architectural FORUM

the magazine of building

EMBER 1956

Crisis before 1976...

What city pattern



for fifty-six million more Americans



and fifty million more automobiles?



GOLD SEAL SEQUIN* INLAID LINOLEUM 1/2" GAUGE IN RICH DARK BROWN. "CONTINENTAL FURNITURE" BY STANDARD.

New, exclusive Gold Seal "Sequin" Inlaid Linoleum brings you a new kind of beauty for commercial installations. It presents a sweeping, virtually seamless expanse of wall-to-wall richness. Seven decorator-styled colors provide ample selection to match any room decor! This rugged product is highly resilient . . . quiet and comfortable underfoot. Its satin smooth surface seals out dirt and resists stains which means maintenance will be easy. Give your clients all these extra advantages—specify new Gold Seal "Sequin" 1/8" Inlaid Linoleum.



Abrasive Wheel Test proves "Sequin" "looks like new" through long service life!

The circular "After Test" area is the result of applying the abrasive wheel to the "Sequin" sample. See how it has worn well through the linoleum—and yet the pattern is still there, as clear and sharp as ever! Compare it with the "Before Test" area. You can't tell the difference! Write to Architects' Service Department, Congoleum-Nairn Inc., Kearny, N. J., for further information and samples.

FOR HOME OR BUSINESS:

INLAID BY THE YARD—Linoleum • Nairon* Standard • Nairontop* RESILIENT TILES—Rubber • Cork • Nairon Custom • Nairon Standard Vinylbest • Linoleum • Ranchtile® Linoleum • Asphalt PRINTED FLOOR AND WALL COVERINGS— Congoleum® and Congowall® RUGS AND BROADLOOM—LoomWeve*

@1956 CONGOLEUM-NAIRN INC., KEARNY, N. J.

SPECIFICATIONS

6-ft. wide yard goods. 1/8" gauge, burlap backed. Install over suspended wood or concrete subfloors. Available in: grey, green, dark brown, white multi, grey mix, taupe, beige. Also made in standard gauge for residential use —in 16 colors.



#Trademark

SEF

9

29

37

42

48

54

74

180

190

196

Cover:

92

260

architectural FORUM

the magazine of building

SEPTEMBER 1956	103	By 1976 what city pattern?
		A 34-page inquiry into the question what 56 million more people using 50 million more automobiles may demand in cities new and renewed
······································	105	First job: control new-city sprawl
		Catherine Bauer contends that attention should be focused on "new cities" of up to a million that will soon exist in today's fields and orchards, rather than on central cities
	112	Reply by Forum's editors
News WHAT CITY PATTERN	•	The new city and the existing central city are just elements of a comprehensive development in US habitat, hence one problem in three parts: central city, fringetown, roadtown
Trends	114	Central City
People	122	Fringetown
Dates	124	Roadtown
Paranthagaa	130	A proposed solution
Letters		Architect Victor Gruen weighs the possibility of restoring order by a "cluster" planning technique
Letters	136	Where to find out more about planning
Excerpts		A selected directory of agencies, public and private
Research	138	Southwest bank
Books		Houston's biggest bank shows how to create many kinds of interior windowless space
Products	142	Buildings in brief
		A quick look at six buildings which make significant con- tributions to the proving ground of ideas
	146	Leading architects compare views
Design by Ray Komai		Cranston Jones, writer of a TIME cover story about Architect Eero Saarinen, tells what highest-regarded US architects think about one another's work and ideas
Editorial data (including masthead), subscription and advertising data	150	Design notes
Advertising index		How the office of Architect Ernest Kump straightens wooden roofs; how it treats exterior steel posts
VOLUME 105, NUMBER 3	152	Technology
Published monthly by Time Inc., 9 Rockefeller Plaza, New York 20, N.Y. Entered as second-class matter at New York, N.Y.		Where the art of acoustics stands today, and a list of practitioners New tricks with a flock of arched concrete shells poised on a grid of wires technical notes
Subscription price \$5.50 a year © 1956 Time Inc. All rights reserved	164	For all concerned
under International and Pan American copyright convention.		An editorial on the centenary of professional architects and what they might do for the next 20 years on cities

.

1

you can BUILD and SELL more house ... at lower cost with

- 2

-

With home buyer's increasing demands for major features, like ample storage space—and the design and cost problems of supplying them . . . architects and builders are doing some careful figuring.

Specifically, lets consider more, easy-to-use storage space, and how to create it with GLIDE-ALL Sliding Doors . . . easily, quickly and economically:

GLIDE-ALL Doors make floor-to-ceiling, wall-to-wall expansive wardrobes, huge closets in corners of small rooms, full-length, full-height hallway storage space, entrance-way guest closets, and in many other waste-space areas. GLIDE-ALL Doors save construction time and dollars . . . they're installed quickly, adjusted easily to fit the opening, decorate with the wall, and give a life-time of trouble-free performance. They are available in standard 8' and 6'8" heights, flush or recessed panel models . . . and in special sizes for unusual jobs. That's why we say: "you can build and sell more house at lower cost with GLIDE-ALL Sliding Doors." See Sweets or write for complete details, specifications and prices. GLIDE ALL Doors are quailable from distribu

0

GLIDE-ALL Doors are available from distributors throughout the United States and Canada. For information write Plant nearest you.

GLIDE-ALL DOORS ARE A PRODUCT OF

WOODALL NDUSTRIES NC.

DETROIT 34, MICHIGAN

CHICAGO, 3508 Oakton St., Skokie, III. EL MONTE, Calif., 801 W. Valley Blvd. FRANKLIN, Ohio, P. O. Box 290 LAUREL, Mississippi, P. O. Box 673 NEW YORK, Glen Cove Rd., Mineola, N. Y. SAN FRANCISCO, 1970 Carroll Ave.

2



Which Type of Paint for this Job?

This Florida hotel had been painted with a lime-based waterproofing which powdered excessively and presented a poor surface for repainting. Moreover, because of the attendant discomfort to guests, sand-blasting was ruled out and wire-brushing was the only preparation permitted. Keeping these factors in mind, what kind of paint would you specify for the job?

If you don't know the answer, you should know about paints made with PLIOLITE S-5—the synthetic rubber resin. The contractor who did this job chose such paint because of his previous experience with them and their more than 10-year reputation for doing a better job longer on all types of masonry. He also knew they would not crack or peel as do many water-emulsion paints when applied to painted surfaces that have chalked.

PLIOLITE S-5 is specifically designed to resist the alkalies and moisture, found in all masonry, which can attack and destroy conventional paints in a few short months. Full details on how and why paints made with PLIOLITE S-5 resist alkali attack plus weathering up to 20 *times longer* than other paints can be found in the free booklet, "Paint Magic for Masonry." Write for it today to:

Goodyear, Chemical Division, Coatings Dept., Akron 16, Ohio

ALWAYS SPECIFY MASONRY PAINTS BEARING THIS SEAL

PLIOLITE S-5 by

GOOD YEAR

Synthetic Rubber Res

For 35 Years... Architects have





NEW Sweet's Catalog insert with separate spreads for each door...complete specifications on each spread...traceable details drawn to scale.

COPYRIGHT 1956, O. D. C.

specified

THE

more than any other brand!

TRADE MARK

The "OVERHEAD DOOR" has enjoyed and appreciated the confidence of architects for three and a half decades. Such leadership has been a pleasure—yet demanding. It means not just the finest class B or better Sitka Spruce or Douglas Fir. Not just the best rust-resistant and reinforced tracks. Not just the finest hardened rollers money can buy ... nor the best electrically engineered operators.

But the outstanding requirements we have met add up to a certainty of quality installation and responsible service...by exclusively dedicated craftsmen.

5

New fire station at Toledo shows how the Overhead Door Corporation handles most rugged physical and design requirements. Architects: Bellman, Gillett & Richards.

A Complete Line of Doors...Commercial and Residential...Including Electric and Electronic Operators.

America's pioneer and leader in upward-acting garage doors

OVERHEAD DOOR CORPORATION Hartford City, Indiana

- MANUFACTURING DIVISIONS -

Hillside, N.J. • Nashua, N.H. • Cortland, N.Y. • Lewistown, Pa. • Oklahoma City, Okla. • Dallas, Tex. • Portland, Ore.

THIS PROTECTION Gery Building needs

BACKWATER CONTROLS



Every building connected to a sewer line is subject to the danger of backwater.

When water from a sewer backs up as a result of excessive rains, thaws, floods or inadequate carryoff, it backs up into basements with destructive force. Equipment and merchandise becomes water soaked...foundations and floors undermined... unsanitary sediment and debris spread filth over the entire basement.

The loss, damage and repairs caused by the water backing up from sewers and drains cannot adequately be covered by insurance. That's why proper safeguards against backwater are absolutely necessary.

Positive protection against backwater is easy to provide and the cost is so small compared with the backwater damage, that no residence or building should be without it. For this purpose Josam offers a wide range of backwater controls, tested and proved in every type of building. The mechanism in Josam backwater controls permit, speedy drainage from the building but closes instantly at the slightest backflow . . . keeps backwater out. Send coupon below for full information today!



Series 680-V



Series 810-V



Series 380-J

JOSAM MANUFACTURING COMPANY Dept. AF • Michigan City, Indiana

Series 210-V

300

	Please send man	ual on BACKW	ATER CONTRO	L .
NAME		Bl	JSINESS	
FIRM				
ADDRESS				
CITY		ZONE	STATE	

Series 850-V

Series 6040-V

JOSAM MANUFACTURING COMPANY GENERAL OFFICES AND MANUFACTURING DIV.

Representatives In All Principal Cities West Coast Distributor JOSAM PACIFIC CO., San Francisco, Calif. Canadian Manufacturers JOSAM CANADA LIMITED, Toronto, Canada

PLEXIGLAS

... for long-lasting quality in lighting

Styling Building, General Motors Technical Center, Detroit, Michigan. Modular lighting units have 5' x 5' pan type diffusers of PLEXIGLAS acrylic plastic. Architects: Eero Saarinen & Associates. Architects-Engineers: Smith, Hinchman & Grylls Inc.

When lighting systems are based on diffusion through PLEXIGLAS® they have the efficiency, permanence and beauty that add up to illumination of the highest quality. This acrylic plastic provides superior transmission and diffusion of light. It is rigid, strong and durable, with exceptional freedom from discoloration on long exposure to fluorescent lamps. At the General Motors Technical Center, nearly seven acres of PLEXIGLAS attest its advantages as a lighting material. Write for our booklet, "Architectural Lighting with PLEXIGLAS." It shows many of the diffuser shapes and designs that are available from lighting equipment manufacturers.





Chemicals for Industry

ROHM & HAAS COMPANY WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries,

Canadian Distributor: Crystal Glass & Plastics, Ltd., 130 Queen's Quay at Jarvis Street, Toronto, Ontario, Canada.

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



FRANK LLOYD WRIGHT architect **COLLINS & GOULD** mechanical engineers CULWELL CONSTRUCTION CO. general contractor W. A. LANDERS CO. plumbing contractor CRANE CO. plumbing wholesaler

The recently completed and much discussed PRICE TOWER, Bartlesville, Oklahoma, is a IN A HORIZONTAL CITY

• Firmly rooted in Oklahoma's oil-rich earth and ex- per panels. Aluminum framed window openings are tending 19 stories up into the prairie air stands this glazed with gold tinted glass and fitted with copper tradition-shattering, tree-like structure which houses louvers. Three of the quadrants contain offices and both highly efficient offices and luxurious apartments. the fourth is devoted to eight duplex apartments with All floors and walls are supported solely by four steel- separate entrance and elevator. The entire tower is reinforced columns which form a central core. Each air-conditioned. As are thousands of other buildings floor extends outward from the core as a cantilever where top quality prevails, this already famous workslab, and the outer covering is made up of alternating ing and living tower is completely equipped with bands of exposed concrete and Wright-designed cop- SLOAN Flush VALVES.



New, expanded US programs promise biggest boost ever for construction

From the AIA to XYZ, Congress enacted benevolent legislation for practically every segment of the building industry before it adjourned last month.

Except for the \$33 billion highway program (AF, Aug. '56), Congress did not bestow any spectacular bounties on any special segments of building. Collectively, however, the highway bill and the substantial sums it gave for so many other construction programs promised to provide a heady stimulant for this hefty, healthy branch of the economy.

Most of the new or bigger boosters were contained in the Housing Act amendments the President signed Aug. 7. Other bills, however, including one giving the AIA real estate tax exemption on its headquarters building, the "Octagon" (preserved as an historical building and now open free to the public), would benefit the industry in many ways (see separate reports, pp. 12 and 13).

Credit ambivalence. Ironically, the Housing Act changes constituted a classic example of government ambivalence on credit policy during an election year. These greatly liberalized all sorts of FHA mortgage credit programs in complete disregard of the fact many of these were still subject to the 2%-greater down payment restrictions ordered into effect late last summer to curb credit-generated inflationary trends. The incongruous "controlled economy" result: the speeds of all these vehicles were stepped up-while the brakes were still kept on. For continued safety, these 2% credit restriction brakes are now retained as the necessary anti-inflation deterrents against the government's new, higher maximum housing credit speeds.

Here is a summary of the new aids and federal fringe benefits for builders in the Housing Act revisions:

Rental housing financed with Sec. 207 FHA mortgages will now require only half as much equity investment by the builder as previously. Loans for these will now be insured by FHA for 90% of value (or actual cost, under cost certification), compared with the former 80% ceiling. Elevator buildings averaging four or more rooms per family will qualify for loans up to \$2,700 per room (formerly \$2,400), and walk-up buildings \$2,250 per room (formerly \$2,000)-or at least \$1,200 per unit less cash required of the builder. If dwelling units average less than four rooms, maximum loans for elevator buildings will now be \$8,400 per unit (instead of \$7,500), and for walk-ups \$8,100 per unit (instead of \$7,200)-or \$900 per unit less equity.

In officially designated "high-cost areas"

all these ceilings may be increased by \$1,000 per room.

Nonprofit corporations erecting apartments designed especially for elderly persons will be allowed Sec. 207 mortgages up to \$8,100 per unit calculated on 90% of "replacement cost," instead of "value," to allow for the added expense of special features for aged occupants.

Cooperative housing financed with Sec. 213 FHA mortgages also will be allowed to borrow \$1,000 extra per room in "highcost areas"; only 50%, instead of 65%, of the units will have to be sold to veterans (including World War I veterans) for a project to qualify for a loan for 95% of replacement costs, instead of the usual 90% Sec. 213 mortgage. To make it easier to launch projects, builder-sponsors also will be granted advance commitments for 85% construction loans before the cooperative is formed. This is belated recognition of what urban apartment builders have tried to tell FHA for years-that the building stage must be allowed to precede, not compelled to follow the sales for large cooperative structures.

Urban renewal stimulants include a brand new kind of federal subsidy: relocation

NEWS

expenses up to \$100 per family and up to \$2,000 for each commercial enterprise forced to move from a Title I slum clearance site. These payments will be made by local public agencies, but then added to the land acquisition grants the US gives local governments.

Builder-sponsors on renewal sites were also virtually promised a "mortgaging out" deal under 90%-of-replacement-cost Sec. 220 FHA-insured loans. Although Congress specified that they should be permitted a uniform 10% profit and risk allowance to get this program moving, unless the FHA Commissioner explicitly "certified" that such an allowance would be "unreasonable," at month's end it was indicated FHA only intended to allow some lesser rate—and building under this program might still proceed at a snail's pace, if at all (p. 21).

Other urban renewal boosters: The aggregate of federal Title I grants in any one state in excess of 10% of the national total was increased from \$70 million to \$100 million (of benefit at present only to New York); Sec. 221 FHA home purchase mortgages for displaced occupants forced off renewal areas or other sites by various public works programs were raised from 95% to 100%, and limits increased from \$7,600 to \$9,000 (up 18%), and from \$8,600 to \$10,000 (up 14%), in "high-cost areas."

Cost certification for urban renewal, cooperative and rental housing projects was made final and incontestable once apcontinued on p. 12

St. Louis park funds voted—but none for Saarinen arch

A \$2,640,000 appropriation to begin construction of the Jefferson National Expansion Memorial beside the Mississippi in St. Louis (see cut) has been voted by Congress and approved by the President subject to a 1954 congressional ban on any federal funds for "planning or construction of the stainless steel arch . . ." This great arch is the main feature of the memorial park plan for which Architect Eero Saarinen was unanimously awarded the \$40,000 first prize in the \$200,000 design competition held in 1948.

Last month, however, Rep. Frank M. Karsten (D) of St. Louis was making progress toward repeal of the antiarch rule. From 11 of the present 14 members of the congressional commission that accepted the Saarinen design as its official plan, he obtained approval for a resolution advocating repeal. By the time Congress meets again in January he hopes to have unanimous commission support for a repealer bill he intends to introduce.

Over a period of years, the US has been slated to contribute about \$15.7 million for this memorial (before the ban, about \$5.6 million of it for the arch); St. Louis would pay about \$5.3 million. Since World War II, however, Congress also has made its appropriations subject to a proviso that the federal budget was balanced.

The Saarinen arch would soar to a

height of 590' or 35' taller than the Washington Monument. Opponents have contended it was not "utilitarian," and have argued that a sports stadium would be preferable. Supporters, however, have pointed out that the arch would have elevators to an observation station at its peak, making it functional as well as beautiful. Said Architect Charles Nagel, a judge of the plan contest and director of the St. Louis City Art Museum: "I get tired of people saying the Saarinen arch is of no use. I wish I had stock in the Eiffel Tower-it would still be paying off. . . Do not compromise with excellence. We have been shown the best. Be sure we realize it."





ROTARY OIL BURNER

for economical heavy oils

Why PETRO is known for DEPENDABILITY Petro engineers are not gadget minded. They like oil burners that are sturdy and steady because that is what users like, with no hairline adjustments required for good operating efficiency.

Take oil handling, for instance. Viscosity of heavy oil isn't nearly the bugaboo it's supposed to be. Everyone knows that heavy oils can be as sticky as January molasses, or as thin as hot syrup. But that is only half the story. The other half is that at operating temperature viscosity is a negligible factor. From 160° on up it changes hardly at all. (See chart.)

So the solution is simple. It's easy to keep the oil above the critical temperature, and not expensive either. The Petro burner has a simple valve that will not pass the oil to the nozzle before it reaches a predetermined temperature. If the oil is below operating temperature it is recirculated through the heater. On a cold start this requires about seven minutes. On restarts there is practically no time lag.

Proper heating of the oil has these advantages

Oil can be *accurately* metered; 2. Oil is subject to finer atomization. (It separates into much smaller particles for better aeration and cleaner burning); 3. Warm oil ignites quickly and easily;
Petro *never* has a slug of cold oil in the feed line to the burner, which is the main cause of smoky starts.

PETRO will see you through - you can bank on it



3218 West 106th Street, Cleveland 11, Ohio. (In Canada: 2231 Bloor St. W., Toronto, Ont.)

Please send me literature and specification sheets on money-saving Petro commercial and industrial burners.

Name		47
Company		
Address		
City	State	

Gymnasium Seating At Its Best!

Safer and stronger

art Roomier, more comfortable

art Maximum, clear visibility

Easiest to open and close

Better looking, more durably finished



FRED MEDART PRODUCTS CO., INC. . 3584 DEKALB ST. . ST. LOUIS 18, MO.

*Medart Telescopic Gym Seats are fully protected by U.S. Patents

NFWS

proved by FHA, except for material misrepresentation or fraud. This answers the complaint of apartment builders on the previous lack of any sort of statute of limitations on cost certifications, and their fears that one FHA administrator could approve them, but any time later some other administrator capriciously reopen and disapprove them. This change-and the regular 10% profit margin allowance -were among the recommendations made by FORUM's Round Table on How to Make Urban Renewal Work (April '56).

College housing loans-low interest 100% advances from HHFA, with no cost ceilings, and available for kitchens, cafeterias, commons and other living-purpose facilities as well as dormitories and apartments were given an appropriation of another \$250 million (plus available repayment funds) for the current year. Congress rejected the administration's appeal to revise this program's present interest rate formula so rates could be raised to match current conventional private borrowing rates more closely. Under the present formula, however, HHFA was able to inch up the rate a month ago on all new reservations for this booming. below-market bargain loan program from 23/4 to 27/8 %.

Military housing under the Capehart program (AF, March '56, News) was extended two years and its gross Title 8 FHA insurance volume boosted from \$1.3 billion to \$2.3 billion. Aiding builders and soldiers alike, the maximum average cost for a project was hiked from \$13,500 per unit to \$16,500 (up 22%), but this must include ranges, refrigerators, screens and fixtures. The Defense Dept. is required to buy all former Wherry Act military

housing at those installations where new 100% mortgage Capehart housing is planned. A liberal formula in the act should protect original builders or owners against any losses in these sales, but is supplemented with Defense Dept. condemnation authority in case they refuse to sell or would reap any windfalls.

Public housing, the bone of contention and parliamentary dueling between Senate and House that almost blocked the enactment of any Housing Act at all this year (AF, Aug. '56), ended up with an authorization for 35,000 new units a year for the next two years-the program advocated by the White House.

Private homebuilding got a shower of presents all its own. Of major significance were two changes legislated in the operations of the Federal National Mortgage Assn. (Fanny May): 1) the amount of stock a seller must purchase when he sells mortgages to Fanny May was reduced from 3% to 2% (and also may be reduced to as little as 1%), and, 2) Fanny May also was authorized to issue advance commitments to purchase mortgages, provided its prices prevent dumping. It promptly offered such commitments at 92. Although the immediate effects might be negligible, in this congressional authority for advance commitments the camel's nose was in the tent. It was not hard to foresee the day when homebuilding industry spokesmen would be arguing loudly and vigorously that "antidumping" prices should not penalize or exclude all the advance commitments builders "needed" to carry on their regular or ordinary volume of construction any time the money market made it difficult for them to obtain their financing elsewhere.

Hospital, sewage, some US school help enacted; realty trust tax aid vetoed

In addition to the \$33 billion highway bill and the substantial Housing Act amendments (p. 9), several rich side dishes for construction were served up by the 84th Congress. A summary:

A \$2.1 billion military public works bill. President Eisenhower originally vetoed this measure because it would have barred the Defense Dept. from constructing military housing and an anti-aircraft missile program without clearing each project with Senate and House Armed Forces committees (AF, Aug. '56). After these provisions were modified, however, the bill was repassed and signed by the President.

A two-year extension of the program to help communities whose schools are overcrowded by children from nearby government projects. This was given \$378 million for two years, with \$146 million earmarked for construction, the rest for maintenance and operation.

Extension of the Hill-Burton hospital construction aid program for two years, including \$125 million for the current year. Of this \$102.8 million is for hospital building; \$21 million for chronic and medical rehabilitation facilities, and \$1.2 million for research.

A \$90 million appropriation to be given to public and nonprofit institutions on a matching basis for research activities and construction of nonfederal facilities to house such work.

A Federal Water Pollution Control Act with \$50 million for Public Health Service grants to be disbursed through state agencies for the construction of necessary sewage plants. Maximum grants will be \$250,000, or 30% of costs, and at least half of the funds must go to cities of 125,000 or less population.

An "experimental" \$5 billion flood insurance and \$2.5 billion flood damage repair loan program. Insurance will be limited to \$10,000 per home, or \$250,000 per company, with the US paying 40% of the premiums. Loans at 4% interest will be limited to \$350,000 to any one person or company. HHFA was given the task of organizing the program.

Realty trusts vetoed. One major bill that passed, but was vetoed by the President, would have given real estate investment trusts the same tax privileges accorded security investment trusts that distribute 90% or more of their income, and pay federal corporation taxes only on the earnings they fail to distribute. The President said such "conduit" tax rights might give undue advantage to realty trusts and exempt their realty earnings from all federal corporation taxes, whereas securities income has already been taxed once before reaching a trust. NAREB said the validity of the President's stand (based on Treasury advice) "has been attacked by tax and legislative experts," and said there were indications the measure would be repassed by the next Congress. Meanwhile, however, one New York group with all its documents drawn to launch such a \$25 million realty investment trust quietly refolded all its papers and disbanded in pursuit of happiness in other deals.

URBAN RENEWAL

Follin quitting URA post; **US-city red tape being cut**

Besides various US urban renewal policy changes legislated in the new Housing Act amendments (p. 9), there were several administrative and judicial developments affecting this program.

Commissioner James W. Follin, head of the Urban Renewal Administration, disclosed his intention to resign this fall



FOLLIN

when he returns from a trip to the Far East. Follin was named director of the former HHFA division of slum clearance and urban renewal (DSCUR) in June '53, and appointed the commissioner for the division when it was reconstituted as the

URA under the Housing Act of 1954. He is a year away from retirement, and is expected to enter private business as an urban renewal consultant. Deputy Commissioner Richard L. Steiner is serving as acting commissioner, and like Deputy FHA Commissioner Charles E. Sigety, is a likely successor to Follin.

URA announced a series of major changes in its application and reporting procedures to shorten the time for local communities to get projects moving and reduce the paperwork and red tape in qualifying for federal grants. Chief changes: only general data on the character of an area will now be required when a project application is filed, leaving final determination on this point open until detailed planning and survey data are developed; henceforth detailed plans for public improvements and land disposition, clearance and redevelopment will not have to be completed until after primary project approval, instead of before; URA regional offices will be given far greater responsibility in processing and supervising projects, reducing Washington supervision to a minimum.

In a unanimous decision, the Rhode Island Supreme Court removed an obstacle that had blocked the Providence Redevelopment Agency's plans for a Point St. area project for industrial purposes, and indirectly had clouded the validity of its entire program. The highest court reversed a lower court decision that the agency could not condemn a restaurant property in the proposed redevelopment area. The Supreme Court held that courts may pass on whether land is being condemned for a "public use" (by an amendment to the state constitution last year redevelopment was declared a "public use and purpose"), but beyond that it was up to the legislature or a designated agency to decide what particular land was necessary for a project, and such decisions, under ordinary circumstances, are not subject to court review.

GSA allocated \$18 million to cool existing structures

The General Services Administration, one of the nation's strongest advocates of air conditioning, has been given \$20 million by Congress for cooling existing government buildings in the current fiscal year. Of this amount \$4.5 is earmarked for Washington area structures.

All \$18 million will be spent in GSA's climatic Zone A, where the temperature reaches 84° or more for sustained periods. The cost to air condition all existing buildings that require it in this zone has been estimated at \$93 million. (For its Zone B, where 80° weather is frequent, GSA estimates it would cost another \$185 million.) It does not plan any conditioning in its Zone C, where 80° heat occurs only occasionally—parts of New England, northern New York, the upper peninsula of Michigan and the north Pacific coast.

It has become GSA policy to specify central air conditioning as standard in all new buildings in Zones A and B. In conditioning existing buildings it also insists on central systems. The use of separate room conditioners or the conditioning of only a few rooms in a building is regarded as relatively inefficient, uneconomical and "bad public relations" (some public officials would get cooling, but others would not).

For the 28 existing buildings it planned to air condition outside of Washington this year, the average cost was estimated at \$4.97 per sq. ft. of cooled space. The lowest estimates were \$3.16 and \$3.18 per sq. ft for buildings in Portersville and Reading, Calif.; the highest were \$6.12 in Houston, \$5.48 in Newport News and \$5.43 in Savannah.

"Detroit Tomorrow" model shows vast renewal changes

As the last major event of its 75th anniversary celebration, J. L. Hudson Co. exhibited a huge model, "Detroit Tomorrow," a visualization of the Motor Capital as it might appear 25 years from now upon completion of major improvements already started or approved and "with principles of modern city planning applied to the whole city."

The City Planning Dept. supervised construction of the model, the largest of the central section of the city ever made, and at the end of its initial display the department store gave it to city officials last month for exhibitions elsewhere to stimulate public interest in Detroit's extensive urban renewal program.

In the portion of the model shown above, A is the immense \$30 million exposition hall and arena started this year just west (1) of the Civic Center along the Detroit River (foreground); B is the new City-County Building; C, the new Henry and Edsel Ford Auditorium; D, the Veterans Memorial Building completed in 1950; and E, the new Hilton Hotel now being designed. Many of the larger existing buildings in the central business district, just



PARAMOUNT SERVICE

beyond the Civic Center, appear in the model. Many of its other representations, however, are admittedly only "ideas," or projects or buildings "in the dream stage."

Designed by Architects Giffels & Vallett, the new exposition hall will be a threestory 500' x 900' structure spanning the John C. Lodge Expressway, and the arena 310' in diameter with seats for 14,000 persons. The hall will have 400,000 sq. ft. of showspace, one third more than New York's new Coliseum, beside a ballroom, two restaurants, 32 meeting rooms and 90,000 sq. ft. of storage and service space. Roof and first-floor parking will accommodate 1,700 cars, surface and underground areas another 1,200.

PUBLIC BUILDINGS

Program for federal buildings passes \$1 billion; most on lease-purchase plan

After all the congressional adjournment dust had settled in Washington last month, it became clear that approved federal public buildings programs had exceeded \$1 billion, backed up with hard cash appropriations or firm lease-purchase approvals topping \$640 million.

In the Capital area the General Service Administration was given \$355 million for construction within the next three years in what its Public Buildings Service Commissioner F. Moran McConihe called "the largest government construction program ever undertaken here." With the office of the Architect of the Capitol embarked on a separate \$127 million program (\$21 million for the new Senate Office Building underway, \$64 million for another House Office Building already approved, and at least an estimated \$46 million for proposed alterations to the East Front of the Capitol), total D.C. area spending would pass \$480 million.

The imposing program around Washington would consist of both direct-appropriation and lease-purchase construction. For five major buildings to cost a total of \$189 million, Congress appropriated \$139 million, would vote the additional \$50 million as needed to complete several of the projects in later fiscal years. These five impressive and colossal structures would house the main activities of the State Department, Atomic Energy Commission, Central Intelligence Agency, Bureau of Standards, and Smithsonian Museum of History and Technology. Under lease-purchase deals that have full Budget Bureau and Congressional clearance, GSA-PBS also will contract for seven more smaller D.C. buildings to cost about \$166 million.

Non-Washington building. Beyond the Washington area, GSA last month had all the necessary approvals to proceed with 61 lease-purchase projects to cost a total of \$322 million. Among the largest of these were a San Francisco federal court and office building for \$45.3 million (largest in this program to date), a Los Angeles Custom House and office building at \$30.8 million, a Communicable Disease Center for the Public Health Service in Atlanta at \$12.3 million (bids to be opened this month).

Both the Senate and House public works committees also had given approval for another 31 GSA-PBS lease-purchase buildings that would total another \$224 million, but they had yet to earn Budget Bureau sanction.

The separate lease-purchase program of the Post Office Department that got started this year (for buildings solely or predominantly for postal facilities) was raised to a total of 48 buildings to cost about \$17 million. They have full approval of both Congressional committees and the Budget Bureau.



New Shopping Center Features Low Cost Construction with Junior Beams

"Our cost estimates comparing various structural systems showed that 40 foot J&L Junior Beams used across two 20 foot spans proved to be the most economical type of construction." That's how Mr. Hymen Rosenberg, AIA, summed up the reason he specified 55 tons of 10 inch Junior Beam roof purlins in the ultra-modern Pines Shopping Plaza at Perrysville, Pa.

Produced exclusively by J&L, Junior Beams are the lightest hot rolled structural section available. Builders find they help reduce construction costs. First, by reducing the steel tonnage required, and second, by cutting the labor cost because Junior Beams can be easily fabricated, speedily raised and positioned with minimum manpower and material handling equipment.

Junior Beams are rolled from copperbearing steel that is four times as resistant to corrosion as non-copper bearing carbon steel, assuring longer life in the finished structure.

Get complete data on these versatile J&L structurals. Write for more information showing how Junior Beams are being used in all types of light occupancy structures as well as shipbuilding, grandstands, truck and trailer frames.

Jones & Laughlin STEEL CORPORATION . PITTSBURGH

Architect: Hymen Rosenberg General Contractor: Sam Verman Steel Fabricator: Levinson Steel Company



Irregular shaped ceilings often posed difficult lighting problems ...until GrateLite was invented. This is a louver that can be fitted to any shape!

results:

A new concept of ceiling design that distributes the light evenly throughout the room without glare and annoying shadows—an inviting, eye-soothing illumination of high intensity at low brightness.





Beauty treatment for odd-shaped ceilings. GUTH GRATELITE* LOUVER-DIFFUSERS

* (R) U.S. Pat. No. 2,745,001 Can. Pat. Pend.





THE EDWIN F. GUTH COMPANY ST. LOUIS 3, MO.

SINCE 1902



on



A roundup of significant proposals announced last month



WASHINGTON UNIVERSITY PRIZE DESIGN LIBRARY

Glass will enclose the entire ground floor, and pink Missouri granite harmonizing with other campus buildings the upper floors of the John M. Olin Library at Washington



University, St. Louis. This design by St. Louis Architects Murphy & Mackey was selected as the winner of an invitation competition judged by Architects William W. Wurster and Henry R. Shepley, and library expert Charles David. Of the five stories, two will be underground, reducing the air-cooling requirement from a capacity of 100 tons to 70. Book-weary students and faculty can get a quick change of scene by strolling around the glassed-in promenade on the second floor or an open-air inner court landscaped around a tree on the site.

US PAVILION AT DAMASCUS TRADE FAIR

In explaining the 40' arched cover over a circular stage and television studio in this US exhibition building for the International Trade Fair in Damascus, Syria, William T. Snaith, president of the Raymond Loewy Corp., the designers, said "We chose the pentagonal shape because that is the American star and because we wanted this soaring, graceful shape to act as counterpoint to the strict, horizontal lines of the formal exhibit unit."

NEW HEADQUARTERS FOR TWO TRADE UNIONS



The new air-conditioned, executive-looking home being planned for the Bakery and Confectionery Workers of America union in Washington (right) was designed by Architects Holabird & Root & Burgee of Chicago. Already under construction, the building at left, for the Joint Council of Teamsters No. 42 Investment & Construction Assn., Los Angeles, was designed by Walker, Kalionzes & Klingerman.



PARABOLIC SPAN IN REVISED IDLEWILD PLANS

Latest plans for the International Arrivals Building at New York's giant Idlewild Airport (AF, Apr. '55) provide for this 230' clear span arch 46' high facing the tall

square control tower and fronting on the mall where incoming passengers will board buses for the last leg of their journey. Architects: Skidmore, Owings & Merrill.



DENVER PLANT FOR GUIDED MISSILE RESEARCHERS

This 172,000 sq. ft., \$5 million electronics manufacturing plant for the Ramo-Wooldridge Corp., designed by Pereira & Luckman, of Los Angeles, has been started on a 640-acre site near Denver that was selected, says President Dean E. Wooldridge "because of its proximity by air to Los Angeles." Ramo-Wooldridge has had a leading role in the research and development of intercontinental ballistic missiles for the Defense Dept., which would account in part for its disdain for the mere 1,200 miles that separate Denver and Los Angeles. Its next field: automation equipment.



NEWS





MUSIC BUILDING THAT GOES 'ROUND AND AROUND

Sound is to be imprisoned even if the musicians have to be more or less imprisoned with it, in Indiana University's new music school. Architects Eggers & Higgins of New York designed this 150' diameter round building with the problem of sound transmission very much in mind. For individual instruction, better sound control can be achieved when at least two sides are not parallel.



OFFICE BUILDING OVER DEPARTMENT STORE'S GARAGE

Newest addition planned for Houston's skyline is this tenstory office building to sit atop a five-story garage. The bottom five stories will provide garage and basement space for Foley's Department Store, its second expansion this year. The upper part, to be finished at a later date, will have ten stories of office space for other tenants. Lloyd & Morgan are the architects. A tunnel links the garage to the main store.



LEASE-PURCHASE PROGRAM FEDERAL BUILDINGS

The Federal Office Building authorized by GSA for Albuquerque, N. M., (above) will be in colors of buff and blue, designed by Ferguson, Stevens & Associates, and Flatow & Moore, all of Albuquerque. Estimated cost: \$6 million. Three Omaha firms — Steele, Sandham & Steele; Henningson, Durham & Richardson, Inc., and Kirkham, Michael & Associates—joined forces to produce the grid design for a new \$9.5 million Post Office Court House (right) in Omaha.

NEWS continued on p. 21



EAST AND WEST COAST BUILDINGS FOR IBM

IBM's president, Thomas J. Watson, Jr., has announced the largest expansion in the company's 42-year history. A 13-story office building and data processing center in Los Angeles (above), designed by Pereira & Luckman, has been approved by the Los Angeles City Planning Commission after zoning changes. Estimated cost: \$4 to \$5 million for approximately 218,000 sq. ft. of space. IBM plans other centers for San Francisco, San Jose, Santa Monica, Portland, and Seattle. On the East Coast, the IBM World Trade Corp. will set up its headquarters (r.) facing the United Nations. The exterior will be steel frame, concrete slab, and



limestone veneer; radiant panel ceilings will supply heat. Architects: Harrison & Abramovitz.

SUBURBAN OFFICES

For its new home office the Guarantee Mutual Life Insurance Co. of Omaha will build this \$1.6 million, 78,000 sq. ft. three-story glass-walled structure in an area of \$50,000 to \$100,000 homes seven miles from the heart of the city. Public areas, employee lounge and cafeteria facilities will occupy the front section; rear work area structure will have a 36' square inner court. Link section will house escalators.



Architect-Engineer: Leo A. Daly Co., of Omaha.



No Pictu	aries 3 .20 Ga. ire Moulding	No.18 Ga Cencelad Clip Fastener Clip Stiffener Clip No.18 Ga. Soffit Venetian Blind Pocket Varies
		Stool Dimension
4 - 200		Varies No.16 Ga.Stool
e	No.18 Ga. Removable-+	Sound Deadening Lectrical Services Mechanical
ht Dimensio	Front Panel	Piping
Panel Height Dimensio	Lip Slot Louvre No.18 Ga. RemovableBase	Services Piping Services C C Radiator C Radiator C C C Radiator C C C C C C C C C C C C C

architects & engineers Voorhees Walker Smith & Smith New York, N. Y. (Successors to Voorhees Walker Foley & Smith)

general contractors Starrett Brothers and Eken, Inc. New York, N. Y.

Milcor Combination Wall Units solve design problem in Westinghouse Research Laboratory

Functional floor-to-ceiling wainscot is complete answer to complex requirements

Wainscoting for the Westinghouse Research Laboratory in Pittsburgh presented several design problems:

1. It had to provide access to electrical and gas connections behind the wainscoting.

2. It had to include removable partition caps, to provide for future partition locations.

3. It had to have removable front panels, for easy maintenance of heating and air conditioning units.

The Milcor Wall Units shown below provided the answer.

This is a good example of combining window trim and convector enclosures into complete wall units that satisfy individual job situations — at substantial savings in cost.

You can specify Milcor Wall Units in variable dimensions in either Ti-Co galvanized or regular steel — factory-welded or knocked-down for assembly on the job. One of the Milcor field engineers can help you put Milcor know-how to work on your next job.

For further information, refer to the Milcor pages in Sweet's (Section 12a/InL). Or write for Catalog 102.



Exterior of Westinghouse Research Laboratory, Pittsburgh, Pa.



Glose-up of the Milcor Wall Unit installation at Westinghouse Research Laboratory. All units are reinforced and supported by concealed members.

An enamel finish harmonizing with the general interior decorative scheme was baked on at the factory.

AND A PEPT. I, 4031 WEST BURNHAM STREET . MILWAUKEE I, WISCONSIN

T-105

BALTIMORE • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DETROIT KANSAS CITY • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • NEW YORK • ST. LOUIS



Get the Extra Advantages of JOHNSON Individual Room CONTROL

Individual Room Temperature Control by Johnson offers a combination of benefits keyed to the special needs of the modern hospital. These include:

- ... The *flexibility* necessary to satisfy *each one* of a wide variety of temperature requirements and to maintain the exact temperature desired in each individual room.
- ... Complete safety, even in the presence of explosive gases, while controlling temperatures and humidities in critical areas.
- ... Accurate, dependable performance under all conditions and under continuous use.
- ... Automatic operation to minimize supervision and free the staff for other work.
- ... Economical, waste-free operation of all air conditioning, heating and ventilating equipment.

Many of the nation's leading hospitals are getting these important advantages. At St. Mary's Hospital* in Kansas City, for example, nearly 400 Johnson *Individual Room* Thermostats provide precision, wastefree direction of the air conditioning, heating and ventilating systems and insure ideal conditions in every room. Both the original building and the newly completed upper floors are Johnson equipped.

Whether your particular temperature and humidity control problems involve new construction or modernization of part or all of an existing building, a specially planned system of Johnson Control is the best answer. An engineer from a nearby Johnson branch will gladly give you his recommendations without obligation. Johnson Service Company, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.



*St. Mary's Hospital, Kansas City, Mo. Siberz, Purcell, Cuthbert & Necomb, architects, Madison, Wisc.; W. L. Cassell, mechanical engineer, Kansas City; W. T. Conroy, mechanical contractor, Kansas City.



WHITE is so much more effective!

Trinity white—the whitest white cement—is a true portland. The gleaming sparkling whiteness as mass or contrast increases the stature of good design. Use it for architectural concrete units; stucco; terrazzo; and wherever high light-reflection is indicated. Trinity white meets all Federal and ASTM specifications.

> This greyness of grey portland cement is absent in Trinity White. That's why Trinity White is best where concrete is to be tinted. There is no muddiness to your colors. You get cleaner, truer

A Product of GENERAL PORTLAND CEMENT CO. • Chicago • Dallas • Chattanooga • Tampa • Los Angeles

rinty 11

WHITE

THE

TRINE

APARTMENT FINANCING

Builders fear FHA "220" regulations will bar 10% profit, deter construction

Ink was hardly dry on the new Housing Act before it looked as if conservative, uncomfortable FHA officials meant to scale down to the least possible rate the "profit and risk" incentive Congress thought it had provided to get a volume of urban renewal rental housing built through 90% Sec. 220 FHA mortgages. By month's end some industry leaders were already protesting that FHA, through its "regulation" route, was actually preparing to thwart the "intent" of Congress, reduce and restrict the uniform 10% profit incentive authorized by Congress to the point that it was turned into a deterrent.

What haunted FHA, and put its officials in an awkward, unenviable, jittery position, was the ghost of the so-called "scandal" over Sec. 608 windfalls. On the one hand they were still browbeating and making prosecuting noises against former 608 apartment builders-not so much for actually obtaining "windfalls," but for allegedly violating technical niceties in the way they "distributed" them. On the other hand, it seemed quite clear that Congress, with its eyes open, by approving Sec. 220 mortgages for 90% of replacement costs and specifically sanctioning a 10% profit and risk allowance if necessary, had now handed FHA a "mortgaging out" program to administerrelying on "cost certification" to prevent any actual cash windfalls in excess of mortgaging out.

Intent of Congress? The Congressional Record contains a formal summary of the new Sec. 220 proviso's purpose that Rep. Albert Rains (D, Ala.), chairman of the subcommittee in charge of the bill, read to the house: ". . . providing for a profit and risk allowance of 10% of project cost -excluding land-for sponsors of urban renewal insurance projects, although the FHA Commissioner is authorized to prescribe a lesser percentage if he certifies that a 10% allowance is unreasonable."

Explaining this proviso, Chairman Rains added: "The committee bill would give additional incentive to the production of multifamily rental housing in our cities. It would put pressure upon the FHA Commissioner to recognize a more liberal profit margin which experts in the field have stressed as necessary to attract private sponsors into building under Sec. 220, which is designed to provide rental housing in urban renewal areas . . .

"Our report pointed out that the FHA has taken an overly conservative position [on profit allowances]. The FHA adopted a sliding scale approach under which allowances varied from perhaps 5 to 9% from project to project. This approach has not operated to facilitate construction. . . . To correct this situation, the committee bill establishes a uniform approach, providing that the allowance for builder's and sponsor's services, profit and risk shall be a uniform 10% unless the FHA certifies that 10% is unreasonable and by regulation prescribes a lesser uniform percentage for all projects and all sponsors. The FHA can reduce the allowance set by Congress to 9% or 8% or any other lesser percentage. There is no opportunity to give any project or any sponsor specifically favorable treatment, because the allowance is exactly the same for everybody."

Smaller job-bigger incentive? At month's end FHA officials admitted that in drafting new Sec. 220 regulations they were considering profit and risk allowances below the uniform 10% allowed by the law. Pending issuance of the regulations, probably sometime this month, they would not indicate what rate they might allow, except to say it probably would be on a uniform "sliding scale." This, it was added, would slide so as to reduce the

profit rate as the size of a project increased-or, viewed another way, the less housing erected, the greater the relative incentive. One of the nation's top builders, requesting anonymity, stated it even more realistically: assuming that Congress intended to permit mortgaging out and that FHA by regulation was going to try to make builders invest some actual cash in Sec. 220 projects, the proposed sliding scale would make the builder take a relatively bigger risk the bigger his proposed project; in actuality therefore such a sliding scale would be a progressively greater deterrent.

What particular reasons would FHA cite when it officially "certified" that 10% was "unreasonable"?-No official answer yet.

If the sliding scale was eventually put into effect, however, there would be one prospective loophole that would require some adroit and devious bureaucratic plugging .- When the old 608 program had a \$5 million per project limit, larger projects were simply divided into so many different "sections," or smaller projects. Now, for instance, if FHA allowed a 9% profit on a \$2 million Sec. 220 project, but only 7% on a \$6 million project, would it refuse to let a builder process a job as three \$2 million projects instead of one \$6 million job?

POLITICS

Key Democratic campaign posts filled by Roger Stevens, Matthew McCloskey

At the close of the Democratic convention it became apparent that the construction industry would have a big interest in this year's Presidential race. To wit:

> Three key posts on the Democratic high command have been filled by well-known realty and building personalities.

The nomination of Adlai Stevenson by the Democrats and the wording of their platform statements promised to make federal public housing, slum clearance and urban redevelopment policies a major issue.

Chief fund raisers. To obtain their lifeblood campaign funds, the Democrats were depending on quiet but efficient Realtor Roger L. Stevens of New York and Ann Arbor, Mich., appointed national committee finance chairman, and Contractor Matthew H. McCloskey, of Philadelphia, party treasurer. Stevens, 46, headed the syndicate that purchased the Empire State Building in 1951. In July he and associate James H. Scheuer signed a lease to redevelop the Area B section of Southwest Washington (AF, Aug. '56), and he also has extensive realty interests in several other cities. In 1952 he was finance chairman for the Volunteers for Stevenson, and this year served as his nomination campaign treaurer. By coincidence,



MCCLOSKEY

STEVENS

Stevens also is a director of the City Investing Co., headed by New York Realtor-Developer Robert W. Dowling, who was one of Gov. Harriman's chief lieutenants in his unsuccessful bid for the nomination.

Burly, outspoken McCloskey, one of the largest contractors in Philadelphia, is developing an office building and transportation center in the Penn Center redevelopment there, and has been active in politics for more than a quarter of a century. He is credited with originating the \$100-a-plate political campaign fund dinner in 1936. He has a simple philosophy: "If you want a suit of clothes, you have to pay for it. If you want Democrats elected you have to go before the people and tell them it will cost money."

After the Democratic convention, Wilson continued on p. 25



Reinforced plastics provide long-lasting beauty with minimum care for exterior design!

OUT-OF-DOORS LIVING, an increasingly important consideration in home design, finds the architect with a willing tool in reinforced plastic panels. For this recent development in building materials can contribute a rare combination of translucency and structural strength to many exterior applications. Prominent among these are awnings, canopies, patios, and carports.

REINFORCED PLASTIC PANELS are amazingly strong, rigid and damage resistant. They actually compare favorably with steel-yet are wonderfully light in weight. Laminates of glass fibers and polyester resins, they are impervious to corrosion and resistant to temperature or weather extremes. Reinforced plastic panels, corrugated or flat, handle as easily as wood or other building materials. Their translucency filters out harsh sunlightallowing only soft and diffused light to pass through. Available in attractive, built-in colors that need no painting or finishing.

PLASTICS IN CONSTRUCTION is the subject of study for the Monsanto Structural Plastics Engineering Group. Check with this group about the usefulness of reinforced plastics in your planning.

A NEW REPORT, "Plastics in Housing," has recently been published by the Department of Architecture of The Massachusetts Institute of Technology. The M.I.T. study was made possible by a Monsanto grant-in-aid. Copies available at \$2.00 each. Write Monsanto Chemical Company, Plastics Division, Room 224, Springfield 2, Mass.

Monsanto does not manufacture polyester reinforced panels. Monsanto does, however, supply the basic ingredients. styrene monomer, phthalic anhydride and maleic anhydride for the polyester resins used in molding reinforced plastic panels.



AT GIMBELS in the Southgate Shopping Center...

GRINNELL SPRINKLERS

dependable

Architects: GRASSOLD-JOHNSON ASSOCIATES Welton Becket & Associates



Distinctive, modern design, inside and out, plus effective store planning make Gimbels Southgate an attractive addition to Milwaukee's first suburban shopping center. The spacious, uncluttered interior was designed for shopping ease and comfort . . . as well as to make the most effective use of merchandising areas. The Grinnell Sprinkler System, specified by the architects at the planning stage, also has been made a functional part of interiors. Notice particularly how the Grinnell Ceiling-Type Sprinklers are almost invisible; extend but a scant inch and a quarter from the ceiling not marring the interior decor. The end-result is an unobtrusive, smartly planned fire protection system that fits so well into the store design. Yet, should fire strike, Grinnell Sprinklers stand

ready to operate quickly effectively, day or night, to stop fire at its source. Call in a Grinnell Fire Protection Engineer when you design your next project. He can advise you on the best system to suit your requirements. There is a Grinnell System for every type of fire

hazard. Write for literature. Grinnell Company, Inc., 292 West Exchange Street, Provi-

dence, Rhode Island.

G

GRINNELL PROTECTION AGAINST EVERY FIRE HAZARD

Manufacturing, Engineering, and Installation of Fire Protection Systems Since 1870-

And in Chicago - A FUTURE OF FAULTLESS SERVICE



Overlooking Belmont Harbor on Lake Michigan and providing the rare combination of quiet, gracious living near the heart of Chicago is this new and distinguished luxury dwelling . . . equipped throughout by COYNE & DELANY. Here will be found a myriad of fine appointments ranging from individual climate control in each room to sliding glass walls opening to lake view terraces. To eliminate irritating sounds, a prime consideration, premium materials such as noiseless light switches, sound deadened house phones, and quiet flush valves are employed. It is particularly worthy of note that nearly 350 DELANY diaphragm type flush valves, complete with "Turn-to-Silence" equipment, were a demand item following competitive noise tests by the owner. When equipment has been carefully scrutinized and selected, look for DELANY – "the fastest growing name in flush valves!"



This new "HAND BOOK and CATALOG No. 53" is the most comprehensive of its kind-designed for everyday reference . . . 19 pages of installation details for exposed, concealed and special FLUSH VALVE installations . . over 75 blue prints . . . cut away views . . . many pages of charts, formulae, piping details . . . sent free, if requested on firm letterbead. DELANY Flush VALVES

COYNE & DELANY CO. • 834 KENT AVE. • BROOKLYN, NEW YORK IN CANADA: THE JAMES ROBERTSON CO., LTD. Wyatt, former Housing Expediter and Administrator of the National Housing Agency, was named "coordinator" for the Stevenson campaign, or what an aide called "a sort of Chief of Staff like Sherman Adams." Former Louisville Mayor Wyatt also headed the American Society of Planning Officials (1943-44) and the American Municipal Association (1945).

Housing issue posed. The certainty that housing and urban redevelopment would become a campaign issue was based on Stevenson's known views, particularly an address he made to the American Municipal Ass'n convention last November that severely criticized the Eisenhower administration for slashing the public housing program for 135,000 units a year that the late Republican Senator Taft sponsored in the Housing Act of 1949.

The Republican platform plank on housing was contained in a single sentence:

COMMUNITY PLANNING

"We have supported measures that have made more housing available than ever before in history, reduced urban slums in local-federal partnership, stimulated record home ownership and authorized additional low-rent public housing."

The lengthier, contradictory Democratic platform plank said: "We pledge . . . revival of the basic housing program enacted by the Democratic Congress in 1949 . . . additional legislation to provide housing for middle-income families and aged persons. Aware of the financial burdens which press upon most American communities and prevent them from taking full advantage of federal urban redevelopment and renewal programs, we favor increasing the federal share of the cost of these programs. . . . The Republican administration has sabotaged . . . the public housing program to a fraction of the nation's need."

US planning and housing film awarded **Grand Prize at world planning congress**

The US won acclaim on one score, but fell flat on its face on another, at the 23rd annual congress of the International Federation for Housing and Town Planning in Vienna late in July.

The honors for the US were won when it was awarded the town planning and housing motion picture Grand Prize for a documentary, It Can

Be Done, which was

directed by attractive,

young Blanche Lemco,

assistant professor of

city planning at the

University of Penn-

sylvania School of

Fine Arts. The uni-

versity made this pic-

ture for the Interna-

tional Cooperation



IEMCO

Administration of the State Dept., which is now receiving numerous foreign requests for prints. The photographer was Documentarian Nicholas Webster. The producer was Philip Martin, of Capital Film Labs, Washington, with technical assistance provided by HHFA's international housing service. Rather than dealing with great metropolitan area planning problems, this film's story, with universal appeal in all lands, shows how people in underdeveloped or backward areas can organize simple self-help and cooperative programs to achieve improved housing and better community facilities.

Thirty-five delegates from the US and Puerto Rico attended the congress, which attracted a total of 1,100 delegates, plus some USSR "observers." What embarrassed the US delegation was the conspicuous absence of a US display in the meeting's international exhibition. This was staged in Vienna's gigantic, Gothic Town Hall, and, as one US delegate reported, was one of the "most brilliant and stimulating" exhibitions on total city building and city expansion he had ever seen. A blank wall and empty alcove marked the spot where space was reserved for a US display, but no one could explain who or what had gone amiss. A partial face saver was the display from Puerto Rico, which was represented by island Treasurer Raphael Pico, former director of the Puerto Rico Planning Board.

City of 50,000 started on old Greenbelt town property

Twenty years after the US Resettlement Administration assembled the property for one of the New Deal's Greenbelt towns, Forest Park, a planned city of 10,000 houses for about 50,000 persons, a 239acre office and industrial area, and an 80-acre municipal and commercial center was started this summer by a private building organization.

Developers of Forest Park, just 13 mi. north of down town Cincinnati, are the Warner-Kanter Cos., of that city. Their present master plan was prepared by Engineers and Architects Vogt, Ivers, Seaman & Associates, of Cincinnati, with Justin R. Hartzog, the RA's original town planner for the property, retained as a consultant.

Besides building themelves, the developers will sell lots or tracts in Forest Park to homebuilders or individuals who wish to undertake their own construction, but all buildings including industrial structures, will be subject to both architectural and landscaping acceptability controls.

Originally the government assembled 5,930 acres for a complete planned suburban community on this site, but used

only about 700 of them for Greenhills, now an incorporated village of about 4,000 residents. Later it granted about 2,000 acres of the property to the Hamilton County Park District, which developed them with a 160-acre lake, a golf course and other recreation facilities. When the government prepared to break up and dispose of the remaining 3,400 acres piecemeal in 1952, the Cincinnati Community Development Co., a nonprofit civic organi zation, purchased the entire tract, so it could be improved as a unit. It contracted to resell it to the Warner-Kanter organization in 1953 contingent upon the preparation of a mutually acceptable master plan covering land uses, utility and highway systems and principles of neighborhood design.

EDUCATION

Exit New York Beaux-Arts; henceforth it is NIAE

Retitling itself with a name its trustees felt would be more appropriate for its changed character and expanded program,



CLARK

New York's Beaux-Arts Institute of Design cast away its old, familiar name last month. Now it is the National Institute for Architectural Education, a name, said Board Chairman Alonzo W. Clark III, that "reflects more correctly the current and contemplated functions and activi-

ties of the organization."

Launched in 1894 to provide a source of qualified office assistants and raise architects' professional standards, the institute was incorporated in 1916 under its old name because most of its membership then consisted of graduates of l'Ecole des Beaux-Arts in Paris. As more and more US architectural graduates became members, however, this name became less and less representative. The institute provided full design curricula in architecture, mural painting and sculpture until it dropped the latter two courses in 1944, and after 1952 it replaced its complete architecture curricula with student competitions in three classes each semester. Clark said this new six-point program for the NIAE beginning with its fall classes is intended to: 1) provide facilities for comparison of student work on a regional, national and international basis through competitions and exhibits; 2) continue the administration of the \$5,000 Lloyd Warren Fellowship (Paris Prize) and other endowments; 3) provide for the interchange of information among architectural students; 4) stimulate and promote the training and development of the profession's younger members; 5) foster closer integration of architecture with engineering and the fine arts; and 6) encourage the highest standards in architectural education.

It's easy to give large rooms and entryways that (1) arm welcome



Type BF cabinet units, equipped with plenum bases and partially recessed in wall, maintain comfort in the hallways of this large midwestern elementary school.

the answer... Modine Cabinet Units

For that lasting "warm-welcome" first impression - in new buildings or remodeling jobs-there's nothing like Modine Cabinet Units for performance, styling, versa-tility. Five smartly-designed models—120 to 640 Edroffer an unmatched variety of installation arrangements and mounting possibilities for quiet, efficient, economi-cal heat distribution.

Some can be used for steam or hot water heating . . . others heat with hot water . . . cool with chilled water. They can be installed upright or inverted . . . fully exposed, recessed or concealed . . . on walls, floors or ceilings. All can be used with or without ducts. What's more, with inexpensive accessories, Modine Cabinet



In Canada: Sarco, Ltd., Toronto

Choose from over 20 variations to match your individual room requirements





Recessed in the counter, a Type BF keeps out cold air when door opens.



Using ducts, cabinet units heat adjacent rooms as well as auditorium.

C-1315

Units can be adapted to introduce, filter, heat and distribute fresh outside air for ventilation. Above all, they're economical-cost far less to install than individual unit ventilators or air conditioners.

Alcoa® Aluminum Siding and Roofing of New Haverford College Field House is

Alodized with ARCHITECTURAL ALODINE®



Chemical conversion coating is protective and decorative, reduces glare by 30% or more

Planned by the designers of Philadelphia's International Airport, the New Haverford College Field House will include facilities for practically all sports activities scheduled by the college. Its design is entirely functional, featuring all-steel framework and V-Beam Aluminum Siding and Roofing. The aluminum is chemically treated with Architectural Alodine to provide a protective and decorative coating integral with the metal. The color developed by the treatment is a sea green which materially reduces the reflectivity of the aluminum.

Samples of the colored aluminum siding and roofing can be obtained simply by writing to Aluminum Company of America. 1102 Alcoa Building, Pittsburgh 19, Pa.



Project: Haverford College Field House • Location: Haverford, Pa. • Architect: Carroll, Grisdale & Van Alen, A.I.A. • Builder: McCloskey & Co., Philadelphia • ACP Approved Architectural Alodine Processor: J. W. Rex Co., Lansdale, Pa. • Aluminum Subcontractor: Elwyn G. Smith Co., Pittsburgh, Pa.

AMERICAN CHEMICAL PAINT COMPANY, Ambler 19, Pa. Detroit. Mich. • St. Joseph, Mo. • Niles, Calif. • Windsor, Ont.





Joanna Vinyl Wall Fabric



Interior: Prudential Insurance Company of America, Mid-America Home Office, Chicago. Architects, Naess and Murphy, Chicago; General Contractors, George A. Fuller Co., Chicago; Decorating Contractor, National Decorating Service, Chicago,



Joanna Western Mills Company • Wall Covering Division

In the new Prudential Building in Chicago, an initial order for 600 yards of Joanna Vinyl Wall Fabric has resulted in reorders totaling 6300 yards. Find out why Joanna Vinyl Wall Fabric is the choice of America's best designed buildings...again and again. Write for samples and complete information.

 New colors
New styling
Longer lasting • Easier to install • Easier to maintain

Joanna 22nd o	Western Mills WALL COVERING DIVISION and Jefferson Streets, Chicago	Company
Gentlemen:		
Please send sampl	es and further information on Jo	anna Vinyl Wall Fabric
Name		
Company		

22nd and Jefferson Streets • Chicago 16, III. • New York Sales Office: 261 Fifth Avenue, New York 16, N. Y. • Canadian Distributors: Daly & Morin, Ltd., Montreal

BUILDING VOLUME: Expenditures and employment set records;

permit data indicates trend to bigger and better structures

Despite a \$905 million decrease in expenditures for new nonfarm residential work, total construction outlays for the first seven months of 1956 set another all-time record of \$4,207 million-\$498 million or 2% ahead of comparable 1955 spending.

Expenditures in all categories except private homebuilding increased \$1,403 million, a fat 9% over comparable 1955 outlays, with private outlays up 12% and public spending up 5%.

The outstanding increases in private building were industrial, 29% ahead of 1955, and commercial, up 18%, and in public work, highways, up 16%.

Record employment. Workers employed in contract construction also set another new high of 3,296,000 in July, according to the Bureau of Labor Statistics. This 36,000 advance over June, said BLS, was a smaller-than-usual gain which "could be accounted for in part by shortages of structural steel." Compared with July, 1955, however, it was an increase of



TOTAL CONSTRUCTION expenditures for July set an all-time record for any single month at \$4,207 million, according to Commerce and Labor estimates. The previous high was Aug., 1955, at \$4,205 million. The July spending also hit a record annual rate of \$44.4 billion when adjusted seasonally.



PRIVATE INDUSTRIAL construction expenditures for the first seven months of 1956 totaled \$1,690 million, a 29% gain over Jan .-July, '55. In July they were \$268 million, or 35% greater than during July '55.

264,000, or 8.7%. In some areas, the construction labor pool was entirely exhausted, and this manpower shortage was contributing to higher building costs (p. 32).

Trend to larger buildings. An analysis by FORUM of building permit data from the Commerce and Labor Depts. indicates that most nonresidential buildings erected this year would be noticeably bigger or better than last year's.

In permit reporting areas, for instance, the government's reports showed that the gross value of new industrial structures in the first five months was 72% greater than a year earlier, but the number of buildings involved only 20.5% greater. Last year's average new industrial building covered by a building permit, it developed, was a \$54,961 structure, this year's was shaping up as a \$78,286 building-or of 42.7% greater value (see tables).

Office buildings under permits for the January-May period were up 57.3% in total gross value, up 22.3% in number, and up 28.6% in average value; educational buildings up 14.1% in gross value and 14.7% in average value, but down 0.5% in numbers.

Commercial garages were the only building type to show a decrease in average value. Four other types showed decreases in numbers, but increases in both gross and average values.

EXPENDITURES BY BUILDING TYPES

First 7 months

(millions of dollars)

Jı	uly '56	1956	1955	%±
PRIVATE BUILDING				
Residential (nonfarm)	1,396	8,434	9,240	-9
Nonresidential	786	4,866	4,097	19
Industrial	268	1,690	1,315	29
Commercial	301	1,871	1,581	18
Offices, lofts;				
warehouses	115	724	608	19
Stores; restau-				
rants; garages	186	1,147	973	18
Religious	66	403	401	非非
Educational	48	296	270	10
Hospitals; institution	s 26	175	203	-14
Public utilities	462	2,783	2,524	10
Status and the second				-
*PRIVATE TOTAL	2,815	17,022	16,892	1
PUBLIC BUILDING				
Residential	23	142	154	8
Nonresidential	380	2,272	2,516	-10
	-	040	517	- 54

Nonresidential	380	2,272	2,516	-10
Industrial	38	240	517	-54
Educational	230	1,444	1,400	3
Hospitals; institution	s 30	170	194	-12
Military	137	721	681	6
Highways	600	2,590	2,226	16
Sewer: water	123	700	614	14
*PUBLIC TOTAL	1,392	7,117	6,749	5

*GRAND TOTAL.. 4,207 24,139 23,641 *Minor components not shown, so total exceeds sum of parts.

** Less than one per cent.

BUILDING PERMIT RECORDS

BY TOTAL VALUE

(millions of dollars)			*
	Firs	t 5 mor	itns
	1956	1955	±%
Amusement bldgs	\$47.5	\$47.3	+ 0.4
Commercial garages	23.0	25.7	-10.5
Gasoline & serv. sta	63.9	56.4	+13.3
Office bldgs	275.9	175.5	+57.3
Stores & other			
mercantile	440.3	392.1	+12.3
Educational bldgs	591.1	517.9	+14.1
Industrial bldgs	513.4	298.5	+72.0
Institutional bldgs	119.5	114.2	+ 4.6
Religious bldgs	181.0	147.3	+22.9
Public bldgs.	95.7	131.6	-27.3
Public utilities bldgs	114.0	114.2	- 0.2
Other nonresidential	98.0	74.0	+32.4

*TOTAL\$2,632.9 \$2,159.2 +21.9

BY NUMBERS

1,003	1,067	- 6.0
866	876	- 1.1
4,206	4,069	+ 3.4
3,259	2,664	+22.3
14,816	15,305	- 3.2
2,164	2,176	- 0.5
6,558	5,441	+20.5
357	373	- 4.3
2,368	2,161	+ 9.6
n/a	490	
n/a	792	
n/a	26,457	• •
	1,003 866 4,206 3,259 14,816 2,164 6,558 357 2,368 n/a n/a n/a n/a	1,003 1,067 866 876 4,206 4,069 3,259 2,664 14,816 15,305 2,164 2,176 6,558 5,441 357 373 2,368 2,161 n/a 490 n/a 792 n/a 26,457

BY AVERAGE VALUE

Contraction of the second se			
Amusement bldgs	\$47,358	\$44,330	+ 6.8
Commercial garages	26,559	29,338	- 9.5
Gasoline & serv. sta.	15,192	13,861	+ 9.6
Office bldgs	84,658	65,878	+28.6
Stores & other			
mercantile	29,718	25,619	+16.0
Educational bldgs	273,105	238,005	+14.7
Industrial bldgs	78,286	54,861	+42.7
Institutional bldgs	334,734	306,166	+ 9.3
Religious bldgs	76,445	68,163	+12.1
Public bldgs.	. n/a	268,571	
Public utilities bldgs.	. n/a	144,192	
Other nonresidential	. n/a	2,797	
SOURCE: Commerce and	Labor De	pts.	

n/a-Not available ^o Minor components not shown, so total exceeds sum of parts.

BUILDING MONEY: Federal

Reserve sets brakes tighter

Even the steel strike gave no severe jolt to the nation's economic progress. After the strike was over, and its total effects on business appraised by the administration's economists, there was still a feeling that total trends pointed more towards inflation than deflation.

To let off "excess steam," reduce the boom's terrific borrowing pressure before it drove up prices, the Federal Reserve tightened credit another notch by boosting its discount rate to 3%. Mortgage borrowing would tighten, too.



um TWI-NIGH TER® blinds! wear new ,

It's nothing but the best for the new Socony Mobil Building, New York's first stainless steel skyscraper. When it came to the venetian blinds, it isn't surprising they picked the Flexalum Twi-Nighter Blind for all 3261 windows. This new venetian blind offers unprecedented light control for all administrative and technical needs. By shutting much tighter than was ever possible before, it will keep out six times more daylight than conventional blinds.* It also offers important advantages that make for lower maintenance costs and longer life: spring-tempered snap-back aluminum slats, wipe-clean plastic tapes, non-fray nylon cords and many other features. Yet, Flexalum Twi-Nighter Blinds cost no more.



FULL LIGHT CONTROL Makes rooms not just dim, but dark; as-sures complete pri-vacy. An important advantage for office buildings, apartment houses, hospitals, and schools.



SNAP-BACK SLATS Bend them, abuse them. Flexalum slats are spring-tempered to snap back even when bent to a 90° angle. Mar-proof fin-ish won't rust, chip, crack or peel.



WIPE-CLEAN TAPES A damp cloth is all that's needed to wipe them clean. Stains come right off the non-porous surface. Flexalum tapes won't fade, fray, shrink or stretch.

exalum.

FLEXALUM VENETIAN BLINDS

FLEXALUM ALUMINUM AWNINGS

FLEXALUM DRAW DRAPERIES

FLEXALUM AUDIO-VISUAL BLINDS

*Independent Laboratory Tests

FOR COMPLETE INFORMATION, CONTACT YOUR LOCAL FLEXALUM MANUFACTURER OR WRITE: HUNTER DOUGLAS ALUMINUM COR 150 BROADWAY, NEW YORK 36, N. Y. (IN CANADA: HUNTER DOUGLAS LIMITED, DEPARTMENT AF9: 9500 ST. LAWRENCE BOUL BOULEVARD. MONTREAL, QUEBEC)



. The second



Symbol of Economy and Quality Control

POWERS Control System Used in Chicago's Largest Apartment Building

Now nearing completion is this outstanding 10 million dollar building with its 662 luxury apartments. It has three 23 story towers with a panoramic view of Lincoln Park and Lake Michigan.

Heating, ventilating, domestic hot water, fuel oil preheaters and snow melting for walks and driveways are all thermostatically controlled by Powers.

SKOKIE, ILLINOIS

The forced hot water heating system is regulated by a Powers indoor - outdoor Mastrol system. Supply and exhaust fans serving corridors, bathrooms, kitchens, offices, garage and other spaces are also Powers controlled.

When you have a temperature control problem why not benefit from Powers experience gained here, and in thousands of other prominent buildings.

For further information contact our nearest offiice.

THE POWERS REGULATOR COMPANY

Offices in Chief Cities in U.S.A., Canada and Mexico See your phone book

65 Years of Automatic Temperature and Humidity Control

TRENDS

BUILDING MATERIALS: Construction will suffer steel shutdown

"hangover" for months; structural prices up \$8 to \$12 a ton

A nasty hangover on top of a bad headache, and a hike in its bill to boot—that was the construction industry's inheritance from the five-week steel strike shutdown.

Even before the strike, steel was one of building's most exasperating problems. To some extent this was caused by its own soaring demand for steel, rather than any decrease in supply; in the first half of the year fabricators booked orders for 2,176,-848 tons of structurals, 32% more than a year earlier, and deliveries for the same period reached 1,724,196 tons, a substantial 22% increase.

The strike shutdown definitely hurt construction in many areas, made bad steel conditions worse in booming centers like Cleveland and Chicago. For many individual builders and their clients, who would face costly delays awaiting completion of their new plants or other structures, it was acutely painful and damaging. And other projects that continued without interruption through the strike would suffer later from delayed reactions of the stoppage.

Nevertheless, the steel strike settlement was reached before a crisis of widespread proportions for construction developed, and the year's building would still set new volume records in virtually every category except homebuilding. **Prices up \$8 to \$12.** After the labor contract settlements came the new price schedules. For the three-year, no-strike contract and wage increases estimated to aggregate 45ϕ an hour in three annual stepups, construction's initial share of the costs would be: \$8.50 a ton more for concrete reinforcing bars (newly priced by bellwether US Steel at \$101.50 and \$104.50 a ton), \$8 more for ordinary structural shapes (repriced to \$120 and \$129 a ton), \$11 more for alloy structurals (upped to \$124 a ton) and \$12 more for high strength structurals (up to \$147 a ton).

Before long there would also be new boosts for metal doors, windows and all sorts of other manufactured building products using steel. And when the second and third annual wage increases for steelworkers went into effect one and two years from now, there would be additional price hikes—but without strike troubles.

On the heels of the steel strike, Alcoa's millworkers (also members of the United Steelworkers) won almost an identical settlement from that firm, the nation's largest light metal producer. This was followed by a 4% increase in Alcoa's prices.

Construction would pay for this too. Last year Alcoa's largest single market was the building products field, which took 24% of its shipments.

BUILDING COSTS: Uptrend mainly reflects labor rates

When asked what accounted for the 0.6% June-to-July jump in his organization's index for nonresidential construction costs (see chart), E. H. Boeckh replied in two words: "Mainly labor." (Material prices have been fairly steady since last fall, and higher steel prices will not show in the indices until next month.)

New records in construction employment (p. 29) produced labor shortages in some areas, and pressures for premiumpayment work. Executive Secretary H. Mayne Stanton of the Chicago Building Construction Employers Assn. said that area needed an extra 12,000 building tradesmen of almost every type. Many contractors were asking permission to work Saturdays, he reported, but so far were only obtaining union and employer association approval in emergencies. Once the industrywide five-day week was breached, it was feared, everyone would have to go on a six-day (Saturday-doublepay) schedule. Otherwise workers would only take jobs with contractors running overtime projects.

To expedite work on the \$3 million City-County building in Madison, Wis., the contractor offered bricklayers \$3.55 an hour, or 25ϕ above scale. The Madison Builders' Assn. promptly condemned this as an "unethical move" that pirated craftsmen from other jobs and then compelled the entire trade to go to \$3.55 to protect itself—with all the buyers of construction compelled to foot the bill eventually.

In the first half of 1956 building workers' wages increased an average of 13.9 cents an hour (plus fringe benefits), according to an analysis of 500 new contracts by *Construction Labor Report*, issued by the Bureau of National Affairs, Washington. Painters averaged a 16.5¢ increase; plumbers, 15.8¢; bricklayers, 15.2¢; ironworkers 14.4¢; and truck drivers 12.1¢.



CONSTRUCTION COSTS for nonresidential buildings jumped 0.6% in July on the index compiled by E. H. Boeckh & Assoc., mainly because of higher labor rates. Since December this index has increased 3.7%.



BUILDING MATERIALS PRICES remained steady in July at 130.6 on the BLS index of average wholesale prices for all items. Lumber and wood products declined, but were offset by in-Creases for metal doors, glass, structural clay products and asphalt roofing. (Roofing rose to 118.3 after three months at 111.9.)

EARNINGS: Most producers score gains in '56 first half

(thousands of dollars)	Net prot	Ht 6 mas	m
Company	1056	1055	%
LIS Steel	1900 9009 550	1900	change
General Electric	112 964	\$177,078	+17.2
Kennecott Conner	90 110	65 420	+ 4.7
Republic Steel	51 520	41 127	+30.2
Alcoa	48 615	44 310	+20.0
Jones & Laughtin	30,909	22 568	+ 3.7
Pittsburgh Plate Gla.	30,258	32,563	- 71
National Lead	28,999	23.503	+23.4
Inland Steel	28,960	23,420	+23.7
Owens-Illinois Glass	26,310	25.481	+ 33
Weyerhaeuser	25,868	26,255	- 11
US Gypsum	20,757	19 219	+ 20
Libbey-Owens-Ford	15.084	20 004	-24.6
Borg-Warner	14.451	18 793	-23.1
Johns-Manville	12 005	0 262	1 20 6
Minneapolis-Honeywel	9.560	7 241	-132.0
National Gypsum	8,935	7.701	-14 5
American-Standard	7,896	9 556	-17.4
Lone Star Cement	7.450	6,601	
Ideal Cement	6.862	6,543	- 40
Armstrong Cork	6.848	7.025	- 25
Otis Elevator	5.710	4,729	+20.7
Owens-Corning Fib'al.	5,698	4.566	-124.8
US Pipe & Foundry .	5,368	4,976	+ 7.9
US Plywood**	5,353	4.986	+ 7.4
Square D	5,218	2,980	+75.1
Revere Cop. & Brass	5,047	6.234	-19.0
Crane	4,988	3,727	+33.9
Worthington	4,530	3,602	+25.6
Long-Bell Lumber	4,165	4,946	-15.8
Penn-Dixie	3,593	2,818	+27.5
Georgia-Pacific	3,569	2,963	+20.4
Blaw-Knox	3,558	969	+267.3
Carrier**	2,966	3,653	-18.8
Yale & Towne	2,824	2,193	+28.8
Celotex**	2,696	1,855	+44.7
Bridgeport Brass	2,528	2,915	-13.6
Ruberoid	1,673	1,993	-16.0
Lehigh Portlandt	1,538	1,414	+ 8.7
Certain-teed†	1,237	1,606	-23.0
Murray (Eljer) ††	920	2,834	-67.5

**Six months to April 30 † Three months to March 31 †† Six months to May 31



RICH'S Inc.

Rich's Inc., one of the world's finest and most progressive department stores, was the first to recognize what the Wind-O-Washer offered in costsaving and safety.



A machine designed by Economy engineers for servicing buildings exteriors.

The architect can now exercise complete freedom in the design of building exteriors, unrestricted by the necessity of specifying movable glass for window washing.

The Wind-O-Washer is electrically operated from the working platform by push button controls for both up and down and horizontal movements. The machine travels on a track, and when not in use, is backed out of sight by means of a turntable or transfer car.

Economy representatives, located in all principal cities, can give personal engineering service on your problems and make recommendations with estimates. Each installation is individually engineered.

Write E. W. McDonnell for Catalog. For interior maintenance. Economy Hi-Reach Telescopers are the answer to the problem of servicing overhead lighting and hard-to-reach interior maintenance work. For many years these Hi-Reach Telescopers have been widely used throughout industry and by institutions.

ECONOMY ENGINEERING CO-4514 W. Lake St., Chicago 24, III. New York Office: 342 Madison Ave., New York 17, New York





Highly flexible, Armaflex follows contours of piping or tubing without any special cutting or fitting. If lines are in operation, slit Armaflex lengthwise, snap in place, and seal with Armstrong 520 Adhesive.

New insulation for liquid cooling and heating lines

goes on in one fast operation

Armstrong

INDUSTRIAL INSULATIONS

Armstrong Armaflex[®] is a new kind of foamed plastic insulation for both commercial and residential air-conditioning and heating lines. Remarkably flexible, it slips right over pipes and copper tubing, follows contours without special cutting or fitting. If lines are already in operation, you can slit Armaflex lengthwise, snap in place, and seal with Armstrong 520 Adhesive. Armaflex is clean to work with, too; it will not rub off, chip, or crumble. Waste is negligible.

A highly efficient material, Armaflex has a K-factor of 0.28 at 75° F. In $\frac{1}{2}$ " thickness, Armaflex will prevent condensation under normal design condi-

tions on indoor lines operating as low as 32° F. The insulation's closed cellular structure is exceptionally moisture resistant, eliminates the need for a separate vapor barrier. A self-extinguishing feature makes Armaflex completely safe to install before sweat fittings are made.

Armaflex comes in 6' lengths for copper tubing and iron pipe $\frac{3}{6}$ " to $3\frac{1}{6}$ " O.D. Thicknesses of $\frac{1}{2}$ " and $\frac{3}{6}$ " are available.

For free booklet containing complete data on this remarkable new insulation, write to Armstrong Cork Company, 2009 Rooney St., Lancaster, Pa.



Residential as well as commercial airconditioning and heating systems perform more efficiently when insulated with Armstrong Armaflex. It goes on fast, makes a neat, clean job.



Condensation is prevented by Armaflex's vaporproof composition. Countless, uniformly sized cells seal out moisture and air, give Armaflex its low K-factor of 0.28 at 75° F. mean temperature.



Rapid fabrication of fitting covers is accomplished by miter-cutting pieces of Armstrong Armaflex, cementing them together with Armstrong 520 Adhesive to form a vaporproof joint.
PEOPLE

John Lyon Reid and Paul Rudolph on new school design

research team; L. M. Cassidy listed as highest earner in 1955



REID

PROMOTION BY DESIGN

Counting on architects and contemporary design to boost longterm market demand, the Douglas Fir Plywood Assn. commissioned 15 architects and designers to conduct programs of creative research in school design, plans for expandable small suburban churches, and for informal shelters and other structures keyed to leisure time activities. As explained by John Lyon Reid, one of a sextet of school design researchers and keynote speaker at a meeting announcing the program, the architect today relies on a vast army of suppliers and contractors, and this program should help stimulate the mutual understanding and respect between them that is vital. Others associated with Reid-some working on problems of pure structure, others concentrating on the relationship of educational theories and methods to general school design -are Charles Colbert, of New Orleans, Hallman and Weems, of Aiken, S. C., Caudill, Rowlett & Scott, of Oklahoma City and Bryan, Tex., Robert Billsbrough Price, of Tacoma, and Paul Rudolph, of Sarasota. A trio developing expandable church designs consists of H. M. Moseley, of Dallas, Donald R. Wilkinson, of Los Angeles, and Barry Byrne, of Evanston, Ill. A sixman leisure team of design and architectural school faculty members is composed of Conrad Buff, University of Southern California; Charles Kratke, Art Center School, Los Angeles; Ralph Thiel, University of California; Harry Glass, Art Institute, Chicago; Thomas McNulty, M. I. T., and Gerald Gulotta, Pratt Institute, Brooklyn.



RUDOLPH

TICKETS PLEASE

Proud Arizonans consider Frank Lloyd Wright almost one of themselves. Recently the official State Highways Department magazine wrote an editorial suggesting that the master of Taliesin West (near Phoenix) should be consulted, or even commissioned to design the contemplated remodeling and modernization of the state's decrepit and deteriorating Capitol. In July, however, a Phoenix Gasette article declared that Wright was not eligible to design or advise on the design of any public buildings in Arizona. In a routine check two years ago, it explained, the registration board headed by Walter A. Biddle rather disconcertingly discovered that he was not registered in the state. The board sent him an application, but waited in vain for its return. Fond of his winter quarters, and reportedly eager for an opportunity to create some of the new public structures in the area, Wright took due notice the week after the Gazette's story appeared, wrote to the board for an application form.

After serving on the California State Board of Architectural Examiners since 1953 (its president since last year), Los Angeles Architect Ulysses Floyd Rible turned in his resignation effective last month. "I've been on the board long enough," was his simple explanation. "I'm going on an extended vacation. Then I have plenty to do in my own office"—with his partner George B. Allison.

SULLIVAN EXHIBIT

To mark the centennial of Louis Sullivan, the Chicago Art Institute will stage its first major architectural exhibition from Oct. 25 to Dec. 2-Louis Sullivan and the Architecture of Free Enterprise. Edgar Kaufmann, Jr., who has headed the industrial design department of New York's Museum of Modern Art, and has been visiting lecturer on architecture at M. I. T. this year, will direct the exhibition. The installation will be in charge of Chicago Architect Daniel Brenner. Chicago architects and builders donated the funds for the exhibition. After its showing there it will be available for display on loan.



EXECUTIVE PAY

For the first time since Business Week started its annual publication of earnings of top US industrialists in 1950, three executives climbed into the \$700,000 bracket last year. In the magazine's listing of top compensation paid by building materials firms, however, the two highest figures it listed were \$170.910 for Johns-Manville Board Chairman Leslie M. Cassidy (up \$16,000 from 1954), and \$170,116 for Pittsburgh Plate Glass President H. B. Higgins, the same amount he received in 1954. Others in the industry who won billing in the magazine for their 1955 earnings were: Crane's J. L. Holloway (president Jan.-May), \$41,867; F. F. Elliott (president June-December), \$82,500; L. N. Blugerman, vice-president, \$63,050. Johns-Manville's A. R. Fisher, president, \$138,580, and C. R. Rassweiler, vice-president, \$105,028. U. S. Gypsum's C. H. Shaver, chairman, \$115,913; Oliver M. Knode, president, \$90,000, and H. F. Sadler, vice-president, \$75,-000. Pittsburgh Plate's David G. Hill, vice-president, \$107,034; R. B. Tucker, vice-president, \$101,850, and C. M. Brown, chairman, \$89,718. Owens-Illinois Glass's J. P. Levis, chairman, \$135,000; C. R. Megowan, president, \$125,000, and H. C. Laughlin, executive vice president, \$96,894.

ELECTED: Mies van der Rohe, as a fellow of the American Academy of Arts and Letters; Bert C. Pretzer, head of the Illuminating Engineering Co. of Detroit, as first president of the new Cold Cathode Assn., established to promote "technological advances in cold cathode lighting"; C. L. Meanor, assistant general manager for sales for Natco Corp., as president of the Clay Flue Lining Institute; Myron L. Matthews, of The Dow Service, as president of the American Society of Appraisers,

succeeding Tevis T. Westgate of Anaheim, Calif.; Glenn A. Hutt, president of the Porcelain Enamel Institute and vice president of Ferro Corp., as president of the Armed Forces Chemical Assn.; Leon Cherksey, as chairman, and Gerald C. Romig to succeed him as president of American Chemical Paint Co.

OFFBEAT JOB

Architectural work of San Francisco Architects Robert Anshen and William Stephen Allen went to sea last month when the American Presidents liner President Adams started her maiden round-the-world vovage. This architectural team has been designing semi-luxury passenger accommodations for four of the line's new freighters fitted with limited (12-person) travelers' quarters, including a separate "passengers' bridge." To handle the interior design within the President Adams' architect-planned space the line engaged New Haven, Conn., Industrial Designers H. Clifford Burroughes and James Patterson.

ISHAM MEMORIAL

In honor of the late Norman M. Isham, head of department of architecture at the Rhode Island School of Design from 1912 to 1920 and from 1923 to 1933, Mr. and Mrs. Royal W. Leith, of Dedham, Mass., have endowed a Norman M. Isham Professorship of Architecture at the school. Isham and Mrs. Leith were cousins.

DIED: Ernest John Russell, 86, AIA president (1932-35), former chairman of the St. Louis City Plan Commission (1917-37), and designer of many large public and commercial buildings in the St. Louis area, July 11 in St. Louis; Washington, D. C. Stone Contractor Norman Campbell, 77, whose firm helped build the Folger Shakespeare Library, Federal Reserve and other Washington buildings, July 16 in Washington; Clarence Mott Woolley, 93, one of the organizers of American Radiator and first board chairman of American Radiator-Standard Sanitary, July 18 in Newport Beach, Calif.

It's Chase[®] copper for new

ARCHITECT: Hellmuth, Yamasaki & Leinweber, St. Louis

GENERAL CONTRACTOR: L & R Construction Co., St. Louis

SHEET METAL CONTRACTOR: Mound Rose Cornice & Sheet Metal Works, St. Louis

SHEET METAL WHOLESALER: E. E. Souther Iron Co., St. Louis

Sweeping, curved roof on new \$4,500,000 Lambert-St. Louis Skyport uses 104,000 lbs. of Chase Sheet Copper

More than 50,000 square feet of surface! Three intersecting barrel-vaulted sections! This big roofing job called for flexible, long-lived 20 oz. and 24 oz. Chase Sheet Copper.

Using quality Chase copper really pays off! This versatile, malleable metal forms fast-fits the most complicated roof curves-helps you meet your completion deadlines. It's durable-adds years of trouble-free service to your jobs. Chase Copper, properly installed, is without equal for *permanent* roofing. Then, too, it gives your jobs a rich appearance that improves with the passage of time.

For workability, durability, beauty, specify Chase Sheet Copper on your next job!

St. Louis Skyport Roof!

NOTE: Chase Copper Water Tube was used for plumbing, part of the heating system and the copper coils in the cooling equipment.

Plumbing Contractor: Corrigan Co., St. Louis. Plumbing Wholesaler: Midland Plumbing and Heating Supply, East St. Louis.

Chase &

BRASS & COPPER CO. SUBSIDIARY OF KENNECOTT COPPER CORPORATION WATERBURY 20, CONNECTICUT

The Nation's Headquarters for Brass, Copper and Stainless SteelAtlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver DetroitGrand RapidsIndianapolis Kansas City, Mo.Los AngelesMilwaukeeProvidenceRochesterSt. LouisSan FranciscoSeattleWaterburyWaterburySan FranciscoSeattle

M	W	С		М
A	A	E		A
G	K	I		G
I	51	Ē	М	T
ē	F	I	A	ē
Ť	Î	Ñ	G	· ·
C	Ð	G	Ι	W
E	L		С	A
Ι	D	M		K
L		A	M	E
Ι	С	G	A	F
N	IE	Ι	G	Ī
G	I	Ċ	I	13
	Ē		Ē	Ĩ
M	I	С		D
A	N	E		
G	G	I		
Ι		Ē		
Ē	М	I		
	A	Ň		The second
	G	G		
	T	~		
	ĉ			
	0			



CEILING

It is a little like magic the way a Magic Ceiling transforms any interior almost overnight—concealing existing ceiling pipes, beams, sprinklers—bathing the entire area in uniform shadowless light—all this with great economy of time and money. This is understandable when you know that the Magic Ceiling comes in standard sizes—that it does not attach to the side walls—that alone or in combination it can fit any size, shape or kind of interior—and that it arrives on the job as a complete package (grid, channels, Wākon® diffuser, fluorescent lamps) ready for installation. No lighting calculations are necessary, for when installed on a reasonably white ceiling at least 50 footcandles are always provided. Ideal for stores, offices, banks, showrooms, museums, almost any interior, the Magic Ceiling is distributed by Graybar and manufactured by The Wakefield Company, Vermilion, Ohio. In Canada: Wakefield Lighting Limited, London, Ontario.



10

NEW

CENTRIFUGAL ROOF VENTILATOR ... QUIET RUNNING, LOW SILHOUETTE

For whisper-quiet operation on schools, hospitals, etc. Runs at low speeds, moves large volumes of air efficiently against static pressure. Low in silhouette, distinctively profiled, blends well with modern architecture. Send for new 16-page catalog which also contains a section, "How to Select a Roof Ventilator."

De Bothezat FANS

American Machine and Metals, Inc.

DeBOTHEZAT FANS, Dept. AF-956 Division of American Machine and Metals, Inc. East Moline, Illinois

Yes, please send me catalog on your new Centrifugal Roof Ventilator.

TRM NAME	
ADDRESS	
TITY	ZONE STATE
TTENTION MR	

DATES

Hospital Architectural Exhibit at annual convention of American Hospital Assn., Sept. 17-20, International Amphitheatre, Chicago

Associated General Contractors, midyear board meeting, Sept. 17-19, Schroeder Hotel, Milwaukee

Building Research Institute, conference on Modern Masonry Construction, at the Institute, Sept. 19-20, Washington, D.C.

Lutheran Church Building Convention, Sept. 20-24, Karlsruhe, Germany

Producers' Council, Inc., annual fall meeting and chapter presidents' conference, Sept. 25-26, Wade Park Manor Hotel, Cleveland

Mortgage Bankers Assn., annual convention running concurrently with exhibit of building, industry and services, Oct. 8-11, Conrad Hilton Hotel, Chicago

Noise Abatement Symposium, annual meeting, Oct. 11-12, Hotel Sherman, Chicago

Architectural Woodwork Institute, annual convention, Oct. 18-19, LaSalle Hotel, Chicago

National Assn. of Housing & Redevelopment Officials, annual convention, Oct. 21-24, Statler Hotel, New York City

Society for Experimental Stress Analysis, annual meeting and exhibit, Nov. 1-2, Deshler-Hilton Hotel, Columbus, Ohio

Michigan Society of Architects and Univ. of Michigan College of Architecture and School of Education, conference on school planning, Nov. 1, Ann Arbor

National Assn. of Real Estate Boards, annual convention, Nov. 11-16, Jefferson Hotel, St. Louis

AIA Regional Meetings: North Central, Sept. 28-29, Pfister Hotel, Milwaukee; Gulf States, Oct. 7-9, Chattanooga, Tenn.; Calif. Council of Architects, Oct. 10-13, Yosemite Lodge, Yosemite Natl. Park; Western Mountain region, Oct. 19-20, Hotel Utah, Salt Lake City; New York State, Oct. 25-27, Lake Placid Club, Lake Placid; Texas, Oct. 31-Nov. 2, Corpus Christi; Florida, Nov. 8-10, Seville Hotel, Miami Beach; Mid-Atlantic and Penn. Society of Architects, Nov. 14-16, Hershey Hotel, Hershey, Penn.



floor of today...and a million yesterdays!

SEE SWEET'S -Arch. 13J-Ma. for full technical data.

for latest official listing of MFMA-approved floor ishing products and methods. Significant and eminently sound is Architect Philip Johnson's use of "the finest floor that grows" in the upper, or guest, area of this emphatically modern home. For the genial foot-friendliness of Northern Hard Maple speaks eloquent welcome to all who enter. Its bright tones return both sunshine and lamplight graciously, softly. Its tough, close grain sands easily to mirror smoothness, responds to quick, inexpensive finishing and maintenance, fights abrasion and denting, endures for generations. Regular strip or block and pattern designs, in standard, warranted MFMA grades, offer endless variety. And Northern Hard Maple costs no more than comparable grades of other hardwood species.



MAPLE FLOORING MANUFACTURERS ASSOCIATION Suite 564, Pure Oil Building, 35 East Wacker Drive, Chicago 1, Illinois



For security reasons, overall photos of the new SAC control building must remain restricted. However, a portion of the building is shown under construction. Evident here and opposite are Ceco Steel Reinforcing Bars, which make the headquarters a steel-ribbed buttress against attack, U. S. Corps of Engineers and Leo A. Daly Company, joint architects-engineers. Robert E. McKee, Inc., general contractors. Construction photos by Corps of Engineers. B-52 jet bomber photo courtesy Headquarters, SAC.



HIDDEN FINGERS OF STEEL

that give Strategic Air Command Headquarters the strength of an Impregnable Fortress...

In this Atomic Age, our armed forces buildings must be more destruction-proof than ever-must be able to meet tests beyond the stretch of man's imagination. So reasoned the United States Corps of Engineers and Leo A. Daly Company, joint architectsengineers, in planning the new Strategic Air Command control building at Offutt Field, Omaha. That's why Ceco Steel Reinforcing Bars were assigned to duty at SAC headquarters... called up to guard the nerve center of America's long-range all-jet striking force. So today **TOP SECRET** hundred tons of hidden fingers of steel add tensile strength to concrete walls **TOP SECRET** feet thick...roofs and floors varying from **TOP SECRET** to **TOP SECRET** feet in depth.

But there's nothing "top secret" about why Ceco Steel Reinforcing Bars were chosen for this vital project. The architects, engineers and contractor all knew they could depend on Ceco's engineering and fabrication. Ceco's reputation for service was a factor. SAC is prepared day and night to deliver nuclear knock-out weapons against an enemy anywhere in the world. And this combat readiness demands the same all-out effort from suppliers.

"We can't say too much in appreciation for the cooperation and good service given to us by the Ceco organization on this job," said Carl Taylor, McKee superintendent. "The fabrication of the steel and timing of deliveries has been of great help to our progress. We certainly give all credit to suppliers like Ceco, who know their business and demonstrate that fact consistently, delivery after delivery."

On your next building project, let Ceco Steel serve you, too, just as it has served Armed Services suppliers and thousands of other customers for 44 years. Consult Ceco engineers in the pre-planning stage...not only for better construction, but to cut time, material and labor costs. CECO STEEL PRODUCTS CORPORATION-offices, warehouses and fabricating plants in principal cities-general offices at 5601 West 26th Street, Chicago 50, Illinois.



Windows, Screens and Doors/Ceco-Meyer Steelforms/Concrete Reinforcing Steel Joists/Metal Roof Deck/Metal Lath

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE



Typical installation of Ceco Steel Reinforcing Bars for column and floor construction at new SAC control building.



Ceco Steel Reinforcing Bars in one wall of new SAC control building.



Typical arrangement of Ceco Steel Reinforcing Bars embedded in foundation for a column in new SAC control building.



Ceco Steel Reinforcing Bars and Spiral are shown here in place, ready for forming and pouring of concrete column.

Architects and Builders Can Simplify Their Problems By Fuller Utilization of Peelle-Richmond Resources

Unusual Doors Are Usual with Peelle

The photo at the right shows the inside view of one of the many unusual doors that have been designed, engineered and installed by Peelle. This 30 Ton Motorized door was built to help the General Electric Company obtain almost complete sound absorption in their recently completed \$1,500,000 sound laboratory at Pittsfield, Mass. Here power transformers are studied and tested.

This door is constructed like two huge club sandwiches consisting of the following layers of materials, from the outside in: structural steel, sand, structural steel, Fiberglas, steel, and Fiberglas wedges. The door can be tightly sealed around the perimeter by a continuous inflatable rubber gasket.

The door is 41' high, 32'-8" wide and 3'-7" deep. It was designed and built by Peelle to meet exacting requirements. If you have a special purpose door problem, no matter how unusual, Peelle can probably help you solve it.





FREIGHT ELEVATOR DOORS

The Peelle R 10 Design is a counterbalanced door consisting of two vertically sliding leaves. Always installed on the shaft side. Many safety and operational features, including the new Peelle Safety Seal Astragal.

PEELLE FREIGHT ELEVATOR DOOR DIVISION



MOTORIZED CAR GATES

Furnished as standard equipment with Peelle Motorized Freight Elevator Doors. Operation synchronized with motorized doors and similarly controlled.



DUMBWAITER DOORS

Bi-parting, slide-up and slide-down, under-counter models as illustrated above. They are factory assembled and ready for setting into the masorry wall. Special finishes can be furnished.



PASS WINDOWS

This pass window unit eases service between the kitchen and dining room. Consists of an integral door and frame. Special extended counter sill can be furnished when indicated in architectural drawings.

PEELLE-RICHMOND

RICHMOND FIREPROOF DOOR DIVISION



PEELLE CUSTOM ENGINEERED DOOR DIVISION



Peelle design, engineering and installation of such products as soundproof doors for jet engine test cells, large hangar doors, special doors for terminals and warehouses and motorized partitions reflect the resourcefulness born of long experience.

This division also does a large volume of classified defense work.

Manual or motorized four-fold doors are manufactured by the Richmond Fireproof Door Division. These doors require low overhead and small returns and are particularly suited for large truck and railroad entrances.

3 section vertical lift door, motorized stainless steel and glass, 24 x 35 feet.

PEELLE MOTORSTAIR DIVISION



MOVING STAIRWAYS

Peelle Motorstairs are in successful operation in many different types of buildings. Their long life expectancy and low maintenance costs are due to thorough engineering that has reduced mechanical wear to a minimum. Through its four unified divisions, Peelle-Richmond can serve as a single subcontractor supplying a wide range of products and engineering services.

ARCHITECTS can often save much time and structural expense by consulting Peelle-Richmond in the early planning stages for projects in which specially engineered doors and moving stairways are required. They can look to Peelle-Richmond for specifications for freight elevator and dumbwaiter doors; tin clad, hollow metal and kalamein doors; specially engineered doors.

GENERAL CONTRACTORS can save a great deal of estimating time by using Peelle-Richmond as a sub-contractor for a wide range of products. In addition to supervision of quality control, Peelle-Richmond is geared to properly schedule all shipments to meet building requirements.

Installation and maintenance service is available for all equipment.

Put your problems up to Peelle-Richmond.

Address Inquiries to THE PEELLE COMPANY 47 Stewart Avenue, Brooklyn 37, N.Y.

or to

THE RICHMOND FIREPROOF DOOR CO., Richmond, Indiana Offices in Principal Cities

architectural FORUM / September 1956

27% bigger... Twice as useful

THE NEW 5TH EDITION OF

ARCHITECTURAL GRAPHIC STANDARDS By CHARLES G. RAMSEY, A.I.A.; and

HAROLD R. SLEEPER, F.A.I.A.

286 completely new plates . . .
236 pages revised

As essential to the architect as his T-square and drawing board! In drafting rooms throughout most of the world, wherever there are architects and builders, the words: "Look it up in Graphic Standards," testify to this book's practical staying-power!

Authentic and reliable, indispensable as ever, the new 5th edition is even bigger and better, with many new and striking features. Here are just a few:

• 75% of all the pages are either new or revised.

- 8 major classes of items have been added. These include: design of plank and beam framing; curtain walls; pneumatic tubes; elevators and escalators; design of special fireplaces; comparative costs of roof covering; furniture and equipment; and tile and its correct usage.
- There is a new arrangement of topics for quicker reference. The book is in 23 sections, each with its own table of contents.
- The index is larger, with a new and more practical format.
- All new pages have been set by vari-type composition (instead of handlettering) for easier, faster reading.
- There is added text to complement the drawings.

GRAPHIC STANDARDS is so thorough, so comprehensive, so basic that it has earned, in the words of *Progressive Architecture*, "A special place for itself in the field of architecture and building." Order your on-approval copy today. Check the new AGS personally on a *trial* basis.

1956	758 pages of plates	\$18.50
JOHN WILEY & SONS, Inc. 440 Fourth Ave., New York	16, N. Y.	AF-96
Please send me ARCHITECTUR In 10 days I will return the b price plus postage.	AL GRAPHIC STANDARDS to examin book and owe nothing, or I will ren	ne ON APPROVAL. mit the full purchase
NAME		*******
CITY SAVE POSTAGE! Check postage. Same return privil	ZONESTATE here if you ENCLOSE payment, in lege, of course.	n which case we pay

(PARITY, PARITY)

In an election year, the following suggestion forwarded by reader Robert Buchter of Scarsdale, N.Y., should deserve some attention from Congress:

"If the government sets up parity for the farmer, to wit, a fair earning for the farmer whether anyone wants his product or not ... how about parity for the architect? Let's take Frank Lloyd Wright's income for, say, 1952, and call that parity. The amount is a fair earning for one year for an architect. Now all the government has to do is send us a form (in quadrupli-



cate) which has this quantity printed at the top (on the right hand side). The architect then lists below his net income for the year. By subtracting the two figures we can then arrive at how much less than parity we made for the year, and the government reimburses us for this amount, thereby insuring us all of parity for the year, and allowing us to stay in business. Congress could then wrangle every year as to whether maybe we should be getting only 90% of parity (or maybe 87%?).

"Also the government might have an 'Ornamental Detail Bank.' Let's say for every ornamental detail we have laying around the office, that we promise not to use this year, the government could pay us a flat sum. Or maybe a STOCK HOUSE PLAN BANK. Or how about a Back Issue of the ARCHITECTURAL FORUM BANK."

There's no doubt about it. Most architecture is at least as organic as peanuts, and surely deserves equal support. Another possibility for the proposed program: proper reimbursement from the government for withdrawing fatigued designers from cultivation and sending them off to Europe for a year. Further suggestions, with illustrations, for the ORANAMENTAL DETAIL BANK are in order.

PARENTHESES

(CIRCULATION)

In the same way that a good rendering of the façade frequently sells a building design, it is accepted in the publishing trade that the picture printed on the magazine cover has a lot to do with selling the magazine on the newsstands. For this reason a sales comparison of a few covers of TIME magazine may be reassuring to the building profession, indicating, after all, that the public really is quite interested.

Our corporate neighbors upstairs in this Rockefeller Center slab, the TIME & LIFE building (which we heard a wry N.Y. cabdriver call the *nervous center* yesterday) put Architect Eero Saarinen on their



cover this summer (July 2 issue) and were not disappointed with the results. That issue sold better than any in the second quarter of 1956 since Woman



Marilyn Monroe (May 14), outscoring Pitcher Robin Roberts by nearly 20,000



copies and equalling Preacher Billy Graham (Apr. 16).

Leading the entire parade in the second quarter in newsstand sales was that potent old mental type, Sigmund Freud (Apr. 23) who outsold even Marilyn by a good margin. TIME readers evidently know; now they want to know why.



Notice also that the cover artists' techniques fall into two schools on these four high-selling issues; there are two interpretive inexact paintings, and two precise naturalistic renderings. Freud was interpreted by Ben Shahn, Robin Roberts by Henry Koerner. Marilyn Monroe was rendered in detail, naturally, by Boris Chaliapin, and Eero Saarinen was specified by Artzybasheff.

(PEACE, DOCTOR)

The Chicago Pharmaceutical firm, J. B. Roerig, a division of Charles Pfizer & Co., recently produced an architectural beguilement for the doctors attending a medical convention in Chicago. For the comfort of foot-weary medics tramping through the exhibits they provided a "Peace of Mind Room" which utilized both "medical research and designer talent to provide relaxation for both mind and body." It should be added immediately that Roerig produces one of the popular tranquilizing drugs now unnerving the country, Atarax. This room was named Ataraxia.



Ingredients:

1. Air conditioning.

2. Colors—"warm colors such as cedar rose or yellow were cited as most acceptable to the emotions."

3. Small textures— "really nubby textures may be distracting"

4. Music—which "removes flights of the imagination to more pleasant and relaxing spheres of thought"

Prescribing physician: the decorating department of Marshall Field.

(HARK)

There is something afoot to honor the American Indian. But something! —a memorial which may be erected near Gallup, N. M., dominated by a 250'-high statue depicting the Redman staring out across the plains "into some far, unseen, horizon," lo, taller than the Statue of Liberty, hark, twice the height of the Colossus at Rhodes.

Backed by the Memorial to the American Indian Foundation, the idea was first conceived in 1938 by Sculptor E. Harlan Daniels. Money is now being raised for the project. After completion of the Indian himself, several other buildings are planned near the base: an Indian hall of fame with exhibit rooms and a library, a research building, an amphitheater seating 50,000, and a rotunda in which an eternal flame will burn, in the words of Jacques Les Strang of the Foundation: "Forever symbolic of his eternal campfire, once flecking this great continent as a rash of stars punctuates the night."



It is easy to mock this wild idea. This can be done simply with quotes from the prospectus itself. "In a sense, corn will be the greatest monument to the Indians," it says. "The eternal flame burns in the center of the rotunda, and is fueled by alcohol," it says. But never underestimate the popular American taste for cowboys and Indians and for the spectacular. The memorial, if built, will surely be a big success.

Meanwhile, back at the typewriter, we have shown the prospectus to several people we know who are proud of their Indian blood. They are not enthusiastic. One shuddered. Another, an architect, said, "Ugh."—W.McQ.



BEAUTIFULLY EFFICIENT... EFFICIENTLY BEAUTIFUL...

Minnesota Mutual Life Insurance Company's gleaming new Home Office Building is the result of the combined efforts of the company's planners, the architects and the builders to couple modern beauty with top efficiency. It is said the now-completed structure is the most efficient physical plant that could be designed for the complex operations of this growing organization.

A significant phase in the effort to obtain the utmost in efficiency and dependability was the installation of USS NATIONAL Steel Pipe for the hot water heating and snow melting systems of the handsome new structure. Over 7000 feet of ³/₄-inch NATIONAL Pipe were used in the snow melting system, alone.

The consistent selection of NATIONAL Steel Pipe for the "big jobs" is nothing new. For over 60 years NATIONAL has been the accepted pipe for plumbing and heating systems. Regardless of the application, architects, builders and contractors know from long experience that they can put their complete confidence in the uniform, dependable performance of NATIONAL Pipe. Plan on using America's Standard Wrought Pipe in your next installation.



NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA. COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS UNITED STATES STEEL EXPORT COMPANY, NEW YORK

The snow melting system being installed. All 3/4-inch lines and 2-inch headers were of NATIONAL Steel Pipe.





HERE'S BETTER LIGHTING AT HALF THE COST

LIGHTING



FEATURES THAT DEFY COMPARISON

- ON-JOB POWER SOURCE Before fixtures are installed, receptacles in UNI-RACE provide power source for tools and temporary lighting.
- NO FIXTURE STORAGE Fixtures need not be delivered until premises are painted. The units can then be snapped into place—clean and factory fresh.
- VARIABLE SPACING Fixtures can be mounted in continuous rows or at intervals of 4, 8, 12 or more feet—added, removed or respaced at any time.

The Gibson ORTHO Fixture is a completely new concept in commercial and industrial lighting design. The exclusive UNI-RACE, shipped separately from the fixtures, provides straight alignment, exact fixture spacing and a fixed power source (receptacle) for each fixture. It banishes those pesky aligning problems and eliminates all electrical work on the fixture itself—just take the units as they come from the box and snap into place at any desired interval of 4' or 8' on the UNI-RACE.

All of which adds up to a 50-percent saving in labor and material—often more—unheard of flexibility to the user, and gives you a better-looking, higher-quality job.

There are many other advantages you ought to know about. Drop us a line today, we'll gladly send you complete information about the remarkable new ORTHO-77 and 88 for commercial and industrial applications.

GIBSON

1919 Piedmont Circle, N.E., TRinity 5-2591, Atlanta 5, Georgia

Manufacturing Co.

When you're figuring pipe specifications for schools—Remember...



"IT'S BETTER TO DO IT RIGHT THAN TO DO IT OVER"

This poor boy doesn't know how to add . . . he's like a lot of people who make the mistake of using the wrong piping materials. They forget that the *real* cost of the installation is first cost *plus repairs* . . . and that the only real yardstick of economy is the cost per year of service.

The smart people, those who really know their arithmetic use BYERS Wrought Iron pipe for corrosive applications. In the home . . . commercial and institutional buildings . . . in plants and factories. Remember—it's never good economy to do a job over. By using Byers Wrought Iron pipe to begin with, your piping problems are solved from the start.

Want a brief, interesting story of the what—why and where of this durable material? Ask for booklet, "The ABC's of Wrought Iron." Write: A. M. Byers Company, Clark Building, Pittsburgh 22, Pa.





LETTERS

ARCHITECTURAL MORALITY

Forum:

Yamasaki's "Morality in Modern Architecture" (AF, May '56, Excerpts) is a courageous re-evaluation of the contributions and confusions of at least two contemporary masters.

His analysis will be distasteful to our young generation whose design vocabulary is distilled from unquestioning idolatry of these two great pioneers.

However, the article will be welcomed as a refreshing zephyr by those architects who try to create their own vocabulary and who choose to imitate nobody.

> JAN REINER, architect Boston, Mass.

DOWNTOWN TRANSPORTATION

Forum:

The article, "Typical Downtown Transformed" (AF, May '56), relating to Fort Worth arouses considerable interest locally among civic leaders who are facing a similar problem.

Although many of our civic leaders have copies of the FORUM available, I wonder if you would be so kind as to provide 20 additional copies.

EUGENE A. TETZLAFF, president P. A. Bergner & Co. Peoria, III.

DESIGN CRITICISM

Forum:

I also cannot refrain from making comments on the article "Three Critics Discuss M.I.T.'s New Buildings" (AF, March '56), because I see the insidious invasion into an erstwhile level-headed publication of the "art expert," who has caused so much damage to European architectural design.

Unhappily the world appears to be divided into those who exist by logic (the "art experts") and those who exist by intuition (the artists). The "experts" can never understand the artist, but the artists understand the "expert," so the "expert," as he persists in writing long and often incomprehensible articles about something he cannot understand, annoys the artists very much. I think you should do all you can to avoid this sort of friction.

> A. C. COTTON, Architect London, England

• Would the "expert" agree that the artist understands him? Incidentally, the severest critic was a practicing architect, Bruno Zevi.-ED.

AIRPORT TERMINALS

Forum:

The articles on airport terminal buildings entitled "Grand Central of the Air" and "The Airport Scramble" in the May and June issues of FORUM have been read *continued on p. 58*

FOLDING averal: Koreye covered in OLF SUPPORTED VINYL ... ARE MORE BEAUTIEUEMORE DURABLE AND FIRE No other covering material offers such outstanding quality and features at such low cost! Produced in dozens of patterns and leather effects in a wide range of decorator colors ... the perfect folding door material!

TEXTILEATHER, Toledo 3, Ohio Division of The General Tire & Rubber Co. Send me the names of folding door makers who use TOLEX supported vinyl coverings:

le'll send you sources

Name.

Address.

HEAVIEST, STRONGEST ALUMINUM WINDOWS BY



ACCENT THE SOUND CONSTRUCTION OF THIS HOSPITAL

> This 17-story, \$13 million modern fireproof structure embodies the newest medical techniques and hospital planning. Enduring quality is the keynote of its construction.

That is why the finest Cupples aluminum windows were specified. There are 1,406 Series 500 double-hung and 53 specially designed Series 900 projected windows in the building. Both of these types are superior in every detail—stronger, heavier, tighter. And they require no maintenance.

 Sash in the double-hung Cupples windows is designed to receive various thicknesses of glass. Cupples aluminum interior sliding screens fully cover the windows. Cleaning anchors, hospital type sills and 3,850 feet of aluminum stools are also by Cupples.

 Cupples is a foremost designer and manufacturer of many types of commercial and residential aluminum windows, curtain walls, doors, Alumi-Coustic grid systems for suspended ceilings and special ornamental products. Our catalogs are filed in Sweet's.



HARRISON S. MARTLAND MEDICAL CENTER

(Newark City Hospital), Newark, New Jersey

Walter Kidde Constructors, Incorporated, Contractor, New York City

Ziealer, Childs & Paulsen,

Architects, Jersey City

2659 South Hanley Road • St. Louis 17, Missouri

DIFFERENT...



WESTINGHOUSE WATER COOLERS

were specified by the architects because by design they, too, are new and different

More Efficient! They deliver up to 60% more cold water at less cost... thanks to the Patented Pre-Cooler and Super Sub-Cooler that use waste cold water to pre-cool incoming water and sub-cool the hot liquid refrigerant.

More Convenient! Only Westinghouse offers Dual Electric Control—both finger-tip and toe-tip control—at no extra cost . . . plus Automatic Stream Height Regulator for no-spurt, no-splash drinking. Compact, space-saving design occupies only 14 inches square of floor space.

More Dependable! Amazing new Solenoid Water Valve eliminates all possibility of leaks... Hermetically-sealed Refrigeration System assures more years of trouble-free performance ... and the E-Z Clean Strainer prevents water stoppage due to pipe scaling. All models backed by Westinghouse 5-Year Guarantee plan.

Put Westinghouse in your plans... just as more and more leading architects are now doing. Specify the *newest* and *finest* of water coolers for your clients. 18 handsome models to choose from. Call your Westinghouse Water Cooler Distributor today. He's listed in the Yellow Pages of your telephone directory. Ask him about the new PAY-WAY PLAN ... and learn how Westinghouse Water Coolers pay for themselves.

by design



PEORIA JOURNAL-STAR BUILDING, PEORIA, ILLINOIS

designed by J. FLETCHER LANKTON-JOHN N. ZIEGELE and Associates

built by GEORGE D. JOHNSON COMPANY

Designed with a difference Peoria's new Journal-Star Building is the talk of the newspaper world.

For unlike most newspaper buildings it's located on a beautifully landscaped open-area site at the edge of the city overlooking Peoria Lake. And, free of heavy city traffic, the Rock Island Railroad is able to deliver newsprint right to its door.

Efficiency-planned throughout to keep the presses rolling faster . . . all composing and press rooms are specially designed to accommodate new types of conveyors and machinery. These rooms are spacious, light-conditioned and noise-proofed. Office areas are air-conditioned and have movable metal partitions for greater flexibility of use. A special floor conduit system also makes telephone locations completely flexible. A modern cafeteria is provided for the convenience of employees.

And . . . in keeping with their fresh new ideas in functional design . . . the architects specified Westinghouse Water Coolers.

EXACTLY THE RIGHT TYPE AND SIZE FOR EVERY NEED

Westinghouse Electric Corporation Electric Appliance Division Springfield 2, Massachusetts



WHERE BIG THINGS ARE HAPPENING FOR YOU!



COMPACI-that's the word for today's radio, with modern transistor tubes replacing the big tubes of earlier days. And Cyclotherm, too,-the modern steam and hot water generator-is a case history in the elimination of useless bulk.



Saving up to one-third the space required by the ordinary boiler, Cyclotherm's exclusive, patented Principle of Combustion and Heat Transfer gives more horsepower per unit of weight, uniform heat transfer for every square foot of heating surface. Guaranteed to operate at a minimum of 80% efficiency, Cyclotherm gets more out of the fuel it burns, gives you substantial savings in gas or oil and in maintenance.

AN ELECTRONIC CONTROL SYSTEM operates Cyclotherm automatically. On 18 to 60 hp units, burner shuts down when steam demands are satisfied,

starts up when steam again is needed. On larger units, precision modulation keeps peak efficiency with boiler operating at from 30% to 100% of rated capacity. Many users report up to 50% savings in maintenance costs.

Cyclotherm comes to you fully assembled and factory pre-tested. Needs only five simple connections to be ready to go. Many plants have installed two or more Cyclotherms for greatest flexibility and power. Burns gas or oil with quick changeover. In 18 to 500 hp models, 15 to 200 psi. Fill out coupon below and mail today.

YEARS AHEAD IN STEAM GENERATION CLOTHERM BITAM AND HOT WATER GENERATORS	Cyclotherm Division National-U. S. Radiator Corp. 2427 E. First St. Oswego, N. Y. Send me free copy of your full-information booklet or Cyclotherm Steam and Ho Water Generators. Company Name Address City Zone State



LETTERS cont'd.

with interest. Your understanding of the problems created by the increasing number of passengers and size of aircraft and their impact on terminal building design is enlightening. The publication of such articles will tend to make it easier for us to bring the many complex situations before interested communities and their architects.

It would be greatly appreciated if we could receive at least 50 reprints of each article for dissemination to our six regional and 20 district offices.

It is with appreciation that we view the many articles and sidelights on airport buildings which have been contained in your magazine.

> HERBERT H. HOWELL, director Office of Airports Civil Aeronautics Administration Washington, D.C.

Forum:

The article "The Airport Scramble" is well timed, constructive criticism in view of the impending jet age.

The article is being distributed to the membership of the Subcommittee on Facilitation of International Civil Aviation for their information and consideration in the overall adequacy of border crossing facilities.

The International Civil Aviation Organization in Montreal has been cognizant of the need for further work by operators and governments to be directed toward the improvement of terminal traffic handling arrangements from the facilitation point of view; that is, clearance by Customs, Immigration and Public Health. taking into consideration the general comfort and convenience of the passengers. The benefits of expediting border crossing formalities may be lost through unsatisfactory arrangement of terminal facilities.

ROBERT R. REINING Secretary, FAL Subcommittee Air Coordinating Committee Washington, D.C.

AIRPORT BENCHES

Forum:

It was wonderful to open the June FORUM and discover under "Airport Scramble" a picture of my home-town airport, Stuttgart. On the pictured benches I met my husband and now I live in this magnificent country, America.

Even for nonprofessionals your FORUM is most interesting and informative.

ERIKA HOSTETTER

Roscoe Engineering Corp., general contractors Washington, D.C.

MISSING LINK

Forum:

I have read your article on "The Missing Link in City Redevelopment" in the June FORUM. It is wonderful and "to the heart." continued on p. 62

For <u>Genuine</u> Beauty ... specify <u>new TERRAZZO</u> pattern



in <u>every</u> tile of *Bolta Floor*... stays beautiful longer ...with or without wax!

Also available in 22 marbleized and solid colors!

There's more vinyl

Here is the rich, authentic beauty of old-world terrazzo—in wonderful, modern, "soft-to-the-step" Bolta-Floor vinyl tile! Bolta-Floor is a highcontent, homogeneous vinyl floor tile that assures longest wear and lowest possible maintenance costs. Bolta-Floor will keep its gleaming beauty through years of hard use!

"Terrazzo" Bolta-Floor is produced in 15 beautiful decorator colors—and in 6 x 6, 9 x 9, 12 x 12 and 18 x 18 tile sizes ($\frac{1}{8}$ " or .080" gauge).

Don't settle for less! Get the genuine beauty of new Bolta-Floor "Terrazzo."



A MARK



HEATRES



SCHOOLS

For samples write:

THE GENERAL TIRE & RUBBER COMPANY FLOORING DIVISION . AKRON 9, OHIO

GOLD BOND Holostud





SIMPLE TO ERECT. Prefabricated Holostuds are quickly attached to the steel aligning track with galvanized steel shoes. One man, using ordinary lather's tools, can erect entire Holostud Wall System framework.

EXTRA ACCESSIBILITY. Open strut-type design makes installation of utilities within partition easy...provides two-way accessibility for vertical or horizontal routing of electrical conduits, plumbing and ducts.

for low-cost, strong,



Since the introduction of Gold Bond's new Holostud Wall System, makes it adapt architects have found it amazingly versatile...its simple construction also is adapta

makes it adaptable for buildings of widely differing designs. System also is adaptable to metal lath construction.

WALL SYSTEM...



EXCLUSIVE STARTER CLIP. An extremely simple Gold Bond Starter Clip, manufactured exclusively by National Gypsum Company, helps attach first course of gypsum lath quickly and firmly to steel track.



STRONG PLASTER BASE. This combination of Gold Bond Clips firmly supports gypsum lath. The Finishing Clip, also an exclusive Gold Bond design, is used to secure top course of lath to ceiling track.

hollow partitions

Specify this fast, easy way to erect a highly adaptable partition

FOR strong, lightweight non-load bearing partitions, specify Gold Bond Holostud Gypsum Lath and Plaster System and get these additional building benefits:

Excellent fire barrier... gives up to 1½ hours of fire protection. Reduced sound transmission between walls... ratings to 49 decibels can be obtained. Elimination of complicated channeling... permits substantial construction cost savings.

The system is made up of prefabricated Holostuds, steel tracks, and shoes. Open strut-type construction of Holostuds provides unusual strength and rigidity to partitions, yet is lightweight and economical. Studs are fabricated with $\frac{1}{2}'' \ge \frac{1}{2}''$ angles securely braced by struts welded at 8" intervals. Holostuds are available in $2\frac{1}{2}''$, $3\frac{1}{4}''$, 4" and 6" widths allowing the system to be used in four different partition thicknesses.

Metal lath, as well as gypsum lath, is easily applied over sturdy, lightweight Gold Bond Holostuds. Floor and ceiling tracks are perforated for easy lath attachment.

Full technical data, showing you exactly how Gold Bond Holostud Wall Systems can simplify your design plans, will be sent upon request. Write: National Gypsum Company, Dept. AF-96, Buffalo 2, New York. PICM

LATH AND PLASTER

NATIONAL GYPSUM COMPANY





LETTERS cont'd.

I have a great deal of respect for the neighborhood store which I find lacking in our own suburban area. Perhaps we are trying too hard to organize the naturally disorganized human being.

> LOUIS J. DRAKOS, architect West Hartford, Conn.

Forum:

... a very fine article, sensitively written and presented with a great deal of social awareness.

PERRY L. NORTON, executive director American Institute of Planners Cambridge, Mass.

Forum:

You have touched upon what some people may feel to be an obscure or less than important factor in city life. However, I feel your thesis is of such importance as to merit the attention of all planners.

> JOHN E. ROBERTS, director of planning Department of City Planning Los Angeles, Calif.

Forum:

Your Jane Jacobs has said something very important, something that needs saying again and again. I am concerned with the asepsis that we are building into our cities.

I don't know how we can consciously remedy this situation, because we vitiate the whole effect by consciously trying to create it. We shall be in the same class as the persons who label their stores "Ye Olde Gifte Shoppe."

> DENNIS O'HARROW, executive director American Society of Planning Officials Chicago, Ill.

Forum:

You offer very sound criticism of much of our public and private urban development. The "humanesques" of life have been given only passing consideration in the design concepts of the great majority of the modern multiple-dwelling and single-family home projects. We have built too much bigness in our new urban development. The large-scale housing projects and the acres of residential subdivisions which compel economic stratification of families lack the humble human qualities that make for contented and enjoyable living. Surely we should be able to include more indoor and outdoor space for the intimate and informal congregation of the inhabitants.

Renewal of our urban centers should be more than just the replacement of old structures with modern buildings. To avoid the creation of the lifeless urban projects critically referred to in your article, the planners, architects and engineers, whether they like it or not, must hobnob a great deal more with people of all walks of life. They must recognize the value of the services that can be contributed by those who specialize in human *continued on p. 60*

62



Everybody appreciates Foldoor's slimmer lines

The principal function of folding doors is to save space, and thus conserve costs. FOLDOOR actually saves more space—two ways. First, FOLDOOR stacks in less space. For each foot of door opening, FOLDOOR requires a maximum $1\frac{1}{2}$ " of stack room, plus $2\frac{1}{2}$ " for lead post and jamb. Particularly in close quarters, this narrower stack often makes the difference that makes a folding door practical! In addition, FOLDOOR has the narrowest "profile" in the business. Every door is only $5\frac{1}{2}$ " wide when stacked. Aside from saving valuable inches of usable space, this important difference makes "wall pocket" installations possible and much more economical. Your FOLDOOR Distributor can give you full and valuable details on this and other advantages of FOLDOORS. Look him up under "Doors" in the yellow pages.

HOLCOMB & HOKE MANUFACTURING COMPANY, INC. 1545 Van Buren Street, Indianapolis

In Canada: FOLDOOR OF CANADA, Montreal 26, Quebec Installing Distributors in All Principal Cities

ONLY FOLDOOR IS DIFFERENT AND BETTER THESE SIX WAYS

1. Easier operating 2. Neater installation 3. Better appearance 4. Greater space-saving 5. Structural durability 6. Long life in actual service.

	FOLDOOR	R
Ge Pl Fo	THE SMARTEST THING IN DODRS entlemen: ease send free copy of new 1956 obdoor Catalog	A.I.A.
N	AME	
FI	RM	
AT	DDRESS	<u></u>





CONTRACTOR FOR THE CRABAPPLE COURT tract is the THERMAL ENGI-NEERING COMPANY of St. Louis. Here you see MR. L. L. VOLLMAN, Vice President of THERMAL, checking the bending of Revere Copper Water Tube in the shop. Tube was procured through the GRINNELL COMPANY of St. Louis. SUPERIMPOSED on the photograph of the living room, in one of the homes of the Crabapple Court tract, is a section of the radiant panel heating system. With radiant panel heating picture windows can be brought right to the floor line, allowing a free rein in interior decor and furniture arrangement. And with radiant heat there are no drafts, no hot and cold zones.



BY BRINGING EACH HEATING PANEL individually to a common header, as shown in the boiler hookup, and equipping each with its own valve, heat is easily and accurately regulated to suit individual room requirements.

ONE OF THE MANY DESIRABLE FEATURES of enduring Revere Copper Water Tube is that it can be prefabricated in the shop, requires fewer fittings, which when properly brazed or soldered assure tight, nonleaking joints. Completed, prefabricated panels are then shipped to the job and installed, using separate circuits for each room.



Radiant heating with copper tube is the best way to heat the modern home, and is the <u>only</u> heating system we use –

Says CHARLES H. ELLABY F.R.S.A.-A.S.C.E.

66

Builder of 152 homes in the St. Louis area during the past 6 years, ranging from \$9,500 to \$30,000.



"There are five main reasons why we use copper tube in our radiant heating systems," continued Mr. Ellaby. "First-copper tube doesn't rust, rot or deteriorate, so we have no worry on that score. Seconda radiant system with copper tube is competitive in cost with other top quality heating systems for multiple home building. Third-copper tube is easier to work with ... requires fewer fittings ... can be prefabricated in the shop. Fourth-copper tube enables us to guarantee the home owner a trouble-free job. Fifth-copper tube, because of its proved, superb performance in radiant heating and hot and cold water lines, has unquestionable acceptance among prospective home owners ... in many cases helps sell our homes."

Take a tip from this successful builder of quality homes; don't take chances, use Revere Copper Water Tube not only for radiant panel heating, but for hot and cold water lines, air conditioning lines, waste lines, vent stacks, and underground service lines.

So, when you write your next set of "specs" remember: there is no "or equal" for copper water tube. Keep out of trouble by using Revere Copper Water Tube.

And if you would like aid in the various methods of installing Revere Copper Water Tube, our Technical Advisory Service will be glad to help.

FREE!—For group showing—instructive 16 mm motion pictures in sound and full color. "THE ABC OF RADIANT PANEL HEATING" and "SHEET METAL IN BUILDING CONSTRUCTION." Write Advertising Dept., for details.

A FEW OF THE 37 HOMES on the Bon-Price tract built by CHARLES H. ELLABY. Price range from \$20,000 to \$30,000. Homes have summer air conditioning with a central system, using ducts in the ceiling.



REVERE COPPER AND BRASS INCORPORATED Founded by Paul Revere in 1801 230 Park Avenue, New York 17, N.Y.

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

LETTERS cont'd

relations and behaviorisms. Cooperative effort on the part of all who have something to contribute to our new urban building will insure the creation of vital as well as orderly communities.

CARROLL V. HILL

Community planning and development consultant Dayton, Ohio

Forum:

I agree stores in residential neighborhoods are "holes in the wall," having a definite raison d'être in the totality of a neighborhood, provided, of course, the walls face a business street or otherwise fit in with the neighborhood. But if these stores are indiscriminately located among residential properties they are called by the legal term "nonconforming," or incompatible with the surrounding uses of the neighborhood.

By their very nature and conflicting interests, these uses exert a harmful influence on the stability of the neighborhood.

Recently urban renewal activity has stirred interest in the elimination of incompatible uses in neighborhoods. The proposed improvement plan for Detroit's first neighborhood conservation project, for instance, earmarked about 30 nonconforming uses for removal because they were considered harmful to the neighborhood. In a redevelopment project, small neighborhood stores and other nonconforming uses could be retained in the development, but grouped together around a neighborhood shopping plaza.

> MAURICE F. PARKINS, principal planner Conservation Division City Plan Commission Detroit, Mich.

Forum:

I was indeed interested in the article in the June FORUM on "The Missing Link in City Redevelopment."

The facilities around which the social life and vitality have grown are things which have developed with time. This, probably, is the only way it can happen. I suspect that there are limits to how well the advance planning can anticipate the types of facilities which will best serve the future community life of the redeveloped neighborhoods. This comment is not meant to diminish the importance of the problem in any way, but rather to suggest that, no matter how well the initial planning is done, there will still be need for future adaption to ways of life that cannot be anticipated in advance.

Thus there is a two fold responsibility to be shared by the planners and the redevelopers. First, to provide in the initial planning the types which are responsive to the community living requirements of the new residential areas; then, and this is more difficult but perhaps even more important, to search for ways in which the initial planning and developcontinued on p. 70

THE CEILING: FORESTONE



Bernard Hoffman School North San Rafael, Calif. Architect: Donald Francis Hines Contractor: Pacific Coast Builders Acoustical Contractor Cramer Acoustics

Economical Forestone is available through the following Simpson Certified Acoustical Contractors:

- ALABAMA Badham Insulation Company, Inc., Birmingham Stokes Incorporated, Mobile ARIZONA Fiberglas Engineering & Supply, Phoenix Hall Insulation & Tile Co., Tucson CALIFORNIA Coast Insulating Products, Los Angeles Cramer Acoustics, Fresno and San Francisco John K. Haas Company, San Diego H. W. Rivett Company, Sacramento CONNECTICUT
- CONNECTICUT Wilson Construction Company, Hartford FLORIDA Anning-Johnson Company, Miami GEORGIA Anning-Johnson Company, Atlanta

- IDAHO IDAHO Fiberglas Engineering & Supply, Boise Idaho Acoustical & Building Specialties Co., Boise ILLINOIS General Acoustics Company, Chicago George S. Grimmett & Company, Champaign, Decatur and Springfield
- INDIANA The Baldus Company, Inc., Fort Wayne E. F. Marburger & Son, Inc., Indianapolis
- E. F. Marburger & Supply Company, Louisville Atlas Plaster & Supply Company, Louisville MARYLAND Lloyd E. Mitchell, Inc., Baltimore MASSACHUSETTS Acoustical Contractors, Inc., Brighton
- MICHIGAN Detroit Fiberglas Insulation Division, Detroit, Flint and Grand Rapids
- Date Tile Company, Minneapolis Flament-Hampshire Company, Duluth
- MISSISSIPPI Stokes Incorporated, Jackson

- MISSISSIPPI Stokes Incorporated, Jackson MISSOURI Hamilton Company, Inc., St. Louis B. J. Lutz, Inc., Kansas City MONTANA Ker & Company, Billings NEBRASKA Kelley Asbestos Products Co., Omaha NEW JERSEY Connor & Company, Inc., Kenilworth Kane Accoustical Company, Inc., Fairview NEW MEXICO NEW MEXICO

NEW MEXICO Fiberglas Engineering & Supply, Albuquerque NEW YORK The Cronin Acoustical Company, Stony Point Davis Acoustical Corp., Albany

Davis-Fetch & Company, Inc., Buffalo and

- Jamestown Robert J. Harder, Inc., Lynbrook, L. I. James A. Phillips, Inc., New York Rochester Davis-Fetch Corp., Ithaca and Rochester
- NORTH CAROLINA The Bonitz Insulation Co., Greensboro Bost Building Equipment Company, Charlotte
- OHIO Acoustical Contracting & Supply Corp.,
- Acoustical Contracting & Supply Corp., Cleveland Cincinnati Floor Company, Cincinnati Riethmiller Acoustic Company, Columbus OKLAHOMA Denman Floors Company, Oklahoma City Midwest Marble & Tile Company, Tulsa
- OREGON
- OREGON Commercial Tile Company, Eugene R. L. Elfstrom Company, Salem Johnson Acoustical & Supply Co., Portland PENNSYLVANIA Selby, Battersby & Company, Philadelphia Standard Floor Company, Pittsburgh
- SOUTH CAROLINA Bonitz Insulation Co. of South Carolina, Columbia
- TENNESSEE Alexander Marble & Tile Company, Memphis
- Anning-Johnson Company, Knoxville Nelson Baird Company, Inc., Nashville
- TEXAS
- EXAS Blue Diamond Company, Dallas Builders Service Company, Fort Worth J. E. Delehanty Company, Lubbock General Supply Company, Inc., Houston Houser Resilient Floors Co., El Paso Raymond Rambo Materials Co., Corpus Christi Rufus A. Walker & Co., San Antonio TAH

- UTAH Utah Pioneer Corporation, Salt Lake City
- VIRGINIA Anning-Johnson Company, Alexandria Manson-Smith Company, Inc., Norfolk and Richmond

- Richmond WEST VIRGINIA Asbestos & Insulating Co., Charleston WASHINGTON Elliott Bay Lumber Company, Seattle Fiberglas Engineering & Supply, Spokane WISCONSIN Building Service, Inc., Appleton and Milwarkan
- F. Drexel Company Limited, Calgary, Alberta, Vaucouver, B. C. and Victoria, B. C. Hancock Lumber Limited, Edmonton, Alberta HAWAII Hawaii, Builder

Hawaii Builders Supply Company, Limited, Honolulu

Simpson also produces these other acoustical materials : Hollokore Perforated Acoustical Tile, Regular and Scatter-Drilled Acoustical Roof Slab . Fissured Mineral Tile



SIMPSON LOGGING COMPANY

SHELTON, WASHINGTON

THE CEILING: FORESTONE

FROM RIOT TO QUIET...for schools



0

Economical Forestone ceilings offer school officials and others an irresistible combination found in no other acoustical tile: only Simpson Forestone Fissured Woodfiber Acoustical Tile gives highly efficient sound control... *plus* rich textured beauty...*plus* low cost. Ask one of Simpson's skilled acoustical contractors (listed on opposite page) for FREE estimate.

March



SUNTROL... color... function

Subtle green Suntrol adds the design expression of color to glass block fenestration. A sealed-in fibrous green screen, shown in the exploded view at the left, produces a pleasing accent tone on panel exteriors . . . a soft, cool glow inside.

Functionally, Suntrol keeps out more heat and glare than other types of glass.

A modular product, Suntrol is available in two sizes— 8" and 12"—and in three types—light-directing, lightdiffusing, and toplighting.

Specified for color, or for function, or both, subtle green Suntrol offers the architect a versatile material for forecast designing. Suntrol is an exclusive PC product.

For details, write Pittsburgh Corning Corporation, Dept. E-96, One Gateway Center, Pittsburgh 22, Pa. In Canada: 57 Bloor Street West, Toronto, Ontario.



PC Suntrol' Glass Blocks

Everybody LOVES fresh Linens...

(you know they do!)



... that's why as an architect you do your client a valuable service when you specify continuous towel installations in the washrooms. He'll find that employees, visitors and customers alike prefer the hospitable touch of soft cotton towels. And low-cost LINEN SUPPLY SERVICE relieves him of maintenance and inventory problems too. Get details from your LOCAL LINEN SUPPLIER (under "Linen Supply" or "Towel Service" in the classified phone book. Or write us for free descriptive booklet.



IN ANY BUSINESS ... LINEN SUPPLY IS GOOD BUSINESS

LETTERS conta.

ment might permit rather than prevent later adaption to the new and unforeseen requirements which are certain to evolve.

The first redevelopment project in Providence, R.I. provides for clearing an area contiguous to a school center to provide adequate play facilities not only for the schools but for a very large neighborhood on the assumption that the extensive recreational facilities here provided would form a nucleus about which to rehabilitate this entire neighborhood. The area to be cleared includes a shopping center which physically is extensively blighted. However, cleared land will be provided for the rebuiding of the shopping center and this will probably be done by the owners of existing stores. Rebuilding of existing shopping facilities may not be feasible in all projects but the idea bears study. Where feasible, it might be the means of keeping alive some of the small businesses which otherwise might have to liquidate.

Certainly reasonable proposals in this direction will be sympathetically received here, but, as you know, the real responsibility lies with those who are doing the planning for local renewal and redevelopment operations and with redevelopers who transform the plans into realities. Anything the FORUM can do to help will be a real service to this program.

J. W. FOLLIN

Urban Renewal Commissioner Housing & Home Finance Agency Washington, D.C.

LOW COST HOSPITAL

Forum:

I like the way you handled the Riverside Hospital in Boonton, N.J. in your May issue; it was fairly and objectively done.

The 75-bed-type study floor plan by USPHS, which you compared with the Boonton hospital, has three complete sets of nurses' stations and adjunct facilities for 75 beds, while Riverside has two for a capacity varying from 65 to 90 beds.

This is an important factor in the hospital's economy of construction, equipment and operation. A head nurse costs not less than \$5,000 per year, including vacation and relief substitutes, fringe benefits, etc. Moreover, the adjunct facilities in connection with a head nurse's station take considerable space and expensive equipment. Duplication of these areas is very costly.

> OTIS N. AUER, hospital consultant Glenn Ridge, N.J.

• The USPHS type study (now almost a decade old and outdated in its 25-bed nursing unit size) was included by FORUM merely to indicate one of the more orderly *schematic* approaches to the onestory plan. Type studies should never be used as stock plans but they can provide a point of departure and stimulus to thinking. Certainly in this case, anyone so using it would need to rethink the nursing unit to accord with present personnel and operating realities. The Curtis & Davis example, also included as a schematic approach, happens to have an up-to-date 50-bed unit.—ED.



A special plate glass — beautiful, glare-reducing, colored to exacting specifications—was required for this historic new curtain wall. Franklin developed precisely the glass needed to translate a bold and original idea into gleaming reality. Do you have an idea that calls for functional plate glass of unprecedented beauty? If so, please write to

FRANKLIN GLASS CORPORATION

130 West 31st Street

New York 1, New York



Installation can keep ahead of building construction. The lightweight, long lengths of copper tube make it possible to complete much of the roughing-in work ahead of other construction—as in this school building addition. Note preassembled unit high on wall.



Easy to cut. The standard 20' lengths eliminate many joints in long runs. For shorter lengths, tubes are cut easily, accurately by hack saw or tube cutter.

Only copper gives you all these advantages

All-copper plumbing gives great freedom of design. Locate bathrooms and utilities where they belong without complicated, expensive construction to provide extra space for installation and maintenance.

All-copper plumbing saves time. Contractors report that installation time has been reduced one-third to one-half because it is so easy to install. This means better utilization of skilled manpower and faster completions.

All-copper plumbing lasts. It never rusts and it resists corrosion. The smooth inside surfaces of copper tubing and fittings minimize the possibility of clogging. Hide it in the wall—bury it in the ground—and forget it.

Anaconda Copper Tubes are available in all standard wall thicknesses—Type K, L, M and the new lighter weight Type DWV Copper Drainage Tube. Type K has the thickest wall and is used for underground lines. Type L is recognized as the standard weight for interior water supply and heating lines, and for sanitary drainage lines buried underground within the building. Types M and DWV are used for all above-ground lines of a building's sanitary drainage system.

Anaconda wrought and cast solder-joint fittings are available in a wide range of sizes and types.

Write for descriptive literature on ALL-COPPER plumbing. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.



Easy to install in tight spots. The light weight of copper tube and fittings-the ease of making solder joints-make installation simple and fast, even in cramped working areas.

Where plumbing shows, copper says quality. Owners and buyers recognize copper as a sign of quality—of long life with low maintenance, and assurance of higher resale value for the property.







Tube and fittings fit in standard partitions. A 3'' copper tube stack with fittings can be installed within a standard 4''-wide stud partition.



Save space and weight in all buildings—even skyscrapers. Copper tubes in main pipe shaft of a 43-story office building. Copper tube saves space because pipe shaft and furred spaces at columns and ceilings can be smaller. Light weight speeds installation.



Lightweight for easy, fast handling. This preassembled section comprising about 13 feet of copper tube and 5 solder-joint fittings weighs only 35 pounds, is easily handled by one man.



Prefabrication speeds construction. Sections like this can be preassembled out in the open or at the shop where men can work easier and faster—no lost time waiting for construction.

Simplify remodeling jobs. Lightweight copper tube and solder-joint fittings made light work of an otherwise back-breaking job, in adding two baths in this remodeled residence. Note how little ceiling height was lost. Trim, compact lines. In this remodeling job, two stud spaces served as the chase for the copper tube risers. The large tube is the soil stack; smaller tubes are water supply and heating lines.





Basic specifications available on the use of asphalt emulsions



BITUMULS® for: Roads & Streets Walks & Drives Parking Areas

LAYKOLD® for: Tennis Courts Playgrounds Roof Decks



Typical specifications are available on Bitumuls and Laykold products for every type of paving and surfacing application. Get them from our nearest office.



American Bitumuls & Asphalt Company 200 Bush Street, San Francisco 20, Calif. • Perth Amboy, N. J. • Baltimore 3, Md.

Mobile, Ala. • Cincinnati 38, Ohio • Columbus 15, Ohio • Tucson, Ariz. Seattle, Wash. • Baton Rouge 2, La. • St. Louis 17, Mo. • Inglewood, Calif. Oakland 1, Calif. • Portland 7, Ore. • Washington 5, D. C. • San Juan 23, P.R.

EXCERPTS

Elimination of the ugly

Excerpts from an address at Cooper Union by C. McKim Norton, vice president of the Regional Plan Assn.

There would be general public approval of a vigorous attack on the incident of ugliness which plagues some sections of our cities. I refer to such highly visual things as posters, billboards and gas pumps in residential areas; advertising awnings, newsstand shacks and used car lots in business areas; overuse of neon and illuminated signs in certain areas. There are several ways to control and eliminate these things which cumulatively create so much ugliness: zoning, licensing, health and sanitary codes.

Such a program would be largely negative in character. It would require public support every inch of the way. Experience in many suburban communities has shown conclusively that the public will endorse and the courts will sustain reasonable regulations to sweep away the worst features of sub-cityscape. The wise merchants of Fifth Ave, have been doing just this by private means for years.

While we are considering cumulative effects of relatively small features of the cityscape, I should like to express my personal bias against the sight of the parked automobile, either in endless lines at the curb or in massed open air parking lots. What is the point of spending thousands of dollars on a new face for City Hall and then hiding it behind masses of parked Cadillacs? Must a permanent feature of our residential streets include lines of pastel colored pieces of hardware larger than two bathtubs and stored in full view on public property? The more parking meters we install, the further off do we postpone the day when curb parking will be eliminated for esthetic as well as many other reasons. A principal feature of Detroit's Northland shopping center is that the automobile is kept out of sight. The same is true of the United Nations area in New York. The visible parked car is an anachronism in good city design.

Skidmore, Owings & Merrill

Excerpts from an article by Paffard Keatinge Clay in The Architectural Review of Britain

Of the four US offices of Skidmore, Owings & Merrill the Chicago office is the largest and fastest growing, having doubled its size during the past year to include 350 people, including also mechanical, electrical, civil and structural engineers.

continued on p. 78
right combination of devices... The

FVITON

Now, a newly designed series of devices that can be made up in combination and installed right on the job with a minimum of inventory and a maximum of efficiency. A purcombination of one two or three devices and sincle more of efficiency. Any combination of one, two or three devices on a single gang can be assembled quickly and easily. Each device locks into the strap with a

With the Leviton Interchangeable Line, you get the devices you want in the combination that is right for the job. And these devices are also interchangetwist of the screw driver.

able with other devices of the same type for replacement purposes. Devices fit standard boxes and wall plates. Available in brown or ivory phenolic. Newly designed wall plates in metal or phenolic are simply styled, easily cleaned. Listed by Underwriters' Laboratories.

Your best jobs are done with

Duplex and Triple outlets.

CHANGEABLE

Select from this wide variety of

H

nvenience outlet.

Interchangeable

Single pole, Double pole, and 4-way switches.

Pilot light

3-way

For full information write: LEVITON MANUFACTURING COMPANY . BROOKLYN 22, N.Y. Chicago • Los Angeles • Leviton (Canada) Limited, Montreal For building wire and cable contact our subsidiary AMERICAN INSULATED WIRE CORPORATION



Architects: Narramore, Bain, Brady, and Johanson; McClelland and Jones Professional Engineers: Bouillon and Griffith General Contractor: J. C. Boespflug Mechanical Contractors: University Plumbing & Heating (Health Science Building) W. E. Beggs Mechanical Contractors: Wenzler and Ward (Teaching Hospital)

OLD STORY:

NEW JOB--

DURIRON[®] ACIDPROOF PIPE

TO HANDLE CORROSIVE WASTES AT UNIVERSITY OF WASHINGTON

DURIRON was the choice for acid proof piping at the new Health Science Building and Teaching Hospital at the University of Washington.

Certain advantages are obvious. DURIRON is the high silicon iron with resistance to corrosion, abrasion and erosion that architects have specified with confidence for more than thirty years. DURIRON is installed by ordinary plumbing methods. It generally outlasts the building; therefore, the first cost is the last cost. No finer recommendation can be made.

Always insist on DURIRON. Stocked by leading plumbing jobbers. Request Duriron Catalog PF/4 for details, or see Sweet's Architectural File.



THE DURIRON COMPANY, INC., DAYTON, OHIO LOOK FOR THE NAME ON EVERY PIECE

Better-quality concrete block for better homes

More homes are being built with concrete block masonry than ever before. And many builders are learning that concrete block made with Duraplastic* air-entraining portland cement are better in quality. They have more uniform dimensions, truer edges, are more cleanly formed, and generally better in appearance. Naturally, such block make better-looking masonry. In addition, Duraplasticmade block are more weather-resistant, and add durability to concrete block walls. For better masonry on your jobs, use concrete block made with Duraplastic cement. Close-up of concrete block wall shows flush vertical joints, and tooled horizontal joints, to accentuate long wall lines. Concrete block painted with durable white portlandcement-base paint provides a decorative contrast to stone masonry. Cement paint increases both the attractiveness and weatherresistance of block walls. Above residence in Harrington Park, N. J.

UNIVERSAL ATLAS CEMENT COMPANY

UNITED STATES STEEL (US) CORPORATION SUBSIDIARY 100 PARK AVENUE, NEW YORK 17, N. Y.

Albany · Birmingham · Boston · Chicago · Dayton · Kansas City · Milwaukee

Minneapolis • New York • Philadelphia • Pittsburgh • St. Louis • Waco ***DURAPLASTIC" is the registered trade-mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company. D-182

Atlas Duraplastic Cement

MAKES BETTER-QUALITY CONCRETE PRODUCTS

United States Steel Hour-Televised on alternate Wednesdays-See your local newspaper for time and station



EXCERPTS cont'd.

To many outside the organization it seems a mystery that an architect's office of such enormous proportions can concentrate so directly on the pursuit of a fine art, keeping its head above commercialism with an increasing unity and strength of direction.

They are all young men. Most of them have strong convictions, and are entrusted because of those qualities with the responsibility of a building. Some are straight from school, others were in the Bauhaus, and some are voted to the rank of general partner having shaped the architecture of SOM by the buildings they design, the Lever House or the Air Academy, but in no case is the architecture the outcome of established principles of design or office practice. It is the building itself that attracts single-mindedness and suggests the next step rather than a theory or a personality.

The general partners state their purpose in simple words: that they work together to achieve what they could not possibly handle alone. But behind that lies a consciousness that this kind of teamwork must steer clear of two ever present pitfalls: the weakness of popular approval and the anarchy of individualistic expression. This is resolved in the careful selection and then confident support of the designer or chief architect for a project. The chief of design, the project managers, the partners themselves may try to influence him, but the concept is his and the final decision lies with him where the architecture is concerned, because they feel that if a building is to stand as a consistant whole it needs the strong hand of a single man. Consequently an enormous personal interest is developed in the project and the designers' time and energy are devoted far beyond the limits of office hours. Discipline, confidence, freedom are conditions, but why is there good architecture coming from this office second only to the work of the great masters? In the final analysis it can only be said that the atmosphere is right for it.

Each project is handled by a small office set up specifically for that job within the broad framework of the organization. In this way it is possible to develop a project by combining the advantages of the personal interest and intimacy of a small office centered on one idea, with the wide range of technical assistance and specialized experience only available in a large organization.

A project manager, representing the firm, is directly responsible to the client for the job. His work may begin with the promotion of the project or the outlining of the program, but it is intended that a designer is selected as chief architect for the job at the earliest stage, and that he is present at all meetings with the client. In the smaller jobs of a million dollars continued on p. 82

EXPERIENCE Gets the Job!



Ford Motor Co., Dearborn, Mich.—Skidmore, Owings & Merrill, Arch.; Bryant & Detwiler Co., Contractor.

New office buildings are not truly modern without the electrical availability offered by cellular steel subfloors. Clear-thinking owners and designers continue to specify Q-Floor* because they know the advantages of doing business with a company with thousands of jobs and 24 years of cellular steel floor manufacture and installations behind it. Write for the "Q-Floor Skyline" showing several hundred modern Q-Floor buildings.



TOILET COMPARTMENT CONSTRUCTION THAT Saves money for building owners



Sanymetal Junior Height Compartments installed in an elementary school.

Now, Sanymetal JUNIOR HEIGHT compartments for schools

(more economical than full height compartments)

QUALITY construction features, that make Sanymetal Toilet Compartments enduring and low in maintenance cost, are a necessity for school installations. Now Sanymetal offers such compartments, scaled right for kindergarten, primary and elementary grades.

These JUNIOR HEIGHT compartments have all Sanymetal construction features that make Sanymetal Compartments durable including door panels welded, so they stay flat and in line, even if severely abused hinges so strong that a heavy man can swing on the doors without harming the hinges trouble-free floor connections for firm, rigid installations.

LOOK FOR THIS



Low over-all height of Sanymetal JUNIOR HEIGHT Compartments is right for proper observation by supervisors, while affording the child privacy from other children. Their cost is lower than that of conventional full height stalls — giving you a saving from the start.

Specify Sanymetal, to be sure of getting the quality features which offer economy in installation, lasting economy in maintenance, and attractiveness.

See Sweet's, or send for Catalog 93 describing all Sanymetal Compartments. If you wish we will mail you all advertisements in this series explaining construction details that mean quality.



TYPICAL PLAN AND ELEVATION showing recommended dimensions.

1687 URBANA ROAD + CLEVELAND 12, OHIO 6433B East Canning St., Los Angeles 22, California

JUNIOR HEIGHT Compartments offer standard Sanymetal features at lower intial cost



NOW! BEAUTIFUL, DURABLE PANELYTE IN 10 NEW SOLID DECORATOR COLORS

- . DOVE GRAY . CERULEAN BLUE . FLAME . MIDDY BLUE
- CANTALOUPE
 CARNATION PINK
 CITRON YELLOW
- . BITTER GREEN . MARL WHITE . EBONY BLACK

Look how Panelyte gives life to your design concepts . . . blends beautifully in cocktail lounges, dining rooms, elevator interiors, lobbies, suites and other areas. And no wonder! In addition to the 10 new solid decorator colors, there are 47 different patterns, wood grains and antique marble finishes to choose from!

Panelyte is exciting from a client's point of view, too. Made of the most durable laminated plastic known, Panelyte resists heat, stains, scuffs and impact; is pre-tested to assure a lifetime of dependable service.

Be sure to specify Panelyte at every opportunity. That way, you'll achieve greater freedom of design—and please your clients at the same time!

For free 5'x7' Special Architects' Samples and Technical Information, write: Dept. AF-956, Panelyte Division, St. Regis Paper Company, 150 East 42nd St., New York 17, N.Y.





BLOK-JOINT'S "cross-shaped" rubber extrusion design simplifies construction of masonry wall centrol joints. Use BLOK-JOINT with any standerd metal sash block!

"100 Year Life" rubber assures maximum effectiveness for the lifetime of the building. BLOK-JOINT forms a secure interlock, actually adds stability to the wall.

Use BLOK-JOINT for all types of masonry wall construction!—Block walls, brick veneer over blocks, cavity walls and many other types!

Simplicity, Versatility and maximum effectiveness are yours with Carter-Waters BLOK-JOINT.

NOW! See For Yourself how BLOK-JOINT fits masonry wall construction!

Write Today for FREE sample! Use this coupon.



```
EXCERPTS cont'd.
```

or less, the designer may work entirely on his own from the first site-use plan to the definitive details. In the larger jobs he may have one or two assistants to work with him, to do research, to study alternative solutions, to make sketch models and presentation drawings. The greatest advantage of this arrangement is that the assistant is completely familiar with the architect's intention and can follow the project through working drawings, checking and making detailed design decisions all the way along, while keeping a sheriff's eye on the other less architecturally minded departments. In the case of the Air Academy, which forms a large office in itself, extending over two entire floors of the office building, the project is again broken down into smaller groups. In one group four or five may make up a design team under the chief architect, but with each working out his own solution to the problem more or less independently until a certain point in the development where they go into conference and settle upon the solution that they will adopt, from then onwards working as a group on one scheme. This simultaneous method enables the chief architect to feel out the problem without spending time on eventually discarded alternatives.

Perhaps the real secret of the consistently fresh work that is coming out of this office is the investment made in the opportunities it gives to the eager minded young architects whose energies in other parts of the world are so often sadly gone to waste, but which are here channelled into actual practice from which they in return reap the fruit of experience in the great discipline of building.

Water Airfields

Excerpts from an article in The Military Engineer by Joseph B. Skelly Jr.*

The airfield construction specialist knows what the perfect airfield should be. If you ask him to describe his dream airfield, he will say that it should be easily and quickly constructed, with a surface which is insoluable to jet fuel, resists high heat and is flexible. And he might say that it should be bombproof.

Water might be the material he is looking for.

A water landing ground affords much promise. The number of water landing areas which can be constructed in any continued on p. 88

[•] Copyright by The Society of American Military Engineers. Reprinted by permission from the January-February 1956 issue of *The Military Engineer*.



- Provides "Sure Lock" Between Reinforcing and Mortar
- Requires No More Area in the Joint Than Superficial Deforming
- As Easy to Handle as Other
 Types



You can see at a glance the extra "gripability" of Carter-Waters BLOK-MESH. The horizontal and vertical surfaces provide a sure lock even under lateral pressure and shrinkage.

BLOK-MESH Minimizes Cracking above lintels, below sills, at corners.

BLOK-MESH Is Best to tie brick to back-up blocks, for cavity wall construction, double walls, ordinary block wall construction.

Remember, BLOK-MESH by Carter-Waters is the only masonry wall reinforcing with the "deep-grip", positive anchor swedging.

SEE The Big Difference In Sweet's File or ... Write Today for your FREE illustrated brochure on the New Carter-Waters Blok-Mesh! Use This

Coupon.

2440 Pennw	av e	Kansas	City 8. M	Ao.
Please send cations on i	me FREE	brochure er-Waters	and spec BLOK-MES	ifi SH
Name				
Address				
City			ate	
CONSTRU	CTION	MAT	ERIALS	
-CAR	TER-	-WAT	TERS	
And in case of the local division in which the	Station in case of the local division in which the local division in the local divisione	State of the local division in which the local division in the loc	and in the second	



Easy on the Eyes and the Lighting Budget

... Another Installation by LITECONTROL

This installation gives the Bridgeport, Connecticut office of Sun Oil Company a "sunny disposition" without glare. It represents a team job of customer, project engineer, contractor and Litecontrol and shows what can be done to achieve a custom look with standard Litecontrol fixtures.

Walls are light green, floor is gray and red and the ceiling is natural white acoustical tile. Litecontrol's curved lens, 2-lamp slimline troffers with Holophane[®] 9033 and 9034 low brightness lenses have eye-*appeal* as well as eye *protection*. The fixture fits in any ceiling having a 12 inch opening, although it is not designed to snap in. Lenses lift easily and tilt for removal and easy servicing.

Litecontrol has a complete line of fixtures which through high efficiency, low brightness and ease of installation and maintenance save sight and money. Let us prove it to you on your next job. INSTALLATION: Sun Oil Company, Bridgeport, Connecticut AREA: General Office PROJECT ENGINEER Alex M. Engart, Engineering Department, Marketing Division, Sun Oil Company ELECTRICAL CONTRACTOR: Wash Electric Company, Easton, Connecticut FIXTURES: Litecontrol #5524 2-lamp slimline traffers with Holophane #9033 and #9034 low brightness lenses. CEILING HEIGHT: 10'-0" FIXTURE SPACING: 8'-0" on centers NTENSTIES: 45 footcandles average in service



LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

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

Carrier "Clover Leaf" Unit Heater for use with steam or hot water. Comes in 8 sizes, 55,000 to 600,000 Btu/hr.

1 Carrier "Clover Leaf" does the work of 3 or 4 old-type unit heaters

Carrier's 4-way air discharge heats areas up to 104' square or corridors up to 136' long

If you're planning a new building or modernizing an old one, you can save your clients money by using Carrier's new "Clover Leaf" Unit Heaters. One of these heaters does the job that formerly required three or four old-type vertical discharge unit heaters, or four to six horizontal unit heaters.

The main difference is the unique Carrier "Clover Leaf" pattern of air distribution. It gives greater heating coverage by discharging air in as many as four directions at one time. Using all four outlets, the largest Carrier unit will cover an area 104' square. Or using only two outlets, it can heat a corridor 136' long.

Four independently controlled outlets make it easy to vary the air distribution pattern. For example, the length of blow can be extended by circulating air in two directions instead of four. There are no outlets to change. No accessories to add.

The "Clover Leaf's" extra coverage means that fewer units are needed. And fewer units mean lower first costs, as well as lower installation costs, lower operating costs, lower maintenance costs—lower cost right down the line for your clients.

For complete information on the Carrier line of Unit Heaters, look for the name of your jobber-distributor in the Classified Telephone Directory. Or write Carrier Corporation, Syracuse, New York.





One Carrier 4-Way Unit Heater, with same capacity as four old units, can heat an area 104 ft. square.



It takes four old-type unit heaters with vertical air discharge to heat this same 104 ft. square area.





Design for a modern kitchen by Huson Jackson, A.I.A.

"CERAMIC TILE MAKES THE DIFFERENCE ... EASY TO WORK WITH ... RELAXING TO LIVE WITH ... "

To help create a warm functional kitchen, Architect Huson Jackson used ceramic tile... and captured this rare combination for work-free convenience and relaxed living.

The semi-separation of the breakfast area—to the right of the ceramic tiled cooking island—affords a pleasant place for eating and relaxation. In the kitchen section an aqua tone ceramic tile wall from floor to ceiling keynotes an easily cleaned, colorful work center. The tiled counter tops and drainboards guarantee lifelong service and economy because ceramic tile won't burn, scratch or stain.

To answer the rugged demands of family living, a ceramic tile floor is used throughout—linking kitchen and outdoor patio into a single attractive living space when the sliding window wall is open. Specify a ceramic tile floor and you give your client an easily cleaned floor that lasts the life of his home.

Husm

Ceramic tile helps you offer your clients unique benefits: custom designs from standard tiles, minimum maintenance and lifetime economy. This is true whether you specialize in residential, commercial or institutional projects. You choose from a broad range of colors, surface textures and sizes. And don't forget to explore the savings made possible by adhesive installations. This type of installation is ideal for many dry wall surfaces.

The Modern Style is CERAMIC

TILE COUNCIL OF AMERICA, Inc., Room 3401, 10 East 40th St., N.Y. 16, N.Y. or Room 933, 727 W. 7th St., Los Angeles, Calif. PARTICIPATING COMPANIES: American Encaustic Tiling Co. • Architectural Tiling Co., Inc. • Atlantic Tile Mfg. Co. Cambridge Tile Mfg. Co. • Carlyle Tile Co. • Dover Ceramic Co. • General Tile Co. • Gladding, McBean & Co. • Jordan Tile Mfg. Co. Mosaic Tile Co. • Murray Tile Co., Inc. • National Tile & Mfg. Co. • Olean Tile Co. • Pomona Tile Mfg. Co. • Ridgeway Tile Co. Robertson Mfg. Co. • Royal Tile Manufacturing Co. • Sparta Ceramic Co. • Stylon Corp. • Stylon Southern Corp. • Summitville Tiles, Inc. United States Ceramic Tile Co. • Winburn Tile Mfg. Co.





For lowest cost steam generation, General Electric, Louisville, Ky., burns coal the modern way.



At American Cyanamid, Bridgeville, Pennsylvania, power system modernization saves the firm \$100,000 a year.



Burning coal the modern way at Pennsylvania RR's Juniata shops in Altoona saves \$500,000 a year.

Each year more firms



Carbide & Carbon, South Charleston, W. Va., saves \$470,000 a year in lower costs and increased efficiency.



Coal costs 40% less than the next cheapest fuel at *Pinehurst*, *N. C.* resort . . . modernized plant 33% more efficient.



Modernization at John Strange Paper Co., Menasha, Wis., reduced power costs and increased plant production 10%.

are burning coal the modern way



Modernization by *Clark Equipment Co.*, Battle Creek, Mich., supplies power for expanding production facilities, saves \$7,500 annually.



Using modern equipment, Scandinavia Belting Co., Charlotte, N. C., has increased steam capacity 150%, cut fuel costs 15% and reduced labor costs 70%.



Modernization gave Kalamazoo Vegetable Parchment Co., Kalamazoo, Michigan, increased steam with lower fuel and operating costs.



Burning coal the modern way resulted in "peak efficiency and economy" for *Garlock Packing Co.*, Palmyra, New York.

for efficiency and economy

facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar • Automatic coal and ash handling systems can cut your labor cost to a minimum • Coal is the safest fuel to store and use • No smoke or dust problems when coal is burned with modern equipment • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable. For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION Southern Building • Washington 5, D. C.



Modern Decoration, Shadowfree Lighting with Acousti-Celotex Translucent Panels

Acousti-Celotex Acousti-Lux Translucent Panels are designed to transmit high levels of illumination as they provide a decorative self-ceiling. Interflectance between sections of Panel offers efficient diffusion characteristics; above-ceiling ducts and pipes, even dirt, dust or debris, cast no shadows because of excellent light diffusion. Other Acousti-Lux features:

• Low brightness—high visual comfort • Light sources entirely concealed • A "self-extinguishing" ceiling surface; will not support combustion • Carries Underwriters' Laboratories label • Long-lasting, durable panels with dimensional stability essential for translucent ceilings • Translucent panels and acoustical tile can be combined in a layout keyed to the needs of the areas • Easy maintenance; convenient size for washing, instant removal for access to light fixtures or other above-ceiling utilities • Available in a *wide variety of attractive patterns*.



ACOUSTI-LUX PANEL—Patricia of the spaced layers of white vinyl sheeting specially developed for translucent ceilings. Provides excellent balance between high light transmission value and uniform diffusion. 24" x 24" size is ideal for installation efficiency, maintenance ease and integration with Acousti-Celotex Sound Conditioning Tile.

FOR COMPLETE DETAILS on Acousti-Celotex ACOUSTI-LUX*† and LUMICEL* Translucent Panels and Sound Conditioning Tile, write to The Celotex Corporation, Dept. A-96, 120 S. LaSalle St., Chicago 3, Illinois.



ACOUSTI - CELOTEX N.S. FAT. OFF. Products for Every Sound Conditioning Problem—The Celotex Corporation, 120 S. LaSalle St., Chicago 3, Illinois · In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec.



Durability in floor tile

If you want extra serviceability under heavy foot or industrial traffic . . . or floors designed especially to resist grease, alcohol, acids, alkalis, oils, chemicals and foodstuffs . . . Kentile, Inc. brings you the features you need, in a wide choice of decorative styles. Each of the tile types offer the added advantages of uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness, built-in_durability and dimensional stability...another reason why this is the world's most popular line of resilient tile flooring. Tile illustrated is Corktone Kentile.

KENTILE, INC. America's largest manufacturer of resilient floor tiles

KENTILE Asphalt Tile, Carnival Kentile, Corktone Kentile/KENCORK, Cork tile for Floors and Walls/KENRUBBER, Rubber Tile/KENFLEX, Vinyl Asbestos Tile, Carnival Kenflex, Corktone Kenflex/KENFLOR Vinyl Tile, also available by-the-yard/KENROYAL Vinyl Tile/SPECIAL KENTILE, Greaseproof Asphalt Tile/THEMETILE, KENSERTS, Decorative Inserts/KENCOVE, vinyl wall base/KENBASE, wall base.

LIGHTWEIGHT FIRE PROTECTION

approved by UNDERWRITERS' LABORATORIES, INC.



SPRAYED "LIMPET" ASBESTOS

Eliminate excess weight and cost, and cut construction time with Sprayed "Limpet" Asbestos used directly on steel surfaces.

Underwriters' Laboratories, Inc. has approved Sprayed "Limpet" Asbestos as a 4-hour fire retardant when applied in recommended thicknesses right to steel beams, columns, and cellular floors.

And Sprayed "Limpet" Asbestos controls sound, is an excellent thermal insulator, and controls condensation.

Write for full details on Underwriters' Laboratories, Inc. findings and for complete information on Sprayed "Limpet" Asbestos.







... and provides lifetime comfort underfoot!



All-vinyl . . . with beautiful colors going through-and-through, Amtico Vinyl Flooring is the most complete line and offers unlimited design possibilities . . . takes hardest wear for years.

America's most luxurious flooring, Amtico Rubber Flooring is the quality leader that gives your customers lifetime economy, rich beauty, cushioned comfort and fire-resistance.

Address



Also makers of Amtico Plastex Rubber Flooring World's Largest Producer of Rubber and Vinyl Floorings

AMERICAN BILTRITE RUBBER COMPANY TRENTON 2, N. J. New York Office: 461 Fourth Avenue In Canada—American Biltrite Rubber Co. (Canada) Ltd., Sherbrooke, Quebec See SWEET'S FILE, Architectural, for specifications and installation data, or mail coupon below: AMTICO, Dept. AF-5, Trenton 2, N. J. Please send me Free complete set of Samples and detailed information about Amtico Floorings.

(Please attach coupon to your business card or letterhead)

.Zone.

.State

EXCERPTS cont'd

given area of land is not, however, limited by the existence of large water sources. Artificial water bases can be filled by small streams. Basically, the artificial water bases which seem feasible are of two types: the canal base and the lake base.

Both types have advantages and disadvantages. In constructing a canal base, the engineer, by building the structure, controls the amount of water required. In an artificial lake, the terrain would usually dictate the total number of gallons necessary. It may not be possible to control flood action as effectively in the lake as in the canal. To the pilot, however, the lake would no doubt be preferable because it provides a wider landing area. Yet the 200' width of the canal runway should not be a mental hazard to military pilots. Certainly it is not as great a hazard as the pitching, narrow deck of an aircraft carrier. Moreover, the presence of a flexible, shock-absorbing runway should more than compensate for the narrowness of the landing area.

Though proved feasible, water bases would not necessarily replace conventional airfields, but would supplement them. Actually, whether or not water bases receive serious consideration will depend first of all on the operational success of hydro-ski aircraft. Even so, there remains the question of converting the traditionalminded, and whether those who have always thought of an airfield in terms of earth and concrete may be converted to the concept of earth and water.

There is no reason why an airplane cannot be designed to use hydro-skis and conventional gear interchangeably, if desirable. Canadian bush pilots have been doing this for years; in the summer they use wheels and in the winter attach snow skis to their landplanes. During thawing periods, when landing strips are muddy, the bush pilot lands on water with skis. By taxiing rapidly, he keeps the skis on top of the water until reaching a shallow place, where he allows the plane to settle with the propeller clear.

Regardless of the line of development selected or of what happens to the proposed artificial water air base, the natural water air base is coming back into use. Increasing airfield requirements are the primary reason, but there are other factors contributing to the rebirth of the water base. Basically, the seaplane has improved, whereas the landplane has retrogressed. The strength of the fuselage of modern aircraft must be as strong to withstand the stress of high speed flight as the hull of a seaplane to withstand the impact of water landing. Moreover, the weight and size of the landing gear in large planes indirectly retard speed more than do new blended hull designs. Thus, for the first time in years the seaplane can compete in performance with its landbased counterpart.

Firm

City.....



OVERHEAD DOOR HOLDERS

provide a cushioned stop...

that absorbs the shock of violent openings, avoids damage to glass, jamb, door, wall, hinges and other hardware and cuts down maintenance and repair costs.



hold the door open...

during heavy traffic—at school dismissal, factory or office "quitting" time or when the theatre lets out. Heavy wear and tear of continuous opening and closing of the door is avoided.



Wide choice of styles to meet varying budget and installation requirements.









A FAVORITE IN SCHOOL LOCKERS is this single-tier standard louvre locker—the most popular in Republic's big line. Its height and roominess provide plenty of space for garments without wrinkling. And once locked, special door construction prevents prying, assures full-time protection for possessions. Available with choice of locking systems. Lockers can stand free or be recessed as above.



DAY LIGHT YOUR CLASSROOMS with handsome Truscon® Intermediate Classroom Windows. Designed for superior light and ventilation, these popular windows are ruggedly built from specially rolled sections to provide weathertight protection, attractive appearance. Truscon makes many types of Steel Windows—all currently being specified for school construction. Send coupon for more information.



MAKE FLOORS LIGHT AND FIRE-RESISTANT with Truscon "O-T"[®] Steel Joists. This low-cost-perfoot construction provides strength and safety reduces time and labor required for erection. And it saves materials in supporting framework and foundations. Send coupon for literature describing complete line of Truscon Steel Building Products.



For your new school...or addition WHICH LOCKER SYSTEM DO YOU PREFER?

Republic Steel Lockers offer three locking systems

Combination ... padlock ... or key operated ... Republic's got 'em all-including Key-Control.

And you can have your choice of these protective systems in any one of many types and sizes of standard steel lockers for every conceivable storage requirement.

Through more than 65 years, Republic's Berger[®] Division, the world's biggest manufacturer of lockers, has completed more installations than any other maker. Here is experience you can always depend on when you want the best in lockers.

Berger offers school administrators and architects a complete planning and installation service, too. A service which supplies technical planning and engineering assistance, then assumes full responsibility for proper installation—right down to the final bolt. Get all the facts from your Berger representative, or send coupon for booklet giving details, specifications and prices.



3108 East 45th Stre	eet, Cleveland 27, Ohio
Please send more in	formation on:
Republic Steel Loo Tru	iscon "O-T" Steel Joists
. Liro	iscon 0-1 Steer Joists
Name	
Company	
Address	
1001033	
Address	





KILNOISE mineral acoustical tiles

... the only all mineral, acoustical tile which is attractively colored — *throughout*. Available in bright white, too!

Kilnoise mineral acoustical tiles feature outstanding beauty, maximum noise absorption, high light reflectivity and dimensional stability (Totally unaffected in tests of 17 days — 100% humidity — 110° F.).

No heavy fissures . . . no drilled holes . . . Kilnoise ceiling tiles have a soft swirl pattern which enhances any room. Easy to install by all methods, Kilnoise tiles are also pre-primed for positive adhesion.



When you're considering mineral tiles, ask your applicator for a Kilnoise quotation. You'll be pleasantly surprised!

Write for descriptive booklet 39-B.

NEW ENGLAND LIME COMPANY Adams, Massachusetts PUBLISHED BY TIME INC. EDITOR-IN-CHIEF: Henry R. Luce PRESIDENT: Roy E. Larsen

architectural FORUM

the magazine of building

EDITOR: Douglas Haskell, AIA MANAGING EDITOR: Joseph C. Hazen Jr.

ART DIRECTOR: Paul Grotz

ASSOCIATE EDITORS: Frank Fogarty, Marilyn Grayboff, Jane Jacobs, Mary Jane Lightbown, Walter McQuade, AIA, Richard Saunders, Ogden Tanner, Stephen G. Thompson

ASSISTANTS: Anne Le Crenier, Dorothy Stone O'Shea, Henry Martin Ottmann, Ann Wilson

ART STAFF: Ray Komai, associate director; Martha Blake, Charlotte Winter

CONSULTANTS: Miles L. Colean, FAIA, Carl Feiss, AIA, Harold R. Sleeper, FAIA

GENERAL MANAGER: Charles B. Bear

ADVERTISING DIRECTOR: Herbert C. Bippart

ARCHITECTURAL FORUM is published monthly by TIME INC., Time & Life building, 9 Rockefeller Plaza, New York 20, N.Y.

Plazz, New JOR 20, 4.1. SUBSCRIPTION DATA: Sold to architects, engineers and other individuals or firms engaged in building —design, construction, finance, realty: material distribution, production or manufacture; government agencies and supervisory employees; commercial and industrial organizations with a building program and their executives; teachers and students of architecture and engineering; libraries, professional clubs, society and trade associations connected with the building industry; advertisers and publishers: US, possessions and Canada, \$5.50: elsewhere, \$10.00. Single copies, if available, \$1.

SUBSCRIPTION CORRESPONDENCE should be addressed to ARCHITECTURAL FORUM, 540 N. Michigan Ave., Chicago 11. Ill. When ordering change of address, please name the magazine and furnish an address label from a recent wrapper envelope, or state exactly how the magazine is addressed. Both the old and the new address are required. Allow four weeks for the change.

EDITORIAL CORRESPONDENCE should be addressed to ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y. FORUM will not be responsible for unsolicited manuscripts or illustrations submitted, and it will not return such material unless accompanied by postage,

ADVERTISING CORRESPONDENCE should be addressed to the advertising director, ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y.

TIME INC. also publishes TIME, LIPE, FORTUNE, SPORTS ILLUSTRATED and HOUSE & HOME. Chairman, Maurice T. Moore; President, Roy E. Larsen; Executive Vice President for Publishing, Howard Black; Executive Vice President and Treasurer, Charles L. Stillman; Vice President and Secretary, D. W. Brumbaugh; Vice Presidents, Bernard Barnes, Allen Grover, Andrew Heiskell, C. D. Jackson, J. Edward King, James A. Linen, Ralph Delahaye Paine Jr., P. I. Prentice; Comptroller and Assistant Secretary, Arnold W. Carlson.









THE ARCHITECT designs Stainless Steel into windows, kitchens, work surfaces, ovens and other important places because he knows there is nothing like Stainless for clean, lasting beauty.

THE BUILDER has had long experience with Stainless Steel. It's easy to install, does not chip or peel, and its beautiful finish presents no problem on matching or replacement.



the owner likes living with Stainless Steel. It's always gleaming and beautiful, cleans with a wipe, and lasts forever. And, to complement her kitchen she loves to own those shiny pots, pans, tableware, and appliances, all made of Stainless Steel.

McLouth Stainless Steel

FOR THE PRODUCT YOU MAKE TODAY AND THE PRODUCT YOU PLAN FOR TOMORROW SPECIFY MCLOUTH HIGH QUALITY SHEET AND STRIP STAINLESS STEEL.

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



100,000 amps gets a new bossthe Westinghouse Tri-Pac breaker

The Westinghouse Tri-Pac breaker is the smallest protective device that can be used where 100,000 amps can be poured into faults. It combines the inherent advantages of both the molded case breaker and fusible current limiters to positively protect electrical circuits—throughout the range from overloads to fault currents that could build up to 100,000 amperes, if not stopped.

Co-ordinated triple circuit protection—thermal, magnetic, and current limiting in one compact breaker. At much less cost than larger air circuit breakers of equivalent ratings and with more safety and convenience than switches combined with fusible elements. That's why Tri-Pac offers the most practical and economical solution to the constantly increasing interrupting requirements of network systems and those fed by large transformers.

The breaker trip portion of Tri-Pac handles overloads and moderate faults eliminating fuse replacement headaches and costs. On higher currents, the current limiters in Tri-Pac trip faster, insuring the prompt protection required at those high currents. In Tri-Pac the current limiters and the breaker are co-ordinated so that the current limiter will trip at and above a point slightly under the interrupting capacity of the breaker. Below that point, the limiters remain undamaged, letting the breaker do the work.

Fault single phasing—a drawback of fuses—is averted by Tri-Pac breakers. The blowing of a current limiter actuates the breaker trip bar and all poles of the breaker open simultaneously. And when a high fault current is interrupted, indicating buttons on the current limiters clearly designate the troubled phase.

NETWORK SYSTEM PROTECTION

With today's increased use of network systems, the possibilities of 100,000-amp fault currents are not uncommon. New Tri-Pac breakers insure positive protection against all system current faults—large or small—at a new and greater economy.

HERE'S MORE INFORMATION ON TRI-PAC

A Westinghouse sales engineer can show you additional reasons why the new Tri-Pac breaker is your best buy for powerful circuit system protection. Call him today. J-30215

WATCH WESTINGHOUSE!

COVER THE PRESIDENTIAL CAMPAIGN ON CBS TV AND RADIO!

HOME OFFICE BUILDING MUTUAL BENEFIT LIFE INSURANCE CO. BUILDING, Newark, N. J. ARCHITECT: Eggers and Higgins, Architect CONTRACTOR: George A. Fuller Co.



KAWNEER METAL WALL engineered, manufactured and installed by Kawneer

Other Kawneer metal wall jobs:

Tishman Buildings, Los Angeles Equitable Life Building, San Francisco Insurance Exchange Building Oakland

Imperial Oil Co., Sarnia, Ontario Newark Center Building, Newark Kalser Aluminum, Ravenswood, W. Va. From engineering through installation, Kawneer takes the complete responsibility for every metal wall contract. Years of creative engineering and production in the field of architectural metals has culminated in a new service for architects and contractors. This Mutual Benefit Building is an example of Kawneer's ability to combine many integrated skills into one department to service the contractor's needs. This department consisting of sales engineers, construction engineers, production men and installers, is another example of how Kawneer can gear itself to the needs of its customers. For complete information, please write: METAL WALL DEPARTMENT, Kawneer Company, Niles, Michigan.

Write for folder describing Kawneer services and metal wall jobs.







... when you specify NICHOLSON Toilet Compartments

There's no need for your installation charges to get out of line. Nicholson Toilet Compartments are designed and constructed for rapid assembly and easy adjustment to location contours.

- All panels and pilasters pre-drilled, with provision for vertical and horizontal adjustment.
- ✓ All hardware locations are pre-drilled and finished.
- Pilasters and front panels are shipped as assembled units.

you can count on quick delivery, too!

There's no delay in shipment . . . because Nicholson Toilet Compartments are stocked in standard sizes and colors for fast "from stock" shipment. For serviceability and service . . . plus minimum field erection costs . . . specify Nicholson.



Specify right from this new Nicholson "tell-all" bulletin!

Contains complete specifications, illustrations and engineering drawings...facilities, styles, construction, layouts and hardware. Send for a copy today!



14 OREGON STREET, WILKES-BARRE, PA. . SALES AND ENGINEERING OFFICES IN 98 PRINCIPAL CITIES

NICHOLSON

ECONOMICAL GYPSUM ROOF DECKS AID VERSATILE DESIGN THINKING

Adaptable, fire-protective system meets rigid performance requirements

From Coast to Coast, U.S.G. Roof Deck Contractors are ready to apply the new materials and assemblies described here. Each of these competent, financially-responsible business organizations operates with a modern fleet of specialized equipment, skilled supervisors and crewmen to assure quality workmanship. For details on U.S.G. gypsum roof deck, see Sweet's Section $\frac{2 \cdot e}{Un}$.

UNITED STATES GYPSUM

the greatest name in building

YPSUM



INSULATING AND ACOUSTICAL PROPERTIES are found in a new, lightweight, incombustible mineral-fiber formboard called PYROFORM*. Used in combination with PYROFILL gypsum concrete, it can mean considerable savings in construction costs; economy in heating or cooling. PYROFORM-PYROFILL roof decks have a U factor of .16; an N.R.C. rating of .75. Boards are sized to suit job needs.



FIREPROOF ROOF DECK being applied here is PYROFILL* incombustible gypsum concrete, adaptable to flat, curved or pitched roofs; practically any design. PYROFILL is strong, durable; it pours in place over



permanent formboards at low cost. A single crew can pour from 20,000 to 30,000 sq. ft. per day ready for roof covering; sets within an hour to carry normal loads. Fire insurance premiums are often reduced substantially, because PYROFILL *Roof Decks fear no fire*.

*T. M. Reg. U. S. Pat. Off.

Creative materials for creative architecture



FINISHED ACOUSTICAL CEILING is part of the roof deck construction when you specify USG® Acoustical Formboard, made of a durable wood-fiber insulation board. Underside is slotted and finished in white, forming a beautiful acoustical ceiling. N. R. C. rating is .65 for No. 4 Mounting; light reflectance is 78%.



For complete information on the products shown here, fill in this coupon and mail to United States Gypsum Company, Department AF-64, 300 West Adams Street, Chicago 6, Illinois.

Roof Decks	Architects' Serv-
D PYROFORM Insulating Formboard	tive or Industrial Sales Engineer
USG Acoustical Formboard	call on me
NAME	
(Please print)	
FIRM	
ADDRESS	

CITY____

_STATE____



At the St. Louis Municipal Airport Terminal

TRAFFIC "FLIES" **TOO**

through STANLEY AUTOMATIC DOOR OPENINGS

The ease and speed with which traffic (travelers, employees and cargo) passes through the St. Louis Terminal's 38 entrance, exit and service doors, operated by Stanley Magic Carpet or Magic Eye (photoelectric) Controls is readily apparent. Less obvious but equally important — is the dependable operation and low-cost maintenance of these Stanley Magic Door Controls.

Consider Stanley Magic Door Controls for the next building you design. Stanley Magic Carpets are now available in a range of attractive, weather-fast colors - Clinton Gray, Grove Hill Green, Russell Blue and Standard Bailey Brown. Choose the color which will most effectively enhance the architectural design of your building.



Stanley Magic Carpet Controls open doors automatically to make passage through terminal entranceways pleasantly easy, whether travelers (about 1,200,000 yearly) carry only briefcases or armfuls of luggage.



WRITE FOR FREE MAGIC DOOR CONTROL CATALOG A.I.A File No. 16-D and LITERATURE ON MAGIC CARPETS IN COLOR.



Stanley Steel Strapping . Stanley Steel

Stanley Tools . Stanley Hardware . Stanley Electric Tools

MAGIC DOOR DIVISION THE STANLEY WORKS DEPT. I, 1002 LAKE STREET NEW BRITAIN, CONNECTICUT

Representatives in principal cities.

Thanks to Stanley Magic Carpet Controls between kitchen and dining room, service to in-a-hurry diners is speeded up, kitchen noises and odors do not enter dining area. Sliding doors at food service entrance, through which food containers move to and from planes, are operated by Stanley Magic Eye Controls.



Movement of baggage trucks between planes and terminal is accelerated by Stanley Magic Eye Controls that open doors automatically, making it unnecessary for drivers to stop, leave trucks and open and close doors manually.

This brand name

also brings you...

West Coast Hemlock

Those who use it call it the "Ability Wood" because of its versatility

• Consider this . . . of the commercial woods used in the United States, West Coast Hemlock ranks as one of the first five in volume produced.

WEYERHAEUSER

4-SQUARE

... as Dimension ... Weyerhaeuser 4-Square West Coast Hemlock is produced in stress grades that include 1600 f Select Structural, 1500 f Construction and 1200 f Standard. Where stress properties are not required, other grades of dimension are available.

... as Boards ... Weyerhaeuser 4-Square West Coast Hemlock is used for sheathing ... and for other applications where good boards are required.

... as Flooring ... Weyerhaeuser 4-Square Hemlock flooring offers a fine uniform, even toned texture, a light color and freedom from pitch. Its long tough fibers have a tendency to mat together, to provide a floor that hardens with age. Hemlock is known as the "hard softwood" flooring.

... as Bevel Siding, drop siding, ceiling, finish, paneling or molding, Weyerhaeuser 4-Square West Coast Hemlock is a practical wood for interior or exterior application.

You can rely on West Coast Hemlock as processed by Weyerhaeuser. You can depend on it as a fine building species in ready supply. Weyerhaeuser has vast stands of this abundant utility wood . . . and the research facilities, dry-kiln capacity, and skills to make Weyerhaeuser 4-Square West Coast Hemlock one of our most beautiful and useful softwoods.

Weyerhaeuser Sales Company

ST. PAUL 1, MINNESOTA





TONTINE[®] flame-resistant vinyl drapery material for darkening <u>and</u> decorating classrooms

Now you can specify an opaque drapery material that complements the décor of rooms used for audio-visual work. "Tontine" flame-resistant vinyl drapery material comes in a selection of attractive patterns and colors on its textured side (see diagram) and in neutral beige on the smooth side facing the window. Soft and pliable, drapes of this new fabric gracefully draw up into minimum space after use. And there's no "boardiness" in low temperatures, or "tackiness" in high.

EXCELLENT SERVICE ADVANTAGES

Although Du Pont "Tontine" is of a weight and softness designed to drape gracefully over large expanses, it withstands rough handling and possesses balanced resistance to deterioration, discoloration, shrinking and stretching. Its flame-resistant characteristic is equal to that of "Tontine" triplex window shade cloth, which has passed every governmental test it has undergone. For free samples and specifications, mail coupon below.





Base fabric is high-grade cotton, coated with virgin vinyl resins formulated to impart permanent flame resistance. Black pigmented vinyl gives opacity. Vinyl coat on one side has embossed textile design.



BY 1976 WHAT CITY PATTERN ?

The US is heading into a growth crisis, the like of which was never seen before. It is an unprecedented crisis simply because we are an unprecedented nation of centaurs.

Our automobile population is rising about as fast as our human population and promises to continue to for another generation. Since 1946 we have added 24 million humans, 26 million car registrations. In 20 years we shall have 56 million *more* people—and conservatively figured, 50 million *more* passenger cars in use.

Right now every human in the US commands an average of 12 acres. Seven raise food for him, leaving an average of five for all other purposes. Optimistically assuming that the same farm acreage supporting 162 million people now will support 218 million in 20 years, the average acreage per person for all other purposes will drop about 20%. And because asphalt will not grow potatoes, the pavement that will be demanded by two cars for every one we have today will have to come out of that other-purpose acreage. There's the rub. For the car is not only a monstrous landeater itself: it abets that other insatiable land-eater—endless, strung-out suburbanization.

Our old way of figuring density by so many persons per square mile has now become irrelevant. The crucial figure for US planning is now density of cars. For some time this has been true, though little recognized, for cities. Traffic and all it means is the key factor in urban renewal. Now we must recognize that this renewal is only part of an over-all pattern of urbanization taking in spaces far beyond, and between, the old cities. Cities used to be an incident in countryside; now countryside is become an incident in City.

The last ten years have given us an unholy mess of land use, land coverage, congestion and ugliness. This is nothing to what the next twenty promise. Barring annihilation, deep depression, or a more tractable invention supplanting the automobile, we have no way to avert this crisis of growth, no choice but to face it and try to civilize it. Somehow. And not much time to do it.

As a people, we are not too well prepared for physical planning to these dimensions: we are short on a philosophy for it, on laws, effective agencies, techniques. We rely mainly on the boundless energy and adaptivity of the nation. It would be presumptuous of FORUM's editors to pretend they had answers. But one element can now be supplied: a picture of what is happening, a picture of some of the things that seem to be trying to happen—constructive things, involving useful new expedients. It is as an eye-opener that this issue is intended.



This novel argument says "forget the old city" because 1976 will see new cities of up to a million people in today's countryside. This provocative concept sets off FORUM's discussion of the city pattern to come.

FIRST JOB: CONTROL NEW-CITY SPRAWL

BY CATHERINE BAUER*

People who look to urban renewal to solve our city problems for the next 20 or 25 years have been fast asleep, ignoring the inevitable impact of population growth and metropolitan expansion. No one knows exactly how many additional Americans there will be by then, or where they will live, but a reasonable guess looks something like this:

Between 1955 and 1975, as the table on p. 112 shows, the population of the US will probably shoot up by 56 million people, or 35%. Look forward to 1976, two hundred years after the Declaration of Independence, and consider what that is likely to mean:

▶ 55 million more people will be living in the so-called "standard metropolitan areas," an increase of more than half. In the West, many metropolitan areas will probably double. In other parts of the country, too, the outward push will carry far beyond the limits of the standard metropolitan areas as now defined. (The figures here assume that future population increases will simply repeat the distribution pattern of 1950-1955 growth. If long-term trends were projected ahead, an even more fantastic prospect would confront us.)

> 9 million of these 55 million new people may try to squeeze themselves into the big central cities, which already have little open land to offer. Some people are bound to be turned away, unless: 1) there is tremendous annexation, which seems unlikely, if not impossible; or 2) there is wholesale residential redevelopment at much higher densities than now prevail in blighted areas.

> The overwhelming majority of the newcomers—at least 46 million of them and probably more—will veer from the central city to the fringe. The result: suburban population, on the average, will double; in areas where the growth trend is particularly strong, it will quadruple or more. The rural fringe, that giant sponge which has absorbed more than half the suburban development of the past five years, will attain a degree of scatteration unknown today.

These figures point to a staggering prospect. But, even more, they underscore a glaring inconsistency, one that is perhaps the most notable shortcoming of American planning today. Confronted with continuous outward expansion—with the vista of cities where today there are only farms and vineyards—planning seems to rivet its attention squarely on yesterday.

For all its dedication to the principle of growth and expansion. America, in its city planning, is still mainly oriented to fixing up the past, rather than shaping the future. Billions are spent, and the most ruthless powers granted, for reconstruction: clearing slums and rehousing slum dwellers; redevelopment and renewal of blighted areas; reorganization of congested traffic routes; replacement and redesign of obsolete facilities; the creation of parks and playgrounds, all at tremendous cost, in built-up districts. But the challenge of tomorrow-the shaping of the metropolitan community that must provide for 46 million more Americans outside our central cities-goes unheeded, by and large. Most new development continues to take place outside the jurisdiction of responsible local government or of wellstaffed planning agencies. Growth in the hinterland just happens-shaped, in the main, by fate, the ad hoc decisions of individual developers, and the narrow financial concerns of the Federal Housing Administration and the lending agencies.

To be sure, many suburban communities, once they are incorporated, do try to control their future destinies. But this often means merely a desperate effort to keep out "undesirable" people and activities, regardless of any broader regional requirements or possibilities. And weak county governments, intended for minimum rural services, can hardly be expected to handle the urban flood effectively. Some metropolitan counties have had their powers strengthened and have become increasingly planning-minded. But even here, zoning and other controls are too often cast to the winds as soon as pressures become serious.

The rising metropolitan problems force some areawide attention, yet even at this level there is more concern for remedying past mistakes and present emergencies than for the shape of things to come. In a few areas—notably Cleveland, Atlanta and Detroit—regional planning agencies are taking some pioneering steps. But nowhere in the US is there a metropolitan

^{*}Catherine Bauer (in private life the wife of Architect William Wurster) is now in the Dept. of City & Regional Planning of the University of California, is author of the classic, *Modern Housing*.



government structure (as there is in Toronto) capable of effectuating a regional development plan, however carefully it may have been prepared.

So the same old mistakes are made, and the same old problems continue to develop on an ever broader and more insoluble scale, assuring continuous employment and ever higher appropriations for replanners and redevelopers—but with little progress toward doing it right the first time.

The big mistake

This addiction to make-over-which might be called the fix-up fallacy in our city planning-goes back, I think, to the thirties, when the present wave of interest in housing and civic improvement was born, and when present policies began to take shape. This was the moment when the demographers made their big mistake. Looking at what proved to be a temporary fall in the birth rate, they preached a gospel of approaching "population stability." Cities would grow only a little, if at all, and the vulgar boosterism of the twenties, with its indefinitely extended curves of future urban growth, was passé. The "mature economy" idea was a corollary, and the civic reformers followed suit. From now on, urban improvement would be mainly a matter of replacing and humanizing and rendering more efficient what had been done before. Reform, rather than new form, would be the keystone.

The wartime boom in babies caught us unaware, but we thought it would be temporary. Now we know it wasn't, but we still haven't learned to think boldly in terms of future growth, and the needs and possibilities it opens up. Here we are, focused on old central areas, with a tremendous kit of tools for reconstruction, while the vast flood of new urban development flows beyond our view, all around our chosen island. The wave mounts and mounts, and though the demographers could be wrong again about the future, it is less likely this time, and there is certainly no sign yet of a reversal of current trends.

With such a fantastic volume of metropolitan growth ahead, it would be only prudent and businesslike to consider the possible alternatives for future metropolitan structure and population distribution. At this scale, and in view of the shifting forces and potentialities in our burgeoning society, the most extreme ideas may not be wholly impractical. Moreover, to test and modify extreme hypotheses may well be the only approach with any practical or scientific merit.

For a serious comparative analysis of the various city patterns, a great deal of systematic research would obviously be necessary in order to determine and weigh the factors involved. All I can do here is suggest a kind of rough outline and append a few personal comments, without the supporting evidence on which my judgments are based. If others are stimulated to differ, or to do better, splendid. (Indeed, we are undertaking a more systematic study in this field at the University of California and would welcome any ideas or arguments.)

There has been a long succession of highly variegated proposals for the ideal city, and at least four of them retain some contemporary significance: 1) the original Garden City "decentrist" idea of the small, self-sufficient community, as amplified in regional terms by Lewis Mumford and Clarence Stein and exemplified in Alfred E. Smith's New York State Planning Commission report of 1926; 2) Frank Lloyd Wright's Broadacre City, of which Buckminster Fuller's ideas are a mechanized space-man version, and present-day Los Angeles a primitive or vulgarized reflection; 3) Le Corbusier's Ville Radieuse, the technocratic skyscraper city Utopia reflected piecemeal in the philosophy and in much of the work of Walter Gropius, Mies van der Rohe, and many of the public housers and redevelopers (particularly Robert Moses, however bitterly he might scorn the association); and 4) the British adaptation of the Garden City idea to New Towns, a satellite formation around an old metropolitan center.

How do these schemes stack up, in terms of current trends, needs, desires and possibilities?

The Garden City. Is it conceivable that we could follow the original Garden City decentrist line today? Could the impending metropolitan flood be diverted into a network of independent small cities entirely removed from the present urban concentrations?

Despite all the social and civic arguments, which are still quite impressive in certain respects, I doubt that it could be done. And the reasons go beyond the question of political feasibility or the power of vested interest or vestigial attraction. In our complex world, with its tangle of necessary contacts and specialized but interdependent operations, there seem to be some pretty basic economic and cultural reasons why large numbers of people with highly varied activities should be associated in some kind of center or related groups of centers. Granted, the feasible area for such association is a great deal larger than it used to be. But it is not yet to infinity, or even to the area of a large state such as California. Like it or not, the fact remains that metropolitan agglomerations, in some form, seem not only justified but actively desired.

There are, of course, many different arrangements for the urban center that are at least theoretically possible. And it would seem that there is little strict economic compulsion favoring one pattern or structure over another.

This may sound like heresy to the economists, but how else can one explain the contrast between New York and Los Angeles? At opposite poles of density Utopia No. 1: The British Ebenezer Howard thought along decentrist lines. His model for living was the Garden City, and applied by Clarence Stein and the late Henry Wright to Radburn, N.J. (pictures), it was widely heralded as "the town for the motor age." Main traffic bypassed the city; the local streets moved in lazy circles around the residential superblocks. The houses themselves were ranged along culde-sacs and faced upon green strips. These led to a wandering pedestrian park. Along Radburn's paths, children could walk and skip to school, free from traffic, and whisked across the streets by underpasses. What has happened to Radburn shows all too clearly in the bottom picture. FHA fringetown has surrounded it with a maze, which has practically nothing left for pedestrians, no apartments to vary dwelling accommodations, no community organization, no greenbelt, no provision for industry or commerce. It looks like a caricature of the Radburn idea by a not-verybright group of schoolboys.







Utopia No. 2: Frank Lloyd Wright's vision of the model city is Broadacre, a ruropolis where each family has its acre of land, and all live within walking distance of work and pleasure. Wright calls it "integrated . . . living related to ground," and there is no doubt the plan is the most agrarian ever conceived (the white dots on the model show how far apart individual homes would be). In place of a common center, Broadacre City has neighborhood food and manufacturers' markets; traffic moves in a bypass, and the great roads exist only to separate and unite the whole. Wright's highly ordered countrycity has never left the model table. But its principle has been perverted everywhereas the typical suburb (picture, right) shows. Gone is Wright's organization. What is left is neither city nor country, only aimless scatteration, congestion and needless waste.




and centralization, the two areas evidence the most flourishing economic growth in the US—despite extreme congestion in one and extreme scatteration (not to mention smog) in the other. This fact—that there is so wide a range of workable economic patterns for the city—may be one of the reasons for our unsolved problems of modern urban organization. Economic determinism is always much simpler than responsible public decision.

The Anti City. The ideal of Frank Lloyd Wright is a kind of agropolis—an acre per family; factories, offices, shops, and community facilities set in the fields; communication only by automobile. Bucky Fuller, with his flying house and mobile environment, would go still further and create a nomadic noncity so completely removed from traditional urban and community values that it is hard to visualize (indeed, I think he has never tried it in regional terms).

But even if one hates cities and all they stand for, and loves only the soil with Prophet Wright, or freewheeling space with Prophet Fuller, the truth is that in our gradualist democratic world we have to approach Utopia by degrees. Most of the land will be developed not by Wrights and Fullers but by ordinary builders, lenders, subdividers, and architects, operating under whatever bureaucratic restrictions currently prevail. New ideas are extremely important, because all factors are subject to constant change and influence. But, sooner or later, theories have to be tested in the lowly vernacular of everyday practice.

In this sense, the present picture of rurban scatteration in southern California—or for that matter in most fringe areas East or West, North or South—comes close enough to the noncity, or anticity, ideal to make one question its validity. Even when brought down to 60foot lots is it really a step toward an ideal community, or merely endless rurbanization with no character at all? Even where there is acre zoning, is it really more rural?

If the next several million people south of the Tehachapi Mountains* are scattered even more widely than the last wave, won't everyone have to spend all day driving from one place to another, with no time left over for working or education, or for tending their acres? All our present overwhelming problems of servicing such areas will be multiplied tenfold, and the countryside, that vague ideal for which we have sacrificed all else, will have moved out into another state. Against this, we would have none of the traditional urban virtues to console us. For rurbanization is the kiss of death for city and country alike, as anyone who has been in California recently can attest. Although the goal is personal and family freedom, cum natura, it doesn't quite work out that way.

*In California, roughly 40 mi. north of Los Angeles.

Perhaps "Bucky" can solve all this by the year 2,000 —but hardly, I think, by 1976.

The Super City. At the opposite pole from Fuller is Le Corbusier, whose technocratic Utopia is collectivist, rather than individualist. Impersonal order, not personal freedom, is the keystone. Hence the highly refined and articulated skyscraper city, organized like a great factory complex or cosmic beehive, imposing an external rationale on its inhabitants.

It is certainly true that high-rise, high-density buildings, if they could accommodate most of the living and working requirements of 55 million more metropolites, would make it far easier to solve the problems of communication and service. At the same time, we could save enormous areas of open space for public recreation and agriculture. Should we then get busy and apply central skyscraper production on a much wider scale?

The first thing we have to know is how much of the anticipated population increase we could take care of this way. Let us assume that about one fifth of the people now living in urban sections of metropolitan areas are in slums or badly blighted districts. Assume, too, that we will reconstruct all these districts in the next 20 years, a fantastic step-up in the present slow and miniscule redevelopment program. But even if we were to double the present density in these areas, by utilizing high-rise structures almost exclusively, we could take care of only about 17 million more people, not allowing for their work places and other facilities. The other 38 million would still have to be housed on new land in outlying areas, whether in skyscrapers or not. So even the most tremendous Corbu-oriented redevelopment program imaginable would not relieve us of the suburban planning problem.

In any case, how many families really want to live in skyscrapers, even with the promise of much greater convenience?

We have the laboratory already, in a number of central reconstruction projects from Mies in Chicago to Moses in New York. What the record suggests so far is that the popularity of high-rise living, even among the lowest-income groups which can't get decent housing in any other form, is surprisingly low.

Obviously, a limited number of high-rise luxury and middle-income apartments can be marketed, particularly in cities that have had little modern multifamily construction. But generally American families, even those without small children, will make a considerable sacrifice to live in ground-level dwellings with private yards, and there seems to be good and sufficient reason in terms of family habits and values for this. One would gather from the surveys that as soon as people can find a small house suitable to their needs, most of them take it.

Perhaps some adult households, particularly those



made up of older people (who will be increasing in number) and of young couples, will find apartment living attractive if it offers real convenience in location, as well as gadgets. And perhaps families with children can be persuaded to realize that most of the functional qualities they seek can be provided in that other central-city expedient—well-designed row or group houses at intermediate densities—quite as well as on 60-foot lots. But a great rush for skyscraper living on any terms seems highly unlikely.

The New City. Another hypothesis for metropolitan organization is the New Towns concept. In England and Scotland, a number of entirely new industrial communities have been constructed in the hinterland of large metropolitan centers. These communities are part of a program to move people and business out of the overcongested central areas and, at the same time, to save some countryside for food production and general amenity. This program has impressed a great many people all over the world, mainly because it seems to offer a means of achieving relatively low densities without scatteration, and greater efficiency, convenience, and urbanity without solid skyscrapers.

The trouble is that this British program does not really fit American needs. In the first place, we are not merely concerned with a little overspill from congested central areas. What we need is a scheme and policies that will take care of 55 million additional urbanites, most of whom are going to settle in the metropolitan hinterland whatever is done with the old centers.

Therefore, even if we had the power to construct new towns entirely by public initiative (as is being done in Britain and as was done with our Greenbelt Towns), a handful of model community projects would be almost meaningless in relation to the scale of the problem. Moreover, insofar as design and construction are concerned, our best private builders could do most of the job quite as well as any American public agency, provided a broad scheme for regional development had been properly established in the first place.

The size of the British communities can also be questioned from our viewpoint. At present, we are tossing out into the countryside all the elements of major urban centers. If, in the next wave of development, we want to pull these elements together into real cities, while at the same time saving some real rural areas within the metropolitan region, we should probably think in much larger terms than the 30,000-60,000 population standard of the British towns.

The New Towns are hardly big enough to achieve the real virtues of bona fide cities today. Nor can they support the varied population and specialized facilities needed to achieve anything like urban self-sufficiency, even for ordinary daily activities. Within the great metropolitan complexes of California—San Francisco-San Jose–Sacramento and Los Angeles–San Bernardino–San Diego—with perhaps 6 million or 7 million people to be added in a few decades, we might well consider the possibility of new urban centers of a half million or so. Certainly, some of the cities should be large enough to support real office centers, as well as to provide varied industrial employment, full community services, and all price levels and kinds of housing—including the intermediate-density types now ignored by both the rurban-minded tract builder and the supercity-minded redeveloper.

For most people, the journey to work would be only a short drive within the same community. Some might even walk, if they are still able to. But at the same time, because these cities would be much more compact than suburbia, rapid transit systems would be feasible to encourage easy intercommunication among all the centers, new and old. Scatteration tends to make efficient mass transit impossible. (In a way, the new pattern would be only a reversion, though in larger, modern terms, to the old system of railroad commuting, with separate communities set in open country.)

Identity restored

The new cities could be located quite far beyond the present outer rim of sprawl and speculation. Thus, they could offer some hope of preserving real agriculture and open space between, not only for profit, recreation, and general amenity, but for restoring that sense of visual and social identity which our present shapeless, endless, overlapping communities so obviously lack. Location would consider not only railroads, water and other economic relationships, but also the avoidance of specially rich or desirable agricultural areas. Napa County in northern California, for instance, with its unique and beautiful vineyards producing some of the best wines on the continent, should be high on the conservation-priority list.

The relationship between old and new cities could vary under different conditions. New York and San Francisco–Oakland would probably continue as dominant centers for their whole regions. In southern California, however, one might expect a constellation of more equal centers, each with its own special functions in the manner of Stein's regional city concept. But in any case, local government could be strong and efficient, supported by an adequately balanced economic base. And it might be added that such a network of substantial, but human-scale, cities could solve their common problems by some kind of loose federation, rather than the all-powerful metropolitan behemoth that must sooner or later supercede local government if our present chaotic sprawl is extended much further.

Culturally, in such a frame, we might even begin to re-establish some of the traditional cosmopolitan virtues

Utopia No. 3: At the opposite pole from Wright and the decentrists is Le Corbusier with his model for the Super City. His "voisin" plan for Paris (circa 1930; picture, right) was an early stage in his thinking. But it embodied many of the principles he later refined: the skyscraper dwelling; the surrounding park; the separation of pedestrian and auto. Almost every big city today has vulgarized this concept. In Manhattan, for instance, the towers of Corlears Hook are set in a green (picture, below). But the towers are dropped helter-skelter, the green space around them is shapeless, and there is no sign of the relief that Corbu built into his plans with lower buildings that formed semicourts.





of urban life which are now lost in the stupid village ideology and class-race exclusionism practiced in suburbia.

But even if most people agreed that this would be a sensible pattern for the shape of things to come, is it mere Utopian dreaming to suggest that this or any other predetermined scheme for future metropolitan organization could be achieved?

Well, it would certainly take some tools and policies that have not yet been fully developed. Still, the necessary public powers would be much less ruthless and costly than those already available (and entirely respectable) for central redevelopment. Public land acquisition should not be necessary, and any initial capital outlays would be returned many times over in tax income later on. The concept of city planning, effectuated by zoning, subdivision control, and the careful location of public works and community services, is fully accepted almost everywhere. It would simply have to be applied at a much broader regional level and be geared to bold and positive criteria for future metropolitan structure. When we are as widely convinced of this necessity as we are of the need to remedy downtown blight and congestion, we'll find the tools to work with.

Right now, in some of the metropolitan planning efforts, the big alternatives for future regional development are beginning to be seriously weighed. Cleveland and Atlanta are concerned about "sprawl." The Bay Area Rapid Transit Commission wants strong subcenters. Several areas are considering the implications of defense dispersal. Traffic planners are more and more concerned with minimizing the need for transportation. The Detroit Metropolitan Area Regional Planning Commission has "explored the suitability and desirability of three basically different patterns of possible regional development: Continued Urban Sprawl . . . Corridor Development . . . Satellite Communities."

The whole question of governmental reorganization at the metropolitan level is rapidly becoming a major national issue. The states are already forced to intervene in numerous metropolitan problems, and state planning has taken a new lease on life after a long hibernation since the New Deal. In some states, particularly California, agricultural conservation is a mounting political issue, with county zoning efforts leading to questions of statewide tax policy, etc. In certain counties the planning function has been strengthened to a point where positive initiative and controls for new city development are not inconceivable. At the local level a hopeful example is the new California city of Fremont. With 25,000 people in half a dozen small communities, but with an area of almost fifty square miles, Fremont has the ambition to become a real city and, at the same time, to save a belt of agriculture and wilderness.

Everywhere, it is increasingly recognized that the pattern of urban expansion is positively shaped, for better

JANUARY 1, 1976:

ON 1955 vivilian) ¹	POPULATI		AREA	AREA
% of total	Number			
100.0	1,461,000	16	U.S.A.	U.S.A.
59.0	95,304,000	OPOLITAN AREAS	STANDARD METROPO	STAND
31.6	51,023,000	s in SMA'S	Central Cities in	
17.5	28,236,000	ge	"Urban" fringe	
9.9	16,045,000	ge	"Rural" fringe	
41.0	66,157,000	POLITAN AREAS	OUTSIDE METROPOLI	OUTSI
14.9	24,217,000		Urban	
26.0	41,940,000		Rural	

¹ US Census, Series P-20, No. 63.

² "Population Trends in the US through 1975," Stanford Research Institute, August, 1955. Distribution assumed to be in the same proportion, by type of area, as for the 1950-1955 increase.

³ These figures include the same deduction for noncivilians made in Census estimates of the 1955 distribution. The actual Stanford projection for 1975 is 220,794,000.

or worse, by inevitable public decisions about transportation and utility lines, and the location of all kinds of public facilities. If these decisions could be coordinated, in order to focus development firmly in certain areas, little additional power would be necessary.

But, just as with central redevelopment, private initiative must be attracted and galvanized from the start. And although certain real estate interests would doubtless oppose the idea of more "planning" on principle, many of the most powerful builders might readily be attracted to a bold program for new city development. The growing shortage of large sites, conveniently located and adequately serviced, is already an emergency problem for big homebuilders, as well as for industrial and commercial promoters. (Indeed, this is one of the main reasons for their interest in central redevelopment.) What a new-city scheme would do, essentially, is to assure the availability of such sites for some time to come. The Zeckendorfs would love it.

Perhaps then, the biggest potential obstacle is neither political nor economic, but mainly cultural. Do we want real cities and real country—or do we actually prefer the rurban sprawl?

where the new Americans will be living

INCREASE 1950-1955 Estimated, ¹		INCREASE	E 1955-1975 Projected, ²			POPUL	ATION 1975 Projected, ³		
	% for area	Number	% of total	Number	% for area	COMMENTS	Number	% of total	Change in % of total, from 1955
	7.9	11,827.000	100.0	56,000,000	34.8	This would have been the "high" Census estimate a few years ago. But now most demographers would consider it "average."	218,000,000	100.0	
	13.7	11,508,000	97.4	54,544,000	56.8	Of course, the growth rate will be much higher in many metropolitan areas, perhaps 100% or more by 1976 in California.	150,000,000	69	+10
	3.8	1,888,000	16.0	8,960,000	17.5	Because of land restrictions, the rate of growth in the central cities probably won't be so great as the figures show.	60,000,000	28	-4
	19.1	4,526,000	38.3	21,448,000	76.1	Therefore, the rate of growth outside the central city is likely to be even greater than these estimates. This leads to the big ques-	50,000,000	23	+5
	46.5	5,094,000	43.1	24,136,000	150.0	tion: Are we to have endless rurban scat- teration, or real cities, compactly developed, with open space between?	40,000,000	18	+9
	0.5	319,000	, 2.6	1,456,000	2.2	If trends continue, the vast majority of Americans will be living in metropolitan areas by 1976.	68,000,000	31	10
	5.0	1,150,000	9.6	5,376,000	22.2	Nevertheless, since 1940, the growth rate of towns outside metropolitan areas has been faster than that of central cities.	30,000,000	14	-1
	—1.9	831,000	-7.0	—3,920,000	-9.4	The total farm population has declined by 12% since 1950. Meanwhile, there is a rising demand for part-time farms in metropolitan areas. Will there be room for them by 1976?	38,000,000	17	—9

FORUM EDITORS REPLY: but this is part of a bigger job to come

Catherine Bauer does not waste busy people's time. What she says about the new "scatteration city" of around one million will seriously engage all community leaders, building leaders, and professionals. Thinking will change.

As for FORUM's editors, they will promptly acknowledge the problem of giving decent shape to America's scatteration, but will not for that reason surrender their deep concern with urban renewal for today's central city. On Catherine Bauer's own showing, the urban population of 1976 will be just about split in half: some 60 million will live in central cities of "standard metropolitan areas," some 63 million in existing fringe towns or small towns (all of which may easily be candidates for renewal by then); and the other half, or 95 million (including farmers), in various degrees of scatteration.

The most important insight we get out of this is the continuity of America's entire "human habitat" problem, embracing both "new-towns" and renewal. And every decade it seems to move another 10% or so toward "urbanization." And considering how citified even the countryside gradually becomes, might we not best conceive the developing US as a great *urban* culture—indeed is it not becoming one grand "citification" process, rolling from Pacific to Atlantic and from the Gulf right on up into Canada? (Canada is in this too.) Open country, thank heaven, will still be here big and plenty, to farm on and fish in and enjoy. But it will lie in the interstices of the great city network.

What then? Why, then the three recognized city elements—central city, fringetown and "scatteration"—are subareas of the great human habitat pattern which we all are building, which planners must now plan, and serious architects must try to give a happy shape.

Big, isn't it? Perhaps too big to grasp; but an age that produces to abundance, deals in atomic power, prepares total war, talks total environment, has to have some going concept with which to encompass it.

What holds it all together? The hopes

and dreams of the world's most mobile man, the man on wheels—his own—the motorized centaur.

The sharpest criticism can be leveled against this American man and his mobile mania, and in the quiet of the ancient island of Ischia off the shores of Naples we once listened to the searching skepticism of a sophisticated Rome-born industrialist on this restless, fleeting, often shallow and rootless percussion-moved civilization as a whole. Yet this is the way of life that our nation has set out to master, and if her leaders fail her in this, other opportunities are unlikely to offer. Who will say this cannot be made fine?

Cities always did spring up along trade routes; but the American city virtually *is* a Roadtown.

And so the most urgent problem is to harmonize the pattern of building with the pattern of roads. This is what ties together the central city and its fringes and the "scatteration" out beyond. All parts of one thing. So let's take a look at the three parts in succession: and all in relation to automobile traffic.



CENTRAL CITY: concentration vs. congestion







The very essence of the city is intense concentration of people and activities. For concentration means exchange, competition, convenience, multiplicity of choice, swift crossfertilization of ideas, and variety of demand and whim to stimulate variety of skill and will.

Those are the strengths of the city. The suburbs may be incubators of people, but the city stands supreme as the incubator of enterprises. That too is its strength and its service.

Congestion happens to be one consequence of concentration. But it is not the same thing. Geologists have a saying that rivers are the mortal enemies of lakes, because the feeder streams tirelessly seek to clog, and the outlet streams to drain. Just so, once the rivers of congestion are out of hand, as they are in our towns and cities today, they become the mortal enemies of pooled urban concentration. The elements of the city are clogged and eventually sundered from one another by the rivers of traffic, moving and still. The Georgia main street (1), its two sides pathetically attempting to make a whole against great odds. stands as an example. Even more serious, the rivers of congestion insidiously drain away those less visible urban strengths of convenience and swift, easy human interchange —and with them drains the historic, the fruitful meaning of the city.

How can the city manage the streams of traffic so they feed and nourish instead of choke and kill? How keep—even heighten—the fruitful concentration without fostering its fatal consequence?

The city itself is an invention—a quite marvelous invention. Fundamentally it is an invention in specialization. And the time has come to apply that urban talent for specialization to traffic.

Four main kinds of traffic must be manipulated: passenger automobiles (1), pedestrians (2), services and good vehicles (3), mass transit (not illustrated). To defeat congestion, these must be recognized as the separate elements they actually are-not as amorphous "traffic"and must have accommodations suitable to their different natures. There is precedent for this. Once the railroad was lumped in as "traffic" too; this scene of twenty years ago in Syracuse (4) was common to many cities. In big cities we are also accustomed to mass transit separated out in subways. The distinction between auto "through" and "local" traffic is also increasingly recognized and accommodated.

And now have begun the first (often fumbling) experimental inventions in sorting out the different local traffics of central city. A variety of approaches to this most desperate of central city's needs is discussed on the following pages.

PHOTOS: (1) ABBOTT-GADD; (2) CARL IWASAKI-LIVE; (3) ANDREAS FEININGER-LIFE; (4) ED NOWAK





CENTRAL CITY FREEWAYS: an answer to urban congestion?

Roughly half the stupendous \$33 billion comprehensive national highway program is earmarked for expressways in and around cities. The possibilities for good (traffic relief, blight-clearance and blight protection) are magnificent; the possibilities for ill (new Chinese walls comparable to the old bisecting, blighting railways, more downtown floods of cars with nowhere to park them) are appalling.

Shown here are three approaches to the use of the freeway for solving central city's traffic impasse.

Boston (5) has completed one

mile costing \$50 million (most expensive mile of highway on earth) as the first lap of its 3.5-mi. Central Artery loop which will tunnel under the downtown core. Estimates are that 85% of its traffic will use the loop to get into downtown—not go around it. Benefit: a swift ride above clogged surface streets to the heart of downtown. But at the destination? Congestion compounded.

Kansas City's ring road (6) now under construction will have parking for 3,500 cars near its inside periphery, is planned to permit an indeterminate amount more. Its





good point is that it encircles, rather than cleaves, the downtown and on one side can bring periphery parking within a few blocks of downtown's core. Its weakness is that it draws the ring so loosely that much automobile traffic must still crisscross through downtown streets.

Fort Worth's tighter proposed belt highway (7) is planned to feed cars not into downtown streetswhich will be reserved for pedestrians-but into interior-penetrating parking accommodations for 60,000 cars. Service vehicles will go into an underground interior ring (8). This scheme by Victor Gruen & Assoc. is the most highly developed yet for downtown traffic separation, and for planning the freeway to eliminate congestion at destination as well as en route. The size of Fort Worth's downtown is compatible with this solution, and its underground is not already overcrowded: the field remains open for equally ingenious invention or adoption to fit cities of greater size, greater complexity. Fort Worth is the most promising of our present models.









CENTRAL CITY TRAFFIC:

sorted for downtown activities

In older industrial cities, great areas are a kind of semi-downtown, a solid hodgepodge of commerce, industry, housing and blight. Many suburbs of today will come to this tomorrow. Tackling Brooklyn as a thesis, three Pratt architectural students suggest a pattern (9) of loft clusters for small, light industry typical of the city. Scheme is notable for its recognition that planning for such a city's economic base is the crux of the problems; that clusters of pedestrian size can yield industrial oases (10) instead of industrial smear: that the vital transportation life line is unimpeded truck freeway (9, 11) joining to dock, rail and heavy industry terminals, and supplied with loading turnoffs.*

In Philadelphia's Penn Center, below-grade level (12) will provide truck-tunnel, mass-transit terminals, pedestrian shopping concourse. Grade-level mall (13) is interrupted by cross-streets. Original scheme by City Planner Edmund Bacon for more fully open sunken mall would have made pedestrian route pleasanter, more significant; but large open courts now dropped in will do much for final underground shop-

^{*} Stuart Cohen, Stanley Kogan, Frank Marcellino, designers; Olindo Grossi, William Breger, design critics.



(12)

ping concourse.

Much talk is heard of shoppingcenter thinking applied downtown. Rotterdam, Holland is among first cities to show what this can look like (14, 15) with its Lijnbaan center (van den Broek & Bakema, architects) which has become city's equivalent of Fifth Ave. Plan (16) is not radical, does not close crossstreets, but nevertheless has welldeveloped central mall.

Many current US downtown redevelopment schemes make the bad mistake of giving pedestrians too large, too empty, too dreary a milieu. Rockefeller Center's promenade (17), still most successful downtown open space, is beloved and used because it is crammed with pleasant things: fountains, sculpture, flowers, umbrellas, diners, ice skaters, flags, trees. In its own way, it is as concentrated as the city around it.

Why so little about downtown mass transit? The more diversion of passengers to it the better, of course; but it is delusion to think it will solve downtown's auto problems. Architect-Planner Oskar Stonorov points out that environs of Philadelphia have fifteen 3,000-seat theaters, downtown Philadelphia only two. Reason: suburban theaters each have about 1,000-car parking. His conclusion: if parking is an indispensable adjunct of culture, downtowns must have parking.





(16)

(17)



P. E. GUERRERO









(18)

PHOTOS: (ABOVE) BETTMANN ARCHIVE; (BELOW LEFT) ABBOTT-GADD







CENTRAL CITY HOUSING: return to the Outdoor Room

Three famous design prototypes and their common fates may be seen on pp. 107, 108, 111. A fourth type is now coming up fast—based on the familiar urban row house. But this is row-house planning with a difference —carefully separating the street and all that belongs to it from the dismounted inhabitant and all that belongs to him, carefully disposed to create outdoor rooms, carefully punctuated with what the British, in their excellent experiments with mingled low and high rise housing, call "point" buildings.

If we wish to give this design type the cachet of genius-architect ancestry, Jefferson is as good a man to settle on as any, with his Lawn at the University of Virginia (18). In its vulgarized form, as in Baltimore (19), the houses are focused on street to which they give enclosure—but without beginning, ending or accent. Here and there, as in Hillside Houses, N.Y., by Stein and Wright (20), interior courts retrieve some semblance of Jefferson's community amenity.

Among fine revivals of row-houseoutdoor room planning are Architect I.M. Pei's and Harry Weese's schemes for southwest Washington (21, 22). Note the punctuation with high-rise point buildings; judicious high-low mingling enhances each enormously. The outdoor room theme is carried into the public buildings area in foreground, too. Treating urban outdoors as rooms, rather than as caricatures of limitless good earth, makes sense both functional and esthetic.

In Philadelphia, where row houses have never lost favor, both the Planning Commission and Redevelopment Authority are sponsoring excellent row-house and block plans for use by private builders; response is encouraging. Suggested block plans (23, 24) by Architects Wright, Andrade & Amenta will yield variety of outdoor rooms; imagine standing anywhere in the plan and you will see around you four "walls" whose open ends leave "doors."





FRINGETOWN

Just another central city?

For millions of American families fleeing the central city, move-in day at Idlewood Acres is a day of rosy promise (1). But for millions more, move-on day can't come too soon. In almost all the shiny new housing developments sprawling farther and farther out around US cities, the suburbanite soon comes face to face with the same old built-in problems: a long drive to the station and no place to park; a long commute to work; rising taxes and not enough local industry to share them; hazardous streets for children to play in or to cross on their way to school; and row on row of cuteness, corn or just plain monotony (2).

In short, Idlewood and hundreds of developments like it, where energetic younger people used to drive by car to get away from the central city, are getting to be young central cities themselves-but in many ways not so good as the old one. They started out to be just "homebuilding," a simple mass-production product; then a dog grew onto the tail, called "new community." Industry and commerce had to be invited out, to pay the taxes if for nothing else. Fringetown is no longer a "dormitory suburb"-it is a working town itself, now. Once 60% or more of its working adults left mornings as commuters; now may-



be 30% do and only 20% will tomorrow.

Fringetown's road system—really a street system—is basically no great improvement on Centertown's. Lined both sides by commerce or industry, its chief roads could not have been better designed if the purpose had been to start killing a few (see diagonal road, top part of view 2). The smaller roads are in a random pattern that can drive visitors crazy. The look-alike, or not-quiteso-alike, houses, thrown out like apples on a carpet, are positively hypnotic as an exhibit of single-idea fixation, repeated ad infinitum.

Like the farmer who needed no science we need no further knowledge to improve Fringetown—we are not doing so well as we know how now.

A first step toward order would be to sort out this amorphous mass into neighborhoods and zones-and lead the main traffic ways around them, not through them, on the well-known "garden city" scheme shown in England's Crawley (3). The clean factories of today's Fringetown (4) belong in a zone together, as in England's Harlow (5). Shopping centers for Fringetown USA will probably resemble more nearly Canada's Don Mills pattern which provides non-English parking (6), though it can use fountains and plazas on the European (Vällingby) model (7). Schools must be built so kids can walk to them safely along a green center strip of each neighborhood area. And, finally, the tall apartments we have started to build at the fringe for greater diversity could be planned as more than accidents, so as to give the beauty and pleasure of Sweden's Vällingby (8). Fact is that Fringetown USA, despite its skilled building and fine individual houses, is 30 years behind England, Scandinavia, most of Europe-and even Russiain its city planning and urban architecture standards.









PHIL STERN-LIFE





FENNO JACOBS-FORTUNE



EISENSTAEDT-LIFE

ROADTOWN: the great American excursion

Streaming out from central city, through fringetown and all across the country, a gaudy honky-tonk slowly filled up the great American road. At first it was limited to wayside gas stations and restaurants needed by the traveler. But then came his lodging, shops and entertainment to recapture him. Market St., Front St., Times Square and Coney Island all exploded into the country and took roots on a broader scale than ever possible in the city. The new motorized fairyland offered something for everyone: frozen custards, pizza pies and foot-long hot dogs; golf, baseball, shooting ranges; wild animals, snake pits, frontier villages; Kozy Kabins and lush Hollywood Motels; drive-in movies, drive-in banks, drive-in churches: steak palaces, gin mills, burly shows. Bigger merchants, too, saw the mood of the new moving market and came out to flag it down. The scale of disorder grew with supermarts, used-car lots, seat-cover outdoor furniture showrooms, stores, do-it-yourself centers, discount houses, pipe-rack clothing chains.

The millions of new motorists, and the thousands upon thousands of entrepreneurs who followed them out of town, were doing their own city planning. The highway, originally an instrument of communication, became everybody's private street to do with as he pleased. There was unlimited access, unlimited zoning, unlimited fun. But in the carnival were the seeds of chaos, for the road was being used for two incompatible purposes: drive-on and drive-in, not to mention pedestrian and cross-traffic. And it was out of these roadtowns that new strip cities would grow.









ROADTOWN: new elbow room for industry

The excursion was no mere popular joy ride; top management thought it over, too. Hard on the heels of the smaller entrepreneur came big business, breaking out from the confines of central city to swallow up vast chunks of country for more efficient one-story plants and for the huge parking lots auto travel required. There were superfactories, like the Alcoa plant near Davenport, Iowa (1) or G. E.'s "Electronics Park" outside Syracuse, N.Y. (2). Then came super shopping centers serving a whole region, like Hudson's Northland outside Detroit (3). Business took apart the stacked floors of its office buildings and spread them across the hinterland; some were handsome expressions of the new idea, like General Telephone's regional headquarters outside San Angelo, Tex. (4). In these buildings was being set the vast new scale for future cities.



(2)



the local provide the local data and the local data

32 K

1

5

HEDRICH-BLESSING OF THE SOUTH mint I (4)

122

IK APRIL CALLER AS ADDRESS ADDRESS

C. COSTER-LIFE

Alar Barry IL ... Pr.





(2)







(4)

FAIRCHILD AERIAL SURVEYS



(5)

ROADTOWN: new cities for people by the million

When highways had become thoroughly choked by being treated as a street, the parkway was invented. It reduced the number of access points, routed cross-traffic on overpasses and shoved the slums behind screens of magnolia and makebelieve. It was a picturesque and welcome beginning but it failed to solve the problem of mounting traffic speeds, volume and distances-and long-distance trucking. These demanded straighter, wider, safer roads with even fewer access points: turnpikes, freeways, expressways, throughways. Denied access except at the throughway's widely spaced cloverleaves, the honky-tonk disappeared. Development began to cluster instead of spread in ribbons. Big industry began to locate at the interchange (1) (Beech-Nut plant on the New York Throughway). At other cloverleaves large signs heralded huge industrial parks (2), shopping centers (3), housing developments (4) and (5).

In these lumps or clusters, forming at access points miles apart, may be found the nuclei of really organizable new cities. Planned or

not, these will be really big. The Road Cities of 1976 promise to outspread Los Angeles as Los Angeles has outspread New York.



And this means in turn that every resource of planning and control must grow up to Paul Bunyan size. Zoning must go regional, greenbelts will have to tie in with "agricultural conservation," an art of architectural composition must evolve by the square mile. Staggering? Perhaps, but a determined America has handled the big ones before.



Along with Catherine Bauer's statement of the planning crisis facing the US, FORUM showed three utopias (pp. 107, 108 & 111) by three genius-architects, for city, for satellite town, for suburbanized countryside. It is obvious that none of these schemes can deal with the whole problem America faces today. What is needed is a *working method* for contending with a situation that stops at none of the old boundaries. Could anybody come up with an approach that embraces concentration, dispersion and scatteration —and brings order into all three? Because of Architect Victor Gruen's planning against congestion in Fort Worth and against scatteration in suburbia, FORUM asked him for a working approach, to start off the thorough discussion that must follow. Here it is.

HOW TO HANDLE THIS CHAOS OF CONGESTION, THIS ANARCHY OF SCATTERATION

BY VICTOR GRUEN, AIA

The evidence grows that neither brilliance and inventiveness of individual architectural design nor grace and ingenuity in relating the best of structures to each other can deliver us from the problems which have been created by the three most powerful forces of the twentieth century: mass production, mass consumption and mass transportation by the automobile.

A solution is possible only if we attack the problem of the entire fabric of urban organization. This pattern is determined not only by the structures and their relationship to each other, but also by all areas of common use and all means of communication. The fabric stretches far beyond the city over wide regions-tightly woven here, loosely woven there-forming an over-all weave often a hundred miles in every direction. Looking at this fabric pattern from an airplane, we can observe that congestion downtown, and anarchic scatteration outside of town, actually have the same basic cause and pattern.

What is the pattern? Its main fibers are roads, streets, highways. Along these are strung the buildings of cities, towns and suburbs, all the structures that serve habitation, production, trade, education. The main fault in this pattern is that the roads, streets and highways are used for two purposes: first, to serve as a track for automobiles; and second, to serve as the pattern or guiding element for structures. The diabolical thing is that the two uses are so diametrically opposed that each nullifies the other's value.

It is easier to realize this if we think for a moment of the railroad. In the not too distant past, the railroad track cut, on street level, through towns and cities—very often on Main Street. When it became evident the railroad was a menace to health and safety, it was rerouted around the city or tunneled beneath it. Compared with today's



steady flood of automobile traffic, the railroad was relatively harmless. Main Street today has more noise, dirt and fumes and endangers more lives than it did when the railroad ran down its middle.

At present, the cars of people who live or have business in the structures lining streets, the trucks servicing them, the buses, create a blocking action on through-traffic. Thus the structures lining the traffic carrier successfully sabotage the traffic on it. But the traffic gets its vengeance on the structures by attacking the inhabitants with noise, smell and dirt, wracking their nerves, endangering their lives, slowing their services.

If we want to end this hot war between structures and means of transportation, if we wish to bring about peaceful coexistence, we shall have to separate the warring forces.

Fortunately, we are not without experience in shaping a sympathetic environment for either force. We know by now what comes naturally to the car; the habitat in which the automobile feels at home consists of engineered parkways, freeways, expressways, parking terminals.

Only if we have given the mechanical monsters their "lebensraum" can we go about the task of reestablishing the natural habitat for human beings and their buildings. Such a habitat must be one in which the individual elements of architecture and their relationship to each other are again observed, enjoyed and used by human beings walking on two legs.

Cluster vs. string

A new pattern emerges from this line of thinking. In it, the shapecreating force for the arrangement of structures is no longer the road pattern. The formation of structures takes place instead around a new module—the human being. The stringlike fabric, in which all elements of human activity cling to the track, disappears, replaced with a pattern formed by *clusters* of structures of various types, within clearly defined borders. The automobile track runs between clusters, linking them together; but it does not impose its own pattern upon them.

This is how the cluster system builds up. One module equals one human (1). Three or more modules equal one family (2). A smaller or larger number of families equal one group, a social unit (3).

A number of groups form a neighborhood, which crystallizes around a neighborhood center offering social, cultural and economic facilities, elementary schools, churches, meeting rooms and facilities for everyday shopping (4).

A number of neighborhoods ring a constellation of clusters of a different nature: working nucleus for offices, labs, light industry; trading nucleus for retail and services, cultural nucleus, educational nucleus, recreational nucleus—together forming a community center (5).

The community centers with their satellites of neighborhoods surround a town center which offers work, trade, entertainment, cultural and social facilities of still greater size, depth and variety (6). This center and its galaxy of communities is formed of 50,000 to 200,000 "modules"—human beings. It constitutes a town.

Some such towns would be selfsufficient. Others would be part of a large metropolitan area. The metropolitan towns would be ranged in the magnetic field of a highly potent activity center—a main creator of urban energy, the metropolitan center (7). This center fulfills the functions we identify with the large central city core. It consists of a complex group of clus-



(4)











(10)

ters (intimately connected by pedestrian overpasses, moving sidewalks, small electric shuttle buses and similar devices for easy flow and interchange) serving public administration, regional, statewide and national business, tourism, and those cultural and recreational activities that can be supported only by large numbers of people.

Each basic unit in this entire cluster system—whether primarily residential or industrial or commercial—is based on the measuring stick of the walking distance acceptable for its specific conditions and purposes. This is what is meant by the human being as module. Each unit is held to a definite shape by its own centripetal force.

Not only these basic pedestriansize clusters, but also the cluster groupings and constellations of groupings are defined and separated by neutral open areas which serve many purposes. Some are used for recreational parks, some for sports, some for agriculture, gardens, orchards, fields. The neutral spaces vary in width, generally growing with the size of the modular multiple. Neutral spaces on a county scale may be seen in a proposed master plan for southern Dade County, Fla. (8).

These neutral areas also give us the opportunity of arranging rationally such communications as railroad tracks, automobile freeways, trucking express roads and, up above, airline air rights. By a combined radial and circular system they will connect clusters, in some cases encircle clusters, in other cases partly penetrate into clusters, but in no case will they cut through or enter into the protected zone of human activity (9).

At all automobile terminal points there will be vehicle storage areas directly accessible from the loop road system. They may be one or multilevel, surface or underground, self-parking or mechanical, depending on need and circumstance. But they will be located so that one end may serve as vehicle entrance and exit, and the other end as pedestrian entrance and exit, with the aim of situating the pedestrian as close as possible to his final destination. This principle can be seen in the scheme for downtown Fort Worth (10).

"It won't work"

This, in quick, diagrammatic form, sums up the principles of the cluster planning pattern. Innumerable objections will be raised to it. I think they can be answered, and I will deal here with four that appear most serious.

Objection: "The whole idea is too radically different from what we are used to and prepared for."



(11) Master plan for Santa Barbara College; Pereira & Luckman, architects.



(12) High school at Northport, L.I.; Ketchum, Gina & Sharp, architects.



(13) General Motors Research Center; Eero Saarinen & Assoc., architects.



(14) Proposed center for an existing suburbia, as yet unannounced.



(16) Northland shopping center, Detroit.



(17) Project for regional office center at Northland. Architects for 14, 15, 16 and 17: Victor Gruen & Assoc.

- access roads and parking
- interior circulation

Answer: We are already moving in the cluster-planning direction whenever we talk about superblocks. We use many expressions which show we wish for the order of some such cluster setup: we talk about community centers, the orbit of a metropolis, neighborhoods within the city, suburban centers. We have a passion for creating "districts" of every sort. Most important of all, we are already planning and building clusters which are in line with the essential ideas of this planning approach—the role of the road as traffic carrier only, terminal vehicular storage, protected zones for humans. Seven examples of varying types are shown (11-17). Dozens upon dozens could be shown.

Objection: "This approach will require too much demolition; its cost in terms of destruction and reshaping is unrealistic."

Answer: We all realize something will have to be done to make space for the ever growing number of automobiles. Bringing freeways in the city core and widening streets cause tremendous demolition and destruction, mostly in the well-builtup downtown streets. The cluster approach will result in some demolition, but in areas where it will be beneficial to our entire urban pattern. All our cities are full of areas which deserve clearing. Residential

(15) Southdale shopping center near Minneapolis and project for adjoining regional health center.



slum clearance is a familiar idea, but we are apt to take for granted all the other slums-the acres of worn-out industrial shambles, the ramshackle one-story buildings which are there only because of no incentive to raze them, the square miles in and around every city covered haphazardly with cars parked, cars junked. The photo (18) can stand as a symbol. Its variations are legion and endless. That this situation exists can be proved by the example of downtown Fort Worth where we found that without demolishing a single structure of value, and hardly touching anything of more than two stories, we could get enough space for the encircling belt highway, enough space for green areas on both sides of it, enough space for garages, enough space for expansion for fifteen years -and when we were through we had enough left over for new cultural and civic areas. The neutral spaces in the cities already exist. but today they are blurred with unproductive urban cast-off.

In newly built dispersion areas, it is true the choice will sometimes be between razing a relatively small "good" area to protect the rest, or the certainty that the whole will deteriorate as our cities have deteriorated. But if planning means anything, it means Foresight instead of Hindsight.

It must be understood that the cluster approach does not envision a standard, stereotyped pattern across the land. Though there might be some cases, especially in new suburban areas and in new metropolitan regions, where planning can follow the scheme closely from the beginning, its great value lies in the fact that it can be superimposed over the existing urban and suburban areas with the minimum of



(18)

destruction of building, and that we can thus maintain the most desirable continuity of our economic and cultural heritage.

Objection: "A metropolitan cluster system with definite boundaries cannot take care of growth in population or enterprises. It has arbitrary limits."

Answer: Considerable growth can be taken care of by built-in expansion. We are used to this principle in hospitals and schools which often provide for up to 100% expansion. We are used to it in shopping centers; Northland has 33% expansion built in. Fort Worth has built-in expansion for all manner of enterprises from shopping and offices to government, hotels and entertainment. All reasonably predictable growth can be taken care of.

Once these expansion possibilities have been used up, however, it is true an increase of density or a spilling over into the neutral areas cannot take place. We are used to this principle, too—for instance, in the office building with a certain number of elevators and stairways which determine its potential forever. If you need more space, you have to build more office buildings. All planning would be void if utterly unlimited growth were permitted. When a metropolitan cluster has reached its ultimate expansion possibilities, we must assume that development of new metropolitan regions will start.

Objection: "The cluster imposes restrictions on automobile users, which means all of us, because we will have to stop our automobiles a considerable distance from our target."

Answer: We are living under the impression that today we can land our automobile right in front of our office, the doctor's, the grocery store or any other place we want to go. The fact is however that only the few early birds manage this, and most of us have to walk from far removed parking accommodations. That walk is usually not only unprotected from rain or sun, but also unpleasant and dangerous because of the streams of automobiles. The walking necessitated by the cluster



system will be preferable as Northland center or Fort Worth planning shows, or as can be seen from the diagrammed cluster neighborhood (19) with its walks through the little parks into which only such machines as fire engines, service and emergency vehicles can penetrate. In all cases walking distances will be kept as short as feasible by proper arrangement of parking facilities.

We must also realize that exactly as the number of automobiles has grown, so have the restrictions put upon their use multiplied. We are told today where and when we can park, on which streets we can drive one way and which the other; we are exactly commanded what speeds to take (not only maximum but on freeways even minimum); we are forbidden to honk. Most of the fun is gone, and in spite of all these restrictions it does not work. Even where we are permitted to go 25 mi. an hour, we often cannot make more than two or three. I am proposing that the automobile driver regain much of his lost freedom by giving up his hassle with the pedestrian and his environment.

New life for architecture

If we can succeed in replacing our string concept with the new cluster conception, most of the frustrations of architect and planner will cease and new and unlimited possibilities for the shape of our environment will open up. The beauty of the individual structure, the atmosphere of the spaces created through composition of structures, will take onas they did in the past-tremendous importance. The integration of art with architecture, which is now only a topic for endless talk, can become reality, and landscape, the happy marriage between nature and human endeavor, can again become an integral part of our environment.

Once the urban environment is liberated from traffic and its defects, we may also find that the taste of our population will swing away from formless suburbanism to more closely knit habitation schemes. The great desire for a detached home is perfectly understandable in a disorderly and unattractive urban scene. But many of today's willynilly suburbanites would happily draw closer together if this alternative offered peace and quiet and a view of the land instead of traffic jams and slums.

A new approach to a pattern that is in harmony with *both* our technological development and our humanness is of greatest urgency because now a huge nation-wide highway program is about to get underway. In the open country the highways are often wonderful. They cut through barriers of rock, leap over barriers of water, cling to cliffs and swerve for neither swamp nor desert nor crevasse. They can cope with almost anything God has invented and do it with beauty.

But in the city, the effect of the highway is often socially and visually hideous. Without the existence of a working concept which takes the future of our urban and suburban scene fully into consideration, the new freeways will cut our metropolitan regions into ribbons and shreds and dribble the scatteration ever farther, ever wider. But if this tremendous investment could be made with wisdom, it can mark the beginning of a healthier and more beautiful American cityscape and landscape.



WHERE YOU CAN FIND OUT MORE ABOUT PLANNING

A selective list of some of the agencies, public and private, that are active in bringing about city renewal and good planning today

▲ Unofficial agencies

NATIONAL AND INTERNATIONAL

- American Council to Improve Our Neighbor-
- hoods, Inc. (ACTION), 2 W. 46 St., N.Y. 36, N.Y. American Institute of Architects, 1735 New
- York Ave., N.W., Washington 1, D.C. American Institute of Planners, 34 Brattle St.,
- Boston, Mass. A American Planning & Civic Assn., 901 Union
- Trust Bldg., Washington 5, D.C.
- ▲ American Society of Planning Officials, 1313 E. 60 St., Chicago 37, Ill.
- ▲ Assn. of State Planning & Development Agencies, 1026 17 St., N.W., Washington 6, D.C.
- ▲ Chamber of Commerce of the US, Construction & Civic Development Dept., 1615 H St., N.W., Washington 6, D.C.
- ▲ International Downtown Executives Assn., 209 South State St., Chicago, Ill.
- ▲ International Federation for Housing & Town Planning, US Committee, 1313 E. 60 St., Chicago 37, Ill.
- ▲ National Assn. of Housing & Redevelopment Officials, 1313 E. 60 St., Chicago 37, Ill.
- ▲ National Assn. of Real Estate Boards, Build America Better Council, 1300 Connecticut Ave., N.W., Washington 6, D.C.
- ▲ National Council of Housing & Planning Assns., 1717 Sansom St., Philadelphia 3, Pa.
 - Pan American Union, Division of Housing & Planning, Dept. of Economic & Social Affairs, Washington 6, D.C.

United Nations, Housing & Physical Planning Section, Housing & Community Development Branch, Dept. of Economic & Social Affairs, United Nations Headquarters, New York, N.Y. US Dept. of Commerce, Office of Technical Services, Area Development Div., Washington 25, D.C. US Housing & Home Finance Agency, Normandy Bldg., Washington 25, D.C.

- Federal Housing Administration, 1001 Vermont Ave., N.W., Washington 25, D.C. Urban Renewal Administration, 811 Vermont Ave., Washington 25, D.C.
- Community Facilities Administration, Normandy Bldg., Washington 25, D.C.
- ▲ Urban Land Institute, Room 116, Ring Bldg., Washington 6, D.C.

STATE AND INTERSTATE AGENCIES

- Alabama State Planning Board, 110 Church St., Montgomery 4, Ala.
- Colorado State Planning Commission, 130 State Office Bldg., Denver 2, Col.
- Connecticut Development Commission, Research & Planning Division, State Office Bldg., Hartford, Conn.
- Louisiana Planning & Development Division, Dept. of Public Works, Capitol Bldg., Baton Rouge, La.
- Maryland State Planning Commission, 100 Equitable Bldg., Baltimore 2, Md.
- A Ohio Planning Conference, 407 City Hall, Columbus 15, Ohio.
- ▲ Pennsylvania Planning Assn., Room 129, Capitol, Harrisburg, Pa.

- Pennsylvania State Planning Board, Room 129, Capitol, Harrisburg, Pa.
- Rhode Island Development Council, Room 324, State House, Providence 2, R.I.
- Tennessee State Planning Commission, 517 Commerce St., Nashville 3, Tenn.
- Tennessee Valley Authority, Union Bldg., Knoxville, Tenn.
- Virginia Dept. of Conservation & Development, 914 Capitol St., Richmond, Va.

CITY AND REGIONAL

(Includes housing authorities where they have, or can assume, the renewal function.)

Albuquerque

Albuquerque City Planning Commission, 222 "B" Tijeras Ave., N.E., Albuquerque, N.M.

Atlanta

Atlanta Metropolitan Planning Commission, 808 Glenn Bldg., Atlanta 3, Ga. Atlanta Municipal Planning Board, City Hall,

Atlanta 3, Ga.

Baltimore

▲ Baltimore Citizens' Planning & Housing Assn., 313 N. Charles St., Baltimore 1, Md. Baltimore City Planning Commission, Municipal Bldg., Baltimore 2, Md. Baltimore Redevelopment Commission, Municipal

Bldg., Baltimore 2, Md.

Birmingham

Birmingham City Planning Commission, City Hall, Birmingham 3, Ala.

Boise City

Boise City Planning Commission, City Hall, Boise, Ida.

- Boston
- Boston City Planning Board, 1101 City Hall Annex, Boston 8, Mass.

Boston Housing Authority, 230 Congress St., Boston 10, Mass.

Buffalo

City of Buffalo, Board of Redevelopment, City Hall, Buffalo 2, N.Y.

Sources: American Society of Planning Officials; Assn. of State Planning & Development Agencies; National Assn. of Housing & Redevelopment Officials.

¹All but two states—California and Texas—have some sort of official agency for planning and development. Most concentrate on industrial promotion, however. Less than a dozen are considered significant in the planning field.

²Includes at least one agency in each state. Nation-wide, at least 716 cities with populations of more than 10,000 have official planning agencies. In addition, there are county planning agencies in a minimum of 90 counties that have more than 100,000 people. City of Buffalo, Planning Commission, City Hall, Buffalo 2, N.Y.

Burlington

Burlington City Planning Commission, 138 Church St., Burlington, Vt.

Casper

Community City Planning Commission, City-County Bldg., Casper, Wyo.

Charlotte

Charlotte-Mecklenburg Planning Commission, 600 E. Trade St., Charlotte, N.C.

Chicago

Chicago Land Clearance Commission, 69 W. Washington St., Chicago 2, Ill.

▲ Chicago Metropolitan Housing & Planning Council, 69 W. Washington St., Chicago 2, Ill.

Chicago Plan Commission, 1006 City Hall, Chicago 2, Ill.

Community Conservation Board, 111 W. Washington St., Chicago 2, Ill.

Neighborhood Redevelopment Commission of the City of Chicago, 69 W. Washington St., Chicago 2, Ill.

Office of the Housing & Redevelopment Coordinator, 69 W. Washington St., Chicago 2, Ill.

Cincinnati

▲ Cincinnati Citizens' Development Committee, Union Central Bldg., Cincinnati 2, Ohio. Cincinnati City Planning Commission, 224 City Hall, Cincinnati 2, Ohio.

Redevelopment Division of the City Manager's Office, City Hall, Cincinnati 2, Ohio.

Cleveland

- Cleveland City Planning Commission, 501 City Hall, Cleveland 14, Ohio.
- ▲ Cleveland Development Foundation, Federal Reserve Bank, E, 6th St. & Superior, Cleveland, Ohio.

Cleveland Urban Redevelopment Agency, 517 City Hall, Cleveland 14, Ohio.

Regional Planning Commission, 415 The Arcade, Cleveland 14, Ohio.

Columbia, S. C.

Columbia City Planning Commission, City Hall, Columbia, S.C.

Housing Authority of the City of Columbia, 1505 Garden Plaza, Columbia 4, S.C.

Denver

Denver Dept. of Planning, 424 City & County Bldg., Denver 2. Col.

Denver Urban Renewal Commission, 456 City & County Bldg., Denver 2, Col.

Inter-County Regional Planning Commission, 1359 Court Place, Denver 4, Col.

Des Moines

Des Moines City Plan & Zoning Commission, City Hall, Des Moines, Iowa.

Detroit

▲ Citizens Redevelopment Corp., 844 Penobscot Bldg., Detroit, Mich.

Detroit City Plan Commission, 8th Floor, City-County Bldg., 400 Woodward Ave., Detroit 26, Mich.

Detroit Metropolitan Area Regional Planning Commission, 800 Cadillac Square Bldg., Detroit 26, Mich.

Detroit Housing Commission, 409 Griswold, Detroit 26, Mich.

Fargo

Fargo City Planning Commission, 639 North P Ave., Fargo, N.D.

136

Great Falls

Great Falls Planning Commission, P.O. Box 417, Great Falls, Mont.

Hartford

Hartford Commission on the City Plan, Municipal Bldg., 550 Main St., Hartford 4, Conn. Hartford Redevelopment Agency, 550 Main St., Hartford 4, Conn.

Houston

Houston City Planning Commission, 712 City Hall, Houston, Tex.

Indianapolis

Indianapolis City Plan Commission, 304 City Hall, Indianapolis, Ind.

Indianapolis Metropolitan Planning Dept., 405 City Hall, Indianapolis, Ind.

Indianapolis Redevelopment Commission, 230 E. Ohio St., Indianapolis 4, Ind.

Jackson

Jackson City Planning Board, City Hall, Jackson, Miss.

Little Rock

Housing Authority of the City of Little Rock, 121 E. 2 St., Little Rock, Ark.

Little Rock Metropolitan Area Planning Commission, 2091/2 W. 2 St., Little Rock, Ark.

Los Angeles

Community Redevelopment Agency of the City of Los Angeles, 354 Spring St., Los Angeles 13, Calif.

▲ Los Angeles Citizens' Committee for Better Housing & Planning, 1553 Gordon St., Los Angeles 28, Calif.

Los Angeles Dept. of City Planning Commission, 361 City Hall, Los Angeles 12, Calif.

Los Angeles County Regional Planning Commission, 108 W. 2 St., Los Angeles 12, Calif.

Louisville

Louisville & Jefferson County Planning & Zoning Commission, 302 Fiscal Court Bldg., Louisville 2, Ky.

Manchester

Manchester Housing Authority, 83 Trahan St., Manchester, N.H.

Manchester Planning Board, City Hall, Manchester, N.H.

Memphis

Memphis City Planning Commission, 102 Court House, Memphis, Tenn.

Memphis Housing Authority, 700 Adams Ave., Memphis 5, Tenn.

Mlami

Dept. of Slum Rehabilitation & Prevention, 3318 Pan American Dr., Miami 33, Fla. Miami City Planning Board, 3318 Dinner Key

Dr., Miami 33, Fla.

Milwaukee

▲ Greater Milwaukee Committee, 110 E. Wisconsin Ave., Milwaukee, Wis.

Housing Authority of the City of Milwaukee, 408 E. Wells St., Milwaukee 2, Wis.

Milwaukee Board of Public Land Commissioners, 155 E. Kilbourn Ave., Milwaukee 2, Wis.

Milwaukee County Regional Planning Dept., 303 Courthouse, Milwaukee, Wis.

Minneapolis

Housing & Redevelopment Authority in and for the City of Minneapolis, 1014 Metropolitan Bldg., Minneapolis 1, Minn.

Minneapolis City Planning Commission, 339 City Hall, Minneapolis 15, Minn.

architectural FORUM / September 1956

New Haven

- ▲ Citizens Action Commission, 47 Church St., New Haven, Conn.
- New Haven City Planning Commission, City Hall, New Haven 10, Conn.
- New Haven Redevelopment Agency, City Hall, New Haven 10, Conn.

New Orleans

Division of Housing Improvement & Slum Prevention, 509 Carondelet St., New Orleans 12, La. Housing Authority of the City of New Orleans, 1111 Tulane Ave., New Orleans 12, La.

New Orleans City Planning & Zoning Commission, 535 St. Charles St., New Orleans 12, La.

New York

- ▲ Citizens' Housing & Planning Council of New York, Inc., 20 W. 40 St., New York 18, N.Y.
- ▲ Citizens Union, 5 Beekman St., New York 38, N.Y.

New York Dept. of City Planning, 28 Floor, Municipal Bldg., New York 7, N.Y.

Office of the Committee on Slum Clearance, City of New York, Randall's Island, New York 35, N.Y.

▲ Regional Plan Assn., Inc., Room 1800, 205 E. 42 St., New York 17, N.Y.

Newark

Central Planning Board of Newark, Suite B-7, City Hall, Newark 2, N.J.

Housing Authority of the City of Newark, 57 Sussex Ave., Newark 4, N.J.

Oklahoma City

Oklahoma City Planning Commission, 301 City Hall, Oklahoma City 2, Okla,

Omaha

Housing Authority of the City of Omaha, 1728 N. 22 St., Omaha 10, Neb.

Omaha City Planning Commission, 603 City Hall, Omaha, Neb.

Philadelphia

▲ Philadelphia Citizens' Council on City Planning, 1717 Sansom St., Philadelphia 3, Pa. Philadelphia City Planning Commission Penn

Philadelphia City Planning Commission, Penn Square Bldg., Juniper & Filbert Sts., Philadelphia 7, Pa.

Redevelopment Authority of the City of Philadelphia, 21 St. & Pkway., Philadelphia, Pa.

Phoenix

Phoenix City Planning Commission, 837 E. Jefferson St., Phoenix, Ariz.

Pittsburgh

- ▲ Allegheny Conference on Community Development, 200 Ross St., Pittsburgh 19, Pa. Pittsburgh City Planning Dept., 10 Floor, 200
 - Ross St., Pittsburgh 19, Pa. Pittsburgh Regional Planning Commission, 200
- Ross St., Pittsburgh 19, Pa. Urban Redevelopment Authority of the City of

Pittsburgh, 200 Ross St., Pittsburgh 19, Pa.

Portland, Me.

- Greater Portland Regional Planning Commission, City Hall, Portland 3, Me.
- Portland City Planning Board, 48 City Hall, Portland 3, Me.

Slum Clearance & Redevelopment Authority, 107 City Hall, Portland 3, Me.

Portland, Ore.

Housing Authority of the City of Portland, 8920 N. Woolsey Ave., Portland 3, Ore.

Portland City Planning Commission, 414 City Hall, Portland 4, Ore.

Providence

Providence City Plan Commission, Suite 103, City Hall, Providence 3, R.I.

Providence Redevelopment Agency, City Hall, Providence 3, R.I.

Reno

Regional Planning Commission of Reno, Sparks and Washoe County, P.O. Box 1286, Reno, Nev.

Richmond

Richmond City Planning Commission, 217 Governor St., City Hall, Richmond, Va.

Richmond Redevelopment & Housing Authority, 100 E. Main St., Richmond 19, Va.

St. Louis

▲ Civic Progress, Inc., 211 N. 4th St., St. Louis, Mo.

St. Louis City Plan Commission, Civil Courts Bldg., St. Louis 1, Mo.

St. Louis Housing & Land Clearance for Redevelopment Authorities, 2031 Olive St., St. Louis, Mo.

St. Louis Metropolitan Plan Assn., Inc., 915 Olive St., St. Louis 1, Mo.

Salt Lake City

Salt Lake City Planning & Zoning Commission. 315 City & County Bldg., Salt Lake City 1, Utah.

San Francisco

San Francisco City Planning Commission, 100 Larkin St., San Francisco 2, Calif.

Redevelopment Agency of the City and County of San Francisco, 512 Golden Gate Ave., San Francisco 2, Calif.

Seattle

Seattle City Planning Commission, 503 County-City Bldg., Seattle 4, Wash.

Sioux Falls

Washington

D.C.

Md.

ington 4. D.C.

6, D.C.

Wheeling

Wichita

Wilmington

ton, Del.

N.W., Washington 1, D.C.

liams St., Wichita 2, Kan.

Hall, Wilmington, Del.

Lane, Wilmington 2, Del.

Sioux Falls Planning Commission, City Hall, Sioux Falls, S.D.

District of Columbia Redevelopment Land

Agency, 499 Pennsylvania Ave., Washington 1,

Maryland-National Capital Park & Planning Commission, 8500 Colesville Rd., Silver Spring,

National Capital Planning Commission, 7013

Office of Urban Renewal, District Bldg., Wash-

Washington Clearinghouse on Urban Redevelop-

ment, Slum Clearance & Housing, 426 5 St.,

A Washington Regional Planning Council, Octagon

A Wheeling Area Conference on Community De-

velopment, Inc., 404 Hawley Bldg., Wheeling, W.

Wheeling Slum Clearance & Redevelopment Au-

Wichita City Planning Commission, 239 W. Wil-

Regional Planning Commission of New Castle

County, Del., Room M-16 Public Bldg., Wilming-

Wilmington City Planning Commission, City

Wilmington Housing Authority, 1400 Todd's

137

thority, P.O. Box 112, Wheeling, W. Va.

Bldg., 1741 New York Ave., N.W., Washington

Interior Bldg., Washington 25, D.C.

ARCHITECT: Kenneth Franzheim INTERIOR DESIGN: Knoll Planning Unit, Florence Knoll, director Joseph Whited, project associate ENGINEERS: Ward Butterwick, structural; H. E. Bovay, mechanical and electrical; Willard Simpson, foundation; R. F. Taylor, consultant GENERAL CONTRACTOR: W. S. Bellows



Office tower clad in aluminum sits on an incongruous blocksquare, four-story base of red granite. Above shopping arcades is windowless, 1½ acre banking floor (plan below).

FOREIGN MECHANICAL DIRECTORS 00 BBB 4141 DI 2,0 OPPICERS Tad FILES П AUDITING CREDIT LP LP या या या या या CASH VAULT SECOND FLOOR PLAN

INSIDE JOB

Outside, this granite-footed Texas treasurehouse is just another big tower. Inside, sophisticated planning creates quite a different feeling



PHOTOS: ULRIC MEISEL-DALLAS

ON A BLOCK-SIZE BANK

Recent completion of Houston's new Bank of the Southwest supplied the US with something of an index of architectural sophistication in its Western oil empires. The base, covering a solid city block 250' square, was sheathed in red granite, handsome enough but treated as a flat, shiny, unrelieved surface that might as well have hidden a windowless department store. The office tower, aluminumclad and small-windowed (to cut cooling and cleaning costs) was just another symmetrical office block—except for a pair of 40' x 100' neon signs of a kind more often found on less-elevated establishments. The great size of these Broadway-type spectaculars, in their old-time magazine lettering, considerably pulled down the apparent size of the bank itself.

Inside, sophistication was far greater. The main banking room (photo above) might by local custom have been merely big and brassy, but instead it emerged warm, spacious and elegant. And some of the other rooms (overleaf) hardly seem windowless at all. **Huge banking room** has 125' tellers' row under curved teak wall, 45' x 14' mural of the Americas by Rufino Tamayo.

Moving stairs ascend from shopping arcade to banking room and mural, descend to more shops, vault, services.







Two ways to finish big interior spaces

Bank: Knoll designers sheathed the 25' columns in same teak paneling as wall (background), same white plastic laminate as their check-desks (right). Paneling is floated inches above the floor, suggesting its nature, and is overlapped at column edges, suggesting actual lines of the steel H-column inside. Light, structural feeling also appears in furniture and (right) in a shimmering wall of aluminum-leaf divided, Japanese-style, by slender teak strips. Floor is cream color.

Arcade: the architect covered similar H-columns directly below the banking room with verde antique marble, making them round and bulkier—3'-9" in diameter. This heavier treatment had been proposed for banking room above. A different patterned marble is used on wall (right), a dark patterned terrazzo on the floor. Bright lights reflect dazzlingly from hard, polished surfaces.

Six ways to open up smaller rooms

Curtain of light along outside wall of the bank's board room gives impression there might be windows behind. Light from fluorescent strips top and bottom is diffused by plastic glass-fiber sheeting, curtains.









PHOTOS: (BELOW) YALE JOEL-LIFE: (OTHERS) ULRIC MEISEL



Hot sculpture

Becoming conspicuous by her absence from the new bank is this large cast aluminum lady (shown dangling beside her sculptor, William Zorach) who was to form the central figure in a 30' x 32' relief over the main entrance. Zorach's lady, meant to symbolize Texas "rising out of struggle and war," got caught herself in an are war that has simmered in Texas during the past year. Civic groups, particularly the American Legion and some women's clubs, have spoken out, repeatedly and unasked, to warn the public against artists who they feel are too modern in their art, or not American enough in their politics. Not long after an art show containing some of Zorach's work had been blacklisted in one such busybody vigilante movement, the bank's officers had a change of mind about the sculpture they had commissioned from sketches and models. "Too modern" said one bank official; "Too traditional" said another. "A terrible disappointment" said Zorach, who got a consolation payment described by the bank as \$50,000, by Zorach as \$110,000. The lady-for all of her innocent monumentality apparently too hot to handle-still languishes in a Brooklyn foundry yard. The bank's main entrance (below) remains blank.



Floating ceiling, used in president's office along with curtain of light, further dispels boxed-in look with help of cove lighting. Air-conditioning outlets are neatly incorporated in two thin intersecting strips across the ceiling.

Luminous ceiling "lifts the lid" from a conference room. Another basic device here (and in photos above) is the use of one accent-wall, painted a different color or textured with wood, to relieve the "four walls" feeling.

Space divider, an open lattice of oak strips, is used instead of a solid wall to set off a waiting area from open corridor space behind. Photos also show a sixth "trick": uncluttered interiors that use occasional plants and other bright accents to focus attention away from the windowless room itself.

BUILDINGS IN BRIEF

A quick look at new buildings of various kinds which make noteworthy contributions to the proving ground of design ideas





PHOTOS: MARC NEUHON

MOTEL RESTAURANT: A HIGH SPOT

A return engagement for Architects Slater & Chait, the Skyline Restaurant at Catskill, N.Y., supplies what a limited budget kept out of their original design for the Milroy Motel (AF, Feb. '54, p. 113). The restaurant, built on the motel property but separate from the other buildings, aims at both the transient and local trade. Perched on top of a small mountain — the "perfect" site, Architect Slater thinks—the building takes full

advantage of the view of the surrounding Catskills. The 28' \times 72' dining-bar area is all glass on one side, and its interior sweep is only partly broken by the massive fireplace that marks off where drinking stops, and eating begins. Walls are frame with redwood siding and natural stone; the built-up roof is finished with marble chips. Cost, including air-conditioning, furniture, and kitchen and bar equipment: \$110,000.







PHOTOS: (ABOVE) JEAN SEIDENBERG: (BELOW) FRANK LOTZ MILLER







A UNION BUILDS FOR ITS FUTURE

These two union halls-one in New Orleans (top), the other in Mobile-might be called theme and variation. Both are the work of Architect Albert C. Ledner, and both were designed for the National Maritime Union to meet roughly the same requirements: 1) a hiring hall of column-free space; 2) a group of offices, closely knit; and 3) natural light for the interior. In the New Orleans building, which came first, Ledner created a circular hall, 100' in diameter, topped it with a star-shaped, pleated roof structure that determined the building's overall shape. Materials used in the 12-gabled roof: structural steel; wood sheathing; 10-oz. copper panels. For the smaller hall of the Mobile building, Ledner abandoned the circle in favor of a rectangle. But he kept the feeling of roundness by perching a 48' diameter dome, with skylight, over the center.







1		I'TCI		Internet Dama
4	go of		199	
_	0			0
-	0	Π.		0
		F		
	0	L.		0
1		DRAPT	ING	
	0	-	1	
-				- 0
	<u>с</u> и	1	nl	r -
15	חםן	1 d	5	
		1 4	JI -	
H	l		E	
	TE	3 5	RECE	PTION
			(mail	

FITTER

11



PHOTOS: (ABOVE & LEFT) MARC NEUHOF; (BELOW) SICKLES

WHAT AN ARCHITECT DID FOR HIMSELF

With \$28,000, and a liberal amount of ingenuity, Architects Alexander S. Cochran Associates turned this old Baltimore taxpayer into what now rates as an efficient and pleasant place to work. Ownertenant Cochran took the entire second floor for its own use, divided it into a receptionclerical area, a conference room, and drafting space. Quick to catch the eye are the oval conference room (picture, right, above), ringed by curtains, and the flooring squares of matting divided by oak strips on a larger module. To save rental space on the first floor (usable area: 1,350

sq. ft.), Cochran scrapped the stairs, installed a small oil-lift elevator. On the exterior of the building facing the street, windows are protected by sun shades of steel mesh, an addition that saved about two tons of air conditioning. Cost for the entire job ran about \$10 a sq. ft.



CAR CLINIC: A NEW APPROACH

To New Jersey drivers, the state's compulsory auto-inspection program has long been a periodic irritation. Obsolete check stations, and spiraling car registrations, produced jam-ups of such heroic proportions that the state this summer had to cut temporarily its required inspections from two a year to one. For a longrange remedy, though, officials are banking on a program for 49 new centralized installations. Designed by Architects

Frank Grad & Sons, these onestory buildings follow a highly flexible plan. Each station can be built with one to four components: 1) a three-lane, inspection unit; 2) an office for licenses and registrations; 3) an examination center for new drivers; and 4) a drivers' clinic. Construction calls either for concrete slab with steel columns and frame, or precast concrete frame. Each inspection unit is ventilated by four exhaust trenches.




PHOTOS: MEDNICH-BLESSING

A MODERN SYMBOL FOR LUTHERANS

For the home office of the Lutheran Brotherhood in Minneapolis, Architects Perkins & Will envisioned a design that would be both functional and symbolic. How successful they were in translating that vision shows in the pictures here. The building, which houses the Brotherhood's life insurance and benevolent activities, rises a confident six stories above street level in its main wing, looks back on a small, onestory wing and sunken garden (above). The upper five stories of the main building are cased in a curtain wall of blue-green porcelain-enameled steel and glass. This wall, cantilevered out 5' from the reinforced con-

crete supports at each floor, allows continuous windows, broken only by the stainless steel mullions that intersect with horizontal members to form symbolic crosses on the façade. The bays between mullions are 30' square. In the garden, one of the few spots of green in downtown Minneapolis, the architects turned from the building's vertical lines to serpentine terrace walls. Opening onto the green are a dining room, a lounge, and a 300-seat auditorium. The entire building is air conditioned, uses a conventional system in the interior, a highpressure, fanless conduit system around the perimeter.





145

Sequel to a TIME story:

Writer Cranston Jones reports on today's architecture and its practitioners, as seen through a novel medium

VIEWS COMPARED BY LEADING ARCHITECTS

Apparently the people of the US like to read about their architects. When TIME in midsummer published a "cover story" on Architect Eero Saarinen, newsstand sales were among the highest. Yet the fascination for FORUM's editors went beyond the story itself. For they knew how much further the volumes of accumulated information went. A crack corps of reporters had suddenly been turned loose, literally all around the world, to find out what could be learned in two selected weeks about the leaders in the building world in which we live. These reporters were not trained in architecture. All the better. They had been asking leading US architects to explain themselves not to other "pro's" in building but to people in general. FORUM asked that TIME's writer who had gathered in all the threads be allowed to do two things: tell how the job was done and report what leading US architects had said about one another's theories and one another's work. Very obviously this report is not FORUM's own. It is a playback which shows how architectural thinking today sounds to the shrewd ears of reporters representing the general public. The reason Saarinen nowhere appears in this story is of course that TIME's published story was about him.

TIME Magazine last June went to the leading architects, the deans of the leading schools, sent out queries to our domestic and foreign newsbureaus. Our questions: Do you agree that modern architecture has now won the day? Whom would you consider the leading "formgivers"? What are the major problems facing architecture today? What contemporary architects do you think are doing the most significant work in the US?

Over a two-week period the answers stacked up, making a bulk of research running to over 100,000 words. Architects, we concluded, are astonishingly articulate, unsparing in their "crits" of the next man's work. Lock three of them in a room, it sometimes seemed, and only one would emerge alive. But the frankness was refreshing. It could also be a sign of health. **Talent galore.** When it came to naming names, the profession seemed in agreement as to the important founders. Invariably named were Frank Lloyd Wright, Le Corbusier, Walter Gropius, Mies van der Rohe, with here and there a vote for Alvar Aalto. Outstanding members of the current varsity: Ed Stone, Eero Saarinen, Gordon Bunshaft, Philip Johnson, William Wurster's firm of Wurster, Bernardi & Emmons, Pietro Belluschi, Harrison & Abramovitz. Pressing hard on their heels a talented J. V. made up of, among others, Louis Kahn, Minoru Yamasaki, I. M. Pei, Ralph Rapson, Harry Weese, Charles Eames, Vernon deMars, Paul Rudolph.

"If the architectural forms of our society are going to be evolved," said one of architecture's most respected spokesmen, "it will be through the work, trials and errors of these men."

For the over-all scene, however, much depended on how the problem is analyzed. An examination conducted architect by architect, building by building, gave an exciting prospect for the future. And there was no lack of confidence that this could be achieved. Said one Irish architect, now practicing in the US: "You can follow architecture back to the Parthenon and the Pyramids, and it is one long string of sausages. We are beginning a whole new string of sausages. The whole thing is yet to come, and it will be tremendous."

But placing the few splendid islands of planned sanity (for instance, several of the US campuses) and many of the individual beautifully detailed, thought-through buildings up against the prevailing clutter and ugliness, and the heart fails. Talent galore, yes. A modern renaissance? Not yet.

The fruit cake. To position ourselves we decided to start with the men closest to the new generation of architects, the architectural-school deans. Our Tokyo bureau caught up with M. I. T.'s Pietro Belluschi, 57, in Japan. As one of the most highly respected deans, an architect in his own right often called in to judge architectural works, he was asked for his evaluation of the modern architecture's founders, with some guid-



WRIGHT



AALTO



MIES



GROPIUS



LE CORBUSIER

PHOTOS: RALPH CRANE-LIFE; (C) EZRA STOLLER; HEDRICH-BLESSING; DAMORA; MOOS-BRUGGER-LIFE

ance on the second generation. Belluschi pointed out: "To be a genius is to be a man whose faults are magnified. But architecture needs these people like you need nuts in a fruit cake."

Between Frank Lloyd Wright and France's Le Corbusier, Belluschi admitted it was a tossup whose ego is greatest. But architecturally speaking he gave the weight to Wright: "He has never repeated himself. He has always considered architecture as a living art." Corbusier's sphere of influence is primarily outside the US (South America is an obvious example).

In Belluschi's opinion both men have the same failing. "They can't be imitated without producing a style that becomes sterile, even ridiculous at times." For the man who currently has the deepest influence, Belluschi unhesitatingly pointed to Mies van der Rohe.

Belluschi had a good deal to say about the current crop of architects, singled out the following: Marcel Breuer, "the architect's architect in generating new ideas and having the ability to carry them through"; Eero Saarinen, "the most thoughtful, the one with the greatest spread of interests and artistic vocabulary"; Gordon Bunshaft, "great talent but somewhat limited palette; he has followed Mies with great persistence and success"; Philip Johnson, "a very talented designer, who has executed works of greater elegance than any of his generation"; Minoru Yamasaki, "the one who has been the most humane and sympathetic toward social problems which architecture must meet"; Paul Rudolph, "one of the most original of the younger men."

Top and bottom. When we brought the question of founding greats to University of California's Dean William Wurster, 62, he came out flatly against the Great Man theory: "Modern architecture developed all over the world pretty much independently." Wurster (as did most architects) found Corbusier "more a sculptor than an architect—the fact that his medium is rough concrete doesn't make any difference." Many architects felt the parade had passed by Finlander Alvar Aalto, 58. Wurster, whose own work is marked by its finely carpentered look, kept him in front rank: "Aalto is probably the greatest single architect. He had no more talent, but it is housed in a much nicer structure." As for Frank Lloyd Wright, Wurster said curtly: "He is without doubt the most overrated architect. Wright is his own greatest creation. He has parodied himself."

For Wurster the chief problem confronting architecture is the whole problem of environment: "The architect must cope with the decay of cities, the spoilation of the countryside, the rise of the roadside town. The best architects are no longer interested in one building, but in where building is going."

No time for manifestoes. Harvard's Dean Sert, 55, says: "You must remember that in the twenties and thirties we were going through a period of housecleaning. We were breaking off with 100 years of revivalism in architecture and establishing new points of view. Now for the most part the battle has been won. Manifestoes have a time limit like everything else. You don't write the gospel over and over again, every week end. The writings of Corbusier have been well formulated; there is no need to reformulate them. Instead, architects must turn their attention to the problems.

"The greatest of these is the increasing complexity of society, the rapid change in our way of living. Thirty or forty years ago it was possible for an architect to build a castle. It is no longer. A piece of architecture does not exist in splendid isolation. Today the man next door gets closer and closer.

"What the functionalists of the twenties often described as 'superfluous' is part and parcel of human needs. What is indicated is a synthesis of the arts to supply man with genuine beauty, not with the cheap, applied decoration that prevailed for so long."

Vienna-born Richard Neutra, 65, since the twenties a pioneer in California modern houses, ever more sumptuous, pegs his hopes on a new humanism that will govern architecture in the future. "The monuments of the future will subtly and in a million details commemorate our new observable, not merely speculative, knowledge of man." One of the things Neutra would be glad to



STONE



BELLUSCHI





BREUER



HARRISON, ABRAMOVITZ

see: "Pedestrian space again emerging in the midst of parking space, and parking space no longer the space where someone else has parked his car."

Old fetishes. Marcel Breuer, 54, whose sculptural sense warmed the stern Bauhaus style, was contacted while at work on the new UNESCO Headquarters in Paris. Said Breuer: "The battle has been won, in the sense that prejudices have been destroyed. Thirty years ago advocates of modern architecture had an aggressive point of view. It used to be on the defensive in suggesting flat roofs and big windows. Now these concepts, along with open space and opening up the inside to the outside, are accepted."

Maturing modern is now dropping some of its fetishes. Glass, Breuer points out, is now used only when it answers a functional and esthetic desire, saying: "We now realize that we have problems with the sun. We built glass walls, then found we had to protect them from the sun, from the outside." But mixing modern with traditional (for instance, on campuses) is something Breuer stoutly defends against the claim that this practice jeopardizes the college's investment in a harmonious plant. Said Breuer: "Look at the Piazzo San Marco in Venice. It is one of the most beautiful and pleasing squares in the world, and it is probably the most mixed up architecturally."

"They will rebel." At Harvard our Boston correspondent talked to Walter Gropius, 74, persuasive founder of Germany's revolutionizing Bauhaus in the twenties, with its slogan: "Art and technology — a new synthesis." Where did the Bauhaus founder stand today? Much where he always had, we concluded, but time has modified his role from the *avant-garde* to somewhere back in the central corps of moderns.

"The idea is here to stay," Gropius said, "the idea of getting not a new style but a new order in everything, from industry to town planning." As an example he held up Japan during its 1,000 years of isolation. "There each house, built of the same parts, was beautifully individual, built all in the same spirit. What they achieved was diversity in unity. This is the thing that lies ahead for us. "We have the ideas already. You look at Sweet's Catalogs of fabricated parts available today. It is tremendous. But what do we do? We make rows of houses, each like the other, without individuality. Against this men will rebel: they will always rebel against overmechanization.

"But in time using component parts will correct itself. Individuality will come through natural competition. Mistakes will be made, of course. We are too fidgety, too nervous, too quick to demand total change. But we have the answer in the machine. What we need is consistency of aim rather than a totally new approach."

"It's got to be." The main corpus of Gropius' teaching and analysis seems now to have become standard doctrine. But what of Old Master Frank Lloyd Wright? He was described to us as everything from four-syllable expletives to "the Michelangelo of the twentieth century." The present moment sees one of the lulls in influence from which he has often sprung back in the past.

Our correspondent visited Wright in his self-designed Wisconsin home and work office at Taliesin West. Wright at 87 is still right, perhaps only a trifle more mellow. He had little hope for the present generation, but hoped the third might come through. To visitors he still evinces a kind of waspish, if courtly charm, showing them through his sprawling labyrinthine world, filled with Chinese gongs, stone dragons, massive and blazing rugs. He points out the new TV-set and vistavision screen in the theater for "my boys." Now and then he will pause befor a dusty model or a peeling photo-mural, then chortle: "I ask you, have they done anything as well since?"

Wright's anathemas hurled from on high are familiar, but still striking. Says Wright: "The city is finished, done with. The city performed its function long, long ago. Now we have flight, the automobiles, movies, television. There's no need to be in a city any longer. The buildings they're putting up now—they diddledaddle it crosswise and lengthwise, concealing the true frame, doctoring it. In New York today there is not one building of true character.



SAARINEN



WURSTER



BUNSHAFT OF "S-O-M"

PHOTOS:LOUIS CHECKMAN; NOCER STURTEVANT; PICTOR; BEN SCHNALL; LIONEL FREEDMAN; MORLEY BAER; (C) EZRA STOLLER



PEI



YAMASAKI



RUDOLPH

NOTE: BUILDINGS IN PHOTOGRAPHS WERE SOMETIMES THE PRODUCT OF ARCHITECTURAL FIRMS OR MORE THAN ONE ARCHITECT. HERE ONLY THAT NAME APPEARS WHICH OCCURS ALSO IN OUR STORY.

"I am not indulging merely in self-expression. I am following a principle in trying to evolve an architecture that belongs to us as a people. We've got to have an architecture of our own. It is going to be organic architecture. It has to be. Architecture is truth itself. It is a manifestation of a circumstance in nature, according to materials, purpose, the nature of man himself. It is an intensely human thing when it is organic.

"How can you call Lever House or that bank building modern architecture? There isn't anything new about them. They are a violation of privacy. It's like looking into a zoo. It is true that Lever House is a good soap advertisement and that whisky building [Seagram's] is a good whisky advertisement, but they do not deserve the name of architecture."

Looking back over the past, Wright seems to lament the fall of the New Jerusalem. "The trouble was, they never seemed to follow the principles. They never seemed to get what I was talking about. There was no joy, no humanity, no love of life. Gropius was the Frank Lloyd Wright of Germany, but he lost it, like Mies." As the visit drew to a close, Wright looked about him, then confessed: "You know my tragedy is that I like all these fellows, but I don't like what they do." Seeing his visitor to the door Wright gave him a cheerful wave and a departing shot: "To hell with modern architecture."

Structure is principle. Riding high is Ludwig Mies van der Rohe, 70, creator of the shimmering steel and glass twin-apartment house on Chicago's Lake Shore Dr. Mies is an architect who says: "Architecture begins when you put two bricks together carefully." With Mies, the emphasis is on "carefully." Other architects may complain: "Mies works with blinders on," sometimes argue: "There are values in this culture Mies has not yet discovered." The fact remains that if the US has a "Poet of Steel," it is Mies van der Rohe.

Our Chicago correspondent found Mies in his conventional co-op apartment, its walls painted an antiseptic white the better to show off the Klee paintings, the bare furniture pieces, a single potted palm by the fireplace. To his visitors, Mies seems a huge man with an arthritic limp, a jowly face as placid as a basset hound's, and strong, expressive hands that seem just right for the architectural son of a stonemason.

But even to his friends, Mies warms up slowly, relaxes only over cigars and several drinks. He states his opinions as precisely as he builds in steel, brick and glass: "I believe in structural architecture. Gothic was structural. Most good buildings were structural. Structure is a spiritual notion, a clear principle, not just something you nail together. Of course, I have nothing against nailing. But if you do that, it should really be nailed together, and the principle should be the nailing.

"It is 100% wrong," rumbles Mies, "that we want to discipline people and force them into a mold. Modern architecture needs more freedom. It should grant more freedom. And it is not ideal for everything to be a box. But since most buildings are split up into parts, a rectangle is often the best answer. If it were necessary to make curves, I would make curves.

"As long as we have this same economic and scientific structure, steel will be the essence of our cities. Our buildings need not look alike. After all there are about 10,000 species of seashells. They don't look alike, but they have the same principle. The trouble is that most architects try to invent something every time. The real thing is a very slow unfolding of form. We should refine what is known. When a new problem comes along, then we'll know how to solve it."

The power of example. Gordon Bunshaft, 47, partner in charge of design at the very large office of Skidmore, Owings & Merrill, has both Manhattan's Lever House and the Manufacturers Trust Fifth Ave. bank to his credit. He is mainly responsible for making good with Mies' principles in the marketplace. With Eero Saarinen and Philip Johnson, he has been lumped as one of the "three blind Mies." Bunshaft's admiration for Mies is open. Says Bunshaft: "The US is a steel country. And that's the thing about Mies. Here's a German who comes to this country and expresses steel building better than anyone else.

"And he keeps on developing from one job to the next.

DESIGN NOTES



KUMP'S ROOFS

Probably no "chickenhouse" fault of modern wood-roofed buildings is as common as wavy rooflines at the edge of wide overhangs. Often the "fascia" boards that trim the roof's edge look more like carpentry from Tobacco Road than products of a great precision age.

Few architects have solved the wide roof overhang in all its details with the shipshape ideas of Architect Ernest Kump and his associates. Correspondence with Associate Jim Fessenden shows how complex are the factors in shaping this simple-looking feature —complex but not too technical for common understanding.

Kump's Hillsborough School (above; see also AF, Oct. '55) won AIA awards largely on the basis of its wafer-thin, knife-sharp detailing, including its plaster-lined roof overhangs. Going back, Fessenden recalls a whole series of earlier plaster-finished overhangs, succeeded by another roof series which, for purposes of economy and a change in textures, was trimmed with redwood.

As to redwood trim, Fessenden says: "In order to avoid water stain and streaking of the fascia board that terminates these roofs, and in order to avoid the bother and cost of building gutters and leaders, we projected the fascia forward and free of the actual roof edge, so eaves-drip could fall down *behind* it and not across its face."



A still further precaution was taken —against twisting—by screwing the fascia board to a steel stiffening strip or channel. This metal, Kump points out, has to be unexpectedly heavy to withstand the real strain when wood wants to warp. (Sometimes these metal shapes themselves come crooked from the mill; they may have to be spotheated and straightened.)



"Gutters we avoided, because of initial expense and maintenance costs of gutters and downspouts or leaders. Water drips off eaves of our buildings, and is caught on the ground either behind a curb or step (to avoid splashing) or in a gravel-filled trench. The redwood fascia itself was always used with different versions of exposed woodframe overhangs and its function was simply to make a trim, gutsy terminus to the roof.



"But then we noted the more careful workmanship and joinery required in overhangs framed of wood (no wood on the building gets more sun, and dries and shrinks more than the roof); beyond that we noted the cost of repeated painting. (Overhangs catch a lot of dust.) These combined costs just about offset the initial expense of putting stucco there.

"Also, the plaster soffits were a fine light-reflecting surface: light bounces from pavement to soffit, thence through windows into building. (Furthermore,



the weight of the stucco produces a 'negative moment' in the rigid steel frames of the roof, helping significantly to balance the stresses in them.) So we had talked ourselves back into overhangs stuccoed on the underside.

"As to Hillsborough, we were intrigued by the richness of that suavely molded, plastic, quite sensuous roof underside, floating between the heavy texture of shake-shingles on top and the hot-fudge color of redwood siding below.

"Meanwhile on other projects we had used formed stainless steel and also copper fascias and undersides-in some cases as gutters."



KUMP'S STEEL POSTS

Kump's firm has also made distinguished school designs using steel posts standing outside the exterior wall and creating a highly rhythmic feature there. It is an idea suited to many other kinds of low buildings.

Here once again the design influences are interesting.

"The original idea," says Fessenden, "was that the steel frames of our low buildings need not be part and parcel of the curtain wall. It would be simpler and cleaner not to fatten the whole wall to include the posts, and not to run a thin wall creating special joints every time a post is encountered.

"Also, the effect of extra depth and richness that series of freestanding posts give to a building is rewarding.

"At first we let posts coincide with the window divisions. But this created complications where we needed clearance for doors or windows. It also put the steel frames in the line of interior partitions where the steel bents interfered with ducts, conduit and pipe at the top of partitions. So now we place



the steel frames in line with the midpoint of windows-in other words where they bisect the 4' module of the building. This makes a nice counterpoint, too.

"But then some client came along and said if we left our freestanding outside posts where they were and moved the wall over to them, we would gain a free foot of building. So we started encasing the posts in the wall after all -but along the 'corridor' side of the building only.

"Please note that at Hillsborough, where posts are encased in the wall along the side with high clerestory windows, we still carry the line of the window framing free past the posts, so as to avoid the complications of jointing sash to posts or interrupting the clear window rhythm.



"At the same time the columnless 'corridor' side makes a strong contrast with the be-columned 'window-wall' side of the building.

"In the group of schools we built of concrete block, the steel posts were uniformly left as part of the wallwhere they helped sustain the block walls against earthquake forces."

TECHNOLOGY

The acoustician and his role in the architecture of today (below)

A spectacular canopy of many shells roofs flexible rectangular space (p. 158)

Technical notes (p. 162)



Photos: JosePH W. MoLitol



IN ACOUSTICS a classic follow-up job was at State Fair Arena, in Raleigh, N.C. When new, building was huge echo chamber (above). Today, glass-fiber baffles on ceiling help eliminate the noise problems (right). Moral to builders: don't forget acoustics; errors cost money.

BEAUTIFUL BUILDINGS AND HORRIBLE SOUNDS

There was a time when architects and owners paid little heed to this thing called acoustics. Not so today. The acoustician is now a key man. Projects have failed because he was not there

From its earliest designs, the North Carolina State Fair Arena, at Raleigh (left), had been hailed as a spectacular testimonial to architect-engineer collaboration. Its suspended catenary roof, strung between two parabolic arches, won praise from a nation of architects and engineers.

But from the day the arena was opened, in the fall of 1953, it had been an acoustical bedlam. Its curved walls, plus its convex ceiling—70,000 sq. ft. of corrugated steel deck—turned the arena into a huge echo chamber. Public announcements were virtually impossible to hear. Music was an intolerable wave of jumbled noise.

In the years to come, the Raleigh arena is likely to stand as a monument to the union of architecture and engineering and, too, as a warning: Don't forget acoustics.

The arena is no bedlam today. It has glass-fiber baffles, encased in thin, washable covers of plastic, spaced vertically over every square foot of ceiling, plus a battery of loud speakers, spaced at 30' intervals around its floor. And many think it looks even better, more exciting, now.

Newman's lament

But these improvements cost about \$17,000. (Had the acoustical job been done in the beginning, the ceiling would have been covered with perforated metal deck, with long strips of glass-fiber sheet sandwiched between the deck and the roof itself.)

Laments Robert Newman, whose firm, Bolt, Beranek & Newman Inc., Cambridge, Mass., worked out the acoustical improvements: "If the architects had taken their problem to a consultant before the plan had jelled, the cost of acoustics would have been considerably lower and the arena would have been a success from the start."

Although the field of architectural acoustics has experienced a rapid growth during the past eight years, there still exists among some architects a resistance to consultation.

Though their number is dwindling, there are architects who by-pass the acoustician* because he is "a scientist," because "he has no feel for good architecture." Their argument goes something like this: The acoustician has only one answer to any problem; more likely than not, it is the same answer over and over again, on one project after another.

In a few instances, there is still some truth in this argument. Acoustics is not an outgrowth of an art; it is an outgrowth of physics, whose laws remain constant. But it is a science which has learned to live with an art. Today, more often than not, its solutions are not "the same answer, over and over again."

The Tile and Carpet School

Also, there are architects and contractors and building managers who think that they are capable of handling the acoustical problems themselves, particularly in the "simpler buildings." But here, there is a danger of falling into acoustical traps and acoustical cure-alls. Generally, such self-made authorities belong in what might be called the Tile and Carpet School of Architectural Acoustics. They couple these two elements to solve most of their noise problems. Very often, they are successful; but when the trouble is too complex for tile and carpet, the patch-up solution is sometimes quite costly, and seldom completely satisfactory.

In fairness to the architect, it should be noted that his fee, particularly on a modest project, is sometimes not adequate to justify a split with an acoustical consultant. Here, he is forced to work out the acoustics problems himself, and hope that he's right.

Most of the better architects in the US have been working closely with acousticians for a long time. McKim, Mead & White, for example, consulted with the man who is recognized as the father of architectural acoustics, Professor Wallace C. Sabine, of Harvard, when they designed Boston's Symphony Hall, back at the turn of the century.

The unaware designers

But even the best architects—and owners—are not always aware how necessary it is to have advice on an office building or an apartment house. Most are likely to confine their expenditures for acoustical consultation to such projects as auditoriums, churches, concert halls.

On the other hand, for the General Motors Technical Center, which some architects would have treated as a "routine" acoustics problem, Architect Eero Saarinen worked closely with Bolt, Beranek & Newman. Saarinen is one architect who has no acoustics experts on his staff-though he wants his architects to know the fundamentals. Most of the large architectural firms have no staff acoustician. They go outside for advice, apparently feeling that the outside specialist can keep himself at the frontier of new developments, where a staff specialist would-in time-fall behind.

Technology and economics are slowly forcing acoustical problems into many architectural projects that formerly were not troublesome. The office building, for example, is no longer the sprawling structure it used to be. In today's office, there is less space per person, for space is costlier. Many former plaster walls are now replaced with shoulder-high partitions. Ceilings are lower, which means that noise cannot drift upward and get lost. Air conditioning sometimes adds its hum.

Together, this means that the once "simple buildings" are no longer so simple, acoustically. There is the problem, for example, of where to put the air-conditioning compressors — great noise makers—so that they will not disturb the occupants of the building. Many a building has been turned into the neighborhood villain because its compressors, placed on the roof for structural and operating reasons, rumble noisily for blocks around. If only for the sake of good will among its neighbors, the building's compres-

The material contained in this article is based on discussions with architects and acousticians in many parts of the country. FORUM is particularly grateful to Miguel C. Junger and Preston W. Smith Jr., of Cambridge Acoustical Associates, Cambridge, Mass., for their technical consultation.

^{*}A mortician to unwanted sounds ?-ED.



BEAUTIFUL BUILDINGS AND HORRIBLE SOUNDS continued

sors had better be put below the ground.

The acousticians cite this as one of the more common mistakes of the amateur. But there are others, for a great many architects, building owners, and building contractors know very little about the very fundamentals of noise control. Says Robert Newman: "The architect should have learned the fundamentals of acoustics in school. But few schools of architecture teach even the fundamentals."

The big blunders

What are the common blunders? One of the most common, say the acousticians, is this matter of neglecting to place things where they won't be heard: the compressor on the roof, the high school machine shop next door to the principal's office or next door to the music room.

Sometimes, as in the case of the compressor and the machine shop, mistakes indicate simply a lack of logical thinking. In other instances, there is clear evidence that somebody doesn't really understand how sound energy behaves, why it often misbehaves. Probably the most common misunderstanding of all is the one about "soundproofing." It goes like this: If you cover a ceiling with tile, cover the walls with a second sound-absorbing material, and put a carpet on the floor, you will have succeeded in 1) making the room quiet, and 2) keeping sound from escaping into adjoining rooms. Actually, only one of these things has been done. The room is going to be quieter—perhaps even too quiet. But it is not insulated; sound will escape to the rooms around it, unless the walls of the room are good and heavy.

The reason, of course, is that sound absorption and sound insulation are two distinct things. Sound absorption means destroying unwanted sound energy within the room—a job that will be done by a material such as acoustical tile. But sound insulation means keeping sound energy from escaping from one room to another. Tile isn't much help here, and there's no use trying it.

Why is a good absorber not also a good insulator? Mainly, its because a good absorber must be porous. Take, for example, what happens when sound strikes a wall that is coated with acoustical tile. The tile soaks up some of the sound energy, just as a sponge soaks up water. This absorption keeps much of the energy from bouncing back into the room. But, at the same time, quite a lot of the sound energy goes right through the tile-because it is porous-and strikes the wall. If the wall is made of a lightweight material, it will vibrate, and this causes the air on the other side of the wall to vibrate too. Thus, the sound energy is not insulated. Only a dense material or a double wall will stop it.

As one West Coast acoustician puts it: "There's no substitute in sound control for 12" of solid concrete between you and any noise. Or, even better, two walls of 6" thick concrete, separated by an air gap."

Another mistake which is often made concerning sound might be called the fallacy of visual analogy, or believing — mistakenly — that if you can't see through something, you won't be able to hear through it. In the case of, say, a wall of concrete, this is true. But it is not true in the case of a lightweight, porous material like cinder block. Sound, unlike light, will pass through cinder block almost without interference.

There is a common blunder, say the acousticians, which even the most conscientious builder sometimes makes: He forgets about cracks. He builds a 6"-thick concrete wall between two rooms, certainly sufficient to prohibit interchange of any reasonable sound. But he neglects to take into account the fact that the concrete will settle slightly—perhaps only a quarter of an inch. This slight crack at the top of the wall is sufficient to cut by half the wall's effectiveness as an insulator.

Too much tile

To the annoyance of many tile manufacturers, the acousticians argue that we are using more acoustical materials than we need to. They point out that



TODAY AND YESTERDAY: Boston's 50-yearold Symphony Hall (right) had its share of sound problems for the acoustician. But today's building, like Caracas' Aula Magna (top), is much more challenging.

the law of diminishing returns comes into play with tile, or with any other good acoustical material. Says one consultant: "Acoustical treatment of ceiling and one wall reduces a room's noise level appreciably. But many builders still feel that they must go beyond that, so they treat the other three walls, though the decrease in the room's noise level is only slight."

Of course, these are facts which the enlightened architect and builder already know, for these are simple truths of sound. But the big, mysterious area, even to the brightest architect, is the field of sound diffusion. This is where the acoustics man must have skill—in both his science and in architecture.

Take the old-fashioned concert hall, or a 200-year-old opera house. Compare, for example, the size and the shape of a new auditorium like the Aula Magna (above) in Caracas, with La Scala in Milan, or for that matter, with any opera house or concert hall that was built more than 50 years ago. The older hall is bigger. Its ceiling is much higher. Chances are its rows of seats are crammed closer together.

Acoustically, La Scala is a classic in perfection, though it has none of the trappings of modern acoustical treatment: no sound reflectors, no soundabsorbing baffles, no acoustical tile. But look at its shape: balcony stacked over balcony in a tall, circular column. Every member of the audience is on a RA---NTA-TAN

SOUND ABSORBERS like these help to reduce the factory din. But it will take more than these to solve industry's problem.

PLASTIC JACKET around these glass-fiber baffles makes them washable. Plastic cuts efficiency, but only slightly.







CIRCULAR CHAPEL at M.I.T. could have been an acoustical bediam. Consultants Bolts, Beranek & Newman suggested undulating walls, backed by absorbing materials.

WHAT PEOPLE DON'T KNOW ABOUT SOUND



LIGHT vs. SOUND: light cannot turn a corner (left). But sound can (right). Don't expect head-high partitions to insulate sound.



THREE WAYS TO INSULATE SOUND: do it by distance when you can (above); it's usually cheaper. If noisy room must be nearby, a





A COMMON BLUNDER: don't expect a false ceiling to work as a sound insulator. An insulating wall must reach to the ceiling (right).



A FALSE CEILING will permit sound to es-

USEFUL REFLECTION: if difference in lengths of two sound paths is less than 50', reflection is useful.



THE WRONG WAY to open doors and windows: here, doors and windows act as sound funnels. Rooms are noisy.



WHERE PEOPLE MUST LISTEN, don't cover the ceiling with tile. An all-tile ceiling absorbs too much sound. Listening is difficult.

DISTURBING REFLECTION: But if difference is greater than 50', listener will hear echoes. Sounds will be confusing.



THE RIGHT WAY: doors and windows are staggered. Sound must travel a crocked path from room to room. Rooms are less noisy.



TILE BELONGS around the top of the walls and the ceiling edges in a classroom. Noise level is lower, but listening is easier.

direct line with the stage; he hears direct sound, not reflected sound.

Not so with a new hall such as Aula Magna. Many members of its audience must hear both direct sound and reflected sound. It was the responsibility of the acousticians—in this case, Bolt, Beranek & Newman—to set up an acoustical design in such a way that the new hall "sounded" right from every seat.

Recognition of their own limitations, plus the occasional blunders of some of their contemporaries, is convincing most architects that they must take these more difficult projects to the acousticians. Skidmore, Owings & Merrill, for example, worked closely with a consulting organization during its design of the Air Force Academy at Colorado Springs; Saarinen did too when he designed both the Kresge Auditorium and the Chapel at Massachusetts Institute of Technology. In each instance, the consultant came in at an early stage, actually helped shape the end design, and enhance it.

The industrial din

In the factory, too, the acoustician has an important role today, both as a consultant in architectural acoustics and as an expert on noise abatement. Indeed, this is the facet of acoustics which is taking most of his time. Within the past few years, hundreds of workers in more than half a dozen states have filed compensation claims, charging that high noise levels at their places of work had caused loss of hearing. A few companies are threatened with multimillion-dollar losses, all traceable to the high noise levels in which their employees must work. It is the acoustics consultant who must find ways to make machinery operate at lower noise levels.

Another activity of the acoustician today is in the aircraft industry, where the jet plane is kicking up such a racket over the countryside. A number of major cities have closed their airports to the jet. The manufacturers have invested heavily in jet noise research, much of it conducted by the acoustical consultants, in an attempt to make the jet at least as quiet as the big pistondriven engines of today's aircraft. Incidentally, most of the acousticians have serious doubts that the jet can ever be tolerably quiet. The most that they're hoping for is something approaching



the noise level of today's commercial planes—still a pretty noisy bunch.

At the present time, there are 43 companies in the US engaged in the business of sound control. But only about half of these are active in architectural acoustics. (The others stay within the bounds of industrial noise control.)

To the architectural consultants, the building industry pays, at a guess, around \$1 million a year for their consultation. Measured against the industry's annual payment to architects and other engineers, this is a tiny sum. Yet, it is an extraordinary jump from just eight years ago, when there was just a handful of firms in the business. The biggest then was the Armour Research Foundation, Chicago, an active acoustics consultant since 1936; it has established many of the standards and methods used in evaluating acoustical materials.

Since 1948, a number of universities have spawned new firms, beginning with Bolt, Beranek & Newman. (All three men had taught at M.I.T.) This was a three-man organization in 1948; today it has a staff of 50. From Harvard University's Acoustics Laboratory has come one of the newest firms in the business: Cambridge Acoustical Associates, headed by Miguel C. Junger and Preston W. Smith Jr.; this company was established in the spring of 1955.

Both companies, like virtually every architectural consulting organization, work in all areas of noise control: the jet plane, the noisy factory, as well as architecture. Even at Bolt, Beranek & Newman, which is currently the most active firm in architectural acoustics, architecture represents only about one third of its work. The company's total income this year will be about \$750,000.

The major item of expense in an acoustically treated office building is the cost of the ceiling tile. In a typical office building-say 20 stories in height, covering a land area of 40,000 sq. ft.-the ceiling tile throughout the building will cost about \$480,000. If the building is air conditioned, the cost of building quiet into the ventilating system will amount to roughly another half that much, or \$240,000. So, in total, complete acoustical treatment comes to about \$720,000 for a small office building. Compared with this, the cost of consultation with an acoustician is quite small. His fee for such a project will be between a low of

\$500 and a top figure of \$1,500.

The manufacturers

The manufacturers of acoustical materials are enjoying a boom. Last year, industry sales hit \$50-million, which is a five-time increase over 1947. Architects and acousticians seem to agree that the manufacturers are producing products of good quality, though they sometimes grumble that the manufacturers are too far from the problems of the acoustician and the architect to know what tomorrow's products should be. A few of the consulting organizations have set up their own materials research sections, explaining that this is their only way of keeping in step with architecture's new shapes.

The acoustical materials industry is one which has progressed mainly by evolution—by modification of existing products, rather than by development of new materials. Unlike such dynamic industries as electronics and chemistry, where new concepts have produced radical changes, the acoustical materials industry is still producing materials which are essentially close kin to the original tile, which came along some 35 years ago.

THE CONSULTANTS IN ARCHITECTURAL ACOUSTICS

The field of architectural acoustics is still very select. Many major cities have no architectural acousticians. Consequently, when an architect is faced with a noise problem, he frequently has trouble finding a specialist who can assist him. For owners and for architects, FORUM publishes this directory of consultants in architectural acoustics:

ALABAMA

Charles S. Minor 2309 22nd Ave., S. Birmingham

CALIFORNIA

Bolt, Beranek & Newman, Inc. 435 S. La Cienega Blvd. Los Angeles

Dariel Fitzroy 50 Montecito Rd. San Rafael

Vern O. Knudsen University of California Los Angeles Robert W. Leonard University of California Los Angeles

Donald P. Loye 10578 Holman Ave. West Los Angeles

William B. Snow 1011 Georgina Ave. Santa Monica

Floyd R. Watson 1504 Milan Ave. South Pasadena

Paul S. Veneklasen 11789 San Vicente Blvd. Los Angeles

R. W. Young and R. S. Gales 1698 Los Altos Rd. San Diego

CANADA

Robert H. Tanner 214 William St. Belleville Ontario COLORADO

Paul E. Sabine 1109 N. Weber St. Colorado Springs

DISTRICT OF COLUMBIA Harold Burris-Meyer

500 Walker Building 734 15th St., N.W. Washington

Leo F. Mulqueen 5148 Massachusetts Ave., N.W. Washington

ILLINOIS

Armour Research Foundation 10 W. 35th St. Chicago

Howard C. Hardy 322 W. Washington St. Chicago

MASSACHUSETTS

Bolt, Beranek & Newman, Inc. 16 Eliot St. Cambridge

Cambridge Acoustical Associates 1278 Massachusetts Ave. Cambridge

MARYLAND

Samuel Feldman Noonan, Knopfle & Feldman 9314 Colesville Rd. Silver Spring

NEW YORK

Lewis S. Goodfriend The Harwood Building Scarsdale

Cyril M. Harris Associates 425 Riverside Dr. New York City

Michael J. Kodaras 150 E. 35th St. New York City

Benjamin Olney 385 Hollywood Ave. Rochester

TEXAS

C. P. Boner and R. N. Lane University Sta. Austin

Wayne Rudmose 3901 Shenandoah Ave. Dallas



EVOLUTION OF IDEAS is shown in architects' diagrams. Simple vault (top, left) wastes space above cubage actually used; big shell vaulted in two directions adds unusable space around sides. Many smaller shells, however, permit horizontal roof and partition grid over actual cubage desired. At right, simple principle of suspension bridge, used in two directions, produces a circus or camouflage net; adding a stiff ring like that in a fireman's net eliminates guy wires. Thinking on space and structure is combined in design.



FLYING CONCRETE TO ROOF GREAT ROOMS

ARCHITECTS: Victor Christ-Janer and Robert Damora STRUCTURAL ENGINEERS: Paul Weidlinger and Mario Salvadori PROGRAM DIRECTOR FOR ATLAS: Robert Damora A flock of miniature shells on cables combines the efficiencies of curved roofs with the efficiencies of straight modular space underneath

The structure above is a "spectacular" for dramatic supermarkets, sports arenas, entertainment and display buildings. It is also something new in the art of clear-spanning great spaces: a level, rectangular roof that can actually float without a single wall or column obstructing the big room it covers. Under this big cellular canopy the space can be left wide open on all sides, or divided up any



number of ways by standing or hanging screen-partitions arranged under its regular grid of concrete shells.

The scheme, by Architects Victor Christ-Janer and Robert Damora, is the third in a series of exploratory projects in architecture and engineering sponsored by Universal Atlas Cement Co. and being presented in full-page advertisements in mass-circulation consumer magazines. (Project No. 2, a single flaring concrete shell rising over a restaurant, appeared editorially in last month's FORUM.)

What the architects have done, in effect, is to fragment the single big shell-concrete dome into many little shells, arrange them in a pattern and hoist them aloft on a network of cables suspended from a giant ring 8' wide, 2' thick and 400' in diameter.

The shells can be economically cast from a single form and hoisted into place. (In this case the shells are 24' square, although they could be up to 30' or more depending on the capacity of cranes available to lift them.) The four corners of each shell would be tied into a grid of exposed tie-rods, which could also be combined with drain pipes from collection points at each intersection of valleys on the roof. The sides of each shell are slightly bowed inward to admit slender lozenges of daylight through plastic skylights and to express each shell as a separate unit.

The advantages of this scheme over single large dome-shells, the architects point out, is a constant ceiling height at any level required, with no low unusable space at the edges and no wasted high space in the middle. Partitions can be sent up to the tierods at any point. Another advantage in this modular system is that some shell units can be omitted from the pattern to give an irregular roof outline or interior lightwells tailored to functions below.

The idea of a roof-of-domes will get a small-scale test run in a grocery store in New Canaan, Conn. which Christ-Janer now has in working drawings with the help of Structural Engineers Paul Weidlinger and Mario Salvadori. This will consist of 12 shells 24'-square supported on columns rather than hung from a compression ring. A full-dress version with compression ring is being presented to a Midwestern college for possible use over a new riding ring (see overleaf).



over proposed New Canaan, Conn. grocery store. Total estimated cost, including air conditioning: a low \$12.80 per sq. ft.



EARTHWORK instead of pillars support ring, cables and shells over riding ring proposed for Lake Erie College in Painesville, Ohio. Entrances are at four corners.





THE SHELL is a new type called a "translational shell," first built in Italy last year and analyzed under methods developed by Engineer Salvadori. Where a true dome is an arc rotated to make part of a sphere, this shell is an arc translated, or moved, along another arc at right angles to it (sketch left). In this case equal arcs are used to give square shells; oblique slices on sides admit light between. Insulation is cast in on simple forms.



TECHNICAL NOTES



SEAGRAM TAKES A SHOWER

Hurricane winds put New York's bronze curtain wall to test

The men behind New York's new Seagram building — the 38-story curtain wall of glass and bronze that will stand over an entire block along Park Ave. — are confident now that water leaks will be no problem, even in hurricane weather.

Unlike most of the early metal curtain wall buildings, Seagram's wall has been put through a series of severe preliminary tests — the last of which was made last month — to anticipate difficulties that could have caused trouble after the building had been completed.

In a display of confidence, a public demonstration of the wall's watertightness was made earlier this summer on the premises of the General Bronze Corp., in Garden City, L. I. (General Bronze is supplying the metal for the building.) On hand were such people as Mies van der Rohe and Philip Johnson, the building's architects; Matthew Grogan, of George A. Fuller Co., the general contractor; officers of General Bronze.

Gale-force winds, churned up by a whirling airplane propellor, splattered water against the wall at wind velocities that ranged from 50 to 120 mi. per hour. Water came from two directions, at the rate of 4" per hour: from a series of perforated pipes overhead, which made it fall like rain; and from a series of distribution rings, just aft of the plane's engine—these to simulate torrential conditions at the faces of the windows. Water pounded at the façade, a two-story replica of the building, for 12 minutes.

On the basis of the test results, the architects and the engineers say that the wall design is watertight.

From the public demonstration, however, the wall designers did uncover one modification which had to be made: The high-velocity winds proved that the panels needed some additional structural strength to avoid excessive deflection. Now, a small bronze channel—a 1" flange with a $1\frac{1}{2}$ " web—is welded vertically on the inner side of each panel. The new panel has since been tested. The architects and engineers conclude that the final modification has now been made.

Among building industry observers, there is agreement that tests of this type have been all too rare. The element which went overlooked in the earlier buildings was updraft. The designers took into account the normal, wellbehaved rainstorm; what they neglected was the swirling water that sweeps up at a building in more turbulent storms. For the Seagram building, both conditions seem to have been considered thoroughly, and overcome.

AIR TRAFFIC JAM

A look at tomorrow's airlines shows heavier loads, larger airports

The International Civil Aviation Organization of the United Nations has just taken a far look into the future of aviation. It sees bigger airports, handling planes that weigh ten times as much as today's biggest planes.

The UN study points out that the airports of 1980 will have to cope with atom-powered ships that weigh as much as 1 million lb.; today's DC-7 has a maximum take-off weight of only 122,200 lb., a landing weight of 97,000 lb.

Also, airports will have to handle much more traffic. The study predicts that the commercial carriers will be flying 480-billion passenger miles per year, a 13-time increase over today.



LOW-COST SLAB ROOF

Texas builder saves 60% on forming costs on school project

A Texas contractor says that he saved 60% in forming costs on the construction of concrete slab roofs for a series of school buildings in Midland, Tex.

The contractor, Warner Construction Co., of San Angelo, used a scaffoldshoring unit (picture) that jacks up into position for pouring, rolls around on wheels when the unit has to be moved to a new pouring site. The contractor used the same forms for three different pours; nothing ever had to be dismantled.

He did it this way: After the concrete had set, he removed the screw jacks from four legs of the scaffolding and replaced the jacks with 6" stemtype casters. Then he lowered the unit into the casters and rolled it to the next site.

He used Universal Ezebilt scaffolding on the project, plus a specially devised four-wheel trailer that enabled him to move both scaffolding and forms from one school building to another still without any dismantling. When he had poured a roof on one building, all remaining scaffolding and concrete forms would be lowered onto the trailer and moved to the next.

Thus, the contractor had to erect his scaffold-shoring panels just once, which meant that he lost no time in dismantling and re-erection.



SNOW MELTING

A high-temperature system proves itself in Maine

In the middle of every summer, there seems always to be a thoughtful soul who is willing to talk about snow. This year, it is the American Hydrotherm Corp., Long Island City, N. Y., a proponent of high-temperature snow melting systems.

Throughout last winter, says the company now, it conducted a series of tests at the Loring Air Force Base, at Limestone, Me. The results, according to company engineers, indicate that it is possible to reduce the initial installation cost of a snow-melting system "to a fraction of what is generally estimated."

Like most systems, American Hydrotherm's uses coils of fluid, embedded in concrete, to cause the melt. But unlike systems that operate at lower temperatures, this one must sink its coils deeper into the concrete. Otherwise, there is a danger of causing cracks. Another basic difference, of course, is one of temperature and pressure. A conventional system will heat its fluid to about 140 F., force it through the coils at pressures of only about 5 psi. The high temperature system reaches 350 F., under pressures of 150 psi.

The higher temperatures, says American Hydrotherm, permit the coils to be placed farther apart—in some cases, 6' apart—which means less piping. Also, the coils themselves can be of smaller diameter, which means less fluid and a reduction in pumping costs.

As the pictures show, several different coil patterns were used—some with better results than others, though



the company is not ready to say which proved to be best. Also, two different types of concrete were used. One is a Portland cement concrete; the other, a bituminous concrete.

American Hydrotherm predicts that high-temperature melting systems will soon be showing up in such places as shopping centers, bus terminals, roof parking lots, and airport runways.

HOW MUCH RESEARCH?

A new study shows how trade associations measure up on research

In the US today, we are investing a whopping \$5-billion a year in the field of research. This is more than our forefathers spent for technological advancement during all of the first 150 years in our history.

In a comprehensive study, just published by the National Science Foundation, we get a close look at a small, but significant, corner of our national research program: the research conducted by the trade associations and other cooperative organizations. The general conclusion is that cooperative research amounts to little in dollars, but that its influence is greater than dollar expenditures would indicate.

In 1953, the year chosen for the study, the cooperative groups—including trade organizations, professional and technical societies, research-educational cooperatives—spent \$21 million for research and development, most of it for technical research.

Trade associations spent the greatest part of this, about \$13 million; professional societies, just over \$2 million.

In addition to providing some hard statistics on dollars spent by cooperative groups, the study reveals a rather pessimistic view of the future on the part of a number of group officers, who feel that their industries could profitably spend more money on research. Although cooperative research programs do not seem to be enjoying the same growth as the total US research effort—which is increasing by 10% to 12% per year—the National Science Foundation concludes that "officials of trade associations sound unduly pessimistic about future research projects."



BUILDING AUTOMATION

Once a factory word, automation belongs now to buildings too

In recent weeks, there has been quite a lot of talk about automation for the office building. One of the most outspoken optimists has been the Minneapolis-Honeywell Regulator Co.

Now, Honeywell indicates the basis for its optimism: during the past 12 months, more than 50 new buildings have put to work new control techniques that make it possible to centralize control of such things as room temperatures, automatic elevator operation, plumbing systems, even the lawn sprinklers.

The Bank of the Southwest building, in Houston (picture), has its control center in the lobby, where everybody can see what's going on through the plate glass windows. In the picture, the building engineer is dialing a number to get a temperature reading from one of 400 points in the building. If he has to make an adjustment, he can do it without leaving the room.

Honeywell will not give details, but says it is designing a system now to control many of the routine operations of a busy hotel. The system will keep temperatures in control, turn lights off and on at proper times, even handle the morning calls.

Some of the newer buildings that are using central control centers; Baltimore Gas and Electric building; Prudential's new 41-story building in Chicago; an eight-story office building of the New England Telephone & Telegraph Co., in Providence; British Columbia Electric Co.'s new central office building, in Vancouver.

for all concerned

ARCHITECTURE FOR THE NEXT TWENTY YEARS

In May of 1957 the architects of the US will meet in Washington to celebrate their first hundred years as an organized profession. The event should be a thoroughly happy one, for there is much to be proud of; in some respects the US emerges from these hundred years as the world's architectural leader, notably in her special fields of beautiful houses and remarkably organized tall buildings.

In circumstances like this nobody wants to be a killjoy, but there are some friendly suggestions to be made to the AIA Board, which meets this month to set up a final program. Chief question:

Will the architects use this rare opportunity to dedicate themselves with the same vigor to erasing America's most glaring architectural weakness?

Basically this weakness is architecture's very shallow penetration into the nation's total building fabric. Basically the question is how you build and rebuild the totality of America, not only a few splendid isolated architectural islands.

Back in 1950, friends of ours across the Atlantic, editing England's Architectural Review, cut deeply into our native pride with a complete issue devoted to "Man-made America." What they said still rankles-because there was some justice in it. They were talking not about our selected beauty spots, our fine suburban homes, our recognized monuments. They were talking about America as a whole. America the way the reverse tourist, coming here from Europe, sees it. And, no doubt

exaggerating a bit, they reported that "never before in ten thousand years . . . has Western man . . . created the kind of squalor we find here—the hygienic but *visually* scrofulous wasteland which is the universal embodiment and symbol of Progress, twentieth-century style."

The problem of this America, the whole of it as built not by architects alone, or builders alone, or any professionals, but by the converging action of all the people, focuses most clearly in our cities. And although not many average citizens see the problem complete, although not many realize what the full extent of "visual scrofulousness" is, one thing is sure: the whole leadership of the US community is aware that "the shabby, dull, dingy condition that is overtaking our cities can no longer be tolerated."

This condition engages the US Chamber of Commerce; it engages industrial leaders who see the threat of being choked off in productive efficiency by the very efficiency of their own building and road and automotive production; it engages commercial leaders who see the distribution of goods loaded with costs through the fantastic confusion of traffic and building patterns, hampering access. Not one institution, cultural or other, but is caught up in this problem.

Elsewhere in this issue we show that this problem is reaching crisis dimensions by the incredible expected increase of 56 million more people and 50 million more automobiles by 1976, pushing still newer cities out where there are now farmlands and orchards. Now that all of our larger cities are hastening to form redevelopment and urban renewal committees, now that the Advertising Council is spreading the gospel of AC-TION through national periodicals, now that all America is getting into the act, we ask:

Can the architects of America afford to wait?

Can they afford not to plunge into this greatest, allcomprehensive architectural problem?

Can they afford to celebrate while opportunity burns?

Will they later complain when others fail to acknowledge the position due them as "leaders"?

The time has come for a major architectural declaration.

In recent years there have been just two major architectural declarations on the job of building the new America.

One was made at the Princeton bicentennial of 1947, when leading architects ambitiously pronounced that architecture today deals with "man's total environment." This will soon take on a wry sound unless it can be given more effective implementation.

Then in 1950 at Washington the AIA for the first time organized collaboration with the unprecedented mass homebuilding industry of the US. The results may sometimes look feeble but they are immeasurably more effective than inaction. It is time for another major move: on the shaping of cities.

Let it be said forthwith, to the honor of US architects, that the new problem of citification lay dormant until architects began to make it visible in the third dimension. The list of utopian visions, models, renderings, projects, exhibitions, along with the few executed demonstrations, is too long to be enumerated.

Yet all this is nothing to what must still happen; indeed we lack more than a handful of architectural organizations, even, that are equipped to cope, in cities large or small, with what has to happen. The work to be done is immense.

So, we submit, this is the problem for US architecture before which every other possible problem pales in significance.

Of course, should architects fail to act others will act, for city building and rebuilding will wait on no man. Yet we believe the profession is ready for a resounding start, for, as Ruskin said: "The cause of art is the cause of the people," and here alone is architecture's chance with the people. Clear heads to the AIA Board, and good luck in a big fresh start for the next 100 years!

Dougras Haskell





announcing ... the monumental type 360°



aluminum window

3 years of continuous planning and development has again resulted in a Pomeroy window which we feel has the characteristics of quality worthy of your

interest and immediate use in buildings of character and prestige. Your inquiries are invited ... just call or write:

S. H. POMEROY CO., INC., 25 BRUCKNER BOULEVARD, NEW YORK 54, N. Y.

of	DOUBLE- Hung Windows	VERTICALLY PIVOTED WINDOWS	CUSTOM- BUILT ENCLOSURES	SPANDRELS SYSTEMS	ACOUSTICAL CEILING SUSPENSION SYSTEMS	METAL Partition Studs
- 17 Y - 1					1	TTD CTTTL

FABRICATION IN ALUMINUM - STAINLESS STEEL and COATED STEEL



leading manufacturers of

HUGE HOSPITAL . . . COMPACT CENTER

architects prefer



for the

nation's newest, most modern

medical buildings...



The new 48-room Olmos Medical Center (San Antonio) is cooled by a central station, RK 25 h.p. The RK contains all elements of a built-up system —blower section, cooling section and evaporative condenser—in one cabinet. The evaporative condenser saves 95% on water consumption costs and eliminates the need for an outside water tower. Architect is Cerf Ross Associates; Engineer: Martin E. Staley; Contractor: G. H. Dillard Co., all of San Antonio, Texas.

The mammoth 500-bed Nathan B. Van Etten TB Hospital in the Bronx, N.Y., recently completed, is one of America's largest medical buildings. usAlRco equipment includes 47 heating coils, 8 unit ventilators, 6 unit air conditioners and 44 blowers. Architects: Pomerance & Breines; Guy B. Panero, consulting engineer; General Contractor for the N.Y.C. Dept. of Public Works: Gerace & Castagna; Heating Contractor: Heating Maintenance Corp. of New York.

In today's finest, most up to date medical buildings, large or small, you see the USAIRCO name on air conditioning, heating and ventilating equipment again and again. Equipment that is designed to fit any requirement, unmatched in engineering excellence, equipment backed by 30 years of manufacturing experience . . . these are the reasons for today's trend to USAIRCO. Typical examples of architects' preference for USAIRCO products in America's outstanding medical structures are these two recent installations: The \$14,000,000 Nathan B. Van Etten TB Hospital, Bronx, New York, and the single story Olmos Medical Center, San Antonio, Texas.

For descriptive literature write Robert G. McLain

UNITED STATES AIR CONDITIONING CORPORATION 7900 TABOR RD., PHILADELPHIA 11, PA. • Export: 13 E. 40th St., New York 16, N. Y., U.S.A.



through rust to bare metal traced by Geiger Counter. To effectively stop rust—the vehicle of a protective coating, when applied over a sound, rusted surface—must penetrate through the rust down to bare metal. Rust-Oleum does exactly that!—as proved by radioactive research! Rust-Oleum's specially-processed fish oil vehicle was radioactivated and formulated into Rust-Oleum 769 Damp-Proof Red Primer—then applied to rusted test panels. Penetration through rust to bare metal by Rust-Oleum's speciallyprocessed fish oil vehicle was then traced by Geiger Counter. You stop rust, because Rust-Oleum's fish oil vehicle soaks

RUST-OLEUM

You stop rust, because Rust-Oleum's fish oil vehicle soaks deep down to bare metal and into the tiny pits where it drives out air and moisture that cause rust. You save, because this same *penetration* enables you to apply Rust-Oleum directly over rusted surfaces—usually eliminating costly surface preparations. Attach coupon to your letterhead for your thirtypage report entitled, "The Development of a Method To Determine The Degree of Penetration of a Rust-Oleum Fish-Oil-Based Coating Into Rust On Steel Specimens," prepared by Battelle Memorial Institute technologists.

> You'll be happy that you did.

UST-OLEU

There is only one Rust-Oleum. It is distinctive as your own fingerprint. Accept no substitute. Buy—and specify only Rust-Oleum.



Curved line illustrates Rust-Oleum penetration through rust as recorded by Geiger Counter.

Rust-Oleum is available in practically all colors, including aluminum and white. Your nearby industrial distributor maintains complete Rust-Oleum stocks for your convenience.







'AH' AIR HANDLING UNITS

Available in 12 models from 800 CFM to 28,800 CFM. Floor-standing vertical and ceiling-hung horizontal models with direct expansion, water or steam coils. Face and by-pass damper sections, mixing boxes, spray type humidifiers and filter sections available for all units. Models AH-10 through AH-32 available with Inner-Fin coils.

'MZ' MULTIZONE UNITS

Available in 9 sizes covering a range from 2,560 CFM to 28,800 CFM, Multizone Units parallel the standard Bush HAH Air Handling units, using the same proven blower sections and accessories such as filter sections and mixing boxes. Zone dividers may be arranged as desired — vertical, horizontal or a combination of both. Entire interior is well insulated and undercoated. Units can be shipped sectionally when this is desired to facilitate installation.





'CR' REMOTE AIR CONDITIONING UNITS

Provide quiet, economical year 'round air conditioning for all types of multi-room buildings. Units are available in vertical floor and horizontal ceiling models . . . feature individual room control . . . are easily incorporated in new or existing buildings.

Request Catalogs containing complete specifications on units shown.



BUSH MANUFACTURING CO. WEST HARTFORD 10, CONNECTICUT • RIVERSIDE, CALIFORNIA

ARCHITECTS' OPINIONS

continued

That's why he is such a force."

Other architects obviously watch Bunshaft's progress with attention. "He's making Mies into the architecture of this country," claims one admirer. "He has polished elegance to the end of the road. It may go out of style," warned another. Bunshaft, an easy-going, shambling sheepdog of a man, with a laconic, almost hayseed manner, shrugs: "I know there's a lot of unrest and boredom with post-andlintel construction. People keep wanting something new. But I believe there should be less distortion in architecture, instead of something new every time. Why don't we work and refine the principles we have?"

Celestial sensations. Philip C. Johnson, 49, long-time director of the Manhattan Museum of Modern Art's department of architecture, has never been known to be backward in his criticism of fellow architects. One nettled architect snorted. "He is a very diligent observer who can take someone else's idea and sometimes make it better." But a defender countered, "Johnson has executed works of greater elegance than any of his generation." The fact remains he is the one architect witty and brash enough to hold court on his contemporaries. And since Philip Johnson is not only Mies' collaborator (on the Seagram building), but his official biographer as well, the result is a tremendous gain for Mies' modern wing.

The day we visited Philip Johnson in his own self-designed glass house, in New Canaan, Conn., he greeted us with the news that Frank Lloyd Wright had passed by recently, said: "I don't know whether to take off my hat or leave it on: I don't know whether I'm inside or out." (Wright apparently liked his remark. He repeated it again in Taliesin). But the house for Johnson was obviously a bachelor's showcase. After eight years, he told us, he still finds it "marvelous": "People call this house sterile. But it isn't. Just look at my wallpaper. It's the whole countryside. And in winter I can turn on the lights outside when it's snowing. The snow coming down makes you seem to go up, like a great celestial elevator."

continued on p. 172

NORTON JAAOOR To beauty insurance for clean lined modern design

Available with (A) regular arm or (B) holder arm ...4 sizes to meet all requirements.

NORTON DOOR CLOSERS USED EXCLUSIVELY IN DISTINGUISHED NEW ILLINOIS HIGH SCHOOL*

Virtually every type of Norton Door Closer can be found in this impressive structure but the INADOR is overwhelmingly in the majority. They outnumber all others because they can be so effectively concealed, insuring complete harmony with the trim modern design of doors they serve. Norton Lintel-concealed closers and Surface Mounted closers are also extensively used, the latter where concealment is not essential. Whether concealed or not, all Norton Door Closers have one quality in common...the built-in ruggedness that has enabled so many of them to serve continuously in famous landmark buildings for periods ranging up to 30 years and longer. For complete information, see the current Norton Catalog. Write for your copy today if you don't already have one.

NORTON DOOR CLOSERS

Dept. AF-96, Berrien Springs, Michigan

*LYONS TOWNSHIP HIGH SCHOOL Western Springs, Illinois

PERKINS & WILL Architects-Engineers Chicago and White Plains, N.Y.

A continuing series of distinguished public buildings, schools, churches, hospitals and industrial structures using NORTON DOOR CLOSERS.

architectural FORUM / September 1956



Design it better with PITTSBURGH GLASS

New Penn Center in Philadelphia makes dramatic use of

Pittsburgh Glass

Towering over Philadelphia's business center is this clean-lined, rectangular, twenty-story building—the first in that city's new Penn Center project. Its facia features broad horizontal ribbons of Pittsburgh Glass with limestone spandrels. The ground story utilizes Pittsburgh Polished Plate Glass in its floor-to-ceiling glass "walls." The upper floors are glazed with Pennvernon® Heavy Sheet Glass. In addition, all entrances to this impressive structure are equipped with Pittsburgh's Herculite® Tempered Plate Glass doors and the enclosed vestibules are glazed with Pittsburgh Polished Plate Glass. Uris Brothers, Owners and Builders; Architects: Emery Roth & Sons, New York City.





THIS VIEW of one of the entrances to the new Penn Center office building shows how Pittsburgh's Herculite Tempered Plate Glass Doors combine to give this modern structure its high design appeal.

HERE, the director's room of Pennsalt—one of the prominent tenants occupying space in the Penn Center building—is separated from the adjacent hall by Pittsburgh Polished Plate Glass dividers.

Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 7a, 13e, 16a, 16d, 21.





ARCHITECTS' OPINIONS

continued

Sitting in a Mies-chair inside of a Mies-house made it seem strange to hear Johnson taking a somewhat un-Miesian line. Said Johnson: "I think we're pushing on two fronts. One front says, 'Why all this trabeation.'*—that's Bucky Fuller and Catalano. The other is the historical front, which I represent for one. I think there are values in history that modern has thumbed its nose at, values it has lost. What's wrong with marble and silk?"

Philip Johnson's argument is for a vernacular design that is sturdy enough for everyday use, but on the grand occasion can rise to the level of poetry. For the moment Johnson still firmly clinches an H-beam. "The trouble as well as the advantage of concrete is that you can do anything with it," he says. "You can't rely on structural functionalism as a guide." For the future, Johnson believes "We should stand on the shoulders of the last generation. We're all expanding the grammar we learned from Mies-we're coming out from the shackles. Of course we still have to fight against what came before -but it's right to honor the talents we've stolen from."

Influence skin deep. With the Mies discipline in ascendency, with its emphasis on clean line, simplicity, precise detailing, it comes as a surprise to find considerable doubts building up in the minds of the third generation now making its bid. Architects who see the only long-range solution in large-scale planning put Gropius in first place again. Corbusier's work they admire wholeheartedly. Wright finds more defenders. There is even a hint of neobaroque in the air. And men like Nervi and Catalano, who take architecture back to engineering and pure mathematics, engender the greatest excitement.

I. M. Pei, 39, whose buildings, like the Denver's new Mile High Center, make him a candidate for the Mies-Bunshaft-Johnson group, says flatly: "I think Mies is now overevaluated. If you look at these new buildings you will see the influence of Mies is only skin deep. In the guts of most buildings there is a lot of Gropius. And just as well. Otherwise it would be a disaster.

* Designed with posts and horizontal lintels.-ED. continued on p. 176

Find out for yourself

. . . Discover Lexsuco Fire-Retardant Roof Vapor Barrier and Securement Constructions TODAY. Contact your local representative or write or call direct.

DISTRICT REPRESENTATIVES

Los Angeles, California L. G. Prendergast & Associates P. O. Box 8582 Crenshaw Station Los Angeles 8, California Axminister 3-3158

Denver, Colorado Charles L. Binna P. O. Box 211 Littleton, Colorado Pyramid 4-1239

Hartford, Connecticut Frederic A. Atherton Co., Inc. 343 New London Turnpike Glastonbury, Connecticut Medford 3-9491

Washington, D. C. F. C. McGrady Co. 7848 Wisconsin Avenu Washington 14, D. C. Oliver 4-6631

Jacksonville, Florida John G. Kearney 2720 Bayview Avenue Jacksonville 10, Florida Evergreen 7-1337

Atlanta, Georgia Hill R. Huffman, Inc. 696 Anton Street, N. W. Atlanta, Georgia Trinity 4-3804

Chicago, Illinois George W. Case 505 Ferdinand Avenue Forest Park, Illinois Forest 6-5770

Indianapolis, Indiana Leslie Bros. Co., Inc. 1101 East 46th Street Indianapolis 5, Indiana Broadway 4948

Boston, Massachusetts Clark Engineered Products 108 Massachusetts Avenue Boston 15, Massachusetts Kenmore 6-5290

Detroit, Michigan Hunter and Company 21329 Woodward Avenue Ferndale 20, Michigan Lincoln 5-1783

Minneapolis, Minnesota James C. Nystrom 1087 Northwestern Bank Bldg. Minneapolis 2, Minnesota Federal 8-1528

Kansas City, Missouri A. C. Terrell Co., Inc. 212 Produce Exchange Bldg. Kansas City, Missouri Harrison 1-1776

St. Louis, Missouri Carlin Company 615 Woodward Drive Kirkwood, Missouri Yorktown 5-7236

Engineered Products Co. 317 South 20th Street Omaha 2, Nebraska Atlantic 1776

Omaha, Nebraska

New York, New York Squires & Cole 501 Fifth Avenue New York 17, New York Murray Hill 7-3836

Rochester, New York George Miller Briek Co. 734 Ridgeway Avenue Rochester 13, New York Glenwood 6500

Charlotte, North Carolina R. G. Ross & Co., Inc. 2333 Lucena Avenue Charlotte, North Carolina Edison 4-7294

Cleveland, Ohio Lexsuco, Inc. 4815 Lexington Avenue Cleveland 3, Ohio Express 1-3888

Columbus, Ohio T. O. Lawler 2265 Arlington Avenue Columbus 21, Ohio Hudson 8-7427

Oklahoma City, Oklahoma D. A. Puckett P. O. Box 3734 Oklahoma City 6, Oklahoma Forest 5-6833

Pittsburgh, Pennsylvania Norman S. Gottlob 1119 Lincoln Highway East McKeesport, Penna, Valley 3-6010

Philadelphia, Pennsylvania Forsythe & Stilwell 1737 Chestnut Street Philadelphia 3, Pennsylvania Locust 8-1083

Nashville, Tennessee John E. Johnson P. O. Box 751 Nashville 2, Tennessee Cypress 2-5833

Houston, Texas Willis L. Barnes Co. 2501 Hazard Avenue Houston 19, Texas Jackson 3-5885

Seattle, Washington Don King 5048 Ivanhoe Place, N. E. Seattle 5, Washington Plaza 7936

IN CANADA

Alexander Murray & Co. Ltd. 1661 Sun Life Bldg. Montreal, P. Q. University 6-9441

Bishop Asphalt Papers Ltd. Lakeshore Rond Toronto 14, Ontario Clifford 9-3268

Building Products Ltd. P. O. Box 6063 Montreal, P. Q. Walnut 7761



B.F.Goodrich



Ford Engine Plant, Cleveland, Ohio

Ford protects against fire...uses Lexsuco roof construction with Koroseal vapor barrier

To protect against dangerous loss of life, production time, and property, forward thinking management at Ford used the proven fire retardant Lexsuco roof construction with Koroseal flexible material vapor barrier on this modern engine plant.

Factory Mutual tests have proven that the Lexsuco roof vapor barrier and securement constructions are fire retardant with a Class 1 rating. You can now have an effective vapor barrier which does not contribute to interior and building damage in case of fire. Flame resistant Koroseal vapor barrier gives positive protection against the spread of fire on the underside of the roof deck.

When you plan a new building, specify the Lexsuco roof constructions with a Koroseal vapor barrier. See one of the local representatives on the opposite page or write Lexsuco, 4815 Lexington Avenue, Cleveland, Ohio. Koroseal flexible material may also be used under base constructions or wherever a vapor barrier is required. Koroseal vapor barrier is a specially compounded, fire retardant material made by *B. F.* Goodrich Industrial Products Company, Marietta, Ohio.



FLEXIBLE MATERIAL



INDUSTRIAL PRODUCTS CO. MARIETTA, OHIO



Independent sound laboratory engineer checks decibel readings in one of many New York executive offices tested.

Sound level meter readings were also taken while elevators were traveling from floor to floor in normal operation.

Tests Prove Westinghouse Elevators Are as Quiet as Executive Offices

Westinghouse Engineering rids elevators of noise . . . increases passengers' comfort

Comparative sound meter tests performed recently throughout the New York Metropolitan area prove that you enjoy the same quiet atmosphere in today's Westinghouse Elevator as that found in the finest topexecutive offices. Yes, noise has been successfully engineered out of elevators by the perfection of a scientifically sound deadened system. Noise isn't "masked" in a Westinghouse elevator—it just isn't there to begin with.

Westinghouse elevator installations are the embodiment of prestige . . . highest achievement in comfort, safety and efficiency for you and your tenants. Made possible by Westinghouse automation in elevatoring which produced:

- 1. Selectomatic for master supervisory control
- 2. Synchro-Glide for accurate, smooth, soft landings

3. Traffic Sentinel[®] for safe, courteous yet time-saving passenger handling

4. Automatic Traffic Pattern for Traffic Controlled Elevatoring

5. Shuntless Relays and Electric-Driven Selectors for reliable operation

If you are planning a new building—or thinking of modernizing an existing one—why not experience a "proof of performance" test for yourself—and take your own decibel readings in a Westinghouse Elevator. Call the Westinghouse office nearest you to make arrangements for this eye-opening demonstration and also learn how you can save up to \$7000 per car per year with operatorless elevators.

AUTOMATED Westinghouse Elevators

WATCH WESTINGHOUSE

COVER PRESIDENTIAL CAMPAIGNS ON CBS TELEVISION AND RADIO



An outstanding unit, combining incandescent light to high-light merchandise with sparkle and warmth —and a high-level of well-diffused fluorescent light for comfortable overall seeing. Hinged, one-piece aluminum louver offers maximum rigidity, minimum weight. Can't come apart, can't sag. Utilizes six or eight 48" Rapid Start fluorescent lamps and one 200 or 300 watt incandescent lamp directly above a glass lens in the center of the eggcrate type louver.

SPECIAL—Unique Alzak* aluminum reflector controls and blends fluorescent and incandescent light. No splash of incandescent...no contrast of fluorescent and incandescent colors on surface of fixture.



Above: Garcy No. R59700 units installed in John Wanamaker's, Wynnewood, Pennsylvania

*T.M. Aluminum Company of America

Available with THREE TYPES OF SHIELDING Plastic panel in hinged frame Hinged one-piece louver	VARIETY IN SIZE AND NUMBER OF LAMPS 2' x 2'—Two, three or four lamp rows 2' x 4'—Two, three or four lamp rows 2' x 8'—Two, three or four lamp rows	-2	'x	2'		-2	'x	4'-			
Glass panel in hinged frame	4' x 4'—Six, eight or ten lamp rows Choice of rapid start fluorescent or slimline lamps			12	' x	8'-			4'	×	4'-

GARCY Quality by Design

Garden City Plating & Mfg. Co., 1736 N. Ashland Ave., Chicago 22, Illinois In Canada: Garcy Co. of Canada, Ltd., 1244 Dufferin Street, Toronto 4

ARCHITECTS' OPINIONS

continued

For Gropius there is no problem too small to consider. But Mies will simplify to achieve his objective—plan to solve the problem later—and walk over a lot of dead bodies in the process."

Structural exhibitionism. Then there is Paul Rudolph, 37, winner of the "outstanding young architect award" two years ago, being watched as "one of the hopes of us older boys." He brought us up short by saying: "Our problems now aren't with the clients, but with the architects. I think building is worse now than ever before. Take Park Avenue. The original concept was to have a lot of buildings leading down to the gateway to the city—Grand Central. Now everyone builds any old height, without any over-all concept. In the final analysis it is sheer exhibitionism."

Rudolph, who is a popular lecturer at architectural schools, also puts Gropius back in top place as the architect who has established the nucleus of the new academy. "As for Frank Llovd Wright," Rudolph adds, "I admire him not for what he says, but for what he has done in making you feel space, his articulation and his handling of light. Mies has only gone from A to B in the conquest of space, though of all the great architects, Mies is the only one whom the commercial boys have been able to pick up and utilize. The great tragedy of this country is that Corbusier has never built. If you want a god. he makes all the others pale by comparison. Not only has Corbu created a tremendous discipline, but a tremendous articulation of space-plasticity."

Minoru Yamasaki, 44, designer for the new St. Louis Air Terminal, we also found arguing for more visual delight and surprise in architecture. This position obviously stretched Yamasaki wide on the horns of a dilemma, a position he ruefully acknowledged. On one hand he readily admits : "I think Mies" new Seagram building will unquestionably be the most wonderful contemporary building in the world." But he frankly fears the thought of US cities of nothing but Lever Houses, fine as the original was. Said Yamasaki: "I dread the thought of our cities becoming endless streets of flush glass, steel, and porcelain modules, no matter how beautifully constructed."

It's casework by St. Charles in all

<u>10</u> new Mineworkers Hospitals!





Architects: Isadore Rosenfield, New York; York and Sawyer, New York; Sherlock, Smith and Adams, Montgomery, Alabama

In selecting casework to meet the complex needs of 10 new Mineworkers Memorial Hospitals, the final choice was casework by St. Charles *throughout all 10*! Proof once again that St. Charles' reputation for quality, dependability and economy meets the test of exacting requirements. St. Charles' long experience and highly skilled personnel, backed by the nation's newest, most modern casework construction facilities, stand ready to help you on any problem of casework and design. Your inquiries receive prompt attention.

A request on your letterhead will bring our 40-page catalog, "St. Charles Hospital Casework."







Shown above are pictures taken at the Beckley Memorial Hospital, one of 10 recently constructed by Miners Memorial Hospital Association under United Mine Workers of America Welfare and Retirement Fund Auspices.

Project Locations Beckley Memorial Hospital Beckley, West Virginia Man Memorial Hospital Man, West Virginia Memorial Medical Center Williamson, West Virginia Pikeville Memorial Hospital Pikeville, Kentucky McDowell Memorial Hospital McDowell, Kentucky Hazard Memorial Hospital Hazard, Kentucky Whitesburg Memorial Hospital Whitesburg, Kentucky Wise Memorial Hospital Wise, Virginia Harlan Memorial Hospital Harlan Memorial Hospital Harlan Memorial Hospital Harlan Memorial Hospital Middlesboro, Kentucky



casework • sinks and counters • special purpose units

ST. CHARLES MANUFACTURING COMPANY, DEPT. AF, ST. CHARLES, ILLINOIS

450,000

Square Feet of

PERMALITE PLASTER*

PITTSBURGH STATE OFFICE BUILDING

Pittsburgh, Pennsylvania

Columns and Beams: 270,000 sq. ft. 4-hour fire ratings have been gained here by Permalite plaster, applied 1¾" thick over selffurring lath on beams and columns. Ceiling, spandrel, and girder beams are plastered with Permalite plaster, 1" to 1½" thickness.

Ceilings: 180,000 sq. ft. Metal lath ceilings are fire-protected by one inch of plaster (measured from the face of the lath). Permalite plaster is applied here as a ¾"thick brown coat, by an E-Z-On plastering gun.

*Permalite plaster refers to plaster made with Permalite perlite aggregate.

Perlite Division, Great Lakes Carbon Corp.

612 So. Flower St., Los Angeles 17, California

Architects: Altenhof and Bown, Pittsburgh Engineers: Tower, Levinson & Long, Pittsburgh General Contractors: Navarro Corp., Pittsburgh Plastering Contractors: Siciliano Brothers, Pittsburgh Permalite Supplied by: Tom Brown, Inc., Pittsburgh Permalite Processed by: Perlite Manufacturing Co., Carnegie, Penna.

Permalite

the largest selling perlite aggregate in the world



new dimension.

-

in fixture value with THE **MEW** SMITHCRAFT FINISH

Smithcraft now adds a new dimension in fixture perfection. The new Smithcraft painting process consists of the finest and most modern Bonderite and Baked Enamel Finish combination in use in the lighting industry today.

In addition to its superior appearance, the new Smithcraft finish has these outstanding qualities:

Adheres firmly to metal — Stays white indefinitely, without yellowing — Provides positive resistance to chemicals and heat — Resists abrasion because of optimum hardness — Reflects a maximum percentage of light

Because the new Smithcraft finish possesses all these attributes to a greater degree than ordinary finishes, it produces many important new benefits for owners and users of lighting ... better appearance, better lighting qualities, easier maintenance and longer, troublefree life.

All the units in the complete and diversified line of Smithcraft commercial and industrial fixtures are now finished with this new process. Typical is the Sheraton (shown above) ... a trim, modern unit, only 3 ¼" deep; the Sheraton is ideal for low-ceiling applications. It is available for two and four-lamps in 4-ft. and 8-ft. lengths. Plan. to use the Sheraton in your next school, store or office design.

America's finest fluorescent lighting

cratt

WHY build to BURN





Build fire protection into your school. commercial, and industrial construction by specifying Wascolite Pyrodomes and Wasco Pyrovents. These prefabricated fire-venting units spring into action automatically within seconds after a fire starts, prevent it from spreading, and allow heat and smoke to escape through roof openings.



Pyrodomes and Pyrovents cause 50% fewer sprinkler heads to pop off, reduce necessity for fire walls, and provide protection even before fire fighters arrive. And — always on the job — Pyrodomes provide well-balanced daylight for interiors en used with Wascolite Skydomes.

Write for new Wasco fire-venting catalog.



Cambridge 38, Mass.

RESEARCH

A spotlight on new tests, new standards, new studies

Weather data

Various segments of the building industry use weather information. Here, according to the Climatic Research Committee of the Building Research Advisory Board, is a summary of what is needed and what is available from the Weather Bureau: Already available: Five-day forecasts and 30-day outlooks; averages and extremes for dry and wet bulb temperatures, wind speed, direction and frequency and rainfall; days of sunshine; winter degree-days. Not wholly available: Thirty-day forecasts; three-to-six month forecasts; dry and wet bulb temperature summaries; duration of temperature near extremes; simultaneous dry and wet bulb records; soil temperatures; frost records; hourly wet bulb records; humidity data; duration of near extremes of wind and snowfall; solar radiation data; summer degree-days; microclimatic information; nocturnal radiation; cyclical data.

Not available: Monthly reports of hourly wet bulb temperatures; cumulative summaries of summer and winter dry and wet bulb temperatures of simultaneous dry and wet bulb temperatures, of wind speeds and directions, and of rainfall and snowfall; summaries of soil temperature with dates of freezing temperaures.

Air-cooling data

Engineers in several federal agencies which conduct building programs have been investigating the possibility of using simultaneous dry and wet bulb readings as basic climatic data in the design of air cooling equipment. They believe that this kind of data will help them evaluate more accurately the need for cooling equipment. In view of this interest, the BRAB's Federal Construction Council asked a group of specialists from several interested agencies to study and comment on climatic criteria and data now in use or proposed. Three major recommendations have been developed by this group:

Current simultaneous dry and wet bulb data could become very useful to the cooling equipment designer if such data were reported regularly. Applications would be found in the design of equipment, industry sales programs, and in consideration of climatic aspects of comfort. Such data is not now published in regular Weather Bureau reports nor is it readily available from past records.

Simultaneous dry and wet bulb data based on past records would also be useful, particularly if prepared in terms of cumu-

continued on p. 184
New plant with Award Winning Electrical System...



"Nine ways better electrically!" that's the way the Factory Management & Maintenance Significant Plant Award judges described the new P. Lorillard Co. plant in Greensboro, N. C. This cigarette manufacturing building was recently selected by these award judges as one of the top ten in the nation, because of its model electrical system.

One of the requirements for this electrical system was wire of the highest quality. That's why Phelps Dodge building wire and paper insulated power cable were installed.

On every wiring job where top-quality materials, expert workmanship and experienced "know-how" are called for, *it pays to rely on Phelps Dodge and your Phelps Dodge distributor!*



PHELPS DODGE COPPER PRODUCTS CORPORATION

SALES OFFICES: Atlanta, Birmingham, Ala., Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Greensboro, N. C., Houston, Jacksonville, Kansas City, Mo., Los Angeles, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, N. Y., San Francisco, St. Louis, Seattle, Washington, D. C.

Select from the new 75 beautiful design







CLINTON

STONINGTON

6

WINSTED

75! The only lock that offers you ... 75!

 That's right! You can actually get 75 graceful, eye-filling design possibilities in the new Sargent Sentry line. The lock for better homes!
 75 design combinations . . . available in 19 functions! 5 beautiful finishes!

67

PLUS money-saving installation ... because of 7 new simplifying features.

The new Sentries conform to Federal Spec. FFH 106A, Type 160, for bored lock and latch sets. Ask your Sargent Distributor for details. Or write direct to Sargent & Company, New Haven 9, Conn., Dept. 11-J.



SARGENT LOCKS

MYSTIC III

LITCHFIELD





ARCHITECTS: NAESS & MURPHY, CHICAGO

Naturally, **REVOLVING DOOR ENTRANCES** serve Chicago's new Prudential Building — first in the "Office of the Year" awards for 1955. For true to its name, Prudential — a word defined by Webster as "provident use of resources" the Prudential Insurance Company of America planned this newest Mid-America Home Office to assure maximum efficiency plus ideal working conditions. That is why revolving door entrances were a natural choice. Only these doors that are "always open" yet "always closed" assured the year-round comfort, cleanliness and convenience demanded for the Prudential Building. Here, as in *most* leading buildings nation-wide, revolving doors alone meet *all* entrance requirements. Available with manual or automatic power operation.



See Sweet's Architectural File No. 16f Or Classified Section of Your Telephone Directory

ALWAYS CLOSED REVOLVING DOOR ENTRANCE DIVISION INTERNATIONAL STEEL COMPANY 2102 EDGAR ST. • EVANSVILLE 7, IND.

RESEARCH cont'd.

lative occurences of three separate temperatures—dry bulb, wet bulb and a single figure index representing combinations of outdoor simultaneous dry and wet bulb temperatures.

> Scope of data should include readings of the principal weather stations in the US, and data should be given for 24 hours of the day over each of the six warmest months of the year.

The full report will be available Sep. 1 from Building Research Institute, 2101 Constitution Ave., Washington 25, D. C., for \$1.

Hot climates

In May '53 BRAB issued a bibliography to help the design professions plan and build more efficient and comfortable dwellings for tropical and subtropical areas. Then came a supplement for 1953 which is now out of print. The "1954 Supplement to Preliminary Bibliography of Housing and Building in Hot-Humid and Hot-Dry Climates" was published in June 1956 by the Bureau of Engineering Research and BRAB and is now available for \$1 through the Bureau at the University of Texas in Austin. About 890 titles are included under such headings as climatology and physiology architecture, structure and structural components, soils and foundations, building materials, construction materials, air conditioning and ventilation, housing and building.

Local climatic guides

In June '56 the US Weather Bureau published the first of a new series of local climatic guides. Called "Climatic Guide for Baltimore, Md.," it is available from the Superintendent of Documents (Government Printing Office, Washington 25, D. C.) for 30¢. Guides for other cities will be issued from time to time.

The series is identified as "Climatography of the US, No. 40-18." The Guides include a summary and tabular reviews of temperature, precipitation, wind, air moisture content, pressure, sunrise and sunset, ceiling and visibility, normals and other climatic data. Simultaneous data and cumulative summaries so much needed by the building designer, are not yet included.

... with new Downlights by miller!

e

To create atmosphere and mood, to attract attention, to accent form and color, to provide high light intensities where needed—Miller downlights will help you meet your most challenging lighting assignments. Just added to the popular Miller "Merchandise Line", these downlights are available in a wide variety of the most popular floods and spots, fixed and adjustable, with many fixture types, louvres and lenses. Miller's downlight catalogue belongs at your elbow when planning accent lighting—and many general lighting installations as well. Send for it today! Dept. MI-3.

ING FOR ACCE

Better Lighting for a Brighter America

THE MILLER COMPANY . GENERAL OFFICES: MERIDEN, CONN. . FACTORIES: UTICA, OHIO-MERIDEN, CONN. . IN CANADA: CURTIS LIGHTING OF CANADA LTD., TORONTO \$ 1 N C

Copyright 1956 The Miller Co., Meriden, Conn.

1 8 4 4

THE MACOMBER V-BEAM

A BRUTE for Strength

PATENTED U. S. Patent Nos. 2,184,113 2,457,250 2,457,056 2,624,430 2,662,272 D PATENTS PENDING



Send for your V-BEAM Catalog

a structural product that delivers more for the money

IT IS SIGNIFICANT that the Designing-Building team of America finds ONE USE of Macomber V-BEAMS such convincing proof of unparalleled strength and economy.

You can verify the truth of this statement by checking your next floor and roof framing requirements within the 48 foot span range of V-BEAMS with your nearest Macomber Representative.



the New Importance of the RLM Label III



Send for Your Complimentary Copy of this 1956 Edition RLM Specifications Book NOW MORE USEFUL THAN EVER!

New illumination data and complete up-to-dating of specifications for 36 different RLM industrial lighting units, make this new RLM Book more useful than ever to buyers, sellers and specifiers of industrial lighting equipment. An important change concerns the use—for the first time in RLM Specifications—of the Zonal Method of computing Coefficients of Utilization and illumination on room surfaces. The tables printed in this new edition are based on this method. You'll also find helpful light distribution curves on both incandescent and fluorescent equipment, including the new SemiDirect fluorescent units, which direct 20% to 30% of the light upward. In addition, there are important changes in the RLM Standard Specifications covering materials, construction and photometric performance.

If your work is at all concerned with industrial lighting equipment, make sure you have this latest edition RLM Specifications Book—you'll recognize it by its green cover with the big red-and-black RLM Label. For your complimentary copy, write to the Institute, or use the coupon.

R L M STANDARDS INSTITUTE	RLM Standards Institute, Suite 830 326 W. Madison St., Chicago 6, Ill. Please send me a copy of the new 1956 RLM Book. I understand there is no cost or obligation. Name and title Company
The letters RLM stand for Reflector and Lighting Equipment Manufacturers R-184	CityZoneState

THE ACOUSTICAL SPEC

PRIVATE HOMES What sound-conditioning ceilings can contribute to their comfort and beauty

Resembling travertine marble, Travertone adds classic beauty as well as restful quiet to this living-dining area.



The "non-commercial" appearance, plus economy of Full Random Cushiontone, makes it an ideal sound-conditioning material for any area in the home. Changes in basic home design during the past twenty years have both increased the amount of noise in the average home and removed many of its former barriers. As a result, acoustical ceilings have become almost a necessity for complete home comfort in many houses and highly desirable in most.

Sound-conditioning ceilings can do a lot to keep the sounds of appliances, television, and family activities under control. In an open-plan home, acoustical ceilings diminish the intensity of noise in any area.

Besides providing the comfort of quiet for today's homes, acoustical materials can contribute considerably to the over-all appearance of a room. Today, many varied styles of acoustical materials provide the architect with more interior design possibilities than ordinary ceilings ever allowed.

For example, Armstrong Crestone, the new striated material, can be worked into many attractive patterns, either by itself or in combination with other materials. Armstrong Travertone, with handsome marble-like fissuring, is also a frequent choice when appearance is a primary factor. For areas where a perforated material is preferred, Armstrong Full Random* Cushiontone and Minatone come in a smartly styled non-directional design of vari-sized holes.

Armstrong's complete line of sound-conditioning materials is designed for both residential and commercial use. Each has special product features that give you the widest possible choice when planning acoustical treatment for any job. Call in your near-by Armstrong Acoustical Contractor for practical assistance in helping you make the proper selection. Meanwhile, check Sweet's Catalog File No. 39-B.

For the free booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4209 Rooney Street, Lancaster, Pennsylvania.



The textured beauty of a distinctive Crestone acoustical ceiling helps carry out the décor of this attractive dining area.



Natural cork texture, plus high moisture resistance, makes Armstrong Corkoustic a natural choice for highhumidity areas like this bath.



ACOUSTICAL MATERIALS

Cushiontone[®] • Travertone^{*} • Crestone^{*} • Minatone[®] Corkoustic[®] • Arrestone[®] • Perforated Asbestos Board *TRADE-MARK



The modern, over-all design of this noise-quieting Minatone ceiling minimizes the old-fashioned tiled ceiling effect, blends with any décor.



There may be some risk in showing how Kinnear Rolling Doors solve so many *special* problems, in doorways like the one above.

It might give the impression Kinnear Doors aren't best for *ordinary* needs — which they are.

But in the picture above, note how the traveling crane moves right up to the face of the door. Notice the windows close to the door on either side. Also the steel supports and piping above the doorway. And the way floor and wall space is used clear up to the door jambs.

The Kinnear Rolling Door never gets in their way, and they never impede the door's action.

Because of Kinnear's *coiling upward action*, the whole curtain of interlocking slats coils into a small space above the opening. No usable room is wasted anywhere.

Kinnear *originated* this type of door, more than 50 years ago. It has been industry's first choice ever since.



Kinnear STEEL Rolling Doors

protection against weather, theft, vandalism and fire. It takes extra years of hard, daily use with minimum maintenance. Accidentally damaged slats can be individually replaced. Heavily galvanized (1.25 oz. of pure zinc per sq. ft., ASTM standards) it stands up longer, through toughest weather and climate. Its straight-line design harmonizes with any architectural style or building material.

Kinnear Rolling Doors are built any size, for motor or manual control. Write for full details, or recommendations to fit your needs.



1642-60 Fields Avenue, Columbus 16, Ohio 1742 Yosemite Ave., San Francisco 24, Calif. Offices and Agents in All Principal Cities

BOOKS

DECORATIVE DESIGNS FOR CONTEM-PORARY INTERIORS. Edited by Konrad Gatz. Published by Architectural Book Pub-

Gatz. Published by Architectural Book Publishing Co., Inc. 240 pp. $8\frac{1}{2} \times 12^{\prime\prime}$. illus. \$12.75 The editor of this book makes the point

that applied decoration in some past periods has masked the reality of buildings, and this has accounted for its stern removal in the modern movement in architecture. Raw flat colors were permitted; the boldness of color was used as changes in materials were used, but the subleties of color in decoration were excluded lest they take the eye off structure.

But Editor Gatz believes this period to be over now. He quotes Valery: "Buildings which do neither sing nor speak, deserve nothing but contempt," and he shows many examples where color and decoration have been reintroduced to complement the forms of modern architecture.

The quality of these examples varies widely (but the quality of the German printing remains consistently high). The book poses many questions in the doubts with which it will leave readers. But these doubts may well be stimulating.

One category in which decoration seems to be very successful is in rooms for children, where the decorators did not take themselves quite so seriously as in some other rooms.

The text and captions are printed in German as well as English, but all of the work illustrated is German.

THE MODERN CHURCH. By Edward D. Mills. Published by Frederick A. Praeger, 105 W. 40th St., New York 18, N.Y. 189 pp. $7!/4 \times 9!/2''$. Illus, \$9.75

Originally published in England, this book logically concerns itself mainly with English churches. Only five from the US are pictured and discussed: Christ Evangelical in Minneapolis by Saarinen, First Methodist in Plainfield, Iowa by Schweikher & Elting, IIT chapel in Chicago by Mies van der Rohe, Trinity Presbyterian in Natick, Mass. by TAC, Benedictine Abbey of St. John in Collegeville, Minn. by Marcel Breuer. However, of all building types, churches are perhaps the most international, and this book presents a broad selection of the best from several continents.

LIBRARY BUILDING PLANS. Edited by Walter W. Wright. Proceedings of the fifth and sixth institutes conducted by the Assn. of College and Reference Libraries Buildings Committee, Univ. of Illinois Library, Chicago Undergraduate Div., Chicago 11, III. 168 pp. $81/2'' \times 11''$. Illus, \$3.25 paperbound

Plans of 16 new college libraries plus descriptions and discussion.



where beauty should be seen ...but not "heard" RUBBER TILE flooring by Here is truly outstanding flooring. In any surroundings, it imparts a hushed, quiet air of unmistakable distinction. Manufactured to meet the highest standards of beauty and serviceability, WRIGHT Rubber Tile is unexcelled for its deep, rich colors, its restful resiliency and exceptional durability. Unusually tough, it wears like new for years, resisting the severest use and proving ideal for ease and economy of maintenance.

Here, indeed, is the ultimate in tile flooring...reflecting incomparable quality in every characteristic. When you seek the supreme achievement in flooring that combines beauty, quiet comfort and serviceability, WRIGHT Rubber Tile will be your inevitable choice!

WRIGHT MANUFACTURING COMPANY Division of Mastic Tile Corporation of America Houston, Texas • Joliet, III. • Long Beach, Calif. • Newburgh, N.Y. Asphalt Tile • Confetti • Aristoflex • Maticork • Parquetry • Rubber Tile • Vinyl Tile • Cork Tile • Plastic wall Tile

F





Facts You Should Know About Masonry Reinforcement By Edwin L. Saxer: Professor and Chairman, Civil Engineering Department, University of Toledo

For some time, there has been a growing tendency to rely on steel reinforcing in mortar joints to improve the capacity of masonry walls to resist the stresses which develop.

The usage of joint reinforcement has often proven unsuccessful in the past. The chief reason for this has been the failure to use reinforcement in more than every third or fourth joint—a practice which provides little or no benefit to the intermediate joints.

A contributing factor in many cases has been the inability of some forms of reinforcing to develop adequate bond strength.

As a result of research at the University

of Toledo, and at other laboratories, the principles of effective joint reinforcement are now well understood. All indications point to the fact that reinforcement should be used in every joint, or at least in every other joint, to insure reasonable effectiveness.

Our research on the effectiveness of Key-Wall leads us to the following conclusions: (1) The design of Key-Wall results in a highly efficient distribution of steel. (2) The use of Key-Wall can reduce significantly the cracks resulting from shrinkage of the masonry; and (3) Key-Wall is effective in improving the lateral strength characteristics of masonry walls.



the <u>new</u> type of masonry reinforcement that gives greater value at lower cost

The effectiveness of Key-Wall has been clearly demonstrated by tests at the Research Foundation, University of Toledo.

It's being specified and used by leading architects and builders today. It will offer you advantages on any jobs you build.

Key-Wall is made for the following wall thicknesses: 4", 6",

8", 10" and 12".

- Reduces shrinkage cracks
- Adds effective lateral strength
- It's galvanized to prevent rusting
 ... assures maximum bond
- Lap joints give continuous reinforcement
- Does not interfere with bedding of units
- Improves mortar joint because multi-directional reinforcement holds mortar in place; gives better bond
- Masons welcome it, because it's easy to handle; easy to cut and fit; doesn't interfere with joint thickness
- You save on material cost, as well as labor cost



FREE-SAMPLE AND TEST REPORT

KEYSTONE STEEL & WIRE COMPANY PEORIA 7, ILL.

Please send me free sample and copy of Key-Wall masonry report made by the Research Foundation, University of Toledo.

 Name

 Firm

 Street

 City_____Zone____State _____

no problem with OVERHEAD concealed DOOR CLOSERS

LEATON A



ATI

THUILUS

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.

THE OSCAR C. RIXSON COMPANY 9100 west belmont avenue • franklin park, ill.

1

1



THREE NEW SHOWROOMS

bring the Knoll international collection of furniture and textiles to important world centers, extending service facilities of the Knoll organization to fourteen countries on four continents.



PRODUCTS



(1) ELECTRIFIED FLOOR of precast concrete carries own fireproofing

Packaged wiring and factory cast hollow beams are combined to make this electrified, long span concrete floor. Installing for \$1.20 a sq. ft .- about 50¢ to \$1 less than poured slab or cellular metal deck with electrification-Flexicore-Conduflor permits outlets anywhere on the floor at 51/3" intervals. The 8" x 16" members are prestressed lightly to prevent bellying and easily span 20' under the 70 lb. live load usually called for in office building construction, and the 6" x 16" clear 16' without intermediate columns. Keyed and grouted into a continuous slab, the beams also can be designed with additional reinforcement to take heavy industrial loads of 120 and 130 lb. over the same spans.

On the nine jobs using the new system this year, the savings in labor and steel were credited to dry erection and simplified framing. No suspended plaster ceiling is needed for additional fireproofing beneath the structural concrete, and on top, a minimum fill (usually 11/2") imbeds the metal feeder ducts running crosswise over the masonry raceways. Flexicore cells are 61/8" and 41/8" in diameter, depending on floor thickness and 11/2"to 4"-deep metal feeders measure 4" across. In installation, wiring from panel boxes (see diagram left) is carried down to the feeders and then along to 234" handhole junctions where it is dropped into the cores and run off in either direction to serve outlets for phone, intercom and general service. The flat top metal feeders act as a level for screeding floor fill. Handhole rings and covers plates are put on after the fill is poured. Flexicore with 11/2" topping has a three-hour Underwriter's rating, and now the use of cellular concrete floor raceways is covered by Article 358 in the 1956 National Electric Code scheduled for publication this month.

Manufacturer: Concrete floor: Flexicore Co., Inc.; Electrical distribution: Conduffor Corp.

(2) BUILT-UP FLASHING with copper and lead resists corrosion

Lead foil 0.003" thick and an electrolytic copper coating sandwiched inside Cop-R-Flash Type B make the waterproofing membrane resistant to acid as well as alkali. Faced with a glass-fiber bolstered crepe kraft covering, the multiple layers in the laminate are each generously buttered and bonded with asphalt for a total weight of $3\frac{1}{2}$ oz. a ft. Some uses

Another Adlake aluminum window installation

Mooseheart High School, Child City, Loyal Order of Moose, Mooseheart, Illinois Architects & Engineers: L. Cosby Bernard and Company Contractors: Arnold Lies Company Equipped with Adlake Double Hung Windows



Adlake PROVEN QUALITY WINDOW

> This window meets or exceeds all quality industry specifications for aluminum windows. THE Adams & Westlake

Adams & Westlake company Elkhart, Indiana

- Minimum air infiltration
- Finger-tip control
- No painting or maintenance
- No warp, rot, rattle, stick or swell
- Guaranteed non-metallic weatherstripping (patented serrated guides on double hung windows)

The Adams & Westlake Company

ELKHART, INDIANA • Chicago • New York • Established 1857



Non-squeak Samsonite Chairs MAKE LESS SOUND than the turning of a page!





The sound of a page turning registered 5 decibels above the sound level of the room on the Sound Level Meter.



When this student sat on and shook the Samsonite chair, it registered only 2 decibels...didn't squeak or creak!

Proven by actual audio tests at Farmingdale school

Here is remarkable proof that when silence is needed, Samsonite chairs stay silent! Test-participants sat on Samsonite chairs -then went through motion after motion attempting to elicit sound. They squirmed about, turned about-crossed and uncrossed their legs. Yet the super-sensitive Sound Level Meter showed that Samsonite chairs actually make less sound than the mere turning of a page! No squeaking, no creaking! Samsonite and only Samsonite has given chairs the silent treatment with these exclusive features: Safety-guard seat hinges . Will not tilt or wobble . Replaceable rubber feet . Reinforcing steel cross



braces on chair legs . Electrically welded tubular steel construction · Remarkably strong -strong enough to stand on.



Mrs. Mildred B. Gehrke, President of The Board of Education of District 22, Farmingdale, L. I., says, "Nonsqueak Samsonite chairs have been used in Farmingdale's music classes for years-where absolute quiet is essential. They mean less distraction, increased teaching efficiency!" Write for the new Samsonite Institutional Seating Catalogue, today!



Shwayder Bros., Inc., Institutional Seating Division, Dept. AF6, Detroit 29, Mich. Also makers of famous Samsonite Luggage, Classroom Furniture and Card Tables and Chairs for the Home

Old reliable material makes modern buildings better

Some materials never seem to grow old. That's especially true of concrete reinforced with American Welded Wire Fabric. Thirty-five years ago it was the best material for building floors. It still is, today. With labor costs increasing, this high yield strength prefabricated material reduces costs.

American Welded Wire Fabric strengthened and improved the Empire State Building, the Chrysler Building, the RCA Building in New York . . . Merchandise Mart, and the Conrad Hilton Hotel (formerly the Stevens) in Chicago. Today, you find it in the concrete over metal deck floors of Lever House, and in the beam and slab floors of the new Socony-Mobil Building. You find it in precast roof decks and walls. You find it in ground slabs in schools, churches, auditoriums and modern shopping centers like the new \$23 million Roosevelt Field Shopping Center in Hempstead, Long Island. You find it in factories of the Ford Motor Company, and Chrysler Corporation.

With today's high building costs, the advantages of American Welded Wire Fabric are more important than ever. It costs less to handle, ship, and install than other types of reinforcement. It is allowed higher working stresses. It effectively controls cracking and adds years of life to concrete.

More about this old reliable material and its use in modern buildings on the next few pages.

> Municipal Parking Garage Number One, Chicago. Shaw-Metz-Dolio, Chicago, architects. Ground slab and pan-andslab floors reinforced with American Welded Wire Fabric.

WELDED WIRE FABRIC..

Big, Old New York is a showplace for American Welded Wire Fabric Reinforcement. Fourteen buildings in Rockefeller Center were strengthened and made durable with it. It is still the best floor reinforcement for new buildings, like the Socony-Mobil Building.

Behind The Glass of Lever House, American Welded Wire Fabric Reinforcement was used throughout.

the best floor reinforcement 35 years ago...and today

To Reinforce A Renaissance, the designers of Pittsburgh's Gateway Buildings used short-span concrete floors reinforced with American Welded Wire Fabric. American Fabric comes in long, wide rolls and, because it is prefabricated, can easily and quickly be unrolled into place.



YOU NEED 28% less reinforcing steel, compared to other types of reinforcement, when you specify American Welded Wire Fabric. That's because American Fabric is made from high strength cold drawn wire that is allowed a working stress of 30,000 psi., compared to only 20,000 psi. for other types. American Welded Wire Fabric meets ASTM Specification A185-53T, and is now available in wire sizes up to and including $\frac{1}{2}$ " in diameter, at 2", 3", 4", and 6" on centers.

Send the coupon for complete technical design data on American Welded Wire Fabric.

. . .

Every type of reinforced concrete construction needs

USS /	Ameri	can	
Welded	Wire	Fabri	ic
55			

SEND FOR COMPLETE TECHNICAL DATA

American Steel & Wire Dept. 96-B, Rockefeller Bldg. Cleveland 13, Ohio
Please send complete information on the following:
American Welded Wire Fabric Reinforcement
American Wire and Strand for Prestressed Concrete
Name
Firm
Address
City State

With American Welded Wire Fabric



... In slabs... 30% MORE STRENGTH COSTS LESS THAN 10%

In concrete slabs built on the ground, American Welded Wire Fabric increases the strength of the slab 30%. Yet, it costs less than 10% of the cost of non-reinforced concrete. For this small investment, it retards cracking, keeps concrete smooth and attractive years longer. Use American Fabric for slabs in homes, shopping centers, factories, warehouses.

... In precast concrete ... YOU GAIN SPEED

AND STRENGTH

Architect H. G. Allen, in association with Scott & Eesley, Marietta, Ohio, made good use of precast concrete panels in this building at the Ohio State Fair Grounds. The precast panels, manufactured and erected by The Marietta Concrete Corporation, incorporate insulation and window openings right in the panels. They made it possible to close this 74,000-sq. ft. building at a rate of about 2,500 sq. ft. a day. Wire Fabric Reinforcement makes precast concrete *possible*, gives it strength and resistance to cracking.

"is it Reinforced"

STEEL

CLIENTS WILL ASK

STATES

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Every type of reinforced concrete construction needs

USS American Welded Wire Fabric

UNITED

DRAMA Stars GLASS

Speech Arts Bidg., Orange Coast College, Costa Mesa, Calif. R. J. Neutra & R. E. Alexander, Architects. Richard H. Pleger, Supervising Architect. Thompson Paint & Glass Co., Glazing Contractor.

Structural Corrugated Glass Enhances Exterior...Screens Interior of College Building

Architect Richard J. Neutra has achieved an exterior treatment as dramatic as a Broadway hit with this striking installation of rhythmic, translucent Structural Corrugated glass. This modern material, rapidly gaining favor in contemporary structures, is an accomplished performer in daylighting. It effectively screens with light instead of darkness . . . floods protected areas with softened, diffused daylight. Translucent without being transparent, Structural Corrugated glass protects privacy beautifully. Practical as well as pretty, it lends itself especially well to today's designs and needs.







Write today for free literature. Address Dept. 6.



WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS



Price Tower: Bartlesville, Okla. Architect: Frank Lloyd Wright Engineer: Mendel Glickman Consulting Engineers: Collins & Gould General Contractor: Culwell Construction Co.

Meeting the architect's concept

High velocity air diffusion in the Price Tower

The photograph at the right shows how Mr. Frank Lloyd Wright incorporated Anemostat Straight Line All-Air High Velocity Units in the ceiling design of the Price Tower at Bartlesville, Oklahoma. The conditioned air is supplied through continuous Straight Line Diffusers located on two sides of the suspended ceiling. The diffusers do not only have vital functional use, but also add to the esthetic appearance of the architect's design.

The Anemostat All-Air High Velocity distribution system also offers important advantages. It can be used with smaller than conventional ducts. It can be installed in less time and at less cost. It requires no coils, thus eliminates leakage, clogging and odors. Furthermore, Anemostat round, square and straight line diffusers with high velocity units are adaptable to a wide variety of architectural designs.



See how Anemostat Straight Line All-Air High Velocity units are used in a typical office area.





Write for "High Velocity Air Conditioning: Its Effect on Building Design" to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.

Anemostat-The Pioneer of All-Air High Velocity Systems

Lighting by

Lighting Tixtures

makes the big difference...

Day-Brite troffer with the new Plastic Cleartex enclosure

New, more distinctive appearance at no increase in cost Plastic Cleartex replaces ribbed glass in Day-Brite's new, shallower, lower-priced troffer line. More beauty, better lighting performance. Plastic Cleartex won't break, handles much more easily.

Extruded plastic, engineered to the principle of the optical refracting prism. Longitudinal side prisms direct light downward and eliminate objectionable side glare. See your Day-Brite representative—or write for literature. Outer section of panel has 14 precise and optically correct longitudinal prisms.



Recessed center section combines longitudinal prisms and lateral striations for brightness control and distinctive appearance.

Day-Brite Lighting, Inc. 5471 Bulwer Avenue St. Louis 7, Missouri



NATION'S LARGEST MANUFACTURER OF COMMERCIAL AND INDUSTRIAL LIGHTING EQUIPMENT









NEW HOPE ELEMENTARY SCHOOL, GASTONIA, N. C. ARCHITECT: Frank B. Griffin, Gastonia. N. C. ENGINEER: W. P. Wells. Charlotte, N. C. CONTRACTOR: Castonia Plumbing & Heating Co., Gastonia, N. C. Distributor for above installations Atlas Supply Co., Charlotte, North Caroling

If you'd like to know more about the Will-Burt Stoker, write for our brochure, "The Logic of Stoker Heating". A stoker heating manual, written for architects and engineers, is also available.

"...extremely proud of our 72 Will-Burt Stokers...recommend to any interested in trouble-free operation...a favorite with janitors"

HUNTER HUSS, SUPERINTENDENT GASTON COUNTY PUBLIC SCHOOLS

Need we say more? Mr. Huss' praise, we think, carries more weight than any general statements we could make.

If you'd like to know more about these installations, Mr. Huss has stated that inspection by other school systems is welcomed.



for Cop-R-Flash: concealed flashing over heads and under sills of openings in masonry walls, through-wall and cavity wall flashing, spandrel beam waterproofing, and termite protection. Reported to do as an efficient a protection job as heavier gauge copper sheet, Cop-R-Flash Type B costs only 25ϕ a sq. ft. (A mopped-on 3-ply membrane runs about 35ϕ in place.) Cop-A-Flash Type A with one exposed face and a 0.004'' thickness sells for about 20ϕ .

Manufacturer: Phoenix Building Products, Inc.

(3) EXPANSION JOINT of extruded plastic is long-lived, low cost

Extruded of polyvinyl chloride, *Plasti-Grip* makes an effective, durable expansion joint, construction joint or waterstop in



all kinds of masonry construction. During a concrete pour the plastic compresses but as the concrete shrinks in setting, the material expands so that its deep grooves keep close contact. The U-shaped pleat in center can be left exposed between two pours to expand and contract with the structure's movement. As a waterstop in foundation, tunnel or swimming pool Plasti-Grip is reported to withstand a 125' head of waterpressure. The polyvinyl chloride is not affected by fungi, chemicals, extreme temperatures or age, and costs 40% less than copper and 60% less than monel. Price per ft. ranges from 75¢ for the 51/4" Plasti-Grip in quantities of 5000' up to \$1.80 per ft. for the 6" width in orders of less than 100'.

Manufacturer: Progress Unlimited Inc.

continued on p. 208

Ebonized **ARMCO STAINLESS STEEL**

Accents Design of Office Building



Typical detail of mullion showing Ebonized stainless channel.

Architects:

Harrison and Abramovitz New York

Ebonized stainless and mullions: General Bronze Corporation Garden City, N. Y.

ARMCO STEEL

CORPORATION

2096 Curtis Street, Middletown, Ohio . Sheffield Steel Division • Armco Drainage & Metal Products, Inc. . The Armco International Corporation



Stainless steel is put to new and unusually effective use in the design of the distinctive office building to be erected in New York for the C.I.T. Financial Corporation.

Satin-black Ebonized Armco Stainless channels, centered in polished stainless steel mullions, not only achieve an attractive tonal variation but heighten the effect of depth and form.

Finish Is Permanent

The 40,000 feet of Ebonized stainless on the C.I.T. building will retain its rich-looking appearance. Tests run by Armco research engineers, who developed the Ebonizing process, show that 10 years' exposure in an industrial atmosphere had no apparent effect on Ebonized stainless. The durable,

> Please send me inform Ebonized Stainless Stee

use in architecture.

jet black surface resists corrosion just as well as the natural finish of stainless.

New Design Opportunities

This new building incorporates one of the first extensive applications of Ebonized stainless and demonstrates its potential in architectural design.

Black panels in flat or patterned effects, adjacent to stainless panels with a gleaming natural finish, offer unlimited opportunities to create striking contrasts.

Because of the simplicity of the process, all types of stainless steel used by architecture can be Ebonized by metal fabricators.

For more information on Ebonized Armco Stainless Steel for architectural uses, just fill out and mail the coupon.

1	Name		
	Firm		
tion on	Street		
and its	City	Zone	State

Prisms are square at edges, become round toward the center. Prisms are effective throughout entire area of lens.



See the uniform light distribution you get with the new Corning Lenslite.

New Corning

- CA	NDLEPOW	ER ATA
MID- ZONE ANGLES	AVG. CANDLE- POWER AT 40 FT.	ZONAL
90°hor	0	Sec Notes
85°	2	2
75°	15	15
65°	54	53
55°	155	139
45°	396	306
35°	994	619
25°	1292	590
15°	1233	350
5°	1274	120
0°nadir	1280	

		LIGHT FLL	IX VALUES	And The Party	Share and the
ZONE	LUMENS	PERCENT	ZONE	LUMENS	PERCENT
0°-30°	1060	28.6	0°-90°	2194	59.3
0°-40°	1679	45.4	90°-180°	0	0
0°-60°	2124	57.4	0°-180°	2194	59.3

A	VERAGE E	RIGHTNESS	
ANGLE	Ft-L	ANGLE	Ft-L
85	82	55	962
80	123	50	1363
75	206	45	1992
70	312	40	3060
65	455	35	4314
60	676	30	5080

204

CONT.

CHOLING CY

lenslite gives more even light distribution

improved concave prismatic design for illumination without glare

Whenever you want to use incandescent lighting — for banks, stores, assembly halls—indoors or out—here is a new lens to consider.

Its concave design reduces the visible area of the lens at high angles. With an unusually high efficiency, the lens gets more light to the useful zone. It avoids sharp-angled beams of intense light. It gives illumination without glare.

Because it is made of a heat-resistant glass, you can use the new Corning lenslite indoors or out without fear of thermal shock.

For more information on this new development in Corning Engineered Lightingware write, wire or phone us.

This cross-sectional diagram shows the concave shape of the new Corning lens.



CORNING GLASS WORKS, 64-9 Crystal Street, CORNING, N. Y. Corning means research in Glass "We've got to reach every member of the building team"

says Bob Wagner, General Sales Manager



"Getting Westinghouse elevators in an architect's specification is only the first – though important – step in closing a sale. You never know for sure which member of the building team is going to make or break the final decision to buy."



"We cannot afford to concentrate our selling effort on only one man. At all times we try to give every member of the building team architects, engineers, contractors and clients — all the information he must have in order to make a wise decision."



"That's why we run one of our heaviest advertising schedules in FORUM. Time after time we have seen FORUM's building team coverage work for us in helping to clinch sales."

Bob Wagner of Westinghouse is not the only sales director who knows that even with an outstanding building product sales are the direct result of selling the entire building team. It's standard practice with every successful building product salesman.* That is why effective building product sales require the constant support of an advertising campaign in Architectural FORUM. More than any other magazine FORUM delivers the highest concentration of building team members: not only architects, engineers and contractors but also decision-making clients who are *actively* engaged in building new buildings, maintaining and modernizing old buildings.

*Source: HOW BUILDING PRODUCTS ARE SOLD. Dun and Bradstreet's report on a personal interview study made among leading building product manufacturers and distributors. Write for your copy: Market Research Manager, Architectural FORUM, 9 Rockefeller Plaza, New York 20, New York.



No costly maintenance problem here



Portland Cement Co. selected Johns-Manville Corrugated Trans-ite for its Bellingham, Washington, plant. Transite Erector: The E. J. Bartells Company,

Corrugated Asbestos Transite

For maintenance-free exterior walls and roofs, plus protection from fire, rot and weather

You save MONEY on construction and maintenance when you build with Johns-Manville Corrugated Transite[®]. Corrugated Transite comes in large sheets that require a minimum of framing . . . permit fast, economical construction of industrial, commercial, institutional and agricultural buildings.

Made of asbestos and cement, Corrugated Transite is practically indestructible. It never needs paint or special treatment to preserve it . . . it's fireproof and rotproof. Corrugated

Transite is also used increasingly for interiors. The streamlined corrugations and attractive shadow lines offer interesting design possibilities.

Investigate Johns-Manville Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, longlasting, trouble-free structure regardless of size or purpose. For complete details, write Johns-Manville, Box 158, Dept. AF, New York 16, New York. In Canada write 565 Lakeshore Road East, Port Credit, Ontario.



- Large sheets go up quickly
- Easy to fasten to steel
- · Easy to nail to wood
- Easy to saw
- Easy to drill

See "MEET THE PRESS" Sundays on TV, sponsored by Johns-Manville. Consult your newspaper for time and station.



PRODUCTS cont'd.

For more data use coupon, p. 242

(4) AIR CONDITIONER keeps cool safely in hazardous areas

Designed with every precaution for explosion resistance, these packaged air conditioners are suitable for chemical laboratories and hazardous industrial areas, operating rooms and other sparkshy locations. Compressors, condensers, coils and motors are hermetically sealed, and fans are fitted with static conducting





Outdoor Fountains

Here are two popular Halsey Taylor outdoor fountains . . . a pedestal anti-freeze type, of heavy cast-iron with porcelain enameled receptor, and a wall fountain of heavy cast iron porcelain enamel, each with distinctive health-safe features.

Ideal for municipal, national or roadside parks, school-yards, camp sites and recreation centers. The Halsey W. Taylor Co., Warren, Ohio.

A-64

HALSEY TAYLOR

Fountains and Coolers



belts. All electrical components are U. L. approved, and wiring and motor leads are inspected by an Underwriter's agency. The new self-contained units are manufactured in 3, 5½, and 7½ ton capacities. Prices range from \$1,700 to \$2,400 not installed.

Heating coils, automatic controls and other accessories are available.

Manufacturer: Conditioner Air, Inc.

(5) COOLING TOWER uses atomized water sprays to carry away heat

Motorless and fanless, the *Carefree* induced draft cooling tower for air conditioners keeps troublesome moving parts to a minimum. Produced in sizes for resi-



dential and industrial systems, the cylindrical tower has an arrangement of water nozzles at its top which sends jet sprays downward to lure in large volumes of air. The water is atomized into tiny particles for efficient mixing of air and water which is necessary for effective cooling. Wood fillers and baffles are not needed, and the simple tower, plastic coated inside and out, requires little maintenance. A Carefree cooling tower can be set up in any convenient location and hooked up to the air conditioner's water connections by a plumber. Prices range from 150 for the 48"-high 3 ton unit up to \$400 for the twin-tower with 15 ton capacity.

Manufacturer: Koch Engineering Co., Inc. continued on p. 214

Write for

With the Butler Building System, you specify distinctive,



modern buildings...born on the production line...



sold at mass-production prices...



... erected weeks ahead of ordinary construction

Small building budgets can be a headache—especially when coupled with big-budget tastes. But you can give your clients distinctive structures at surprisingly low cost—when you employ the Butler Building System.

With the Butler Building System, you can combine lowcost, pre-engineered Butler steel structurals and a die-formed metal roof with end and sidewalls of your specification and design – brick, stone, wood, glass, cement block, steel, aluminum. You invest little time in preliminary structural engineering, Butler has done that for you. Butler buildings meet or exceed uniform, state and municipal codes.

Rigid frames span the entire width of buildings, producing

are easy to apply. Economical insulation minimizes heating and ventilating costs. Inexpensive curtain walls and partitions can be used extensively with no sacrifice in strength or rigidity. Rigid frames –

not sidewalls – carry the building load. Fast erection puts your clients in business weeks ahead of conventional construction. For additional information, call your Butler Builder. He'll be glad to work with you in every phase of design and speci-

spacious, post-free interiors that lend themselves readily to

architectural treatment. Acoustical materials of your choice

fication. Or write for colorful brochure on the Butler Building System.



for name of your Butler Builder. BUTLER MANUFACTURING COMPANY

Consult the yellow pages of your telephone directory

7336 East 13th Street, Kansas City 26, Missouri



Manufacturers of Steel Buildings • Oil Equipment • Farm Equipment • Dry Cleaners Equipment • Outdoor Advertising Equipment • Special Products Sales effices in Los Angeles, Richmond, Calif. • Houston, Tex. • Birmingham, Ala. • Minneapolis, Minn. • Chicago, III. • Detroit, Mich. • New York, N.Y. • Burlington, Ont. Canada

THERMOPANE" HELPS YOU CREATE PLEASANT



ENVIRONMENT FOR BUSINESS

When employes are comfortable, personnel relations are improved . . . efficiency is increased.

Thermopane insulating glass contributes to their comfort because it cuts drafts near windows . . . helps air-conditioning and heating systems perform at peak efficiency . . . subdues distracting outside noise. And, when *Thermopane* is made with heat-absorbing glass, even sun heat can be controlled.

These characteristics give architects greater latitude in designing buildings with large expanses of glass. Learn more about *Thermopane* and its qualities. Send the coupon, or call your $L \cdot O \cdot F$ Distributor.





Offices of The Jewel Tea Co., Inc., Melrose Park, III. Architects: A. Epstein & Son, Chicago.

NOW NORMAL DELIVERY OF

.

.

.

....

.

.

6

.

....



INSULATING GLASS

 Many standard sizes in local stocks right now!

• Only <u>60</u> <u>days</u> for factory shipment of special sizes!

Thermopane FACTS

Technical information is available to help architects and engineers design for the most effective and most economical performance of

Thermopane insulating glass. It is all in our Thermopane Manual which will be sent on request. (See coupon below.)

Thermopane is sold by local L·O·F Glass Distributors and Dealers, listed under "Glass" in yellow pages of phone books.



ibbey.Owens.roi	rd Glass Co., Dept. 5190
608 Madison Av	e., Toledo 3, Ohio
Please send me	a copy of the Thermopane Manual.
Name	(Discus Dates)
	(Flease Frint)
Street	(Flease Frint)

..........



When you add all of this



to this room...you add happiness

Isn't there a big happy feeling about this classroom? So light, bright and airy. It's the Daylight Wall that does it... with its clear glass from sill to ceiling.

In a recent research study, 44 out of 45 teachers were enthusiastic about big window areas. Here are some typical comments:

"The lighter, brighter surroundings create a good environment for learning."

"Students do not get tired and restless, because there is no feeling of confinement."

And most of the teachers were quick to admit that they, too, were a lot happier in classrooms like this. Wouldn't *you* be? We think you'll find the complete research report by Paul R. Hensarling, Director of Administrative Research and School Community Relations for Port Arthur, Texas, mighty interesting.

If you'd like, we'll also send you our authoritative, illustrated book that discusses the important things to consider when you're planning school daylighting. Write to Dept. 4296, Libbey Owens[•] Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio. And feel free to call your Libbey Owens[•] Ford Glass Distributor or Dealer (listed under "Glass" in the yellow pages) for cost estimates and other help.



LIBBEY · OWENS · FORD a Great Name in Glass
<u>Proved</u> by the <u>test of time</u>... <u>Preferred</u> for today's roofing needs!



Only CELOTEX Roof Insulation provides all of these important features:



Made from tough cane fibers. The only roof insulation made from genuine Louisiana cane fibers . . . long, tough, durable.

Controlled density and thickness. Quality control insures exact, even density ... providing uniform insulation over the roof deck.

Excellent bond—no excess take-up of bitumen. Compactness of surface means insulation value is not materially affected by meppings on the job.



Firm, squared edges – snug joints. Provide flush contact at board joints for top insulation efficiency, protection from punctures. Resists damage from rough handling. Tough cane fiber board clear through . . . no weak spots to tear or break in shipping and application.

Strong, rigid, crushresistant. Withstands wheeling and job traffic; resistant to punctures or depressions forming weak spots.



Termite and dry rot resistant. Protected against dry rot and termite attack by exclusive Ferox® Process.

THE CELOTEX CORPORATION, 120 SOUTH LASALLE STREET, CHICAGO 3, ILLINOIS



31 YEARS ON THE JOB! Woodward and Tiernan Printing Co., St. Louis, Missouri. 225,000 square feet of Celotex Roof Insulation applied in 1925... and still doing a job!



SPECIFIED FOR EVINRUDE! Evinrude Motors Building, Milwaukee, Wisconsin. 300,416 square feet of Celotex 1" Preseal Roof Insulation used. Roofing Contractor: F. J. A. Christiansen Roofing Co., Inc., 2139 West Purdue Street, Milwaukee, Wisconsin.

OVER A THIRD OF A CENTURY OF LEADERSHIP IN EFFICIENCY, DURABILITY, ECONOMY!

In the past 35 years, The Celotex Corporation has manufactured and sold many millions of square feet of roof insulation. The advantages of specifying Celotex Roof Insulation become more and more obvious as the years go by . . . for this dependable insulation has proved able to stand up to time, wear, and weather, decade after decade. *Be sure* always to specify *jobproved* Celotex Roof Insulation.





For more data use coupon, p. 242





Good Samaritan happy with Van equipment in new floor kitchens

• The new Villa Madonna maternity wing of the Good Samaritan Hospital at Dayton has three floor serving kitchens and one diet kitchen . . . all with most modern all stainless equipment . . . designed, fabricated and installed by Van. Sister Helene, Chief Dietitian, says that they are a joy to clean. It is so easy to keep everything shining and clinically clean.

• Van engineers collaborated with Harry I. Schenck in laying out the decentralized service for most efficient operation, providing 375 meals to patients daily, for light diet service.

• When you have a food service problem . . . whether it involves modernization, expansion or an entirely new installation . . . be sure to make use of Van's century of experience.



(6) BABY CLAM picks up barrow load of gravel or sand in one bite

As it digs into a pile of building materials the little Fouray Clam matches the ravenous enthusiasm of huge excavating clam shells, if not the latters' capacity and taste for debris. However, the Fouray hydraulic unit is strictly a materials handler, an efficient susbstitute for a shovel. Especially useful on roofing jobs, the Clam can be hooked up with any hoist to operate as a simple hydraulic crane. As it is lowered over a pile of mineral chips or sand, a workman standing at the pile puts the hydraulic cylinder in position and the Clam opens up to gulp in a barrowful of material. A flick of the control valve closes the Clam so it can be lifted to release its load into a waiting vehicle or carried up to dump the material on the rooftop. Price: \$885 FOB factory.

Manufacturer: Fouray Products, Ltd.

(7) QUIET VENTILATOR hugs factory rooftop with low mushroom cap

Spinning exhaust air out into the atmosphere with little audible fuss, the *Silent Vent* ventilator contributes modestly to an industrial silhouette by crouching close to the roof. The rugged fan's lack of turbulence and low power consumption are attributed to its die-formed airfoil blades and guide vanes which work together to pull air up and out effectively at low



wheel-tip speeds. The enclosed motor, set inside the square base to keep the over-all height down to 1'-6", is mounted on rubber vibrator isolators. Fan blade diameters range from 9" to 49"; outputs, from 350 to 34,430 cu. ft. per minute.

Manufacturer: Detroit Blower Co.

continued on p. 226



Fasten it with STAINLESS STEEL

for Better Looks - Longer Life

"INFO" for Architects and Builders

- "AL Stainless Steels for Building"—12 pages on stainless grades, properties, forms, finishes, standard "specs,"uses and advantages.
- 2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. A1A File No. 26D.
- 3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. A1A File No. 15-H-1.

Unite for Octails Address Dept. B-81 AL Stainless Steel fasteners are non-rusting, non-staining. They will last as long as, or longer than, the materials they join. You can count on them to stand up through the years—both in strength and in bright good looks.

Best of all, stainless steel fasteners can be used anywhere. It isn't necessary that the materials to be joined are stainless these corrosion-proof fasteners are the perfect answer for joining other metals, woods, or plastics. Fasteners made of AL Stainless are produced in complete variety—every type and size that your job requires.

For improving quality and reliability wherever they're used—and for the economy of lifetime service—specify fasteners made of time-tested Allegheny Ludlum Stainless Steel. • For any technical data or engineering help in the use of stainless steel, address Allegheny Ludlum Steel Corporation, Henry W. Oliver Bldg., Pittsburgh 22, Pa.





ultimate in distinguished interiors EBBTONE[®] Acoustical tile

Those who design with clean, sculptured forms and sharp contrasts will find in Ebbtone a material of classic beauty. Here is a richness and elegance new to tile—in its impeccable whiteness, in its subtle textures, in a finish of fabric-like softness and depth. This is unquestionably today's most beautiful acoustical tile. Yet Ebbtone offers more than beauty. Its foamed, completely mineral composition combines a light reflectant value of 81%, maximum acoustical and insulating efficiency, and its fire hazard classification as per Underwriters' label shown below is rated incombustible by building codes and insurance rating bureaus. And should painting ever be required Ebbtone can be painted with a nonbridging paint without materially changing its acoustical characteristics.

Specify Ebbtone as the crowning glory for your finest interiors. Its chaste, classic beauty is the perfect foil for a decor of any mood, or period or color.

For client presentations request matched panels exhibiting the several Ebbtone finishes available.

FOR IRREGULAR SURFACES SPECIFY CORALUX'ACOUSTICAL PLASTER, THE PERFECT COMPLEMENT TO EBBTONE.

F. E. Schundler & Company, Inc.

504 RAILROAD STREET . JOLIET, ILLINOIS RATED FIREPROOF MATERIALS, ACOUSTICAL & INSULATING

Developers and producers of incombustible mineral products including Ebbtone Acoustical Tile, Fesco Insulation Board, Coralux Acoustical Plaster, Coralux Perlite Aggregates, Mica Pellet Vermiculite, High Temperature Insulating Blocks and Insulating Cement.

ABSORPTION COEFFICIENTS OF EBBTONE ACOUSTICAL TILE

	Unit Size Tested	Wgt. Lbs.	Surface	Thick- ness	Moun	125	Coefficients				Noise	
Number		Sq. Ft.					250	500	1000	2000	4000	Coef**
A54-280	12" x 24"	1,16	Natural White	13/16"	7	.63	.71	.64	.77	,84	.94	.75
A54-281	12" x 12"	1.16	Natural White	13/16"	1	.13	.31	.75	.95	.76	.77	.70
A55-296	12" x 12"	1.22	Natural White	3/4"	7	57	58	. 60	.70	86	. 86	.70
A56-17	12" x 12"	1 28	Natural White	3/4"	1	10	34	68	87	79	83	.65

"The noise reduction coefficient is the average of the coefficients at frequencies from 250 to 2000 cycles inclusive, given to the nearest 5%. This average coefficient is recommended for use in comparing materials to be applied in offices, hospitals, banks, corridors, etc. **EBBTONE** Acoustical Tile is available factory kerfed, beveled and backcut for suspension systems, or may be applied with approved adhesive according to manufacturer's specifications. Ebbtone is available in 12" x 12" and 12" x 24" sizes.

APPROVED by the Board of Standards and Appeals for use in New York City under Cal. No. 463-53-SM.



REINFORCED CONCRETE

... the answer to low-cost housing

Lower over-all costs and flexibility of design were the major factors which influenced architects George Fred Keck and William Keck in their selection of reinforced concrete for the new Prairie Avenue Courts project.

On many other important public housing projects and apartment buildings from coast to coast, reinforced concrete is also providing better structures for less money. It is a flexible medium, inherently firesafe, and highly resistant to wind, shock, and quake. Furthermore, reinforced concrete buildings start quicker . . . are completed sooner because all necessary materials are readily available from local stocks. On your next job . . . avoid costly delays—design for reinforced concrete! Prairie Avenue Courts, Chicagofor Chicago Housing Authority

George Fred Keck William Keck

Samuel R. Lewis & Associates (Mechanical) Frank J. Kornacker & Associates (Structural)

Jacobson Bros. Co.

...all located in Chicago, Illinois

Compare...

Architects

YOU'LL SAVE MORE WITH REINFORCED CONCRETE



CONCRETE REINFORCING STEEL INSTIT 38 South Dearborn Street • Chicago 3, Illinois

"**a**merican



LUSTRACRYSTAL* will substantially

cut glass costs"

"And it meets all other requirements, too!"

AMERICAN PRODUCT LINE

American manufactures sheet glass with the least distortion and the greatest clarity, whiteness and luster.

LUSTRAGLASS—single and double strength for conventional glazing.

LUSTRACRYSTAL—economical heavy sheet glass for larger openings and many other applications.

* MAX. SIZE—72" height x 120" width. Information on larger sizes available on request.

THICKNESS - 3/16", 7/2", 1/4".

LUSTRAWHITE—a picture glass of exceptional clarity and flatness.

LUSTRAGRAY—for better television viewing; and special glazing.

BULB EDGE GLASS—for use as counter dividers, wind deflectors and shelves.

THIN GLASS—for microscope slides and covers. Extremely flat and true to tolerance.

SUPRATEST-a laminated safety glass.

PANAL—a fiberglass-reinforced plastic structural panel.

WATCH OUR PRODUCT FAMILY GROW

Economy-wise architects and builders, nationally, are specifying and using American Lustracrystal instead of costlier plate glass for many glazing applications. Builders following this practice have reported saving as much as 35% on glass costs.

Economy is only part of the Lustracrystal story. Greater strength, more resistance to wind pressure and impact, makes Lustracrystal a very dependable structural glass.

Lustracrystal provides unimpaired vision and is produced with a fire-finished luster that adds external beauty to modern structures. Always specify and use AMERICAN for:

niways specify and use nivierient for.

True Economy
 Dependable Strength

Crystal Transparency
 Lustrous Beauty

..........









Engineered Air Distribution R

dynamically

rbulence

reduce pressure los

to a

design

minimur

Multiple-radius vanes of Uni-Flo AIRTURN® make air behave in ducts

Direction of air flow



Contrast the noisy turbulence and low-pressure areas shown by actual smoke test in this unequipped duct turn, with the smooth flow of air produced (above) by the Uni-Flo Airturn.



For minimum noise and maximum efficiency of air movement in square duct turns, specify the Barber-Colman Uni-Flo Airturn. Laboratory data and field experience prove that the exclusive Barber-Colman vane design is the most effective available. The Uni-Flo Airturn gives sweeping radius performance to square duct corners, permitting installation economy in ductwork and operating savings at the fan. Sturdy, rattle-free assemblies in sizes 48 in. x 48 in. immediately available, specific sizes made up to meet individual job requirements. Get complete specifications from our nearby Field Office or write us today.



DEPT. I, 1135 ROCK STREET, ROCKFORD, ILLINOIS, U. S. A.

MAXIMUM SECURITY

for swinging glass doors

W with the revolutionary new MAXIMUM SECURITY 1850 DEADLOCK

by adams-rite

The Maximum Security 1850 deadlock by Adams-Rite is the strongest, most compact deadlock yet devised for narrow stile swinging glass doors. This brilliantly designed deadlock has a bolt throw of fully $1\frac{3}{8}$ " from a backset as short as 7/8". As a result, it overcomes all the weaknesses of narrow stile design commonly caused by play in the hinges, flexible channels and jambs, inaccurate installation, and wear and tear of heavy traffic.

... the MS lock that doubles protection

Compare with ordinary lock. The MS 1850 retains as much bolt within the lock stile as is projected. Thus it bridges the opening with a solid bar of hardened steel.

This rigid construction makes forced entry impossible without complete destruction of the door channel itself.

The MS 1850 is wonderfully versatile and easy to install, and can be operated by any 1-5/32" mortise cylinder from one or both sides. Available in three backsets, the unit fits all popular size door channels for new or replacement installations. A natural half turn of the key throws or retracts the counterbalanced bolt.

Designers and builders of industrial, business, and institutional structures acclaim the MS 1850 as today's greatest advance in deadlock safety and simplicity.

For complete information mail coupon below



ORDINARY LOCK

COOLING . HEATING . VENTILATING . HUMIDIFYING . DEHUMID-IFYING . FILTERING . ZONE CONTROL . The McQuay Multi-Zone Air Conditioning Unit is designed for buildings where both heating and cooling are required at the same time. The unit is constructed to deliver to each zone, either filtered, cooled and dehumidified air; or filtered, heated and humidified air. By automatic control of the zone dampers a mixture of the cold and warm air is supplied to each zone at the required air temperature. Available in eight sizes in horizontal or vertical models with capacities from 1360 CFM to 21000 CFM. Each "MC" unit has a maximum number of zones-from six on the smallest size to 22 on the largest. A complete line of coils and accessories are available. Write for McQuay's new 12 page catalog, No. 550. It will give you a big assist in planning the installation of multi-zone air conditioners.

COOLS

Mc QUAY "MC"

SIMULTANEOUSLY up to 22 zones from one **Multi-Zone Unit**

MCQUAY "AC" UNITS

OR

Popular McQuay "AC" units, companions to the "MC" Units, provide heating, or cooling to commercial buildings where only one zone is required. Fourteen models for horizontal or vertical installation offer capacities ranging from 640 CFM to 21000 CFM. Write today for McQuay Catalog No. 505 to help you meet specifications for central air conditioner installations.



McQuay representatives located in all principal cities.



AIR CONDITIONING

REFRIGERATION

- 16g

HEATING



HOUSE OF SEAGRAM:

Architects: Mies van der Rohe and

Philip Johnson Associate Architects:

Kahn & Jacobs

Interior Design: Knoll Associates, Inc.

General Contractor:

George A. Fuller Company



The First Name In Hollow Metal For The Last Word in Office Buildings

Toward the advancement of the highest standards in contemporary architecture, Seagram Distillers submits THE HOUSE OF SEAGRAM, now under construction on New York's Park Avenue.

With all the hollow metal industry to choose from, owner, architect and general contractor agreed on AETNA doors and door frames for installation throughout.

Backed by over fifty-five years of specialization, AETNA's reputation for utmost quality makes it the choice of architects and builders involved in the outstanding construction projects of our times.

AETNA STEEL PRODUCTS CORPORATION 730 Fifth Avenue, New York 19, N.Y.



e Buildi Emery Roth & So r: Uris Door



se, N Yor Architect: Skidmore, Owings & Merrill • General Contractor: George A. Fuller Co. • Doors



430 Park Avenue, New Architect: Emery Roth & Owner:Builder: 430 Park Av Corporation • General w York ition • General Con-Freeman & Gerla and Door Frames-r Enclosures-Aetna-

AETNA ON PARK AVENUE



99 Park Avenue, New York Architects: Emery Roth & Sons, Owner-Builder, Tishman Con-struction & Realty Co. • Gen-eral Contractor: Tishman Contractor: Tishman truction and Realty Co.



460 Park Avenue, New York Architect: Emery Roth & Sons Owner-Builder: Tishman Can-struction & Realty Co. * Gen-eral Contractor: Tishman Construction & Realty Co. man Co.

architectural FORUM / September 1956



GENERAL ELECTRIC BUILDS THEM

dependable

Equipped with time-tested hermetically sealed compressor for long life and trouble-free operation.

handsome

Simple, modern styling with louvered front. Hammered soft gray finish lends itself to every interior.

compact

Take up to 30% less floor space. Fit easily in shallow corners. Over-all depth is up to 5" less than other makes.

> and thrifty

General Electric engineering for maximum efficiency cuts water and electricity bills. Operating cost is only pennies a day.



for offices, stores, institutions and factories

These features make the big difference:

1. Full-width foot pedal for easier water control.

2. Anti-splash basin prevents splattering.

3. Adjustable dial has 8 settings for control of water temperature.

 Extra-large stainless steel reservoir guarantees ample supply on peak demand days.

5. Direct rod to bubbler control assures steady stream of water.

6. Snap-off front panel for easy maintenance.

Whenever you include water coolers in your floor plans, specify General Electric Water Coolers...not only for quality and special features, but because there's a General Electric model to fit your particular requirements. They range in capacity from 2.85 to 21.5 gallons per hour. The standard General Electric 5-year protection plan backs up famous General Electric quality. Call your local General Electric Water Cooler dealer or write to General Electric, Commercial and Industrial Air Con ditioning Department, 5 Lawrence Street, Bloomfield, N. J.

Progress Is Our Most Important Product GENERAL BEBECTRIC



WHY WAYLITE IS THE MOST WIDELY USED OF THE LIGHTWEIGHT AGGREGATES

WAYLITE AGGREGATE PLANTS ARE LOCATED AT:

> BETHLEHEM, PA. (2 PLANTS)

CHICAGO (2 PLANTS) DULUTH HARRISBURG PHILADELPHIA YOUNGSTOWN It has now been 25 years since Waylite aggregate was introduced to architects, builders and products manufacturers.

It is the most widely used of all lightweight aggregates. Its physical properties and characteristics are fully documented and widely known. It can be specified with the utmost confidence because of its dependable uniformity.

Waylite has unique and exclusive merits as a material. Masonry units made with Waylite aggregate gives a combination of 3 desirable features...an insulative wall... a decorative interior finish...and complete acoustical treatment. And all for one low cost.



Plain and reinforced concrete made with Waylite aggregate gives a weight reduction of 30% to 35%. This permits important economies in design.

Waylite aggregate's uniform high quality begins with the design of the plant in which it is processed. Used exclusively by Waylite, these processing plants are permanent installations. Each requires a greater capital investment in order that precise quality control can be achieved. They are skillfully operated with the same end in view.

In the future as in the past, you can specify or use Waylite with complete confidence that it will serve you well.

THE WAYLITE COMPANY

20 N. WACKER DRIVE, CHICAGO, or BOX 30, BETHLEHEM, PA.



For more data use coupon, p. 242







(8) STAGE AND CHAIRS stack up well in style and storage

Ruggedly built in minimum parts of practical materials for long, hard use, Nestaway movable platform and stacking chairs look delicate and tasteful. Easily set up and stored, the furniture is intended for multipurpose rooms in schools and churches. The platform, comprised of 2'wide interlocked sections, is engineered to withstand a California-type earthquake and can take a 200 lb. load per sq. ft. on its solid 5%" exterior grade plywood deck. Its 11/2"-deep steel channel frame is arc welded and the legs are braced in two directions. Taken apart, it goes through a 2'-8" door on its own dolly; several of the sections ride on one fitted with swivel rubber wheels. Its wood surface is finished with a resin bonded plastic. Standard sizes run from 4' x 8' up to 24' x 28' in heights of 8", 1'-4", and 2'. Price averages \$4.80 per sq. ft. Stacking in clusters of 25, the Nestaway chairs have no bolts, screws or folding or sliding parts to catch clothes and calves. The seat is molded in one piece of plastic and wood fiber and riveted to the simple tubular steel frame. The child's chair in seat heights of 11", 13" and 15" weighs about 15 lb. Single order price is \$11.60; in quantities of 100, \$5.95. Special racks and dollys are available. Manufacturer: Nestaway Products Div.,

Manufacturer: Nestaway Products Div., Rollway Grandstand Corp.



(9) GAS DISPENSER hangs overhead in hospital operating room

Sure to get approval of hospital planners and surgical staffs, Logan's ceiling mounted *H-850* gas dispenser sets up no roadblock around a busy operating table. Providing a sterile and safe means of dispensing anesthesia and oxygen (stored in a room above) the chrome-plated cylinder with concealed piping keeps such paraphernalia as racks, hoses and portable tables out of the crowded operating room. The anesthetist can obtain any gas or combination of gases from a convenient *continued on p. 232*

A distinguished example of Reynoside



The modern beauty of this school bespeaks a functional modernity in its siding. For insulation, it combines the high radiant heat reflectivity of aluminum, both sides, with $1\frac{1}{2}$ " glass fiber insulation in between. Aluminum's freedom from rust and resistance to corrosion reduces upkeep costs over the years. Inside surfaces may be readily washed or wiped clean. Thus low upkeep combines with low applied cost for all-around economy.

A complete installation service is available. For name of nearest jobber-erector, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. For literature, write to **Reynolds Metals Company**, Building Products Division, 2020 South Ninth Street, Louisville 1, Kentucky.

Shawano High School, Shawano, Wisconsin

Architect:

Edgar A. Stubenrauch & Associates, Sheboygan, Wisconsin

- General Contractor: Palisades Construction Company, Appleton, Wisconsin
- Jobber-Erectors: Wisconsin Bridge & Iron Company, Milwaukee, Wisconsin

Material:

Reynoside* 8" Rib (.051" thickness), used with 1¹/₂" glass fiber insulation and a back-up sheet of .032" flat-embossed Reynolds Aluminum.



See "FRONTIER", Sundays, NBC-TV Network. Starting Sunday, Sept. 23, see Reynolds great new series "CIRCUS BOY"-same time and station.

REYNOLDS ALUMINUM BUILDING PRODUCTS

for the critical lighting professional LOUVRON by LIGHTOLIER

Crisp, clean design. Broad yet shallow light source. Direct and indirect light. Side panels of pure white enameled steel, ribbed luminous polystyrene or Perfalux (translucency of plastic with the strength of steel). Two varieties of louver shielding. Spring-lock and safety chain louver hinging. Interlocked, rattle-free louver construction. E.T.L. approved ballasts. 4' or 8' lengths, 2 lamp or 4 lamp widths. Three stage, pure white semi-gloss finish. Lightolier quality construction.

These are just a few of the many features you will find in the new Louvron by Lightolier, features that make Louvron the proper specification where permanently superior performance is required. Write on your professional letterhead today to Dept. AF-96 for the full facts on Louvron and for Lightolier's complete Architectural Lighting Portfolio.

JERSEY CITY 5, N. J

XLIGHTOLIER

PillCO NO. 91 CONCEALED AWNING BAR

This handsome awning bar comes in three impressive styles. One with a sleek, unbroken surface . . . another is enhanced by an attractive, reeded, feature strip fastened to the center of the bar . . . and finally, a bar with evenly spaced, snap-on mouldings that create a strong horizontal sweep. Your choice of any of these concealed awning bars will add graceful, clean lines to your store front design. For complete details, see your Pittco® Store Front Metal Representative.



R

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

when lighting specs are still o the scratch uning on the trans

John Watts

Electrical Contractor

it's not too early to start working with ...

Today, almost any lighting job you plan involves a multitude of new problems-and new possibilities-as to equipment, wiring methods, installation detail. So does everything else on the electrical side of the building industry from doorbells to power distribution.

To make practical economical use of new items and to make sure that everything you specify, new or old, meets local conditions and regulations, there's one sure source of help-"John Watts", a qualified electrical contractor familiar with conditions in the area.

Call upon him early, before plans have "jelled" and the specifications are drawn up. Let him discuss with you the practicality of innovations, check with him on the availability of supplies, let him advise on the surest means for "on-time" delivery of materials and equipment.

A competent electrical contractor, working with you from the start, can often increase the effectiveness of your plans and smooth the way to faster completion of the job at lower cost. Choose him carefully, of course-but equally important-call on him early ! 680-319

Here are 7 ways in which QUALIFIED ELECTRICAL CONTRACTORS can be of real help to ARCHITECTS, **CONSULTING ENGINEERS, and BUILDERS**

- 1. Providing information on the newest developments in specified electrical equipment.
- 2. Sharing experience on details of installation.
- 3. Furnishing first hand data on local practices, regulations and preferences.
- 4. Supplying practical facts on availability of equipment.
- 5. Offering "related items" experience with units and supplies they require.
- 6. Contributing his years of experience as a coordinator to help on material delivery schedules and project completion dates.
- 7. Using Graybar's nationwide warehouse stocks and facilities to deliver the smallest to the largest equipment anywhere, fast.

ravbark... serving the nation's building industry through electrical contractors

GRAYBAR ELECTRIC COMPANY, INC., 420 LEXINGTON AVENUE, NEW YORK 17, NEW YORK, IN OVER 130 PRINCIPAL CITIES



The symbol, and the spirit, of the fighting gamecock lives on with the commissioning of the powerful aircraft carrier, USS Saratoga.

The incident which gave birth to this 142 year old Navy tradition took place on the decks of the first *Saratoga* as she closed for action against four men-o'-war in 1812. In the opening minutes of the engagement an enemy ball landed on deck – crashing into a coop containing a gamecock brought aboard by a sailor.

With a flurry of feathers, the startled bird flew to the rail and, as if expressing his personal indignation, crowed lustily and defiantly. Taking this as an omen of good luck, the outnumbered and outgunned American ship entered the battle with new courage and completely won the day. The Navy's newest aircraft carrier is the fourth ship to bear the name *Saratoga* and adopt its fighting symbol. As aboard its sister aircraft carriers, the USS Forrestal, USS Independence*, and USS Ranger*, Walworth Valves and Fittings are installed. We are proud of the many contributions that our products and engineering skills have made to these outstanding vessels.

Walworth products installed aboard these ships include Pressure-Seal Cast Steel Gate, Globe, and Angle Valves, Fabricated Cast Steel Manifold Valves, Cast Steel Y-Globe and Angle Valves, Bronze Gate, Globe, Angle, and Check Valves and thousands of Walworth pipe fittings including Walseal[®] Fittings, Flanges, and Unions. *Now under construction.



PRODUCTS cont'd.

For more data use coupon, p. 242

height. (Bottom portion of the unit should be roughed in 6'-8" off the floor.) To assure absolute safety, each coupler is labeled and keyed for a matching connector: nitrous oxide's key will only plug into the nitrous oxide line, oxygens into oxygen. Cost of the H-850 is about \$300 plus installation.

Manufacturer: Logan Hospital Equipment Co.





Low silhouette...

...Swartwout **Low-Line** Roof Ventilator ties in with modern building trend

Adaptable to many situations where individual roof ventilators serve best, the Low-Line simplifies your selection. For Low-Line is made in both gravity flow and powered types. Roof appearance can be standardized; gravity Low-Lines for use over areas where positive pressure exists — powered style where heat or fumes need forced removal. And where positive intake of fresh air is desired, Low-Line can be arranged for that purpose at our factory. In all three styles the design of this modern ventilator assures top efficiency.

The nicely proportioned hood provides generous capacity combines neat, business-like appearance with high utility. Made in 11 sizes, with many capacity variations available in powered style. Write for Swartwout Low-Line catalog sections.

The Swartwout Company • 18511 Euclid Ave., Cleveland 12, Ohio



(10) OLIVE HINGE needs no oil; pin rotates in a nylon bushing

As easily mounted as a butt hinge, Soss's new olive knuckle hinge, the Olive Butt, combines grace with burglar resistance. Although an open door hung on these inexpensive hinges can be removed without taking out any pins or screws, when shut it cannot be disassembled. The fixed hinge pin of the Olive Butt rotates in a heavy duty nylon bushing; no lubrication is necessary. Right- and left-hand hinges are produced in various finishes for both 1%" and 1%" interior and exterior doors. Prices start at \$3.11 each.

Manufacturer: Soss Manufacturing Co.



(11) TRUSSED RAFTER jackknifes to flat bundle for easy shipping

The Marsh truss comes to the site as what looks like a small banded pack of raw lumber, and it is charged the same freight rate. It unfolds, however, into a 75% assembled rafter unit. All the 16 major connections are made at the fabricator's with Timberlock 21/2" split rings and 1/2" bolts. To complete the assembly and rigidize the unit, the truss is extended to approximate position and bolts and rings inserted in the prebored short diagonals. No jig is needed and the on-site time runs about ten man-minutes a truss. For stability and minimum deflection, two members are used for the truss' upper chord with a double ring in the critical heel joint. Prices for Marsh packaged trussed rafters, stocked in lengths up to 30', run about \$180 to \$200 per M bd. ft., including hardware. A 28' unit containing 63 bd. ft., costs about \$12.85 FOB fabricator.

Manufacturer: Marsh Co., Ltd.



(12) WOOD RAFTER TRUSS held tight by many-toothed grommets An invention of Florida Architect A. Carol

Sanford, the steel Gri-P-late makes a rigid continued on p. 238



Simplified construction cuts cost of non-bearing walls

Milcor 2-inch Studless Solid Partitions

Important, three-way savings distinguish Milcor Studless Solid Partition construction:

- Material costs are less there are no studs.
- Erection costs are less installation is quick and easy.
- **3.** Maintenance costs are less Milcor Studless Solid Partitions resist structural stresses and are crack-resistant.

These savings enable you to give your client these advantages of a solid plaster wall on an interlocking web of steel:

(a) Saving of floor space; (b) Full one-hour fire-rating; (c) Increased strength under impact;(d) Reduced floor load; (e) Reduced sound transmission.

Specify Milcor Studless Solid Partitions wherever non-bearing walls are feasible.

Milcor Catalog No. 222, available upon request, helps you make the most of Milcor 2-inch Studless Solid Partitions.

MILCOR Solid Partitions



Eliminating studs, 36" Milcor Stay-Rib Metal Lath is erected so that its ribs provide vertical reinforcement. It fastens to a ceiling runner and a floor runner—or to a ceiling runner and Milcor Housing Base.



Where extra strength is required, use a Milcor 2-inch Channel Stud Partition — reinforced vertically with Milcor Cold Rolled Channels; horizontally and diagonally with Milcor Small Mesh Metal Lath.

M-177

Milcor Housing Base acts as plaster grounds and firmly resists damage at floor level.



INLAND

INLAND STEEL PRODUCTS COMPANY DEPT. 1, 4031 WEST BURNHAM STREET . MILWAUKEE 1, WISCONSIN

OFFICES IN: BALTIMORE + BUFFALO + CHICAGO + CINCINNATI + CLEVELAND + DALLAS + DETROIT KANSAS CITY + LOS ANGELES + MILWAUKEE + MINNEAPOLIS + NEW YORK AND ST. LOUIS.



products

buildings modern

When you specify American-Standard plumbing, heating and cooling, you can be sure these products complement the modern design and serviceability of your building for years to come.

Why? Because these new products are simple and straightforward in design. Because they are easy to use. And because (like all American-Standard products) they are precision made with the most durable materials available.

For complete information on these products, write to American-Standard, Plumbing & Heating Div., 39 West 39th Street, New York 18, N.Y.

NEW LEDGEWORTH CAST IRON DRINKING FOUNTAIN AND RECEPTOR—Offers improved sanitation and great utility. Ideal for school planning. This versatile fixture also has commercial, industrial, laboratory, club and church applications. Comes in 2 sizes—6 colors and white.



NEW NEO-HEALTH TOILET—First really new toilet in decades. A built-in cleansing spray, controlled with separate handle, affords the ultimate in personal hygiene. Water contained in special compartment is used for frequent and thorough personal cleansing. Harmonizes with other American-Standard bathroom fixtures in styling and wide choice of colors.





NEW SELF-CONTAINED REMOTAIRE YEAR 'ROUND AIR CONDITIONING—Complete flexibility gives new freedom of design. One unit may be heating, while another is cooling the adjacent room. Self-contained refrigeration circuit needs no water, central cooling plant or ductwork. Connects to two pipe steam or hot water for heating. One cabinet size for ³/₄ or 1 hp unit. The ³/₄ hp operates on 115, 208 or 230 volts; the 1 hp on 208 or 230. Available with top or front grille. Fits flush with outer wall.





Overhead Underfoot the world's greatest air terminal uses TUFCOR[®] steel decking

655 acres of buildings, parks, roadways and taxi-ways... facilities for 6000 cars and 140 airplanes at a time...8¹/₂ million travelers a year—that's New York International Airport's dazzling new "Terminal City," rushing now toward completion. And to make sure it's the world's finest airport, to keep it on schedule, The Port of New York Authority is specifying the finest building materials available. It chose Tufcor permanent steel decking for casting 412,000 square feet of floors and 138,000 square feet of roofs in the International Arrival Building, to be completed in mid-1957. In the floors, Tufcor serves as a permanent steel form for lightweight, structural grade concrete and provides a safe platform for workers on the job. In the roofs, Tufcor deep corrugated steel is the ideal long span, high strength, permanent steel base for lightweight insulating concrete. Unsurpassed for high strength and toughness, it is also firesafe and serves as a positive check against roof fires. And Granco's new, hot-dip galvanizing process guarantees an even coating of protective zinc. Like to have the advantages of Tufcor on *your* next job? For more information, costs or estimates, consult Granco home or district office. Attention: Dept. F-65.





See our listing in Sweet's Architectural File and Industrial Construction File

GRANCO[®] STEEL PRODUCTS COMPANY

A Subsidiary of GRANITE CITY STEEL COMPANY 6506 N. Broadway, St. Louis 15, Mo., Executive Offices: Granite City, III. DISTRICT OFFICES: St. Louis • Kansas City • Dallas • Chicago Minneapolis • Atlanta • Cincinnati Distributors in 80 principal cities



TUFCOR ELIMINATES MEASURING AND CUTTING. Sheets arrive at the job site conveniently bundled and precut to fit steel framing. Actual job photo shows Tufcor sheets

are easy to handle, easy to weld in place. The minute Tufcor sheets are down, they create a safe, strong, incombustible platform, protect workmen above and below the steel decking.



15 MILES FROM TIMES SQUARE, New York's new \$90 million "Terminal City" at International Airport will feature an eleven-city-block long International Arrival Building and adjacent Airline Wing Buildings, individual airline terminal buildings, seven and one-half miles of taxi-ways, and ten miles

of two-lane roads! This modern, efficient air terminal will be the world's largest. Operators: The Port of New York Authority. Architects for the International Arrival Building: Skidmore, Owings & Merrill, New York City. General Contractors: Cauldwell-Wingate Company, New York City.



HIGH STRENGTH TUFCOR FORMS A TIGHT, solid, level base for concrete, helps eliminate costly clean-up on floors below. Elimination of forms speeds concrete placement.

End result: a rigid and permanent roof or floor slab with unsurpassed strength. Tufcor can also be used for wall panels and as a concrete form for bridge floors and pipe tunnels.

PRODUCTS cont'd.

For more data use coupon, p. 242

positive connection between members in the low rise Sanford truss. Applicable to many types of small one- or two-story frame or masonry nonresidential buildings, the trusses can be fabricated for as low a pitch as 11/2" to 1'. The simple electrogalvanized connector plates are cut in several shapes and punched with sharp 1/4" teeth. They are forced into the timbers by a 50 ton press to create a permanently





American's Laundry Planning Service takes the architect's point of view ...

Laundries are important, but they have to fit in along with the many other essential service facilities. We take this view in helping you plan a laundry department. Whether it's in a hotel, hospital, school, or other institution, we hold floor space to a minimum. Not the absolute minimum-but the practical minimum, which properly balances floor space with capacity needs for most efficient and economical work flow with the least operating personnel.

With over 88 years of experience, with the industry's most complete line of equipment to choose from, with representatives in more than 85 communities, American can bring useful, cooperative and effective service to both architect and owner.

nerican Cincinnati 12, Ohio

World's Largest, Most Complete Line of Laundry and Dry Cleaning Equipment

Write for your copy of American's ARCHITECT'S REFERENCE GUIDE showing our complete line of laundry equipmen



Himmu

ing both tension and compression. Each truss takes 16 Gri-P-lates. Designed for 2' spacing and weighing about 104 lb., with 21/2" to 1' on 12 pitch, the 26' plantassembled trusses with 2 1/2" to 1' rise weigh about 100 to 108 lb. each and can be handled by two men. They are shipped to the site for under \$14 apiece and can be ready for sheathing one hour after delivery. According to the region of the country, lumber used with the Gri-P-lates in the Sanford truss is either stress graded No. 1 Southern pine, 1500 F coast region Douglas fir or 1500 R West Coast hemlock. Savings in materials and handling over conventional 16" o.c. rafters are estimated by the manufacturer at least \$100 for a 1500 sq. ft. building.

aligned truss structure capable of resist-

Manufacturer and Licenser: Sanford Grip Plate Co.

(13) Coils of enameled foil

Firing aluminum foil 0.0025 to 0.005" thick with porcelain frit at 975° in a continuous process, AllianceWare is producing enameled sheet that can be cut with a scissors without chipping. The new material, obtainable in any color with any degree of matte or gloss finish, is ideal for laminating to back-up boards of pressed wood or plywood for use as appliance housing and wall paneling. It can be sawed and drilled with carpenter's tools without damaging the thin flexible color coat. Present capacity is limited to coils 2' wide, 300' long.

(14) Thermostat with 27' feeler

An electronic thermostat with a 27' long sensing element has been introduced by Minneapolis-Honeywell. Designed to help solve problems of temperature stratification in large air ducts, the long feeler is enclosed in 1/8" copper tubing. It has an operating range from -30 to 225° and can be used to give readings of radiant panel concrete slab temperatures.

(15) Little holes to fill big ones

Two self-curing isocyante lightweight foams for insulating and reinforcing voids continued on p. 242



RE

This great new advance in built-up roof construction promises a virtual end to blisters and damaging surface buckling, peeling and cracking. Fiberglas Built-Up Roofing and bitumen are welded into one continuous monolithic sheath reinforced by the same strong glass fibers used in Fiberglasreinforced fishing rods and boat hulls. These fibers impart permanent strength to the bitumen—reduce failures caused by faulty bonding of bitumen and felt.

Because Fiberglas Built-Up Roofing is reinforced this new way, 40% more bitumen can be applied without risk of cracking—giving 40% more weather and water protection ! Field-tested and proved in use since 1947 in millions of square feet of roofing, Fiberglas materials can outlast the bitumen itself! Under all weather conditions, Owens-Corning will bond your roof for up to 20 years! And with Fiberglas Roof Insulation under a Fiberglas Built-Up Roof, you have a quality roof from top to bottom. It's amazing the difference Fiberglas makes!

SEND FOR FREE SPECIFICATION BOOK—Reinforced Built-Up Roofs—containing 32 pages of technical and design data later than current Sweet's Files. Address Owens-Corning Fiberglas Corp., Dept. 171-I, Toledo 1, Ohio.



Roofing Products — FIBERGLAS PERMA-PLY* • FIBERGLAS BASE SHEET FIBERGLAS COMBINATION SHEET • FIBERGLAS ROOF INSULATION • FIBERGLAS FORM BOARD • FIBERGLAS MOP YARN • FIBERGLAS COROTOP* (Cold-application roof resurfacing) ***T-M**. (Reg. U.S. Pat. Off.) O.C. F. Corp.



Ordinary roofing felts *separate* bitumen layers—blisters between layers may result in premature roof failure.

Fiberglas roofing *bonds together* bitumen applications —creates a single reinforced monolithic roof.



Solve all your door problems by saving this

Weldwood Door Guide for Architects

Weldwood "Stay-Strate" Flush Doors end complaints and Service Problems!

No other door offers so much. Maximum dimensional stability! Incombustible core! Greater insulation value! Vermin- and decay-resistance! Complete weathertightness! Over 30 decibels sound reduction!

Ideal interior or exterior door for homes, offices, apartments, institutions. Guarantee-for the "life of the installation" . . . against warping, twisting

or manufacturing defects-includes labor charges for hanging and refinishing. Inert Weldrok mineral core. Birch, oak, walnut, Korina® and other beautiful hardwood faces. All standard sizes; thickness: 13/4". Light or louver openings available.



Weldwood Hollow-Core Flush Doors leader in the low-price field

Popular quality door in the lower price field. Beautiful woods: Gold Coast cherry, oak, walnut, birch, others. Standard sizes. Thicknesses: 13%" or 134".

Weldwood Lumber-Core Flush Door

Top quality at a moderate price!

Guaranteed for life against delamination. Has stave lumber core for dimensional stability. Virtually warp-free. Waterproof glue makes it suitable for exterior. Faces of mahogany, oak, Korina and others. All standard sizes. Thicknesses: 13/8", 13/4", 2" and 21/4".

Novoply-Core Cupboard Door Stock virtually warp-free

Special construction of nonwarping 3/4" Novoply with birch faces and hardwood banding. Doors won't sag, stick. Wide range of stock types, sizes.



All exposed edges of door made with kiln-dried <- hardwood

Weldrok core

banding 1/16" hardwood

Face veneer standard thickness

Lock blocks 3 13/16" wide two sides

Top and bottom rails glued-up kiln-dried hardwood

Weldwood Louver Doors

of Ponderosa Pine or Fir

Thicknesses: 11/8" or 13/8". Single doors and pairs in standard sizes.

DOORS SPECIAL - DUT Y

Weldwood Wood-Faced Fire Door*

gives double protection

Combine double protection against fire and heat (U. L. label for Class "B" and "C" openings, maximum heat transmission 250°F at 30 min.)



with handsome wood surfaces (oak, mahogany, walnut, others can be matched to walls). Mineral core of incombustible Weldrok®. Guaranteed for life including labor costs of hanging and refinishing. All standard sizes up to 4' x 7'. Vision panels available in 10" x 10" and 8" x 12". Thickness: 134".



United States Plywood Corporation 87 Offices in Principal Cities

Weldwood Micarta®-Faced Door

ends scuffing

The "Custom Roval" . . . ends scuffing and marring. Needs no kick- or push-plates. Wipes clean with a damp cloth. Available in decorator colors or woodlike faces. Lumber, Stay-Strate or honeycomb core. All standard sizes, ideal for all types of institutions.



Weldwood Metal-Faced Doors: A wide choice for restaurants, hotels and other institutions

Weldwood Novoply® Sliding Doors Flattest, most stable wood door panel ever made. Won't stick because it's guaranteed not to warp in excess of 1/8". Textured Novoply Flush Doors come plain or birch-faced. Doors available alone, or complete sliding door unit with pre-



cision rolling hardware. Sizes 3' x 6'91/2" to 8' x 8'. Thickness: 34".

Weldwood X-ray Doors: Lead-lined to your specifications.

United States Plywood Corporation	AF-9-56
I'd like to know more about Weldwood Doors. Please let No. 1489.	send me book-
NAME	
ADDRESS	

PRODUCTS cont'd.

For more data use coupon below

have been developed by Scotch tapers Minnesota Mining and Mfg. Co. Called compounds type A and type 1, the thermosetting foams come as two liquids which are mixed with a catalyst to create a rigid cellular material that will not settle, loosen or sag. They are said to be especially useful in filling cavities where stiffening and vibration dampening are required.

(16) Glass plaster

Certainteed is replacing the conventional sisal and hemp in its fibered gypsum plaster with filaments of textile glass. Marketed as *Bestwall*, the glass-fibered plastic is claimed to provide an excellent keying on metal and perforated lath and a smooth base for finish coat. The glass fibers are chopped short enough to prevent build-up on the mixing machine blades or balling during application.

(17) Machine finished metal

Various patterns of stripes and crosshatching are available on Apollo prefinished metals in sheets or strips for trim and panel skins.

How to Flash & Waterproof with PERMANENT COPPER for less than 15[¢] PER SQ. FT.



Copper Armored Sisalkraft is pure Anaconda copper bonded to reenforced, creped kraft. It provides all the traditional advantages of heavy sheet copper at a fraction of the cost. Specify this unique product for all concealed flashing and waterproofing applications. It will satisfy your clients two ways: (1) save them money, (2) give them effective water and moisture protection.



AMERICAN SISALKRAFT CORPORATION DEPT. AF9, ATTLEBORO, MASS. Please send samples of Copper Armored Sisalkraft and literature showing applica-

tion details. Name Company Address City Zone State

PRODUCTS INFORMATION COUPON						
For additional information on any product reviewed in the September issue check the corresponding key number below and mail this coupon to Architectural FORUM (Room 7-06) 9 Rockefeller Plaza, New York 20, N.Y.						
 1. Electrified Flexicore floor 2. Laminated Cop-R-Flash 3. Plastic expansion joint 4. Explosion resistant conditioner 5. Carefree cooling tower 6. Fouray clam hydraulic 7. Quiet roof ventilator 8. Nestaway stage and chairs 9. Overhead gas dispenser 10. Oilless olive hinge 11. Folding Marsh truss 12. Low rise Sanford truss 13. Porcelain aluminum foil 14. Thermostat with 27' feeler 15. Self-curing plastic foams 16. Glass-fiber plaster 17. Apollo machined metal sheet 						
title						
street city state						
NOTE: This request cannot be honored after Nov. 31, 1956						
Please enter my subscription to Architectural FORUM for _ one year at \$5.50 or _ two years at \$8.50 (These rates for US and possessions and Canada only.) _ Renewal _ New						
Signature						



In the nation's newest, most modern schools...

CLAY PIPE SEWERS Protect YOUNGSTERS' HEALTH

MEDINA, OHIO's new million-dollar senior high school is protected by Vitrified Clay Pipe sanitary and storm sewers. It's a typical modern school building, with a typical modern sewerage system . . . built for permanence, and guarded by the only pipe that never wears out.

Taxpayers, city officials, and men of long experience in the construction industry all agree that America's schools must be built to *last.* That's why you'll find an overwhelming preference for Vitrified Clay Pipe in the specifications . . . not only for sewers but important drainage lines and heating ducts.

Clay Pipe is the one material you can depend upon to outlast the life of the building. Chemical action can't corrode it. The ravages of time can't weaken it. Generations of constant use can't wear it out. Wherever public health is at stake, it pays to specify *permanent* Vitrified Clay Pipe. ARCHITECTS: Fulton, Krinsky & Dela Motte. BUILDER: Freeman Construction Co., Art Bayless, Superintendent. PLUMBING: Kraus Plumbing, Heating and Ventilating Co. SEWERS: Franklin Bros. Co.





311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio

Progress in Public Health - Through Clay Pipe Research





University of Wichita field house features unique 267-foot diameter

THE ALL-WELDED, EXPOSED STRUCTURAL STEEL framework actually enhances the attractive interior of the building. The soffits of all trusses are painted a brilliant red which contrasts with the gray lead of the rest of the steel, emphasizing the diamond pattern.



UNIVERSITY OF WICHITA FIELD HOUSE. Architects: Lorentz, Schmidt, McVay, and Peddie, Wichita, Kansas. Steel Fabricator: Watkins Inc., Wichita. General Contractor: Dondlinger and Sons Construction Company, Wichita. Designer and Engineer of Lamella Roof Structure: Roof Structure Inc., Webster Grove, Missouri.



THE ROOF STRUCTURE is supported by 36 10WF39 columns. A trussed ring girder, 39 inches deep, rests on top of the columns and runs the entire perimeter of the building. Into this ring girder are framed 12 radial trusses which span to the compression ring at the apex of the roof. Also springing from the ring girder at intermediate points are curved roof trusses which intersect the radial trusses, resulting in the characteristic diamond-shaped lamella pattern.

Structural Steel may be riveted, bolted or welded, and may be erected in any weather. Since steel members are fabricated indoors, weather can have no effect on the quality of workmanship. Want more information? Re-

turn the attached coupon.

UNITED STATES STEEL CORPORATION, PITTSBURGH COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS UNITED STATES STEEL EXPORT COMPANY, NEW YORK



SEND FOR THIS INFORMATIVE BOOK NOW!

United States Steel Corporation	
525 William Penn Place, Room 5472 Pittsburgh 30, Pennsylvania	

Please send me a free copy of HOT ROLLED CARBON STEEL SHAPES AND PLATES.

Name	
Company	
Address	
City	State

hapes



lamella dome of

Structural Steel

432 tons of steel erected in only 14 days

The unique lamella dome of Structural Steel which crowns the University of Wichita's new field house is the *first* such dome ever to be constructed. It was designed, developed and put to use for two practical reasons—economy, and speed of erection.

Spanning 65,000 square feet, the 432 tons of Structural Steel were erected by two crews in the spectacular time of just 14 days! Starting on opposite sides of the building, the two crews worked around in one direction until closure was effected. The only falsework required was a central tower supporting the compression ring, or "lantern," at the apex of the dome. All connections were bolted during erection, then field-welded.

Built at a total cost of \$1,405,700, the ultra-efficient structure includes such features as a complete heating and ventilating system (with radiant heating in the locker rooms), and color-corrected vapor lighting for the arena. And, with peripheral seating, not one of the 10,235 seats is more than 86 feet from the playing surface.

Where economy, speed of erection, and dramatic design are the keywords of construction, that's where you'll find versatile Structural Steel. Moneywise, Structural Steel is the most economical of load carrying materials. And, it's the strongest. It will withstand more abuse than other structural materials, effectively resisting tension, torsion, compression and shear. Once enclosed in buildings, it lasts indefinitely, requiring no maintenance.





New cartridge-powered tool sets both 1/4" and 3/8" diameter studs in steel or concrete

With the Remington Stud Driver you can take on every stud-fastening job-light, medium and heavy-duty-and save time and money on each of them! Compact tool sets up to 6 studs per minute. Handles both 1/4" and 3/8" diameter studs, needs no outside power source. Shown below are three of many Stud Driver applications.



Fastening door bucks to concrete floors and ceilings



Set door buck in place, plumbed and shimmed. Use Stud Driver with special guard to set floor anchor clips with Remington S-21 standardhead studs. Bend ceiling struts into position and secure with S-21 studs.



Fastening wood to concrete

Place wood runners on chalk lines. Using standard guard or Remington GS-21, fasten 2 x 4 runners to the concrete floor or ceiling with Remington S-27 standard head studs.



Installing cellar window wells

After the concrete forms are removed, position the steel window well and anchor it with the cartridge-powered Remington Stud Driver. Use four Remington S-21 standard-head studs, Compact Stud Driver easily fits into confined places and can be operated with one hand if necessary.

100=

	P	R	0	D	U	CI	rs	cont'd.
--	---	---	---	---	---	----	-----------	---------

TECHNICAL PUBLICATIONS

ADHESIVES

Penacolite Resorcinol Adhesives for Permanent, Waterproof Bonding. Koppers Co., Inc., Koppers Bldg., Pittsburgh 19, Pa. 8 pp.

AIR CIRCULATION

Standard Electric Fans. Standard Electric Mfg. Co., Inc., West Berlin, N.J. 24 pp.

AIR PURIFICATION

New But Proved Super Clean Air. Catalo E-90. Trion, Inc., McKees Rocks, Pa. 6 pp.

CEILINGS

The Modu-Luminus Ceiling. Luminous Ceilings, Inc., 2500 W. North Ave., Chicago 47. III. 4 pp.

ELECTRICITY

For Safety . . . Important Facts You Should Know about Grounding Electricity. The Arrow-Hart & Hegeman Electric Co., 103 Hawthorn St., Hartford 6, Conn. 12 pp.

FLOORS AND ROOFS

Religious Buildings with Flexicore Precast Concrete Floors and Roofs. Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio. 6 pp.

HARDWARE

Dual-Purpose Sliding Door Hardware. The Stanley Works, New Britain, Conn. 8 pp.

HEATING AND AIR CONDITIONING

Fundamentals of Air Conditioning Controls. Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave., South, Minneapolis 8, Minn. 50¢

Lewyt Built-in Wall Air Conditioner. Lewyt Air Conditioner Corp., 43-22 Queens St., Long Island City 1, N.Y. 4 pp.

Look Forward to New Dimension Living with an Airtemp. Airtemp Div., Chrysler Corp., 1600 Webster St., Dayton 1, Ohio. 10 booklets

Majestic Air Conditioners. The Majestic Co., Inc., Huntington, Ind. 8 pp.

Meet the Titusville Boiler Family. Struthers Wells Corp., Titusville Iron Works Div., Titusville, Pa. 4 pp.

Pacific "LoSet"-a boiler to solve a problemnot create one! Pacific Steel Boiler Div., National-U.S. Radiator Corp., Johnstown, Pa. 8 pp.

Remote Air-Cooled Air Conditioners. Sequoia Mfg. Co., 1000 Brittan Ave., San Carlos, Calif. 4 pp.

LIGHTING

Continental Lighting. Globe Lighting Products, Inc., 1710 Flushing Ave., Brooklyn 37, N.Y. 37 pp.

General Purpose Sports and Outdoor Area Floodlight. GEA-6435. General Electric Co., Schenectady 5, N.Y. 12 pp.