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MECHANICAL ENGINEERS -Edmund Associates Architectural Forum / the magazine of building / August 1957

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Urban renewal crisis: Congress boosts funds for one year, but economizers want to kill it

Congress voted a budgetary "windfall" for the federal urban renewal program last month.

But at the same time the President and White House advisors started applying the brakes, and hinting they might even like to see the program brought to a full stop eventually—at least as far as federal spending was concerned.

At month's end, agency officials were betwixt and between. They were not only in the dark about what portion of the new \$350 million congressional authorization they might be allowed to use in the current fiscal year. They also were uncertain what they should be planning to do at all about the program beyond next June 30.

What Congress did

The new funds for renewal in this year's housing act had a tortuous gestation, and an amazing birth.

In his January budget message to Congress, the President recommended \$250 million a year for each of the next two years. But then his total budget of some \$72 billion came in for widespread criticism and attack. By the time the administration's housing bill was introduced later, HHFAdministrator Cole discreetly trimmed sail and asked Congress for only \$175 million for one year for urban renewal.

Explained Cole to a US Chamber of Commerce meeting on April 30: "There is no basis for apprehension that the national program of urban renewal will languish. When I reduced my budget request to \$175 million I did so because I was satisfied that would be enough to support a vigorous campaign during the next fiscal year."

But this self-imposed budget reduction by the administration was one economizing move this economy-minded Congress chose to ignore. Instead the House adopted a bill to provide \$250 million for one year, and the Senate a bill for \$250 million for each of two more years. The remarkable "compromise" that was evolved by the conference committee that reconciled the two bills, and was then voted as the law: \$350 million for one year!

FORUM asked several conferees for

the origin and rationale of this odd, unexpected compromise. The best account of what happened was this: House conferees were adamant on their provision holding the extension of the program to only a single year (possibly inspired by some of the expressions emanating from White House sources-see below); Senate conferees, particularly Sen. Joseph Clark (D), former Mayor of Philadelphia, were reluctant to give up their two-year, \$500 million total extension; as the price for accepting only a one-year extension the Senate conferees demanded that the funds for this year be increased from \$250 million to \$350 million.

What Ike did

After the tidal wave of economy demands that rolled into Washington on the heels of the President's January budget proposals (aggravated by Treasury Secretary Humphrey's "hair-curling" depression remarks), Eisenhower finally decided to fight to save his budget from devastating or crippling pruning. At the same time, he decided to act boldly to arrest at the very start what threatened to be an even higher, runaway budget looming for the year after this.

Top White House aides and advisors were instructed to explore all avenues of retrenchment. Orders went to all executive departments to make every possible reduction in spending this year, and to attempt to hold their requests for the next annual budget to the level of the fiscal year that ended this June 30. Late in June word leaked out through N.Y. Times and Wall Street Journal reports that urban renewal had been fingered as expendable-one of the few places in the total national budget that could be sizably or significantly trimmed. Some Treasury and Budget Bureau officials reportedly want to see it ended altogether-over the strenuous opposition of HHFAdministrator Cole.

After Cole asked Congress for only \$175 million for renewal this year, a delegation of big city mayors called at the White House early in April to object to this reduction from the President's original budget message recommendation. Ike listened attentively, and replied that he was "very heartily in favor of urban renewal."-But he made no promise to press for his original proposed sum. Later, after his campaign to hold the line on next year's budget had been launched, he addressed the Governors' conference in Williamsburg, Va., on June 24, proposing return of many federal functions (and corresponding taxing responsibility) to state and local governments. There he expressed his disappointment that slum clearance and urban renewal were problems on which "committees of mayors are far more likely to journey to Washington today than to their own capitals.

"Because I am so earnestly hopeful that this task will be assumed by government nearest to the people, and not by the far off, reputedly 'rich uncle' in Washington, D. C.," he added, "I enthusiastically commend your council's initiative in facing up to the needs of metropolitan areas."

Contrasting these two April and June statements, a *Times* editorial said: "The President himself is an example of how we are all caught up in our inconsistencies."

What next?

Some observers saw the President's Williamsburg remarks as a signal to House conferees (then considering the housing bill) to hold the line for their \$250 million, one-year extension of the program rather than the Senate's twoyear extension. Others (and possibly the Senators who insisted on boosting the current authorization to \$350 million) also saw it as part of the groundwork, and a further tipoff indicating the administration's intention to try to drastically curtail or halt the program by including no further authorization for it in next year's budget.

But the fascinating gamesmanship in government never ends. Last month the President signed the housing bill that gave him so much more than he asked for, but at the same time he trumped the congressional trick. In a qualifying statement that rapped a whole series of its provisions as "very serious defects," he said: "In preparing the budget, and again in the weeks following . . . painstaking efforts were made to balance the needs of various federal programs while keeping over-all federal expenditures to the minimum. The provision in this act of \$1.9 billion in new obligational authority, more than double the amounts requested, runs directly counter to these actions. However, these amounts do not have to be made available in the current fiscal year. Hence they do not represent so serious a setback in our joint effort to control federal expenditures as to require that the bill be disapproved.

"Accordingly, I have given instructions to limit the use of the new authority during the year to amounts consistent with the over-all budget program."

How much of the new \$350 million authorization will URA be allowed to commit this year?—The \$250 million once proposed by the President? The \$175 million Cole once called "enough" to support a vigorous program? How much of an authorization would be able to clear the White House and Budget Bureau for the next fiscal year?

At HHFA and URA at month's end there were no answers to any of these questions. The course and fate of urban renewal, short term and long term alike, were now being controlled and decided mainly by the aides and advisors at supreme headquarters—the White House. Back at the agency level, most personnel were merely all "good soldiers" marking time.

Citing the nonaligning statements of the President, Cole and his various other advisors, NAHRO complained that "ambivalance" of the Eisenhower administration has put the future of urban renewal "in jeopardy . . . prospects for a virile and vigorous program have never appeared dimmer." And Washington observers, in fact, found it difficult to say what definite policy, if any, the administration does espouse now.

WASHINGTON

College loans, FHA terms aided by housing act

Like urban renewal, HHFA's loan program for college housing and related facilities was given a greater boost in the new housing act than the administration wanted.

President Eisenhower first recommended \$175 million for the current year for this program, a proposal subsequently trimmed on his behalf by Administrator Cole to \$150 million. At one point the House committee approved a bill for \$150 million, and for a $3\frac{1}{2}$ % interest rate on such loans, more in line with the "realistic" rate sought by the administration. Along the line, however, more philanthropic congressional instincts prevailed. The final bill hiked the year's authorization to \$175 million again, and left intact the current formula for the interest rate (boosted by this formula on July 1 from 27_8 to 3%).

The President's reproachful statement on this point as he signed the housing act: "Unfortunately the Congress has once again failed to enact an adequate interest rate formula It is neither necessary for an effective program, nor desirable from the taxpayers' viewpoint, that the federal government should continue to lend at less than its current cost of borrowing. The present formula, further, deters private financing which would otherwise supply a significant part of the funds required in this important area."

Liberalized FHA down payment schedules in the housing act were subject to a proviso that they be put into effect when it was found they were "in the national interest." After the bill was signed, it remained unclear for some time how long it might be before the FHA would approve them, or the President and his advisors would bar them for the present as "inflationary."

The sections of the housing act that drew the President's greatest dissent as he signed the bill were its liberal Fanny May provisions and its directive to FHA to reinstitute mortgage discount controls.

Ford grants \$1.7 million

COMMUNITY PLANNING

for urban studies

Through eleven grants totaling more than \$1.7 million since January, the Ford Foundation has become one of the major forces in the search for solutions to the nation's constantly pyramiding urban planning, development and government problems.

Last month the foundation allocated \$410,000 to the University of Pennsylvania for developing improved teaching methods and programs in city planning. Earlier this year it granted \$527,000 to the University of North Carolina, at Chapel Hill, for a five-year program of regionally oriented studies of urban growth, particularly problems of governmental, economic and social adjustments from "rapid urbanization."

Four other major Ford grants so far this year: \$125,000 to the Cleveland Metropolitan Service Commission to study the spending of the multiplicity

News

of taxing districts in the Cleveland metropolitan area; \$210,000 to Community Studies, Inc., of Kansas City, Mo., for research in metropolitan area problems of Kansas City and Peoria, Ill.; \$150,000 for similar research in the Dayton, Ohio, metropolitan area.

Probably foreshadowing a much larger study and grant in the future, the foundation also has given the University of Southern California \$25,000 "for planning an inter-university approach to urban problems in the California region."

Rockefeller aid at Yale

From another source, the Rockefeller Foundation, Yale University was given \$67,000 to support a three-year continuation of the urban-rural and interurbia studies directed by Christopher Tunnard, director of Yale's graduate program in city planning. These will pay special attention to the esthetic appearance of new communities, and will include studies on "the conflict between building and agriculture" in the rapid growth of the population, the impact of new thruways on rural areas, and "the growth of so-called roadside commercial slums or fringe jungles."

The Twentieth Century Fund also is undertaking an urbanization study of another type. It has engaged Dr. Jean Gottmann to analyze the growth of the Boston-to-Washington "megalopolis," and what significance it may have for government and planning agencies throughout the other vast "urban conglomerates" developing in other areas.

Urban transit interests consider organizing

A closer look at urban mass transportation problems may be forthcoming as a result of the first National Conference on Coordinating Metropolitan Area Transportation. About 200 representatives of transit systems (both bus and rail), state and local governments, city planners, traffic engineers, safety groups, and others attended the Chicago conference in May. At the close of the session they directed Walter J. McCarter, general manager of the Chicago Transit Authority, to name a steering committee to consider the advisability and possible ways and means of forming a permanent organization. McCarter is expected to announce his committee later this month.

Spite bill hits at FLLW Madison civic center

ARCHITECTURE

One of the most vigorous proponents of the Lake Monona waterfront civic center for Madison, Wis., designed by Frank Lloyd Wright, AF, April, '55), has been William T. Evjue, editor of Madison's *Capital Times*. But in strongly Democratic Madison, Evjue's paper also has vigorously and frequently gadflied the state Republican organization. Result: in what is widely regarded as mere pique and annoyance with Evjue, the legislature has adopted a bill that would kill the civic center by limiting the height of any structure on the site to 20'.

Republican Assemblyman Carroll E.

Metzner, Madison's sole GOP representative in the legislature, engineered passage of the measure through both GOP dominated chambers. In 1931 a state law was enacted to allow Madison to use this site for public use; the state had an interest in riparian rights. Metzner's single paragraph law simply amends the 1931 law with its crippling height limitation.

Late last month the bill was being held by legislative clerks until Governor Vernon W. Thomson asks to have it formally transmitted to him. After it reaches him "officially" he will have seven days to approve or veto.

Thomson was not telling whether he would sign or veto (and the bill lacked enough support for passage over a veto). Students of democratic culture were therefore uncertain whether the rare alliance of the people with a genius could ever get a masterpiece in public architecture built—if politicians objected.

Embassy addition stirs British critics, US zoners

Another compromise effort in public architecture drew fire from both sides when the proposed addition to the British Embassy in Washington was criticized by the Royal Academy president, Charles Wheeler, for "monotony and straight lines" on the assumption that a better companion for the present embassy, designed by Sir Eric Lutyens in 1930, would be a new pseudo-Lutyens; while the influential Architects' Journal of London asked for the more likely solution that the "detail, color and rhythm of massing" of the new bigger building be subordinated to the old one by means of contrasting modern construction.

In any case Washington zoning officials looked with disfavor on the high density occupancy for the dense brick structure in a residential area. State Department officials helped squelch these objections, noting discreetly that too stringent regulations in Washington might have disturbing repecussions on State's own building plans abroad.

The cause of the transatlantic commotion (see cut) is a \$3.2 million, sixstory building designed by the British Government's chief architect, Eric Bedford, CVO, ARIBA, mildly contemporary in style and related in materials.

A four-story section of the new building will face Massachusetts Ave. and the old Embassy, with a small circular conference hall (r). This addition, made necessary by staff expansion since the war, will accommodate 550 employees.





BRITISH EMBASSY OFFICE BUILDING FOR WASHINGTON RESIDENTIAL AREA

NEWS continued on p. 9

Savings with Celluflor...

Milcor Celluflor® saved 6 months on this job!

Edward Martin, partner in Bayshore Construction Co., Oakland, Calif., is sold on Celluflor. Here's what he writes:

"The use of Milcor Celluflor permitted all trades to work simultaneously instead of one trade following another. We saved over six months on the job schedule for the El Dorado Building in downtown Oakland and permitted occupancy of 40,000 sq. feet of office space for our major tenant, The Pacific Telephone Co., six months after ground breaking."

Construction time savings are dollar savings in overhead, financing and insurance. Earlier occupancy means faster investment returns.

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Write for Catalog 270, or refer to Sweet's - Section 2a/In.

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Bayshore Construction Co. Oakland, Calif.

News

40 industry producers on FORTUNE's "500" list

BUSINESS

Forty manufacturers of building materials and equipment were included on the third annual list of the 500 largest US industrial corporations published in the July FORTUNE, sister magazine of FORUM. Biggest of these, judged by sales volume, was Pittsburgh Plate Glass (\$596 million in 1956, compared with \$582 million in 1955) and last on this business honors list was Masonite (\$61 million), a "500 club" newcomer.

In the order of their sales volume (but omitting such firms as US Steel and Westinghouse that serve construction, but devote their major energies to production of nonbuilding items) the FORTUNE list included these producers:

	RANK			
	1956	1955	Net p 1956	1955
Pittsburgh Plate Glass	62	57	38	27
National Lead	66	66	29	42
Am. Radiator & Std.*	89	99	114	96
Crane	95	104	197	207
Weyerhaeuser Timber	119	109	44	39
Johns-Manville	124	123	94	92
Minneapolis-Honeywell	137	148	101	106
US Gypsum	152	137	60	54
Libbey-Owens-Ford	155	126	85	61
Revere Copper & Brass	162	151	219	169
Armstrong Cork	166	144	166	136
Glidden	182	171	247	218
US Plywood	194	229	192	238
American-Marietta	195	204	133	172
Carrier	204	186	223	215
Grinnell	206	209	235	222
Rheem	224	212	494	304
Owens-Corning Fiberglas	225	211	206	173
Worthington	230	250	225	243
Otis Elevator	236	248	150	159
National Gypsum	256	233	148	122
Diamond Match	278	268	232	206
Yale & Towne	288	297	308	330
Georgia-Pacific	293	326	269	270
US Pipe & Foundry	301	287	180	168
Flintkote	326	306	319	317
Square D	341	378	186	220
Lone Star Cement	351	330	134	134
Certain-teed Products**	366	257	343	226
Harnischfeger	397	430	407	469
Ideal Cement	408	418	115	144
Celotex	411	412	314	310
Ruberoid	412	365	363	336
Murray Corp.	414	402	243	287
Lehigh Portland Cement	417	415	202	170
Trane	422		322	
Robertshaw-Fulton	430	438	366	361

 ^{*} includes 1956 sales of Mullins Mfg. (1955 rank: 465), acquired Jan. 30, '56
 ** does not include sales of Bestwall Gypsum, spun

Carey (Philip) Mfg.	444	424	438	405	
Bird & Son	473	449	455	426	
Masonite	497		278		

Only one of these producers, National Lead, ranked exactly the same as a year earlier on the full 500 list, while 17 won higher rankings, and 22 dropped in position. There was no change in the relative rank among the first six building products firms, but Libbey-Owens-Ford dropped from eighth to ninth place within this grouping. Four names on the list a year ago disappeared through mergers: Owens-Illinois is still in the 500 club, but through expansion is now predominantly a container manufacturing company; Mullins was absorbed by American Radiator & Standard Sanitary; Long-Bell Lumber by International Paper, and York by Borg-Warner.

In its article about "the 500," FORTUNE notes that Ideal Cement ranked third in the entire list on the basis of profit-to-sales ratio (24.8%).

NABOM convention: top problems are slightly higher rents, less expensive conditioning

At their golden jubilee convention in New York's luxurious Waldorf-Astoria, members of the National Association of Building Owners and Managers radiated a quiet, satisfied confidence in the present and future.

There were few expressions of unlimited or exaggerated optimism. But there also was a marked lack of pessimism—fewer expressions of concern about an uncertain or overbuilt future than heard at some other postwar NABOM meetings.

Two convention reports reflected industry conditions that contributed to everyone's feeling of well being:

▶ The association's May 1 national office building occupancy survey reported a decrease in the vacancy rate compared with the previous (Oct.) survey. In a report covering 2,536 buildings in 162 cities, the vacancy rate was down to 3.21%, compared with 3.29% last October, and its postwar peak of 3.44% in Oct., '55.

▶ In an address on business conditions, Carl H. Madden, of the N.Y. Federal Reserve staff, pointed out that contract awards for new bank and office buildings were 7% higher in terms of floor area, and 21% greater in dollar volume, for the first four months of this year than during the same 1956 period. Actual outlays on such buildings under construction have been running 12% ahead of a year ago, he added, although he attributed about half of this increase to higher building costs.

Even two of the cautionary expressions of the convention were framed within addresses that were primarily optimistic.

President Maynard Hokanson, for instance, noted that the association's 1956 office building Experience Exchange reports show rental income increased an average of 9.4ϕ per sq. ft. last year, but expenses rose 11.1ϕ —a trend typical "not of our business alone but shared by most business and industry," and a problem that will undoubtedly become more serious as competition sharpens.

Said E. B. Shannon in a comprehensive report on rental problems: "We have been dangerously successful in our industry. As to the adequacy of present rents, I'll ask rather than answer the question—'Have rents been raised enough to compensate for increased operating costs; pay for modernization; and show a profit under a

continued on p. 12





NABOM NABOBS at Golden Jubilee dinner (I to r) were: Convention Co-Chairmen H. Hamilton Weber, of the Empire State Building, and N.Y. Real Estate Board President Robert S. Curtiss; President Hokanson, of Indianapolis; and Executive Vice President Robert B. Beach, who was honored with a special emblematic, Jeweled pin.

off July 1, '56



THE JACK HARRIS PARKING SERVICE. Architect: Walter Zick and Harris Sharp, Las Vegas, Nevada. Consulting Engineer — Contractor: Ellis E. White Company, Engineering-Contracting, Park-on Structures, Beverly Hills, Cal.

How Jack Harris <u>saved</u>

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money in Las Vegas

This is the Jack Harris Parking Service, a five-floor, 300-car parking structure, located in the golden heart of Las Vegas.

The building rests on concrete slab and reinforced concrete footings. But the structural framework, the ramps, the upper four floors, the roof and most of the siding are of STEEL. And that's where Jack Harris saved his money!

Over 500 tons of USS Structural Steel were used in the framing of this building, along with approximately 180 tons of USS Multigrip

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QUALITY? Unquestionable! Steel members are fabricated indoors; therefore, weather can have no effect on the quality of the workmanship.

You can save construction dollars, too. Whether your municipal project be parking garages, schools, government buildings, or even airports —you won't find a stronger, safer, more practical construction material than Structural Steel.

USS STRUCTURAL STEEL



News

normal 10% vacancy?" But he also quoted a recent answer by George Brush—"If we could match the advantages gained by labor since 1940, our rental rate today would be \$9.34 per sq. ft. To maintain an operating ratio of 50% today, we need \$6 per sq. ft., which is 20% more than our current average."

Shannon, who helped the L. J. Sheridan office rent the new Prudential building in Chicago and is now manager for the huge Southland Center under construction in Dallas, also saw a bright, rich future in more construction and extensive modernization of older buildings to give office workers everywhere the higher standards of working conditions that have been established by modern postwar structures. "Billions of dollars will be required for air conditioning, new standards of lighting, new elevators and the other niceties that today's tenant expects," he declared. "For



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NORTON COMPANY WORCESTER 6, MASS. the long pull there is no reason to expect this expanding economy will backtrack. All this new building and modernization has made an important contribution to the uptrend of gross national product. These expenditures during the next few years will make a contribution too."

Other convention highlights:

Office financing. Edmund E. Thomas of Brooks, Harvey & Co., chairman of the N.Y. Real Estate Board's mortgage committee, said the new, cautious pattern of mortgage lending will prevent any serious overbuilding of office structures in New York or other cities, so there will be no foreclosure debacles such as occurred in the twenties and early thirties. He described as typical the way the builder of one New York postwar tower first obtained a conventional loan commitment from an insurance company for \$6.5 million-as tenants were signed up this was increased to \$7.5 million-and when it was fully tenanted on completion two other insurance companies loaned a total of \$10 million on the project, one \$7.5 million on the structure alone, the other \$2.5 million on a created leasehold. In lieu of mortgage financing, he also explained how two large New York structures, including the 666 Fifth Ave. building of the Tishman interests, to contain more than 1 million sq. ft., were financed through long-term saleleaseback deals with an insurance company "at near cost." Despite tight money conditions, Thomas declared, there is still mortgage money available for properly planned office buildings.

Office air conditioning. At an airconditioning economics session, Richard M. Palmer related some of the problems involved in installing conditioning in the Marshall Field building in Chicago -a job that will cost closer to \$7 million than the original estimate of \$5 million. (At one point high velocity 12-lb. pressure through square ducts turned them round.) He said ultimate costs will probably range between \$8 and \$8.50 per sq. ft.; "people who speak of converting old buildings for \$4, \$5 and \$6 a ft. don't know from nothingyou had better think in terms of \$9 a ft." Operating expenses will run about 25¢ a sq. ft., he estimated, and amortization of original costs over 20 years cost another 55¢ to 60¢ a ft. To really make a profit, he added, conditioning in older buildings on the basis of these figures can hardly be provided for less than an additional \$1 a ft. rent.

E. H. Cary Jr. gave cost and operating figures for conditioning six new *continued on p. 14*



Build years of service into roofs and walls

Constructed of stone in 1675-87, Glamis Castle in Scotland has withstood the ravages of weather and time. Glamis is the ancestral home of Queen Elizabeth of Great Britain.

Johns-Manville Corrugated Asbestos Transite® wears like stone

For durability, Corrugated Transite is one of the most lasting building materials ever developed. Made of two practically indestructible minerals—cement and the agelessrock, asbestos—Transite looks and wears like stone. Like the famous old stone castles, original installations of Corrugated Transite are still giving service and protection under conditions which destroy other forms of roofing and walls.

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-Consult an architect—use quality materials.



News

Dallas buildings that ranged in cost from \$953 to \$1,280 per ton of conditioning capacity, or from \$3.50 to \$4.30 per sq. ft. of building cost—depending on quality of construction and efficiency of equipment. For these new-building installations he estimated average annual expenses would be 11ϕ per sq. ft. to amortize extra construction costs, 32ϕ to amortize equipment, and 22ϕ operating expenses—or a minimum 65ϕ a ft. extra rental. Cautioned Moderator Donald T. Sheridan in conclusion: "Don't undercharge your tenants for conditioning."

Apartment air conditioning. Edward F. Rodgers, of Douglas L. Elliman & Co., New York luxury apartment specialists, said the greatest need today was for architects, builders and manufacturers to develop standard sizes for "sleeves" for room-to-exterior, underwindow conditioning units, to facilitate interchangeability and the most efficient



maintenance and replacement. He told how several Manhattan apartment builders recently had to unite and virtually underwrite a manufacturer who was verging on bankruptcy, because he was the only producer of units that would fit the waiting sleeves already completely in their nearly finished buildings. Rodgers' technical assistant also emphasized the need for great care in setting sleeves at exactly the proper pitch, complained of poor work by sheet metal workers, and in other instances inadequate support that allowed the masonry over the sleeve to sag, making it impossible to get the unit into the close-fitting sleeve.

Apartment markets. Leonard H. Scane reported a strong demand in Chicago for modernized, large, older apartments-usually rewired with adequate capacity for the tenant to install and operate his own air conditioning or other appliances. Commenting on "terrific" maintenance expenses on dishwashers, he cited a report that as many as 25% of the families in apartments that are equipped with dishwashers do not utilize them. On the other hand, he added, there is now a great demand for clothes dryers in individual apartments-but these involve the problem of proper venting.

PROFESSIONAL RELATIONS

Spreading the work in Los Angeles

"Wanted: more architects," was the verdict after the Los Angeles County Board of Supervisors digested a report from Supervisor Kenneth Hahn. His report: three firms received more than half of the \$8.5 million in architectural fees paid by the county since 1950. Fifty-eight firms shared the remainder. Hahn's report made it clear that he was not critical of the three offices that individually, or in association with each other or other offices, had received the lion's share-Wilson and Williams: Stanton and Stockwell: Austin, Field and Fry-but he did think more firms should have a chance. The rest of the board agreed, and directed County Engineer John A. Lambie to list qualified architects and see that work was rotated among them.

Also under consideration is a proposal to reduce the architect's fee from $6\frac{1}{4}$ to 5% on all projects costing more than \$1 million.



Poor little fresh air Kidz

Schoolrooms should have ceilings! Schoolrooms can have fine, handsome acoustical ceilings *free*, when the school is roof-decked with Insulrock slabs.

Insulrock Building Slabs provide an exposed acoustical ceiling without a penny of extra cost.

Insulrock Slabs, laid easily, fast, and permanently as roof decking on steel, wood, or concrete framing, make a tough, strong, incombustible, insulated roof decking for all-weather protection.

The other side—the side of the Insulrock Slabs seen from inside the schoolrooms—makes a random-texture, good-looking acoustical ceiling...

Off-white, reflecting more light, reducing illumination costs . . . sound-absorbing, trapping up to 80% of efficiency-robbing room noises that reach the thousands of air pockets honeycombing the tightly packed wood fibers pressure-bonded with portland cement to form Insulrock Building Slabs.

One material, one operation, two jobs!

Insulrock insures other economies, too. It can be applied all year. It's easy to handle. Its savings stretch school dollars and provide schoolroom expansion without expansion of building budgets.



Exposed acoustical ceiling provided by Insulrock Roof Decking (Bulb-Tee on steel framing)—East Williston Junior-Senior High School, East Williston, Long Island, N. Y.

See your Sweet's or ask

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Stanley Magic Door Controls can be installed on any new or existing doors that swing, slide or fold. They actuate Magic Door Operators — visible or concealed — that open and close the doors automatically. Both controls and operators meet every architectural requirement for appearance and space. A Stanley Representative near you will be pleased to consult with you, offer helpful advice and provide installation drawings and wiring diagrams.

For immediate information, see Sweet's Architectural File or write to Magic Door Sales, Stanley Hardware, Division of The Stanley Works, Dept. H, 1005 Lake Street, New Britain, Conn. for A.I.A. File No. 16-D.

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Design for Summer Pavilion by Worley K. Wong, A.I.A. & John Carden Campbell

"A CERAMIC TILED SUMMER PAVILION... BEAUTIFUL ... PRACTICAL... EASILY MAINTAINED"

Campbell & Wong took time-tested ceramic tile applications and added the vital elements of superior design. Result: a graceful summer pavilion for casual outdoor living.

This same imaginative beauty can be utilized in countless other designs for today's trend to outdoor patio living. Lifetime ceramic tile is the ideal material: it's proof against sun, rain, fire and foot traffic.

Inside the home, too, more and more architects and builders are taking advantage of tile's unique design potential and long-range economy—in baths, kitchens, laundries, utility rooms, recreation rooms and foyers. Tile is the most work-free material on the market. It eliminates the need for waxing, painting or any other refinishing.

Remember ceramic tile in your next residential, institutional or commercial project. It is produced in a myriad of colors, shapes, sizes and surface textures—the widest range of any surfacing material. Today's modern lower cost adhesive installation techniques are giving ceramic tile wider application than ever. Ask your ceramic tile contractor to tell you more about these new methods.

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GIANT ON THE OHIO. Clifty Creek Plant at Madison, Ind., is the world's largest investor-owned power plant—with a 1,290,000 kilowatt capacity. The complex air conditioning requirements for this "big job" were met efficiently by General Electric Zone-by-Zone method.

General Electric **ZONE-BY-ZONE** Air Conditioning chosen for largest power plant ever built by industry

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General Electric Air Conditioning can be installed step-by-step, if desired, so that the investment at any time can be kept relatively low. Space presents no problem-ceiling-mounted units take no floor space and floormounted units may be stationed out of space. These smartly streamlined units are self-contained, trouble-free. And you'll always go right specifying General Electric products.

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You air condition only the areas you need when you need it.



CONTROL ROOM at base of each of three stacks—tallest in the world—adequately air conditioned by 2 General Electric 10 ton Units. Third unit (located out of space) serves foreman's offices. Each of the 3 control rooms is air conditioned by General Electric Units in a similar manner.



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LOCKER ROOMS air conditioned by a 3 ton unit. In addition, all offices and laboratory have General Electric Zone-by-Zone Air Conditioning.



CEILING-MOUNTED UNITS take no floor space—available in 3, 5 and $7\frac{1}{2}$ ton capacities, water-cooled; 3 and 5 ton air-cooled; **FLOOR-MOUNTED UNITS** in 3, 5, $7\frac{1}{2}$, 10 and 15 ton capacities.



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Regardless of your climate or location. New Fenestra® FENLITE Intermediate Steel Windows are the answer to expensive window maintenance problems. They give you distinctive appearance, lifetime corrosion resistance without painting, plus the strength of steel. And, they cost no more than ordinary steel windows with two-coat field painting.

This new corrosion-resistant steel window is produced by an exclusive Fenestra process developed through years of research and testing. The FENLITE process alloy-bonds a lifetime zinc surface with the steel of the window. It includes a special chemical polishing conversion coating treatment that protects the surface against the natural early corrosion of free zinc. The window is also prepared for a tight glazing compound bond and for decorative painting, if desired. Maintenance protective painting is not required.

Precision electronic control is necessary for every step in the FENLITE process. The windows must be completely submerged in one dip in each bath! Fenestra's specially designed "million-dollar" plant is the only one in America with facilities to produce FENLITE.

If you have the responsibility of planning new schools or other fine buildings, Fenestra FENLITE Intermediate Windows give you other important benefits, too. Their slim, but strong, steel sections provide more daylight per window opening. Their sturdy hardware cannot loosen or "strip out". They are always easy to operate and you can clean and



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screen them from inside the rooms. For more information on Fenestra FENLITE Intermediate Windows. call your local Fenestra representative-listed in the Yellow Pages-or mail the coupon below.

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Tracerlab, Inc., pioneers in X-Ray, Isotopes and Nucleonics, new building in Waltham, Mass., is a combination office and manufacturing plant containing 164,000 square feet of floor area. Built at a cost of about \$11.00 per square foot, the mortgage appraisal value is about \$2,000,000. Fenestra Building Panel Products, including Electrifloor and Acoustical "D" Panels in the office area and Fenestra Type C Wall Panels throughout, helped make this economical construction possible. *Architect*: E. T. Steffian, Boston, Mass. *Contractor*: Gilbane Building Co., Providence, R. I.

New Fenestra Floor-Ceiling Panel System supplies <u>electrical service</u> to floor above ... <u>acoustical treatment to ceiling below</u> for Tracerlab ... World's Most Modern Nuclear Facility

Building costs can be substantially reduced by combining Fenestra* Electrifloor[®] and Acoustical "D" Panels into an integrated floor-and-ceiling system for buildings of two to four stories. Basically, it provides an acoustic ceiling below and an electrified floor above.

Cellular steel design combines great strength with light weight. Panels form the structural floor and finished interior ceiling. They replace five different materials—usually requiring extra labor and cost—with one metal building unit, erected in one operation, by only *one* trade. This combination of Fenestra Building Panels reduces ceiling-floor depth, saves in building height and wall materials.

So light weight—as compared with other materials—Fenestra Building Panels save structural steel and foundation by cutting the dead weight of the building. They save construction time because the floor-ceiling panels are installed as the building frame goes up, thus providing working platform and storage areas for the contractor. This means faster completion and occupancy and lets the owner's investment pay off sooner. *Trademark

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Fenestra ACOUSTICAL "D" PANELS

These lightweight, high-strength steel panels form the structural floor above and finished ceiling below with *"built-in" acoustical treatment.*

The flat bottom surface of the panels is perforated, and an exclusive Fenestra preformed, arched, sound-absorbing batt[†] is enclosed *inside the panels*. It cannot be harmed by painting or cleaning with soap and water. There is no "stuck-on" material to discolor or fall off and require replacement. Room-to-room noise is prevented by sound transmission barriers incorporated in the panel design.

And, because this ceiling plate is a part of the structural panel, it is made of 16-gauge steel—four times thicker than usual metal pan ceilings. This assures extra resistance to damage by objects thrown against the ceiling or other impacts.

Mall coupon below—for complete information on Fenestra Electrifloor and Acoustical "D" Panels and how to combine them into practical, low-cost ceiling-floor systems, or call your Fenestra representative. + Patent Pending





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Appearance as well as cost were important considerations in this new bank installation by Litecontrol. But the primary objective was good functional lighting!

Litecontrol recessed curved-lens troffers were used throughout to do two jobs: (1) Staggered over the public area they provide moderate light intensity (2) Over the tellers' counters under the balcony, they step up the intensity to the precise high level that's needed. Even the mural on the wall is adequately lighted by the row of lens troffers - no supplementary lighting is used or required. The mural is clearly visible even from the street.

If you have photos to show of an installation like this, you know that

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Litecontrol No. 4734RS in Public Area; No. 4724RS in rows over Tellers' Counter.

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Performance-predictable. In Celotex Roof Insulation, you get what you specify — and then some! You get the assurance of dependable performance — *job-proved* ability to stand up to time, wear, weather. Billions of feet have been used on buildings of all types, all over the country. Many of these installations have been in service for twenty to twenty-five years and are as sound and efficient as when applied. And, thanks to continued research and manufacturing advances, the improved product made today is better than ever.



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A type for every job requirement. PRESEAL: Asphalt-coated on both faces and edges for greater protection against moisture pick-up. CHANNEL-SEAL: Bevels on deck-side form network of channels for equalization of air and vapor pressure, providing extra protection against blistering and separation of felt and insulation, asphalt-coated. REGULAR: Uncoated Celotex board. Recognized standard where lowest cost insulation is required. All in a variety of thicknesses.

See 1957 Sweet's Architectural File, catalog 10a Ce.

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Case I: Uniform Strata. Pile Lengths Known in Advance

Uniform driving conditions helped simplify the foundation job for this Kansas City, Kansas, school. 97 Armco Pipe Piles were driven to consistent depths of from 42 to 45 feet. Armco supplied exact 45-foot lengths. There was no waste. And the job was speeded because no splicing was required.





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Sloping strata complicated the foundation problem for the new state office building in Tallahassee, Florida. In many cases, Armco Pile Shells driven for the same pier encountered different strata. Lengths varied from 36' to 75'. The deeper piles were a composite, made up of a lower portion of Armco Pipe Piles and topped with lightweight, helically corrugated Armco Pile Shells. This example shows how contractors are able to meet specific needs, no matter how widely varied, with the *right* Armco Foundation Pipe.



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Architects and builders everywhere have found that multicolor lacquer helps cut costs because it can be applied directly over irregular surfaces. One coat of multicolor will cover imperfections or rough surfaces, yet produce a finish that is attractive and serviceable-one that is most pleasing and intriguing to the designer.

A unique coating, multicolor utilizes lacquer to simultaneously spray two or more colors on a primed surface as a single finishing coat. Application involves only the use of normal techniques and equipment. Over suitable primers it offers complete and attractive coverage to a variety of surfaces including concrete, plaster, canvas, wood, wallboard and various plastics and metals.

Bellaire Senior High School, pictured here, was designed by Golemon & Rolfe. and was awarded the Medal of Honor for design by the Houston Chapter, A.I.A. It was the only school in this area to be so honored.

Hercules Powder Company does not make finished lacquers or coatings of any kind. If, however, you have difficulty securing adequate information on multicolor lacquers, write us and we will be glad to assist you.

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Different effects are easily achieved from large particles giving a granitelike appearance to small ones the size of pin-points.

SERIE LALER & STREET



-Multicolor is really tough. It withstands scrubbing and scuffing—any normal abuse—and it won't come off when properly applied.

New National Carbon Company Research

and Solex[®] Heat-Absorbing Glass



The graceful, modern appearance of this new structure is immediately apparent in this exterior view of the front. Here, the full effect of the SOLEX and SPANDRELITE curtain wall is completely realized.

Your Sweet's Architectural File contains detailed information on all Pittsburgh Plate Glass Company products ... Sections 7a, 13e, 16d, 21.



IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Laboratory is clad with Spandrelite® to help achieve an outstanding structure



This building, housing the Research Laboratories of the National Carbon Company at Parma, Ohio, combines *Pittsburgh's* SOLEX Heat-Absorbing, Glare-Reducing Plate Glass and SPANDRELITE —the new *Pittsburgh* heat-strengthened glass which can be supplied in an almost unlimited variety of fused-on, ceramic colors—to give this structure color, beauty and functional values. All walls of this building are "glass clad." Additionally, Prrrco® Premier Metal, Pitts-burgh Paints and interior mirrors made from Pittsburgh Plate Glass were basic to the architectural plan. Architects: Skidmore, Owings & Merrill, New York City.



This view shows the SOLEX wall area in the cafeteria. SOLEX keeps interiors more comfortable by reducing solar glare and heat entering a building.



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A STRONGER FLOOR AND ROOF SUPPORT 40' TO 76' SPANS

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Check your loads and spans with a V-Girder Catalog and ask for a quotation. One job will be convincing.



A continuing series of distinguished office buildings, schools, churches, hospitals and industrial structures using NORTON DOOR CLOSERS



A CLASSIC OF MODERN DESIGN WITH DOOR CLOSERS TO MATCH

As thoroughly modern as the latest findings in nuclear fission, this distinguished structure has been hailed as one of the most outstanding of recent additions to the Washington scene. To preserve complete harmony of design throughout, every detail including door closers was selected with utmost care.

Both Norton INADOR® and surface mounted

closers were extensively used, the latter on doors where concealment was not considered essential. Both are true liquid type closers with all the reliability, low maintenance and precision workmanship which the name NORTON always implies. For complete data on these and all other Norton models, consult the current catalog. Write for it today if you don't already have one.





To solve a growing traffic problem at the east end of San Francisco's Bay Bridge, Oakland's East Bay Freeway has been developed.

This multilevel, massive concrete structure is a joint venture of Grove, Shepherd, Wilson, and Kruge, general contractors of Seattle, Washington.

Reinforced concrete was the logical construction material for the East Bay Freeway because of its pleasing appearance, first-cost economy, freedom from maintenance, and ready availability of materials regardless of the rate of use. Portland cement for the job was furnished from Ideal's Redwood City plant, strategically located on deep water directly across San Francisco Bay from the construction site.

For freeway and elevated highway construction jobs everywhere, reinforced concrete should always receive consideration wherever the elements of beauty, longrange economy, and availability of materials are important.



IDEAL CEMENT COMPANY

14 Plants and 2 Cement Terminals Serving the Nation, Coast to Coast and Border to Border
ALWAYS ON DUTY WITH CLEAN, QUIET BEAUTY



Vina - Lux FLOORS

WITH Micromatic Veining

You can depend on Vina-Lux - a longlasting vinyl asbestos tile with rugged resistance to wear, spilled food and medications. Its tightly textured surface keeps dirt and grease from grinding in - makes maintenance easy and economical.

Resilient, too, Vina-Lux softens foot

and wheel noises - reduces fatigue increases safety with its slip-resistant surface. And now, with the subtle styling of Micromatic veining, Vina-Lux in 21 modern colors gives you a big plus over other resilient floorings. Samples and color chart are yours on request.





504 A Frost Bank Building • San Antonio, Texas



Precast 'Incor' School SAVES MONEY, TIME...LIVES

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CEMEN

• School Boards and Taxpayers everywhere are wrestling with the problem of providing badly needed schools in a hurry, while keeping costs within manageable limits. This unusually attractive Hoosier school points the way to a sound solution—that is, the precast concrete school.

Structural frame and roof were precast at job site. Careful planning, with standardization and repetition uppermost in mind, made possible utmost re-use of forms in the casting beds...dependable 'Incor' high early



strength produced maximum output with minimum form investment.

Result, this 36-classroom, 1200-pupil, one-story building, with three classroom units radiating from central administration, service and cafeteria unit—at a cost of \$858,000. Contributing to this economical end result was a saving of \$16,000, realized through the use of precast frame and roof, as against conventional methods.

To initial economy, add concrete's incomparable advantages of lowest annual cost, plus the all-important assurance of utmost fire-safety, and you have the answer to the problems of a school board or anyone else looking for a way to squeeze the utmost out of today's building dollar.

Owner: LINTON-STOCKTON SCHOOL CORPORATION, Linton, Indiana Architects: DORSTE & PANTAZI, Indianapolis

Structural Engineer: FLOYD E. BURROUGHS, Indianapolis

General Contractors: REPP & MUNDT, INC., Columbus, Ind.

Precast Structural Units: RISHER READY MIX COMPANY, Linton, Indiana

'Incor' Cement Supplied by: MIDLAND BUILDING INDUSTRIES, INC., YARD, Linton WILKINSON LUMBER COMPANY, Linton



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A roundup of recent and significant proposals

TILTING-FLOOR AUDITORIUM

Theater-goers and sports fans should be equally happy if Pontiac, Mich. voters approve a civic auditorium bond issue. Resting on a center fulcrum, the auditorium floor could be tilted by hydraulic jacks to make a 7' difference between front and rear theater seats. For sports and other events, floor would be level. Smith, Hinchman and Grylls Associates, Inc. designed the hexagonal auditorium, with a $60' \times 120'$ stage.





CORREGIDOR-BATAAN MEMORIAL PRIZE DESIGN

An arc measuring 500' from tip to tip and stretching 250' into the air was chosen winner of the Corregidor-Bataan Memorial Competition. Two thin curved slabs of cellular concrete form a double cantilever shell. Seen from the air or observation platforms, the curved surfaces will show commemorative scenes in mosaics of stone and glass. The "eye" of the monument, between reinforced concrete piers, will contain a fixed beacon and a pool of rainwater from the shell. Outside, the piers will be decorated with concrete and stone sculpture; inside, with marble facing and inscriptions. Winners of the competition: Naramore, Bain, Brady & Johanson of Seattle. Pietro Belluschi was chairman of the 11man jury of architects and armed forces officers.





MODERN MEXICAN OFFICES

Thirteen-story glass wall headquarters abuilding in Mexico City for government corporation — Petroleos Mexicanos was designed by Jorge Dominguez and Alfonso Hurtado. Top will provide luxurious office and penthouse for director general. Two-story lobby will have huge mural, probably by Diego Rivera or David Siqueiros.





NEW YORK-CLEVELAND AXIS

A 22-story office building (1) behind New York's Hotel Pierre (background) will include a new main kitchen for the hotel, and an enlarged ballroom. The same architects, Emery Roth & Sons, designed the 21-story offices (top) New York's Tishman interests will erect in Cleveland.



SUBSTITUTE ARENA

Time was of the essence: Welton Becket produced this preliminary plan for a \$5.7 million Los Angeles Sports Arena in ten weeks, and has promised working drawings in 16 more. Elliptical design will utilize excavation made for design by the Stiles O. and Robert Clements office that was discarded because of high bids (AF, June '57, PEOPLE).

ELEVATED, SUN-SHADED NEW ORLEANS OFFICES

Architects Curtis & Davis plan to rent space for their own offices in this \$500,000, fourstory, air-conditioned New Orleans office they are designing for a Canal St. site about ten blocks from the main shopping center. A 25' strip in front of the elevated structure will be landscaped, and underneath the building, to be completed next spring, there will be ground level parking space for about 40 autos. Masonry and glass walls will be shaded by a terra-cotta screen.





TERMINAL REPLACEMENT

Greatly expanded passenger terminal facilities at La Guardia Airport are part of a \$32 million redevelopment program undertaken by the Port of New York Authority and six major airlines. To insure uninterrupted service, the new terminal's wings will be built first, then the central portion. Arriving passengers will use the lower level; departing passengers the upper floor.

COAST SKYSCRAPER GROUP

Long-range plans of the Schine Hotels would transform their 21-acre Hotel Ambassador property in Los Angeles into a plaza complex of seven office buildings totaling 10.5 million sq. ft. and a new, modern (re-sited) hotel. First phase of design by Daniel, Mann, Johnson & Mendenhall would add 35-story spired wing to present hotel, build one office tower on Wilshire Blvd.; second phase (cut) would have four office buildings, extend new hotel wing; third phase would remove original hotel, add final towers.





BROAD BASE, NARROW TOWER FOR BERLIN HILTON

The Berlin Hilton, now under construction, has undergone a startling change since a preliminary drawing appeared in FORUM two years ago. The new design is a 13-story-andpenthouse tower faced with ceramic tile panels in three shades of brown. The broad, ground-floor base will contain lobby, promenade, ballroom, dining rooms, and a fountain plaza. Pereira & Luckman designed the new Hilton in conjunction with the German firm of Schwebes and Schoszberger.

VIRGINIA BEACH CONVENTION AND CIVIC CENTER

In April citizens of Virginia Beach, Va., voted a \$360,000 bond issue for a civic center designed by Norfolk Architects Oliver & Smith. This month, for less than one-third of this amount, the Kaiser Aluminum & Chemical Corp. will erect

for them the 2,000-seat, 145' diameter, domed aluminum auditorium for the center, a replica of the Don LaRue-Buckminster Fuller structure erected for the Kaiser interests in Honolulu in only 20 hours (AF, March '57).





EXPANDED TV CENTER

Expansion of the CBS Television City in Los Angeles designed by Pereira & Luckman will include an eight-story headquarters building, two studios of 14,100 sq. ft. each, said to be the largest built to date for TV, and other production and service facilities.



Get next year's classes into classrooms next year...

New Adaptation of Truscon

A basic plan for small-school construction at lowest possible cost. This design provides a single-story elementary school, completely integrated. It includes all elements of good school planning at moderate cost. Thanks to Truscon Vision-Vent Window Walls, wings have full daylighting on three sides. Offices and service facilities are at the center of the "X" shaped building. Additional facilities or more classrooms can be added by expansion in any direction.



Standard "L" units provide unlimited room for future expansion. All insulated end walls of either wing can be removed, additional space added, and the end wall re-used. This means that expansion of a school building is limited only by the site, as indicated in main illustration above. Additions can be made rapidly, economically and in perfect architectural harmony. The best protection against obsolescence is provision for easy expansion.



Retain the low cost of the basic plan... then plan to fit the site. Proper site is vital. Grade groupings, travel distances, accessibility of utilities, sewerage, fire protection, and transportation may be more important than topography. Projected community growth is an influence, too. The Truscon system of standard units which can be infinitely varied is the ideal solution to topographical problems, permitting the architect to select the site for its convenience rather than ground formation.



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BETTER PLASTICITY

To build the best possible concrete-block walls, the bricklayer must use plastic mortar. The mortar must be plastic enough to stick to the long head joint. It must not drop off the edges of the block when the block is swung up, and lowered into place. It must remain plastic long enough to enable the bricklayer to tap the block down to the line, easily and accurately.

Brixment mortar provides this necessary plasticity. Moreover, it stays soft and plastic long enough to let the bricklayer level, plumb and straighten the unit and adjust it to its final position in the wall before the mortar stiffens.



Washington, D.C., May 14-17, 1957

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Trends

Building outlays set first-half record; outlook through 1958 highly favorable

Dollar volume of new construction put in place in June totaled \$4,354 million, a record for the month and 2% above June '56 outlays. Private expenditures were 1% below comparable June '56 outlays, but this decline was more than offset by a 7% gain in public outlays.

June outlays also helped set a new record for the first half of the year, \$21.5 billion, or 3% better than the first six months of 1956. In the first half of this year private expenditures dropped \$42 million, or about one-quarter of 1% below 1956 spending, but were offset again by an 11% increase in public outlays (up to \$601 million).

Actual outlays for all types of construction for the first six months of 1957, according to these Commerce and Labor estimates, were about 45% of FORUM's revised forecast for the year -\$47.4 billion (p. 140). But third and fourth quarters of the year usually provide more favorable building weather and witness a greater volume of work, which should help convert this forecast into reality.

In its semi-annual forecast for the succeeding 18 months, the July FOR-TUNE saw a continued uptrend in the economy, and the possibility that 1958 could be another "best ever" year. It took note of a late spring upturn in the rate of housing starts (the major soft spot in private construction during the past year), but suggested that the 1,094,000 rate of 1956 may not be reached until late in '58. "The market," it declared, "can probably support more



TOTAL EXPENDITURES for new construction in June were \$4,354 million, or 2% above \$4,288 million in June '56, according to Commerce and Labor estimates. building than the present rate, but less than the 1,310,000 starts of 1955."

The FORTUNE outlook for nonresidential construction: "Public-works volume, \$10.7 billion last year, will probably expand at a rate of more than \$1 billion a year for some years to come (apart from cost inflation). Most of the present rise is in state and local projects, but next year the federal-aid highway program will be in full swing and public-works volume may be growing by \$1.5 billion to \$2 billion annually."

Two other favorable economic indicators for realty and building last month:

▶ A majority of the real estate boards in 227 cities surveyed by NAREB's research division predicted that sales prices and rents of retail business properties, and the demand for office space, will continue at current levels through the second half of this year. In 63% continued on p. 45

SPENDING BY BUILDING TYPES

(in millions of dollars)				
	une '5	7 1957	6 mon	0%+
PRIVATE BUILDING	anc o	1 1551	1350	/0-
Residential (nonfarm).	1.534	7,596	8,183	-7
Nonresidential	786	4,381	4,083	+7
Industrial	270	1,619	1,430	+13
Commercial	309	1,649	1,716	-4
Offices; lofts;				
warehouses	153	845	757	+12
Stores; restau-				
rants; garages	156	804	959	- 16
Religious	73	400	337	+19
Educational	43	246	248	-1
Hospital; institutions	43	224	149	+50
Public utilities	517	2,547	2,312	+10
**PRIVATE TOTAL	3,012	15,319	15,361	*
PUBLIC BUILDING				
Residential	41	201	128	+57
Nonresidential	399	2,148	1,884	+14
Industrial	43	249	199	+25
Educational	249	1,340	1,214	+10
Hospital; institutions	31	169	134	+26
Military	115	569	614	-7
Highways	530	1,970	1,802	+9
Sewer; water	120	647	577	+12
**PUBLIC TOTAL	1,342	6,171	5,570	+11
**GRAND TOTAL	4,354	21,490	20,931	+3
* Less than 1%				

** Minor components not shown, so total exceeds sum of ports.

BUILDING PERMITS BY CITIES

(in millions of	of dollars,)		
		6 mor	nths	1956
	1957	1956	% Change	rank
New York	\$390.8	\$358.1	+9.1	1
Los Angeles	278.9	238.4	+17.0	2
Chicago	179.8	167.7	+7.2	3
Houston	118,5	81.2	+45.9	4
San Diego	66.2	45.7	+44.9	11
Dallas	61.1	81.1	-24.7	5
Detroit	56.5	55.9	+1.1	7
Milwaukee	54.8	54.7	+0.2	8
Philadelphia	48.7	77.4	-37.1	6
Baltimore	45.6	32.5	+40.3	17
Miami	41.7	25.6	+62.9	25
New Orleans .	40.2	47.7	-15.7	10
Cincinnati	39.6	28.5	+38.9	19
Cleveland	38.6	43.3	-10.9	12
San Francisco	37.1	36.5	+1.6	13
Denver	36.7	48.9	-25.0	9
Wash., D. C	36.6	26.8	+36.6	23
Seattle	34.9	36.3	-3.9	14
Columbus	33.9	26.5	+27.9	24
Atlanta	31.5	32.2	-2.2	18
San Jose	28.9	27.8	+4.0	21
Long Beach	28.7	34.5		16
Ft. Worth	27.7	22.3	+24.2	32
San Antonio	27.2	35.6	-23.6	15
Pittsburgh	25.8	16.4	+57.3	43
(Sounce: Dun & B	RADSTREET)			

MODERN DESIGN CALLS FOR VERSATILITY

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 a wide variety of architectural applications in all types of structures.



Curtis Hall, Temple University, Philadelphia Nolen & Swinburne, Architects

An unusually light and transparent appearance is achieved in this new 4-story classroom building by the extensive use of IRVICO type CC pressure-locked aluminum grating as sunshades. These help reduce air-conditioning costs and help control sky glare. They also serve as window cleaning walkways.

Angell Hall, University of Michigan Kahn Associated Architects and Engineers, Inc.

Vestibule mats of Irving grating prevent excessive grit, mud and wetness from being tracked into corridors of public structures, office

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Beauty and utility are combined in the balcony railing around the second floor of this new office and retail store building through the use of IRVICO type AA.

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of the cities realty boards expect prices of prime location business properties to hold, and in more than half of these instances to increase in the event of a transfer.

▶ The Census Bureau's preliminary estimates for housing vacancies for the first quarter of 1957 showed a gross national vacancy rate of 2.3%, compared with 2.7% a year earlier and 2.5% in the last quarter of 1956. Rental units were 1.8%, compared with 2.1% in the previous quarter. The less vacant housing available, the greater the need or demand for more construction.

BUILDING MATERIALS

New schedules hike steel \$5.50 to \$8 a ton

When steel prices were raised last month to cover the July 1 contract wage increase for steel mill workers, price tags on concrete reinforcing bars were boosted \$7 a ton (6.8%). Carbon steel standard structural shapes were raised from \$100 to \$105.50 a ton (5.5%), and different grades of special high strength structural shapes were increased \$5.50 to \$8 a ton (a range from 4.1% to 5.4%).

In June the BLS index for structural steel prices stood at 183.4, or 16.4% above June, '56, mainly because of the



PRICES for structural steel shapes had risen to 183.4 in June on the BLS index, and as a result of July increases would hit approximately 192.5. By contrast, the same agency's index for average prices for all building materials stood at only 130.7 in June, and for commodities of all kinds at 117.4. price hike to cover the first contract wage increase granted under the July, '56 steel strike settlement. On the basis of the newest price increases—averaging about 5%—structural shapes are now approximately 22% above June, '56, roughly 192.5 on the BLS index, in which average 1947-49 prices equal 100.

By contrast, the composite BLS index for *all* building materials rose less than 1/10th of 1% from June, '56, to June, '57 (up from 130.6 to 130.7), and its index for wholesale prices for all commodities of all types rose only 2.8% in the same period.

How to account for the almost imperceptible change in the BLS index for all building materials in the face of such a marked hike in the cost of structurals?—Within this index structurals are only a 2.2% component, so a 16%change in structurals will produce less than 0.4% change in the total index, a 22% steel change scarcely an 0.5%variation.

The biggest factor that has offset higher prices for structurals in the BLS index has been the 6% decrease over the past year in average prices for lumber and wood products. These are a 30% component of the BLS building materials index, with a 6% change in this category causing a 1.8% fluctuation in the over-all index. From June, '56, to June, '57, as a matter of fact, this 6% drop in lumber and wood product prices (1.8% in the composite index) offset not only the first 16.4%

BUILDING MONEY

hike in steel prices last summer, but also less severe increases for many other items: plate glass, up 6% over the 12-months span; window glass, up 3.3%; structural clay products, 5.9%; concrete ingredients, 4.1%; concrete products, 3.9%; prepared paint, 5.4%; prepared asphalt roofing, 12.4%.

The larger the proportion of lumber and wood products (in homebuilding, for instance), the less it costs for materials for a new building today—the larger the proportion of steel, concrete and most other items (as in large nonresidential structures) the higher the bills for its materials.



CONSTRUCTION COSTS for nonresidential building rose 0.6% in June (up from 142.0 to 142.9) on the index of E. H. Boeckh & Assoc. The advance for two months was 1.2%, and the gain for six months almost 2%.

No easier financing in sight; N.Y. industry group approves federal credit curbs

No marked easing for construction financing was in sight yet. A month ago the Treasury itself found it necessary to pay the equivalent of 3.485% annual interest, the highest rate since before the depression thirties, to sell \$3 billion of nine-month bills.

In Washington as he waited to retire, Treasury Secretary George M. Humphrey set a record for the longest appearance of a Cabinet member before a congressional committee: 14 days defending the administration's fiscal and credit policies. A few highlights from his long, hard cross-examination.

He was against any further increase in the Federal Reserve discount rate for the present.

He declared that this year's slowdown

in the rise in homebuilding costs was one of the "indications" that restrictive credit policies are "taking hold."

▶ He agreed that "tight money" is more of a hardship on some groups than others, but emphasized that there could not be restraints without hardships on someone, and there must be restraints because the economy cannot absorb a "creeping" inflation indefinitely without disaster.

To the surprise of some Democrats who would prefer to make "tight money" an election issue next year, a subcommittee of the Congressional Joint Economic Committee headed by Rep. Wilbur D. Mills (D, Ark.) released a report that unanimously recommended continued credit curbs, and Trends cont'd

resistance to tax reduction proposals, as the best ways to counter the present. inflation threat.

Because it is seldom that an industry group recommends or approves a policy that might curtail its own business, although it serves the common good, it also was out of the ordinary when a top construction industry group-the New York Building Congress-released a report supporting the government's credit policies. This report was prepared by a so-called Tight Money Committee, headed by Otto L. Nelson, vice president of the New York Life Insurance Co., and also composed of Allen Waller, of Webb & Knapp; William F. Butler and Andrew Fischer Jr., of the Chase Manhattan Bank; P. L. Douglas, of Otis Elevator, and James J. Lucy, of Lucy & McNiece, surety bonding.

"The objective of a tight money policy," said this report, "is to keep increase in investments in new plant and equipment, housing, public works . . . in line with the increase in savings"-because new capital, at the current rate of savings, is insufficient to provide all the financing everyone wants at once.

"That tight money was not entirely successful in containing inflation in 1956 and early 1957," it adds, "is shown by the fact that the price level has risen about 4%. Yet it seems clear it would have gone up faster had it not been for the restraining influence of the Federal Reserve. Moreover, recent trends show signs that the upward movement may be slowing down. Thus, 'tight money' would seem to have made an important contribution to economic stability and is therefore desirable for the nation.

"Experience shows that construction costs rise more rapidly than prices in general in an inflationary situation. Construction is highly sensitive to inflationary forces because 'orders' cannot be filled from inventory; much work must be done at the site to individual contract specifications and design, and this reflects immediately increases in labor, material, financing and other costs such as premium prices for scarce items, added costs for any delivery delays.

"Everyone will lose if runaway costs price construction out of the market. Thus the industry should support the development and execution of effective policies to combat inflation."

In a section on "learning to live with tight money," the report advised all segments of the construction industry of the need to reappraise their financial capacity, the possibility of greater continued on p. 50



THE CEILING: FORESTONE

Bernard Hoffman School North San Rafael, California General Contractor: Pacific Coast Builders Acoustical Contractor: Cramer Acoustics

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It's quiet in the classroom, too, where quiet is even more important. The teacher's words are better understood (and her nerves will be calmer) when classroom noise is effectively quieted by modern, beautiful Forestone ceilings. Forestone fissured woodfiber acoustical tile costs no more than popular thicknesses of perforated woodfiber tile. It absorbs sound as well as equivalent thicknesses of perforated woodfiber or fissured mineral tile.

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AC-74

MODERN SCHOOL



Edsel Ford High School, Dearborn, Michigan. Eberle M. Smith Associates, architects and mechanical engineers, Detroit; O. W. Burke Company, general contractor, Detroit.

100.5

The contemporary design of the Edsel Ford High School can be seen in these photographs showing the three courts around which the school is built. Above is the paved "social court" which allows access to the gymnasium and other public areas of the building. At the left, in the architects' sketch, is the "quiet court" around which are grouped the more academic classrooms. The "project court," in the center, is the hub of such creative subject classes as art, photography and biology. The efficient Johnson Pneumatic Control System regulates the heating and ventilating systems to match the needs of each room in the building.

ARCHITECTURE AND JOHNSON PNEUMATIC CONTROL

The new Edsel Ford High School is as practical as it is beautiful. In achieving this much desired combination of qualities, the school's planners created a near-perfect environment for secondary school education.

Among the building's many modern facilities is a Johnson Pneumatic Temperature Control System that was designed to meet the special requirements resulting from the building's size, exposures and widely varied usage and occupancy factors. All rooms are individually comfort controlled by Johnson Dual Thermostats. For "after-hours" use, only the occupied rooms are heated to normal comfort levels, while the rest of the building is maintained at lower, non-occupancy temperatures. Fuel savings are large, yet comfort provisions are complete.

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won't pull loose from door or jamb

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Made in 5" x $4\frac{1}{2}$ " size, extra heavy with four oilite or ball bearings, for all doors $1\frac{3}{4}$ " to $2\frac{1}{4}$ " thick. In types for use with concealed or surface holders and closers. Wrought steel, solid brass or bronze in complete line of finishes. Sold only in sets with one pair of 5" x $4\frac{1}{2}$ " extra heavy mortise butts.



In Canada-McKINNEY-SKILLCRAFT LTD., St. Catharines, Ontario

equity requirements, and "caution in assuming contract obligations which must be supported by additional credit or income from tenant leases or cooperative contracts to the extent the latter payments are applied to deficits in construction costs."

Trends

MISCELLANY

Total building values rise —mainly nonresidential

In the postwar decade from 1945 to 1955 the gross value of all buildings in the US—both new and existing, but excluding land—edged up from 48.4% to 49.4% of the national wealth, according to the latest estimates of Economist Raymond W. Goldsmith, of the National Bureau of Economic Research.

Preliminary data in the bureau's latest annual report-the first formal updating of these estimates by Goldsmith since 1951-would indicate that the greatest relative increase in value occurred in nonresidential and government buildings, which rose from 23.5% to 25.5% of the national wealth in this ten-year period. Although the value of private nonfarm residence structures in current dollars rose \$180.5 billion (up from \$140.7 billion in 1945 to \$321.2 billion in 1955) their ratio to the total national wealth declined from 24.9% in 1945 to 23.9% in 1955. (Soon the homebuilding industry may be expected to start emphasizing this fact as evidence that, despite the great postwar homebuilding boom, so far homebuilding has not been gaining an exaggerated position in the national economy, nor even absorbing a proportionate share of productive capacities.)

In rounded figures, Goldsmith's preliminary data (based on \$1,344 billion total national wealth in 1955) shows:

	1955	% of
	value	national
	(\$ billions)	wealth
Private Nonresidential		
Urban or nonfarm	\$183	13.6
Farm	16	1.2
Private Residential		
Nonfarm	321	23.9
Farm	17	1.3
Government		
State-local nonresiden-		
tial	91	6.8
State-local residential	4	0.3
Federal nonresidential	31	2.3
Federal residential	1	
TOTAL	\$664	49.4



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HOW ACCOMPLISHED:

Textured 8 x 8 x 8 inch Waylite Units stacked diagonally. Some units set in wall at different level for shadow effect.

CREDITS:

Pub Bar and Restaurant, Philadelphia. Architects: Armand Carroll and Wm. J. Stephenson. Mason contractors: Casper Bros.



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An all-wool Wilton carried in

stock in charcoal with red, gold

and natural accents.

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RAYNOR MANUFACTURING COMPANY, DIXON, ILLINOIS Builders of a complete line of Wood Sectional Overhead Doors

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.. for Interior or Exterior Use!

Mahon Underwriters' Rated Metalclad Fire Walls are now available for use as interior dividing fire walls or as exterior curtain-type fire walls. They can be installed in old or new buildings, of either steel or reinforced concrete construction, where a fire hazard may exist, or where the requirements of Fire Insurance Underwriters or Building Codes must be met. The Mahon Metalclad Fire Wall is field constructed. It has been tested by the Underwriters' Laboratories, Inc., and has been given a Two-Hour Rating for use as either an interior or exterior fire wall. When employed as an exterior wall, Fiberglas insulation can be inserted between the interlocking ribs of the inner wall plates, thus providing insulating properties superior to that of a conventional masonry wall with furred lath and plaster. Exterior Wall Plates may be Aluminum, Stainless Steel or Enamel Coated Cold Rolled Steel. The important feature of the Mahon Fire Wall is the Impaling Clip with its Stainless Steel Spike (Patents Pending) which permits construction of the wall with only .0048 sq. in. of throughmetal per sq. ft. of wall area. Mahon engineers will cooperate fully in supplying information and assistance in adapting this product to your particular requirement.

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Section of Mahon Metalclad Fire Wall showing Construction Features. Four layers of ½2" Plaster Board are sandwiched between Roll-Formed Steel Wall Plates, All Joints in both Wall Plates and Plaster Board are Offset.



*FIRST COST can be the LEAST COST if it's the LAST COST

"INFO" for Architects and Builders

1 "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. AIA File No. 26D.

3 "Stainless Steel Curtain Walls"—A 24-page progress report on methods. AIA File No. 15-H-1.

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Address Dept. B-92

Take the lobbies of big buildings as an example, so many of them all agleam with stainless steel on walls, columns, elevator enclosures, etc.

They weren't built that way just to spend money. Stainless was used to SAVE money, because of all modern surfacing materials, nothing else is at one and the same time as hard, strong and lastingly beautiful—as resistant to heat, wear and corrosion—as easy to clean and keep clean as stainless steel. Nothing else lasts as long and costs as little in the long run! Lobby interiors are only a case in point. The same advantage of long-term economy holds good for stainless steel curtain wall panels on building exteriors. Or stainless store fronts, marquees and entrances. Or stainless windows and doors, railings, grilles, roofs, drainage systems, etc.

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Weldwood News for Architects

UNITED STATES PLYWOOD CORPORATION

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This bright store front will stay bright easily. Colors won't fade; limited maintenance required.

Weldwood Porc-Lin-Ply is weatherproof, easy to install

Here's a building panel that combines the beauty and durability of a porcelain-on-steel face with the moisture resistance of waterproof plywood. The name is Porc-Lin-Ply[®]. And it's not only beautiful and durable, but it's easy and inexpensive to install, too.

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First, for appearance! Weldwood California Pine Plywood has ideal painting qualities—no discoloration, less checking, less grain lift, and less paint needed to cover. That means a better looking product. Next, Weldwood California Pine Plywood is *all* pine, so it's easier to work, produces less edge-splintering. And Weldwood Pine has greater stability because of the lower moisture content during manufacture. Furthermore, it's made with exclusive, mold-resistant L-IR glue.

Weldwood California Pine is actually lower in cost than panels with equivalent paintability. And the superior finished product insures complete satisfaction for you, for the builder, and for the home buyer. Overlaid Lap Siding Cuts Building Time and Costs



Workman installs special aluminum corners on Duraply-built home. Corners save construction time, cost only pennies—are available from United States Plywood branches.

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AF 8-57
Plywood
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Manually, Mechanically or Electrically Operated

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Above are Two of Three Mahon Power Operated Rolling Steel Doors installed in double truck openings in a new plant for Nicolay-Dancey, Inc., Detroit, Michigan. In this installation, Doors are mounted outside while Power Operators are mounted inside with Mahon Thru-the-Wall Drive. Harold D. Ilgenfritz, Architect. F. H. Martin Company, General Contractors.



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Right—Efficiency is high all day in new drafting room of Aluminum Structures, Inc., because the glare reduction provided by AMERICAN LUSTRAGRAY sheet glass results in greater eye comfort. **Below**—Glare seen through opened entrance doorway at left is reduced approximately 50% by windows of AMERICAN LUSTRAGRAY at right of doorway. Note how the neutral gray tint of LUSTRAGRAY actually sharpens the view.

C

Below-Viewed from exterior, windows of AMERICAN LUSTRAGRAY provide an attractive appearance and interior privacy. Photo shows exterior of new plant-office of Aluminum Structures, Inc., Upper St. Clair Township, Bridgeville, Pa. Architects: Schell, Deeter & Stott, Pittsburgh, Pa. General Contractor: Dick Corp., Large, Pa. Aluminum Fabricator and Erector: Aluminum Structures, Inc. Glazier: Watson-Standard Co., Pittsburgh, Pa.



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For efficiency appearance economy privacy

-the architects chose **american LUSTRAGRAY**

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Significant economy is one result of the use of glass for wsw 6723

walls in place of other building materials, and glass lasts longer with practically no maintenance or deterioration in appearance.

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71

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Architect: Skidmore, Owings & Merrill. General contractor: Turner Construction Co.

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RESISTS WEATHER This WEATHERBAN-sealed test wall withstands hurricane fury without leaking . . . simulated 12-inch-per-hour rainfall driven by 130-m.p.h. wind. Building uses prove that WEATHERBAN Sealer can endure sunlight, atmosphere, temperature extremes, too, for years.

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MASONRY being put in place over the Revere-Keystone 2-Piece Cap Flashing. In this way masons and roofers can work without interference and without damaging cap which is snapped into place after work is completed.

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Joseph B. Klein, Architect Robert Glenn, Inc., General Contractor Wolff & Munier, Inc., Mechanical Contractors



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Sectional View of an Electrified Cellular Steel Floor Constructed with Mahon M-Floor Section M2, and Energized with a Three Header Duct Electrical Distribution System.





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This building, shown under construction at the left, is a unique design in that it provides for 50 ft. clear span laterally between outside columns on all floors. The Mahon M-Floor Section employed for the structural subfloor was placed on simple spans of 16'-8''. It provided a flat plate upper surface with Cel-Beams of 6'' in depth.

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The roof of the multi-purpose building, above, consists of seven 60-ft.-long barrels, each with a 32-ft. chord and 23-ft. radius. Photo below shows the type of covered walks (precast concrete bents) used on the campus. The architect was Maloney & Whitney, Yakima, Wash. The structural engineer was Worthington & Skilling, Seattle. The contractor was Wall, Bartram & Sanford, Wood Village, Troutdale, Oregon.



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Marriott Motor Hotel, Washington, D. C. Architects: Joseph G. Morgan and Edwin Weihe, Washington, D. C. General Contractor: Charles H. Tompkins Company, Washington, D. C. Panel Fabricator: Seaporcel Metals, Inc., Long Island City, New York



these three hotels?



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Look at them carefully. One hotel is in Hartford, one is in Dallas and the other in Washington, D. C. They don't look a bit alike, for each has a distinctive appearance of its own. But they're all brothers in the skin, for each building is made with porcelain-enameled steel curtain walls.

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The Dallas Statler Hilton Hotel, Dallas, Texas Architect: William B. Tabler, New York, New York Contractor: Robert E. McKee, Dallas, Texas Panel Fabricator: Texlite, Inc., Dallas, Texas

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Letters

... art ... engineering ... criticism ... housing

VISION FOR ENGINEERS

Forum:

A few comments on your June editorial, "Art for Engineers." When I interview a candidate for our office (structural engineering) I am always amused by his startled expression when I pop the question, "What musical instrument do you play?" Once I interviewed an engineer with a brilliant record. As I questioned him he got redder and redder in his face until he gathered up his papers with trembling hands and stomped out of the office shouting at me, "I thought this was an engineering office. What you want is an artist!"

He was right. Appreciation of art is an important antidote for an overdose of figures. Engineers usually select this career because they have natural abilities in handling figures. But good engineers must be dominated by thoughts and visions rather than figures. The figures are to give more definite forms to the visions, but they must not be allowed to *crowd out* the visions.

FRED N. SEVERUD Severud-Elstad-Krueger-Associates New York, N.Y.

VIEW FOR COMMUTERS

Forum:

I was particularly interested in your article on mass commuter transportation (AF, June '57) because of New Jersey's great concern with the problem. We are presently studying a report recommending a regional tie-in of our commuter railroads with the New York subway system.

I am glad that you have brought one more viewpoint to the attention of the public.

ROBERT B. MEYNER, governor Trenton, N.J.

Forum:

It goes without saying that an adequate means of rapid transit in Los Angeles is one of the most serious problems confronting us. When one stops to consider that in our county 600 new automobile registrations are recorded daily and in our city there are 240 new registrations, simple arithmetic will show that in another year there will be over 87,000 additional vehicles operating on Los Angeles streets. And throughout the county there will be 219,000 additional automobiles a year from now. The problem becomes staggering.

The California State Legislature recently enacted legislation whereby a transit authority was set up for this county. I know the members of this authority will consider every one of the suggestions contained in the FORUM article.

NORRIS POULSON, mayor Los Angeles, Calif.

SUPPORT FOR MIES

Forum:

The criticism leveled at Mies's solution for the Gratiot Redevelopment Project in the June Letters section illustrates one of the basic inadequacies of the *average* architect attempting to criticize or solve a city planning question—the apparent inability to see beyond the immediate problem.

Mies was criticized for his use of predominately elevator apartments, thus providing for the "wrong segment" of the population and discriminating against families with children.

The fact is that Mies provided for exactly the "right segment" of the population on *this particular* site.

If the comprehensive plan of Detroit called for an indefinite repetition of the densities of the Gratiot Project, then some of the criticisms leveled might be justified. This is simply not the case.

As the project stands, it is a tremendous credit to unrelenting efforts of the administration under Mayor Cobo, the Plan Commission and its Director Charles Blessing, the artistry of Mies and ultimately to the people of Detroit.

EDWARD J. HUSTOLES Vilican-Leman & Associates City Planning Consultants Berkley, Mich.

SUGGESTIONS FOR HOUSING

Forum:

I read with great interest the comments of the eleven writers who dealt with "The Dreary Deadlock of Public Housing" (AF, June '57).

Perhaps it is a sign of the times, but there was only one clear-cut statement to the effect that public housing had accomplished more than a little good. Charles Abrams is to be commended for his balanced statement.

STEPHEN SUSSNA, assistant director Division of Planning and Zoning Department of Economic Development Frankfort, Ky.

Forum:

I think that the philosophical problem of public housing vs. privately built lowcost housing strikes at the basis of true Americanism.

If America takes on the concept that the continued on p. 90

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government should house its citizens, we are building important blocks in developing a Socialistic state. This must not go forward. We must protect private property, private enterprise and the incentive to venture and create in our citizens. Public housing is a blight on incentive and strikes at the heart of private enterprise.

Any man who wants to work today can get a job and make at least \$50 a week. Private builders pay \$2.15 an hour for common laborers-a price of \$86 a week for five days' work. With this kind of an income he can buy his own home under present rules and housing programs. The income of Americans is going up regularly. There is no need for public housing.

HERBERT R. KETELL, manager Ketell Construction Co. Portland, Ore.

Forum .

Discrimination and segregation against minority groups, particularly Negroes, cuts across the entire shelter problem.

Let's face up to the fact that the character of households needing shelter subsidy has shifted sharply: there are more of the minority group and more of the problem type. The post-World War II migration of Negroes to our urban centers has contributed to the former, and the stepped-up slum clearance programs have brought more of the latter to the surface.

Recognition of this reality should guide us in the carrying out of all aspects of the program. It should be reflected, for example, in choosing sites. Smaller developments scattered throughout the city would tend to minimize some of these problems because it would avoid concentration of them.

RICHARDSON DILWORTH, mayor Philadelphia, Pa.

Forum:

I agree with Catherine Bauer that one of the factors adversely affecting the public housing program is the frequent and often bitter renunciation of the program by its opponents. Their constant drive has made the program unpopular at both local and national levels. Locally, many community leaders have backed away from the program because of these attacks. At the national level, federal officials have become unduly sensitive and conservative. The result has been a tightening of present regulations and a failure to develop new ideas which would make the program work.

Public housing will be with us for a long time. I say this particularly because of the dependence of urban renewal programs on public housing. It is becoming more obvious that the urban renewal program will never be successful without some means of housing the low-income families displaced by slum clearance. The law under continued on p. 92





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Letters

which urban renewal operates is specific: persons dislocated from urban renewal must be rehoused in decent, safe and sanitary quarters. This relocation problem is becoming increasingly difficult in areas occupied by large numbers of low-income families. Unless there is an adequate supply of low-cost housing, either private or public, local urban renewal programs will be seriously crippled.

There are, of course, many other things which might help this program. One of these is a revision of the rent-income formula. It has been called to my attention that at the present time families living in public housing pay on the average 22% of their income for rent; this compares with the national average of 15% paid by families living in private housing. Some persons have advocated a new formula providing that the proportion of income paid as rent by public housing tenants conform more closely to the proportion paid by occupants of private housing.

I congratulate FORUM for making it possible for Catherine Bauer and others to discuss the public housing problem. The program needs attention and this is a good way to get people thinking about it.

JOHN SPARKMAN, senator (Ala.) Subcommittee on Housing Washington, D.C.

ERRATUM

In an article on laminated timber structures (AF, May, '57) the long-span arches for the Jai Alai Court at West Palm Beach, Fla., were inadvertently credited to the wrong fabricator. They were fabricated by Unit Structures, Inc., Peshtigo, Wis.

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People

Richard J. Mitchell heads jurisdictional disputes board; Park Planner William A. Stinchcomb retires

Construction labor accepted an engineer



MITCHELL

executive of the Trimble Co., large Pittsburgh building contractors, as the new chairman of the National Joint Board for the Settlement of Jurisdictional Disputes. Richard J. Mitchell, 57, a member of the board for the last six years, was named to succeed John T. Dunlop, resigned. A Harvard economics professor, Dunlop had held this top construction labor arbitration post since the board was established in 1948 by the AGC, the national specialty contractor associations, and the AFL-CIO Building and Construction Trades Dept. Mitchell joined the Trimble organization as an engineer in 1923, was named superintendent in 1942, general manager in 1950 and executive vice president in 1954. Simplified rules and procedures to expedite the work of the Joint Board, which is supported strongly by NLRB (which thus spares itself the headaches of many involved construction labor disputes), are expected this month.

BUSY SEPTUAGENARIANS

Two of the East's most energetic realty and architectural personalities nearing the "four-score" mark were being hailed last month for making higher education (including architectural study) the beneficiary of important portions of their surplus energies and earnings.

New York realty owner Samuel D. Leidesdorf, 76 next month, who also is famous as an accountant and philanthropist, accepted the chairmanship of the board of the Institute for Advanced Study in Princeton, N.J., of which he had been treasurer and a trustee since he helped establish it in 1930. (After Albert Einstein came to the US, Leidesdorf handled all his personal investments, but one day when giving an account of his stewardship was abruptly cut off by the physics and mathematics genius: "Sam, I can't understand this. Is everything all right? Yes? Then let's talk about something else.")

New Jersey Architect Frank Grad, 75, celebrated his 50th year as an architect by donating \$10,000 for the creation of fellowships in the architectural schools at Princeton and the University of Pennsylvania, and scholarships at Newark Academy and the Newark College of En-



gineering. (Grad's two sons, Architect Bernard J., and Engineer Howard, who are now associated with their father as general partners, both attended Newark Academy and Pennsylvania.) In a half century Grad's office has designed countless public, industrial and commercial building throughout the East, and since World War II has also done a large volume of work abroad for NATO and various branches of the Defense Dept.—a 50year total exceeding \$1 billion.

BENEVOLENT PARK DESPOT

Cleveland was slowly readjusting last month to the beginning of a "new era" in the administration of its public parks following the retirement of 79-year-old William A. Stinchcomb as director of the Metropolitan Park Board. A persuasive, universally respected, benevolent despot in park affairs, Stinchcomb laid out most of the city's park system a half century ago and later almost single-handed against tremendous odds also brought about the development of its metropolitan park system, including its now internationally famous 15,000-acre outer-ring "Emerald Necklace." (A shocker for some slower, more methodical professional master planners, Stinchcomb often enjoyed telling acquaintances that he "planned" virtually the entire metropolitan park system over a single week end.)

A native Clevelander, Stinchcomb went to work at 17 for the city engineer, and in 1902 was appointed chief engineer for the city parks department. Over the years he demonstrated he was a considerate as well as forceful individual, and he ultimately was given free rein by his superiors, who usually were only too happy to bask in the reflected credit of his autocratic supervision of anything and everything concerning their parks. Said board *continued on p. 97*



LEIDESDORF



People

member Charles W. Sellers when Stinchcomb announced his decision to retire, after a cerebral hemorrhage had left his eyesight impaired: "Stinchcomb has carried on in many [policy and administrative matters] in the past almost alone. The board, including myself, has leaned on him and let him run the show. He has done a grand job. These responsibilities must now be accepted by the board and administrative staff."

After 17 years of grooming, Deputy Director Harold W. Groth, 58, was moved up to succeed Stinchcomb. Although not informed of the board's intentions at the time, Groth was hired as chief engineer for the board in 1940, when it decided it was time to put somebody in training to take over when Stinchcomb should retire.

URBAN AFFAIRS GROUP SHIFTS

To succeed Hugh Mields Jr., who resigned to join the staff of the American Municipal Assn. in Washington, NAHRO appointed a new assistant director in charge of its redevelopment section. He is Daniel Shear, formerly development coordinator for the St. Louis Housing and Land Clearance for Redevelopment Authority, and from 1949 to 1956 a staff member of the Baltimore Redevelopment Commission.

Named as director of the Continuing National Conference on Metropolitan Problems: George H. Deming, of Bethesda, Md., previously with AMA, the staff of the President's Council of Economic Advisers and with Gen. John S. Bragdon, the President's special assistant for public works planning. Former New York State Comptroller Frank C. Moore is chairman of this organization, which was formed after a meeting at Michigan State University last year sponsored by 20 different national associations concerned with various metropolitan area problems.

ON AND OFF CAMPUS

Financed with a \$50,000 Ford Foundation grant, the University of Pennsylvania began a survey to determine the feasibility of establishing new schools of architecture and city planning in Pakistan. Dean G. Holmes Perkins has already sent Associate Architecture Professor Leon Loschetter to Pakistan to start preliminary studies, will send another four- or five-man follow-up team in the fall.

Appointed by Dean Jose L. Sert as Harvard's first Frank Backus Williams Professor of City Planning and director of the university's new Center for Urban Studies in its Graduate School of Design: Martin Meyerson, vice president and research director for ACTION and city planning and urban studies professor at the University of Pennsylvania.

At Washington University, St. Louis, Joseph R. Passonneau, former TVA design chief, was named dean of the school of architecture, after a year as acting dean. At Harvard, President Nathan M. Pusey appointed Jose L. Sert, dean of the design faculty and chairman of the Cambridge Planning Board, as a consultant on Harvard's own problems of planning and development.

The Sears-Roebuck Foundation named the first five recipients of its new annual city planning and urban renewal graduate fellowships. The highest grant this year, \$3,000, was made to **Henry S. Brinkers**, winner of the top \$5,000 prize in the Ferro Corp.'s Porcelain Enamel Design Competition conducted by FORUM last year, who will continue his town planning studies at M.I.T. The four other fellowship recipients: **Ralph A. Gakenheimer**, Towson, Md.; Lester A. Hole, Brooklyn; Leroy O. Myers, Morgantown, W. Va. and Alfred P. Van Huyck, Aberdeen, Md.



LANDIS

CONGRATULATIONS: to James N. Landis, vice president of the Bechtel Corp. in San Francisco, former chairman of both the New York and San Francisco sections. nominated as 1958 president of ASME (tantamount to election); to Detroiter Leonard P. Reaume, elected to head the International Real Estate Federation at its annual congress in Wiesbaden, Germany, thus becoming the first person to have served as local, state and national NAREB president, and then international president; to New York Realtor Leonard L. Farber, elected the first president of the new International Council of Shopping Centers; to A. W. Agnew, vice president of the Pacific Coast Co., Sonoma, Calif., elected president of the Douglas Fir Plywood Assn.; to Joseph F. Addonizio, former executive vice president of New York state realtors, appointed executive director of the New York State Assn. of Architects: to Richmond, Va. Building Commissioner William G. Wharton, elected president of BOCA, succeeding Arthur N. Rutherford, of Hartford, Conn.

architectural FORUM / August 1957

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Urban renewal federal or local?

President Eisenhower last month coupled two things: a general statement that the citizens of America run too much to Washington instead of solving their problems locally, and a specific proposal that urban renewal be taken out of Washington and given back to the cities. He asked that funds available for capital grant authorizations by the Urban Renewal Administration be cut back in amount, and that the power of authorization be held down to a limited period.

There are many who agree with the President's general thesis. The cities do have to run-or at any rate they do run-too much to the federal government. Local action, local responsibility, local power are thereby weakened and the very process of government is weakened. But many who agree with the President's general aims will disagree with the idea of dropping the one carefully worked-out system of urban renewal that we possess, and that is barely starting, before anything has been worked out at all that might take its place.

The notion that cities don't act for themselves simply because local politicians do not want the unpopularity of imposing adequate taxes has run through some of the newspapers including the New York *Times.* Yet anybody who really thinks the situation can be remedied by simple moral suasion on city politicians is due for bitter disappointment. As the *Times* well knows, cities like New York are not free to tax as they please—and keep the money. Our cities are run by the states, and the states are run largely by other people, notably farmers who do not love cities. In very few of the states are the city people allowed so much as equal representation.

Nevertheless, the big problem of getting urban renewal going is a problem of taxes, and the tax reforms necessary for cities to handle such things satisfactorily by themselves would not be minor. The redistribution of tax power would have to amount to a sizable revolution. As an index of the weakened tax power of cities it may be recalled that local taxes in the US since 1939 have risen approximately 10% while state taxes have increased by five times.

Was it not a tax problem that. brought the cities running to Washington in the first place? The main stumbling block in acquiring blighted land for renewal was that parcels. large enough to make a dent could beassembled only with the aid of condemnation by the city; this was blocked by too-high assessments on blighted land, inflating its "value"; but these assessments could not bepulled down without pulling down the city's credit structure with them. So the system was invented of ac-quiring land at face, and then writing down the value, with the federal



government sharing the bookkeeping loss. At the written-down book value, private enterprise could afford to use the property to rebuild, with the consequence that the land could become an actual producer, an actual payer of taxes. Therefore in the end the city was bound to come out ahead. The federal government of course had to police the procedure to make sure that cities really did manage to come out ahead; this involved making sure that redevelopment fitted into "workable programs."

There might be other, better devices, as FORUM has said, for obtaining the result; but this "Hanson-Greer" approach, thoughtfully worked out, has underlain legislation during the past eight years, and it cannot be chucked for nonexistent schemes nobody has invented.

If the states do accept the President's invitation to reconsider the distribution of power and responsibility-and thoughtful men devoutly hope they will-the amount of work that will have to be done is fairly staggering. The city problem has not been eased by the federally subsidized competition of the suburbs, for the federal government has directly underwritten some 4 million suburban homes through FHA and VA and has thereby stimulated private financing of 8 million more, thus helping to draw off millions of the cities' ablest inhabitants. Nor has the present administration eased the way for local action by instituting the \$33 billion federally aided highway program, which will force 750,000 city families out of their demolished homes and into another urban renewal problem.

Fortunately there is at least a year in which URA funds will be available (although there will apparently be no haste in passing them out). During this time the major problem of redistributing government power should be carefully studied.

Meanwhile there are FHA officers who point out that even should URA be discontinued, the 220 and 221 sections on housing could presumably be carried forward by FHA, though without the federal aid feature. Local authorities could at least get underwriting for replacement housing and the like. But not many knowing people are ready to expect that FHA, which has been a suburban agency and not much else, can suddenly reverse itself and become an effective agency for city building; moreover, even if it should do so, only residential building would be affected. The large concepts, the rounded kind of building needed to get urban redevelopment off the ground, could not happen under FHA at best.

Those with the good of our cities at heart will be ready at once to join any large-scale effort to restore powers of local action, to find the kind of government structure and the kind of tax structure that will release cities from excessive dependence on the federal government (see "Metropolitan Government," p. 124 ff). But until new machinery is in place, let's make energetic use of the machinery we have.

(For the current situation, see News, p. 5.)

Turning point?

"... Crises in architecture occur with singular regularity," wrote the English Critic John Summerson in 1948, "in fact, once in every generation. If the 'functionalism' crisis can be dated at 1927, the next critical year will be round about 1957." Now 1957 is here, and change is in the air as predicted. What change? It is hard to say. Change from what? The answer is easier.

There is one aspect of modern architecture with which the public is quite definitely tired. That is the slick, smooth, scrubbed-down effect of so many modern buildings, "as like one another and as fundamentally boorish as block upon block of tenement buildings—just blander." —As bland as castor oil and leaving a feeling just as empty.

Of course modern architects have been aware of this long since; and the better ones have been working doubly hard in recent years to extend the "vocabulary" and multiply the varieties of expressiveness in modern architecture, largely by paying renewed attention to lessons of history. What the art is suffering from now, on the street, is the multiplication of work by the inevitable second-raters.

In the face of this situation a small group of fanatics has been getting some attention in general magazines—they advocate the overthrow of modern architecture altogether in behalf of just one revival which they favor, that of Roman Classical.

Unfortunately it is hard to launch a new style by simply learning nothing and forgetting nothing over a period of 30 years. The stately virtues of classical architecture cannot be brought into being in the modern world simply by opening the old Pandora's Box of ready-made style, out of which would leap all manner of other ghosts besides the classical one. The magazines that have been playing around with this shallow dilettantism would do better to give their readers a responsible account of the full effort of modern architecture, whose current "crisis" is but an episode in a 100-year development, ranging widely.

In New York's Penn Station a self-dramatizing ticket office is the beginning of a long-term overhaul

Old setting, new gleam

All the marvels of modern electronic ticketing are pretty well visible, up close, in old Penn Station's huge new oval ticket office. But the most visible marvel, close or afar, is the great, upswept suspended steel canopy which serves as a giant light fixture to the ticket sellers and their customers, as a hat to confine conditioned air beneath and as an advertisement that railroading is blossoming out with big new ideas. "We have learned a lot from other industries, including show business, about how to sell our product," remarks the Pennsylvania's regional manager.

Actually the most ingenious thinking about railroading and about customers is embodied in the design of the department under the canopy, a matter dealt with on p. 106. But the steel and aluminum canopy is what draws the "Ah's" or the grunts. It is suspended from two fans of steel cable attached by bolted plates to the two lofty Corinthian columns that formerly marked the portal between the lofty stone-faced waiting room and the Crystal Palace train room.

Hung in the tall gloom of Mc-Kim's somewhat narrowed version of the baths of Caracalla in Rome, the canopy was bound to arouse controversy, and did. Curiously enough, there were plenty of architects, modern ones, who found McKim's absurdity unexpectedly lovable on suddenly seeing it again, the more so because it sought grandezza, spreading an architectural banquet in the grand 12-course manner before the eye, and making of the Penn Station that rarity of modern times, a remembered place. Tichy's reply was that the curve of the canopy did basically carry an echo of the vaulted forms for now, but in the long run he expected that economics would tear the tall, tattered hall down.

Meanwhile and for the moment, however long or short it may prove to be, the station room affords a curious study in scale, in which the element which declares to the viewer that it is simple and light—in this case the canopy—dwarfs the elements which declare they are heavy and grand, in this case the colonnaded ends of the waiting rooms. It's an Alice-in-Wonderland feeling. But there's a sweep in that canopy which has a brilliance all its own.

> **Canopy**, a huge, curving sweep of diffused light, hangs from steel cables attached to waiting room's tall, old columns. Curious juxtaposition of new scale with old is caught in Dong Kingman's wash drawing.


ARCHITECT: Lester C. Tichy

MANAGEMENT CONSULTANTS: Robert Heller & Associates

STRUCTURAL CONSULTANT: Paul Weidlinger

LIGHTING CONSULTANT: Lewis Smith

MECHANICAL CONSULTANTS: Slocum & Fuller and Harold Ryan ELECTRICAL CONSULTANTS: Lorne-O'Reardon Associates



Design opens up the workings to divert the customers

In this ticketing oval, a fantastic number and variety of transactions occurs each day: 10,000 tickets sold for 20 major types of space (15 subvariations within types) for hundreds of different trains. It is, in effect, a giant appointment desk with the added problem that a concrete record of the appointment must get to every client.

The oval is as packed with automation as a tugboat is with engine, but this automation does not eliminate humans; there are 158 of them on the busy shift, about half dealing with customers at the "windows" or on the telephone, the direct-transmittal service for big customers, or the special handling desk to which bottleneck cases are diverted. The other half services the sellers. What the automation does is to keep most of these people put. It shows them by closed-circuit TV what accommodations are available; it prints fare coupons and tickets as needed, on the spot. By facsimile transmission, it wafts reservations around the oval, to nine outlying offices and to business subscribers. It

transmits orders and gets back information by simultaneous electric writing. It does so many wondrous things that it takes a 94-page manual to explain them.

One of the many worthy results is that the average reservation now takes less than two minutes to make instead of eight. Another is that canceled railroad space is back on sale at windows, telephones, outlying offices, within seconds after it has been canceled. Moreover, the same telephone clerk who has general train information at her fingertips can also make a reservation.

People standing in line at the "windows" (yes, people still stand in line) are entertained by the whole spectacle because Architect Tichy, as a foe of boredom, deliberately put the process on show. When his own turn comes, the customer also has the psychological balm of seeing exactly what is done for him instead of being maddeningly deserted. He watches the ticket seller dial in, by code, to the appropriate part of the file bank and, on television, he watches the man there get the order and follow through.

Some of the processes were first installed, as pilot operations, in Pittsburgh and Philadelphia, but the New York installation is full of new elements, ranging from details such as color coding of the public directory and windows, to major innovations like the video system with its 105 TV cameras and 100 monitors.

It would seem that planning of all this complexity would be a job for an esoteric specialist. It was not. Architect Tichy did not invent the machines, but he did design all the installations, such as the telephone and counter positions illustrated, and planned the placement and layout of the department as a whole.

The ticketing installation, plus employee lockers and lounges on the level below, cost \$2 million. Now under construction is the \$1 million second stage of the station overhaul on the opposite side of the waiting room and the back-up side of the train room. Into these areas will go nine new shops, new facilities for Travelers' Aid, lockers and telephones and new train gates. **Ticket seller** uses banked ranks of type matrices to print tickets in a trice as needed, on machine at elbow.



Television cameras send information from coupon files, nerve center of the department, to sellers at phones or windows.

Sales "windows" get space information by TV. Canopy's valence helps confine conditioned air, lets some waft over queues.



Telephone installation, which has 80 positions, alternates TV receivers with units for data storage and order taking.







As is: plan shows station, below street level. Sketch (left) is from same angle as "future" view (bottom, opp. p.).



Tichy's version of how to turn a monument into cash

Pennsylvania Station and its reminiscent glory occupy a nine-acre chunk of midtown Manhattan, and they meet a real estate tax bill of 11/2 million a year. But every function of the station, except the glory, occurs below street level.

Tichy's proposal for shrinking the glory to fatten the revenue is to begin at the eastern end of the site, a portion which contains no station functions, only a spacious restaurant and shop-flanked concourse and two skylighted roofs over train platforms. This he would convert into a street-level plaza with a 17-story office building.

Next he would demolish the aboveground portions of the station building proper, shrinking waiting rooms and train room to 16' ceilings over their 300' lengths. Over them he would put a street-level parking lot, punctuated with a dome over the new ticket office.

In the final stage, the parking level would be covered by a second plaza, above street level, on which more office buildings and perhaps an auditorium would stand.

The previous scheme for using Pennsylvania Station's air—a stupendous, site-saturating merchandise mart and tourist attraction conceived by real estate giant William Zeckendorf-died off after considerable planning work. There is some controversy over why, but reportedly an engineering study showed that the difficulties of building atop the going station and trackage, plus the massive masonry demolition job, would add tens of millions to the cost, and construction would take five years. (Building over Penn Station is a far knottier problem than building over Grand Central, for Penn Station has less than half the number of tracks Grand Central has and runs more trains on them. Leeway for tracks out of service during an extended period is almost nil.) The construction time estimate on the Zeckendorf scheme reportedly killed off hope of getting the firm leases necessary for mortgage money.

Tichy would lick these problems by means of the more modest stageat-a-time program. He also thinks the plaza scheme would attract office tenants over to a part of Manhattan which, in spite of enormous transportation convenience, has been cold-shouldered by the present New York office building boom. **First stage:** east end of station (façade in sketch, upper left) would be replaced by office building and plaza.



Second stage: rest of present structure above street level would go. Added: shops, parking around new ticket office dome.



Completed scheme: raised plaza with more office buildings covers parking level, as in section and sketch (right top).







In less than 25 years, the motel industry has grown from cabins in the back to swimming pools in front. What's ahead for the industry?



Behind the telephone poles: 120-room motel in downtown Atlanta. Architect: Warner Morgan

The odds on motels

by RICHARD A. MILLER

Few of the nearly 1.3 million people who stayed in motels last night were "tourists"—once the basic clientele of the industry. Instead, most were salesmen, using the motel as a base for a week or more; or executives, who arrived from the airport in a rented car to inspect the nearby branch plant; or engineers, assembled for a short training course. They were honeymooners, or convention-goers, or truck drivers, or relocating families waiting for furniture to arrive before moving into their new houses.

This new breed of Americans-onthe-go—their needs, habits, and desires—make the motel business what it is today. To satisfy their need for accommodations, more than 3,000 motels were built last year, bringing the national total to well over 56,000. To satisfy their habits and desires, the industry has made revolutionary changes in organization, in location, in facilities and services, and in planning and design.

This rapid growth and thoroughgoing change has made the motel industry picture a study in contrast and complexity.

Not the least of the contrasts in the industry is the wide disparity in net profit figures. According to a survey of 24 motels by American Motel Magazine (the source of most industry statistics used in this article), net profit before taxes varied from 3% to nearly 50% of gross room sales. Architect Rufus Nims, who has planned many motels, says that a well-conceived operation should net \$1,000 a year per room after taxes and depreciation. But many of the 5- to 15-room "mom and pop" operations barely eke out a back-breaking living and continue to exist only because they don't know enough to go bankrupt.

As for complexity, merely trying to define what a motel *is* is complex. After many years of trying, Accountant C. Vernon Kane says that "a motel, in the final analysis, is a motel simply because it is called by that name." Certainly, the new Miami Beach motel which (in the words of the press release) "cleverly minimizes" its four-story height with an eight-story advertising pylon confirms Kane's definition.

What's ahead?

The wide-ranging profits and confusion in terminology are but two indications of the dynamic character of the motel business today. Some of the major trends:

▶ The distinction between motel and hotel is fast disappearing. Most new motels are an adroit combination of the best features of each.

▶ The number of rooms per motel is increasing from the present average of 20 or so at the rate of two or three rooms per year. Most experts say the minimum number for efficient operation is between 48 and 96 (based on an increment of 12 rooms per maid).

▶ Motels in metropolitan locations are commonly of 200 to 250 rooms, with the 370-room Washington Marriott about optimum.

Most new motels are being built not on the open highway but in







Registration is done at a drive-in window by choosing rooms from photo transparencies at Marriott Motor Hotel in Washington. Bicycle-riding bellboys escort cars to parking positions near rooms. There are 370 rooms in seven buildings of two to five stories. Building behind swimming pool (photo left) contains a 250seat restaurant, lounge and meeting rooms. Architect: Joseph G. Morgan.



terminal locations, in central cities, near major outlying population centers, or adjacent to industrial and commercial developments.

• Motels are clustering around airports, and major intersections of the interstate highway system will develop into motel centers in much the same way that hotels clustered around rail terminals in the nine-teenth century.

Special motels for truckers, resorters, and convention- and meeting-goers will be built in greatly increased numbers.

• Chain organizations, led by the big hotel chains (all but Hilton are now active in motels), will take a major percentage of business.

 Franchise organizations (like Howard Johnson and Holiday Inns),
which basically sell a name, will not greatly increase in number, although those now well-established will expand considerably.

▶ The individual proprietors will organize strong associations like Master Hosts, Quality Courts and Best Western, in order to meet chain and franchise competition.

• A restaurant is already an essential adjunct to a motel. Public facilities such as lounge and meeting rooms will be increasingly important.

A swimming pool is standard in today's new motel. Lawns, terraces and increased recreation facilities will become more prevalent.

▶ Room size will not increase much beyond today's high standard. Separate dressing rooms and lounging space in rooms will become much more common. With the trends indicated above goes a corollary: motels are no longer a retirement or spare-time business for amateurs. They are big business involving professional management, sound financing, and careful planning.

Hopeless upgrading

One thing alone will sustain the boom in new motel building: a great many of the existing motel facilities in the nation cannot keep pace with this trend to big business. In many a case, no amount of "up-grading" could bring an existing motel up to today's standards. So, anyone considering the purchase of an existing motel should do so with considerable caution.

To get a new motel under way is



ALEXANDRE GEORGES



MORLEY BAER



Beach-front motel on Tampa Bay near St. Petersburg, Fla., is first in a proposed chain of "Doctor's Motels." Name was chosen because it implied "a high degree of professionalism." In Tampa Bay development rooms open toward lawn and beach, turn their backs on highway and parking areas. Pool is built off of restaurant terrace and away from rooms, for sound insulation. Architects: Kivett & Myers.

Freeform pool and surrounding paved terrace are edged with two-story buildings containing 24 rooms at motel for Dinah's Shack Restaurant on El Camino Real near Palo Alto, Calif. Additional rooms are arranged in court clusters, including one with a lagoon (photo, p. 115). Pool-side units are screened from terrace by a partially enclosed patio. Architects: Cambell & Wong. Landscape: Eckbo, Royston & Williams.



Signs which are readable from cars are considered essential. Here is that great rarity: a decent sign, king-size, in front of a Shreveport motel. Architects: Wiener & Wiener.

Interstate highways will deeply affect motel location and close study of highway plans will be needed to find good locations. Best sites will be those seen from the major highway and on a feeder road leading from interchange to population centers. Complex intersections and limited access provisions will limit sites to those easily accessible to off-coming cars. Some highways may have service lanes (third sketch) offering more than one good location.

Location of Washington's Marriott (near airport, bordering a main-line railroad) created unusual soundproofing problems. Here is a sound-deflecting wall along tracks.



no simple matter, either. Sound locations are hard to find, and the rapid changes in desirable sites resulting from the interstate highway program may make an apparently good location today not so sure for tomorrow.

ALTACHER !!

Mortgage money, hard to find in any case, will probably not cover more than 40% of construction cost, generally on a ten-year term basis. Construction costs (including land, fees and furnishings; excluding restaurant facilities and meeting rooms) will vary from a low of around \$6,500 to a high of \$10,000 to \$12,-000 per room.

The chance for big profits

Based on a rate of \$1 per \$1,000 of room cost and an average occupancy of 70% (national average is 75%), a new motel will turn a slight profit. But rates often run over \$1 per \$1,000 (especially in multiple occupancy) and many motels have been running near 100% in occupancy. Here, precisely, is the chance for the big profits which attract investors to motels like flies to honey.

THURMAN

(LEFT)

In planning, the problem is to achieve a motel which will attract higher rates and higher occupancy without commensurately increasing the cost per room. The difficulty is that many amenities soon become standard, and the edge they provide toward higher profits and higher occupancy is lost. The swimming pool is a case in point. Most operators concede that it is a "sales gimmick," the kind of thing designed to bring in more customers at higher rates. Usually, it is placed in front of the motel to impart an air of resortlike fun. Soon, however, swimming pools will be standard motel equipment and their drawing power will be dissipated.

The light of day

The pool is a symptom of another fact of which the motel operator recently has become aware. Motel rooms are, by and large, rented in daylight hours between 4 and 7 P.M. This means that salesmanship must lie in design qualities more substantial than a mammoth animated neon sign and roof lines edged in light bulbs. The motel must look pleasant in the harsh light of day, and pros-

Highway noise is minimized by layout of Howard Johnson Motor Lodge in Springfield, N.J. Gate lodge is located close to highway. Motel rooms are ranged around side and rear lot lines with drives and parking between the buildings and property line. Glass walls of motel rooms face a quiet interior lawn behind the restaurant. Only jarring note is the restaurant parking lot which Johnson organization insists must go entirely around restaurant. Thus, motel is "in back" of restaurant, and advantages of an interior view from restaurant itself are lost to weary diners who are just as sick of hard-surface pavement as motel guests are. Architects: Carl Koch Associates.





pective tenants should have something to do and a pleasant setting to do it in for the three to five hours they will spend in the motel before going to bed. Here is the real asset of the swimming pool. A "country club look" revealing the prospect of rest and recreation (and a way to amuse the kids) is a definite asset in the push to higher occupancy and steeper rates.

Services, definitely on the increase for the same reason, are generally on a self-serve basis in order to keep operating costs down. Instead of room service, coin vending machines for ice and soft drinks are installed. Coffee and even continental breakfasts are provided on a serve-yourself basis in the lounge or office. Telephone service, including provision for morning call, is rapidly becoming standard, even though it means that the desk must be continually manned, with a separate telephone operator on duty as well during busy hours.

Most motels still simplify operation by using the pay-with-registration system, but advance registration service (to other motels in the chain or association) and credit card systems are coming fast.

In general, restaurant facilities are separate operations placed on a self-sustaining basis. Meeting rooms are sometimes established in conjunction with the restaurant, more often established as part of the motel to be let on a standard rental basis. (See p. 120 *ff.* for an example of a combination restaurant-meeting-rooms facility built in conjunction with a motel.)

PHOTOS: (ABOVE) ALEXANDRE GEORGES; (TOP) AF STAFF PHOTO

And still the room

Despite the increase in service and extra facilities, the basis of the motel is the individual room, and it is here that the most far-reaching changes in design have taken place.

The most obvious change is in room size. The cramped 150 to 200 sq. ft. room of a decade ago has yielded to a minimum in today's new construction of 250 to 400 sq. ft. Within that larger room, certain amenities are included which were virtually unknown a decade ago. Air conditioning is a basic essential, as are tile baths, wall-to-wall carpeting and free television. Bathtubs, long considered unsuitable in a motel



Standard room for Howard Johnson Motor Lodges (plan, right) was originated by Architects Carl Koch Associates and used by Koch and Architect Rufus Nims in most Johnson motels. St. Louis version (by Koch) is shown above.

Mock-up of redecorated room was used by Design Inc. (a division of Bank Building & Equipment Corp.) to sell Johnson organization.



room, are being installed in many new motels. Dressing space has become segregated from sleeping space, and often a second wash basin is built into a counter in this area. Since tenants are beginning to spend more time in their rooms, the addition of lounge chairs, desks, drawers and good reading light is necessary. Although new in-city motels still employ the back-to-back room plan, suburban and outlying motels predominately use the single row plan, with an entrance and parking area on one side and a glass wall open to the lawn and recreation area on the other. Often, a terrace or porch is provided on the "garden side" of the room. Most operators are providing a variety of accommodations ranging from a double bed to twin



Variation of standard room by Nims in Little Rock, Ark. Lodge (plan right, above) experimented with a rearrangement of plumbing fixtures to obtain more spacious bathdressing area. Simple arrangement of shelves on wall and space "borrowed" from bath-dressing area gives room a look of spacious luxury. Mirror and wash basins seen from entry help "sell" room.









Prefab bath with motel room attached is Architect Rufus Nims' idea for motel room of the future. Round unit would have outer skin of metal, inside walls of plastic. Dressing area is more private than in Little Rock room, offers wash basin and counter completely out of traffic of main room.

beds to two double beds. Although studio rooms are often included in room variations, most operators insist that they are "hard to rent." However, with the increased use of motels for meetings and conventions, an increase in the number of studio rooms seems due.

Suite arrangements are looked at askance by most operators because they limit variety in rental patterns. Certainly, rooms should not be connected directly, but a trend toward connecting doors in an entrance or dressing area will probably develop for the same reasons that the studio room should become more popular. In any case, the demand for suite and studio-room types should remain at a minimum for the foreseeable future. Kitchenettes are increasingly frowned on, although some plush motels include a small sink and refrigerator in some rooms and find it popular.

One continuing phenomenon of motel business is what is known in the trade as "family occupancy." The so-called double-double room is occasionally equipped with additional cots to allow parents with children to occupy one room at bargain rates for every tenant over two. In some motels, "family occupancy" has led operators to install two double beds in all units, while other motels provide rooms with four double beds per room to care for every possible exigency. The latter arrangement. however, seems to be a hangover from "cabin" days. Most operators prefer the variety of three or four



Spacious terrace off rooms at Dinah's Shack motel is a dramatic setting for relaxation and a look at water and lush planting in the lagoon court. Sliding doors connect terraces to rooms, many of which are equipped with fireplaces. Luxurious setting and plush decoration typify industry-wide trend in motel planning.

Wing walls and projecting floor and roof slabs at St. Petersburg Doctor's Motel offer privacy from neighbors, create terraces and balconies for outdoor living. One wall of each room is a bright-hued aqua, gold, or flame. Remaining walls and ceiling are offwhite. Wall colors are used on wing walls outside, making an exterior effect of brilliant, almost tropical, color. Bent "U" plan of motel room section gives every room a view of Tampa Bay (see p. 113).





PHOTOS: (BELOW) ALEXANDRE GEORGES; (ABOVE) MORLEY BAER



room sizes and arrangements. Basic to all unit planning is the increased demand for privacy, sound control, and light control.

A return to the inn

Perhaps the motel of today is further away from the "tourist cabins" of 25 years ago than it is from the traditional hotel. As a matter of fact, Architect Rufus Nims defines the motel as a "dispersed hotel." But today's motel comes nowhere near resembling the big city hotel nor its emulating small-town cousin. Like the gas station, it is a product of the motor age. It is a resting place on the way, the presentday substitute for the old-fashioned roadside inn before the coming of the railroad.





PHOTOS: JULIUS SHULMAN



Four canopies shelter the pump islands, lubritorium and a pedestrian platform. Pipe columns of 16" diameter support the 40' square roof structures as well as the gas pumps, which are hung free of the ground on a steel beam.

> **Pedestrian platform** is designed to lure customers from their cars for exposure to merchandise and services. Conveniently available are rest rooms, phone booths, soft drink dispensers, and map cases.



Tambour doors convert the storage cabinet in the lubritorium to a display case for tires and accessories stored within. Station's total cost (construction and equipment) was \$75,000. Canopies alone cost \$2.50 per sq. ft.



A handsome gas station

SMITH & WILLIAMS, architects MERENDINO-GREENE, industrial designers



Roadtown's visual scurrilousness is in large part caused by the ever present gas station: a building overwhelmed with flapping pennants, curbside sandwich boards and spotlighted pole signs. Many attempts have been made to eliminate the chaos. None has worked. If the signs are eliminated and a sober building remains, it doesn't sell gas. If the building is jazzed up to replace the signs, it may sell gas, but the scurrilousness is only transposed: what might be taken as contemporary folk art becomes a de-

signer's fantastic nightmare.

Here, the designers went at the problem the other way around. They eliminated the building and filled the lot with a carnival of come-hither advertising dominated by four mastsupported canopies. And in the process they managed to solve a merchandising problem afflicting every gas station.

The designers reasoned that gas and oil customers were "captive prospects" for related service and merchandise sales provided they could be lured from their cars dur**Bright color** and dramatic structure couple shrewd merchandising with good design in this pilot-model service station.

ing the captive period. This they achieved with the vision of a "pedestrian island" in the center of the scheme. Here, in leisurely fashion, customers can go about dropping dimes into phones and soft drink dispensers all the while subject to the blandishments of displayed polishing cloths and tires and enticed by the adjacent vision of a uniformed attendant performing a lubrication operation.

The station was built for the General Petroleum Corp. at Anaheim, Calif. by the Roulac Co.



HOTOS: ALKXANDRE GEORGES





Poised on the edge of a rocky slope, a restaurant of Japanese charm serves the "Motel on the Mountain"

Teahouse on stilts

The couple in the picture at the left is looking down on the dramatic tangle of highways which forms around the Suffern exit of the New York Thruway. In the distance, beyond a Ford Motor Co. plant, lies the densely developed roadside chaos along New Jersey's Route 17. From where they stand, it seems like another world.

But the restaurant is a part of the American road as much as anything they see—perhaps more. For just as the scene below is reality, so is the restaurant—and it is dream and promise as well. It is a dream of man amid nature and promise of what the American road might provide.

When the extensive restaurant and adjacent motel (AF, Aug. '56) was only a gleam in Developer Robert Schwartz's eye, he took Junzo Yoshimura, famed architect of the Museum of Modern Art's Japanese Exhibition House, out to see the site. Yoshimura, scheduled to return to Japan, could only stay long enough to contribute the general outlines of the project and a few specific ideas ("Good, expensive ideas," says Schwartz). One of these ideas was the long road which snakes back and forth across the face of the mountain, rather than coming up the back way by easier grades.

However, Yoshimura was intrigued by the project. "Motels and superhighways," he later told a *New Yorker* reporter, "are among the best American things." When Schwartz and his partners were ready to proceed with the restaurant, they sent to Tokyo for Yoshimura and he came back to plan it for them.

The restaurant is at a widening in the steep road near the crest. Here, cars can pull up to a covered platform from which short flights of steps lead down to the entry and lounge or to the coffee shop at the platform's extreme end.

Inside the lounge, guests can either head right to the bar, left to the main dining room, or downstairs to the large banquet room and adjacent private dining room.

From each of these rooms a view of the valley below can be seen beycnd the balconies that rim the building—a valley now beautiful in remoteness, dramatic in abstraction.









Floor plans reveal organization of the building around entry court on the uphill side (photo right). Lower floor contains banquet room, private dining room and kitchen service area. Upper floor contains bar, lounge, main dining room, coffee shop and kitchen. **Stairway** from the upper floor lounge (photo top) leads down to banquet room lounge (photo bottom). Balconies beyond glass walls wrap around downhill side of building (photo, p. 121), give dramatic views of highway interchange and roadside chaos below.

THE RESTAURANT ON THE MOUNTAIN, Suffern, N.Y. DESIGNER: Junzo Yoshimura ARCHITECTS: Steinhardt & Thompson ENGINEERS: Frederick C. Lowy (structural consultant)

Fred S. Dubin Assoc. (mechanical-electrical) INTERIOR DESIGNER: Lenore Schwartz



Shadowed light imparts an almost magic prospect to dining rooms viewed across the court from arrival porch. Shoji screens shape intimate spaces out of main room, allow the rearrangement of space for meetings and parties. Architecture of the restaurant is best when seen as a background for people and their activities. The completed building fulfills Yoshimura's purpose: "My designs are to make people feel good—if possible, to make them happy."



Metropolitan government

by JANE JACOBS

The complicated instrument the cities must design before they can redesign themselves



Jigsaw government: the Cleveland metropolitan area, with 60-odd municipalities, cannot plan its waterfront rationally nor can it distribute the cost of its services fairly. This typically fragmented metropolis is now merging into two other metropolitan areas, also jigsaw puzzles.

In spite of a potent grass-roots-andtown-meeting folklore, the US has become a nation of metropoli; very peculiar metropoli with problems that are something new-at least in degree-under the sun. Sprawling over municipal lines, township lines, school district lines, county lines, even state lines, our 174 metropolitan areas are a weird melange of 16,210 separate units of government. The Chicago metropolitan area, one of the prize examples of fragmentation, has about a thousand contiguous or overlapping local government units. But the problem is similar everywhere: how does the metropolitan area (which lacks governmental entity) contend with urgent and massive problems of a metropolitan nature, armed with a cross-purpose jackstraw heap of local sovereignties representing genuinely clashing interests?

The metropolitan problems-monstrous traffic, missing or bankrupt transit, incompatible land uses, unbalanced land uses with their sequel of unbalanced tax structures, transformation of old core cities into racial and economic ghettos, pollution of air and water, and a host of others-are not new in kind. But they have become abruptly massive and urgent during the past ten years because we have had a phenomenal growth of metropolitan population and this has coincided with the phenomenal scatteration made possible by the automobile. These problems will become still more massive as the present metropolitan area populations of about 96 million increase by an estimated 54 million in the next 18 years.

Cumulatively, the number, size, and complexity of the metropolitan problems add up to a metropolitan crisis, as set forth in last month's FORUM ("The Hundred Billion Dollar Question"). Looked at another way, they also add up to one of the greatest adventures in inventive self-government that any people has ever had a chance at.

Governmentally, we have never

really come to full grips with the fact of cities, and this is a root of our trouble. Our governmental structure is based on static units of territory, rather than on dynamic units of populations. Our states, divided into their revealingly named counties, are an organizational heritage from feudal territorial war lords who fitted the city into their scheme of things as a special, chartered "exception." It is still an "exception" theoretically, although the ancient legal form of the city and its physical reality began to part company half a century ago, when the early suburbanites hop-skipped along the railroad lines out in the county.

But it would be folly to jump to the conclusion that the states, and the cities' positions within them, represent a troublesome archaism necessarily. The American political genius has consisted in the ability to take the instruments at hand and evolve them to new purposes as needed. It is quite possible that the salvation of our fragmented metropoli will be found in the existing states, rather than in the creation of new layers of "supercity" metropolitan government, an idea now intellectually fashionable.

In any event, the first thing to understand about metropolitan government is that it is going to be dealt with not by abstract logic or elegance of structure, but in a combination of approaches by trial, error and immense experimentation in a context of expediency and conflicting interests. Whatever we arrive at, we shall feel our way there.

The approaches

In broad terms, there are three possible approaches to metropolitan government and one impossible approach.

The possible approaches are: 1) much greater extension and evolution of present *ad hoc* devices such as special districts, authorities, compacts, contracts, and taxation ingenuities; 2) greater dependence on the federal government for the required money and hence for the required decisions and authority; and 3) federation of governmental units within metropolitan areas; such a joint government might be a council, or it might be a decentralized agency of the state, and the local units would surrender sovereignty over certain problems.

The impossible approach is consolidation of municipalities within metropolitan areas, making the metropolitan area one big city, at least within state lines. It is well to deal with this idea first and at some length because it shows, in sharpest relief, many of the limitations and complexities that apply to the other approaches too.

Consolidation: impossible

Consolidation is impossible, first, as a pragmatic fact, because the citizenry of most of the units concerned strongly oppose it. Annexation, for example, has very lean pickings nowadays. Last year no cities other than Houston, Mobile, Dallas and El Paso annexed so much as 10 sq.mi. Among annexations by 348 other municipalities having a population of 10,000 or more, the average was 3/5ths of a sq.mi. And these figures, so pathetic against immense urban scatteration, are the best since the war.

The bigger the metropolis, as a rule, the more ardently its outliers will defend themselves against being "swallowed." This fear, while possibly selfish and shortsighted, is not imaginary, as one illustration of a common situation shows. In Philadelphia, the city government has had to contend with the problem of "the suburbs in the city," areas within the city of low density housing which the city needs to intersperse with higher density zoning because of population pressures and cost of services. Although the citizenry in the "suburbs" involved has been vociferous and politically active in its opposition, it has consistently been defeated because it is a minority voice in the city as a whole.

Conflict of precisely this nature, in many different guises, is the hard core of the whole metropolitan government problem.

Political Scientist Edward C. Banfield comments: "The problem is not, as many seem to think, merely one of creating organization for effective planning and administration. It is also-and perhaps primarily-one of creating or of maintaining organization for the effective management of conflict, especially of conflict arising from the growing cleavage of race and class. These needs may be incompatible to some extent. . . . Indeed it may be that area-wide planning and administration would of necessity heighten conflicts by raising questions which can only be settled by



Standard metropolitan areas, as classified by census, now number 174, up six since 1950.

bitter struggle. Conflict is not something to be avoided at all costs. It may be well, nevertheless, to consider whether there are not decisive advantages in organizational arrangements . . . which, although handicapping or entirely frustrating some important undertakings, nevertheless serve to insulate opposed interests and to protect them from each other."

Aside from being politically impossible—and in the Banfield view perhaps politically undesirable consolidation may also be illusory as a planning solution for the following reasons, which have their influence on all schemes of metropolitan government. It presupposes more or less neat and manageable arrangements of core cities surrounded by satellites. The map below shows, however, that there are now 18 growing "urban regions" where two or more standard metropolitan areas overlap or adjoin. Where we had wheel or star-shaped urban struc-



Mergers: 18 "urban regions" have now grown where two or more metropolitan areas meet.

tures, we are now getting amorphous masses. In even the largest of these regions, the core-citysatellite concept still does have validity for many purposes, especially the journey to work, but it has little validity in solving other problems, such as general traffic, air pollution, water supply. The logical "jurisdictions" of such problems do not even necessarily coincide with each other, nor is the territory involved today likely to be the same in 20 years or even five years.

Then there is the entire problem of size, workable size for a specific governmental function. The problem of the school district too small for efficiency, or of the suburb with its tax base and child population wildly out of whack, is well known. On the other hand, the huge New York City Board of Education, with more than 900,000 children to provide for, tries hard to plan but also has poor success with it, probably because it is just too big. Decisions on sites and buildings, for instance, are necessarily made so remotely from the "communities" intimately involved, and with such an absence of

natural give-and-take and explanation, that the result is a system of ukases from above, countered by frenzied pressures from below, with planning lost in the shuffle. Execution of planning, generally, suffers many defeats by dealing in units of great size, as well as by being confined in units too small. In a unit of very large population, departments and bureaus, each an empire in miniature, require increasing layers of coordinators and mayoral assistants constantly engaged in attempting, often vainly, to pull things together.

Size also involves the entire problem of local responsibility and the principle, probably inseparable from vigorous self-government, that any division of government should be kept as close to the people as function permits.

In short, consolidation does not answer the situation: if the metropolitan problems themselves are a fearsome snarl, the problem entailed in going at them make a fearful snarl too.

Ad hoc devices

How much promise is there in such *ad hoc* devices as special districts, authorities, compacts, contracts, and taxation ingenuities? (This we have called the first of the "possible" approaches.) A great deal of invention is now being spent on unraveling the metropolitan snarl

> **City line:** a Philadelphia boulevard, zoned as a fast artery, becomes a stop-and-go roadtown in the county.

one knot at a time. For instance, "special districts" created to deal with problems that cross governmental lines, are by far the most rapidly growing category of governmental unit. Since 1942, 6,124 new special districts have been created. California, with 330 municipalities (and 1,841 school districts) has 1,652 special districts. Illinois has 1,785. Not all special districts are metropolitan, but most are. Their ancestor was the Boston metropolitan sewage district created in 1889. Many are authorities with independent borrowing power, modeled after the Port of New York Authority which was created in 1921.

Among dozens of other inventions, for attacking this facet or that of fiscal or physical disability, are ungraduated city income taxes (applying to suburbanites too), county home rule (for metropolitan areas within a county), state taboos on new incorporations in the sphere of a core city, and planning powers for the core city extending a few miles beyond its boundaries.

One of the strangest inventions is the Lakewood Plan, named for a Los Angeles suburb of 75,000, which in 1954 incorporated and contracted with Los Angeles County for almost all its services. This scheme, hugely popular, has triggered 11 incorporations in the county since, and detailed price lists have been worked out for buying services, such as



\$3.63 for each health call; \$7 a day for women in jail, \$3.50 for men; \$73,000 per year for one around-theclock police patrol car. These communities even contract with the county for technical services in tax assessment and collection, planning and zoning and civil service administration. They have made headway in solving the problem of duplicated governmental overhead and inefficiency, but these communities still retain their autonomy, set their own policy—notably zoning—a point to keep in mind.

Looking at current devices as a pattern, two rather alarming motifs stand out. The first is the effect of the "special district" approach. "The great disadvantage of special districts and authorities lies in the cumulative effect of their use," comments Political Scientist Victor Jones. "One special district may be of no import, but ultimately their use will lead to functional disintegration. This is a problem of politics, of control as well as of administration, and will force us to reorder our values or start all over again to build a community from functional fragments."

The second motif is the apparent inability of any of the inventions to come to grips with land planning policy. Many existing arrangements do pretty well with things that flow and fly: with water supply, sewage, smoke control, pest control and, to a degree, even with traffic and transit. If things that fly and flow were all that need be considered, we might expect the metropolitan problems to come under reasonable control in time, with existing devices.

The fixed anarchy

But something very fixed is involved: the land. And land planning remains in complete anarchy. This anarchy touches everything. It is the road, like that in the photo at left, which in the city is zoned to serve as a fast-moving arterial feeder, but at the city line becomes a stop-and-go roadtown. It is Suburb A zoning for heavy industry against the residential district of Suburb B. It is School District C,

divided so swiftly into builders' developments that, before anyone realizes, it has no way of getting money to support the schools it needs. It is the suddenly vanished open land that had given the city relief and recreation. It is the new bridge approach, tearing out the heart of an old community or cutting off school from students. It is the ever greater segregation of low income and minority populations in the core city, daily increasing the cleavages and conflicts with which Banfield is so concerned. It is an ever longer journey to work. It is shopping centers, whose inpouring of traffic and lack of buffer territory cast blight.

Anarchy in land planning makes new metropolitan problems faster than they can be solved. And it is the untouchable among metropolitan problems. Perhaps the best example of dealing with it thus far is in Nashville, and there only the negative step can be taken of county veto on proposed zoning changes. Even Miami and its environs, which have just voted in a form of federated metropolitan government for Dade County, have left zoning and planning to local municipal control. Schemes like the Lakewood Plan, referred to above, are devised mainly to keep land policy thoroughly local because land planning policy also involves who your neighbor shall be, or in what way you can make money from your holdings and how much.

Regional or metropolitan planning in the land area is always set up as a voluntary or advisory arrangement because everyone recognizes that anything else would be politically impossible. But, as Planning Director Henry Fagin of the Regional Plan Association in New York points out, the advisory regional planning board with no metropolitan governing officials to give advice to is a "floating" body, by definition politically irresponsible-and it acts politically irresponsible. "It does not need to come to grips with the real conflicts, as effective decision makers do," says Fagin. "Too often the 'lesson' it teaches is that planning

is futile or undesirable." At best, Fagin thinks, the floating planning board can indicate realistically what it thinks is going to happen anyway, which is useful information. This is mainly the role played by those regional advisory boards, such as Detroit's, which have managed to earn respect.

Law Professor Charles M. Haar, analyzing the statutes by which 22 states authorize regional planning activity, notes how boldly they prescribe research, studies and the drafting of a master plan, and how vague they leave the question of what is to be done with it. "Even the process of preparation is not drawn up so as to elicit public support nor to be illuminating either to the general citizenry or to the planning staffs and boards. Certainly the procedures for adoption are not devised with the thought of . . . having the final acceptance of the plan, which after all sets basic goals that affect the lives of the citizens in many intimate ways, a matter of public concern. Without such clarification, there is small hope for a reconciliation of divergent interests, without which planning becomes simply a pleasant intellectual hobby." He notes that 90 major planning surveys have been made of metropolitan areas, of which only three can lay any possible claim to having had any effect. But hope springs eternal. In June, Chicago civic groups finally succeeded in getting a metropolitan planning commission past the legislature. It will be advisory-because nothing else is politically possible.

Federal solutions?

This missing link—lack of means for adopting genuinely effective metropolitan land planning policy is important to keep in mind when considering the second "possible approach" toward metropolitan government: the use of federal cooperation, aid and authority. The main point in this approach is that the federal government has highly effective ways of getting tax money out of localities and, in recontinued on p. 204





TIBRARY

Open structure welcomes the trade winds through slim columns 25' apart. Storage is recessed on the ground floor, offices and library are shaded behind louvers above. Top floor contains court, judges' suites.

ADMIN

US public architecture gets a lift from Puerto Rico

Bright new home for justice

Public officials and architects from the mainland US are taking a healthy second look at this spanking white structure, in San Juan's Munoz Rivera Park. It is the Supreme Court of Puerto Rico, the first major public building commissioned by the island's new commonwealth government, and a handsome indication that growing Puerto Rico is looking ahead in its architecture as well as economics and politics. Behind clean lines and proudly snapping flags, the new building houses a seven-man court and its staff, which under the 1952 constitution administers the island's judiciary as a separate and equal branch of government. Above the long fountain pool running underneath—a pleasant note which also cools the air-conditioning water—a free-spiraling stair leads up to a new kind of courtroom under the dome (overleaf).

Graceful stair at the rear winds unsupported from second-floor lobby to courtroom. Glass shield and "blinders" accent the stair without shutting out the breeze. Frame is reinforced concrete plastered white.



Galleries outside the courtroom give justices and visitors a breath of fresh air and a view of the park between sessions. Sliding glass doors at left open up the courtroom vestibule and waiting room.

Stairway, seen here from inside, provides a novel downview of the pool. Total cost of the project, including air conditioning and landscaping, came to some \$600,000, only about \$16 per sq. ft.



SUPREME COURT OF PUERTO RICO, San Juan, P.R. ARCHITECTS: Toro-Ferrer and Charles H. Warner Jr.; Harold Eliot Leeds, design consultant LANDSCAPE ARCHITECT: Hunter Randolph ENGINEERS: Perfecto Vasquez (electrical) F. Felices (air conditioning)

H. V. Munchhausen (acoustical) GENERAL CONTRACTOR: Xavier Zequeira



Round courtroom, 45' in diameter, places the seven judges equidistant from the appealing attorney. Spectators are ranged in another arc behind the rail. Behind them, entry doors and two panels on each side can be folded back to open up the vestibule to more spectators. Translucent glass and floodlights reflect light down from the 2" thick concrete dome.







In Western Germany, a new postwar landscape has emerged. Creative young architects are pulling their country's architecture out of 1920 radicalism (1, 3), regimentation under chapeaux (4), warmed-over Nazi pseudo-classicism (2), and overwrought cloverleafs (5). A Berlin sign points to close German-American building collaboration (6).



German Architecture and American

by PETER BLAKE, architect

Pan American's Flight 100 touches down lightly on Duesseldorf's airport. You are whisked off by car to Bonn-past the new Mannesmann Buildings (porcelain-enamel, steel, glass), past glass factories, past concrete churches, past stucco and glass housing, more steel and glass factories, new bridges, cloverleaf intersections, new schools. Past the small "Ville Radieuse" in a landscape near Bad Godesberg, built for German employees of the US Embassy. Then the Embassy itself, a glass and concrete monster on pilotis, overlooking the Rhine.

This is Western Germany, a dozen years after the end of Hitler. And West Berlin is no different: more than 30 new structures, by Gropius, Le Corbusier, Niemeyer, Stubbins and others from all over the world. now on exhibition as part of the Interbau Show, the biggest architectural exposition held anywhere in as long as anyone can remember. And, just a couple of blocks away, a new Hilton Hotel going up (by Americans Pereira & Luckman), a new Garment Center just opened (it looks like Wilshire Boulevard, too) and, everywhere, new construction, day and night, two shifts by daylight, one shift by searchlight.

Tradition and economic necessity

How did it start, and where is it going?

Much of it started, of course, in the Bauhaus, which Hitler closed by force nearly 25 years ago. It started with the man who created the new Bauhaus, Walter Gropius, and with the man who closed it in 1933, Ludwig Mies van der Rohe. And, today, the man who opened the Bauhaus and the man who was forced to close it can look upon West German reconstruction with wry satisfaction: for the ideas of Gropius and of Mies predominate wherever West Germany rebuilds. Many of these ideas have been misunderstood or coarsened. But their presence is unmistakable.

How do these ideas differ from the Bauhaus concepts of the twenties? Have they gained by becoming exposed to America in the thirties and forties? And how readily have West Germans accepted the Americanized version?

These questions are of some importance to us because more and more American firms are building in Germany today, in collaboration with German architects, engineers, contractors and manufacturers, and because more and more American firms are having to meet the competition of German contractors throughout Europe and the Near East.

Last month. Mies pointed to the chief difference between American and German work. "We have no tradition," he said, using "we" when talking about America, "they" when talking about Germany. "We are free, we can do what we like. The Germans have a historical tradition -it could give them strength, but at the same time it is a limitation." Charles Luckman thinks it has been a limitation. "The only thing they've done is to modernize their monumentality," he says. Dan Schwartzman, who has recently had a close look at German architecture, thinks that their attachment to a tradition has been a limitation in other ways as well. "Their willingness to experiment is nowhere near so great as ours," he says.

All of this is true, at least in part. But it does not go to the root of the problem of postwar German architecture—which is, quite simply, the same old economic equation: cheap labor, plus expensive materials, equals handicraft building, whereas the American equation reads: expensive labor, plus cheap materials, equals industrialized building.

The high cost of architecture

The fact that this equation may change momentarily—i.e., that German labor costs may rise and US building may soon have to start conserving its materials—does not change the present situation. For,

> German completeness and US completeness: every nut shows, German style, in a wall section drawn under SOM direction and completely preplanned, US style.



as of today, any German architect working in the "American style" of mass production building is tampering with the basic laws of his country's building economy, just as any American architect putting up a hand-carved skyscraper would be tampering with the basic laws of US building economy.

Yet, this is exactly what is happening in Germany; and the results, while costly to the Germans, are fascinating for us to see.

This is because the German craftsman is as much an artist as ever,



Miesian precision: an attempt in stucco

and his allegedly "standard" wall panels and other components are exquisitely handicrafted. As Skidmore, Owings & Merrill's David Hughes puts it: "You can build a finer building in Germany than you can here—any time." (He excepts the costly Seagram building.) Hughes, who was project manager for several of SOM's handsome German structures, is full of praise for the quality of German workmanship: "There are very few American companies that could stock the field with men as good as German companies employ," says Hughes.

Most German job superintendents are trained engineers. They have to be, because many crucial decisions on matters of mechanical and structural design and detailing are made, not in the architects' offices, but right on the job. Says Ralph Walker: "The German architect has to be on the job almost every day, making decisions, guiding the workmen. He could learn a great deal from us about the organization of working drawings." And Engineer Fred Severud found that German architects will sometimes leave the structural engineering to the contractor—and let him make changes as he sees fit!

And the low cost of building

If this seems incredible in so superorganized a country as Germany, the reason again lies in the economic equation: most Germans still believe that it is cheaper to make decisions in the field than to make them before the contract is let. Dave Hughes disagrees: "It's not more economical," he says, "but they don't know that yet." Still, they are learning-through collaborative efforts with SOM and other American firms. At first, such collaborative efforts tend to be touch and go: the German draftsmen may produce the most exquisitely detailed wall-section (illustrated on p. 133) --- without knowing just exactly what heating, wiring or plumbing will have to go into that section. It is not at all unusual for a modern German building to be finished up to and including the final coats of plaster-only to have the heating men, plumbers and electricians come along and tear into the plaster to find room for their ducts, pipes, and cables. Admittedly, things are not so primitive as in countries like Italy, where the window supplier may turn up half way through the

Church à la Perret: irregular plasticity



construction process to measure the rough openings for size so he can make his windows to fit.

So Western Germany's modern, precision architecture is often a fetish. It is a fetish carried out with exquisite detail—sometimes, indeed, with too much detail. But it is still somewhat nonsensical: a repetitive structure or curtain wall system makes plenty of sense in industrialized buildings like General Motors, but much less sense in a handicrafted structure.

Recognition of this fact is coming to several German architects just as it came to Le Corbusier within recent years, especially when he built in relatively backward countries like India. There is a group led by Hans Scharoun which feels that the idiom of German building today is concrete and stucco, and that these materials lend themselves to an irregular plasticity freer and more interesting than the regular patterns imposed by mass-production techniques. These men are responsible for many concrete churches à la Perret and his Swiss imitators (photo below), but they are having trouble with buildings that consist of repetitive units (like apartment houses). Still, even there they feel that it is folly to try for Miesian precision in stucco-and there are plenty of sad, imprecise Mies-imitations in Germany today to support the argument (photo left).

Between these two groups-the "precisionists" led by the brilliant young Egon Eiermann, and the "plasticists" led by Scharoun-there is a great sea of fair to indifferent architecture, ranging all the way from the twenties' radicalism to Nazi-like classicism. Both are equally dated, though the former, when handled by a real master like Wassili Luckhardt, has a quality of plain guts sadly missing in some contemporary work. The Nazi-classicists seem to be strongest in Southern Germany, where the "Drang nach Gemuetlichkiet" has replaced the more menacing "Drang" advocated by the late regime.

The changing equation

It is easy to oversimplify, and easier to predict. But most Americans who have worked in Germany believe that the future for German architecture lies with industrialization, that the changing economic equation will force a shift in the direction of "precisionism." Hubert Schmidt, a German engineer formerly with SOM, says that after the war, Germany needed buildings right away and no one was interested in research. "But in five years we will be spending much more time on research-and by that time we will have caught up." Most young German architects agree that, sooner or later, the economic facts of life will force them to preplan and pre-engineer their buildings just as thoroughly as this is done in the US. And one German student, now working under Mies, said that the limitations on materials and techniques available to German architects are being broken down. "Soon there will be no difference." Mies agrees.

And when German building becomes truly industrialized, it will present a formidable competition to our efforts in underdeveloped areas of the world. Even today, according to Hughes, the Germans are the best builders in Europe by far, and their contracting outfits are doing work all over the map. Their standards of workmanship are admirable. Says Fred Severud: "German technicians are generally of a higher caliber than those in the US. They take greater pride in their work and that shows in the final quality of their buildings." And Ralph Walker thinks that, despite their antiquated methods of preparing working drawings, the Germans are just as good as we are in building organization and management.

Meanwhile, Germany's best young architects are making good use of the present state of affairs: while expert workmanship is still cheap, they are perfecting the details of their "American" curtain walls, enjoying the relative freedom that comes with the fact that nothing is standard-and any specially proportioned window, door or fixture is just as cheap as if it were standard. In the hands of this small group of creative, research-minded architects, all of Western Germany is a laboratory for better building and better architecture.



- 1. Scharoun's Berlin Concert Hall
- 2. Blumberg Mill by Eiermann
- 3. Berlin apartment house by the Luckhardt Brothers
- 4. Mannesmann-Hochhaus, Duesseldorf
- 5. SOM's US consulate, Duesseldorf











Gallery

Ten rugged perennials that know how to live in offices

Executive greenery

Until recently the tending of indoor plants was left to professional green-thumbers and ladies of Victorian disposition (above). Now architects who omit a "planting pocket" from the executive suite need look to their list of new clients.

For the word has spread in corporate circles that there are varieties of greenery that will not fade away when subjected to the rigors of a human, and particularly male, environment. These plants would of course *prefer* the natural life of green things (an evenly regulated supply of food, moisture, light, air, and the company of other plants). But they appear willing to put up with the dry, drafty, flickering, lonely kind of world that men work in.

Since the secret is out, FORUM is pleased to present a collection of ten "iron-clad" plants, each peculiarly able to accompany man through his hours of labor. The selection was made by Landscape Architect Lawrence Halprin; the drawings are by Helen Federico.









Aspidistra lurida

Landscaper Halprin does quickly admit that even his "iron clads" will do better, look sleeker, when treated with a certain amount of respect. Respect includes:

Watering. The most common death in the plant world is drowning. To test when to water, simply touch the soil. Water should be at room temperature when applied.

Location. From the point of view of plant health, the best location is out of drafts and in soft, regular light. When esthetics are also considered, plants are best placed as delightful, decorative sculpture, not as smoke screens for architectural deficiencies.

Fertilizing. Since most indoor plants are grown in containers with inadequate quantities of soil, the soil is quickly exhausted of plant food. When the plant leaves begin to look yellowish (and there is no other reason for ill health), lack of fertilizer is most likely the cause. An application of a standard, commercial fertilizer once every six to eight weeks should bring back that healthy green.

Foliage spraying. Regular weekly spraying of the leaves is excellent insurance against plant drought. Also, insect sprays should be used whenever there is reason to suspect the presence of insects or insect diseases. Most frequent pests: aphis, mealy bugs, and scale.

If any office-holder finds himself giving this much respect to his plants (or catches his secretary doing it), he may be ready to graduate out of the iron-clad fraternity. But if he observes only some of the rules, and tends to ignore the graceful shapes of his plants until a sentimental mood overtakes him, he would do well to stick to this list of loyal companions. They can take it.



A planting pocket can sometimes have unforseen architectural consequences, as in this Los Angeles foyer.



A workable solution being tried by an increasing number of offices is the "rent-a-plant" routine, whereby seasonal displays are regularly maintained by a florist or landscaping firm (above). But others prefer to get year-round delight from hardy, well-located plantings as in the admirable example below, by Architects Durdeman & Bechet.



Updating the 1957 forecast

Because federal estimates have been revised on 1956 construction, new 1957 figures are needed. Prediction: volume will be up 3%

Major revisions in 1956 construction expenditure plus some unexpected and sharp shifts in a few building categories have brought about some changes in the pattern of estimated 1957 spending, but no change in the over-all outlook. This year will show a moderate rise in total spending for construction, which is about what had been predicted earlier. But a \$1.8 billion upward revision in spending estimates for 1956 by the Departments of Commerce and Labor have shifted the base on which earlier forecasts were predicated. The new estimate of \$46 billion for last year's expenditures results mainly from a \$2.3 billion rise in estimated spending for residential alterations and additions, a \$435 million increase in commercial building, and a \$615 million decrease in government spending.

This year, the main steam behind the estimated 3% rise in spending will come from an 11% gain in public spending, while private construction activity will fall just a shade under last year's total, \$33.2 billion. Public housing is expected to be up 54% over last year, and other big gains will come from public institutional building and industrial building. Highway spending should be up 9.5%, which is less than expected. The highway program has been slowed by a welter of unforeseen complexities, as well as higher costs and tight money, which has hampered the states in their roadbuilding.

The most disturbing and most publicized lag in the private sector of spending will come this year in new residential units, which will drop 11% in dollar expenditures and around 18% in terms of units started. It is expected that spending in this area will pick up some towards the end of the year. Meanwhile, apartment construction, sparked by

a boomlet in cooperatives, may hit 100.000 units this year, compared to only 82,300 in 1956.

Factories (up 8 to 10%), institutional building (up 19%) and public utilities (up 13.5%) are the strongest elements in the private area, while stores, restaurants, and garages are the weakest (off 18%). The latter is such an anomaly in the generally strong building picture, that FORUM has singled it out for a special look which follows.

SPENDING FOR NEW CONSTRUCTION

(millions of dollars)			
	1956	1957	%
	Actual	est.	chg.*
Nonresidential	\$8,817	\$9,350	6.0
Industrial	3,084	3,400	10.0
Commercial	3,631	3,450	-5.0
Warehouses, offices	1,684	1,850	10.0
Stores, restaurants	1,947	1,600	-18.0
Other nonresidential	2,102	2,500	19.0
Religious	768	930	21.0
Educational	536	520	-3.0
Hospitals, institutions	328	520	58.5
Social, recreational	275	320	16.5
Miscellaneous	195	210	7.5
Residential (nonfarm)	17,632	16,400	-7.0
New dwelling units	13,490	12,000	-11.0
Additions, alterations	3,695	3,900	5.5
Nonhousekeeping	447	500	12.0
Farm construction	1,560	1,450	-7.0
Public utilities	5,113	5,800	13.5
Other private	120	200	66.5
PRIVATE TOTAL	33,242	33,200	
Nonresidential	4,072	4,650	14.0
Industrial	453	550	21.5
Educational	2,549	2,850	12.0
Hospitals, institutions	298	370	24.0
Administrative service	362	450	24.5
Miscellaneous	410	430	5.0
Residential	292	450	54.0
Military	1,395	1,250	-10.5
Highways	4,470	4,900	9.5
Sewer, water	1,275	1,450	13.5
Other gov't. buildingt	1,314	1,500	14.00
PUBLIC TOTAL	12818	14,200	11.0

GRAND TOTAL 46.060 47.400 3.0%

* Percentages are rounded to the nearest 0.5%. † Including public service enterprises, conservation and development projects and miscellaneous pub-lic building. * Less than 0.5%. Source: 1956 data, US Departments of Commerce and Labor; 1957 estimated by FORUM.
Stores:

the hair in the butter

Except for housing, no segment of construction this year has seemed so much at odds with its environment, so obviously a hair in the butter, as the building of retail stores and shops. At a time when nonresidential construction has been pointing up, and retail sales, at worst, edging sidewise, store building has continued to slump, clinging to a downward curve that first became noticeable last fall. Few economists foresaw it, but on the basis of its first half performance, new construction of retail outlets, restaurants, and garages is expected to lag 18% behind 1956. Suddenly, yet unmistakably, store building has become an exception. How did it happen?

The reasons for the drop in retail construction—and from an analysis of contracts awards it has been stores almost alone that have been dragging down the store-restaurantgarage category—actually trace to a well-blended mixture of financial and cyclical factors. One way or another, though, most of this mix derives from a peculiarly American tendency, an urge to go too fast too soon which has long been as characteristic of the economy in general as it has been of construction in particular.

Through 1955 and the first half of 1956, store building rolled along in all-out boom. Spurred by the tremendous expansion of shopping centers, new construction of retail outlets (plus restaurants and garages) climbed to a record \$1.9 billion in 1955 and went even higher in 1956, despite a slowdown that set in in August. In three months alone of last fall, 17 regional shopping centers were completed, adding a total of more than 12 million sq. ft. of gross floor area. Lumped together, this was more than the footage of all the regional centers that had been built from 1948 to mid-1956.

Whether this massive addition of space actually brought the country close to an adequate capacity in retail facilities-and some economists now suspect that it did-it unquestionably absorbed many of the best speculative opportunities, particularly for large and medium-sized centers. New store construction makes economic sense only so long as the spendable income of a community is sufficiently sturdy to shelter a new operation. Thin that income out over a mass of retailers, and the lures of speculative development lose much of their charm. This is exactly what has happened in many areas this past year. As a near-saturation point has been reached, and as break-even points have moved ever higher with boommade land prices, premium financing and rising construction costs, developers have found more and more cause to hold off on new projects. Indeed, it is now a serious question whether any but a handful of big new centers is likely to materialize in the next few years. Economist Homer Hoyt, who specializes in shopping-center analysis, believes that with the 54 big regional centers now in operation (each with a department store of more than 100,000 sq. ft.) and the 15 more that are definitely committed, we may have gone about as far as we are likely to go for now.

The problem of money

Even where incentives are present today, financing often isn't. This has been the second big factor in the store slowdown. Institutional lenders surveyed by FORUM early last month were unanimous in saying that they are now applying a far more selective policy to both big and small shopping centers than they did in the past. Partly this attitude stems from tight money, partly from the realization that some of the centers that were financed in the past were ill-conceived, that many smaller tenants are now in serious trouble, and that a shakedown is probably in order before any more expansion. The Prudential Insurance Co., for one, admits that it is definitely discouraging applications for new shopping centers and it believes that there has already been serious over-building. In the few areas where lenders are making new commitments, their demands, in terms of minimum rental guarantees to cover all costs, have grown progressively stiffer.

Though financing seems to have hit hardest at medium-sized community centers, highly vulnerable local convenience centers and singlestore operators (who now find it almost impossible to get backing without Grade A qualifications), it has not completely missed the national chains. On the whole, though, chain stores, which have always been more selective in their building policies, appear to be the only part of store building that has held up. The magazine, Chain Store Age, which surveved 1.432 chains late last year on their building plans, found they anticipated spending 18% more for building in 1957 than they did in 1956. Though the magazine thinks the total may come out to be somewhat lower when actual figures are in, it doesn't feel that the drop will be too sizable.

Whether store building continues to slump depends, of course, partly on consumer spending through the rest of this year and next. By and large, though, most economists expect no new cycle of boom until at least 1960. There always has been some correlation between store building and housing starts; e.g. in the twenties the drop in stores followed the decline in housing by about a year, which is what has happened again. A spurt in mass housing, opening up a new fringe, thus could have a sizable impact on store construction. But as things look now, a spurt of that size is probably not going to come before another three to four years. Then the new wave of family formations should push us into a new era of strong outward expansion.

Lower Park Ave. in 1906 was a sprawl of smoky railroad yards in front of a picturesque station. By 1920 the new Grand Central terminal had been built (but not the Grand Central tower in front). The tracks had been roofed over for the avenue, and buildings like Grand Central Palace (left) had begun to close in. First to move up to the present building line was the Mar-guery Hotel (right), in 1917. By 1960 (below) the new Carbide building, on the site of the old Marguery, will have started to open up the lower avenue again with a 33' setback and colonnade under its unique second-story display lobby. Color scheme: black metal with stainless steel trim.



MODEL BY THEODORE CONRAD; PHOTOS: LOUIS CHECKMAN







Pedestrian passage through Carbide's block formerly continued the line of Vanderbilt Ave. through the Marguery courtyard, under picturesque arches. The new building also provides through passage, but it will not compose with Vanderbilt (see map opposite).

Substructure (shaded sketch below, right) will be erected through two train rooms under a temporary protective ceiling. Existing ground floor and substructure of the old Marguery will be removed, larger columns for the new skyscraper lowered through new openings in express level floor and set on heavy footings. New girders will be set between the columns, crash walls between tracks will be replaced, a new ground floor and hung ceiling built. Where curved tracks force columns to be placed eccentrically in relation to building frame, transfer girders (below, left) carry the weight across.





no basement space for the 15' deep elevator pits the new skyscraper would require. So the pits were placed above ground, flanked by glassenclosed moving stairways to carry passengers to a second-story lobby where the elevators start. This led Architects Skidmore, Owings & Merrill to leave the ground floor open on all four sides around the elevator core, creating welcome through views and circulation for the new load of foot traffic around the building's base. The big trick is to get columns sized for a 53-story building down through the ground between the curving rows of tracks and train-room columns, to dig and remove debris, sink footings beneath lower-level tracks, brace the whole new structure, and replace crash walls—without upsetting train schedules. (How SOM and George A. Fuller Construction Co. are doing this is shown below.)

At press time, it seemed fairly sure that Carbide's ground-floor open colonnade scheme would go ahead as planned, although there had been some second thoughts along the way about offsetting the building's rising costs with the income from store rentals on Park Ave. (A bank and stores had already been planned around the nonplaza Madison Ave. side.) The open scheme could prove a boon to the over-all future development of Park, where open, high-style plazas are already beginning to make the boulevard unique on the North American continent.







C-TOTOTA

STREET LEVEL

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4TH - 10TH FLOORS

Scale of the new building is seen in sketch view south toward Grand Central tower, whose axial dominance of the avenue will be thrown off balance by its new neighbor. Between the two is the old Postum building, on one of the smallest blocks in the city (see map). Because of Carbide's huge size and setback, the suggestion has been made that this block would be an ideal place for an open plaza taking up the jog between Park and Vanderbilt.







From IXth-century Florence, a lesson for American cities

Citizens make cities

Drifting from city to city with equal indifference, the typical American is reluctant to admit he is responsible for any urban crisis. But, he alone can bring a golden age to our cities

> * Long a student of medieval cities in Europe and native cultures in this hemisphere, John Osman turned his attention to contemporary American affairs when he joined the Ford Foundation's Fund for Adult Education in 1952. He has been vice president of the Fund since 1955.

by JOHN OSMAN*

Every child born in the city of Florence is baptized in the ancient baptistery. He becomes, at one and the same time, a child of the Church and a citizen of the city.

This rite takes place in the venerable octagonal-shaped temple that has been the focal point of Florentine life since the ninth century. Placed like a jewel in the center of the city, the baptistery has been the scene of historic civic rituals for centuries.

Contrast the significance of this sacramental initiation of the Florentine into citizenship with the casual way an American becomes a citizen of Atlanta or of Memphis or of Little Rock. We become citizens of New York or Chicago with equal indifference. We move from city to city without a ceremony to accent the change in our loyalty and in our citizenship. We ignore the shifts that take place in our civic responsibility. It is no wonder that Americans are apathetic about civic obligations.

The redemption of our cities from their present plight depends upon our establishing a mature civic tradition in American life that will both inspire and educate a civic leadership.

The failure of a civic tradition to mature in the American urban scene has led to a crisis in civic affairs. It has prevented an effective civic leadership. The amenities of urban life have been lost. Without wisdom about urban ways, the city has bred its slums, its skid rows, and its city bosses. Main Street is a shambles. It is not much better than its extension—Road Town. It is a reason for civic shame.

The simple social structure of our early American society produced the simple physical forms of villages and of small towns. Villages were built around squares. Towns grew up along the roads which became the main streets. These civic forms dominated this country for a century. They gave shape to our cities. The hegemony of the village and the town tended to make the nation "village minded." The village and the town determined our ways of thinking about our cities. But the wisdom of the village is not enough for a modern, industrialized society such as ours.

The form and function of the village are not adequate for the contemporary industrial city. The city requires a different kind of knowledge to understand it, a different set of institutions to make it work smoothly and efficiently. The modern American city needs the urban mind. And the urban mind is the product of a civic tradition.

Soul of the city

Since our civic sin is a consequence of our ignorance in the arts and sciences of civic life, a restoration of the civic tradition is a necessary preface to any effective city planning. If we are to build our city, we must first of all uncover the civic soul. Sometimes we call this intangible aspect of the city its civic spirit. The ancient city referred to it as its "genius."

Building a city is a sacramental act on the part of the whole people. For a city is the physical manifestation of an invisible reality: the soul of its people. Ancient cities were worshipped by their citizens. Americans appear to hate their cities. We do all we can to demean and disgrace them.

But there is an intangible spirit at the heart of a contemporary commercial city that must find its expression in and give purpose to the city building of its people. We should endeavor to make an art out of our town building.

The citizens of a city must discover the character of the city if they are to build an image of its soul. They must understand its nature and its function before they can design it. For the design of a city is not to be found on the drawing boards of the city planner. The forms of the city live in its people. They emerge out of the mind and spirit of its citizens. They reside in the very history of "the place." The discovery and the organization of these subtle forms is the task for a program of civic study.

Not long ago I heard a story about a famous city. The dictator of the country in which it is placed took the distinguished civic designer he had chosen to refreshen it up in an airplane. And, pointing down at the centuries-old Latin American town, he asked: "What kind of a design will you give it?"

The planner remarked that he could put a shell around the old city and keep the heart and brain of the people as they were. The envelope would reflect the soul of the city. It would mirror the spirit which had prevailed in the town for centuries.

"There is an alternative, however," the planner said. "We can put a modern functional shell around the city, and it will change the heart and brain of the people. It will give a new shape to the soul of the city. The city will become modern and up-to-date—a part of the twentieth century instead of lingering in the past."

The dictator chose to make the city over all at once. He had this power.

It has hardly been a decade since the conversation took place. The building of the city has begun. At first the people protested this ruthless murdering of their soul. They rebelled. They threw rocks through the glass façade. They broke up the marble monuments with sledge hammers.

But after a time the protests ceased. The rebellion was over. The people began to change.

The new streamlined city began to shape the brain and the heart of the people. Today this city appears modern and efficient—a part of the twentieth century. It is a spectacular city—full of architectural surprises and displays of grand boulevards. But an uneasy quiet prevails. The restless people walk the streets unhappy. They are strangers in their own city.

For, you see, it was not the soul

which made the city. It was the city which made the soul.

This new age of the city makes large requests of its townsmen. And who are the townsmen of today? Who are the inheritors of the sense of beauty which belonged to the citizens of Athens? Who are the heirs of the urban wisdom possessed by the burghers of Amsterdam? Who are the descendants of the merchants who frequented the Globe Theater and built Shakespeare's London? What has happened to our townsmen and what are the lessons they should have learned from the citizens of the great cities of the past? Where is the civic "way of life"?

Many of America's townsmen have moved out to the suburbs and to the rural retreats beyond the suburbs. They have fled to escape the city and to seek the supposed stability of the villages and towns. Yet, when they get to the country, they find towns and cities there and there, too, puzzled people are endeavoring to restore civic traditions.

These refugees from our cities have been replaced by a new type of city dweller. The townsmen of New York today come from the fields and villages of Puerto Rico, and of the South. The new townsmen of Atlanta, of Tulsa, and of Little Rock come from the farms and villages of the South and the Southwest. The city has been left to a "new immigrant" often uneducated in the civic arts, and, consequently, incapable of civic judgment.

Politics, the most sophisticated of the civic arts, and education, the civic art that transmits and creates the civic tradition, have been placed in their hands. It is not easy to build a civic tradition among these restless people who are ever on the move—within the city—and from city to city. It is not easy to inculcate the civic virtues in men and women who fear and hate the city because they do not understand it.

Since our American culture and our institutions are changing under continued on p. 202

Moké in camouflage



PHOTOS: (ABOVE) JAMES H. REED; (OTHERS) JULIUS SHULMAN

Moké is a term based on the Old English word for weaving. Recently, the word was reintroduced to the language to describe the process of cutting saw kerfs through plywood sheets and then weaving dowels or wood strips through to make interesting patterns for screens or fences. Here, Architects Smith & Williams stress the cut plywood sheets into lip-shaped forms by pushing 2×12 beams through at the midpoint of the sheet. The result is a fanciful-appearing pergola serving the very real purpose of camouflaging the ugly old house which serves as their Pasadena office. A concrete wall built on the sidewalk line completes the conversion of a typical front yard into an intimate terrace and garden approach to the firm's office.

SMITH & WILLIAMS, architects



Bamboo screens slide in front of east facing fixed glass. Old front porch was enclosed to provide new office space.

> **Wood deck** and steps under the pergola invite a gentle transition from parking area to reception room.







Filigreed shadows project pergola pattern on the concrete wall bordering the street.

Textured wall provides a background for the raised letters of Architects Smith & Williams' "shingle."





Technology

Dirty air costs the US some \$2 billion every year, to say nothing of its effect on health. City after city is determined that a contaminated

atmosphere be tolerated no longer

Crusade for clean air

RECIPE FOR SMOG

The graphs in the kettle (opp. p.) symbolize some of the elements of smog creation. The kettle is the Los Angeles Valley, formed by mountains on the east and gentle sea breezes on the west. The lid is a phenomenon of meteorology called a temperature inversion: a thick blanket of warm air above the valley which prevents the escape of the cooler polluted air inside the kettle.

By long-path infrared spectrograph (shown below), Franklin Institute scientists charted this daily build-up of pollution, much of it caused by auto traffic.

Note how the concentration builds to a peak in the early morning hours of traffic influx to the city, then reaches another series of receding peaks on the evening outflow. A recorder indicates the contaminants present: carbon monoxide, some hydrocarbons, oxides of nitrogen, and many others. With the spectrograph, the scientists also determined how smog was created. Smog, shown as white dotted line on graph, results from exposure of contaminants to sunlight. (For further explanation, see p. 156.)

PHOTO (OPP. P.) : CEORCE STROCK

On any given day, the air above America contains about 50 million tons of manmade dirt. On an ideal day when the air is still and hangs overhead like a thick umbrella—warm air atop a layer of cold, an atmospheric inversion—the man-made contaminants begin to blend together, slowly at first, then faster and faster as energy from the sun turns the underside of the umbrella into a bubbling caldron of strange chemicals.

There was a time when the chemicals of the atmosphere seemed not so strange. When Pittsburgh, for example, set out to rid itself of smoke, after the war, the villainous chemicals were unburned carbon and sulfur dioxide, waste products of burning coal. Rigid controls soon cleaned Pittsburgh's sky. And smoke control worked in other cities, too, where more than 140 now have active control programs. In St. Louis the clean-up was so successful-"thick smoke" reduced from 716 hours a year in 1940 to less than 4 hours todaythat Smoke Commissioner Raymond Tucker was elected mayor.

But smoke and soot, though still overabundant, are yesterday's problem. Many means of control are available (p. 154). Today's dilemma is the rising tide of new atmospheric chemicals, waste products of our intense but inefficient activity: carbon monoxide, the oxides of nitrogen, the hydrocarbons and hundreds of others, not to mention radioactive fallout, not considered here. Some of the former, such as beryllium and pyrene, detected from time to time in the atmosphere, are known to be harmful to human life, though the line between harmful quantity, i.e., that producing disease, particularly cancer, and the amount which is merely annoying is yet to be defined. One reason is that there are few US medical scientists at work in the field. As one authority puts it, Dr. W. C. Hueper, of the National Institute of Health: "We have no more knowledge about environmental cancer today than we had in 1880 about the infectious diseases."

Just as dirt in other forms yielded finally to the modern idea of sanitation, however, so there is growing awareness of the high costs-in health, material loss, and esthetics-of air pollution. The air, once barely thought of, is more and more an object of attention. Where industry not so long ago gloried in its belching stacks, it is now increasingly self-conscious of them. More advanced industries are developing in which atmospheric cleanliness is the essence of efficient operation. More buildings are arising, with the rise of air conditioning and other modern architectural features, in which clean air is important. The public, in reflex from this new level of technics, is increasingly conscious that clean air is one of the necessities as well as amenities of life and that its pollution need not be tolerated.

Some crusaders for air purity say we are now well-equipped to decontaminate. One such crusader is Dr. A. J. Haagen-Smit, the professor of biochemistry at California Institute of Technology who discovered the basic mechanism of Los Angeles' smog. He says: "We may not know exactly what smog is, but we do not need to know its every constituent to prevent its appearances in the air. Since we know its ingredients, why not make an all-out attack on smog sources with the weapons we now have?"

Actually, an attack has begun, though perhaps with less force than such men as Haagen-Smit would urge:

In Los Angeles, where air pollution is probably more acute than in any city of the world, with the possible exception of London, the US Public Health Service has joined with the California Dept. of Health and Los Angeles County in a coordinated air clean-up. Included in the program: analyses of automobile exhausts and gasoline compositions, which are believed to be major contributors to Los Angeles smog; a threedimensional study of mass air flow in the Los Angeles basin, which may form the basis for an industrial zoning plan to locate factories; and perhaps freeways, in places where air movement is such that contaminants can be dissipated. The effort to clear Los Angeles' air has gone on so long and intensively that it is a central laboratory for the science, watched closely by other cities, and considered separately later.

In New York, some 20 counties of the New York-New Jersey metropolitan area expect to link together in a regional warning system to reduce the danger of atmospheric poisoning from air-pollution. Although blessed with winds which direct much of the area's industrial dirts away from Manhattan. New York itself creates enough waste to constitute a serious problem. Since 1952, the city has spent about \$2 million for citywide control, including \$250,000 for laboratory and lab personnel to monitor and analyze the air each day. But this is not enough. Any city which lives beneath a daily downpour of over 500 tons of dirt, as New York does, must feel, sooner or later, that extra work needs to be done. In Tulsa, Okla. a virtually sootfree, smogfree city of 300,000 people, including its suburbs, one of the most progressive and significant steps in airpollution control was taken last month. In July, Tulsa's Metropolitan Planning Commission launched a two-year survey of the city's air resources, making Tulsa the first nonpolluted city in the US to undertake a study of air pollution. Five governmental agencies, including state and federal divisions, will participate in the program, ascertaining wind currents and present levels of air contamination. On completing the study, Tulsa hopes to have meteorological information which can be considered with other factors in a master plan for future industrial zoning. By 1977, when its population and industry have doubled, Tulsa expects to have the prosperity which industry brings, without the annoying concomitants. On a \$27,000 investment, Tulsa may save the millions which smog can cost.

Motivation to clean up

From a faint rumble in 1864, when a St. Louis legal judgment held that smoke was a nuisance, the US crusade against air pollution has grown to a furious outcry-from the gas-masked members of the Los Angeles Optimists Club, meeting heatedly to denounce the ineffectiveness of the county's control program, to the delegation of irate housewives of East Greenville, Pa., who stormed the borough council with bundles of soiled laundry from backyard clothes lines, to the 200 Rutherford, N. J., home owners who recently saw a mysterious fog turn their white houses a permanently blotched brown.

Today more than 2,000 US communities have enacted air-pollution control measures. The typical city spends about 12¢ per capita per year on air pollution, with Los Angeles-at 75¢ per headtopping the list. Among the states, Washington, Ohio, and New York this year enacted control legislation, following the lead of several other states. The federal government, long silent on air pollution, appropriated \$1.72 million in 1955 for a national program of research and technical assistance. In his health message to Congress last year, President Eisenhower recommended "a substantial increase in funds to broaden the research attack on problems of air pollution." And in June, honoring the 50th anniversary of the Air Pollution Control Assn., ex-President Herbert Hoover threw his support with a Western Union message: I AM ARDENTLY IN FAVOR OF PURE AIR . . . I WISH YOU WELL AS I HAVE BEEN IN PLACES THAT NEED IT.

The force behind the crusade is twice energized: by economy and fear. The cost of air pollution, in damaged crops, defaced buildings, ruined clothing, delayed plane flights, and slowed traffic is estimated at \$2 billion per year. This does not include the staggering cost of day-to-day cleaning: the average New York office building, for example, with 350,000 sq. ft. of floor space, costs about \$175,000 a year to keep clean. Nor does it include the immeasurable cost of a shrinking reputation, as in the sad story of Los Angeles.

The fear motivation is just as strong. People who live with today's smog soon learn its history: the five-day smog over little Donora, Pa., in 1948, which killed 20 people in a community of 14,000; the London smog of 1952, which hung over the city for four days and caused the death of some 4,000 people. Comprehensive medical examinations following both disasters leave not the slightest doubt that the smog was the cause. The only rationalization is that victims of both were in poor health when the smog set in.

But what about other smogs, seemingly less lethal? Virtually every US city experiences several of these each year. Whether these smogs actually kill people, or even whether, by repeated exposure, they cut short the human life span, are questions which may wait years for conclusive scientific answers. One reason for the delay is the trickle of medical research in the field. Those scientists at work are hampered further by time; it may take 20 years for the effects of contaminated air on people to be detectable. And in the laboratory, it is very difficult to determine by experiment how certain contaminants affect that vulnerable human organ, the lung, particularly in causing lung cancer. Laboratory analysis alone shows only that certain contaminants may contribute to the disease, e.g., a chemical which is capable of inducing skin cancer in mice is strongly suspected of having harmful effects on human organs. But further suspicions continue to arise. In the recent report to the American Medical Assn. on the relationship between cigarette smoking and lung cancer, it was pointed out that the incidence of the disease was 25% higher among people in urban areas than among rural people. But again, this proves nothing. As Dr. Robert Kehoe, occupational health scientist of the University of Cincinnati, says: "The big question is whether exposure to these contaminants over a long period of time causes ill healthlung cancer, respiratory disease, allergies, chronic ailments. We know that under conditions of severe exposure to large quantities, as in Donora and London, things do happen. And if severe pollution is harmful in a short time, it may seem logical to believe that some degree of pollution causes harm after a long time."

What makes dirt?

The air around us contains more chemicals than most chemical laboratories. But the sources, by type, are relatively few: coal-burning and oil-burning boiler plants; factories of most types, including rubber plants, oil refineries, steel mills, chemical plants; apartment houses, which usually burn low-grade oil or coal—or burn trash in crude incinerators.

But each of these sources can be controlled. (Industry now spends upward of \$200 million a year for control equipment and personnel; the chemical in-





Crusade leaders: Dr. A. J. Haagen-Smit, Cal. Tech, I., found basic mechanism of Los Angeles smog; William Scott, c., whose Franklin Institute group identified L.A.'s ephemeral smog-producing compound; Arthur Stern, r., US Public Health Service, who watches national pollution trends; map swatches show relative dirtiness of selected areas of US.

dustry alone says it spends \$40 million a year.) The apartment-owner can be compelled to heat with cleaner fuel. The crude incinerator can be outlawed, as Los Angeles will do this year, until incinerator design catches up. (Development projects are being carried on now by the American Gas Assn., New York University, U.C.L.A., Battelle Memorial Institute, and others to improve incinerator design.) The architect can do his share by specifying a clean-burning incinerator for the buildings he designs, rather than passing the decision to the contractor.

But there is that other source of air pollution, the automobile, believed to be the major source of smog in Los Angeles and potentially in other cities as well. Because of a unique natural combination-mountains, ocean, and sunshine-Los Angeles was more susceptible to smog than other cities. But meteorologists warn that other areas have smog potentials, i.e., cities which rest in topographical bowls: Salt Lake City, Reno, Phoenix, Boise, Helena, Asheville, Knoxville, and Chattanooga. These, as auto populations increase, could begin to experience the same eyesmarting smogs as Los Angeles. And still others, such as San Francisco, Detroit, Philadelphia, New York, Baltimore, Boston, and Washington are potential trouble areas, despite their more favorable topographies. Each has experienced Los Angeles-type smogs from time to time.



How to check pollution

Air pollution control is expensive. Control equipment for a single openhearth furnace costs about \$1 million. Equipment for an electric plant serving a city of 300,000 costs about \$5 million. It is not unusual for a company to set aside 5% of new plant cost for control equipment; if its contaminants are particularly troublesome, or the company particularly fussy about being a "good neighbor," the cost can be as much as 15%. Costs are not so high on the other side of the dirt, i.e., cleaning or screening the air before it enters a building. For a 350,000 sq. ft. building, such as the one mentioned earlier which spends \$175,000 a year for cleaning, the cost of air-filtering equipment will range from \$3,000 to \$20,000, depending on the degree of cleanliness required. In a precision factory, manufacturing things like miniature ball bearings or highly sensitive electronic devices, costs often run 20¢ to 25¢ per sq. ft. But in most instances, first costs are more than paid off by savings in maintenance, cleaning and increased production.

Generally speaking, devices similar in principle control air contamination at the source and at the inlets to buildings. The major types and their efficiencies in filtering out particles, ranging from heavy visible soot down to tiny invisible discoloring particles, are charted on p. 154. The air-cleaning industry has an ingenious, steadily improving array of devices ranging from plain fiber dust collectors to the most sensitive, widerange (and highest cost) electrostatic types. Since air-borne waste can never be completely controlled at the source, both sides of the business are lustily growing. And looming ahead is other business, for none of the present conventional air cleaners controls gaseous contaminants, the growing type. To control these requires air scrubbers or other chemical devices still to be worked out for general use.

The automobile presents a very special problem in this regard, one on which the industry has spent \$3 million in the past four years. Despite hopeful prophesies of an "early solution," made recently to the citizens of Los Angeles by their control officials, there appears little justification for optimism. The auto industry must work against several disadvantages, for instead of smoke stacks or air vents, it must deal with an independent vehicle, a jiggling, overworked, undermaintained device, and its irrational operator, a man or woman of mysterious habit who cares little about the pollution he or she creates, and less, far less, about a device which would cost money to check it. Unlike the industrial plant, the automobile requires a device that should cost no more than \$30, or about 11/2% of total cost, yet works as effectively as a good industrial device, permitting no more than 5 to 10% of the exhaust gases to escape into the atmosphere.

To date, the industry has worked on



* One micron is equal to one-millionth of a meter, or 1/25,400ths of an inch. The human hair is 75 to 100 microns in diameter.

four types of devices. One already has been discarded. A second is still only 25% efficient. A third is little better, and the fourth is still too cumbersome.
The first device, which shuts off fuel flow to the combustion chamber during deceleration, was dropped because not enough fuel was fed to the engine while idling, causing frequent stalling.

▶ The second, an induction system or vacuum limiter, keeps the throttle slightly open during deceleration, admitting air to the combustion chamber and permitting more efficient fuel burning. But its 15 to 25% efficiency is too low; further, it too works only during deceleration. Despite its limitations, Los Angeles is ready to try it. Los Angeles Air Pollution Control Chief Smith Griswold sees it as a stop-gap measure, estimating that it will eliminate a daily amount of emission equivalent to 150 tons. (Los Angeles is testing

other devices too, some from private companies outside Detroit.) Ford Motor says that it will produce the induction device for Los Angeles, but with no guarantee. Says Ford's James Chandler: "Griswold believes, as we do, that the answer is in the exhaust. We will do everything we can to make the device acceptable. But we won't come out ourselves and advertise it as a smog reducer." Chrysler is even more cautious. Says Chrysler's Charles Heinen: "The induction system is what we can do today, but it's not the end of our study. We won't stop until we're no longer a public nuisance."

▶ The third device is a catalytic muffler, which burns the exhausted fumes before release to the atmosphere. The newest of these, and one of the more effective to come along, has been developed by Oxy-Catalyst, Inc., Wayne, Pa. When working, the device is said

There are two families of air pollution control equipment:

► THE DUST COLLECTORS, which remove the heavy, concentrated dirt particles of industrial activity before releasing the air to the atmosphere. Because this dirt is homogeneous, efficiency is measured by a single standard: total weight of particles removed.

THE FILTERS, which capture the smaller, more heterogeneous dirt particles of the atmosphere before admitting this outside air to a building. Because atmospheric dirt is heterogeneous, efficiency must be measured by two standards: total weight of particles removed, and total amount of discoloring particles removed.

The mechanics of filtration



* It is important that both standards of efficiency be considered in selecting a filter system. Unlike the larger industrial dust collectors, which capture the more homogeneous particles of dirt, the filters must capture a wider range of particle types. Thus, good weight efficiency alone is not enough: an effective filter must also capture the smaller, lighter particles of dirt; these are the particles which cause discoloration—to fabrics, draperies, paints, etc. Weight efficiencies represent per cent (by weight) of synthetic dust particles removed from air during accelerated LAB tests. Discoloration efficiencies represent per cent of discoloring dust particles removed.

by General Motors to be 80% effective. But this type of catalyst requires about ten minutes to warm up—the average urban auto trip takes only 25 minutes —and if the catalyst becomes too hot it burns out. GM believes that its over-all effect is not much better than the induction system.

▶ The flame afterburner, device number four, mixes hydrocarbon exhausts with air, then ignites the mix with a sparkplug. So far, its bulky combustion chamber has proved effective only on trucks and buses.

Even with the many discouragements, men like Heinen believe that progress has been made. "Three years ago," he says, "we did not know what any of these devices could do. Now, at least we do know that." But many pollution control people, like Griswold of Los Angeles and Dr. Morris Jacobs, of New York's Dept. of Air Pollution Control, have said publicly that the auto industry should be doing more than it is. Says Jacobs: "If they spent as much money trying to control air pollution as they do on design—or on a single television program—the cities would be much better off."

What happened in Los Angeles?

In a little more than a generation, Los Angeles grew from a small western city to a metropolis of 5 million, with every other person driving a car. Even before its land disappeared into ranch houses, freeways, and five big industries—aircraft, movies, oil refining, electronics, and sports clothes another of its great resources was dwindling: its sunshine and air supply.

The Indians, years before, had seen hints of what could happen. They called the area the Valley of Smokes, because smoke from their brush fires hung in the air for days. Modern Los Angeles first noticed the new smoke around 1942, an eye-smarting mist which appeared even on the clearest days. By the late forties, the mist had become an intolerable smog, appearing on as many as 300 days of the year. Meteorologists explained the cause to be a temperature inversion in which a top layer of warm air clamped a lid across the valley. Farmers saw their crops wither. Motorists could not see. People cried unaccountable tears. But as to just what the witch's brew was beneath the lid, no one knew.

In 1947, Los Angeles set up an Air Pollution Control District, called in Dr. Louis C. McCabe as first director, a research-minded scientist from the US Bureau of Mines, who set out to rid the air of sulfur dioxide and set up a research program to hunt down other suspected contaminants. McCabe

CRUSADE FOR CLEAN AIR cont'd.

cracked hard at the oil refineries, forcing them to install control devices. Between 1947 and 1949, the refineries spent about \$3 million, not without a fight. By 1949, the refiners were cleaner (they now recover more than 700 tons of sulfur a day), and the air was cleaner, too. But still there was smog. McCabe returned to the Bureau of Mines, and his successor, Gordon P. Larson, hunted a new villain. At about the same time, the research staff, which included such authorities as Dr. A. J. Haagen-Smit and Dr. Frits Went of Cal. Tech as consultants, had begun to point to hydrocarbons as the principal cause of plant damage and eye irritation. Meanwhile, Larson was after other smog sources, hitting hardest at dust, fumes, and gas. But still there was smog.

In 1954, after five years of harassment—including citizens' banners reading "Fire Gordon Larson" and threats by the Board of Supervisors to fire him—Gordon Larson stepped down. (Today he is executive vice president of Oxy-Catalyst, Inc. and a resident of a quiet Philadelphia suburb.) The next and current director, after a short holding operation by the county's administrative officer, Arthur J. Will, was S. Smith Griswold.

Griswold found that every source of pollution was exonerating itself by blaming someone else. In two years, he feels, this has been stopped. Also, he has expanded the department to 459 employees, up more than 350 since he became head. With a \$3.68 million budget, Griswold runs 15 monitoring stations and 15 research projects. In October, he will wipe out the county's second largest producer of contamination, the back-yard incinerator. Through the past nine years, notwithstanding the protest meetings, the newspaper blasts and the succession of smog chiefs, there has been genuine technical progress in Los Angeles. As one qualified observer says-Benjamin Linsky, San Francisco's smog chief and last year's president of the Air Pollution Control Assn .- "There is not a single community that has done all that is known technically about clearing its atmosphere. Los Angeles is closest in many ways." To get so close, Los Angeles has spent more than \$10 million, while its industry has spent \$50 million. But Los Angeles still has smog.

New truths

When Los Angeles took its smog problem to scientists at California Institute of Technology, it substantially broadened the existing field of air-pollution research. During the following eight years new scientists of many fields began to analyze critically the air we breathe, an effort that is destined to continue for many years to come. By 1957, no miracle of science has taken away the smog, but science has explained its chemistry and thereby taken Los Angeles closer to the threshold of sunshine.

First to bring new truths were Haagen-Smit and his associates at Cal. Tech. Using artificial sunlight in a laboratory experiment, and casting the light onto air which contained traces of hydrocarbons and nitrogen dioxide, the scientists created unusually large quantities of ozone, Os. Though not wholly understood at the time, the presence of ozone with certain hydrocarbons caused damage to vegetation in the laboratory -the same kind of damage that had been experienced from smog throughout the valley. From this, Haagen-Smit reasoned that Los Angeles sunlight was an effective source of photochemical irradiations and a catalyst in smog formation. Haagen-Smit could not explain how the ozone was created, nor could he explain why the reaction he had observed caused smog and its damages. He did not have the instruments for such analysis.

The answer to the first of these questions-how ozone is created-came just a few months ago, as a result of experimental work by a team of scientists at Philadelphia's Franklin Institute. sponsored by the American Petroleum Institute. Using a device called a longpath infrared spectrometer, William E. Scott and his group were able to examine the atmosphere more closely than it had ever been analyzed before. The spectrometer, in effect, made it possible for them to take a "fingerprint" of a sample of air and determine each of its many constituents. By laboratory experiment, they found a new compound (labeled Compound X), which they suspected was involved in the creation of ozone. Scott predicted that Compound X-or peroxyacyl nitrite-would be found in a sample of Los Angeles smog, which it was. In the atmosphere, as Franklin now can demonstrate, Compound X sets up a little ozone factory: a molecule of nitrogen dioxide, which can come from an auto's exhaust, links with a molecule of oxygen, O2, from the air. Sunlight changes this combination to two new molecules: nitric oxide and ozone. Very quickly, the nitric oxide reacts with organic radicals from hydrocarbons to form peroxyacyl nitrite.

which, in sunlight, slowly decomposes, forming nitrogen dioxide again. In effect, the new compound and sunlight enable the cycle to repeat again and again, producing more ozone with each full swing. Compound X may have other roles in smog formation, but Scott hasn't nailed these down yet.

This does not answer the second of Haagen-Smit's unanswered questions: what products of the ozone-hydrocarbon reactions cause smog damage? Since January, this question has been under study at the University of California, by Dr. John Middleton, chairman of the department of plant pathology. Franklin Institute is active in this study also. At present, Middleton and Scott believe they have good leads. It appears that plant damage and eye irritation are caused by different chemicals; the eye irritant appears to be a rather stable material, but the one which damages plants is not.

And quite different programs are going on in other laboratories. At the US Government's Robert A. Taft Sanitary Engineering Center, Cincinnati, for example, scientists are developing new methods of atmospheric analysis and new devices for controlling air pollution. The federal government is appropriating about \$4 million per year for this program, about one-third of which goes to nongovernmental research. An important phase of the Taft Center's work is its National Air Sampling Network. With local organizations, the center has set up air-sampling stations in 110 cities and 15 rural areas. The purpose of the network is to detect national air-pollution trends and to observe any correlation between these and the nation's health. The center conducts field studies as well, also in cooperation with local agencies.

This is by no means a complete account of the total research effort in the field of air-pollution control, for new programs are born almost every day. Indeed, the program, on a national scale, has taken on sweeping proportions during the past eight years, with some \$300 million going into all phases and easily \$5 million into research. And yet few of those who are concerned with the problem, as industrialists or as control specialists, are ready to concede that the effort is sufficient, for there is still too little known about these new chemicals of the atmosphere for the bestinformed to declare that there is sufficient purity in the air around us. And until we know this, who can take issue with the man who proclaims he is ardently in favor of pure air?



structural economy and freedom of design !

BESTWALL's Firestopper Roof Deck meets the highest requirements for firesafety, flexibility, economy and durability. This incombustible deck consists of steel subpurlins welded securely to the main steel structure, a permanent base of Bestwall Gypsum Formboard, welded steel mesh reinforcement, and pouredin-place Bestwall Metro-Mix gypsum concrete.

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Speed of application is an important feature of Firestopper roof decks. An average crew can pour up to 30,000 sq. ft. in a day. And the Metro-Mix slab sets within an hour; so final builtup roofing can be applied without delay. Once in place, a Firestopper roof deck gives years of trouble-free service with a minimum of maintenance. To get complete information about this efficient, fully fireproof roof deck, just contact your nearest Bestwall Certain-teed Sales Office or write to us.







REYNOLDS ALUMINUM IN MODERN ARCHITECTURE





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B-B

Tubular sash members show clearly in section drawing of wall.

B ←

C 4

D.

pre-assembled matte gold spandrel panels made of

interlocking extrusions; intermediate projected and fixed-light windows also anodized in a matte gold.

Extrusions interlock to form spandrel panels, are attached simply to mullions.

ARCH

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New Home for Army Service Records



WIRE BY PHELPS DODGE. This modern AG Becord Center buildingt in

This modern AG Record Center building* in St. Louis, Mo., is virtually an oversized glass filing cabinet. Housed here are service records of 20,000,000 persons who have served in the Army or Air Force since the Civil War.

A dependable wiring system was an important part of the building's specifications. That's why Phelps Dodge wire and cable was installed.

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*Joint General Contractors: Fruin-Colnon Contracting Co., St. Louis, Mo., and Peter Kiewit Sons' Co., Omaha, Neb., Electrical Contractor: Mack Electric Co., St. Louis, Mo.



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Brief accounts of noteworthy developments



NEWS IN PLASTICS

The inexhaustible development of plastics, which continues apace, recently brought forward these new materials or new uses of old ones of some significance to building:

▶ Polyformaldehydes, a new class of plastics under development by du Pont for a new textile fiber, will also bring a new range of stability, heat and moisture resistance to other plastic forms including foamed plastics.

▶ Polycarbonates, another new family of plastics being developed by General Electric and others (see Products, p. 167), combines great toughness and stability in a plastic that may replace cast metals and ceramics in structural parts and accessories.

▶ Silicone dyes, developed by Union Carbide, are the first permanent, fullcolor dyes capable of coloring glass fibers and glass cloth.

▶ A method of joining plastics and metals in the form of submicroscopic crystals, discovered by Dr. Michael W. Freeman of Detroit, produces a nyloniron "alloy," for instance, that withstands pressures far in excess of those borne by plain metals.

▶ A new method for bonding vinyl film to steel, developed by US Rubber and in pilot production by US Steel, produces a bond so strong that it withstands rough drawing and forming operations in metal fabrication. Big Steel sees it as a competitor to stainless steel. ▶ A symposium on plastics for roofs in the Building Research Institute Plastic Study Group meeting in St. Louis on Sept. 17 and 18 will have as its chief paper a report on a new roof system designed by Dean Joseph R. Passonneau of Washington University's School of Architecture. It consists of plasticsheet pyramids joined at their apex by steel rods (see picture) in polygon units.

NEWS IN MARBLE

The marble industry, long a loser to more "modern" materials of building, is moving now to catch up:

▶ For interior partitions, the Carthage Marble Corp., Carthage, Mo., and Unistrut Products Co., Chicago, have developed a glass-and-marble panel system which has one feature seldom possessed by marble: framed in conventional metal sections, the thin panels can be put into place in relatively short time. Further, the companies say that the cost of such a wall system, including marble, glass and framing, is comparable to the lowest priced movable partitions.

▶ For broader applications of marble, the Marble Institute of America has called the Armour Research Foundation, Chicago, to undertake a research and development program on marble in building. Armour will concentrate in three areas: 1) attempt to adapt marble slabs to window-wall construction; 2) study various types of reinforcement and backup materials, such as lightweight foamed cements, in order to develop a marble slab unit which can be installed quickly in large wall areas; 3) study the problems of gasketing, pointing, and adhesives.

Later, Armour will investigate protective finishes for marble in order to make available a wider range of exterior marble for building.

FOAMED ALUMINUM

A Wisconsin research organization has developed a process for foaming aluminum, the first of its kind in metals. The new material (photo) weighs only 15 lb. per cu. ft., slightly more than balsa wood. In mass production, it may be competitive in price with lumber. Like wood, the foam can be sawed, nailed, cemented, screwed, or bolted. It has considerable rigidity, according to Dr. Johan Bjorksten, whose company developed the process, but lacks great compressive strength. Says Bjorksten: "If you give it much of a mechanical workout, the bubbles break." Thus, the new foam will be quite difficult to cast, weld or forge. Other problems remain, such as controlling uniformity and improving continuous foaming methods, which indicate that production is some distance away.

The Bjorksten Research Laboratories, Madison, have been at work on the foaming process for about ten years, under Air Force contract. A key step in the development, after trying vainly to foam with air, was the discovery that bubbles could be created by adding a solid gassifier to the molten metal. On cooling, the metal is honeycombed with air cells.

The new foam's future depends now on the ability of the aluminum industry to develop a method of mass production.





and laboratories.

visionproof, inconspicuous

Sight-Tite Door Grilles

to complement contemporary interiors



Handsome and strong Uni-Flo Sight-Tite Door Grilles provide free air movement for offices, dressing rooms, locker rooms, school rooms, and other areas, without unsightly "see-through" gaps. Because of their inherent extra strength, Uni-Flo Sight-Tite Door Grilles withstand scuffing and kicking. Rattleproof construction also contributes to a finer installation. Available with six standard baked enamel and electroplated finishes, or special baked enamel finishes to match any color. With frame, or as core alone, in wide range of sizes to meet your job requirements. See your nearest Barber-Colman Field Office, or write for catalog.

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SPICE, by Hanley Duramic gives the Westminster Building in New York City a quiet dignity with understated vitality and excitement. Created for inventive architecture, Spice, Hanley Duramic 337, is a unique Pearl White with Brown light speck. It adds dramatic simplicity to contemporary and traditional design; it opens new dimensions of color and texture. As with all Hanley Duramics, striking beauty and individuality are burned into the building strength of quality brick. For full information call or write your nearest Hanley office for the architectural file on Hanley Duramic Brick and Tile.



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New LIFE-LINE TOP HINGE "Zytel"**, the wonder nylon resin developed by DuPont, is the bearing surface for the stainless steel pintle this new top hinge. Absolutely will not corrode . . . simply can't wear out always operates smoothly

New LIFE-LINE SLIDE BOLT

The simplicity of the ingenious FIAT slide bolt and keeper-bumper con-forms to the smooth, modern "years ahead" design typical of the entire FIAT compartment line. Easy op-

New LIFE-LINE GRAVITY HINGE Here is a true gravity hinge that has a complete load bearing and cam action entirely in the door ... no springs to replace-no undersized ball bearings to wear out-no periodic adjustments to make-no lubrication required.



Flush glazing . . . multiple hammer . . .

hospital signal system . . . a review of recent developments



NARROW ALUMINUM FRAMING uses roll-in vinyl glazing bead

Featuring flush glazing on all four sides, Kawneer's new mullion and muntin system goes up fast and looks clean. No screws are exposed in the new Narrow Line package, and integral holding channels for glass eliminate the usual jog of extra glass stops. The system is adaptable both as a display window storefront and insulated curtain wall. It is comprised of eight basic sections and seven fittings for mounting glass straight as well as at



angles (to kill reflection) and for holding solid wall panels. Verticals are 134" wide x 41/2" deep. Two members become the door frame with the addition of a weatherproofing wool-pile insert. All members are available in lengths up to 21' and can be precut to size. Installed cost runs about \$3.75 to \$4.50 a sq. ft. glazed and installed. Either putty, synthetic compound, or Kawneer's extruded vinyl roll-in strip can be used to set the glazing. Where large expanses of glass have to buck severe wind pressures, the slim mullions can be reinforced internally with steel rod. Any condensate forming on the fixed members drains down and is shed off the slightly tapered sill.

Manufacturer: Kawneer Co., 1,105 Front St., Niles, Mich.

ELECTRONIC NAILER sinks two dozen nails in one blow

An automation machine with tremendous potential for any prefabrication setup involving hardwood, *EANie* can drive home two dozen 20 penny nails in one thrust. Currently used to speed up pallet production on the West Coast, the hydraulically powered multiple hammer should be useful in manufacturing panels for homes and light commercial buildings, door and window framing and trusses. It can be directed, via an electronic con-



trol panel, to feed different numbers and sizes of nails through slotted banks and pound them in prescribed patterns. The 6 ton machine will handle any screw type, plain or ring shank nail in sizes from 5 to 20 penny. EANie is engineered to control nail penetration in dialed increments of 1/64" and to compensate automatically for thickness variations and warpage up to 34". The machine's nailing and clinching range is 6"-2"; through work clearance, 7'-8". Over-all dimensions of the hustler: 11'-2" wide, 8'-101/4" high and 3'-7" deep. Clincher, hydraulic press, and electric nail selector systems are all included in the \$18,300 price. (A double set of chucks to handle 48 nails at a time instead of 24 costs an additional \$1,200.) Manufacturer: Food Machinery and Chemical Corp., Packing Equipment Div., Riverside, Calif.

THIN SKIN DIFFUSER is efficient acoustical control medium

A parchment-like membrane, Soundsheet Translucent Acoustical Element fulfills two vital roles of a ceiling material. Engineered by noise musketeers Bolt, Beranek & Newman, the thin paper and plastic sheet not only has a soft illumination quality, but also scores well on sound control. It provides balanced sound absorption at low, rumbling frequencies and good absorption at high frequencies. Its noise reduction coefficient when used with continued on p. 164



Products

Agricultural and Technical College of North Carolina. Architects: McMinn, Norfleet and Wicker, Greensboro, N.C.



On this side, it's a window...



on this side, it's a mirror!

Top picture, taken from a semidarkened room, shows *Mirropane®* as a window you can see through to observe activities in the classroom.

Bottom picture, taken *in* the lighted classroom, shows the same window as a mirror. The students see no one, just their own reflections. *Mirropane* has many architectural uses . . . in schools, hospitals, banks, stores . . . anywhere you need to provide a way to observe

without being observed. For complete details, call your L·O·F Glass Distributor or Dealer (listed under "Glass" in phone book yellow pages). Or write to Liberty Mirror Division, Dept. LM-187, Libbey Owens Ford Glass

Company, 608 Madison Avenue, Toledo 3, Ohio.



MIRROPANE® THE SEE-THRU MIRROR IBBEY • OWENS • FORD GLASS COMPANY a 10" cavity depth is .70. As a diffuser, its 48% transmission is about equal to other luminous ceiling materials. Soundsheet is washable. The flat type is installed taut in framing and the corrugated rested in standard H tracks. Stock widths are 35 11/16" and 48". For best acoustical results, the engineers recommend that the cavity above be a voluminous 1'-6" to 3' deep.

Manufacturer: Contres Co., Chelsea 50, Mass.

COOLING TOWER keeps plastic deck in file drawer

Vacuum-formed sheets of lightweight polystyrene make up the deck in Acme Flow Mizer cooling towers. In a 25 T. tower, the plastic pack weighs only 74 lb. compared to 593 lb. for a steel deck. Dead load saving (and thus, roof reinforcement saving, too) in a 100 T. capacity unit is 2,120 lb. In addition to a weight advantage and an easily removable file drawer mounting, the plastic pack also has a maintenance and design edge on other materials. Chemically inert, it cannot rot or rust. Temperature changes do not affect the plastic. As for heat transfer efficiency, small conical projec-



tions which act as air turbulators and a network of spreader ribs are molded as an integral part of each sheet. An ideal air-water mixture for optimum heat transfer is said to be maintained by the unique surface of these plastic sheets. Smaller towers have one removable drawer of plastic sheets held in a basket of galvanized wire; bigger units have four. A 100 T. tower has a total deck wetting surface of 5,000 sq. ft.—an area equal to twothirds that of a baseball infield. To assure the tower's quiet, vibrationless behavior regardless of changes in outside wind direction or velocity, the large blowers are balanced statically and dynamically. Prices on the Acme towers run about the same as earlier models but healthy savings are reported on installation because of the reduced weight.

Manufacturer: Acme Industries, Inc., Jackson, Mich.

GLASS FIBER LINING formed to fit round and square ducts

Preshaped of fine resilient glass fibers to slip snugly inside circular and rectangular ducts, *Insul Coustic* liners need no clips, adhesive or pins. The sagless thermal and



sound blankets are molded in various sizes in thicknesses of $\frac{1}{2}$ ", 1" and 2" in lengths cut to order up to 4'. A smooth inner lining of glass cloth prevents glass tendrils from getting drawn into the air stream and helps eliminate high velocity whistle. K factor of *Insul Coustic* is .25 at 75° mean temperature. Price: about \$1.10 a sq. ft.

Manufacturer: Insul Coustic Corp., 42-23 54th Rd., Maspeth 78, N.Y.

STORE FIXTURES graduate from children's wear

Styled with clean square lines, Serva Sel telescoping garment racks fit the merchandise they display as well as the atmosphere of a modern store. Constructed of welded *continued on p. 166*



When wear creates problems... MET-L-WOOD[®] puts beauty to stay!



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Products

tubing with a simple X or wood panel at each end, the fixtures adjust from 44''to 62'' high to accommodate clothing of different lengths. List prices run from about \$109 for the 4'-long rack with X ends to \$140 for a 5'-long unit with wood



panels. Fixtures with metal mesh or glass tops are about \$13 to \$18 more. The *Serva-Sel* merchandising line also includes gondolas, round racks and floor-to-ceiling stanchions.

Manufacturer: Frederic Weinberg Co., 145 W. Columbia Ave., Philadelphia 22, Pa.

BERMUDA ROOF TILE precast of lightweight concrete

Zonolite has fashioned a rather elegant roofing product out of an earthy material. Lightweight aggregate concrete is used for casting these slim tapered Bermuda



tile that can be applied directly over shallow pitch built-up roofs. Weighing about 5 lb. a sq. ft., the natural stone color tile provide excellent thermal insulation and fire protection. Each tile measures 1' x 1'-8" (including the 2" lap) and is 2" at the thick end. Allowing 2" for lapping, actual coverage is 1'-6". Installation runs about 55 to 65ϕ per sq. ft. including waterproofing membrane. Tile alone costs about \$30 a square. The roof may be painted with any cement coating. *Manufacturer:* Zonolite Co., 135 South LaSalle st., Chicago 3, Ill.

SCAFFOLD BRACKET latches onto concrete formwork

To help keep work moving while foundations are setting up, Symons is marketing a convenient scaffolding bracket that attaches directly to concrete forms. Collapsible and lightweight, the galvanized steel



vertical member (supports 2 × 4 handrail) in clips pivot

arm is secured with standard form hardware. Three 2 x 10's are laid across the horizontal members to provide a wide sturdy work platform. (Recommended safe load is 1,000 lb. per bracket.) The vertical members support a 2 x 4 handrail 3'-6" above the platform. If a rail is not required, the bars can be pivoted down flush with the platform support. Brackets cost \$9.75 apiece.

Manufacturer: Symons Clamp & Mfg. Co., 4,249 Diversey Ave., Chicago 39, Ill.

TOUGH, STABLE PLASTIC

has high tensile and impact strength

Extrudable and moldable, Lexan polycarbonate joins the growing family of resins that come from the electrical field to the open marketplace. Formulated for insulation and thermal and chemical resistance, the new thermoplastic also proved in the laboratory to be as tough as many ceramics and metals. Parts—gears, housings, rollers, small structural channels, hardware—molded experimentally of the compound resist repeated hammer blows and other laboratory impact and tensile



tests. Lexan can be produced in transparent or opaque colors in molding compounds, film and in coatings. The new polycarbonate is still very much in the test program stage, but extrusions and castings of the new resin should show up shortly as small building components, hardware pulls, and varnish.

Developer: General Electric, Chemical & Metallurgical Div., Pittsfield, Mass. continued on p. 168 BIG PROBLEMS of Heating System Design



KEEP COSTS DOWN

The cost of Reznor unit heaters is comparable to or lower than that of other types of equipment of equal heating capacity. And with Reznor, this is the total cost. You don't have to add the costs of extensive piping and valves or duct work, and of radiators or registers. Reznor gas unit heaters produce and distribute heat at the point of need. To install them involves only suspension, venting and utility connections. So installation costs are much lower than those of central heating systems. Lower

equipment cost . . . lower installation cost . . . two reasons why Reznor gas unit heaters can offer substantial savings on heating systems for so many commercial and industrial buildings.

SAVE SPACE

Reznor gas unit heaters are installed up at the ceiling, completely out of the way. When you design for a store or factory, you don't have to allot a single square foot of valuable space for heating equipment . . . and you don't have to keep floor or wall areas clear for radiators or registers.

INSURE FLEXIBILITY

When you specify Reznor gas unit heaters you don't have to choose between a heating plant which is over-sized and over-priced for current requirements and one which may not be adequate for future needs. With Reznor unit heating, when that new wing is added, additional heaters are installed. It's as simple as that. And in the case of internal remodeling, it's very easy and inexpensive to relocate the existing heaters.





CAST ALUMINUM QUALITY

The gleaming satin finish of these mcPhilben directional units will blend with the interior door and window frames of the handsome new Philadelphia Sheraton Hotel. Invisible hardware permits flush installation so necessary to streamlined modern decorating. Solid cast aluminum construction assures permanent maintenance-free operation. Hinged access doors provide for easy relamping.

Most mcPhilben directionals are available in white, red and green color combinations with a range of lettering sizes to meet all fire code regulations. Auxiliary lampholders suitable for proper circuiting of emergency lighting systems may be specified.

Ask your mcPhilben representative for individual specification sheets. Consult Sweet's Architectural File $\frac{31a}{Mc}$ or write to mcPhilben Lighting Co., 1329 Willoughby Avenue, Brooklyn 37, N.Y.



Philadelphia Sheraton Hotel Another Outstanding Building Featuring mcPhilben Lighting Architects: Perry, Shaw, Hepburn & Dean; Electrical Contractors: Keystone Engineering Corp. Engineers: Slocum & Fuller; Distributor: Standard Wholesale Supply Corp.

SILICON ALUMINUM takes on bright anodize coat

Buildings may soon be treated to some high shines with Alcoa's new magnesiumsilicon aluminum. When anodized, in color or clear, the new extrusion alloy #x6463becomes mirror radiant. First use of the bright new metal very likely will be on appliances and cars, with architecture

Products



coming in a decorous second. Some possibilities: stair rails (which now get halfbright from handling), framing, ornamental trim and grilles. Structurally the alloy has mechanical properties similar to architectural alloy #6063 and can be extruded to the same tolerances. Its price also is about the same.

Manufacturer: Aluminum Co. of America, 796 Alcoa Building, Pittsburgh 19, Pa.

INVISIBLE GRIPPERS hold wood paneling from behind

The nuisance of countersinking nailheads and filling in holes in fancy hardwood wall paneling is eliminated with Aetna's *Spider Fasteners*. Before the paneling is put up,



these pronged rings are secured to the back at intervals of 18" on center in lines matching the spacing of the furring strips. The little round grippers each have a resin coated nail set through the center. A few blows of a padded hammer on the face of the wall paneling seats the nails firmly in the furring without a single visible nailhead on the surface. Spider Fasteners sell for \$3.50 per box of 144. Manufacturer: Aetna Plywood & Veneer Co., 1733 North Elston Ave., Chicago 22, Ill.

PORTABLE VANDAL ALARM uses radar to spot intruders

A Radar Eye alarm screams a warning and turns on floodlights if anything moves within a 25' radius of its location. Detecting intruders by their movement, the portable device can be set up behind a nonmetallic wall or in the center of a 2000 sq. ft. area. Its wiring is tamperproof and anyone approaching the unit will set off the alarm, which keeps signalling for 1 min. after movement stops, and



then resets automatically. Operating on 115 v. A.C., the compact unit uses as little current as a 60 w. bulb. Cost runs about \$400; with an added fire detection circuit and alarm, about \$500. The complete unit is $17\frac{4}{7}$ long, $10\frac{7}{8}$ " deep, and $25\frac{3}{4}$ " high including the antenna.

Manufacturer: Radar Eye Corp., North St., Natick, Mass.

BASEBOARD RACEWAY carries all building service lines

Power, light, telephone and intercommunication lines all can be installed in one *Twinduct* surface raceway. Designed to carry both high and low potential conductors, the baseboard system is actually two separate feeder ducts faced with a *continued on p. 170*



"REPEAT performance" because of its <u>original</u> PERFORMANCE!

CLOW (threaded) Cast Iron Pipe can be...

> The pre-war Chicago Wesley Memorial Hospital (shaded part of photograph below) was Clow-equipped. Installation proved fast and economical. Through the years, Clow I.P.S. (threaded) Cast Iron Pipe has cost Wesley nothing for upkeep, nothing for replacement.

> Naturally, when the \$5,500,000 fifteen-story addition was planned, Clow was called on again for all downspouts, vents and waste lines 3 inches and larger. The architects, engineers and

contractors all know that Clow I.P.S. (threaded) Cast Iron Pipe is corrosion-proof; lasts the life of the building; is quickly, economically installed; *never* needs replacement; requires *no* maintenance.

Clow I.P.S. (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8, and 10'' sizes in 18' random lengths.

*Iron Pipe Size O. D.



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single screw-on flat cover. A bridge device holds the cables securely during wiring, and with the cover off, access to any portion is completely unobstructed. Corner sections and covers with outlet devices up to 20 amp. are available as part of the system. Especially practical for rejuvenation jobs on older buildings, the 4¼" high x 1%" raceway can be mounted on the wall surface or recessed flush. *Twinduct* is made in 10' lengths with ½" and $\frac{3}{4}$ " knockouts and mounting holes 15" on center. Finish is satin gray enamel. Price runs about \$2.10 to \$2.40 a lin. ft., plus installation.

Products

Manufacturer: National Electric Products, 2 Gateway Center, Pittsburgh 22, Pa.

PATIENT CALL SYSTEM signals needs at nurses' station

Engineered by the Rev. George H. Mc-Lain, a compassionate Peoria pastor with an electrical background on auto ignition systems, the *Hosp-i-tell* annunciator system considerably cuts down the time nurses spend walking back and forth to check patients' signals. In this silent inter-



com, a pushbutton unit at each patient's bedside is labeled with seven specific items. A central flashing board at the nurses' station not only indicates the room number calling but also whether the pa-



tient is in pain, wants a drink, orderly, nurse's aide or other hospital service. Ten rooms can be run to a central board; bedside units are portable and may be plugged into prewired outlets. Cost runs about \$67.50 a bed.

Manufacturer: Multi Signal Corp., First National Bank building, Peoria, Ill.

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Working on the absorption refrigeration principle, the *Sun Valley* packaged air conditioner uses oil as its power source in both summer and winter. Manufactured by Servel Inc., the new burner was adapted to summer oil firing by two affiliates of Standard Oil Co. of New Jersey. Giber & Barker Mfg. Co. developed a special air atomizing burner that operates at the low rate needed in the cooling phase and Esso Research & Engineering Co. ran laboratory and field studies. In



operation, the Sun Valley's burner heat causes a solution of lithium bromide and water in the generator to boil at low temperatures, brings it up to the highest point in the system and then lets it return by gravity and different pressure levels. Flow is controlled by an arrangement of traps. By closing off the water through a flick of a switch, the same coil that acts as condenser in summer becomes a heating surface over which air passes and is warmed on its way out to the ducts. The compact unit takes up 10.4 sq. ft. of floor area. It has a 96,000 BTU heating capacity and 3 T. cooling. (About 1/2 gal. of fuel is consumed an hour during cooling.) Price, including installation and ductwork is around \$2,100-a little higher than Servel's gas-fired conditioner.

Manufacturer: Servel, Inc., Evansville, Ind.

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Manufacturer: Stay Tite Products Co., Inc., Cleveland 4, Ohio



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URBAN LAND USE PLANNING. By F. Stuart Chapin, Jr. Published by Harper & Brothers, 49 E. 33rd St., New York 16, N.Y. 397 pp. 7" x 10". Illus.

Though F. Stuart Chapin Jr. starts with an all-embracing title, he quickly shortens his reach. Urban Land Use Planning passes over much of the legal and administrative side of planning, confines itself mainly to a run-through of existing theory and a summary of known techniques for analyzing land use and measuring trends. Within these limits, it succeeds admirably. Though the book is dogged by academic jargon, it remains a highly skillful pulltogether and a useful guide for any planning practitioner.

ACOUSTICS FOR THE ARCHITECT.

By Harold Burris-Meyer and Lewis S. Goodfriend. Published by Reinhold Publishing Corp., 430 Park Ave., New York, N.Y. 122 pp. Illus. \$10

Acoustics is perhaps the least understood field in all architecture. This is partly due to the contradictory nature of acoustics itself: There is more than enough basic science in it to baffle the architect; there is enough art required in its application to trouble the acoustical scientist.

During the past few years, however, the barrier which separates the science of acoustics from the art of acoustics-application in architecture has begun to tumble. Splendid buildings, monuments both architecturally and acoustically (such as the Kresge Auditorium at Massachusetts Institute of Technology) express this new mutual understanding.

A book on architectural acoustics, provided it is not written by an acoustical scientist who insists upon spelling out each painful detail of theory, can do quite a lot to bring these fields still closer together. Authors Harold Burris-Meyer and Lewis S. Goodfriend have done just this in their well-written, well-illustrated book. It will not teach any architect how to design a Kresge Auditorium without con-



Sound waves from horn projected through an acoustic lens.

sultation from an acoustical scientist. Indeed, it cautions him not to try. But it does succeed in its purpose, which is to enable the architect to do the acoustical planning on the straightforward projects —such as schoolrooms and offices. Where the problems become more complex, or where acoustics is the determining consideration in design, he should go to the acoustical scientist for help. But even in such instances, a better understanding of the principles of acoustics will help the architect in his give-and-take with the acoustics consultant.

SELECTED WRITINGS OF PAUL VAL-ERY. Published by New Directions, 333 Sixth

Ave., New York, N. Y. 256 pp. 51/2" x 81/2" \$3.50

Architects can share in the general pleasure that more and more of Valéry's writings are being made available in English. For critics have been proclaiming that the French poet-philosopher (1871-1945) had more significant things to say about architecture than anyone since Aristotle. Now members of the profession can find out for themselves.

They will find, among other things, that this is the voice of humanism. There is the classic willingness to judge everything by its applicability to human scale and form. There is the immutable attitude toward time ("What is important to me above all else," remarks one of the dialoguists, "is to obtain from that which is going to be that it should with all the vigor of its newness satisfy the reasonable requirements of that which has been.") And there is the sublime confidence in man's ability to reason together.

But unfortunately readers of this excerpted translation of Valéry's essay "Eupalinos, or The Architect" will miss much that he had to say on the subject of architecture. Perhaps the most important piece they will miss is Valéry's analysis of the way form (or geometry) can be expressed. He said we can only try to do it through a combination of *reason*, *numbers* and *words*.

This deserves not only translation but also a place somewhere above the "think" sign in the drafting room.

THE AIA'S FIRST HUNDRED YEARS.

By Henry H. Saylor, FAIA. Part II. Published by The American Institute of Architects, 1735 New York Ave., N.W., Washington 6, D.C. 184 pp. 6" x 8". IIIus. \$4

Henry Saylor has been observing AIA affairs long enough to write a fairly authoritative history of the Institute. But *continued on p. 180*



In one brilliant stroke, designers Kipp Stewart and Stewart MacDougall abolish the "period" limitations in your furniture requirements. The *Holiday* concept, in colorful metal and plastics, makes available the largest, most economical selection of its kind for dining, seating, etc. Professional discounts.

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that's the trouble—Saylor's account is too authoritative. It leaves out most of the rages and squabbles that have made the very existence of the Institute a kind of running miracle (e.g., the vigorous but unsuccessful attempt of the young Turks in 1949 to elect William W. Wurster president). This varnishing was done, presumably, in an effort to give long-term respectability to a venerable body. But the picture would have been more truly impressive if it had reported that the Institute, having had its share of youthful tiffs, is now in a position of sufficient strength to fulfill its promised destiny.

RECORD HOUSES OF 1957. Reprinted from Mid-May special issue of "Architectural Record." Published by F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 286 pp. 834" x 111/2" Illus. \$2.95

The 25 "best contemporary, middlepriced" architect-designed houses, as brought together in these pages, make a fairly impressive collection. Although one suspects that the "middle-priced" criterion was occasionally forgotten, and although some of the houses don't seem all that new, the editors have done a praiseworthy job of focusing on their objective. The introductory article by "taste-maker" Russell Lynes is, however, somewhat disappointing: in trying to boil down a considerable number of meaty points into the space allowed, Lynes lost a good deal of his well-developed flavor.

TECHNICAL PUBLICATIONS

A selection of new handbooks, textbooks, technical reports, brochures and commercial leaflets, noteworthy for their information content or pictorial format or both.

THE TREES ON YOUR STREET by Desmond Muirhead. Published by Portland General Electric Co., Rural Services, 621 S. W. Alder St., Portland, Ore. 36 pp. Color illus. \$2

In this handsome and unusual brechure, well illustrated in color, a leading landscape architect and city planner explains the principles of tree planning and planting on residential streets, how to achieve formal and informal effects, select species and care for them once they are in. While most of the species illustrated are indigenous to the Northwest, many grow in other regions and the basic principles of street planting will apply anywhere.

A NEW WORLD OF PLAY: Play Sculptures. Published by Play Sculptures, Inc., 5 University Pl., New York 3, N.Y. 31 pp. Illus.

A well-designed catalogue showing an imaginative new line of playground equipment, which includes free-form concrete structures in the shapes of turtles, tunnel bridges, stalactites, stepping stones, beehives, frigates, abstract trees, hexapods, spirals and helixes (with chutes), fantastic houses, metalgrid climbing arches, playwebs and tepees. Should charm even juvenile delinquents.

DESIGN FOR LABORATORY LIVING: In Colleges and Universities. Published by Standard Electric Time, Co., 239 Logan St., Springfield 2, Mass. 120 pp. Illus.

This exhaustive catalogue and design book describes Flexlab voltage distribution systems in over 100 college laboratories, also includes information on modern trends in laboratory design in lighting, layout, machinery, etc. Free only to school architects and engineers, college administrators.

GRAY GLASS. Published by Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa. 11 pp.

A technical memorandum on this company's new Solargray Plate for architectural uses, as well as on its older Pennvernon Gray Heavy Sheet.



180



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Guarantee Mutual, Omaha, Nebraska. Arch.: Leo A. Daly, Arch. & Engr. Contr.: Peter Kiewit Sons Co.



Mutual Benefit Life Insurance Co., Newark, N. J. Arch.: Eggers & Higgins, F.A.I.A., Newark Gen. Contr.: Geo. A. Fuller, New York City



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Excerpts

What other people are saying

The social architect

One of the distinguished speakers at Harvard's Urban Design Conference in April was Dutch Architect J. B. Bakema. He had this to say about the architect in democratic society:

The fact is that the architect is losing more and more his contact with the private men for whom he has to build and is more and more confronted with anonymous institutions that give him employment. Such institutions, commissions, research centers, formulate programs for regions, towns, housing-schemes and in these programs structures are already defined. In the definition of these structures the architect has to participate in order to avoid his work being only of decorative value.

The modern movement has to penetrate to the roots of democracy where it will meet the resistance of politicians, bureaucrats and other kinds of built-in specialists. These are the new barriers that must be surmounted, in the process of developing man's full awareness of life. This is the next step.

The condemned title

In trying to shape the future, planners sometimes overlook the rights of present-day citizens. George A. Cram, attorney from Pontiac, Mich., took a lawyer's view of the danger in the Michigan State Bar Journal

The whole business of master planning for future public uses, as it now is being used and abused, just does not make sense. It creates clouds upon real estate titles, and seems unconstitutional under both state and federal constitutions. If we and our property are affected thereby, we are compelled to go to court to establish our rights.

We have found that our Supreme Court has decided property cannot be condemned for public uses, looking indefinitely into the future; and has decided that property cannot be zoned into the future measured by speculative standards. From other decisions we have learned that the enforcement of zoning ordinances cannot be used as a "subterfuge in place of condemnation." All these things being true, it is axiomatic that master planning for future public uses should never be allowed to be used as the same kind of a subterfuge. Master planners and municipal authorities must be thoroughly apprized of these situations.

The community highway

The harvest from last spring's meeting of the American Society of Planning Officials is still being reaped. Vintage wisdom can be found in the words delivered there by John T. Howard, associate professor of city planning at M.I.T.

I submit that the purpose of highways is not-or should not be-the carrying of traffic. That is the function of highways. The purpose is to serve the community. This is true not only for local streets and roads, but also for state and interstate highways within metropolitan limits, where 80 to 90% of their traffic has both origin and destination within the metropolitan area. If a highway is so designed and built that it produces a pattern of land development and population distribution that worsens the livability and efficiency of a metropolitan area rather than bettering it, that highway is a disservice to the community-even if it carries traffic to capacity, and all the traffic seems to want to go where it is carried.

Perhaps it is too much to ask that the Federal Highway program impose conditions that would have delayed highway building until unready communities could think their planning through. But it is not too much to ask that a policy be set that requires attention to city and metropolitan planning where it has been done and that requires at least the sharing of ideas through review by other local planning agencies.

The highway engineers into whose hands this program has been delivered have assumed a terrible responsibility, far beyond what many of them realize. They are, by and large, skilled and competentperhaps more so in their field than we planners are in ours. But this program forces them to make decisions that have impacts far outside their field. It does not belittle them to say that, just as war is too important to leave to the generals, so highways are too important to leave to the highway engineers.

Here lies the hope in the present situation: that the state and federal engineers, even though they are in a hurry, and even though the law does not require, will pause and listen to what metropolitan and local planners and planning agencies have to say; and, where it is not too late, that they will modify their plans if they recognize the soundness and wisdom of what they hear. In this way we can expect highways that truly serve a community purpose.

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Above: New Coney Island General Hospital in Brooklyn, N. Y. has some 226,000 sq. ft. of SIMPLEX ceilings, mostly corridor. Architects: Andrew J. Thomas & Katz, Waisman, Blumkrantz, Architects: Stein, Weber.

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continued on p. 186

The new hypocrites

David E. Lilienthal, former boss of the TVA and now board chairman of Development and Resources Corp., has seen the relationship between business and government from both sides of the fence. At the June conference of the American Planning and Civic Association, he gave a frank description of the two forces Business, so to speak, has invaded the public domain, and—with notable exceptions—it is a far cry from the kind of special interest invasion that called forth the trust-busting and other reform movements earlier in this century. This new concept of the public role of the businessman has been the result of a steadily maturing growth in this country—just as the new concept of the role of government has gradually unfolded and has become widely accepted. I have had the opportunity to see these concepts from both the public





and private standpoint. I have been intrigued to discover that the basic managerial ideas and principles that seemed sound and workable to me when I was in public service are substantially the ones that guide the private company which I now head. And I wonder whether this does not give some substance to a proposition or statement of faith: that productive, creative governmental activities, and productive and well-conducted private business need to be, and increasingly in fact are, guided by some of the same underlying principles. To me, there seems to be little doubt that cooperation between public and private interests on the basis of these principles leads to results in regional development which are both good government and good business.

I am convinced that the results depend primarily on the initiative of local people who are aware of the possibilities for development of the resources of their own locality. There is no substitute for this. Certainly, from my own experience in the Tennessee Valley, I can testify to this. By no stretch of the imagination could anyone attribute the growth of a rich and diversified agriculture in that valley solely to the work of TVA and other governmental units and agencies. The farmers took over right at the start; they carried the program from the testing stations and the demonstration projects out onto the land itself. They developed it; they are the ones who are making it work. It has been the same story in urban and business activity.

Now, I do not want to paint too bright a picture. There certainly are plenty of people in responsible positions in this country, in both private and public life, who are holding fast to the old, narrow ways of doing things—or of not doing things.

For example, take the wholesome concept of partnership between government and private agencies, or between federal and local government. This, by some, is perverted to mean: Let somebody else do it. Or: Let government take all the risk and private business take the profits. Or: Let's don't do anything at all.

The fact is that many of the reactionaries of yesterday have become the hypocrites of today.

Program for downtown

For some time James W. Rouse, Baltimore real estate developer, has been thinking through the problems of downtown areas. Here's an excerpt from his recent thoughts, taken from Urban Land Magazine

The fight for downtown has been a panicky, piecemeal defense consisting largely of tricks, gimmicks and promotion ideas, plus a few parking garages and onecontinued on p. 188



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Excerpts

way streets. There has been little study of the basic problems and still less in the way of broad development programs designed to make downtown into the strong "heart of the city" which it ought to be.

The natural advantages of downtown are enormous, but the simple fact is that downtown is obsolete. It is the core of the worn-out inner city. We have failed to apply creative vitality to bringing the cities in which we live up-to-date with our knowledge and our hopes of how to live. Downtown is ugly, inconvenient, confused. Programs for more public transit, more parking garages, more dollar days and downtown promotions simply fail to deal with the facts. They are part of a losing battle for they fail to cure the deep-seated obsolescence that renders unfit downtown and the inner city which surrounds it.

The problem of downtown is to make itself what it ought to be instead of trying to make people like it as it is. Here's how:

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the clatter and confusion of downtown to drive out of the central city many of the uses which most logically should remain and expand there.

2. Consider the adjacent area: around the central business district is now largely slums and blight.

3. Work with the automobile: it is not enough to create a few boulevards and one-way streets. Major expressways must be ripped through to the central core and these expressways properly planned.

4. Plan with appeal: the plan must be big, bold and defendable. It must appeal to the people as the kind of place they would like to see. It is little plans that are hardest to sell and most difficult to execute.

5. Create new powers: in most cities new powers will be required to carry out the plan. We have found it necessary progressively to enlarge the powers of municipal government to make our cities fit places in which to live.

6. Activate leadership: A bold and effective downtown plan will require the vigors and dedicated leadership of merchants, bankers and the entire business community. It will require a sympathetic attitude in City Hall. Downtown surely has a future—an exciting rebirth into a joyous and fitting centre for our American cities.

Why the exurbanite?

In a recent issue of the American Institute of Planners' Journal, Catherine Bauer, US housing and city expert, faced up to the question: Do Americans Hate Cities?

Visiting firemen from other countries finally decide, as a general rule, that we simply *dislike* cities. They observe that we spend most of our time and resources trying to get away from them, and just do not take them seriously by comparison with the houses, gardens, automobiles, TV sets, factories, supermarkets, schools, freeways and whatnot which we apparently strew around the countryside. And we give no thought for an urban community structure to contain these facilities and show very little real concern for the older centers except in terms of property values and traffic paralysis.

The judgment that we hate or scorn cities is, moreover, no casual criticism on the part of people who still look on urban communities as the fountainhead, symbol and measure of civilization itself. Visitors from poor and backward countries sometimes feel uneasily that we are denying primary values that they are struggling for. Continental Europeans are likely to blame the "Anglo-Saxon" tradition, with its individualism on the one hand and its sentiment for greenery on the other, which in their opinion never did or could produce real urbanity or a cosmopolitan culture.

Of course, we must not take all this carping too seriously. The foreigners' view is often hopelessly biased from the start. *continued on p. 190*



Rittenhouse Apartments, Washington, D.C. Architects: Berla & Abel. Contractors: Morris Pollin & Sons. Photograph by Robert C. Lautman.

Award-winning apartment building designed with LUPTON aluminum windows

Here is another major apartment building that shows the widespread use by architects of LUPTON aluminum residential windows.

The Rittenhouse Apartments, Washington, D.C., recently received one of the Washington Board of Trade's Biennial Awards in acknowledgment of its part in the advance of modern architecture in the capital city. Selected by a jury of architects, this impressive project makes effective use of standard LUPTON Aluminum Residence Casement Windows.

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These standard LUPTON aluminum residence casements add a sleek modern finish to Rittenhouse Apartments besides providing maximum visibility and weathertight construction.



After all, our metropolitan environment is for us, not them, and if our values and habits are different, then what suits us will be different too. Perhaps, then, we are shaping an entirely new kind of urban society, which only puzzles outsiders because they are judging it by outworn criteria. Even the most urbane and orderly European cities are hardly the finer answer. And if they suddenly had to cope with the pace or change and development we have had in this country, I suspect the results might be quite similar. But it seems to me, as a strictly lay observer of the metropolitan milieu and the people whose hopes and fears, likes and dislikes, are shaping it, that there are two related factors evident in the social psyche of many of us which may provide a clue to our difficulties and which are, essentially, "anti-city."

One is a kind of escapism, a desire to get away from it all, neurotic in the sense that it may be quite irrational both in its goals and in its methods. It is one thing for an urban worker to want a house and

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If the escapist neurosis explains some of our metropolitan difficulties and weaknesses, there is a related attitude which is propably more pervasive, and perhaps even more inimical to the recapture of traditional urban values and virtues. This is a kind of emotional compulsion to get away from people who are at all unlike oneself.

In all cities everywhere, there has always undoubtedly been some tendency for birds of a feather to flock together. And unless it becomes too rigidly institutionalized this is a perfectly natural and healthy practice. In this country today, however, we seem to be promoting a degree of enforced social segregation—by dwelling-type, by income, by veteran status, by age-group and by race—which might suit a neofeudal society but seems somewhat inappropriate here.

In large part this has come about through exterior forces, it is true. Largescale building technology, local zoning practices, and bureaucratic federal housing policies all tend to produce highly standardized homes over wide areas, with their occupants similarly standardized, unless there is a conscious effort to introduce more variation.

The extent to which this trend has been blindly or wilfully imposed, rather than shaped by inner conviction and desire, is difficult to determine. But there has certainly been no effective effort to reverse it as yet. And there is considerable evidence of real distaste for any contact with "different" sorts of people, and of a strong emotional drive to escape from the social diversity that traditionally provided the stimulus for a tolerant urbanity.

There will always be exurbanites in some form: they add to the diversity. There will always be enclaves fearing intrusion into their ritual conformities. For a long time there will be some concentrations of underprivileged people. But in future the *dominant* pattern may be less exclusively determined by the escapists. If there are enough people who would prefer a truly urban way of life, they will get it. And as a reward they will also get greater economy and convenience.

Do we hate cities and can we get along without them? There is no simple answer. As for our foreign critics, I think we may never convince them that we value "urbanity" in its traditional physical forms. But we may yet learn how to create urban communities that we really like ourselves. And with another wave of metropolitan expansion to come, we still have a chance. *continued on p. 192*

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Up from the pavements

In March of this year the World Federation for Mental Health held a panel discussion on mental health aspects of urbanization. The eminent Anthropologist Margaret Mead was one of the panelists. Her comments on "grass roots" in the city bear repeating

Our cities are now a traumatizing device, which, for most people, teach them how not to belong to a community, how not to have any friends, how not to be responsible, how to pull down your windows when you hear somebody shriek on the street instead of dashing out to rescue the person who's being murdered. There are many parts of New York City where a shriek on the street is a signal for everybody to close his window at once. This is a frightful thing for people to be learning, and we end up with a kind of apathy, where people have learned not to be citizens, not to be neighbors, not to be

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The ALUMILINE CORPORATION Dept. F, Dunnell Lane, Pawtucket, R. I. kin, not to be responsible and not to feel that they can grasp the whole pattern of living in the modern world and where they cease to have any indentity except their own name attached to a few dates as they move around.

We must consider the city in its implications for bringing up individuals for change in a changing world. They mustn't see houses that are going to stay just like that forever for this set of people. They mustn't see streets that were built for one sort of world and have never been adapted to another. We should begin to have the kind of city planning that has large reserves of strength and flexibility. In it you could see small families and large families exchange places or move the wall around in some way. Neighborhoods would shift and change and playgrounds give place to parks for the old, if that happened to be the necessary change. The city itself would then become a model for confident ability to move, so the people who grow up in the cities could move to another city, to another country, to the country, without getting miserable and sick because there isn't any downtown. For people can live in any part of the world, and if necessary, on a satellite.

"Why isn't there a 'grass-roots' movement in the cities?" Because we have modeled the city on grass-roots concepts. We have had almost a century of idealistic, sentimental talk about the country and of looking at cities as if they weren't really as nice as the country. New Yorkers are fond of a nice song called "The Sidewalks of New York," but they never have had a word for a "pavingstone" movement, and the most important thing about a city is to have it paved and not full of mud with grass in it.

We actually need new models of new kinds of community participation. These people that make friends on a stairway, they're acting as though they live in a tiny village. They don't know how to move around or find people that are like them or have the same interest or the same I.Q. They're stuck on a stairway, the way they might be stuck on a reef. And because we haven't any standard except for the upper classes in certain periods of history, we've had patterns of city living that only partly utilized the city instead of the country. If we start now asking how you can have community participation in the city that is different from grass roots, we'll get a lot further.

Social scientists know a little about urban plans and the habits of people in one culture as compared to another. But by and large we haven't been asked to participate in the visions of our new cities. I personally regard any slight opening in city planning as a magnificent opportunity: if the planners concerned with the physcial setup of a city really want the social scientists to help, we have the techniques; we have a lot of people trained to do the things that are necessary.

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CITIZENS MAKE CITIES cont'd. from p. 147

the impact of urbanization, our people must change, too. The present urban revolution anticipates an accompanying intellectual revolution on the part of the people. Our townsmen must learn to live in the context of and with the image of a new city. They must learn to think with this new image which is shaping the mind and spirit of America.

Obsolete governments

The limited concepts of the village, the town, and the county. which we have been maintaining for centuries, are obsolete. The relationship of the state to its great cities is being re-examined in the light of the growing political and economic power of the metropolitan region. Some American cities have larger populations than some of the influential nations of the world, and their budgets are many times as large. The American city today is a new kind of city-state. And it is giving rise to a new civic civilization.

Such rural regions as Arkansas, Virginia, Georgia, and even New Mexico are in transition from ranch and plantation communities, villages, and towns, to vast urban complexes. The highways and turnpikes have interlaced a civic system. The automobile and the airplane have obliterated state lines. Even the concept of the state may become obsolete in our growing Interurbia. A civic system is covering the whole country.

The emergence of this urban America and the extension of this civic system over vast areas of the country destroy established institutions and create new ones in their place.

One of the major revolutions is in the nature of the local government. States and countries and cities and towns and villages are now forced to think in terms of a civic federation. There is a place for a new set of "Federalist Papers," for metropolitan government. There is a reason for civic constitutional conventions. The assertion should be made that many, perhaps most, of our urban problems can never be solved within the framework of our present local governments.

There have been golden ages of the city. The ancient "polis" of the Mediterranean area was the inspiration of our own civic heritage. The cities of medieval Italy refined the inherited institutions in bitter civil struggles between Guelph and Ghibelline. It was English townsmen who won the right to representation in government. The towns of the Dutch burghers achieved a nobility in domestic living rarely attained since. And, in some ways, our American cities were the heirs of all this civic wisdom from the past.

Cities of the past have reflected the virtues of their citizens. Athenian merchants produced the dramas of Aeschylus and Sophocles, which honored the city and taught its citizens.

The cities of Boston, of New York, of Philadelphia, and of Baltimore were havens of refuge for the emigrants from Europe who brought this rich civic heritage to this country. The advent of these immigrants should have ushered in a great age of the city of these shores.

But our civic heritage has been neglected. We come to this new age of the city totally unprepared for it. The civic tradition which might have been ours is lost to our use. So we must be about the business of the restoration of the civic arts.

It is not easy to bring about a renaissance in the civic tradition when the very idea of the city is being violated. In the breakup of our urban forms the idea of a city has lost its meaning. The unity and coherence of the ancient and medieval cities are gone. The city has no structure today. It has no focus. The city is in motion. Incomplete, it is a series of meaningless and unrelated parts. There are no civic institutions comprehensive enough to integrate the sprawling urban complex of our time.

This shattering of urban forms leaves us bewildered There can be no civic pride with all coherence gone from the city—and in its place the disorderly and shapeless tangle of ugly building and streets stricken with paralysis. Urbanity is a lost virtue in an age that accents suburbanity. Civilities disappear in the rush of a city life which has lost its design. Civic wisdom is fragmentary and incomplete and we have lost the art of making the city work for man's good. Civic patriotism disappears. Civic statesmen who are needed to lead the renaissance desert the city and flee to the suburbs in despair. Civic leadership is rejected because there is no tradition.

Needed: the civic humanist

The redemption of civic leadership is in the hands of the civic humanist. The civic humanist reads cities as texts which contain and transmit the civic heritage. He understands those values that help to build cities on the human scale. He understands the history of the city. He speaks an urban language. His is an urban mind. His documents are cities themselves. They are the classics of civic history which must be searched for the wisdom to be used in this new age of the city. The civic humanist uses the past in order to understand the present and to plan for the future.

As the civic humanist studies the cities of the past, he does not fear what he sees as he looks at American cities of today. He understands these cities of the present. He seeks out the history of his city and in the American classics of civic history he finds a wisdom, too. He will not seek to flee the city, knowing full well that there is no escape from the urban revolution which has overtaken us. Rather, he will use the new age of the city to build a better civic civilization upon the foundations of the heritage which he has redeemed.

Thus, the regeneration of our cities is the work of the men who possess the civic attributes. Here is the true "townsman." Here is the civic humanist who places the humanities at the service of his city. Here is the man who can help in the transformation of Little Rock, of Memphis, and of New York.



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turning it as expenditure, can use the powers of decision that accompany powers of money disbursal. The hope that federal means will succeed, where the means available to cities and states cannot, is implied in current bills for establishment of a cabinet rank Department of Urban Affairs and proposals for a White House conference on urban problems.

The federal government does already have an enormous influence on metropolitan land planning. For instance, Federal Housing Administration and Public Housing Administration policies, between them, have probably had more to do with the progressive ghettoizing of core cities, the class segregation of the suburbs and the form of metropolitan scatteration, than any other factors. These results have not been deliberate however; the two agencies have been unable to formulate policies that take cognizance of each other, let alone take cognizance of the metropolitan situation as a whole. The great federal highway program now getting started will influence metropolitan land use for good or ill more than all the metropolitan land planning ventures of our time put together, but there is no sign that this is understood by those who wrote the legislation or those who will administer it (AF, July '57). While these great forces blunder about blindly, doing "planning" on true metropolitan area scale, the Urban Renewal Administration applies its little poultices and encourages municipalities to produce plans-on a municipal scale.

Most proposals for a Department of Urban Affairs recognize this unhappy situation; they list among the Department's proposed functions investigation of the impact of federal programs on cities and coordination of such programs.

Is such coordination actually possible? With all its money and authority, can the federal government succeed in producing rationality where the cities and states have not? First, there is the difficulty of federal programs coordinating among themselves. "No community ever approaches its government problem *in toto*, for it never exists that way historically," notes Sociologist Albert J. Reiss Jr. This is spectacularly true of the federal government, as witness the current misidentification of urban rebuilding with the depression-fighting theory out of which it was born, or the inability of the HHFA coordinator to coordinate the historically separate FHA and PHA.

Second, there is the difficulty of coordinating federal programs with the local situation. "Planning by its nature looks to the coordination and integration of governmental functions," points out Lawyer Jerome J. Shestack. "There is an over-all and continuing aspect to planning that requires involvement of all the community resources." At the most optimistic, even assuming that the federal government could miraculously coordinate its own parts with respect to their impacts on the metropolis, it is impossible to imagine Washington filling a planning role satisfactorily for the metropolitan area. "All of the community resources" means many with which the federal government cannot possibly be concerned or be aware of. On the contrary, if and when we do get effective metropolitan governments, one of their most pressing tasks will certainly be to bend, educate and influence federal aid and controls as they apply to specific metropolitan areas.

The federated city

Most students of metropolitan government are now agreed that the most logical aim is the third "possible approach": some form of federation of governmental units within a metropolitan area, with the units surrendering some of their sovereignty to a metropolitan government.

This is by no means a "simple" approach. There is nothing simple about such relationships, as the entire history of our federal-state partnership attests. The only metropolitan federation in operation thus far in North America—the federation of Toronto and 12 suburban satellites (all in one county, with some planning powers overlapping two other counties)—is a little too simple, in fact. So much power resides in the metropolitan council, and especially in its chairman, that, for US consumption, it embodies many of the objections that apply to consolidation.

The nearest approach in the US is the Miami plan (again involving one core city and its satellites in one county) which the voters have just accepted. The Miami scheme does not provide for unified planning as such, but it does give unified powers over slum clearance, traffic and parking and drainage, for instance —activities which in practice determine many great questions of land planning policy.

Powers of this type are probably the great opportunity for achieving metropolitan government. For they are the handle, several authorities believe, by which we can best grasp hold of reasonably unified planning and administration.

Jones suggests, for example, that the way out of the impasse of having single-minded authorities or special districts is to form their governing boards from elected officials of the municipalities and counties concerned, as the San Francisco Bay Area Air Pollution Control Board is organized. The next step would be for the same local officials to serve on new special boards as they are created. This collection of boards with the same elected officials on them could evolve into a metropolitan district with many general powers of government, an integrated view of the many different but related problems and, eventually, a popularly elected chief executive.

Haar suggests that the state is the logical instrument of federation—or at least federated planning—because its role is already so large in many matters affecting metropolitan and regional development: flood control, highways, schools, for example. The state judiciaries, he argues, are already "plunged into the vacuum of [planning] power," with intercommunity disputes about land



METROPOLITAN GOV'T.

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use increasingly thrust on them.

Fagin suggests that a practical first step would be to abandon the idea of the floating regional planning board, but by no means abandon metropolitan and regional planning. Instead the regional planning staff should be attached as a working instrument to a regional agency which has decision-making powers over key aspects of regional and metropolitan development. This could be a federated metropolitan council or it could be a regional agency of the state. To govern properly, many states have already decentralized the administration of parks, roads and health, into districts. Such districts could be redrawn and pulled together to permit them to deal with their functions on a metropolitan level. To them

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could be added powers over pollution or over transit, over almost anything which the states now delegate to special districts or authorities. The point would be that these powers would be exercised consciously in the context of a broad area plan, and that the plan, for its part, would be formed in the context of genuine decision making.

Like Jones, Fagin thinks the agency of federation should be composed of elected local officials, but Fagin would add elected officials of the state, including some from the areas involved. After experimentation with the process of delegating some powers of the state "downward" to a region, and some of the powers of the local communities "upward," the scheme might be regularized. The states, long the declining stars of our national firmament, might well become more important in their role as senior partners in state-city federations than in their role as junior partners in the nation-state federation.

This or any other federated scheme would work, Fagin thinks, cnly if the metropolitan or regional body were firmly confined, probably by a "constitution type" statute, to matters of regional import. This would not preclude a joint underwriting of certain minimum standards throughout the area, with option by the communities to better the standards locally, a concept already familiar in many types of state aid. It would preclude centralization of all real decision making and the degeneration of local units into janitorial government. For example, how the suburb of Bronxville, N.Y. wants to zone the commercial district around its railroad station, or what internal street pattern a builder chooses to put in his housing development, would be of no regional import. But whether New York puts public housing or port facilities on its waterfront, or where a parkway runs and what borders it, likely would be. Litigation would draw the effective lines between what is regional and what is local-a process already under way as Haar has shown, but with no planning framework or theory at present to assist the judges.
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METROPOLITAN GOV'T.

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There are several persuasive reasons for the states to take over the new function of metropolitan government. Metropolitan areas are dynamic, not fixed, and a state regional body (even one made up of local officials) could have a matching flexibility of jurisdiction, difficult to build into a distinctly new layer

of supercity government. Where metropolitan areas cross state lines, state governments are the logical units for making pacts and setting up joint bodies or programs. Most important, the states have a strong and well-understood tradition of popular government and of giveand-take with localities, something that has to be worked into, slowly and chancily, with new managerial layers of government.

There is a further reason, little



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noted yet, but vital. In California, where the future seems to happen faster than anywhere else, two of the "Lakewood Plan" incorporations in Los Angeles county happen to be rural dairy-farm districts which incorporated to protect themselves from urban encroachment. Agricultural conservation is going to become deeply enmeshed, in many places, with the metropolitan problem ("Our 'surplus' land," AF. March '57)). Thus the very "rural mindedness" of the state legislatures, long a burden to the development of the cities, could be a valuable pressure on the metropoli of the future. Certainly no scheme of federation which overlooks the problem of agricultural conservationor is set up to deal with it strictly from an urban viewpoint-will be suited to making planning policy for our monstrously growing metropoli.

If the problems of achieving metropolitan government seem formidable, and even the thinking about means to achieve it maddeningly tentative, it is well to remember that nobody has been trying very long. Most planners and many theorists were unaware of the metropolitan government idea until Jones' Metropolitan Government was published in 1942. Most government officials have learned of the idea only within the past three or four years. Some have not yet grasped its importance to them. Predecessors of current state governors showed no public awareness of the concept, but several present governors have, notably **Ribicoff of Connecticut and Williams** of Michigan. It is, in fact, encouraging that the era of experiment and of investigation (much of it with foundation money, as in Cleveland and St. Louis) should have begun so quickly and should be enlisting so many lively and practical minds.

And for those who despair that it can ever be worked out with neatness and certitude, it is well to remember Architect Henry Churchill's wise words: "Within the broadest possible framework of the general good, disorder must be allowed for. lest the people perish. Any form of initiative is disordering of the status quo and so needs encouragement, not suppression, if democracy is to retain vitality."

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A continuing review of international building



ELEPHANT IN VENEZUELA

Seen on the plain outside Altamira, a large, new apartment building (below) looks as huge and elusive as a white elephant. But, closer up, the pattern of brise-soleil and balcony (right) becomes recognizable for what it is. The eight-story structure was planned as a compact unit, primarily for families without children, by Architects Carlos Guinard, Moisés Benacerraf.



GIRAFFE IN CANADA

Gazing at its lower neighbors with multilidded astonishment the tall and leggy Salvation Army building in Toronto could be a misplaced giraffe. It is, however, the highly efficient and pleasingly designed (by Architect John B. Parkin) office headquarters for the Army's work in Canada and Bermuda. On the first floor is a large auditorium, on the fourth is a half-way-up cafeteria. In Canada as well as in other parts of the world the Salvation Army has been a pace-setting patron of local architectural imagination. The results, though not consistently brilliant, are always noteworthy additions to the international scene.





GARMENT CENTER FOR BERLIN

Across the square from the ruined Kaiser Wilhelm Church, West Berlin has constructed a glassy jumble of buildings for its economically important garment industry. The merchandizing and industrial center was designed by Berlin Architects Paul Schwebes and Hans Schosberger, stands only a few blocks away from the section of the city that is being **pre**pared for Berlin's building festival in September.







OBSTACLES FROM CASABLANCA

Planners of a settlement for natives in Casablanca determined that the new apartment units should have a certain relationship to the cavelike homes that the residents had left behind. To meet this requirement a French team of architects produced some highly unconventional shapes. The buildings, which remind US forces stationed in Morocco of ob-

stacle courses they have known, provide far better ventilation, soundproofing and shade control than native quarters traditionally offer. Each floor of the "tower house" unit (left and below), designed by Atbat-Afrique, G. Candilis and S. Woods, has six two-room apartments. Above is one of the five-story residential blocks by J. Hentschand and A. Studer.



Abroad







DIPLOMACY IN TOKYO

Japanese-modern with a touch of Corbusier, the new French embassy in Tokyo is officially credited to French Architects J. Demaret and J. Belmont. The interior court of the reinforced concrete embassy contains a contemporary version of the traditional Japanese garden. The garden is viewed through deep-set windows shielded by vertical and horizontal aluminum louvers. Although this eclectic merging of varied materials and random epochs may bother purists, it gives the ambassador and his staff a safe and sound environment for managing their diplomatic affairs.





WING OVER NAKAYAMA

The last thing construction workers did at the new Nakayama race track was to tighten bolts securing the roof hinges. For, balanced on the hinges (and on the concrete piers beneath them) is a 750'-long roof designed according to the latest wind-resistant principles by Tokyo Architects Matsuda & Hirata. The roof, which resembles a wing come momentarily to rest, shelters all the many trackside activities beneath its well-ventilated, flexible form. To beat opening day post-time, the structure was completed in a fast six months.



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