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ART OF ARCHITECTURE

Renaissance in Japan 96

Four radical Japanese—and a famous Frenchman—are fighting old ways in order to give Japan some excellent buildings and a new tradition.

Moscow looks at U.S. architecture ¹¹⁰

For the first time, the Russians have been able to judge the U.S. building arts—a report on our architectural exhibit at the Moscow Fair.

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VOLUME 111, NUMBER 3

Published monthly by TIME INC. 9 Rockefeller Plaza, New York 20, N.Y. Entered as second-class matter at New York, N.Y. and at additional mailing offices. Subscription price \$6.50 a year. © 1959 TIME INC. All rights reserved.



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INDUSTRIAL CONSTRUCTION shows definite signs of pulling out of its two-year slump. Latest federal statistics indicate the highest annual rate of industrial building for any month since August 1958. Few projects stalled in first month of steel strike; industrial building shows strong signs of an upturn

As the steel strike moved into its second month, the construction industry as a whole seemed hardly to have felt its effects. Work stalled at a few projects -most notable, perhaps, was the domed Civic Auditorium in Pittsburgh where steel shipments stopped because the steel had been floated down the river direct from the plant, which is now closed by the strike-but in most cities, major projects continued. The American Institute of Steel Construction estimated that most structural steel fabricators have enough steel on hand for three months, and some say they can keep going for six months. The fabricators are encouraging future orders, figuring that the industry now has enough capacity to fill backlogs promptly after settlement of the strike. Some builders are not so optimistic as AISC, however, and say that construction will be seriously crippled if the strike continues for another six weeks or more. As the strike continues, imports will play an increasingly important role, particularly in reinforcing bars, and reinforced concrete will probably make further inroads in steel's market.

Up to the time of the strike, construction was robust, according to official estimates of the Department of Commerce. In the first seven months of this year, total new construction was \$30.1 billion, or 15 per cent higher than the same period of 1958. So far, nobody expects the steel strike to prevent the industry from enjoying its first year of over \$50 billion in new construction (probably about \$53 billion).

Through the first seven months of this year, home building has been the bellwether of the building boom. Such spending has increased 36 per cent above the same period of 1958, and has so far accounted for 85 per cent of the gain in total private spending for new building.

On the other hand, nonresidential building is still lagging. In the first seven months, such spending dropped 4 per cent behind 1958. Office building is now 5 per cent behind the first seven months of 1958, hospital construction 8 per cent behind, and private school construction 2 per cent behind. The bright spots in nonresidential building are stores and restaurants, which have reversed their two-year slump, and are now being built at a clip 26 per cent higher than last year, and church construction, which is up 10 per cent in the first seven months.

The biggest factor in the slump in nonresidential building, industrial construction, was showing some definite signs of recovery. In the first seven months of this year, industrial building dropped 28 per cent, but the sharpness of this decline has been tailing off. In July, for instance, industrial construction was only 6 per cent behind the figure for July 1958, and the seasonally adjusted annual rate of industrial construction in July had reached its highest monthly total (\$2 million) since August 1958. Latest figures on contract awards for industrial building show that category up more than any other-89 per cent, according to F. W. Dodge Corp. And the Department of Commerce-Securities & Exchange Commission recently hiked their estimates of over-all capital spending in the last half of the year to a seasonally adjusted annual rate of \$33.5 billion. (The original estimate was \$32 billion for the second half of 1959.) All in all, it appears that the two-year slump in industrial construction is coming to an end.

While the news is getting brighter in private building, it looks somewhat more somber in public construction. The public building boom (up 12 per cent so far this year) may be threatened by slowdowns in two of its biggest categories—schools and highways. School building continues its inexplicable slump—it is now 4 per cent lower than the first seven months of 1958 and will probably fall behind spending in the previous year for the first time since World War II.

The highway program's slowdown is owing, of course, to Congressional inability to agree on a suitable measure to insure continuance of the federalaid program. The administration has asked a 1½ cents per gallon raise in taxes to keep the program on a payas-you-go basis, but until last month Congressional leaders had seemed more inclined to institute a bond program for the federal share. But the House Ways and Means Committee last month *continued on page 6* reversed its stand against a rise in the gasoline tax, and backed a 1-centper-gallon increase, to take effect this month, and expire June 30, 1961. Besides the tax rise, the committee would earmark \$2.5 billion in other taxes mostly on automobiles and parts specifically for highways after June 30, 1961. Even with the gas tax increase, however, federal aid for highways will fall by \$600 million between now and June 1961.

The 1-cent-gas-tax increase is expected to be approved by Congress and the President. But unless other sources of revenue are found, or some other means of financing devised, the federal highway building program will have to be stretched out beyond its original 1972 target date.

The pulling and hauling on federal highway aid has put state officials on the spot. At least 24 states have either slowed or completely halted letting of contracts or actual construction on federally aided roads. Even if Congress and the Administration get together on a solution to the deficit problem in highway spending, the program will probably generate less activity than was originally forecast.

Another federal building program due for a cutback is airport aid. The President succeeded in getting it pared from the high levels Congress originally wanted to its current \$62.5 million a year. Federal Airways Chief Elwood Quesada recently told states and municipalities that there would be little federal money released for terminal buildings. This is because Quesada, who has broad discretionary power over federal airport spending, intends to make safety requirements the key criteria for federal aid. This will probably mean that much less federal aid money will go for building, more for safety facilities per se. In the past, about 25 to 30 per cent of federal money has gone into buildings.

WASHINGTON'S FIRST URBAN RENEWAL apartments are now completed in the city's Southwest Area B project, sponsored by James H. Scheuer and Roger L. Stevens. The eight-story, \$6 million apartment was designed by Satterlee & Smith, of Washington. Rents for the 400 units range from \$98 for small efficiencies to \$220 for two-bedroom units.



Senate fails to override President's veto, passes new compromise housing bill

Like a bunch of amateur carpenters trying to even up table legs, Congress last month took a couple more whacks at housing legislation, in hopes of finally getting a bill past the White House. The Senate, after first failing by nine votes to override President Eisenhower's veto of a watered-down \$1.4 billion compromise bill, watered it further, trimming it back to \$1.1 billion.

The biggest cut, as has frequently been the case in the past, came in funds for urban renewal. Exhibiting further its inability to grasp the significance of the urban revolution (page 93), Congress trimmed renewal from \$900 million in the vetoed bill, to \$550 million, with another \$100 million put at the President's discretion. This money would be authorized for one fiscal year, thereby negating exhaustive efforts by a few zealots to get urban renewal on some sort of sensible, long-term basis. Other cuts were made in the programs for college classroom and housing construction, neither of which is wanted by the President.

Senate leaders from both sides of the aisle predicted that the President would sign the revamped bill, despite the fact that many of the provisions he had attacked most vigorously in his veto message were still intact. (Public housing, for instance, was passed at the level of 37,000 new units for the next fiscal year.) And Senator Homer S. Capehart (R, Ind.) predicted that, if the President did veto this second compromise housing measure, Congress could muster enough votes to override the veto.

The most pressing force behind the housing bill now is the need to give the Federal Housing Administration new insuring authority. FHA has not only used up its \$30 billion of authority available to it through fiscal 1959, but it also has outstanding \$5 billion in "Agreements to Insure," which will have to be covered with some sort of Congressional action that will pump up insuring authority anew. Builders are already getting wary of the agreements, as Congress dallies longer over housing. The administration would like to get FHA on at least a two-year basis, so that it could not be used as a lever to pry into law other housing programs deemed less desirable. But the Democrats have so far successfully resisted these efforts, and will probably continue to resist them.

Rockefeller proposes state fallout shelter plan

A year and a half ago (FORUM, Feb. '58) a flurry of excitement was raised about the nation's chances for survival through use of fallout shelters when two controversial reports recommended broad shelter construction programs, perhaps costing as much as \$22 billion. Until several weeks ago, the issue had subsided, except in the inner councils of federal government, where study is still under way. It was dramatically revived, however, when New York's Governor Nelson Rockefeller announced that he would ask for new legislation for a compulsory fallout shelter program at the next session of the state legislature. Rockefeller then made his shelter proposal the most controversial item at last month's Governors' conference, where most state leaders endorsed "vigorous" public education campaigns about fallout hazards and promised to survey potential areas for shelter facilities in state buildings.

Rockefeller will base his legislative proposals on a July report of his special task force study on fallout, which strongly recommended that every building in the state have a shelter, except in cases where it is completely impossible.

The report, prepared by a nine-man committee headed by Rockefeller's longtime legal advisor and special aide on atomic energy, Oscar M. Ruebhausen, pointed out that 1.3 million persons might be killed outright by blast and heat in a nuclear attack, and that another 8 million would die or be injured by fallout in New York, unless protected. It recommends that every home have a shelter, allowing about 12 sq. ft. per person, and each shelter be equipped with a special survival kit, which would include a radiation warning device. It estimates that survivors would have to spend a minimum of two weeks in the shelter, and outlines procedures for sanitation, water, and other necessities over the critical period. These procedures follow those of the federal Office of Civil and Defense Mobilization. A shelter for six persons is estimated to cost at least \$150. It would have 8 in. solid concrete block walls, and would be installed in an existing basement. In new houses, the cost could run from \$500 to \$1,500, the report estimates. (Initial reaction of New York home builders to the plan was cool, but a Denver, Col. home builder installed a 12 ft. by 14 ft. shelter in a new \$17,500 house, which sold quickly to an Army officer.)

The state's role in the shelter program is not yet clear, but there would probably be some form of loan program, at least, for home owners, and perhaps a tax write-off for shelter facilities in larger buildings. Governor Rockefeller, who is enthusiastic about the plan, says: "I think it's possible. I think it's feasible. I think it's within the financial capabilities of the state and the people."

Urban renewal plays fireman in Carbondale, Pa.

Perhaps the most unusual use of federal urban renewal funds will be a \$1.6 million grant, approved several weeks ago, to the city of Carbondale, Pa. The grant will be used to extinguish a 13year-old fire that is slowly burning through veins of coal under 130 acres not far from the city's center. Fumes from the fire have killed at least 2 persons, and, one night in 1954, overcame 15 others. Efforts to flood the fire have been futile. Now, state and federal agencies will combine to dig all the coal out of the 130 acres, a job expected to take at least three years.

About 514 dwelling units in the area will have to be destroyed in the operation, which means a sizable relocation problem for the city of around 14,000. (Carbondale's population has dropped in recent years with the decline of the coal mining industry.) But, with the help of its city planning and redevelopment agencies, which were set up specifically to initiate the renewal program, the city has been finding space in existing housing and has initiated a public housing program.

When the mine fire is eventually extinguished, the area will be filled, graded, and reforested. The land will stay vacant until suitable reuse is found for it—probably, say Planners Isadore Candeub and Associates, who developed a master plan for long-range development of the city, as an industrial and residential area.



\$25,000 housing competition won by Dallas architects

A hopeful trend away from the cheekby-jowl sprawl that mars much of the U.S. suburban-scape was evident last month in the top winning entries of a \$25,000 competition in middle-income housing design. Most of the designs submitted showed open site planning, with houses and apartments clustered around park-like green areas in keeping with modern concepts of subdivision planning (FORUM, March '59). The competition was sponsored by Mastic Tile Corp. and judged by a team headed by Pietro Belluschi, dean of the School of Architecture and Planning at M.I.T.

Winners of the top award (\$10,000) were Architects Howard R. Meyer, James Reece Pratt, and John Harold Box of Dallas. Their design (above) calls for a variety of houses clustered in small courts, with common park areas and community facilities grouped roughly in the center of the development. By utilizing an economic mixture of row-type garden apartments with single-family detached houses (68.5 per cent of all units are of this type), the Meyer-Pratt-Box design allows higher densities on the site than an ordinary single-family home development laid out in the usual grid pattern.

News

Other top winners in the competition were: Manuel Dumlao, John Buenz, Robert Burley, and Edward Kovach, who won the second prize of \$5,000, and Paul A. Kennon, Chartier Newton, Henning Huth, and Phil Kinsella Jr., who won the third prize of \$3,000. Both of these groups are from Eero Saarincontinued on page 9



Judges for the middle-income housing competition were (left to right): Architect Edward H. Fickett, of Los Angeles; Architect Reginald Roberts, of San Antonio; Architect George Fred Keck, of Chicago; Architect and Jury Head Pietro Belluschi; and Joseph Orendorff, Special Assistant to the Administrator, Housing and Home Finance Agency.



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en's office, which has done almost no housing design. In fact, one of the more encouraging aspects of the competition was that so many of the entries were from men in offices which had done little or no large-scale housing development.

In the student awards' section, the top winners of \$2,500 were George Ohanian and Fernando Gonzalo, of Brooklyn's Pratt Institute. Other awards went to Ernest G. Schweibert Jr., of Princeton University (\$1,500), and to G. M. Bulota and W. Miller of the University of Illinois (\$1,000). Students from the University of Illinois also won three of the four merit awards (\$250 each) given in the competition.

Many of the plans, particularly the top winners, showed a strong flavor of Henry Wright and Clarence Stein's 1929 plan for Radburn, N.J., which had winding, common green areas, uninterrupted by roads. Like the Radburn plan, most of the competition designs give the pedestrian the right of way, and they also provide central shopping and recreational facilities, as well as smaller, neighborhood recreational areas near the housing concentrations themselves. This sort of plan was well suited to another requirement, that siting take consideration of the needs of children and the elderly.



DENVER'S HILTON HOTEL, designed by I. M. Pei & Associates, of New York City, is nearing completion in Courthouse Square. The 21-story, 884-room structure is faced in precast concrete, has a three-level underground garage, and 33,700 sq. ft. of rentable office space. A glass-enclosed bridge will connect the hotel with the Pei-designed May-D & F department store. Webb & Knapp Corp. recently sold Courthouse Square to Alleghany Corp., a holding company, for \$20 million, but W & K has a long-term lease on the property.



Webb & Knapp to develop Pittsburgh's Lower Hill

William Zeckendorf's Webb & Knapp, Inc. last month walked off with one of the choicest urban renewal jobs in the country-the ten-acre Lower Hill project in Pittsburgh. W&K bid \$1.7 million for the land (the Urban Redevelopment Authority wanted at least \$1.5 million) and will build three apartment buildings containing about 935 dwelling units (70 per cent of them efficiencies or one-bedroom units). Unsuccessful bidders for the tract were Gateway Development Corp. of Cleveland, S. M. Levinson & Associates of Pittsburgh, and Dr. Daniel Gevinson & Associates of Washington, D. C., which recently was designated sponsor of the controversial Brookline, Mass. Farm Redevelopment Project (FORUM, June '59).

Pittsburgh's Lower Hill project site is bounded on the north by the steeldomed Civic Auditorium, which is being built in the conter of the city's projected cultural center. To the south is existing shopping in a commercial area that Webb & Knapp hopes will be refurbished as part of the over-all redevelopment of the Lower Hill. Mellon Square and Pittsburgh's downtown is only a ten-minute walk from the renewal site.

The apartment buildings, designed by I. M. Pei & Associates, will be staggered on the slope of Lower Hill, the highest one to be 14 stories, the lowest, 20 stories. They will be of reinforced concrete with glass and metal façades. Apartments will have sliding glass doors opening onto balconies,



which have been made feasible by the the city's effective smoke-control program. Parking will be in covered areas terraced directly into the slope of the hill. The whole area will be landscaped to give it a parklike setting, stretching downhill to Epiphany Church to the west of the apartment site. Initial occupancy of the buildings will probably be in early 1962.

Webb & Knapp also suggested that the redevelopment authority build a parking structure for the cultural center as a base for high-rise luxury apartments. The authority had at first considered underground parking, but abandoned it as too expensive in favor of surface parking around the dome.

Webb & Knapp made extensive studies of the whole area, on which it based not only its plan for the apartment site but its suggestions for the development of the commercial and cultural areas adjacent to it. These studies were a major factor in swinging the authority to W&K. It praised W&K for their impressive job in analyzing the whole Lower Hill and has said that the W&K suggestions will be given consideration in the planning of the entire Lower Hill project.

continued on page 11

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News

Pedestrian malls tried in Toledo, Kalamazoo

Downtown pedestrian shopping malls, already tested in many cities (FORUM, Feb. '59), last month were getting a tryout in two Middle Western cities. In Toledo, Ohio (population: 330,000) the main downtown intersection was made the axis for a temporary fourblock mall, and in Kalamazoo, Mich. (population: 85,000) three main blocks of downtown were converted into a permanent shopping plaza.

The Toledo mall, which cost about \$15,000, is an experiment designed to test the concept of shopping plazas for their suitability to Toledo's Downtown Master Plan, drawn up by Toledo's AIA chapter. When the trial period is over, a survey will be made of merchants and shoppers to see what the reaction has been. Sidewalk surveys show that the merchants are so far somewhat more enthusiastic than the shoppers. Presidents of two of the city's largest department stores both



TOLEDO'S EXPERIMENT

say that business had definitely increased since the mall was built, and restaurants in the area have also noticed a business pickup. Shoppers still complain that the city needs more downtown parking, but several said they came specifically because of the mall, which they feel should be made permanent.

Business leaders from other cities have been impressed with Toledo's mall. A Kansas City group says it will urge such an experiment in that city as soon as possible.

Toledo's mall was enlivened with yellow and brown concrete block squares, pools, shrubbery, and grass, and such attractive extras as a playground and a penguin pool (penguins through courtesy of the local zoo).

Kalamazoo's pedestrian mall was opened last month. It is the first step toward making downtown either completely parking or pedestrian mall. The



KALAMAZOO'S NEW LOOK

mall was first recommended by Victor Gruen Associates as part of a \$40,000 study of Kalamazoo. The mall itself will cost about \$60,000 when completed, half of this amount to be paid by the city, the rest by special assessments against downtown merchants. The original street paving was torn out, and the mall was rebuilt flush to the sidewalks. It is well planted with grass and shrubs, has a special stage for concerts and displays and has several pools and fountains. When the plan was proposed, there was some opposition because of loss of parking space and closing of streets. Now, downtown merchants are enthusiastic about the plan, which has already stimulated the remodeling of eight out of 39 storefronts, with more expected to come.

Safeway quiets opposition with good design

When a residential neighborhood declares war on commercial development in its area, the fighting can get pretty rough for the developer, particularly if the neighborhood is one of expensive homes, overlooking a gorgeous bay.

This was the situation Safeway Stores faced in trying to build a new supermarket on a site not far from expensive residences of the Marina, near San Francisco's Golden Gate Bridge. Although the site was zoned for industrial use, Pacific Gas & Electric Co., which owned the property eight years ago, changed its mind about building a steam generating plant

there. The reason: PG & E felt the plant would be too much out of character with the surrounding area. When Safeway bought the property, residents made it clear that a store would be equally unwelcome, and tied Safeway up for 13 months in litigation over the zoning of the area. (Residents of the area were even against high-rise apartments, suggested several years ago by the late Herbert Greenwald.) But Safeway won its battle to prevent the site from being rezoned for residential use only, and President Robert A. Magowan, himself a resident of Pacific Heights, not far from the disputed area, determined to put a prestige market on the site that would smother the antipathy of the zoning fight.

To do this, Magowan went to Architects Wurster, Bernardi & Emmons, who were hired four years ago as consultants to the design department of Safeway Inc. of northern California. Hired initially to effect economies in design, the architects also revamped Safeway's prototype store design, making it cleaner and lower. Side walls were lowered 4 ft., and the bowstringing for the laminated wood trusses was taken out. For the Marina store, they set porcelain enamel fins vertically in the broad glass front, which not only mute the flow of late afternoon sun into the store but also enhance the sweeping height of the roof.

Safeway is delighted with the results of its Marina store, feels the neighborhood opposition has been successfully overcome through the sheer attractiveness of the building itself. (Much of Safeway's delight is based on the fact that the store has generated 20 per cent more business than expected.) As an added dividend, the Marina store cost no more to build-about \$10 a sq. ft.-than most of Safeway's other northern California stores, despite the company's willingness to put more money into Marina by way of improving public relations. END



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People

New York's Mayor Wagner appoints three new members to Slum Clearance Committee, but Moses still runs the show



BUTT



STRAUS



MCMURRAY

New York City's Slum Clearance Committee met early last month for the first time since the city's Title I program came under heavy fire for a broad range of administrative peculiarities (FORUM, Aug. '59). Last month's meeting was of some historic note, for the committee had three new members, appointed by Mayor Robert F. Wagner Jr., as a step to increase public participation in the program, and decrease the influence of Committee Chairman Robert Moses (see story, page 107).

The three new members are Joseph McMurray, 47, former New York State Housing Commissioner and one-time executive director of the City Housing Authority; John D. Butt, recently retired chairman and president of the Seamen's Bank for Savings and now president of the private Downtown-Lower Manhattan Assn., which has drafted broad-gauge redevelopment plans for the financial district; and Jack I. Straus, 59, chairman of R. H. Macy & Co. Wagner said of the appointments: "Now you have more people from the public on the committee. Mr. McMurray has a vast amount of experience in housing in Washington (as a federal statistician and economist), Albany, and here. John Butt has a wealth of experience in banking and housing. Jack Straus, who is a very prominent citizen, is deeply interested in the city and its progress and brings the point of view of the business community." Wagner has also appointed his legal aide, Jacob Lutsky, to be his personal observer at all future SCC meetings.

One major change in SCC procedure will be that Thomas J. Shanahan, committee vice chairman, will no longer have the responsibility for checking the suitability of sponsors for redevelopment projects. In the future, various members of the committee will check potential sponsors from their own fields (e.g., Butt might be asked to look into the suitability of a banking group that might want to sponsor a Title I project). Shanahan had been criticized by Mayor Wagner for an "error of judgment" in checking out one potential sponsor.

Other changes, besides those on the committee itself, will include a full-time threeman staff for the committee to replace the present patchwork of personnel siphoned from others of Moses' public enterprises. Wagner last month emphasized that he expects William S. Lebwohl, who is director of SCC, to devote full time to that job. Lebwohl is also counsel to the Mosesdirected Triborough Bridge and Tunnel Authority. The problem of a part-time director may not be solved, however, until the Board of Estimate votes to pay Lebwohl's \$29,000 salary, rather than let him stay on Triborough's payroll while devoting full time to SCC. Also, Mayor Wagner sidestepped the question of George E. Spargo's role on SCC. Spargo, who is the \$40,000-a-year general manager of Triborough, has been Moses' number-one aide on SCC. Last month, Wagner said that Spargo could continue "to assist" Moses on Title I work, because he did not consider Spargo part of SCC. Thus, despite Wagner's dictum that SCC shall have a full-time staff, Spargo will still wield influence as Moses' top aide.

The committee is also slated to get a full-time consultant on relocation practices, which have frequently come under fire. The mayor and the Board of Estimate will get more information on projects and sponsors at earlier stages of the Title I process, and more public advertising of available slum sites will be done to attract a wider range of potential sponsors.

None of the procedural changes so far put into effect will change very much the way Moses runs his Title I program. The addition to the Slum Clearance Committee of three strong personalities will make it harder for Moses to have things his way as much as he did in the past, but his influence is still predominant, and the outcome of his battle with Wagner over Spargo and Lebwohl indicates that Moses is still strong despite the Title I controversy. Probably the biggest factor in future changes in Title I practices and procedures will be wrought by Moses himself-he is too astute a politician to allow the same mistakes to be repeated.

HAWAII'S BIG BUILDERS FEUD

The two giants of Hawaii's booming construction industry are locked in a competitive struggle that threatens to make the building pace in the 50th state the most feverish in the nation. The two are 84year-old Walter Dillingham, lifetime resident of the islands and leading figure in real estate, trucking, dredging, pineapple growing, as well as building, and 77-yearold Henry J. Kaiser, who came to Honolulu on vacation in 1954, has since built the \$18 million luxury Hawaiian Village *continued on page 14*



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Hotel, and has announced plans for a \$350 million model city on the southeast point of Oahu.

The struggle between the two strongwilled titans was almost inevitable. Dillingham, son of missionaries who came to Hawaii 126 years ago, represents the established wealth of the islands, already somewhat cautious about the influx of mainland entrepreneurs. Kaiser is typical of the latter breed, with a reputation for "Can do" that has become a trade-mark in his ventures into steel and aluminum making, construction, and cemen'. The two had known each other for rearly 20 years, though they were never close friends, and the latent friction of their personalities flamed into open warfare when Kaiser announced intentions of building a cement plant adjacent to some property that Dillingham hoped to develop into a resort area, Kaiser's Permanente Cement Co. still brings in almost all of Hawaii's cement,

WERNER STOY

KAISER GRAPHIC ARTS



DILLINGHAM

KAISER

over Dillingham-owned docks. Dillingham feels that Kaiser wants to build the new plant just because Hawaiian Cement Co., in which Dillingham has a small interest, carlier had announced plans to build a plant. Dillingham also feels that Kaiser picked the site for the Permanente plant just to discomfit him. The issue of the site was settled, however, when Kaiser purchased a second site, two miles from the first. Last month, Kaiser announced he would build the plant at the new site, and use the first site as a quarry.

Kaiser kept the kettle boiling by announcing, shortly after public hearings on the cement-plant site, that he was going into the dredging business-where Dillingham has been king for over 50 years. Kaiser bought a 30,000 cu. yd. dredge and says he will lease another dredge for work at his model city. Dillingham acts unconcerned about this latest competitive shove from the man he calls "a visitor." He says "Kaiser is about 45 years too late. We've already done the big jobs in the island, and we now think of the dredging business as world-wide. There's better potential for it in the Middle East, where we're already continued on page 16

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operating. . . . If Mr. Kaiser wants to get in the market, he's welcome to."

People

Kaiser plans to rush his \$12 million cement plant to completion by mid-1960, before Hawaiian Cement's plant begins to operate. The two plants together will be able to make three times more cement than Permanente alone now imports, but neither Kaiser nor Dillingham will say that they are stepping too far out of line with foreseeable demand.

Kaiser is also working hard on the first two residential subdivisions of his model city, which is to house 50,000 residents within five years.

Dillingham himself is trying to stay out of the battle, leaving most of the talking to his sons. But he has made known his distaste for Kaiser's entrepreneurial techniques and his feeling that Kaiser is a Johnny-come-lately who is trying to take the islands over. Kaiser, with characteristic energy, continues his expansion into Hawaii's building industry, most recently announced that he was planning to get into the making and selling of building materials other than cement.

People in Brief

Dave Slipher, 47, one of the founders of National Homes Corp. and most recently a vice president of Webb & Knapp Corp., last month was named vice president of Kaiser-Burns Development Corp. Slipher will oversee the building of Henry Kaiser's 6,000-acre resort city in Hawaii (see story above). From 1945 to 1956, Slipher was technical director of Kaiser's Community Homes, which built over 6,000 houses in southern California.

Professor Ernest Fisher, well-known Columbia University land economist, will make a three-month study of federal housing programs for the Housing & Home Finance Agency. Fisher will work under assistant administrator, and former congressman, **Henry O. Talle.**

Edward D. Stone, architectural consultant to the National Cultural Center, recently revealed plans for an estimated \$50 million three-building center to be built in Washington's Foggy Bottom area, on the Potomac River. The opera hall, symphony, and theater will have a common entrance, Stone says, and "will not follow Washington style."

Architect William F. R. Ballard, of Ballard, Todd, & Snibbe, was elected chairman of the Board of Directors of New York's Citizens' Housing and Planning Council, a private housing organization.

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Architect: Hoyle, Doran & Berry, Boston, Massachusetts Electrical Engineer: Thompson Engineering Company, Inc., Boston, Massachusetts Electrical Contractor: M. B. Foster Electrical Company, Boston, Massachusetts SPANG Distributor: Wesco, Burlington, Vermont



Mr. Tewksbury and Mr. Morse, Foremen for M. B. Foster Electrical Company, discuss the ease of working inside square access boxes after concrete is laid. Square design provides more room for making splices. Access boxes are quickly brought to screed level by adjusting corner leveling screws.



Electrical crew installs SPANG HEADERDUCT at National Life job. Left to right: first man cuts through headerduct and into cellular floor with circular saw; next two men apply protective grommet around the opening with a hydraulic tool; workman on far right welds headerduct to flooring,



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Here's another example of LITECONTROL easy-on-the-eyes lighting that increases office efficiency. You'll find this type of eminently practical lighting throughout the new offices of Gulf Oil Corporation, Philadelphia Division. Also in one of Gulf's Pittsburgh buildings where the same kind of fixtures were recently installed.

A 3' x 4' troffer is used in the inverted "T" Grid ceiling. This fixture replaces a 3' x 4' ceiling panel. Thus, if desired, the fixtures could be moved, without disturbing the ceiling structure.

The troffer features a formed vinyl plastic diffuser which fits snugly in the fixture. No metal shows and there are no light leaks. Result: 3' x 4' modules or units which shed evenly diffused, low brightness illumination. The same diffusers, which have structural ribs for rigidity, are also used in an overall luminous ceiling in Gulf's Engineering Department Drafting Room.

For offices, stores, schools and other commercial installations, Litecontrol standard fixtures control costs. But there is nothing standard in our approach to lighting problems.



INSTALLATION: Gulf Oil Corporation, Philadelphia Division Office, Bala-Cynwyd, Pennsylvania Gulf Oil Corporation, Financia Pennsylvania AREA SHOWN: Credit Department, Third Floor ARCHITECTS & ENGINEERS: George M. Ewing Company (and) Welton Becket & Associates INTERIOR SPACE CONSULTANTS: Michael Saphire Associates ELECTRICAL CONTRACTOR: Harry F. Ortlip Company, Philadelphia, Pennsylvania DISTRIBUTOR: Shiladelphia, Pennsylvania

DISTRIBUTOR: Graybar Electric Company, Philadelphia, Pennsylvania

FIXTURES:

URES: Litecontrol #5903-44-RS — 4 lamp — 3' x 4' grid ceiling troffers with formed vinyl diffusers

SPACING: 8'-0" x 9'-0" CEILING HEIGHT:

INTENSITY: Average 60 Footcandles in Service



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Grady Memorial Hospital, Atlanta, Ga. Architects and Engineers: Robert and Company Associates, Atlanta. General Contractor: Robert E. McKee, Dallas, Texas. Terrazzo Contractor: Texas State Tile and Terrazzo Co., Houston. Dealer: Cromer and Co., Atlanta.



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Projects

A roundup of recent and significant proposals

LOS ANGELES' SUPERSUBURB

A new neighbor for Beverly Hills, and one that will almost outstrip Beverly Hills' 30,443 population, is Century City (right), Webb & Knapp's longplanned undertaking on what used to be the Twentieth Cen-tury-Fox lot. Welton Becket & Associates are coordinating architects. In the revised model, offices and commercial buildings appear in the foreground, the tallest being three 20-story lens-shaped offices and a slender 31-story tower similar to those in an earlier plan. Directly behind these, an oval auditorium anchored to a 600-room hotel, a theater arts center, a large department store, and a "fashion mall" have been added. In the background are high- and lowrise apartments.





SAN FRANCISCO'S FEDERAL COURTHOUSE AND OFFICE BUILDING

An impressive addition to the San Francisco sky line will be the 21-story U.S. Courthouse and Federal Office Building (above) soon to be built by the General Services Administration from a design by four San Francisco architectural firms: Blanchard & Maher; Albert F. Roller; Stone, Marraccini & Patterson; and John Carl Warnecke. Despite its large floor area, 1.5 million sq. ft., it will cover only half the site, leaving the rest for a plaza as "a source of enjoyment to the people of San Francisco, whom the federal building is designed to serve." Up to the third floor, the exterior will be stone, set in a grid pattern. Above that, the walls will be a striped pattern of columns, metal-framed windows, and structural glass spandrels. Cost: \$48 million.

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TEXAS INSTRUMENTS PLANT IN ENGLAND

To design a new plant for their English subsidiary, Texas Instruments chose Architects O'Neil Ford and Richard S. Colley, designers of the TI plant in Northeast Dallas (FORUM, Sept. '58). Much of the new plant in Bedford, England (below), will be concrete: hyperbolic paraboloid shells 3 in. thick and 50 ft. square over the manufacturing area, lift slab for all floors and other roofs, including the cafeteria roof (one-story portion, foreground). Glazed handmade brick chases (rectangles on the exterior) will contain air-distribution systems and exhaust stacks. Beneath the terraces in the foreground will be waterstorage tanks. Construction started last month. Cost: \$2.5 million.



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*ARCHITECTURAL FORUM, September 1959

BUILDING—399 PARK AVENUE OWNERS — THE FIRST NATIONAL CITY BANK OF NEW YORK ARCHITECTS—CARSON & LUNDIN ASSOCIATED ARCHITECTS—KAHN & JACOBS STRUCTURAL ENGINEER—CHARLES MAYER MECHANICAL & ELECTRICAL ENGINEER—MEYER STRONG and JONES GENERAL CONTRACTOR—GEORGE A. FULLER COMPANY

MINNESOTA HOTEL-MOTEL

The Red Cedar Inn (right), a hotel-motel on the north edge of Austin's business district, will welcome local residents as well as transient guests. Nearly 1,500 Austin residents invested \$1 million in this community enterprise, and many of them will patronize its dining rooms, Olympic-size swimming pool, and adjacent cabanas. Architects Hammel & Green of Austin and St. Paul used the sloping river-bank site, formerly a city park, to tuck a fifth story under one side. Altogether there will be 60 guest rooms, a dining room seating 106, a coffee shop, barlounge, and party and meeting rooms, all wrapped in a precast concrete brise soleil. It will be finished next June and will be operated by the Knutson Hotel Corp.



WEST COAST CONCRETE TOWER Architects Daniel, Mann, Johnson & Mendenhall were under orders to use lots of reinforced concrete, and use it dramatically, in designing the home office for the American Cement Corp. in Los Angeles (left). True to their instructions, the architects planned a 13-story, \$4 million building lavish with concrete-eight massive concrete columns (4 ft. by 5 ft.) support the tower, load-bearing diagonal grilles carry two sides, a cast screen wraps up the two-story parking section, and the utility core is concrete too. They even put a folded-plate concrete roof over the executive offices.



JESUIT SEMINARY ON A RIVER BANK NEAR TORONTO

North of Toronto, on the banks of the Don River at Willowdale, Ontario, the Jesuit Fathers of Upper Canada are building a new seminary (below). The long main block in the center will contain classrooms, offices, reading and recreation rooms, and cloistered areas

Projects

shut off from public rooms. Jutting out from the central block are a half-circle chapel and three rectangular wings, containing a dining room, a kitchen, a gymnasium, and a library, all precast concrete and fieldstone. Architects: Peter Dickinson Associates.



Hemmed in by a small 60 ft. by 150 ft. plot, and a budget to match (\$100,000), Architects Peter Blake & Julian Neski relied on an ingenious design to give spaciousness and elegance to the new Unitarian church for Hollis, Queens (left). The entrance leads to

UNITARIAN CHURCH FOR A TINY SITE IN NEW YORK CITY

glass-walled classrooms looking out on the tiny gardens at both sides. Upstairs is a windowed lobby (center), the sanctuary, the minister's study, library, and the meeting rooms. The church seats 180, plus an extra 20 in the lobby, and has a peripheral ribbon skylight.

continued on page 53

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You can frame windows and glass-clad walls completely with the related components of the new PITTCO "900" series. It is provided with a drainage system. All members are aluminum; all fastenings are concealed; all glass is held in neoprene strips and recessed to increase daylight opening. And the clean beauty of every line is strikingly apparent. For details, consult your PITTCO Metal Representative.

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UNIVERSITY OF CHICAGO RESIDENCE HALL

Part of the massive Hyde Park-Kenwood urban renewal plan in Chicago depends on the University of Chicago's building plans. Recently the university announced that it would pour a hefty \$49.5 million into new construction on its Hyde Park campus, jacking up its total building investment there to \$259 million by 1964. One of the buildings under construction is a \$4.8 million men's dormitory (left), its twin brick towers trimmed in limestone. Between them is a dining and lounge section under a roof of concrete hyperbolic paraboloids. Architects: Harry Weese & Associates.

STATE UNIVERSITY SCIENCE BUILDING IN MIDTOWN DETROIT

Wayne State University in Detroit will soon have a science building (left) equipped with laboratories and offices for teaching and research in biology and chemistry. To conform with the university's master plan and its circulation scheme, there will be an open arcade at ground level. The

three stories above it will be faced in quartz aggregate precast concrete panels set in an exposed concrete structural frame. For glare control, windows will be gray-tinted glass. The design is by Albert Kahn Associated Architects and Engineers and Design Consultant W. B. Sanders.





FOR ANCHORAGE, A FIRE AND POLICE STATION, COURT, AND JAIL

Next month the citizens of Anchorage, Alaska, will vote on a bond issue for a \$1.4 million public safety building (above). The building will accommodate police and fire sta-

tions, a municipal court, and a jail under one roof, but Architect Edwin Crittenden & Associates of Anchorage divided it into four clearly separate areas. At left is the muni-

BEHIND THE FILIGREE: IBM'S ST. LOUIS OFFICE

Though the upper floors of IBM's new branch office in St. Louis (below) will play peekaboo behind circular extruded tiles, the ground floor will offer plenty of clear open space to display IBM's wares and services. Built chiefly of reinforced concrete and brick, the office structure can be expanded later by adding two more stories. Hellmuth, Obata & Kassabaum designed the offices, being built by Harold W. and Melvin Dubinsky for long-term lease to IBM.



cipal court, which shares an interior courtyard with the two-story police station, center. At right is the fire station. The jail, not shown, runs across the rear of the building.

HOUSTON'S RECORD-BREAKER

Topping everything in sight, not only in the south but west of the Mississippi, the \$32 million tower designed by Welton Becket & Associates for the Humble Oil & Refining Co., Houston (right), will rise 44 stories, or a total of 600 ft., from a plaza inlaid with reflecting pools and fountains. A six-story garage (near right) will provide 1,300 parking spaces and will carry all heating and air-conditioning equipment for both buildings on its roof. Consulting architects: Golemon & Rolfe, George Pierce, and Abel B. Pierce, all of Houston. END



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THIN GYPSUM SANDWICH forms studless dry-wall system

Three layers of gypsum combine to form Pabcowall, an interior wall system developed by a West Coast firm to save space and cut labor costs. Intended for both residential and commercial construction, the sandwich is made of standard % in. tapered-edge gypsum boards with 1 in. thick, 6 in. wide gypsum spacer ribs in between. First, a spacer rib is glued as a spine to each panel (picture 1, left). Then panels are set alternately on one and the other side of 1 in. by 11/2 in. nailing strips previously lined up on ceilings, floors, and existing walls. A staggered arrangement lets the spine of each panel hold the edges of two adjacent panels opposite, which are screwed and cemented to it (2) forming a smooth joint. The sandwich is held together at the joint by wood screws 2 in. long. Doors and windows can be cut into the wall (3), and wiring comes through the nail strips on the ceiling and runs down between the face panels to outlets.

The advantages cited for Pabcowall are these: lower costs (about \$4.50 a lineal ft. for an 8 ft. wall, or one third the cost of a gypsum partition with sides separated by studs, and one sixth the cost of a steel partition) and space saving (2¼ in. thick). It is also verminproof, and has superior resistance to sound transmission.

Manufacturer: Pabco Building Materials Div., Fibreboard Paper Products Corp., 475 Brannan St., San Francisco 19.



POCKET CALCULATOR adds, subtracts, and converts

An ingenious import from West Berlin, a midget pocket calculator called Addfeet Jr., might well prove worth its weight in gold to architects, engineers, and draftsmen because it adds and subtracts fractions, inches, and feet, and converts them automatically. It is operated by inserting a brass stylus into the hole beside the number to be added or subtracted, and the total, to a maximum of 1/8 in. under 10,000 ft., appears in the center row. A small bar at the top pulls out to clear the machine. Ideally portable in size, measuring only 11/2 in. by 6 in. and thin enough to slip into a pocket, Addfeet Jr. costs \$4.95, which includes a leather case and instruction book.

U. S. distributor: Continental Exchange, P. O. Box 2296-D, Pasadena, Calif.

ELECTRICAL DISTRIBUTION SYSTEM offers safety and standardization

An electrical distribution system which can be assembled like a giant Erector set in industrial or commercial buildings has been developed by a subsidiary of the Worthington Corp. Largely the brain child of Elmer T. Carlson, executive vice president and general manager of Electric Distribution Products, Inc., Uni-Bus Masterguard combines the convenience of stock components with a system intended for total safety. Carlson, among others in the industry, had long worried about the number of deaths and injuries which resulted from accidental contact with unprotected live "bus bars" of previous busway systems. He felt sure that there must be a way to offer safety as well as efficiency. To make certain the new system worked, components were tested in actual continued on page 57

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use for five years without a single accident. With this satisfactory safety record behind them, Carlson and his colleagues predict that with Masterguard even a careless workman is completely safe from accidental contact. Automatic sliding devices seal off live bus bars before a control box can be opened.

The drawing above shows the component parts of a typical installation: busway feeder (1), plug-in devices (2), service en-

METAL TUBING IN RIBBONS ships flat, inflates on site

Strubing, a flat tubing which can be made of a number of metals and is blown open on the job (see photos, right), has been tested in pilot quantities at Wolverine Tube and will be ready for fall delivery in quantity. Ducts, cable conduit, downspouts, and temporary fuel or water lines on a building site are the chief uses for such tubing in construction.

In the Strubing process, the first step is to pass tubing through a rolling mill, where it is both elongated and flattened, but its inside diameter is unchanged. After repeated journeys through the rolling mill, the tube's wall becomes thinner and the ribbon longer. The flattened tube, coiled for shipment, is far more compact than "round" tube. As an example, the manufacturer reports that the ductwork necessary for heating a seven-room house can be packed in a box the size of an orange crate. On the site, Strubing may be inflated by several methods-water, air, or hydraulic pressure, for instance-and still another method is under development, a mechanical wringer which rolls the flat tubing over a point and a mandrel to open and round it.

The process can be applied to any metal that can be cold-rolled; copper, aluminum, stainless steel, tantalum, and zirconium have been flattened and inflated successfully. Its cost, Wolverine says, will be no higher than for tube made conventionally, and, hopefully, the cost will be considerably lower. Impressive savings are expected from lower handling and storage costs.

Manufacturer: Wolverine Tube Div., Calumet & Hecla, Inc., 17200 Southfield Rd., Allen Park, Mich.

continued on page 58

trance equipment (3), distribution centers (4), safety switches, circuit breakers, and motor control (5). In addition to interchangeable stock parts and total safety, the new system is light in weight and competitive in price with other busway systems of comparable ratings and functions.

Manufacturer: Electric Distribution Products, Inc., 2200 31st St., S. W., Allentown, Pa.



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glare is a problem, the blocks not only look cool (often half the battle in hot weather) but also reduce sun brightness and solar-heat transmission. For maximum light control, a solar-selecting block has a glass-fiber mat partition; the other two designs are decorative blocks with high light transmission. The darker blocks at left in the photograph above are Shade Green; the others, in the same concentric circle design, ordinary glass. The cost is the same as that for regular block: about 90 cents for the 8 in. size, and \$2.50 for the 12 in.

Manufacturer: Kimble Glass Co., Owens-Illinois, Toledo 1.

GERMAN MARKING PENCIL writes anywhere, on any surface

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"NORTH LIGHT" FIXTURE mixes colors for true light

The need for an artificial light which reproduces "true north light" has plagued artists, and others whose work demands close scrutiny of color, for generations. Recently a Connecticut manufacturer introduced a fixture which, it hopes, ends the search. The new fixture, Verilux, blends the light from eight 40-watt colored fluorescent tubes. Not only does the blend produce "average" north light, but it can be varied, by rearranging three tubes, to produce cooler or warmer north light. Already tested by a battery of colorsensitive users—art restorers, hair dyers, fabric buyers, and artists, among others —Verilux appears to have passed with flying colors. The Gemological Institute of America modified the standard Verilux unit by adding to it a series of baffles which "bounce" light and thus play up a gem's brilliance as well as its color.



Verilux is offered as a complete unit 8¼ in. high, 23% in. wide, and 46% in. long in a steel body with a plain Plexiglas diffuser at \$185, or a plastic egg-crate louver which costs \$5 less. Standard units may be installed in several ways: hung on chains or wires, flush mounted to the ceiling, suspended on stems, or recessed in inspection cabinets.

Manufacturer: Wheeler-Fullerton Lighting Div., Franklin Research Corp., Willard Rd., Norwalk, Conn.

WOVEN ALUMINUM BLINDS add texture and color to windows

Slender reeds of an aluminum alloy are loomed with cotton, rayon, and metallic yarns to make flexible, flameproof blinds. Two patterns are available in a choice of seven soft colors, and a third pattern is all white. For easy cleaning and a textured effect, the reeds are molded to a rounded M shape and then given a matte finish of baked enamel. Woven Flexalum blinds can be hung vertically or horizon-



tally for traverse draperies, room dividers, or shades, to fit either cord-and-pulley or spring roller fixtures. In addition to being light in weight even in large installations, they are said not to warp, split, or mildew. Costs run to about \$1.50 to \$2.50 per sq. ft.

Manufacturer: Hunter Douglas Div., Bridgeport Brass Co., 405 Lexington Ave., New York 17.

END



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Architect: John Carver, 2112 Spruce St., Philadelphia, Pennsylvania

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Associate Architects: Button & McLean—Mitchell & Ritchey, Pittsburgh, Pennsylvania General Contractor: Sherry Richards Company, Chicago, Illinois Glazing: United Plate Glass Company, Pittsburgh, Pennsylvania

At the Philadelphia International Airport, modern vistas are created by 10,000 sq. ft. of 60" wide lights of Polished Misco (wired glass).

Architect: Carrol, Grisdale and Van Allen, Philadelphia, Pennsylvania Glazing: Pittsburgh Plate Glass Company

ROLLED GLASS



New factory of American Chicle Company, Rockford, III. where 14,000 sq. ft. of Coolite Wire glass, Glare Reduced, combines heat absorption with protection.

Architect: William Higginson & Sons, New York, N. Y. General Contractor: Sjostrom & Sons, Inc., Rockford, Illinois Glazing: National Mirror Works, Rockford, Illinois





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For the Sunshine State

RADIANT MULTICOLOR LACQUER ENAMEL

Florida—the state of sunshine and year-round summer fun—naturally finds colorful multicolor lacquer* a perfect match for the gay mood of its inhabitants. But Florida is by no means alone in its acceptance of this new architectural design tool. From North to South, East to West—everywhere in the nation more and more architects have been specifying multicolor lacquer when designing new buildings and remodeling older ones.

Only normal techniques and equipment are required to spray two or more colors of multicolor lacquer on a surface simultaneously. This single finishing coat can be applied to any properly primed surface—plaster, canvas, wood, concrete, wallboard, most plastics and metals. The finished job can even merge dissimilar types of surfaces into a smooth, integral area. Economical to use, easy to maintain, multicolor lacquer is the ideal answer to the architect's search for a modern coating that is as new as his ideas.

Hercules Powder Company does not make finished lacquers or coatings of any kind but it does manufacture nitrocellulose, a basic material used in this multicolor lacquer. If you have difficulty securing adequate information on multicolor lacquer, write us and we shall be glad to assist.

Multicolor lacquer enamel is manufactured under license from Coloramic Coatings, Inc., Los Angeles (U. S. Patent No. 2.591,904)

HERCULES POWDER COMPANY



RENERAL OF ELECTRIC

APPLIANCE HEADQUARTERS

The entire exterior of this building in Tampa was finished with a multicolor formulation. Multicolor was specified here not only for its attractiveness, but for its durability even when exposed to Florida's high temperatures and humidity.

*Multicolor lacquer enamel for these applications was manufactured by American Lacquer & Solvents Co. of Florida, Tampa 10, Florida.



SOWLING ALLEY

Deerfield Lanes in Deerfield Beach selected multicolor for several reasons. The flecked entrance treatment here provides a granite-like exterior. Multicolor on the lower half of walls, columns, and washrooms inside provides a long-lasting, easy-to-clean finish.

BANK

The Orange State Bank at Orlando also used a combination of color flecks to achieve an almost amazing similarity to exterior granite. The extreme hardness and durability of the multicolor finish, resulting in easy maintenance and a lasting "like new" look, is one of the features that has made the bank management confirmed multicolor boosters.





APARTMENT

The Edgewater Arms in Fort Lauderdale used multicolor for all corridors of this modern cooperative apartment building. Resistance to smudging and hand prints — combined with multicolor's easy-to-clean characteristics — keep the corridors cheerful and bright.

NEWSPAPER

No area of a newspaper plant is harder to keep spick-andspan than the pressroom. That's why the Fort Lauderdale News selected multicolor for the interior. Even ink can be readily removed from the colorful multicolor finish.





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MOVABLE HAUSERMAN INTERIOR WALLS If it's new... you'll find it first in Hauserman

Striking architectural effect achieved with RS ceramic tile Curtain Wall Panels



FIRESTONE SALES-SERVICE STORE Akron, Ohio Architects : WILLIAM F. KINKOPH – D. W. GOODWIN The Firestone Tire & Rubber Co., Akron, Ohio

General Contractor: J. G. RUHLIN CONSTRUCTION CO. Akron, Ohio

Close-up shows 1*x 1* Romany -Spartan tile in a random 50/50 mixture of Spartex White and Decorator Cherry Red.



Offering unlimited color and design possibilities, RS Panels were the architect's logical choice in designing the exterior of this handsome sales-service center.

These panels are of ceramic tile and reinforced lightweight concrete, cast monolithic and grouted with permanently resilient latex. Each vertical panel is made up of two 5' x 5' sections 21/4" thick, with tongue and groove joint between sections and square edges on outer perimeter. Concrete backs provide finished interior walls.

RS Panels are available in thicknesses from 13%" to 4", with or without insulation, and in a complete range of sizes and edge conditions to meet your specific requirements. For complete information on RS Panels, including "U" values, weights and short form specifications, write for Bulletin RSP-201. Ceramic Tile Panels, Inc., Dept. A-30, Canton 2, Ohio.



at the new National Bank of Detroit main office . . .



The under-window model, with 45° inlets and top discharge air delivery, produces the same draftless air flow pattern characteristic of all Kno-Draft equipment. The air moves upward along the window and out under the ceiling, effectively conditioning an area approximately 25 feet from the outside wall. Helical spring hot and cold air dampers in each unit ensure proper air mixing...and full heating and cooling is achieved because dampers close with less than 2% leakage.



On the main banking floor a grid of aluminum, gold anodized, hexagonal cell lighting diffusers hangs approximately 20" below the ceiling proper, hiding ceiling-mounted lighting channels. Ducts running through a piping space above the ceiling introduce air through Kno-Draft adjustable ceiling air diffusers, all of which enable easy adjustment of air pattern.



KNO-DRAFT air diffusers and high velocity valve attenuators provide constant comfort conditions

At the beautiful new headquarters of National Bank of Detroit, the combination of precisely engineered Kno-Draft dual duct high velocity valve attenuators and adjustable air diffusers provides a 500,000 sq. ft. interior with constant comfort.

The dual hot and cold high velocity air distribution system includes nearly 300 overhead and more than 700 under-window attenuators. These units accurately mix, proportion, and diffuse the air to the building's various rooms at precisely the desired volume and temperature. Kno-Draft attenuating and air diffusion equipment was selected because it responds most rapidly to changing loads . . . most suitably serves the wide variety of comfort demands of occupants in private offices . . . and sharply reduces operational costs. The Connor Engineering Corporation is justly proud that Kno-Draft equipment was chosen for this leading Detroit building—an endorsement of Connor experience and performance. Numerous Kno-Draft dual duct diffusion models are available. One of these is engineered for your next building.

Request Bulletin K-33-A for complete information.

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high velocity air diffusers

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FOR A FRACTION OF FORMER COST Furamic Styling in Permacolor brings you utmost unit flexibility





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MONOLINE MOBILWALLS

accent on thrift, accent on style, accent on mobility

Office designer and company controller talk the same language . . . when they talk in terms of new VMP Accent Monoline Mobilwalls. Here is the smartness of modern, fully-flush partitioning, with a subtle accent line between panels. Here is the time-defying beauty of VMP Permacolor. Here is matchless unit flexibility.

But here, too, is a new engineering simplicity to make possible a first and last cost far below that of any comparable product. A simplicity that permits panels to be interchanged without "jackknifing" or disturbing whole runs of partition. For example, a single panel may be changed in just five minutes. Or a door installed between offices in as little time. Or if a new office arrangement is needed your Accent Monoline Mobilwalls may be quickly relocated by your building maintenance crew.

Ask your VMP Representative to show you the capabilities of new Accent Monoline . . . in Furamic Styling that lets you specify color, arrangement, accessories to fullfill *your* concept in mind.



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SEE SWEET'S 1959 ARCHITECTURAL FILE (22a/vi) for 60 pages giving specifications and design advantages of all standard VMP Mobilwalls . . . and suggesting some possibilities of Furamic Styling in Permacolor. "Mobilwalls designed with your concept in mind."



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DIRTY AIR

IS NOW A MAJOR U.S. PROBLEM

Industry and particularly the public utilities have taken the lead in the abatement of air pollution and have reduced contamination from industrial plants. In spite of this, dirty air from a myriad of other sources has continued to rise, creating a major problem.

Dirty air comes from both inside and outside your building. Smoke, fumes, dust and gases all combine to soil and spoil furnishings, equipment, your product and inventory. Airborne dirt means skyrocketing cleaning and maintenance costs, rejects and spoiled production runs. It can also lessen the productivity of your employees.

A new building, or a newly remodeled building, can be obsolete—even with modern air conditioning—if something is not done to effectively remove "dirty," airborne dirt and odors.

Now, more than ever before, the dirtier the air becomes outside, the more important it is to have clean, pure air inside.

Nowhere is it more important to have clean air in your building than in areas of high population density. Our increased population with attendant increases in motor vehicles, and other accessories to our modern way of life cause ever increasing amounts of contaminant and dirt "fall out." No matter how dirty the air outside, or what the activity inside...

You can be assured of clean, pure air in your building...

by including the exclusive Honeywell Air Cleaning System as a vital part of your air conditioning because only Honeywell Air Cleaning

Removes all odors Removes 95% of all airborne dirt

Only Honeywell can offer you the exclusive combination of the Electronic Air Cleaner and the Activated Charcoal Filter.

This "team" removes 95% of all airborne dirt—is 6 times more effective than ordinary mechanical filters. It even removes particles as tiny as 1/25,000,000 of an inch.

Besides assuring you maximum clean air which keeps your buildings spotlessly new, Honeywell air cleaning removes annoying odors and gases. This means the utmost in comfort for you, your employees and your guests.

Honeywell Electronic Air Cleaner

New selector series provides three models: (1) Hi Velocity—for 99-100% dirt removal or where space is limited, (2) Standard—for normal conditions, provides high efficiency dirt removal and high dirt capacity, (3) Hi Load for handling high dirt concentration. Cell type construction permits flexibility to fit any size job.

Honeywell Activated Charcoal Filter

Uses specially refined, charred cocoanut. When teamed with the electronic air cleaner, and located downstream from it, does not become clogged with dirt. Thus it only has to filter gases giving the most effective filtration possible and assuring longer life.

CLEAN AIR PAYS FOR ITSELF

Honeywell air cleaning cuts down your operating expenses, by reducing cleaning, painting and decorating costs. And with fewer bacteria, viruses and allergens in the air, absenteeism can be reduced, efficiency increased. It only requires a small reduction in your cleaning and decorating costs, a slight increase in your workers' productivity, or a small reduction in absenteeism, to *offset* the cost of Honeywell air cleaning.

Here are examples of how easily Honeywell Air Cleaning can pay for itself.

	% reduction in cleaning and decorating costs needed to pay for the Honeywell Electronic Air Cleaner	% reduction in absen- teeism needed to pay for the Honeywell Elec- tronic Air Cleaner
New Office Buildings	7.7	2.3
New Hospital Buildings	4.9	7.0
New Industrial Buildings	14.0	3.4
New Hotels and Motor Hotels	5.8	57.0
New Department Stores	7.7	15.4
New School Buildings	9.2	4.4
New College Classroom Buildings	9.4	20.9

In many companies even more important savings are achieved in production areas. Rejects, spoiled inventories and damage to precision equipment, if caused by dirt and other airborne contaminants, are drastically reduced by the Honeywell electronic air cleaner. Cost savings are also dramatic in the packaging, food and drug industries where bacteria, spores and other impurities can prove costly if not eliminated.

YOU ALSO SAVE IN AIR CONDITIONING COSTS WITH THE HONEYWELL ACTIVATED CHARCOAL FILTER

By filtering the air through activated charcoal, you need less outside air for odor dilution. This results in a substantial saving in money spent both to own *and* operate air conditioning.

Don't let dirty air make your building obsolete—Don't overlook the important benefits of Honeywell Air Cleaning. Without modern air cleaning, a new building can be obsolete—or new air conditioning may be out of date.

For more information about Honeywell air cleaners and filters telephone your nearest Honeywell office. Or write Honeywell, Minneapolis 8, Minnesota.



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With the old system, the supply of hot water often ran out. Busy personnel had to wait for the temperature to rise. Now the four quick-recovery Ruud-Alcoa units afford two-temperature service— 180° for sterilization and 140° for general use—and there's always more than enough hot water for every need. All four units operate 24 hours a day, every day of the year. Yet they have required no maintenance since installation.

In applications where an adequate supply of hot water is vital, you can count on Alcoa alloy water heaters. The aluminum alloy tank is strong, solid and corrosion resistant for longer life and complete freedom from water discoloration. High thermal conductivity assures rapid recovery rate and economical operation. Specially designed units meet American Gas Association Laboratories' requirements. For more information on any application commercial, industrial or residential—send in the coupon, or write Aluminum Company of America, 1898-J Alcoa Building, Pittsburgh 19, Pa.

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Architects: McCoy & Blair, White Plains

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MELLE

Where perimeter heat is indicated, Nesbitt Sill-line Radiation is your prescription. The five Sill-line accessories shown here illustrate but one way this product has been designed to provide a better solution to most installation conditions. There are many others: the five enclosure styles; the six decorator colors; the one-piece back panel that permits mullion-to-mullion application on panel walls. All point up the versatility of Nesbitt Sill-line Radiation. For the full story, send for publication 30.

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Concrete slabs cost less with Milcor Ribform

This new permanent steel form for concrete floor and roof slabs saves on time and materials in many ways. It is quickly installed - in any weather, because it is easy to handle and is not affected by moisture or temperature. Yet Ribform will carry normal roof loads over spans up to 64 inches, because its unique design is stronger than ordinary corrugated patterns.

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For complete details on Milcor Ribform, including load tables, section properties and suggested specifications, see Sweet's, section 2h/In, or write for Milcor catalog No. 245.



Welding to structural supports is done in the ribs of the sheet.





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Another new development using B.F.Goodrich Chemical raw materials





Columbus and Southern Ohio Electric Company building at Columbus, Ohio, uses window wall supplied by Universal Corporation, Dallas, with seals of Geon extruded by Western Textile Products, St. Louis. B.F.Goodrich Chemical supplies the Geon polyvinyl material only.



Geon seals satisfaction into window wall construction

Between each of the factory-fabricated, stainless steel window sections of this new Columbus, Ohio, building is a double gasket extruded of Geon polyvinyl material. In addition, each sash is separately protected by weather seals made from Geon.

These seals will remain springy and weathertight even at extreme temperatures of 40 below or 200 above. Independent tests have proved that seals of Geon have a service life several times that of conventional material.

Geon can make many other products impervious to water and weathering. In extrusions or moldings, Geon provides accuracy to meet tight specifications . . . is already in use in dams, bridges and commercial and residential building to provide new, long-lasting seals of satisfaction. Geon is also available for coatings, films, foam, and rigid profiles.

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SIMPSON FORESTONE 24"x 24" ACOUSTICAL CEILING TILE

Deep-fissured Forestone^{*} tile can be nailed, or suspended by "H & T" concealed systems. This handsome 24'' x $24'' x \frac{34}{}$ " tile is ideal for areas where large scale ceiling patterns are most appealing.



FORESTONE CEILING BOARD

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This structure was envisioned with **cast aluminum components** to assure flat textured wall panels without oil-canning. This degree of texture gives the building a quality of sculpture. In addition, the low cost of patterns, availability of polished or colored surfaces provide an opportunity for creative expression. **Panels are shop fabricated** for tight weatherproof joints and assembled into one-story sections for rapid field erection. **Let Michaels show you** what development of the "Structural Diaphragm" principle can do for metal wall construction and your next building. For additional information, complete construction details and technical data request CWA+5-F.

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Cheating the cities

The cause of urban renewal is in deep trouble. It is not simply that the President vetoed one inadequate housing bill in favor of another still more inadequate, to balance a budget. Urban renewal can survive that. Far more serious is the import of the veto message, indicating that in the future the federal government should shift major responsibility in this area almost wholly to the states and municipalities, withdrawing wholly from public housing and other critical areas of human shelter. This would evade, as will be shown, the mounting federal responsibility for the plight of cities through its own operations, notably such really massive federal programs as highways and defense.

As if this were not trouble enough, urban renewal has erupted a messy situation of its own in the Title I slum-clearance scandals of New York. These, thrown up on the national proscenium in big black headlines, are rarely distinguished as singular to one city and one man's rule, as shown elsewhere in this issue. And if a Congressional investigation of all Title I gets under way in New York this month, as scheduled, the messy pot may be kept boiling for weeks to come. Granted that programs so closely linked to the public weal need constant scrutiny, it is still unfortunate that such fuel is being added to the fire-breathing of those who oppose all public, planned slum clearance and urban renewal anyway.

The truly serious difficulty is that so many men of substance and good will, even as the President, seemingly have failed to think things through. Ignored is the enormous urban revolution going on chaotically around them, transcending all governmental boundaries; unapplied is all the sound fiscal sense these leaders bring to other enterprises, as in combating the obsolescence of industrial plant. Not all men of substance have failed to grasp this great challenge. Rising numbers of solid citizens, including business and corporation leaders, are actively engaged in urban problems, and have come to see from the grass roots the need for substantial federal leadership and assistance. The veto message itself has been attacked as misleading by no less a conservative member of the President's own party *continued on page 95*

THE NORTON BUILDING

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FAST ERECTION Pre-glazed units swing into position from special cradle designed by FENTRON for fast, safe erection.

than Senator Homer E. Capehart, Indiana. On the national and administration level, however, three great blind spots remain:

1. Federal policies and programs are creating unprecedented new problems for cities.

Since World War II, the federal government from necessity has been putting huge sums into various programs, and taking other actions or nonactions that have had explosively damaging effects on cities.

▶ \$1.9 billion a year in federal housing insurance and home loans, on the average since the programs started, have been going to home builders. Around 90 per cent of the total has gone to expedite the postwar explosion of suburban developments, discriminating against new housing in cities. While some redress is under way to encourage rental housing in cities, subject to heavy federal taxes that home building escapes, it is too late to reverse the tide that has drained cities of the middle class and home owners, leaving behind tidal flats in which blight, slums, and decaying downtowns are rankly growing.

▶ \$1.6 billion a year in federal defense highway funds, on the average, have been apportioned since 1956 to states. The impact of this program on cities, though difficult to measure, is not difficult to see from coast to coast. Altogether, the people and property being displaced and demolished by this federal program is estimated to be running about 90,000 family units a year, with little local and almost no federal responsibility displayed for relocation, replacement, or planning.

▶ \$40 billion a year in defense contracts have been going, on the average since 1950, into what amounts to reshaping the economy. The direct and indirect leverage on cities, little noted, is tremendous. Concentration of new industries, as on the West Coast, has built up huge new population agglomerations; dispersal of other industries, as in the South, has created bulging new backwoods towns. Some cognizance is taken of this in a tiny emergency defense housing fund, but all the larger aspects are ignored.

When, therefore, the federal government attempts to shift responsibility for the plight of cities, it is being less than honest. Add to this a long record of inaction in promoting the modernizing of railroads and public transportation, and the federal position becomes untenable.

2. Cities are in the midst of an urban population revolution of unprecedented proportions.

Below all this, pushing with inexorable force, is an urban population revolution which, beginning about World War II, is just now approaching full tide. This is the phenomenon known as "scatteration" or "the exploding metropolis," described by Coleman Woodbury, director of urban research at the University of Wisconsin, as "a new pattern of settlement."

The main characteristic of the pattern is the centrifugal new growth of metropolitan areas. The total national growth from 1950 to 1956 breaks down into 15.6 per cent for center cities, 27.2 for suburbs, and 41.5 for fringe areas, with the latter whipping up a 55.8 per cent rate of increase against only 4.7 per cent for center cities. Professor Woodbury sees nothing here to indicate any diminishing of the outward flow. This urban population explosion, simply at its present rate of growth, will add residents by 1975 equal to the 1950 metropolitan area populations of New York-Northeast New Jersey, Chicago, Los Angeles, Philadelphia, Detroit, Boston, San Francisco-Oakland, Pittsburgh, St. Louis, Cleveland, Washington, Baltimore, Minneapolis-St. Paul, Buffalo, plus 15 million persons more. Even if the rate dips or levels, it will still be something phenomenal.

Above all, it is this fragmentation bomb that both the President and Congress, as well as the public generally, fail to take into account.

3. The new 85 per cent urban population gets only a fraction of the federal money going to farms.

Such changes as the new pattern portends require capital investment, public and private, on a huge, unprecedented scale. States and cities have neither the tax base nor the power for leadership to hold up the public end. Yet the federal projection for urban renewal funds is so small as to be bizarre. The whole current rumpus is over funds-now at a yearly rate of about \$300 million-slightly larger than the price support program on potatoes or about one eighteenth of the Department of Agriculture's budget. Comparison with agricultural supports is not irrelevant. As Thomas R. Reid, civic and governmental affairs manager of the Ford Motor Co., pointed out to the recent Conference of Mayors, there are now a million more slum dwellers than farm dwellers, yet federal percapita expenditure on farm families is \$3,000 yearly against only \$84 per slum family.

Washington has signally failed to wake up to the fact that this is no longer an agricultural nation, but one composed 85 per cent of urban dwellers. When the huge wasteful farm surplus program is added to other urban burdens, the cities are being cheated on the vastest scale in history.

With or without federal funds, the forces of change are so powerful that urban creation and renewal will go on willy-nilly. The only issue is whether, with some foresight and planned investment, some order, reason, and beauty-which is to say architectural quality-can be brought to America's fast-changing scene. The hard fact is that despite federal reluctance to support public works, its own actions in housing, highways, and defense have destroyed or made obsolete a large part of our cities, and its own monopoly of tax base has made it impossible for states and cities to do for themselves.

Renaissance in Japan

Four radical Japanese—and a famous Frenchman—are fighting old ways to give Japan some excellent buildings and a new tradition BY RUSSELL BOURNE With sudden frequency the rugged forms of a Japanese architectural renaissance have been looming over the Oriental horizon. In a day when the world seems enraptured by the convoluted possibilities of plastic materials and dazed by the glitter of the curtain wall, these buildings are welcome evidence that architectural thought can still develop in an independent direction. And, more significantly, they are evidence that, in architecture at least, the Japanese are determined to emerge from their awesome past into a newly creative tradition.

The leaders of the renaissance are a tightly knit group of professionals who work in a generally hostile environment-in Japanese building circles an "architect" is either a sensible package builder or an impractical, Western-influenced esthete. Recent works of four of the leaders are shown on the following pages-along with the latest contribution of the Western architect who has most affected Japanese thought, Le Corbusier. Senior of these architects is Togo Murano (67) who, since beginning his practice in 1929, has consistently sought to relate modern ideas to Japanese forms. Next senior and perhaps most influential is Kunio Maekawa, the disciple of Le Corbusier. Maekawa returned to Japan in 1930 to practice and teach modern architecture and modern technology, emphasizing the virtues of poured-in-place concrete. Best known is Kenzo Tange, once an apprentice of Maekawa, who will come to Cambridge this year to lecture at M.I.T. Most experimental, and highly respected among younger architects, is Hiroshi Oe, professor of architecture at Hosei University, where he has developed a remarkable group of assembly and lecture halls.

It is not coincidental that the building type with which these architects have made their influence most strongly felt is the public building. For Tange, Maekawa, and the others believe that the architectural renaissance will not be complete until acceptance is won for their antiauthoritarian social ideas. Thus, the first real statement of postwar Japanese architecture was Tange's Memorial Peace Center at Hiroshima, which openly invited the public into its raised spaces; his subsequent Tokyo City Hall was so successful in its creation of public plazas and courtyards that city officials have not allowed Tange to go ahead with his "wasteful and radical" plan of developing a traffic-free municipal center.

The critical reaction of the officials represents the normal, arduous climate in which Japanese architecture is flourishing again after centuries of neglect. Its blooms are proud and hardy.

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carlagented) (a) in

Seen from the town, the office block rises above the auditorium.





Roof sculpture on the auditorium and around the penthouse.

Tange's popular prefectural office

The Kagawa Prefectural Office, which serves as a combination county seat and community center for a predominantly agricultural district, is Kenzo Tange's most recent and perhaps clearest statement of his wish to "make something new of tradition." The total complex consists of two main parts, a nine-story office building and a low-lying assembly hall-auditorium (see plan), both of which strongly reveal their post-and-beam concrete structure. Although some critics deplore the woodwork style in a concrete building, the public is delighted with its openness and airiness as well as with the boldpatterned garden. Shortly after the building's completion, one of the architects associated with Tange on the job remarked in post-mortem tones: "... it appears the elevators are too small; the reason being that we assumed peak traffic would occur during the hours when employees were coming to work or leaving, whereas in fact the peak comes in the middle of the day when sightseers arrive en masse." A public building should have that kind of trouble.



Supported by exaggerated concrete joists, balconies shade





the set-back windows of the office floors.



Raised on columns, the auditorium provides space for bench-sitters.



Wood-style concrete louvers screen the auditorium's south end.





Standing before Hosei University's main building is the pagodalike lecture hall that also serves as a high-legged porte-cochere.

Hiroshi Oe's edifying university

Clustered like full-rigged ships around a pier, Hiroshi Oe's three billowing shell structures at Hosei University float alongside the university's main classroom and administration block (see plan). They are special-purpose buildings-a lecture hall of crisscrossed vaults (above), an assembly hall of inverted hyperbolic paraboloids (right, above), and a laboratory of cylindrical shells (right, below)-and therefore should stand apart from the rather monolithic main block that Oe has developed in three sections over the course of the last five years. Oe is fascinated with shell structures because of their adaptability to this kind of formal functional relationship, because shells eliminate the clutter of interior columns, and because their example encourages university students to examine freely the creative possibilities opened up by modern technology.

Above the lecture hall is a pattern of lighting and drainage.



Overhead, the assembly hall's warped shells almost meet.





Twin rows of hyperbolic paraboloids, divided by a central glass strip, make up the assembly hall's roof.



The laboratory's concrete vaults needed to be only 4 in. thick.



PHOTOS : HIRAYAMA



Facing the street are the sentry-boxlike entrances to the second floor.

Maekawa's rugged public housing

Although the Harumi Apartment House looks raw and ungainly to Western eyes, it embodies an experimental and sensitive approach to public housing. Designed by Kunio Maekawa, it is the first Japanese public housing project to be awarded to a big-name architect; it is also one of the first high-rise units in Tokyo's housing program. Some of Maekawa's innovations: a large garden in back of the building that takes advantage of the extra ground area gained by a tall structure; a skip-stop elevator arrangement that delivers passengers to open, gossip-inviting balconies on the third, sixth, and ninth floors; floor-through apartments that blend tight, modular planning (based on the theories of Maekawa's mentor, Le Corbusier), and traditional interiors.



An antique chest inspired the basic form.

Decoration in apartments is traditional.







Shoji screens open onto a narrow balcony

The auditorium rears above the city.





The interior is broad and column-free.

Brick panels curve out from the columns.





Functions are separated: public rooms on the far left, auditorium on the right.

Beneath the height of the auditorium is the entrance to the exhibition areas.



Murano's romantic public hall

Togo Murano's massive public hall for the small city of Yonago offers facilities typical of the civic centers that are being built throughout Japan. The concrete-framed, upswept auditorium that juts out from the low wing of public rooms (top) appears at first glance as forbidding as a samurai. But the warm brick finish, vaulting roofs, and open areas attract the adventure-ready citizens.



The neat, boxlike form of the museum, with its precise panels of small stones, surprised critics who wanted something brutal.

Corbu's international museum

The biggest architectural event in Japan this summer was the opening of Le Corbusier's National Museum of Western Art in Tokyo's Ueno Park. Some art critics moaned that the museum was "more architecture than gallery" (it was built to house the Matsukata Collection of nineteenth- and twentieth-century European painting and sculpture). And, when other critics noted that a number of the exterior details executed by local architects in Corbu's continued absence looked more machinefinished than Corbu would have wanted, they missed the point that the National Museum is actually an *international* museum. Whatever the critics thought, the 100,000 first-month visitors were charmed by the spatial tricks that Corbu had built into the museum. Like his famous gallery at Ahmedabad, India, the museum is built around a ground-level, skylighted sculpture court from which the second-floor painting galleries are reached by a switch-back ramp. These galleries are illuminated by suspended "lighting rooms" (see sketch) which also, by reducing the ceiling height, seem to compress space into the smaller side galleries and out onto the mezzanine floor and roof terrace. With the completion of the museum, there is no doubt that Corbu's influence on Japanese architecture will continue to be strong. It might have been even stronger if officials had approved his plans for a school originally included in the project.



Visitors come in under the museum, between the columns to the glass doors of the reception room (right).







Galleries are illuminated by hung "lighting rooms."

LIGHTING ROOM SEVLIGHT SCULFTURE COURT PICTURE GALLEEY SECTION







5



FORUM acknowledges the courteous assistance of The Japan Architect in obtaining material for this article.

The future of Title I

The mess in New York does not go much beyond the city and its local administration. A survey of Baltimore and 14 other cities finds the urban-renewal program working Well BY STEPHEN G. THOMPSON When New York City's Title I slumclearance and redevelopment "scandals" were splattered all over the newspapers for weeks this summer, the immediate questions were: how far does this thing go into the fabric of the federalsupported urban-redevelopment program, and does it weaken or jeopardize that national program?

FORUM has completed a survey of 16 cities (see box, page 108) and canvassed leading authorities in the urbanrenewal field. It finds that the answer to the first question is that the situation does not go much beyond the borders of New York City; and to the second, that no real black eye has been hung on the program as a whole. Outside of New York, FORUM found only three or four isolated instances of abuses, such as the fining and jailing of a redevelopment director in Jersey City for concealed conflict-of-interests. This is no more than political realists would expect in any large public-works or public-land disposal program. The significant fact, pointed out as amazing by former Federal Housing and Home Finance Agency Administrator Albert M. Cole (1953-1959), is that the urbanrenewal program, despite its broad scope and ten-year duration, has been marred by no widespread major scandal.

As for the effects of the New York "scandals" on other cities, the consensus is expressed by Philadelphia Redevelopment Authority Director William L. Rafsky, who believes that, as of now, the national program will not be seriously affected, beyond a generally tighter supervision everywhere and a possibly sharper scrutiny by Congresswhich may well be to the good. The steam behind a full-dress Congressional investigation, demanded at the height of the New York revelations, has been steadily losing force. Democrats have no relish to probe Democratic New York City before the national election next year, and liberal Republicans are not likely to press for anything that would tag them as anti-renewal or reflect on the administration's handling. Urban renewal, therefore, is likely to escape major injury from this source. For the country at large, however,

much remains to be learned from the New York fiasco, not the least of it by New York itself. What sets the New York situation apart is not so much the basketful of smelly situations uncovered, as a pattern of operations that almost constitutes a handbook on how not to get urban redevelopment done. Actually, for several years the Federal Housing and Urban Renewal administrations have been quietly riding herd on the New York program, raising objections to or rejecting outright many highhanded attempts to circumvent or disregard federal regulations. The nub of the matter is that, scorning federal and local practices that have been tried and proved elsewhere, the New York program is unique-and a mess.

The New York mess

New York's uniqueness is embodied almost solely in the redoubtable, stormcentered Robert Moses, who, in addition to holding many other public works jobs in which he has earned just fame, is chairman of the city's Slum Clearance Committee, a part-time ad hoc body that directs the city's redevelopment program. A prickly but effective political scientist, shrewd and suave, Moses had come to rule what amounts to a private empire of public works in and around New York because he knew what he wanted and how to get it - either through channels, through loopholes, by audacious administrative dexterity, or, if otherwise unobtainable, by fait accompli. It is not that Moses acts against the law, but simply above it. Where his capacity for getting things done did not win high praise, it evoked only the criticism that it was too bad he had to be arbitrary or capricious, and perhaps next time he would observe the rules, but his achievements and integrity could not be overlooked.

When, however, Moses' high individualistic talents were turned in part to slum clearance and redevelopment, an enterprise involving the whole fabric of the community, it led to trouble, and one of the longest, most violent storms of a stormy career. The major revelations of the last few months were that much of New York's \$1 billion slumclearance and redevelopment program was being held closely by a group of cronies with whom Moses was used to getting things done, that project sponsors were chosen by a peculiar preselection system, that some projects were for years "milked" of slum rentals by these sponsors without clearing the slums, and that in one instance a twiceapproved sponsor, Louis Pokrass, was a known business associate of known racketeers. Though none of these things so far has been deemed actionable, and Moses' personal honesty remains unimpugned, their odor is high enough, particularly in the last case, to cause newspapers and civic organizations, led by the Citizens Union, to call for Moses' removal. So far Moses has refused to explain these cases beyond a perfunctory denial of fact or failure to answer a long list of questions from the press.

The situation was summed up more than two years ago in a provoked blast from HHFAdministrator Cole, ordinarily a temperate, equitable man: "This month is the tenth anniversary of HHFA. During most of this time the agency has had more trouble with Mr. Moses than with any other single individual in all the cities of the U.S."

The main sources of trouble were individual and procedural. The busy Mr. Moses holds no less than six major jobs, including Commissioner of Parks,

City Construction Coordinator, City Planning Commission member, Triborough Bridge and Tunnel Authority chairman, and New York State Power Authority chairman, developing the U.S. side of the St. Lawrence Seaway's hydroelectric power. He could spend no more than a modicum of time on the Slum Clearance Committee, which itself had no regular staff for project planning, development, or supervision, such as every other large city in the program has. This led to many inefficiencies and much waste, increased by Moses' personal and stubborn way of doing business. When, to save face in the present situation, New York's Mayor Robert Wagner instituted some

The state of Title I in other cities

A sampling of 14 cities—other than New York and Baltimore, covered in detail in this article—reveals that none is suffering from New York City's problems, though various local programs range from excellent to poor:

Boston. Except for its chairman— Joseph W. Lund, nationally known real estate man — city's redevelopment authority is generally rated "a political dumping ground." Projects for sake of projects, rather than slum clearance, seems to be objective. One West End project, surveyed by outside experts, is shown to be substantial low-rent area, not slum, from which 2,800 households are being ousted. Status: poor.

Chicago. Spirited bidding for land, which city clears, parcel by parcel, as fast as old buildings are vacated and families moved by city's own relocation staff. Redevelopment agency's "gold-fish bowl" policy includes joint meetings about twice a month at which heads of conservation board, building department, and planning commission confer with mayor on renewal plans and progress. Status: excellent.

Cincinnati. Vociferous minority of almost evenly divided city council is alert to shenanigans by any majority. Redevelopment, conducted "in a goldfish bowl," enthusiastically supported by city's two newspapers. Projects conform to city's master plan; no effort to locate them to serve special interests or organizations. Status: good.

Cleveland. Through nonprofit Cleveland Foundation, top industrialists have subscribed \$2 million to revolving fund to assure success of urban renewal. Loans are made to approved redevelopers needing extra financing, and strategic properties are bought while still inexpensive if city agencies cannot act fast enough. Foundation serves as city's redevelopment watchdog. Status: excellent.

Jersey City. Has distinction of having only criminal case in whole program. In 1954, executive director of redevelopment agency was fined \$5,000 and jailed for two years for concealing interest in architectural firm doing business with agency. Charges of poor management and politics rife. Status: poor.

Little Rock. City sells individual building lots for single-family houses to both individual families and speculative home builders. Some commercial parcels sold in open negotiation; program conducted without scandal or outspoken criticism. Status: excellent.

New Haven. Exceptionally effective citizen participation and approval of program through 500-member Citizens Action Commission appointed by mayor. Outstanding land disposal record (see article). Status: excellent.

Philadelphia. Open and vigorous competition for most sites. Originally some sales by negotiation, more recently by sealed bids. Close adherence to city's master plan. Some redevelopers admit friendships with powerful political figures; but no hint that political influence or connection has ever affected awards. Status: excellent.

Pittsburgh. Extensive private, nonsubsidized redevelopment. The city's Title I program, now getting into stride, receives same wholehearted support of city's powerful business community. Status: excellent.

Providence. Completed second Title I project in July. Program scandal-free, very efficient, but misses some of city's worst slums. Some initial projects seem to have been calculated to gain such municipal improvements as schools and playgrounds as well as to redevelop substandard areas. Status: good.

Sacramento. Redevelopment agency strong and independent; it rejected bid of one big redeveloper to buy entire 15-block project, instead offered commercial, hotel, and housing sections separately to get best specialists in each field. Despite heavy political pressure, it also turned down local housing investors for more experienced eastern redeveloper. Sharp-eyed Sacramento *Bee* watches over program. Status: excellent. reforms in the SCC (see *News*, page 13), ordering its chairman to remove "the veil of secrecy" from committee meetings and to appoint a full-time director, Moses' first action at a closed meeting was to reappoint the same part-time staff directors as before from among his old standbys on another of his agencies. "He must have misunderstood me," said Bob Wagner.

A string of incidents

The list of dubious incidents and possible "scandals" in New York's Title I operations—some of which were brought to FORUM's attention over the years—goes well beyond those so far aired.

St. Paul. Delays due to political jockeying and conflicts between redevelopment agency and commissioners. Says one former agency official: "In general it was possible to run your program—if you went along with the commissioners' deals on personnel and contracts." One suit against commissioners charging favoritism in selling a site went to state supreme court, was dismissed. Status: poor.

San Francisco. Slow-moving program due to restrictions hedging land acquisition; first resale of land is not scheduled until next spring at earliest. In January, city's chief administrative officer resigned under cloudy circumstances, in no way involving local redevelopment agency. (He was investor in and director of corporation which purchased properties slated for redevelopment, then offered them to agency at premiums as high as 140 per cent.) Incident has tightened scrutiny of program. Status: poor.

Washington. Large and complex program benefits from good newspaper coverage and support, including some criticism. Formula for upward revision of land prices worked out after local builders complained that proposed negotiated price with Webb & Knapp was too low. One proposed but inactive project criticized for being tailored to provide special benefits to local university. Status: good.

) On two occasions, reputable, nationally known builders and redevelopers were dangled along with some promises of participating in the program, only to find eventually that the prize went to a small, obscure outfit or carried impossible terms. In the first instance, the losing builder was privately approached by the winner to become an associate, who would do most of the work on the project while the sponsor would take a profit for holding the "franchise." In the second, a developer found that a promised contract for taking over a sour project from a defaulting sponsor was repeatedly delayed while a fixed-sum settlement to be paid to the original stockholders was successively upped, \$100,000 at a time. The developer bowed out.

) In the early stages of the Lincoln Square project, Moses and the SCC made an extraordinarily involved arrangement to sell a basic three-block site to the Performing Arts Center in two parts: the main portion for about \$7 per sq. ft.; a small subplot occupied by the 13-story Kennedy Building for a flat \$1.5 million, or about \$63 per sq. ft. Arts Center officials later found out that this subplot could be obtained as an integral part of the Title I site and protested to the SCC, arguing that they should be allowed to buy it for the same price as the rest. This led to an involved tug of war with Moses, who held out for the original arrangement. Eventually, the HHFA refused to approve the two-part sale and the Arts Center paid a composite price-averaging \$10.60 per sq. ft .-- saving federal government about \$700,000 in subsidy.

A curious subsidy-credit situation, typical of the city's tangled web of public works, is posed in the Bronx's storm-tossed Soundview Title I redevelopment, from which federal funds already have been withheld on suspicion of speculation. Part of this project is the improvement and extension of a city water-front park, the cost of which may be counted as a project expense by the city and credited as part of its write-down contribution. The park extension already is under way, according to Moses, with the placing of an unspecified amount of "fill" obtained from a Bronx public-housing site. The poser: since the federal government already is bearing the full cost of disposing of this excavated material through its underwriting of all capital

costs on the housing project, can the city also receive credit to itself for the "value" of this same material when used as "fill" on its Title I park project? Federal officials last month alerted all concerned parties to be wary of the situation.

A handbook of dubious policies

Most of these incidents and many more dubious policies flow from Moses' insistance on his own system of slum clearance and redevelopment.

Unlike most cities, New York's SCC "tentatively" approves a project sponsor before calling for public bids, though theoretically any builder is free to bid for a New York Title I site at formal auction. In 14 official auctions held so far, however, there has never been a bid from anyone except the predesignated sponsor. This practice is now likely to be reformed-though no one can be sure in the SCC's closed-door operations-for federal officials are insisting that the city introduce genuine open competition into sponsor selection. This is delicate ground because competitive bids, once obtained, must still be judged-and negotiated-largely on intangibles. Federal officials also intend to insist quite properly on wide advertising well in advance for proposals, and on assurances being given that no builder will be harrassed or penalized even if he outbids an officially favored sponsor at an open auction.

Unlike other cities, New York effects simultaneous acquisition and resale of an entire project tract to the designated sponsor on a single day, then putting the full task of site management, tenant relocation, and slum clearance on the redeveloper. Moses always has insisted on this unique procedure, arguing that it requires too much city investment and is too "risky" for the city to clear sites without assurances of immediate sales, pointing to sale troubles encountered in St. Louis, Detroit, and Philadelphia. But these cities have worked out of their difficulties, and none has had a string of sour projects such as has piled up in New York, where, as a consequence of policy, some so-called redevelopers have been allowed to take large sums out of properties slated for redevelopment without ever clearing them.

• Unlike other cities, notably Washington, New Haven, Pittsburgh, and Sacramento, New York has never nego-

continued on page 194

1 (see plan below)

2











This summer, for the first time, the Russian people have been able to see a definitive display of U.S. building arts—in a skillfully designed architectural exhibit at Moscow's fair

Moscow looks



PHOTOS: (1) COURTEST KAISER ALUMINUM; (2 & 4) COURTESY OWENS-CORNING FIBERCLAS CORF.; (3) ROBERT ZION; (5) ROBERT LAUTMAN. ARCHITECTS: WELTON BECKET & ASSOCIATES; LANDSCAPE ARCHITECTS: ROBERT ZION-HAROLD BREEN.



6 Architectural display takes up almost a quarter acre, has round entrance hall showing New York at night. Letters spell "architecture."

at U.S. architecture

When Nikita Khrushchev toured the construction of the American National Exhibition in Moscow last spring he confessed that some of its architectural ideas were good enough to steal. In the past two months, 60,000 Russians a day have jammed their way into the U.S. exhibit in old Sokolniki Park and discovered firsthand what he meant. America's architectural ingenuity has been pleasingly obvious at the fair—in its buildings, in its displays, and especially in its architectural exhibit designed by Architects Peter Blake and Julian Neski.

The point of the architectural exhibit is to show the Russians a cross section of U.S. building today, in the city and in the suburbs and country. Under George Nelson's umbrellas of glass fiber and plastic, Blake and Neski artfully assembled nearly 100 photographs and models of contemporary architecture, ranging from Frank Lloyd Wright's Florida Southern College to the Chicago Chestnut Apartments of A. Epstein & Sons. By taking and mounting photos of these buildings at the eye-level height of 5 ft. 2 in., they achieved an uncanny air of reality; the fair-goer roaming through the exhibit gets a strong impression that he is seeing actual buildings. Indeed, the effect is so powerful that it can even be sensed in photos on these pages.



PHOTOS: (ABOVE) PETER BLAKE; (BELOW) ROBERT LAUTMAN

Umbrellas cover urban half of the collection of 12 ft. high photos.



PHOTOS: PETER BLAKE



Footbridge (above, left) leads from urban part of exhibit in foreground to country part. View of Wright's Taliesin is in back-ground, GM Technical Center is at right.





Stereo peepholes (above, right) show color slides, supplementing big photo panels. This corner of exhibit is devoted to urban renewal, public housing, and private apartments. Pool and fountains (below) set off tree-dotted suburban area. Curved photo panels give panoramic impression. Panel backs are painted yellow in suburban area, red in urban section. Exhibit pictures 20 foremost U.S. architects (below) picked by architectural magazines. Government policy was not to exhibit materials or technology, which some feel was a mistake.

PHOTOS: (BELOW) ROBERT LAUTMAN; (OTHERS) FETER BLAKE





The question "What comes after Seagram?" is being answered in Philip Johnson's latest designs. In view of his earlier work, the answers will be surprising

The Mies-less Johnson

BY WILLIAM H. JORDY

Philip Johnson—Mies van der Rohe's disciple, biographer, and erstwhile collaborator—is venturing out with designs very different from the classically simple work for which Mies is well-known. Johnson's declaration of independence from Miesian discipline is most interesting because he pursued this discipline longer and more profoundly than did most others. He produced many a work which, suffused with his own creative individuality, was also exactingly Miesian, demonstrating a genuine kinship. Under the circumstances, it is natural that the break be ambivalent. But ambivalent or not, the Mies-less Johnson is more interesting and more varied than the Miesian one.

At first glance the neoclassic forms remain, simple and serenely ordered, in his latest work. The elemental shapes and dominating ceremonial space of his typical country houses persist in most of his current production. Compared to his earlier work, most of his recent designs are more compact in composition. Plans are rigidly axial and more commandingly dominated by central spaces, which have generally become more tightly contained. But on second glance there is a tension between the intensive discipline of the early Johnson and the extensive exploration of the present one (photo, left). Johnson's neoclassicism, still deeply embedded, is being modified by three interrelated quests, central to his work from the beginning, but now revealing new possibilities. First, there is the quest for a continuity of human experience through the recall of historic forms. Then, there is the quest for movement of various sorts to enliven the rigidity of the neoclassical order. Finally, there is the quest for a powerful image evoked by the building, both through its visual form and by associations which it calls from memory.

Johnson's orientation has always been profoundly historical, but subtly so. His present historical allusions, however, are both wider in range and, occasionally, more literal in their reference. His exploration of the Western tradition, for example, ranges from the portico and cella of the classic temple (photos, page 117) to complex plans and undulating roofs of Hadrian's Villa at Tivoli or of work by such late baroque architects as Borromini and Guarini (photos, pages 121, 122). Occasionally he goes further to attempt a synthesis of Western and non-Western traditions as, for example, in juxtaposing ideas garnered from the Japanese pavilion house and the Indian stupa. Even vernacular and folk architecture do not escape attention. Johnson's shingled dome for a shrine at New Harmony, Ind. (page 122) recalls the undulating surfaces of the American shingle style and the knobby masses of Norwegian wood churches.

In individual cases, the puzzle is how much Johnson's design grew *out* of historical reminiscence in the first place, and how much it grew *toward* historical reminiscense during its development. But for all the transmutation of old into new, the hazard in such historicism is a withdrawal from life to form, from actuality to abstraction. This hazard is especially evident, perhaps, in the Carter Museum and the Computing Laboratory at Brown University (page 117). Here the reminiscence is too literal; the past is simply "modernized."

Johnson's neoclassicism has always diverged from Mies's in an almost eighteenth-century liveliness, as natural to Johnson's mobile temperament as it is alien to the fixed gravity of his mentor. The most significant ventures into movement in Johnson's recent work are three: most completely realized is the use, in the Boissonnas house (page 121), of the principle of Japanese domestic architecture which adds up similar building units in a dynamic composition; most pregnant for future possibilities is the baroque complexity of plan and ceiling in the New Harmony shrine; most questionable is the often literally moving detail of the newly opened Four Seasons Restaurant in the Seagram Building (page 123), albeit festive and vivacious in the setting.

Finally there is Johnson's quest for an architectural image as memorable and unforgettable as an unusual human face. In the new shapes they take, these images break with the Miesian past. In their self-containment, however, they remain essentially Miesian. Although one may question the remote and chilly abstraction in some of Johnson's images, they are assured memorable abstractions. The power to envelop a forceful plan with a haunting exterior image is at the core of Johnson's achievement. This power is more evident now than before. If architecture is measured by the intensity of its image on the consciousness of the viewer, Johnson's current work is his most challenging to date.


THE TEMPLE

The largest and most impressive of Johnson's porticoed schemes is the original design for the Theater for the Dance in New York's Lincoln Center.

The girderlike colonnade surrounding the exterior (model photo, left) seems simultaneously decorative and severe. Actually, only the inner column of the paired group is structural. The outer columns only symbolize the structure acting like Mies's H-section exterior pilasters. The extension of the colonnade around the back walls of the stage binds the compact mass together the way pilasters bind a classic or renaissance wall.

Despite Johnson's preference for this design, it will not be built because recent alterations in the general plan require a rectangular rather than a semicircular building. With the abandonment of the first scheme, Johnson proposed another design (sketch, left), which was abandoned in turn for a third scheme now in the formative stage and not yet divulged. The second scheme extended a tall and elegant portico across the front of the central plaza and across the facades of the flanking theaters for the dance and the philharmonic. The theaters would have been visually subordinated to the outdoor room formed by the all-embracing portico.

PORTICOES

The Thomas J. Watson Memorial Computor Laboratory at Brown University in Providence, R.I. (model photo, above right) and the Amon Carter Museum of Western Art for Fort Worth, Tex. (below, right) are Greek Revival of modest pretention. Both are simply masonry boxes fronted with porticoes, one in red concrete, the other in hand-carved pink granite. In each example the portico is more tenuously related to the building than the portico for the Theater of the Dance.

Of course, neither portico is as arbitrary as may appear at first glance. Both go nicely with enclosed interiors. Both can be justified as sunshades and entrance shelters. And the buildings are both so sited as to make a frontal composition logical. But defenses aside, the porticoes are so two-dimensional as to recall stage backdrops for some ballet dream sequence.











PHILIP JOHNSON

A CENTRAL PLAN

Among Johnson's more adventurous structures is the Proctor, Williams, Munson Museum in Utica, N. Y. (model photos, left), now nearing completion. Here, the walls hang as deep reinforced concrete beams from trusses exposed atop the roof. Obviously, the Utica Museum harks back to Mies's Crown Hall at the Illinois Institute of Technology. But, as those inclined historically may note, it looks back even more directly to Mies's forgotten building for the German electrical industries at the 1929 Barcelona Exposition and to a third source (to which Johnson confesses): Frank Lloyd Wright's 1908 Unity Temple.

As seen in a model, the building is sited on a gentle slope. Offices and an auditorium will be placed below grade. A separate entrance to these facilities is located at the rear of the building and will be used when the Museum is closed. The Museum itself will



be entered in front across a bridge of stairs over the sunken moat.

On the exterior, the box form suggests the unified central space within, while the tic-tac-toe division of the trusses records the second-story mezzanine that surrounds the central room.

Although the plan is logically delineated on the exterior of the Museum, the question is whether or not the resulting image will be a happy one. The brutal scale of the bronze frame and hammered black-granite wall is deliberately contrasted with the delicate scale of railings, glazed entrance, and basement windows. There is a remote quality to the austerely closed shape which, coupled with the monumental scale, is, perhaps, initially discomforting. But there is no denying the haunting quality of the image.

AXIS AND CLIMAX

Structurally more radical than the Utica Museum are Johnson's Nuclear Reactor Building (outside U.S.-model photos, right) now nearly complete, and his shrine in New Harmony, Ind. (page 122), now in construction. Both buildings are gored circular structures, the reactor built of reinforced concrete, the shrine of wood frame covered with shingles. Both are on axis in rectangular enclosures, with the most important form topping other forms in a hierarchical fashion. Both are reminiscent of the undulating baroque shapes of Borromini and the complex geometric plans of Roman architecture.

The reactor dome rises above the battered walls of a rectangular podium containing offices and laboratories. The entire complex is formidably sealed against desert sun. Only a single entrance at the front and a truck entrance for the reactor at the side break into the walls of the podium.

Inside, the complex is a shaded garden oasis. Daylight is filtered from the open garden court through the glazed interior walls to the laboratories. The cross-shaped columns of reinforced concrete in the court may distantly recall Mies, but the elegant flared shapes are more reminiscent of the inverted columns of nearby Crete.

The concrete-surfaced reactor casing is shaped at its base like a drum, takes on a many-pointed star plan as it clears adjoining roofs, and is the same star at the top—but slightly smaller and with the points reversed (see rendering). The reversal gives the wall facets a subtle hyperbolic-paraboloid twist. The roof, also faceted, rises gently to a central bronze disk.





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A COLONNADE

At the University of St. Thomas in Houston, Tex. (photos and plan, left) Johnson used a portico as a running colonnade, much as Jefferson did in imposing a large unity on many small buildings at the University of Virginia. The buildings at St. Thomas, unlike Jefferson's, vary in size, shape, and placement, and are simply hooked onto the back of the continuous galleries. And, unlike Jefferson's colonnade with its one- and two-story alternation, Johnson's all-two-story version holds a uniform cornice height. This cornice line is held across the classroom and dormitory buildings by simply raising the lower-ceilinged dormitory buildings on a 4 ft. artificial earth mound. This change of level, plus the closure of the dormitory quadrangle by a building across the main axis of the campus, nicely distinguishes the two separate functions.

The lightly framed colonnade marches across the front of the buildings in marked contrast to the buildings themselves, Miesian in weight and gravity. Occasionally, smaller courts are opened between the U-fronted classroom buildings and the colonnade, which ties the whole main quadrangle into a neat rectangle.

Johnson's several portico buildings demonstrate one of his architectural ambitions: "In addition to creating beautiful individual structures, I would like to be an architectural vulgarizer like Palladio. I would like to create designs which could be applied to cheap as well as to expensive buildings."

MILLER.

A PAVILION

The vitality of the Eric Boissonnas house in New Canaan, Conn. (photos and plan, right) derives from the rigid components of checkerboard, square bay, and pier out of which grows a free plan. The checkerboard, eight units across by five units deep, was marked off on an artificial earth



terrace overlooking a landscape of woods and water. Once the 16 ft. squares were established, the composition grew into three dimensions by enclosing some of the rectangular building bays as rooms and leaving others open as outdoor space. The rooms, indoors or out, retain a sense of the original "bays."

The rectangular piers, two bricks wide and four bricks long, assume a double role: they are columns when seen head-on and slabs when viewed from the side. As columns they mark points in space; as slabs they direct the eye from the entrance to the rear terraces in accordance with the plan.

The dignity and liveliness of the Boissenas house are most evident at its climax in the grand salon, appropriately furnished in Louis Quinze style. Here the contrast of high spaces and low, of sunlight and shadow, of formality and informality, provides a space exceptional in modern architecture and unique in Johnson's work.

While the prototype of the house is certainly the add-a-unit plan of the Japanese house, the thin wooden roof on heavy piers derives from recollections of pergolas in Italy. Johnson also admits to having been influenced by Le Corbusier's week-end house at Vaueresson and, possibly, by Louis Kahn's strongly bounded building bays.



Architectural Forum / September 1959







THE DOME

As architecture, the shrine in New Harmony, Ind. (model photos, left) is an unusual commission. Johnson, in simply sheltering a Lipschitz sculpture under a hood, took liberties he might hardly have hazarded in a more complicated building. The structure is now being built in the unspoiled country where Rappites and Owenites plotted their utopias.

The ground plan for the 50 ft. high hood of lapped wood shingles is formed of six interlocking circles surrounding an inner circle. The outside contour of the circles is one track and the inner circle the other track for the parabolic curves of the hood. Wood bents rise in the valleys as "columns" and curved horizontal "ribs" arch outward from column to column to provide a base for the plywood sheathing.

The large axial portal, which Johnson added at the request of Sculptor Lipschitz, serves only on ceremonial occasions. For everyday use there remains the small side entrance. Across the court is an open balcony overlooking the Wabash River.

MOVEMENT

In the sumptuous Four Seasons Restaurant in the Seagram Building (below and right), thin chains of colored aluminum looped across the windows undulate with currents from the airconditioning system. In the cocktail lounge, suspended clusters of brass rods by Sculptor Richard Lippold create an animated aurora borealis. Stair rails are supported on two staggered rows of thin rods which seem to flicker as the steps are mounted.





Volume of the top builders rose 8 per cent last year; 35 firms were new to the list

The 100 biggest contractors

The 100 biggest general-building contractors, listed on the following pages, had an extraordinarily good year in 1958. New building construction put in place by the 100 rose to \$2.7 billion, a gain of \$222 million, or 8.3 per cent above 1957. This compares with a 2.6 per cent rise in all U.S. construction last year, and with an 11 per cent sag in the volume of the 100 biggest architects (FORUM, Aug. '59).

The contractors' 1958 performance differed in many ways from that of the biggest architects. For one, the contractors scored heavy gains in school and hospital building, the two areas that caused most of the drop in the architects' list. Conversely, the contractors lost in industrial building, one place in which the architects gained. These and other divergencies raised a significant point: either the big contractors did much of their work with smaller architects; or they did a lot with no independent architects at all.

The 100 biggest contractors accounted for 6.5 per cent of all *building* construction in the U.S. last year.* This ratio, based on adjusted national totals, excludes as does FORUM's list all heavy construction (dams, highways, etc.) by the 100 contractors, the equipment value of industrial-process plant construction, and all work done for a firm's own account (which bars most big home builders from the 100 list). FORUM's list includes only building within the continental U.S. (excluding Alaska).

Once again, the biggest contractor to appear on the directory is New York's George A. Fuller. With \$135.9 million of new building put in place last year, Fuller again shaded second-ranking Turner Construction (\$130 million of building in 1958). In third place was Robert E. McKee of El Paso (\$81.8 million), followed by Hal B. Hayes, Los Angeles (\$75 million), and John Mc-Shain, Philadelphia (\$71.5 million). Of the top ten firms, four are new to the group: Hal B. Hayes; Daniel Construction, Greenville, S.C.; Frouge Construction. Bridgeport, Conn.; and Farnsworth & Chambers, Houston. Dropping out were Del E. Webb, J. W. Bateson (both of which did not supply data for 1958), Perini Corp, and Johnson, Drake & Piper.

Beneath the top ten there were five firms that individually completed \$40 million or more of construction; 35 others with \$20 million to \$40 million; and 50 with less than \$20 million. On the whole, the bottom layer of the directory increased more during 1958 than did the top. Total construction of the lowest 25 firms on the list was up 16 per cent over 1957; volume of the top 25 gained only 5.6 per cent.

This year's directory also shows that: Sixty-five contractors that ranked among the top 100 in 1957 were also among the biggest firms in 1958. (This was almost identical with the architects' list, which had 66 repeaters.) Three ranked the same as in 1957, 33 ranked higher, and 29 were lower. Of the 65 repeaters F. H. McGraw, Hartford, made the biggest jump in standing-from ninetieth place to twelfth (a factor in the jump: process plant construction, included in the totals for 1958, but not for 1957). The sharpest fall of the 65 was by Perini Corp., which dived from No. 8 to No. 85.

▶ Commercial construction accounted for more than one-quarter of the total \$2.6 billion of construction reported by 97 firms which broke down their work by building types. Industrial building represented 21 per cent of the total, residential construction 13 per cent, and hospital and institutional construction 9 per cent. Schools took 8 per cent, and all other building 23 per cent.

▶ As in 1957, the biggest constructor of commercial and office buildings was George A. Fuller, which completed \$67.9 million of business facilities. No. 1 in industrial construction in 1958 was F. H. McGraw (\$41.7 million); in housing, Frouge Construction (\$38.2 million); in hospitals, John McShain (\$35.7 million); and in schools, F. E. Young, San Diego (\$12.2 million).

This year 96 of the contractors on FORUM's list submitted estimates of the construction volume they anticipate for the current year. Of these, 57 firms expect to do better than in 1958, and 20 expect to improve by as much as \$5 million or more. Thirty-two contractors anticipate a smaller volume of work in 1959 (18 think they will be down as much as \$5 million), and seven expect to do about the same. As a group, all 96 companies expect to put in place 6.6 per cent more construction in 1959 than they did last year. If past performance means anything-the contractors predicted last year's gain within almost one percentage point-they may well hit that estimate on the nose.

A list of building's biggest clients will appear in the October issue, supplementing this list of the biggest contractors and last month's list of the biggest architects. Combined reprints of the three lists may be had after October 1 for 25 cents each, prepaid.

^{*}Ten contractors and nine package builders that probably ranked among the top 100 did not supply data. The missing contractors: J. W. Bateson. Dallas; Ragnar Benson, Chicago; Grove Shepherd Wilson & Kruge, New York; J. A. Jones, Charlotte; Peter Kiewit, Omaha; John Lowry, New York; Frank Messer, Cincinnati; Frank J. Rooney, Miami; Rothschild, Raffin & Weirick, San Francisco; Del Webb, Phoenix. The missing package builders: Austin Co., Cleveland; Bechtel Corp., San Francisco; C. F. Braun, Alhambra, Calif.; Cunningham-Limp, Detroit; Holmes & Narver, Los Angeles; Kaiser Engineers, Oakland; Stone & Webster, Boston; United Engineers & Constructors, Philadelphia; and Wigton-Abbott, Plainfield, N.J.

			Construction put in place		Type of construction put in place as a per cent of 1958 volume					
Rank		Firm (home office)	1958	1959 (est.)	Idustrial	ommercial	esidential	ducational	ospital & istitutional	ther
96	57	Firm (nome onice)	(\$000)	(\$000)	5	ŏ	Ř	ш	TE	0
1	1	George A. Fuller (New York)	135,900	150,000	17	50	11 1	6	2	25
2	2	Turner Construction (New York)	130,000	150,000	29	44	6	2	10	9
3	6	Robert E. McKee (El Paso)	81,836	69,695	12	19	28	2	21	18
4		Hal B. Hayes (Los Angeles)	75,000	150,000	2	5	-		-	93
5	4	John McShain (Philadelphia)	71,500	74,000	-	30		15	50	
6	13	Daniel Construction (Greenville, S.C.)	59,492	73,713	61	15	1	11	-	12
7	5	Darin & Armstrong (Detroit)	59,483	51,395	60	18	()	9	5	8
8	- 7	Hilp & Rhodes (San Francisco)	51,290	53,000	21	74				5
9	-	Frouge Construction (Bridgeport, Conn.)	50,975	62,500		100 - 0	75	17	-	8
10	25	Farnsworth & Chambers (Houston)	45,263	N.A.	22	7		8	9	54
11	12	Gilbane Building (Providence)	43,400	35,000	26	27	(51)¥	. 9	2	36
12	90	F. H. McGraw (Hartford)	41,700	10,000	100		2(i) - 3 3	·.* —	-	
13	29	Terminal Construction (Woodridge, N.J.)	41,700	40,000	10	3	27	1	1	58
14	15	Gust K. Newberg (Chicago)	40,000	50,000	-	30		2	8	60
15	24	Paul Tishman (New York)	40,000	36,000		-	21	4	50	25
16	41	C. H. Leavell (El Paso)	37,839	42,000		29		2	3	66
17	55	Sumner Sollitt (Chicago)	36,000	45,000	30	5	30		30	5
18	20	Diesel Construction (New York)	35,250	43,375		97	(11) 	nd -		3
19	19	Virginia Engineering (Newport News)	34,800	38,000	55	22	10	2	7	4
20	44	Diversified Builders (Paramount, Calif.)	33,881	28,566	27	13	10	and the second		50
21	-	Cedric Sanders (Santa Ana, Calif.)	32,776	20,000			100	()	-	-
22	40	H. R. H. Construction (New York)	32,018	35,927	2	5	56	16	7	14
23	17	Taylor Construction (Miami)	31,300	42,600	-	1	89	-	8	3
24	21	C. L. Peck (Los Angeles)	31,200	42,000	2	97			-	1
25		Gersten Construction (Beverly Hills)	30,190	25,000		N 19 77 1	10	-	-	90
26	49	Myers Bros. (Los Angeles)	28,068	13,000	2	8	7	4		79
27	35	McCloskey & Co. (Philadelphia)	27,695	31,000	4	49	33	10	4	
28	22	R. P. Farnsworth (New Orleans)	26,758	26,758		20	1	6	-	73
29	38	Bryant & Detwiler (Detroit)	26,500	28,000	16	64	-	-	17	3
30	14	Huber, Hunt & Nichols (Indianapolis)	26,000	35,000	40	10	-	40	-	10
31	-	Dinwiddie Construction (San Francisco)	25,009	26,259	20	60	-		10	10
32	-	Caristo Construction (New York)	25,000	27,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
33	-	F. E. Young Construction (San Diego)	24,500	44,000	12	10	-	50		28
34	43	Haas & Haynie (San Francisco)	24,200	26,862	29	69	2			-
35	33	Swinerton & Walberg (San Francisco)	24,058	24,058	47	49	1910-0	2		2
36	81	Arthur Venneri (Westfield, N.J.)	23,500	25,000	6		46	20	5	23
37	16	T. C. Bateson Construction (Dallas)	23,350	18,000		24	10.11	1. 1. 1. 1. 1.	36	40
38	52	MacDonald Construction (St. Louis)	22,683	45,800	4	8	15	-	-	73
39	28	Henry C. Beck (Dallas)	22,671	30,400	55	29	-	10 77 9	11	5
40	75	Williams & Burrows (Belmont, Calif.)	22,523	25,000	12	18	5	16	15	34
41	57	S. S. Silberblatt (New York)	22,282	18,000	-	-	100	-	-	-
42		Blake Construction (Washington)	22,122	28,759	-	48	18	9	10	15
43	18	O. W. Burke (Detroit)	22,084	25,500	1	11	-	10	8	70
44	31	Walsh Construction (New York)	21,795	21,795	80	14			6	-
45	64	Cahill Brothers (San Francisco)	21,500	27,400	14	66	-	18	2	-
46	48	Cauldwell-Wingate (New York)	21,300	10,000	-	50	25	And And	15	10
47	36	Malan Construction (New York)	20,632	25,000	36	14	4	19	9	18
48	39	John W. Cowper (Buffalo)	20,410	15,000	35	20	1.5 -	41	4	-
49	-	Twaits-Wittenberg (Los Angeles)	20,215	25,000	65	20		15		-
50		H. D. Tousley (Indianapolis)	20,100	14,000	95	() they	5	C DITTE	-	-

NOTES: Construction totals shown for package building firms, which do both design and construction, include only those projects on which they have acted as general contractor. N.A. means data not available. "Other" includes churches, courthouses, social, recreational, and military building.

				Construction put in place		Type of construction put in place as a per cent of 1958 volume					
Rank '58 '57		Firm (home office)	1958 (\$000)	B 1959 (est.) D) (\$000)	Industrial	Commercial	Residential	Educational	Hospital & Institutional	Other	
51		Blount Brothers (Montgomery, Ala.)	19,883	29,000	20	25		a de terres		55	
52	1 <u></u>	Dickmann-Pickens-Bond (Little Rock, Ark.)	19,774	15,000	40	20	-	25	15	-	
53		Burl Johnson & Assocs. (Tulsa)	19,500	33,000		100				-	
54	61	John A. Volpe (Malden, Mass.)	18,880	18,000	8	58	-	11	10	13	
55	-	Vermilya-Brown (New York)	18,716	20,500	-	50	-	2	20	28	
56	100	Howard S. Wright (Seattle)	18,686	18,686	20	49		-	-	31	
57	73	Florida Builders (St. Petersburg)	18,211	20,000		ichtic <u>es</u> j	85			15	
58	89	B. J. Lucarelli (Newark)	18,170	22,000	1	1	3	20	13	75	
59	85	Stolte, Inc. (Oakland, Calif)	17,918	16,822	3	13	1	12	2	69	
60	-	Heftler Construction (Beverly Hills)	17,500	13,500	(0.0	7) (1 44)	1110) 11	12 14 	-	100	
61	53	S. N. Nielsen (Chicago)	17,273	17,000	33		35	9	22	1	
62	-	Barton-Malow (Detroit)	17,200	20,000	70	30				-	
63		Fruin-Colnon (St. Louis)	17,000	17,000	66	28		6	-	-	
64	77	Southeastern Construction (Charlotte, N.C.)	16,750	18,000	45	15		5	15	20	
65		Caye Construction (New York)	16,660	8,240	20				35	45	
66	34	J. A. McNeil (Alhambra, Calif.)	16,635	15,000	12	3	12)-50	22	15	48	
67	-	Anthony P. Miller (Atlantic City, N.J.)	16,404	9,843		-	90	10		-	
68	1.10	Depot Construction (Long Island City, N.Y.)	16,315	19,415	()	15		20	65	-	
69		A. Bentley & Sons (Toledo, Ohio)	16,000	8,800	30	21	199	15	19	15	
70		Castagna & Son (Manhasset, N.Y.)	16,000	20,000		30	20	15	25	10	
71		Sam W. Emerson (Cleveland)	16,000	16,000	27	51	2) (<u></u>)	10	12	-	
72	27	H. K. Ferguson (Cleveland)	16,000	17,600	100	(1914) <u></u>	1500-05			-	
73		James I. Barnes (Logansport, Ind.)	15,999	12,799		14	dire det	37	45	4	
74	23	George F. Driscoll (New York)	15,913	19,650	-	9	45	14	18	14	
75	69	Psaty & Fuhrman (New York)	15,850	9,423			40	32	22	6	
76	86	F. D. Rich (Stamford, Conn.)	15,775	15,000	_	15	29	ht <u>an</u> d	16	40	
77	65	William Simpson (Los Angeles)	15,750	N.A.	25	35		1912	35	5	
78		Inland Empire Builders (Riverside, Calif.)	15,500	21,102			35	101 -		65	
79	42	Walter Kidde (New York)	15,332	20,000	60	10		-	20	10	
80	66	Rust Engineering (Pittsburgh)	15,300	17,600	79	18		194	-	3	
81	51	Martin K. Eby (Wichita)	15,258	14,000	25	24	the state of the	10		41	
82	84	James Stewart (Falls Church, Va.)	15,220	19,565	22	34		17	1	26	
83	45	Charles H. Tompkins (Washington)	15,194	17,764	-	82	-	11	-	7	
84	78	Aberthaw Construction (Boston)	15,125	13,500	75	19	5	-	-	1	
85	8	Perini Corp. (Framingham, Mass)	14,500	15,000	37	40	-	9	6	8	
86	87	Lembke Construction (Albuquerque)	14,464	11,571	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
87	-	George W. Lathrop & Sons (Toledo, Ohio)	14,378	7,189	41	7	1	44	2	5	
88	62	Mellon-Stuart (Pittsburgh)	14,334	16,000	20	45	1	4	25	5	
89	—	James McHugh (Chicago)	14,325	15,758	-	10	10	30	40	10	
90	99	A. L. Jackson (Chicago)	14,319	16,750	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
91	30	Frank Briscoe (Newark)	14,270	20,000	70	30	-	-		-	
92		Centex Construction (Dallas)	14,109	N.A.		10	90	-	-	-	
93	-	E. & F. Construction (Bridgeport, Conn.)	14,000	15,000	21	24		29	14	12	
94	-	Yonkers Contracting (Yonkers, N.Y.)	14,000	7,700	-	10	-		-	90	
95	-	M. J. Brock & Sons (Los Angeles)	13,775	N.A.	5		56		14	25	
96	_	Fusco-Amatruda (New Haven)	13,700	15,000	4	28	- 11	53	9	6	
97		Ritter Bros. (Harrisburg, Pa.)	13,695	13,695	13	27	2	29	7	22	
98	-	Bank Building & Equipment Corp. (St. Louis)	13,653	15,000		95	5	-	-	-	
99	70	Wark & Co. (Philadelphia)	13,520	18,540	6	16	2	30	13	33	
100		Navarro Corp. (Pittsburgh)	13,467	13,516	10	17	22	26	19	6	



1. Three small office buildings nest under a sunshade of metal mesh.

A cage for designers

A group of firms which sometimes work as one get together under a steelframed, metal-mesh canopy When Architects Smith & Williams teamed up with Landscape Architects Eckbo, Dean & Williams, and Planning Consultants Samuel Eisner & Associates to form an omnibus organization called Community Facilities Planners, they decided that the group could operate most efficiently under one roof. But the several firms, all continuing independent practices as well, still needed separate drafting rooms, reception areas, and conference rooms. Their solution was an almost classic example of having one's cake and eating it, too. Their new building in South Pasadena, Calif., is, in fact, three separate buildings under one roof. (A fourth building will soon be added for Industrial Designers Selje & Bond.)

But the roof is really not a roof. Instead, it is an arched sequence of strips of expanded metal mesh held up by light steel columns and open-web joists (1).



2. Spherical lights hang from open-web steel joists.

Obviously, Smith & Williams did not put up the big roof to keep out rain. But their device does keep the sun out to such an extent that they could considerably reduce the capacity of air-conditioning equipment. The cage structure works in a fashion similar to the ventilated attic of a conventional house. Prevailing breezes push air through the space as would an attic fan in an attic.

Underneath, the architects laid out a series of offices in a sheltered garden (3). Members of the several firms can quickly assemble for conferences or "bull sessions" in the central garden court. Some facilities, such as the print room, kitchen, and toilets, are shared by all the firms. Smith & Williams, who needed a large drafting room as well as office space (6) equivalent to the other firms, built a second-floor "bridge" (7) across the court, linked to their own building by a stairway.

In turning to the cage structure, the architects chose a dramatic and luxuriant device, albeit one that can easily conduce to clutter. Unlike Charles Eames, whose cage house framed in light steel may have been regarded as a precedent, they were somewhat relaxed when they came to details, finishes, and furnishing. For example, some visitors regard the wood-frame covered walk (7) as a bit incongruent. But, despite the little battles the building wages with its interior, it strikes knowledgeable Californians as a "big bang for a buck." Total cost of the project was \$86,000, or only \$13.60 a sq. ft.





- 3. Wood-framed covered walk shelters the route to reception rooms.
- 4. From the street, the cage structure lends prominence to the group.





- 5. Landscape architect's drafting room overlooks the interior court.
- 6. Architects display awards on a screen in their reception room.













Hexagons (plan below) enclose bright, informal classrooms.



Rambling along a landscaped rise, the new church raises folded roofs like paper sails against the trees.





Church on a family plan



Congregations wondering where to put all their growing community activities these days might take a cue from the new White Plains (New York) Community Unitarian Church. Under its folded triangular roof, the church proper seats 400 on chairs for services, lectures, and recitals alike in a handsome, tentlike enclosure of laminated pine arches decked with fir and left open to the trees through glass walls on the sides (photo above). A smaller triangular roof drops down to form a clerestory window behind the congregation, and slopes away to a focal fireplace at the rear. Here the floor slab steps up 2 ft. 4 in. with the terrain, becoming a raised area for 200 more worshippers, a meeting place for discussion groups or dinners, or-with the chairs in the main hall turned around-a stage for pageants and plays. Linked with this versatile mother church, on the other side of a central kitchen, is a family of smaller hexagonal buildings. One doubles as a hall for smaller meetings and dinners, and as worship and extra teaching space for the 300-pupil Sunday school. Others incorporate library, offices, and classrooms. Separated by little triangular light courts, the hexagons create the lively intimacy of a "campus" type of school plan without the expense of separate corridor links. More units can be added as the family grows. Construction cost: \$360,000. Architect: Jules Gregory. Contractor: Fetzer-Atwater Corp.

Clean-cut frame for winter dips

One of the pleasanter excuses New Yorkers could find to stay indoors this winter is this crisply detailed, warmly sunlit pool house at Grossinger's Catskill Mountain resort, just up the line from the city on the celebrated "borsch circuit." Built to lure customers who prefer indoor splashing to outdoor skiing, the big, rangy \$1.2 million structure is in itself an athletic, well-disciplined exercise in raw wood and polished glass.

Atop a stone-veneered concrete base which houses health facilities and dressing rooms, pairs of laminated posts of varnished Douglas fir are set out on a projecting window-washer's ledge, rising up 24 ft. to clasp hefty, 9 in. by 39 in. laminated beams. Within this pattern of support, Architects Kelly & Gruzen set up a slimmer pattern of enclosure with laminated wood mullions and muntins which hold sheets of insulating glass against the cold (see photo and section, right).

Seen from the slope above (photo below), the built-up roof is brightly patterned in sections of dark and white marble chips, which repeat the spacing of beams and columns inside. Over the central pool itself, the roof rises to accommodate a battery of vent fans, spotlights, and bubble skylights, well above the heads of backstroking aquamaids and high-flying divers inside.









Pair of patterns for summer sun

In these two very different buildings-one a nurses' residence in Canada, the other an oilmen's office building in Oklahoma-a common desire to keep out sun and introduce surface shadow pattern has produced remarkably fresh, and in some ways similar, results. In their dormitory for 100 student nurses at the General Hospital. Guelph, Ontario (right), Architects Craig & Zeidler faced their concrete skeleton with a checkerboard curtain wall of light colored brick expressing the 9 ft. 4 in. module of single bedrooms inside (each room shares half a square of solid wall and half a square of window adjoining). To emphasize the difference between window and wall areas, the panels under the windows are of a darker brick. Across the tops of windows, 2 ft. 6 in. extensions of the floor slab act as eyeshades against southwestern sun, and cast a lively, changing pattern of shadows across the building's face.

In their office building for the Shell Oil Co. in Tulsa (below), Architects McCune, McCune & Associates also staggered the windows for pattern, reducing them to relatively tiny ports to fight still hotter sun and to reduce considerable air-conditioning costs. Concrete sunshades eliminate 90 per cent of the sun's direct rays, and raised brick panels give an added lift to the façade.









Native inspiration: the white-spiked palace of an African chief.



Set between mahogany bays, posts reach to the roof.



American adaptation: a classic rhythm of spearlike posts.



Inside, posts rise through the gallery linking offices.

Entrance stairs rise above a central pool to a sun-screened gallery of offices around the court.



Eyeful in Africa

Not often is an architect able to represent one country with dignity and imagination, while helping another country to form an architecture of its own. In the new U.S. Embassy at Accra, however, Architect Harry Weese has nicely managed to do both.

Apart from thatch, corrugated iron, and adobe, Weese found little to go on, architecturally, when he looked around in the new country of Ghana. Most of the boxy, thick-walled "modern" buildings imported from Europe had already proved too squat and hot for the steaming Gold Coast climate. But he did note some Victorian-era houses with shaded verandas sensibly raised on posts to catch the breeze. He also stumbled across an example of native style too good to forget: a chieftain's palace with strange buttresses recalling Africa's towering anthills and its native spears (photo, far left).

Combining good sense with native form, Weese lifted the new American mission up into the breeze and view (and away from Ghana's voracious termites and other unauthorized personnel). His slim, spear-shaped concrete columns support a basketwork of concrete floor beams which brace the building against wind and earthquake and provide a lively ceiling pattern in the open, shaded area underneath. On this platform is set a classic hollow square of offices, whose coolly jalousied windows of fine native mahogany jut out around the columns beneath a broadly sheltering roof.



SECTION



Architectural spellbinder



Volatile, vociferous, scholarly Vince Scully has been whipping up excitement for architecture at Yale

BY DAVID MCCULLOUGH

Vincent Joseph Scully Jr., lecturer on the history of architecture and art at Yale University, has been called "a sort of Billy Graham of architecture." Architect Louis Kahn says: "If the students don't get it from Scully, they'll never get it." Architect Philip Johnson concluded a guest lecture last winter with the cry: "Hurrah for History! Thank God for Hadrian, for Bernini, for Le Corbusier, and for Vince Scully!" As one of his colleagues sums it up: "Vince in many ways can do for architecture what Leonard Bernstein does for music."

The wiry young man about whom these encomiums flow is so far relatively unknown outside of New Haven, where he is one of the most popular, most frequently quoted teachers at the university. Nearly 900 students turn out for the courses he lectures on. Overflow audiences usually fill the balcony stairs and doorways at his lectures on American architecture, his most popular. Vincent Scully is only 38, but many of his admirers are ready to assert that he is potentially one of the most influential architectural scholars of his time.

The qualities of a great teacher are often difficult to pin down. Partly, at

least, Vincent Scully's phenomenal success stems from his explosive vitality. Once, lecturing on Frank Lloyd Wright, he became so vibrant over his own phrases that he lost his balance and fell (he says "jumped") off the speaker's stand. Partly it stems from his openly cavalier spirit. A few years back he broke his wrist dueling at an undergraduate orgy. But above all, Scully's great success seems to arise from an unembarrassed, contagious passion for architecture, a passion that can move even engineers to standing ovations.

Scully's lecture courses, not including graduate seminars, are: the history of American architecture; Art 12, a basic survey course in which he delivers a section of about eight weeks; and history of Greek art and architecture, his current "love." His manner of teaching is much the same for each. As the last seats fill, he comes into the lecture hall with a curious lunging stride, makes a few introductory remarks in a tense, rather nondescript voice. Then the lights go out as a huge slide is projected on a wall-sized screen.

At this point, standing alone in the dark with a 10-ft. pointer, his silhouette suddenly diminished beneath the immense screen, Scully takes command. The voice, now strong, slightly theatrical, unleashes what one friend has called "a musical avalanche of picture-making words." Quickly, surely, he translates visual images into verbal images, never "talking down," never making a conscious effort to *instruct*. "I'm not really interested in their individual psyches," he says. "I'm interested in the subject."

The slides flick by. Ideas are thrown out at a brisk clip. Now and then, like a veteran showman, he alters the pace. He becomes almost relaxed, lyrical, quotes passages from his "bibles" (Pindar, Aeschylus, Finnegans Wake, The Adventures of Huckleberry Finn, Pilgrim's Progress). Or he rambles off on some of his heroes (Jefferson, Andrew Jackson, Le Corbusier). Or he becomes uproariously funny (though he



will berate an audience if it laughs at the wrong time). All the while he roams back and forth with his long wooden pointer, which seems to act as a lightning rod, picking up esthetic charges from the picture and exciting the man at the other end.

Most of Scully's lectures are threaded with variations of his favorite themes: that architecture is a man-created world within the world; that there are two kinds of architecture, one which "serves as a backdrop for human life," another which "reaches into the unsayable nature of man"; that always great architecture gives scale to the land, and vice versa; and that the greatest architecture, like other arts, expresses basic truths for all time.

His approach is via the emotions, never inductive. As one architect has put it: "He uses his vast knowledge only as a vehicle with which to dredge up feeling. His attitude is not philosophical; it is religious." And it is precisely this attitude which leads ulti-



mately, in nearly every Scully lecture, to those movingly reverent moments he has become most noted for.

After the audience has been bombarded with several slides showing the shoddier of New York's modern skyscrapers, a magnificient shot of the Seagram Building flashes on. Scully pauses, probably for the first time since the lecture began. He lets the picture take over for as long as 30 seconds. Then, breaking the hush, he quietly says: "Here, gentlemen, you see something grave and silent. Standing there in the disaster that Park Avenue has become, it looks as though it had just wandered in from some higher and more integrated civilization."

The man Scully

Some of Scully's success in a field traditionally dominated by academic tedium may be traced to his background. Vincent Scully was born in New Haven in 1920, an only child of Mary Catherine McCormick and Vincent Joseph Scully, a local Chevrolet dealer and long-time president of the New Haven Board of Aldermen. A spindly "townie" fresh out of New Haven's Hillhouse High, Scully went to Yale on a scholarship in 1936. He was 16. Except for the war years, and one year of study in Rome and another in Greece, he has been at Yale ever since. His undergraduate career was remarkable only in that it was so mediocre. He made the varsity fencing team and he played some intramural football, but, as he says: "Intellectually I was half asleep . . . I hardly ever worked . . . spent most of my time at the movies." (He still sees nearly



every movie that comes to town. "I like all that space.") "I didn't know what I wanted to do. Oh, for a while I wanted to be an architect, and then a writer—but doesn't everyone? Mostly I was restless. I wanted to get out."

He graduated in 1940 with a B.A. in English. After an abortive attempt to enlist in the Royal Canadian Air Force (blocked by his parents) he wound up in the U.S. Army Air Forces instead, but washed out within a few months ("I was really a lousy flyer"). From there he went into the Marine Corps, received his second lieutenant's commission, and after actively serving in both Europe and the Pacific, came out with the rank of major.

It was then, at 25, that Vince Scully returned to Yale and fell with an almost crazed intensity into art and architecture. "When the war was over I wanted to do something specific," he recalls, "to pour myself into something real, not anything so allusive as literature. Art seemed solid."

In the years following he acquired an M.A. (1947), a Ph.D. (1949), and designed for himself a most unorthodox glass-walled house tucked in the woods of nearby Woodbridge. Here he and his wife (the former Nancy

continued on page 191





Craftsman's choice

Gallery

On Brattle Street in Cambridge, not far from Harvard Square, stands an unusual and popular store which helps good taste start at home. Like a growing handful of similar shops around the country, Design Research, Inc. performs a welcome service in an age of plenty that sometimes borders on confusion: from America and abroad, it searches out and makes available the newest and best in contemporary design. Started a half-dozen years ago by Benjamin Thompson of The Architects Collaborative, Design Research has gradually taken over the rambling interior of three old row houses, sensitively remodeled by TAC, and is well on its way to becoming a successful business and something of a local institution as well.

Not yet as familiar to Americans as the sleek products of Denmark or Sweden, the Finnish crafts currently on display in the store are already injecting a rugged freshness into current interior design. Here and there, as in a scattering of wooden toys under the stairs (opposite) or a whimsical beaded bird (overleaf), they also spice good taste with good fun.





In a series of old row-house bedrooms, parlors, and attics opened up by TAC, Design Research sets its Finnish exhibit against appropriately cool and spare surroundings. Above, a shaggy "ryijy" rug in explosive colors, designed by Vuokko Eskolin, is brought nearer to eye and hand on a low bench. Left, glass decanters by Kaj Franck are set off by a jaunty cock, and a congenial double container whose top compartment serves as a stopper for the one below. Right, Birger Kaipiainen's bird of beads pokes a little whimsy at Finland's more pompous feathered friends. In front of the fireplace are swivel chairs of molded plywood by Oli Mannermaa; behind, a background photo of Finland's woods and lakes.







In other rooms, a tough, simple craftsmanship born of birch and pine forests is displayed in molded plywood furniture by Finland's famed Alvar Aalto (above), and in a new group of compact and sturdy designs, among them shelves that can be pegged together in combinations and bench-tables that double as chairs (left). In front of a window overlooking a pleasant garden (right), the grain of raw wood is used as a background for primitive, rough-textured pottery, including a boldly modeled candlestick by Oiva Toikka a foot and a half high.



Technology

Three years ago the building plastics were just laboratory ideas. Today many are gaining in construction

Plastics move up in building





Form in place



Structural form



surface coating



structural coating

"Tomorrow" and "future" are still favorite words in dealing with plastics in building: a plastic "House of Tomorrow" stands hopefully in California's Disneyland, and in the U.S. exhibition at Moscow is another "futuristic" idea in plastic parasol shelters on the exhibition grounds (page 111). Still andevelopment is the all-plastic other school building, shown on page 148, whose structural system, using lightweight plastic panels, is designed for easy modification, something which the plastics readily allow. But the real news in plastics is that a number of these versatile chemical compounds are no longer potential materials of construction but are beginning to come into prominent use in building. The sketches suggest the most important of these: core insulation in sandwich walls; hard, durable coatings to protect various traditional materials, such as metals, wood, gypsum board; and, though still in development, foam-in-place materials that become walls themselves.

Here, in brief, are some of the commercial developments taking place:

▶ Three major suppliers of basic building materials—Aluminum Co. of America, American Bridge Division of U.S. Steel, and Koppers Co. are producing panels with foam plastic cores.

▶ Six major producers of basic chemicals—Allied Chemical's National Aniline Division, Dow, Du Pont, Mobay, Nopco, and Thiokol— are working with some dozen curtain-wall manufacturers on foam-core insulators. Just three years ago, there was virtually no production of such building components; to date, thousands of wall and roof panels have been produced, using polystyrene or urethane cores, the two most prominent foam materials.

▶ In the chemical coatings, some of the same raw materials are creating still other radical changes, showing properties of weatherability and abrasion resistance which are markedly superior to existing finishing materials. The important names here are Cargill, Du Pont, Mobay, National Aniline, and Spencer Kellogg—all of whom are working with the urethanes, a most versatile chemical family. Other important participants are Dow, Union Carbide, and Rohm & Haas; during the next year, Dow will introduce an acrylic latex with unusual properties as an outdoor coating; the chemists claim "spectacular" results on structural steel.

BY DAVID ALLISON

The question of how soon such new materials will become commonly used in building depends upon how long it takes those two giant industries-building and chemicals-to get well-acquainted. A few scattered instances of this interindustry experimentation are beginning to appear. A notable example involves Lee Frankl, a building consultant on Cape Cod, who has been living in a "styrene-sandwich" house for the past four years. He has used styrene sandwich panels in two houses (in a field research project with Koppers). He is now working with sandwich panels of urethane and plywood. Frankl speaks with frankness of problems with urethane: some panels have warped and some cores have been improperly foamed. However, he maintains strong convictions concerning the value of these materials in construction. Professor Albert Dietz, of Massachusetts Institute of Technology, one of those rare individuals who knows the problems of both industries, says that the proper integration of plastics with building is "a mutual exploration problem." Dietz believes that most architects are not yet ready to use most of these new materials because they have not learned of the materials' properties or the techniques for using them.

The expanding foams

Three years ago, the foams were highly promising but still experimental building materials (FORUM, March '57). In the next three years, they will froth up in some 40 million cu. ft. of buildFoaming-in-place is still a complicated process, as illustrated by American Bridge's production of urethane foam sandwich panels. Under close control, urethane is foamed between skins of metal; plywood molds enclose each panel during the foaming operation.



PHOTOS: KEN SMITH

ing space, mostly as wall and roof insulation. Six foams could go into large commercial production in the next three years; two already have: polystyrene and urethane. A third, phenolic, could soon "go commercial" if the chemists find a way to keep it from crumbling.

An older type of polystyrene was one of the first foams used in building. It was fabricated in rigid, boardlike shapes; Dow still produces millions of board feet of this material. The new foams, both polystyrene and urethane, are different in one important respect: they can be foamed between skins of factory-made panels, or within walls of existing buildings. The advantage of these expandable foams is that they lend themselves to mass production: e.g., the materials are fed in at one end of a conveyor and a stressedskin panel comes out at the other. These panels have certain advantages in commercial construction. In house building, for example, a stressed-skin panel can be used either as a loadbearing wall or as a conventional wall with post-and-beam support. Both Alcoa and Koppers are producing such panels, using polystyrene as the core material.

Commercial production of urethane foam-core panels is less impressive than polystyrene's; at present, American Bridge is the only major producer. Urethane is a newer material, and more costly-65 cents to 80 cents a pound vs. polystyrene's 37 cents-hence, it must show some special properties in order to gain equal acceptance. Urethane has such qualities. Unlike polystyrene, which will not stick as it foams (surfaces must be treated with an adhesive to hold the polystyrene), urethane is a strong adhesive and can even be used as a structural jointing material. Because of its adhesion, urethane can be readily foamed within existing walls.

Urethane foams are also superior to polystyrene as insulation, one of the chief functions of any core material,



Panel strength is demonstrated by nine lab men (total weight: 1,500 pounds) who stand on a 4 ft. by 8 ft. module. Compressive strength of urethane foam core panel exceeded 2,000 pounds per sq. ft. under test.

though both are excellent insulators. One of urethane's current uses is in refrigerators, where its high insulation factor allows less bulk: a normal 12 cu. ft. refrigerator, designed with thinner urethane insulation, gains an extra 4 cu. ft. of storage space without an increase in its outside dimension.

The most surprising properties of the urethane foams may turn out to be their great toughness and strength. Looked on at first as frothy, fragile materials, certain low-density urethanes now show sufficient compressive strength for use as insulating slabs upon which concrete floors can be poured. For example, at the Cornell Aeronautical Laboratory, in a research program sponsored by National Aniline, a foam of 1.5 pounds per cu. ft. density was found to carry a compressive strength of more than 2,000 pounds per sq. ft., strong enough for industrial roof decking or as slab insulation under concrete. A denser foam (18 pounds per cu. ft. density) had a compressive strength in excess of 70,-000 pounds per sq. ft.

As further illustration of the foams' structural properties, two independent research laboratories are looking at the possibilities of forming entire structures of rigid foams. One such project, at M.I.T.'s Lincoln Laboratories, involves the development of a fabrication technique for a "foam-dome," made of urethane panels and jointed with urethane. The dome will be 68 ft. in diameter and strong enough to withstand the extreme weather conditions of the far north. Field erection is scheduled for later this year. The other project is exploring the possibilities of spraying foam over an air-inflated form which will be deflated and removed when the foam hardens. Some engineers expect this technique to replace wood and concrete in thin-shell construction.

During the foams' brief exposure in building, their main function has been that of substituting for existing materials, such as core materials in sandwich construction. The next step, as the foams themselves are improved and building designers become more familiar with them, will be to recognize the unusual physical characteristics of these materials - such as urethane's jointing capabilities - and to develop new structural systems which take advantage of these properties. The structural panel applications just beginning should lead to more sophisticated prefabrication systems, using foam panels for walls, roofs, and floors, and packaging the building's mechanical systemswiring and ducts for heating and ventilating-within the panels.

For the chemists, the next step is to improve on the foams' physical properties, through modification of their chemical structures. For example, both styrene and urethane now have fairly low melting points (about 250° for styrene and 400° for urethane); at higher temperatures both foams burn, though not with great enthusiasm.

The tough new coatings

The most important of the new synthetic coatings are the epoxies, vinyls, acrylates, and urethanes, all of which are causing technological changes in an area long dominated by natural

Jointing system developed by National Aniline involves butting two prefabricated wall panels, then filling the small rectangular joint cavity with foam-in-place urethane.





ORERT K. DICK STUDIO

Destructive test shows urethane core's great strength and adhesive properties. When skin was pulled away, the strong-bonding urethane clung to panel backing (shown as dark areas on the core's surface).

materials, such as oils of linseed, cottonseed, soybean, and oil-modified alkyd resins. As paint vehicles, the new synthetics are superior to natural oils in various respects: for example, white acrylic, alkyd, and vinyl paints do not turn yellow, and the epoxy paints have the advantage of excellent adhesion, as well as great hardness and impact resistance. Each of the synthetics has its disadvantage, to be sure (see chart, opposite page). The epoxies, for example, are quite expensive, and the acrylics tend to be soft and somewhat susceptible to dirt. In some instances, these new compounds are chemically combined with natural oils; in others, the synthetics have begun to replace conventional coatings, because of their superior properties of weatherability or better abrasion resistance.

The most talked-about synthetics, and the newest, are the urethane coatings, developed in Germany during World War II and experimented with in the U.S. for the past three or four years. The urethanes are probably the most wear-resistant organic coatings ever developed, and have good characteristics of weatherability, hardness, and resistance to chemicals and solvents. Their chief drawbacks at present are cost (\$10 to \$13 per gallon) and difficulty of application (a mix can thicken and gel while still in its container).

In the building field, where the urethanes have already shown very good results as floor coatings, they are expected to become widely used as exterior finishes. The chief obstacle is that most pigments so far available—particularly the pastels—tend to yellow or *continued on page 148*

Foams

Prefoamed polystyrene is formed in board shapes, used as thermal insulation in roofs, side walls. Also used as combination insulation-and-plaster base in masonry construction, and for floor-slab perimeter insulation.

Properties: Easy to handle, low moisture absorption, good structural strength. Compressive strength is sufficient to permit direct covering with concrete or metal. Not adhesive; skin surfaces must be treated so that foam will stick. Begins to soften at about 180° F., adequate for most building uses; burns, but is available in self-extinguishing types at higher cost. Cost: intermediate between phenolic and urethane. Must be machined or hand-shaped for complex forms.

Expandable polystyrene beads are used as sandwich cores, especially shop-fabricated panels. Promising for economical modular panels of low density. Excellent for pipe insulation. Developed primarily for foaming-in-place; also available in extruded sheets and slabs.

Properties: Strong, light, dimensionally stable up to about 180° F. Conforms easily to irregular shapes and curves in hard-toreach places, but surfaces must be treated for adhesion. Produces smooth-skinned foam. Little or no waste in foaming-inplace, but an outside source of heat is required for expansion.

Rigid urethane is a promising core material for sandwich construction. Proving itself for thermal insulation in roof decks. Research in progress for combined use as thermal insulation and major component of structural strength.

Properties: High water and moisture resistance; low thermal conductivity. Available in a great variety of formulations. Rotand vermin-proof. Maximum allowable temperature is about 250° F.; comes in selfextinguishing forms. Bonds well without separate adhesive when foamed in place. Can be applied in varying thicknesses and densities. Cures at room temperature or slightly higher. Large volume sections can be molded in relatively simple molds. Requires careful handling and control: must be used immediately once ingredients are mixed. Cost: about twice that of polystyrene on equal-density basis.

Flexible urethane foam is adaptable as industrial pipe insulation. Slab stock in any thickness is produced for ceiling and wall insulation with possible sound-absorption advantages.

Properties: Higher temperature resistance than styrene. Excellent insulator; easily handled and fabricated. Strong, water-andmoisture-resistant, rot- and vermin-proof. Withstands wide changes in temperatures; retains dimensional stability up to about 250° F. More expensive than polystyrene and phenolic foams. Phenolic foams are still in development for building, either prefoamed or foamedin-place. Foamed-in-place phenolic will rise in high and narrow spaces, e.g., between studs in house construction.

Properties: Lowest cost foam. Not adversely affected by temperature up to about 300° F. Self-extinguishing. Available in densities most useful for building. Present formulas tend to be brittle and relatively weak.

Epoxy foam is a "dark horse," promising for a wide range of uses, particularly foaming-in-place.

Properties: A closed-cell material with excellent temperature resistance and dimensional stability. Can be made flame resistant. Fine, uniform cell structure, very hard and strong at heavy densities, high bonding strength. Most expensive foam material. Discolors under light. Curing at high temperatures is usually necessary to develop full properties.

Coatings

Acrylic and vinyl acrylic emulsions for both interior and exterior use are pigmented for protective and decorative purposes. Certain formulations are successfully applied to plastics. A popular use is as an air-dry coating for interior plaster and plasterboard walls. As an exterior paint, can be applied to wood, concrete block, masonry, cementasbestos.

Properties: Excellent outdoor durability and color retention. Little odor; quick drying; easily applied by spray, brush, or roller. Tends to be soft and pick up dirt.

Alkyds are formulated as synthetic enamels, also as an important ingredient in some varnishes. Uses include coatings for electrical insulation, floors, interior, and exterior surfaces. Commonly used in white paints for interior wood trim.

Properties: Reasonably quick drying; excellent weatherability; good resistance to water, solvents, heat, and cold. Good adhesion; high gloss; but tends to be brittle and flake off. The inorganic solvent of an alkyd coating makes clean-up inconvenient: the solvent required is flammable, odorous.

Cellulosics are used as an air-dry lacquer for interior coating on wood, metal, plastic. Other cellulosic formulations are used as stabilizers or thickeners in latex paints.

<u>Properties:</u> Dry very rapidly to tough durable films. Retain a lustrous finish. The lacquers contain a volatile solvent with flammable properties, require skill in applying. Moisture resistance is low.

Epoxy coatings are formulated as floor varnishes, corrosion-resistant maintenance coatings, electrical insulation, and appliance primers. Though use has been primarily interior, they are promising for exterior uses.

Properties: Great hardness and good impact resistance. Excellent adhesion supplies a strong bond with a wide range of materials, from metal to fabric. Resist water, alkali, heat, and cold. Expensive.

Malamine and urea resins are used in various formulations with alkyds to produce finishes with good hardness, mar resistance, and durability. Principal applications: automotive finishes, Venetian blinds, wall panels, general household coatings.

Properties: Can be sprayed and baked; produce a strong, mar-resistant, weatherresistant surface. Both contain flammable solvents.

Phenolic coatings are used for wire insulation. The basic material is also compounded to produce varnishes which are particularly satisfactory for indoor finishes, especially for household-floor enamels and gym-floor finishes.

Properties: Outstanding durability; quick drying; water-resistant; excellent insulators. Clear types tend to darken outdoors.

Styrene-acrylic coatings prove serviceable for concrete, stucco, masonry, cinder block, asbestos shingle. Styrene-butadiene emulsions are the most widely used interior wall paints.

<u>Properties:</u> Can be formulated to have high alkali resistance. Easy to apply, in wide color range; good adhesion and weatherability. Styrene-butadienes become brittle when exposed to light and have an objectionable odor. Somewhat expensive.

Urethane coatings have a longer history of application abroad than in the U.S. Look very promising as pigmented coatings on concrete, wood, and metal.

Properties: Produce a hard glossy surface; adhesive to a wide variety of materials. Excellent abrasion resistance, good resistance to fresh and salt water. Expensive, tricky to apply. Most pigments darken under long solar exposure.

Vinyl is an important ingredient in a wide range of different formulations with a correspondingly wide number of applications. It can be used for interior, as well as exterior, purposes. Polyvinyl chloride type is an excellent anticorrosive maintenance paint for such metals as steel.

Properties: Can be formulated to great strength, durability, abrasion resistance, and weatherability. Can be sprayed or brushed. One of the less-expensive coatings. Vinyl emulsions are not so good as others for weather and alkali resistance. Polyvinyl bulyral is very expensive and pigments have to be kept separate until coating is about to be used.

Silicones provide excellent protection for metals exposed to heat, corrosion, or weather; mainly used industrially thus far.

Properties: Most often applied as baked finishes, though some dry naturally. High weather and water resistance. Expensive; cost more than epoxy coatings.

Foams chart compiled with the assistance of Professor Albert G. H. Dietz, Massachusetts Institute of Technology, Coatings chart compiled with the assistance of Henry Grinsfelder, Rhom & Hass Co.; Dr. Malcolm B. VerNooy, Union Carbide Chemicals Co. darken under long exposure to sunlight. (The clear finishes also darken, but less noticeably.) The chemists are coping with this problem, using natural oils to modify the urethanes and inhibit solar effects on color stability.

Why be futuristic?

Not many years ago, when the chemists first approached the builders with their synthetic wares, most of their ideas for building with chemicals seemed outlandish, even shocking, as, indeed, they were intended to be. But today's ideas in chemistry for building are more conventional and tame, as shown in the school-building model on the following pages. In part, this change is owing to chemistry's few years of exposure to building and the industry's natural abhorrence of any too-radical change. It also is owing to the chemists' realization that they must overcome the designer's notion that plastics are still "futuristic" materials.

The elementary school shown here is an example of this effort. Architect Marvin Goody, of M.I.T.'s School of Architecture and Planning, who headed the design team, was also a designer of Monsanto's "House of Tomorrow" now on display in Disneyland. The school scheme is an extension of that same Monsanto-sponsored program, but with a more practical approach; its intent is to illustrate, "in a realistic manner," the possible applications of plastic panels in conventional building.

In this design, the aim is to create a school which can flex or expand during its life span. For example, the building could follow either "cluster," "loft," or "finger" plan, so prominent in many of today's school plans. Further, it could be adapted either to enclosed, isolated classroom spaces or to open rooms with low partitions. The designers feel that lightweight panel construction, combined with the inherent advantages of plastics generally, particularly their formability and transparency, is a promising approach to school design. As these materials become available in greater quantities, other architects are certain to make the same discoveries. The result will not be a "plastic" architecture, for the plastics have too many limitations to encourage such a sweeping change. In many respects, however, it will be a new architecture, and these new chemicals will contribute to the metamorphosis.





A school of plastic

Plastic school model makes use of reinforced plastic sandwich panels as roofing. Roof is made up of series of 8 ft. by 8 ft. component panels. Four panels are bolted together (16 ft. by 16 ft.), supported by a steel column.

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Plastic school interior provides span between columns sufficient for classroom bays. Wall panels may be any of several core and skin materials; wall system would combine panels, glass, and decorative screens, with a framing system of either wood or metal.



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Plastic skylight increases the span between supporting columns from 16 ft. to 32 ft. Codesigner Joseph Schiffer suggests using clear aorylic skins with aluminum honeycomb core for the skylight panels.







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Schoolrooms may be totally enclosed, using glass to close off openings between the wall partitions and ceiling. Glass is also used in decorative panels at doors and columns.

Quilted pattern of the school roof shows how each of the 16 ft. by 16 ft. sections joins with its neighbors. Skylight units—also 16 ft. by 16 ft.—can be spotted freely on roof. Show-off equipment . . . heat from cold . . . modernization finance



? How to get an extra dividend from the expensive mechanical equipment in today's new building.

Locate some of it beside public areas, to give people an intriguing "cutaway" action display.

Blinking lights and machinery in motion usually excite the curiosity of crowds. In addition to being a good show, and creating some advertising value, the display of equipment can also serve educational purposes. On the observation deck atop the new 41story Prudential building in Chicago (Naess & Murphy, architects), the most popular interior "show" is provided by the glass-enclosed elevator equipment room and its eight large polished elevator motors. At the push of a button, a recorded talk explains the operation of the control switches and motors as the observers watch their movements. The idea of showcasing the elevator room was developed by Walter F. Reinhardt, general manager of regional headquarters buildings for Prudential, and Edmund Froude, the building's service manager.

Another instance of letting a building's "innards" be seen for a practical purpose is found in the new wing of the Moore School of Electrical Engineering, University of Pennsylvania, designed by Architects Geddes, Brecher & Cunningham (FORUM, March '59). The vertical service stack of air-conditioning and electrical equipment, four stories high, is in the connecting link between the older building and the new and is seen from each corridor in a "cutaway view" through glass. A diversity of mechanical dimensions and requirements made it impossible to mount all machinery on platforms level with adjacent floors, and some artful juggling had to be done to preserve good sight lines up and down the stack through the glass panels on the corridors.

? How to get double service from refrigeration equipment in a commercial building without extra expense.

Integrate the heating, airconditioning, exhaust and refrigeration systems so that the heat extracted in the refrigeration cycle can be used for heating needs.

An unprecedented degree of economy and efficiency has been achieved through integrating heating, cooling, and refrigeration in a new Boston supermarket, and the system will be incorporated in new California chain stores being designed by Chicago Architect Harry Weese with the collaboration of Fred S. Dubin Associates, consulting engineers on the Boston project. As developed for the Boston supermarket by Edward V. Gartland Jr. of New England's Star Market chain and Harold L. Mindell of the Dubin organization, the warm-air heating, air conditioning, and refrigeration, and a regular ventilating and exhaust system for the Boston supermarket are all integrated (and in part interconnected) to operate automatically on one master set of temperature and humidity controls. Prior practice in many stores has been to discharge the heat extracted and generated by refrigeration equipment directly to the outer air, thus completely wasting it during the heating season. In the new system, heat from the refrigeration cycle is automatically diverted into the warmair heating ducts whenever the temperature range requires store heating. If this proves

inadequate, the furnace then starts up automatically. At the desired temperature, the furnace is the first element to go off, and next the heat from the refrigeration equipment is diverted and discharged again outside the building. Changeovers from heating to air conditioning occur automatically. Automatic, too, is the initial use of fresh air direct from the outside, if that is cool enough. If the outside air is too warm, its intake is cut off. and full, automatic air conditioning takes over. The system also is provided with an emergency purge switch that allows all the air in the building to be exhausted to the outside and replaced by fresh air, should any odorous or toxic conditions ever occur in the building. The developers say their system is about 33 per cent more economical to operate and 25 per cent more economical to install than independent heating, air-conditioning and refrigeration systems.

? How to justify greater payments by the owner, instead of the tenant, for modernizing tenant areas in existing buildings.

Calculate the increase in value of the building resulting from such improvements through advances in rent and net income.

During the space shortages of World War II and later, most office building owners required tenants to make their own installations of fluorescent lighting and other improvements. As an alternative, an owner would make improvements only in exchange for a rent increase large enough to pay the entire cost of the improvements during the period of the tenant's lease. Directly or indirectly, the tenant paid all.

More recently, however, as new buildings have put an end to scarcity, renters have begun to revolt against assuming full costs for what often amounts to capital improvements to the owner's building. More and more owners, or their managing agents, have had to face up to the need to make their own capital improvements for tenants, and to develop more acceptable cost-rent formulas.

At the Dallas convention of the National Association of Building Owners and Managers in June, Dale R. Cowen, partner and head of the management department of Bullier & Bullier of Portland, Oregon, described a formula that his office has found practical in this situation. It is based on an authorization once given his firm by a leading ownerinvestor client: capital improvements up to \$2,500 could be made at its own discretion, without asking for his permission, providing each \$2,500 resulted in an increase in the building's value of \$5,000 or more.

Explaining how this formula works in practice, Cowen points out that under ordinary circumstances a prewar office building renting for an average of \$3.50 a sq. ft. should be able to get \$4 a ft. with the addition of fluorescent lighting, acoustical tile, floor tile, fin-tube radiation, and new Venetian blinds. Total costs for this, he says, should range from \$2 to not more than \$2.50 a sq. ft. of tenant area. At that rate, the maximum added cost for each 1,000 sq. ft. of tenant area would be \$2,500, which would be offset by a \$500-a-year increase in income. Before taxes, deductible financing charges, and depreciation allowances, the increased income would cover the full costs in five years. Or. Cowen observes, if the costs of these improvements are viewed as an increased capital investment of \$2,500, the \$500-a-year increase in income may be regarded as equal to a 10 per cent return on \$5,000, which, at that capitalization rate, means an increase of \$5,000 in the value of the property in return for an outlay of only \$2,500.



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NERVI'S PALACE

Work on Pier Luigi Nervi's great Sports Palace for the 1960 Olympics in Rome has progressed to the point where the total structure may now be seen (above). Each of the ribs in the weblike dome (top) is made of a series of diminishing, precast concrete elements. At the summit of their arcs, the ribs are held together by a tension ring which also supports a funnel-shaped cupola. At their bases, they are received by 48 massive joints (left) that rest on the 300 ft. lower ring. Seating for the 16,-000 spectators begins at this ring, extends in tiers down to the palace floor.



PHOTOS: (ABOVE) HANS JORG HENN; (BELOW) SCHONWETTER CLARUS, COURTEST "WERK"





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CARL NESJAR

NORWEGIAN MURALS

While recognizing the technical versatility and economic virtues of concrete, Norwegian architects have been appalled by its unnatural and inconsistent surfaces. They have been assisted in attempts to bring out the rugged nature of the material by building technicians who discovered a new way of infusing mortar into the stone aggregates that make up the concrete. This system, which has been nicknamed "Naturbetong," was used extensively in the corridors of Erling Viksjo's Government Building in Oslo (right and below). The exterior of the building (left) is decorated with a wall sculpture in concrete panels.



SWISS GABLES

In the recess yard of this secondary school in Schnegg, Switzerland (below) Architect Thomas Schmid commissioned a friend, Emanuel Jacob, to construct a concrete wall sculpture that would be rugged enough to withstand little fingers and would be sheltered against the area's heavy snowfall. The snowproof gables of the school building itself and the peaks of the surrounding mountains are mirrored in the wall sculpture, which, although done in a simple style that seems right for a secondary school, is a sophisticated group portrait of the building's site, materials, and purpose.







FRANKFURT'S SLUDGE

Abroad as well as at home, the suburbs must take care of many of the city's housekeeping details. Outside Frankfurt, for example, are three sludge digestion tanks (above) which because of their size (they are

107 ft. high) and unusual shape have become the local conversation piece. Neighborhood fears of odors and leakage were eased during construction when it could be seen (left) that the tanks consist of three layers: an inner wall of prestressed concrete, an applied coat of insulation, and an outer sheeting of corrugated asbestos - cement. Oberbaurat Ziegler's big city installation is now considered secure.





Abroad



PONTI'S SWEDEN

Italy's many-talented, muchtraveled Gio Ponti was commissioned to build a classroomand-auditorium complex in Stockholm to house the Italian-Swedish Institute. In keeping with the institute's bicultural program, Ponti sought to give it the simple exterior forms of Scandinavian architecture and the more complex interior patterns of modern Italian design. Thus, the exterior of the threestory classroom building (far left) is as clean-cut as a piece of pastry; and the interior of the auditorium (above) has a luminous ceiling that is as zigzag as any Swedish Italophile could wish.

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Books



RICHARD NEUTRA—Buildings and Projects: 1950 to 1958. By Willy Boesiger. Published by Frederick A. Praeger, Inc., 15 West 47th St., New York 36, N. Y. 240 pp. 91/2" x 12". Illus. \$15.

Swiss Editor Willy Boesiger is best known for his editions of Le Corbusier's works. It is largely on the basis of these famous, trilingual publications that Corbu's reputation has been judged by architect-readers around the world. Now it appears that Richard Neutra is ready to get the Boesiger treatment. And from the rich variety of works collected in this volume, some old, some new (like the Miramar Chapel at La Jolla, California, shown at left), it would seem that the moment has indeed come for the architectural world to prepare a niche in history for the 67-year-old Viennese-Californian.

Whether Neutra will successfully fill that niche will not, of course, depend on the slickness of the editorial presentations that acclaim him but on the degree to which he has lived up to his architectural goals. And the foremost of those self-set goals appears to be a more human design, a design that puts man's spiritual and physical needs at the center of any architectural solution.

Readers of Editor Boesiger's wellprinted volume are invited to conclude how fully Neutra meets his own stiff specifications.

ALUMINUM CONSTRUCTION MANUAL. Published by the Aluminum Assn., 420 Lexington Ave., New York 17, N. Y. 389 pp. 6" x 9", \$3.

Two years ago, the member companies of the Aluminum Association joined together to produce a technical manual which would facilitate the design of aluminum structures. Heretofore, no such reference had existed for aluminum other than the handbooks of various manufacturers, including Paul Weidlinger's excellent volume, Aluminum in Modern Architecture, Vol. II, published by Reynolds Metals in 1956.

In a new volume, the Aluminum Construction Manual, published last month, certain of this previously published information is included, along with recently developed data, such as tables of allowable loads on aluminum beams and columns. The new volume is the outgrowth of the industry's cooperative effort. In many respects, its publication is as significant as was the publication of The Manual of Steel Construction back in 1927. The aluminum manual is intended as a refer-

ence work for engineers and designers; it does not include material on design theory, formula derivations, etc. Data within the manual is divided into five sections: Part 1 contains information on aluminum structural shapes, standard tolerances, and other, frequently needed data for designing and estimating. Part 2 contains dimensioning and weight data. Part 3 includes allowable-load data for aluminum beams and columns. Part 4 contains data on properties of aluminum structural alloys, as well as information on design loads in buildings. Part 5 includes miscellaneous reference data, such as temperature effects on aluminum, coefficients of thermal expansion. Much of the new material for this volume was developed at the Polytechnic Institute of Brooklyn, by Dr. R. B. B. Moorman, Professor R. C. Veit, and Professor L. J. Pignataro.

CAMP SITE DEVELOPMENT. By Julian Harris Salomon. Published by Girl Scouts of America, 830 Third Ave., New York 22, N. Y. 160 pp. 8" x 11". Illus. \$5.

Julian Harris Salomon, veteran camp designer, has given camp directors and their local architects many valuable hints in this exact and well-specified handbook. It is a complete and attractive redo of the book of the same name published ten years ago. Its up-to-dateness may be read both in its advice on such new-fangled equipment as swimming pools and in its concern for the careful and unified development of power and waste disposal systems.

Yet for those who fear that because of such modernisms as folded-roof privies



(see Architect Harry Weese's sketch, above) the good old days of camping are over, Author Salomon has these reassuring words: "Living under canvas is part of every child's dream of camping. No cabin, lean-to, or other permanent roof of wood or metal will produce the same sound and feeling as rain on canvas and in no other shelter is a camper quite as close to all the wonders of the woods."

continued on page 170

Books







TWENTY YEARS OF PUBLIC HOUSING. BY Richard Moore Fisher. Published by Harper & Bros., 49 East 33d St., New York 16, N. Y. 304 pp. 534" x 81/2". \$6.50.

Several programs for building public housing were started as job-making expedients under the New Deal's emergency "pump priming" legislation of 1933 and 1934. It was not until 1937, however, that Congress established a federal low-income housing program on a permanent basis.

In the two decades from 1937 through 1957, this program stimulated the inauguration of 2,710 local projects with a total of 534,594 dwelling units-but not without many trials and tribulations. In a realistic survey of the first 20 years of this complex program, Robert Moore Fisher concludes that "even its objectives and accomplishments seem difficult to appraise. Not only may the results be interpreted in different ways by various observers, but they also may be construed differently in various places. Moreover, the costs and benefits are not readily calculable."

Nevertheless, Fisher has succeeded in writing a book that is neither an attack on nor a defense of public housing, but that impartially examines both the achievements and shortcomings. His text, never very spirited, more than makes up for it with a wealth of well-evaluated factual material on the economic aspects of the program.

One of Fisher's most interesting sections re-explores national rent and income patterns and asks whether many families live in less costly, substandard housing by their own preference. (The answer is yes, in contradiction to the frequent assertion that most slum dwellers cannot afford better accommodations.)

In another section, Fisher shows how the federal government in effect usually pays the entire capital cost of local projects, because its contracts guarantee annual contributions up to 100 per cent of all interest and amortization costs over a period of 40 years (originally 60 years). If by any chance a local project earns a "surplus," its annual federal contributions are, however, reduced correspondingly. Therefore, as Fisher points out, most local authorities have little or no incentive to economize or to operate so as to show a surplus. He also points out the strange effects produced by the federal law, which sets cost limits for "building and equipment," but sets no limits on site costs or total project costs (except that a recent administrative rule set a limit of \$17,000 per unit for total costs).

As a reference book on the federal legislation on public housing, its ascertainable costs, and all the mechanics of its financing and tax exemption, a better or more impartial documentary volume would be hard to produce. Both the friends and the foes of public housing will find Twenty Years of Public Housing crammed with meat for their causes-and for their opponents.

END

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Excerpts

What other people are saying

MIES IN LONDON

When accepting the Gold Medal of the Royal Institute of British Architects in London this spring, Mies gave a modest statement of his architectural meaning.

I was in this country 50 years ago, on my first and my last trip here, to study the great architects of that time. I had studied Behrens, Albrecht, and Van der Velde. I wanted to study Lutyens, Voysey, Baillie-Scott, and Mackintosh. Those times were very different from today. There were a few people who tried to do something new and find the way. Everybody went in a different direction, so we had to learn from each of them what seemed good to us and what we liked, but there was nothing clear.

I once asked somebody to tell me what architecture was and he replied: "Do not ask silly questions." But I did ask them. That was all we could do. We had to start. We learned from a great man and his talents, but we did not get a clear direction. I learned more from old buildings than from this man—the old buildings with their fine, simple purpose, their fine, simple construction, their marvelous draughtsmanship and wonderful proportion, their unsophistication. That is where I learned. These old buildings have been a continuous inspiration to me, even today.

We had to find our way and we had to ask hundreds of questions. We wanted to know what was civilization, what was culture, and whether there was a relation between them. We felt that there was a





Paxton's Crystal Palace (1851) ... Mies's Crown Hall (1956)



close relation, but we did not know what was the truth. We had to search among ancient and medieval philosophy to find the answer to that. The best answer to the question of 'What is the truth?' has been given in *adequatio reis et intellectus*. That is, the whole world.

I have been asked many times, where do we go from here? To those for whom architecture is the expression of an epoch: "Where do we go from here?" does not make sense to us. Architecture is the expression of the inner structure of our epoch and the slow unfolding of its soul.

GROPIUS AT NEW ORLEANS

The AIA Gold Medal Award was presented to Walter Gropius in New Orleans in June. His acceptance speech took exception to some of the recent trends in modern architecture and modern life.

In the recent past we have concerned ourselves more with defining ever newer means than with defining ends and we have now amassed such a tremendous arsenal of techniques that their bristling display has nearly robbed us of our sense of balance. Twenty-two years ago, when I first arrived in this country, it was, for instance, still possible in Massachusetts to squelch an unusual proposal with the words "it isn't done." This of course can be either a virtue or a handicap, depending on how it is used. It was an impasse which could not be overcome by clever argumentation since its mainspring lay in certain agreements between people who had accepted a particular code of life and considered themselves bound by its unwritten rules.

No such code exists today; everything can be done and, most certainly, is being done. Our cities have taken on the look of a free-for-all, wild competition to engage the mind, heart, and body of its populace and all sense of propriety and discrimination seems to have been swept away by this unlimited technical damburst. The old adage "Let's put first things first" has lost its meaning, since we seem unable to remember clearly what should come first, and no visitor from Mars could possibly gain an understanding of our guiding spiritual conceptions by looking at our newest man-made world.

One of the fallacies of our present conception of life results, I believe, from the fact that a majority of people believe that modern organization man has found today's version of that indispensable ingredient of all cultures: the intellectual common denominator of a period. He has not. For with his new tool, automation, *continued on page 174*



Off-Street Parking Garage, Post Office Square, Boston, Mass.

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Excerpts

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We stand at a moment in history that calls for a bold, imaginative interpretation of the democratic idea. Our generation is presented with a similar challenge as were the founders of our Western culture, the Greeks, when they deliberately buried the treasures and temples of their former existence under the triumphant symbol of their newly found freedom: the Acropolis.

UTAH IN MANHATTAN

The following item appeared in its entirety in a recent number of Architecture Utah.

Madison Avenue in New York City is a very long street. At the bottom, looking uptown, one can see far, as the sailor sees from the bridge of his ship. This is about 11 miles. On a clear day, walking up Madison Avenue, no bridge, one can see for perhaps 6 miles, enough, surely, to let the curvature of the earth or the island be actually observed. It is a wall of buildings from five to 50 stories high. An amazing and unique view to the very end of perspective. The city from 40th Street up and all across town is being torn down and built up. Many buildings, obsolete after 50 to 60 years, are stripped to the iron; they build again on this.

One building which is new and grand and all by itself on this avenue* is the Seagram Building. It goes up in front of you like the pyramid in the desert.

Forget the building for now. Look at it and leave it. Nice, Clean, Tall. All by itself in the bunch. Take a cab for Idlewild and home. Taxi driver goes up the town and over a bridge and across the flats of Long Island and out the freeway to Idlewild. This is 12 to 15 miles. Long, crowded miles. Look back, across the flat, just before turning into Idlewild. A clear day this is. What do you see: downtown the Woolworth Building; uptown Seagram's Tower . . . that is all. The old sky line and the new one. The contrast of our century.

Mies van der Rohe must have seen this building in his mind from the same place I saw it. The new sky line is his.

continued on page 176

^{*}Really on Park Avenue.-ED.

iystem . . . Bronxville Field Club . . . Pittsburgh Regional Industrial Development Corp. . . . Koppers Company, Inc. . . . Pima County Courthouse . . . Shell Research Center . . . Farmer tate Bank . . . Eisenhower Memorial Chapel . . . City Planning Commission, Havana, Cuba . . . Musiccraft Studios . . . Gump's . . . Ball State Teachers College . . . Babcock & Wilco Co.... F.B.I.... El Rancho Hotel ... U.S. Marine Corps Recruit Depot ... Mission Bell Motel ... Standard Paving Co.... Princeton University ... Republic Steel Corp. ... Baldwin Piano Co... ig Three Welding Equipment Co. . . . Sun Life Assurance Co. of Canada . . . Ft. Worth Chamber of Commerce . . . Fidelity Trust Co. . . . Barwick Agency . . . Elks Club . . . U.S. Army Suppor center . . . Peoples Federal Bank . . . Howard Aero, Inc. . . . Mountain View Motel . . . Veterans Administration Hospitals . . . Erie Forge & Steel Corp. . . L. B. Smith Aircraft Corp. . . akoradi House, Gold Coast, British West Africa . . . 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ARCHITECTS' FEES

In looking at the present, antiquated fee system, Jack Train of SOM's Chicago office decided that it needed a businesslike reappraisal. His recommendations were quoted in the July issue of the Inland Architect.

In this day of enlightened architecture, we criticize our associates when they blindly mimic structures of the past, yet nine out of ten architects, when asked to establish their fee on a project, blindly quote the magic number "6 per cent" without relating it in any way to the work to be performed. The origin of establishing an architect's fee as a per cent of the building construction cost was sound. However, its present-day usage, without recognizing an infinite number of exceptions, is completely ridiculous.

In order to overcome this incongruous situation it becomes necessary to attempt to analyze and establish our fees in terms



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of actual or anticipated costs. Thus, in its simplest form, the architect's fee should be expressed by the following formula: $Fee = Target \ Profit + Budgeted$ Costs.

It is my recommendation that the target profit be maintained as a variable. Unless there is some incentive such as fee to entice a prospective client to employ a newly licensed architect to perform his services, I believe it is safe to assume that all work will go to well-established firms already having experience in similar facilities. This would, of course, destroy our profession in short order.

I also feel that when a firm has more work than it can handle, its target profit should go up; and conversely when a firm is in need of work, its target profit should go down. This procedure would automatically siphon certain work from the fortunate to the less fortunate and act to the benefit of the entire profession. In fact, it is my opinion that if each architect performs to the fullest measure of his professional responsibility, there will be little difference in budgeted costs between one office and another of equal experience.

When dealing with [new] clients, with whom the architect has had no operating experience, it is recommended (and possible) to make a fee arrangement whereby the architect will receive all technical labor costs plus a related amount for other direct costs, overhead, and profit through the stage of preparing a definitive design. This is for the period during which the architect works with the client in order to solve his building problems. For the phase when the definitive design has been approved, the preparation of further contract documents becomes entirely the architect's problem; and he should be able to estimate his costs accurately in advance. After definitives, the architect should also be able to estimate his costs for the construction period provided that the period of construction does not exceed a given time span for reasons beyond the architect's control.

Thus, it is recommended that that portion of an architect's services which cannot be entirely controlled by the architect, such as the design phase and the construction phase after a given date, be paid for in a manner that will assure the architect of his actual book and overhead costs plus a reasonable profit. If it is not desirable to extend this arrangement for the entire project, because of the client's need for firm commitments, the architect should be willing and able to establish a firm lumpsum fee.

If these recommendations seem a bit radical and appear difficult to sell to clients, it has been my experience that the clients buy them much more readily than my fellow architects do. Most of our clients are businessmen who understand the basic formula relating to income, costs, and profit much better than we do.

END

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ARCHITECTURAL SPELLBINDER continued from page 137

Keith of New Haven, whom Scully married during the war) and their three sons (Daniel, 15, Stephen, 11, and John, 10) still live surrounded by homemade Scully-designed furniture and an extensive art collection, mostly acquired on travels.

Of his house, Scully says: "Ten years ago, when I designed it, I had in mind some absurd notion like 'togetherness' so I left out all the walls. Everybody warned me against it, but I wanted to prove something." Would he build the same house again? "Hell no! The next one I do will have a stone cell for each kid with a slot under the doors to slide food through."

Scully spends nearly all his time off campus at home—reading (mostly modern poetry, novels, some history, seldom newspapers or magazines), writing, thinking, and "just lying around in the sack."

At home or strolling about Yale's Art Gallery, Scully looks not unlike the undergraduates who idolize him. His pants are always a little too short. His shoes are seldom shined. His Ivy League jackets are more than likely flecked with cigarette ashes. But there is nothing of the pipe-smoking, dropby-my-study-for-some-sherry look about him. He is too vivacious, too aggressive looking to be considered professorial. In fact, as one former student describes him, "with his nearly pointed ears, his mischievous smiles, and those stormy Gaelic frowns he looks more like a man-sized leprechaun." He smokes, almost continuously, lumpy cigarettes which he rolls himself from a pack of Bugler tobacco. Going to and from work, he drives a stubby Citroen 2CV with the recklessness of a hot-rodder or (an analogy he would prefer) like Fangio at Le Mans.

Yet overriding all Scully's colorful personality quirks is his abiding, serious dedication. For every lecture he puts in an average of six hours' preparation poring over stacks of slides, scribbling notes across big sheets of yellow legal paper. The slides he uses are never the same from year to year, nor are his lectures. Unlike some spellbinders, he does not simply give his audience a playback of last year's success. "I change my lectures because I change," he says. But Professor Frank Edward Brown, Yale Latin scholar and one of Scully's few intimate friends, feels that the change is a manifestation of growth. "Vince needs those lectures. He needs that audience in front of him to help him generate new ideas." And Scully seems continuously restless for new ideas, the way some men are restless for a new car or a new job.

The creative scholar

The fact that what Scully says about the work of Eero Saarinen this year may differ from what he said last year, for example, has given rise to the criticism that he is too inconsistent to be taken seriously. Professor Charles Seymour Jr., chairman of Yale's History of Art Department, answers the charge this way: "Scully is never content to dig back just for the sake of accumulating facts. He's looking for the truth and he always relates his findings to the midtwentieth-century condition. In this sense he is a creative scholar; and like all creative people he does tend to ride enthusiasms."

Because Scully adheres to no set dogma, preaches no packaged set of values, most of his colleagues feel that he achieves the ultimate goal of education: to open the students' eyes without simultaneously putting blinders on them. "You inhibit the student, you freeze his point of view when you are afraid for him," says Scully. "After all he is not here to be indoctrinated, protected, or made happy. He's here to be taught to see—and to believe that anything is possible."

Understandably, not all students swallow the Scully line, some because they do not want to, others because, try as they will, they cannot comprehend his rather heady, abstract thought patterns. By and large, however, Scully has no trouble keeping a following. As one student has expressed it: "You go through three stages with Scully. First, you think he's the most exciting teacher you've ever heard and you religiously troop with the mob to all his lectures. Then, when you learn a few realities about building, you think he's all wet. And finally, usually senior year, you come back to Scully-and you realize just how damn good he really is."

On the teaching of architecture, Scully has said: "It suffers from an inadequate expression of architecture's real potential. It labors under an outworn materialistic determinism, a thin *continued on page 202*

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THE TITLE I MESS continued from page 109

tiated the lease, instead of sale, of Title I tracts to developers. In one famous New Haven lease deal, taking annual rent as 6 per cent of land value, the "price" obtained rose from an upset figure of \$700,000 to \$1,150,000, with corresponding reduction in both city and federal subsidies. In another deal, involving negotiated resale of a 16,000 sq. ft. plot to a bank, New Haven secured \$550,000 or \$35 per sq. ft., believed to be the highest resale price for Title I land in the country.

Lacking a full-time staff organization, as in other cities, New York's SCC has made a complicated arrangement of hiring outside consultants. For nine years, "coordinating architects" to the SCC have been Skidmore, Owings Merrill, who receive two "con-& sultant" contracts on each project, one covering planning, the other covering the execution stage. Any housing in the project requires another consultant contract with a housing architect, and most of this work has gone to S. J. Kessler & Sons. To date, no one has been able to find out either from the consultants or from Moses exactly how much this has cost the taxpayer, but it leads to waste.

New York's coordinating architectural consultants to the SCC prepare an official brochure on each project detailing redevelopment plans, and in the case of housing, a separate section is supplied by the housing consultant showing site planning, preliminary architectural sketches, and proposed rental schedules. Not a single New York Title I project has been erected according to these original brochure plans, hence most of this work for which housing architect-consultants are paid has little value except as publicity for the SCC. Only recently, however, have many outside redevelopers learned that none of these schematic plans or even the proposed rental schedules are binding on the redevelopera discovery rudely made when some scheduled middle-income housing turned up at "luxury" rentals when completed, the most notorious example being Washington Square Village.

The major trouble with SCC policies is that, lacking a planning staff, nowhere in them is there any coordinated plan for New York urban redevelopment on a consistent pattern. Many projects seem to be tailored mainly to serve or assist special purposes of the moment, institutions, or favored sponsor organizations, with only enough slum clearance to assure federal assistance. There is no slum clearance and redevelopment on a priority-of-need basis, but only a pragmatist's contempt for all planning and planners, even good ones.

Progress elsewhere

In contrast to New York, eight cities were nominated by FORUM correspondents for outstanding records of Title I progress with a minimum of political favoritism, shenanigans, or "scandals": Baltimore, Chicago, Cleveland, Little Rock, New Haven, Philadelphia, Pittsburgh, and Sacramento.

Baltimore may be taken as a good example, for it was the first city to get a Title I project into execution, the first to have new Title I housing occupied, and the second city (after Philadelphia) to have an entire project completed, in June 1957, and receive the entire federal assistance grant. Baltimore has two projects completed, four in execution, and four in planning. As of March 31 it had drawn \$6 million, or 23 per cent of its \$26 million in federal grant allocations. At the same date, New York had drawn \$39.6 million of its \$156 million of grant allocations, which was 25 per cent.

Baltimore has had its difficultiesbut never a hint of scandal. And it disposes of land by competitive bidding, by negotiated sales, and by leases. Its biggest headache was its Broadway project, where an old Negro slum was cleared and scheduled for redevelopment with housing mainly for whites. For several years after demolition, the Broadway area still stood empty and useless. Builders could not obtain adequate financing for new housing in the area, mainly because of adjacent blight, and the result was the type of situation that Moses has feared in New York. By the end of last year, however, the city had completed arrangements for redeveloping the entire project area under revised plans that included expanded facilities for neighboring Johns Hopkins Hospital, a Hopkins-Sheraton Inn (motel), three churches, a school, and a medical office building. The project was officially completed in June.

In Baltimore's Mount Royal Plaza project, two large State Office Buildings have been erected, the Baltimore



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THE TITLE I MESS continued from page 194

Life Insurance Co. has bought a $5\frac{1}{2}$ -acre plot for a new home-office building, and at least 11 builders have indicated they will submit proposals for its high-rise apartment sites.

Baltimore has made its greatest strides in urban renewal in the past two years, following creation of a unified Baltimore Urban Renewal and Housing Agency, which merged the city's public housing, redevelopment, urban renewal, and conservation programs into one coordinated operation. This new agency also was instructed to establish a program to interest and enlist private capital in nonsubsidized redevelopment work. Its outstanding achievement in this field is the projected \$127 million Charles Center redevelopment.

Also of major importance has been the work of the Greater Baltimore Committee, composed of some of the city's outstanding bankers, merchants, civic and business leaders. This citizens group has worked in the closest liaison with BURHA and the city's Planning Commission to help expedite the Charles Center redevelopment and other city projects. New York, by contrast, is conspicuous for its lack of any broadly representative citizen advisory group that has any official or even quasi-official status as an adjunct of its redevelopment agency.

The lessons from it all

For New York and other cities, notably Boston, that are poorly organized for urban redevelopment, there are several lessons to be learned:

▶ Top-level coordination of a city's various redevelopment and public works programs is absolutely essential. New York might well borrow a leaf from Baltimore in this respect. Experts have suggested that New York and other cities might create some form of "housing policy board" composed of the heads of redevelopment, public housing, and planning agencies, plus the mayor or one of his deputies. Such a board might establish coordinated city "policy" for certain volumes, types and general locations of public housing, urban redevelopment, and other public-assisted housing each year.

▶ Enthusiastic citizen group participation and approval is needed in formulating housing and redevelopment policy.

▶ Redevelopment agency activities must be conducted in a "goldfish bowl," a phrase that turned up repeatedly in reports from other cities. Discussing New York's troubles last month, HHFAdministrator Norman Mason disclosed that both he and Urban Renewal Commissioner David M. Walker think it would be helpful to have a clause in the housing law requiring full disclosure of prospective sponsors and all other details about redevelopment projects. Moses' aides have lobbied against legislation for this purpose.

Redevelopers need to be assured that there is free and open competition for redevelopment property, even though its final disposal may be worked out on a negotiated-price basis in lieu of a formal auction or bid-opening process.

Large redevelopment projects should be divided into smaller units for resale (a recommendation by many experienced builders, which has been ignored in New York).

If some of these lessons are learned, the washing of New York's dirty linen in public will have served a wide and useful purpose. For the nation's slum-clearance and urban-redevelopment program is sound, and all the pressures of society, economic growth, and population indicate that the nation should get on with it. END


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C The complete remodeling of the thirty-year-old HOTEL ROOSEVELT of Cedar Rapids, Iowa, included as one of the major features the installation of a Westinghouse Selectomatic-Automatic-Operatorless Elevator System with Automatic Traffic Pattern Control. The Westinghouse '30-Minute Pre-Investment Eye-Opener' convinced us that this was the best system and, after 15 months of operation, we find that our confidence was very well placed.



Harold Cummings, President Minnesota Mutual Insurance Company 345 Cedar Avenue, St. Paul, Minnesota

When we were planning our new Home Office on Victory Square, St. Paul, our Building Committee examined several automatic elevator installations and consulted many users before deciding on Westinghouse. Westinghouse was chosen because the Building Committee found it the most completely electronic and modern system then available. The elevators do a remarkable job of automatic adjustment to fluctuations in traffic flow.

thoroughbred throughout . . . **NEW \$33-MILLION AQUEDUCT RACE TRACK** INSTALLS QUALITY MCKINNEY HINGES

McKinney hinges are installed on all doors of the administration building, clubhouse, grandstand and stalls of the fire-proof stables at the new Aqueduct Race Track, Long Island, New York.

At Aqueduct they insisted on thoroughbred building materials throughout. McKinney hinges met these strict quality requirements because of their proven ability to withstand heavy in-and-out door traffic and to prevent high maintenance costs.

On your next important job specify quality McKinney Hinges. You'll provide your clients with a lifetime of trouble-free operation and protect yourself against costly service calls.

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With one million square feet of floor space on four levels, the 7-acre grandstand-clubhouse area at Aqueduct is the largest of any track in the United States. Total capacity-80,000 persons. Parking accommodations-14,000 cars.

Owners: New York Racing Association, Inc.

Architects: Arthur Froehlich & Associates, Los Angeles, California.

Engineers: Stone & Webster, Inc., New York, New York.

Contractors: Caye Construction Co., Brooklyn, New York, and White Construction Co.,

New York, New York.

Hardware Suppliers: Atlantic Hardware & Supply Co., New York, New York, and McCadden Hardware Co., New York, New York.

Hardware Specification: Builders Hardware & Supply Co., Los Angeles, California.

Hinges: 126 sets of McKinney Anchor Hinges on all heavy-traffic grandstand and administration building doors. 502 pair of 24-inch Oilite bearing strap hinges on fire doors of stalls. All hinges for all doors are McKinney Oilite bearing.

ARCHITECTURAL SPELLBINDER continued from page 191

sort of functional determinism. . . . They [the students] want to become architects, I believe, because they think it offers them a way to be creative without stepping outside society. But what they need is a more humanistic education. And because they are not adequately civilized men, they can't comprehend the alternatives."

Onward and upward

Where Vince Scully will go from here is difficult to predict. Chances are he will stay at Yale. ("They're good to me here; they let me do what I please.") Chances are that he will concentrate on developing his perceptions and proliferating in scholarship. This fall he will publish his book, The Earth, the Temple, and the Gods, written last year in Greece. It tells how the Greek temple got its form out of its placement, as a man-made object, in a specific sacred landscape. This is his most ambitious and important work to date. Two earlier books-The Architectural Heritage of Newport Rhode Island (with Antoinette F. Downing), 1952, and The Shingle Style, 1955-were well received. Both won prizes as the outstanding scholarly works of their years.

What is most intriguing to speculate about is Scully's future in the mass media, primarily television. Next year, on Boston's Channel 2, he will make his TV debut on a regular half-hour color show sponsored by the Council for a Television Course in the Humanities for Secondary Schools, Inc., part of a general survey course geared to the high-school level. These programs will be written by Scully and will deal with the art and architecture of antiquity and modern architecture. No one knows whether or not he will prove as effective on camera as he is on the lecture platform. If he does, some feel certain he will become "the hottest egghead on TV." It is possible.

In any event, it seems inevitable that his influence will expand beyond the Yale campus. It also follows that he will become increasingly important not only for students of architecture, and students in general, but for architects as well; for ultimately it will be he and others like him who will create in this country a cultural climate more receptive to good architecture. His potential is great, but the pattern is refreshingly unpredictable. END



With Burgess-Manning Ceilings — Your Building Is Better — Your Building Budget No Bigger

Radiant Acoustical Ceilings in New Porter Building Provide Uniform Year-Round Temperature

One of the most attractive of the many outstanding features of the new Porter Building, located in the heart of Pittsburgh's "Golden Triangle," is the uniform, year-round temperatures maintained throughout the building by the Burgess-Manning Radiant Heating, Cooling and Acoustical Ceilings. Each office has its own thermostatic control and the ceiling automatically warms or cools the room, depending on the season, to maintain the desired temperature.

The radiant energy from the ceiling heats only the occupants, floor and objects in the room. It does not raise the air temperature except as the air is warmed by the floor or the objects in the room, so there are no air currents or drafts; the room temperatures are uniform from floor to ceiling and throughout the room. The down-drafts in front of a window, or the up-drafts above a radiator, common in convection heated rooms, are not found in radiant heated rooms.

In the warm weather, chilled water is circulated through the coils of the ceiling, and the panels will absorb excessive heat from occupants and furniture in the room. Again there are no drafts such as the chilled air currents emitted from conventional air conditioners.

The architects, Harrison and Abramovitz, and engineers, Jaros, Baum and Bolles, made the most of the possibilities offered by the Burgess-Manning Radiant Acoustical Ceiling. The floor area of the Porter Building is uncluttered by radiators—the walls contain a minimum of ducts required with the more conventional comfort conditioning devices. Less ceiling thickness, because only ventilating ducts are required—mean lower building height and lower cost for the same number of stories.

The modern Porter Building, in addition to radiant heating and cooling, has an electronic precipitator that will remove dust, pollen and smoke from the ventilating air. Half inch solar glass windows absorb solar heat and reduce outside noise. The Burgess-Manning Radiant Acoustical Ceiling absorbs interior noises.

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



Radiant Acoustical Ceiling Cuts Down Building Weight

In addition to other economies in first cost, the Burgess-Manning Radiant Acoustical Ceiling, because of its reduction in weight over a plaster ceiling, permits the use of lighter structures. The weight of the aluminum panels of the radiant heating and acoustical ceiling, plus the water filled grid, is only 25% of the weight of a plaster ceiling.



The illustration above shows the construction of the Burgess-Manning Radiant Acoustical Ceiling. A conventional $1\frac{1}{2}$ " channel suspension grid supports a water circulating coil which consists of $\frac{1}{2}$ " laterals welded into square headers. A sinuous type coil can be used where conditions make it desirable.



The sound absorbing insulating blanket is laid on top of the suspension.



Perforated aluminum radiating panels are attached directly to the water circulating coil.

The distance from the face of the aluminum panel to the top of the suspension member is $3\frac{1}{3}$ ", a substantial saving in space over the ventilating ducts, etc., required for some other systems.







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Standard Steels and Stee

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For the plaster plaques and wall panels of this high school auditorium in Niles Township, Illinois, RED TOP* Cement Plaster and USG* Metal Lath were used.

Architects: Holabird & Root, Chicago, Illinois Project Manager: Eugene E. Cook Plastering Contractor: William A. Duguid Company, Chicago, Illinois

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PLASTER CAPTURES THE CONTOURS OF CREATIVE THOUGHT

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The planes and patterns of a tortoise shell could well have inspired the functional fusion of beauty, strength and lightness in the high school auditorium pictured at the left.

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Architectural Forum / September 1959

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ALL-COPPER plumbing chosen for new Butte hospital because it cost no more — saved space — offered economies in maintenance



WATER SUPPLY AND SANITARY DRAINAGE. Roughed-in piping system for rest rooms and therapy service shows how compact assemblies of copper tube and solder-joint fittings save valuable floor and overhead space. General Contractor was Dan J. Mooney, Butte, Mont.

The \$2,100,000 Silver Bow County Hospital, Butte, Montana, is the first major public building in the state to have all-copper plumbing—for sanitary drainage lines, water supply, and heating.

What the architect says: "In specifying materials to be used in a building, we feel it incumbent on the architect to select those materials that have longer life and contribute to low maintenance costs. For this reason, we selected copper tube for all plumbing lines in Silver Bow County Hospital. In a hospital there are many plumbing lines; they are all concealed; and the use of less durable materials would not give true economy in the operation of the building." Norman J. Hamill, Norman J. Hamill & Associates, A.I.A., Butte, Montana, and Idaho Falls, Idaho.

What the plumbing contractor says: "In a hospital, intricate systems are the rule rather than the exception and the use of copper in Silver Bow County Hospital made it possible to complete all lines with greater ease and speed than would have been possible with other materials... Copper tube requires less space in par-

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HEATING SYSTEM: Copper tube piping for hot-water heating system, awaiting installation of boilers. Over 6 miles of Anaconda copper tube in sizes up to 6" and about 10,000 Anaconda wrought-copper and castbrass solder-joint fittings for plumbing and heating system supplied through M & L Supply Co., Inc., plumbing wholesaler, Butte, Mont.

titions and other areas of concentrated services. Its use also made it possible to fabricate bends, connections, etc., at a workbench with the result that final installations were made in one operation with a minimum of effort. . . . Particularly in hard-to-get-at places overhead, copper's lighter weight than other materials was a factor that appealed to us." Floyd J. Stewart, Reardon Plumbing & Heating Co., Butte, Montana.

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#2 Broadway, New York City. Architect: Emery Roth & Sons, New York. Owner and Builder: Uris Brothers, New York. Photo by Wurts.

BY LUPTON...

2 Broadway—Largest curtain-wall building in the world

This impressive 30-story office building at 2 Broadway was built with 350,000 square feet of aluminum curtain-wall, prefabricated and *installed* by LUPTON. It sits in the heart of New York City's financial district on a plot covering 73,000 square feet. It contains 1,300,000 square feet of rentable floor space.

Whether your project is of this mammoth size, or more moderate, it'll pay you to call in LUPTON: You can depend on LUPTON to fulfill your instructions from planning stages until the last curtain-wall unit is installed. And you enjoy other significant advantages.

LUPTON aluminum curtain-walls allow wide design freedom. They're modern and beautiful as well as completely functional . . . low-cost to install and maintain. Parts are lightweight and prefabricated for simple, routinized assembly . . . fast, easy erection. Overall building weight is reduced considerably, which lowers foundation and framework costs. And because LUPTON aluminum curtain-walls are only onethird as thick as conventional masonry, there is more usable floor space.

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See SWEET'S (Sections 3 and 17) for the Michael Flynn Aluminum Curtain-Wall and Window catalogs, and write for further specific information. A call to the nearest LUPTON representative (see the Yellow Pages under "Windows— Metal") will bring fast action without obligation.



Comfort-Conditioning* may be installed as an integral part of LUPTON Curtain Wall for economical, efficient heating, cooling and ventilating. Each unit is self-contained, electrically operated and individually controlled—no expensive, bulky central plant is needed. Capacity is readily increased or decreased to compensate for variance from initial design conditions. Write for complete information. *(Trade Mark) *PATENT PENDING





This dining room is quiet because the decorator baffle in the Built-In *Thinline* is engineered to absorb sound.

It also directs air upward to allow tenants of York River House complete flexibility in placing furniture.

Operator of New York luxury apartments switches to General Electric Thinline air conditioning

"Our tenants demand air conditioning but they don't want grille-work marring the walls," says Rubin Garfinkel, partner in Kessler-Wohl Associates.

"That's why we are buying General Electric Built-In *Thinlines* the room air conditioner with the decorator baffle." Kessler-Wohl Associates are operators of several luxury apartment buildings in New York and other Eastern cities.

"Our new building—York River House—will be air conditioned by Built-In *Thinlines*. When the baffles is painted or papered to blend with the walls, the air conditioner almost disappears.

"Tenants respect the General Electric name, too. It means that our air conditioning system is reliable."

A General Electric Thinline air conditioning system can be tailored to any cooling and installation needs. Units are available in models of up to 16,000 BTU* capacity. See your General Electric dealer for the full story. General Electric Company, Room Air Conditioner Department, Appliance Park, Louisville 1, Kentucky.

*Cooling capacities are tested and rated in compliance with NEMA Standards Pub. No. CN1-1958, and are stated in terms of British Thermal Units.





Plush York River House on New York's East River is completely air conditioned by 750 General Electric Built-In *Thinline* room Air Conditioners.



Designed for builders—the Built-In *Thinline's* aluminum case is exactly as high as two building blocks with mortar, six courses of standard brick or five courses of jumbo brick. Case fits between studs.

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Mr. Rubin (standing) notes how easily Keywall is handled on one of his current jobs, the Hyde Park Shopping Center on Chicago's south side. Hyde Park Project Contractor: Webb & Knapp Inc., Chicago. Architects: I. M. Pei & Associates, New York; Harry Weese & Associates, Chicago. General Contractor for Shopping Center: Inland Construction Co., Chicago.



galvanized masonry reinforcement

"You just can't beat Keywall," says Al Rubin, president of Arco Construction Company, Chicago, Illinois. "It's the easiest-to-handle joint reinforcement I know...my men really like to work with it. And I get the results I want. That's why I always urge the use of Keywall wherever joint reinforcement is specified."

By using Keywall masonry reinforcement on his jobs, Rubin gets stronger walls with greater crack resistance. This is one of the reasons he's recognized for quality masonry by leading Chicago architects and builders.

Rubin's men prefer Keywall. They use it right. Installation details, such as reinforcing corners so they are stronger than the wall itself...lapping joints in straight walls to assure continuous reinforcement... getting full embedment of reinforcement, even when lapping, without increasing thickness of masonry joints... are easily done with Keywall. These superior features, vital in the effectiveness of any reinforcement, make walls reinforced with Keywall stronger and more crack resistant at lower cost.

Keywall comes in easy-to-handle 200-foot rolls, galvanized for rust-free storage. Made for the following wall thicknesses: 4", 6", 8", 10" and 12".



These two Lake Meadows units on Chicago's south side are a prime example of Rubin's fine masonry work. Keywall was used throughout. Architect: Skidmore, Owens & Merrill, Chicago. General Contractor: Turner Construction Co., Chicago.

> Rubin used Keywall on the International Minerals & Chemicals Company office building in suburban Skokie. Photographs (left) show interior and exterior masonry construction of this attractive building. Architect: Perkins & Will, Chicago. General Contractor: Turner Construction Co., Chicago.

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Diverse Parts Do Not a Whole Thing Make



Forum

Miami . . . mobile homes . . . Mendelsohn . . . Yamasaki

DREAM DUMP

Forum:

"Miami Beach: Dream Dump, U.S.A."in your August issue—is a masterpiece of reporting and typography. (It's also true.)

JIM BETTS, managing editor Inplant Food Management Magazine New York City

THE WHEELED SUBURBS

Forum:

I thought your article on trailers (FORUM, July '59) well done, if just a little hard on some of the really fine parks which have recently been built. On the whole it will accomplish good for all concerned.

> HAROLD F. SMITH, editor The Mobile Home Citizen Riverhead, N. Y.

Forum:

Reporting of this nature is reprehensible by all or any journalistic standards.

Your reporters must desert the editorially becalmed latitudes of Manhattan and discover the real America that lies beyond. In fact, a trailer is a wonderful way to explore byways teeming with people and news.

RUSSELL BURTON, public relations director Trailer Coach Assn., Los Angeles

Forum:

You have done an excellent job of servicing our industry, and we feel flattered that FORUM is taking this interest in it.

EDWARD L. WILSON, managing director Mobile Homes Manufacturers Assn. Chicago

Forum:

We assiduously avoid the use of the word trailer. We feel that the connotation of tin-can tourist has been too long applied to the very lovely people that are using mobile homes as residences now, and are



FROM "ERIC MENDELSOHN," BY ARNOLD WHITTIK; F. W. DODCE CORP.

endeavoring to live down that implication and connotation by the use of the term "mobile homes."

> A. B. MILLER, vice president Imperial Harbor Corp. Naples, Fla.

Forum:

... Your somewhat morose conclusion is undoubtedly correct—that trailers will be with us for some time.

The solution requires a complete change in trailer thinking. To date, the trailer has developed without the aid of architectural talent, and with over 10 per cent of our housing production in trailers, this is an unfortunate situation. May it be hoped that in the future architects will be allowed to design not only a few trailer parks, but also the trailer itself.

JOHN STAINTON, planner Redevelopment Authority of Allegheny County Pittsburgh

MENDELSOHN'S STORE

Forum:

The new owner of the Schocken Department Store in Stuttgart, designed by Eric Mendelsohn, plans to demolish this historic, pioneering building (left, below). Although most of Mendelsohn's German buildings were destroyed by war, this one early work (1926) has fatefully survived.

Needless to say that I, who shared Eric Mendelsohn's work and life and who lived with him through all the joys and labor of his creative mind, am profoundly distressed about this act of impending destruction of one of his few remaining buildings.

A protest movement against its destruction has been inaugurated by students, architects, and intellectuals throughout Europe. Among those who have already registered their protest are: Giedion, Gropius, Mies van der Rohe, Hilberseimer, Neutra, Oud, and Nervi.

It would be of great value to have more Americans protest, and I appeal to you and your readers to add your voices.

LOUISE MENDELSOHN (Mrs. Eric Mendelsohn) San Francisco

• Pending a full statement of the facts, FORUM is more than glad to join others in urging preservation of this early Mendelsohn work.

continued on page 222



YAMASAKI'S DESIGN

Forum:

Yamasaki's analysis of a number of his design problems in executing building projects (FORUM, July '59) was of genuine interest. I am in agreement with his philosophy of giving this technological grid system a warmth and individuality (cf. the façade of his projected Michigan Consolidated Gas Co.-above). He has done more than most of our greats in making the new idea come off.

Let's hear from some of the other bigs. GILBERT CODDINGTON, architect Brooks & Coddington Columbus, Ohio

Forum:

Yamasaki's recent buildings have helped to return elegance to architecture : inherent elegance-not applied, and without slickness. Much more important than the elegance, though, is the lovely human scale of his buildings. In a world that has fallen victim to the belief that bigger is better, he understands that men rarely grow much taller than their grandfathers and that Gargantuan buildings dwarf, rather than inflate, the human ego.

> HOWARD R. MEYER, F.A.I.A. Dallas

Forum:

The personal expression and personal beliefs and feelings toward architecture can be well brought out of even a reticent architect by your interview method.

Regarding Yamasaki's work, I can only praise it fully for its freshness, its individuality, and its beautiful variety. To me, his whole thinking and expression is what architecture should be! In your conversation with Yamasaki the most significant thought, and the one with which I am in most complete accord, is that of concept. Every building that is to be "architecture" must start with a "concept," and this concept can really come from only one mind, and it is in this concept that the emotional quality of the idea lies. To my way of thinking, only this is architecture.

> MAYNARD W. MEYER, architect Maynard W. Meyer & Associates Milwaukee

ARCHITECTS AND CONTRACTORS

Forum :

I very much appreciate your listing of "The 100 biggest architects" (FORUM, August '59).

Your publication has done a tremendous job in continuing this service.

> R. C. DALY, president George A. Fuller Co. New York City

Forum:

Your original list proved valuable to us, and this second one was most welcome.

> THEODORE M. HOUSE Aluminum Company of America Pittsburgh

Forum:

We have found your two years' listings of the top 100 architects particularly helpful as a guide to those firms with which we would like to be better acquainted. By means of your lists, we have been able to obtain up-to-date data on those firms which are currently acquiring additional experience in the industrial field.

We hope that you will continue to publish this ready reference to the largest firms in the building business.

N. M. MARTIN, director

Facilities Planning and Construction International Business Machines Corp. New York City

Forum:

Your lists are a complete success. We have used the information extensively.

> RAY A. MYERS Myers Brothers Construction Co. Los Angeles

• This month FORUM lists the biggest contractors; next month, the clients .--- ED.

FRAMES AND SHELLS

Forum:

I would like to challenge Barklie Henry's assertion that "the rectilinear beam is a nonorganic, nonfunctional, even nonnatural means of suspension in purely architectural terms" (FORUM Letters, August '59). Whether he likes it or not, the fact remains that the vast majority of concrete buildings actually constructed today are frames, for the obvious reason that this is the most sensible, straight-forward, and economic way of erecting multistory buildings which require internal partitions.

I suspect that the new dogmatic enthu-

siasm for shell concrete architecture stems entirely from the chapter on Maillart's bridges in Space, Time and Architecture, where Giedion points out that Maillart was the only engineer whose structural forms kept abreast of contemporary painting. If my guess is correct (and there is no denving that the younger generation's obsession with concrete shells began to appear after the publication of this book), it is an instructive example of the influence of historical speculation on creative architecture.

> PETER COLLINS McGill University Montreal

AMBIVALENT BUSINESSMEN

Forum:

Your June article entitled "Urban renewal and the ambivalent businessman" was a most important analysis of the problem facing federally aided urban renewal programs today. Without a doubt the local businessman is more and more aware of the benefits to his community and to him from an effective urban renewal program. We have seen our own Chamber of Commerce dissociate itself from the National Chamber for similar reasons, and we have seen the local realtors in strong difference of opinion from the national board.

I am not quite sure how to resolve the problem and make it known to the Congress and the President that the few "diehard" lobbyists in the national organizations in Washington do not represent the thinking of their grass-root counterparts. I hope your article is well read.

To do my part, I would like to distribute 50 reprints to various local businessmen; bankers, realtors, etc., and to our congressman.

JOHN E. HIRTEN JR., executive director Stockton Redevelopment Agency Stockton, Calif.

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For Southland Center ...

Curtain walls and sculptured panels of

M2Sai.

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Architects: Welton Becket and Associates, Los Angeles and Dallas Consulting Architect: Mark Lemmon, Dallas

SHERATOR

DALLAS

The huge Southland Center project in Dallas includes the 42-story Southland Life Tower and the 28-story Sheraton-Dallas Hotel.

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