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## News

## St. Louis ready to approve project beside Saarinen's arch; his views unrecorded

The soaring 600-foot stainless steel arch designed by Eero Saarinen that will be erected in the 83-acre Mississippi river-front Jefferson National Expansion Memorial Park (photo below) will be a national monument, and the possession of all Americans. Any adjacent development that would not be complementary, or would detract from its esthetic effect, would amount to a disservice to the nation.

In St. Louis, however, local officials acting on plans for a five-block-long urban redevelopment project facing the park and the arch have hitherto appeared to be influenced solely by local considerations.

As FORUM went to press, it appeared that the city would soon give final approval to a plan which —although not undesirable in itself—could not be accepted unanimously as complementing the adjacent national monument when that is erected in the next few years. The City Plan Commission and Mayor Raymond R. Tucker both recommended acceptance of a \$45 million project of Kansas City Builder Lewis Kitchen, designed by St. Louis Architects Russell, Mullgardt, Schwarz & Van Hoefen, and consisting of three proposed 28-story apartment towers set



REDEVELOPED ST. LOUIS as visualized by artist in a master plan for the downtown area that the City Plan Commission released in April. Buildings in this are only schematic representations. Redevlopment project now under consideration by city would cover five long blocks facing right half of park. Two blocks behind left side of park is proposed \$89 million downtown civic sports stadium.

on a continuous low base containing parking, store, and office facilities. In doing so, they passed over plans for a \$30 million project of St. Louis Builder G. J. Nooney designed by St. Louis Architects Hellmuth, Obata & Kassabaum and consisting of a continuous Sshaped seven-story structure oriented north and south parallel to the Saarinen arch and intended to contain a 600-room motel, 300-room hotel, 260,-000 square feet of office space, and supplementary parking and restaurant facilities (FORUM, March '60). The last approval necessary will be that of the Board of Aldermen, which received a bill in favor of the Kitchen plan on May 13, and was expected to act on it between May 27 and its summer adjournment on June 9 or 10.

Eventually, when a building permit is sought, the City Art Commission will have to approve plans for any project in this area, because it adjoins a park. But at that point it will no longer have a choice between Kitchen's predominantly open vertically punctuated plan and other plans such as Nooney's long continuous quiet scheme, and it is uncertain whether this commission has the ultimate power to require major revision of any plan that is not unattractive of itself.

One of the curious features of the St. Louis situation, however, was that no direct expression of the esthetic views of Architect Saarinen had apparently been solicited regarding the development likely to occur within the shadows of his arch. So far there has only been an indirect statement by Kitchen last December, when he said the 28-story, 275-foot-high towers he planned, less than half the height of the arch, would be "agreeable" to Saarinen and to the National Park Service, which will be in charge of creating the park and arch. At that time, in response to Park Service prodding, Kitchen had revised his original plans, which would have produced two 40story towers opposite the arch.

But from Cambridge last month, José Luis Sert, dean of Harvard's Graduate School of Design, said that on such an important national issue the uninhibited opinion of the architect of the memorial should be obtained and given the widest publication, and, if necessary, time allowed for contendcontinued on page 6 ing developers to revise their plans to meet conditions that Saarinen might consider advisable. From Detroit, Architect and City Planning Director Charles A. Blessing also said the views of the architect responsible for the memorial should be given most careful consideration in a matter so important both to St. Louis and nationally.

Trying to account for Saarinen's silence and the lack of any report of more enthusiastic approval of the highrise plans by him, two well-informed St. Louis sources told a FORUM correspondent that they understood that local National Park Service representatives had requested him "not to rock the boat." To complicate this picture, FORUM received the most authoritative assurances that the Park Service as a whole, though it would obviously not want to become involved in any local controversy, would never want its architect to feel muzzled. Moreover, the Service was said to recognize the close relationship between the monument and any adjacent tower buildings, and, in fact, would be concerned about the density and uniformity of any nearby structures too.

Neither the St. Louis City Plan Commission nor Mayor Tucker sought Saarinen's views before they recommended approval for the high-rise redevelopment project. The Art Commission has not sought his views yet either, although one member said he understood Saarinen was approached by it unofficially and declined to answer.

Against the prevailing opinion of architects polled informally by FORUM, who favored a continuous low building without towers as a background for the arch, William W. Wurster, head of the University of California, College of Architecture, Berkeley, offered still a third view. He stipulated that he would prefer no continuous base, because that would cut off the view of the river from the area behind. Wurster, who also was the chairman of the jury that chose Saarinen as the winner of the national competition for the Jefferson Expansion Memorial in 1948, was indifferent to the question of discordant towers. He said he felt the strength and size of the arch would still allow varied development around the park without any harm to the arch esthetic.

The fact that neither Wurster nor the preponderance of other architectural opinion favored the main features of the high-rise scheme, gave added weight to the implied import of Sert and Blessing, that the question should be kept open to review by the highest architectural opinion nationally, to correspond with the national importance of the Memorial and its surroundings.

## AIA San Francisco convention told of "Expanding Horizons"; reorganization plan deferred

San Francisco in April, and a warm hospitality, both abounding and intimate, made the A.I.A. 1960 convention an exceptionally pleasant and memorable affair. And in the practical matter of hotel and meeting arrangements, with main convention sessions held in the new Masonic Memorial Temple, there was also satisfaction and convenience.

The convention's theme, "Expanding Horizons," allowed its well-chosen principal speakers to address themselves seriously (and often entertainingly) to broad problems of the architect and his profession in this fast-changing kaleidoscopic contemporary world. Highlights included:

Dr. J. Robert Oppenheimer's talk on the difficulty of adjusting to the rapidity of new developments in this scientific age, in which man's knowledge now virtually doubles every ten years. While this brings the architect and the engineers new answers, it also brings them new problems. After expressing the hope that so much material progress would be utilized most effectively for the better interests of mankind. Dr. Oppenheimer added : "The greatest hope that I can express for your profession is that you will find it possible in your work of design and creation to look with wide-angle lenses at the site in which you are working. Ideally, perhaps, the city itself, the megalopolis or the province . . . anyway, at the very least, in areas physically large enough to encompass what naturally meets the eye, what one sees in one vision."

Dr. Wendell Bell, professor of sociology and anthropology, U.C.L.A., who explained how today's major social problems in the U.S. involve overorganization and the evolution of various power structures, rather than the disorganization that characterized earlier decades of this century. Having referred to the world of lobbyists and advertising, Bell said today's sociologists are no longer content to predict how people will behave, but have [somewhat dangerously] set their sights on "the formulation of principles of controlling, of manipulating people and their institutions."

Dr. C. Northcote Parkinson, Raffles Professor of History, University of Malaya, who with witty tongue in cheek, was still serious enough to observe that "the American suburbanite, trying to combine the amenities of city and country, enjoys the advantages of neither. In the one direction the urban sprawl has put the countryside (in so far as there is any) out of effective reach. In the other direction, the city's magnetism has been lost. It can no longer sell itself. Excepting New York and San Francisco . . . it has little to offer that would balance the real inconvenience of returning there in the evening."

Ludwig Mies van der Rohe, awarded the Institute Gold Medal this year, also spoke on problems of today's city, but more encouragingly. He found merit in large-scale redevelopent projects now being undertaken in many central city areas, and recommended that builders acquire these, and other suitable building sites in downtown areas, before land prices go higher. "Our cities are so ugly, by and large, because of the



NEW OFFICERS AND DIRECTORS elected by the Institute assembled for their group photo. Officers, seated left to right, are: Treasurer Raymond S. Kastendieck, Gary, Ind.; 2nd Vice President James M. Hunter, Boulder, Col.; President Philip Will Jr., Chicago; 1st Vice President Henry L. Wright, Los Angeles, and Secretary J. Roy Carroll Jr., Philadelphia. Directors, standing left to right, are: Reginald Roberts, San Antonio; Clinton E. Brush, III, Nashville; Linn Smith, Birmingham, Mich.; Malcolm D. Reynolds, San Francisco; Harold T. Spitznagel, Sioux Falls; (Executive Director Edmund R. Purves); Alonzo J. Harriman, Auburn, Maine; Arthur Gould Odell Jr., Charlotte, N.C.; Frederic H. Porter, Cheyenne; Trevor W. Rogers, Buffalo; Harry C. Weller, Pullman, Wash.; Oswald Thorson, Waterloo, Iowa; Daniel A. Hopper Jr., Irvington, N. J.; Robert M. Little, Miami.

heritage of a century of building without much thought," said Mies. "But it is not too late. We can still have good cities if we go to work now and plan them properly." The first medal in a new photography classification went to Roger Sturtevant of San Francisco.

At their business sessions, A.I.A. members were unenthusiastic for the structural "reorganization" of the Institute's board of directors, and of its regional and chapter representation system, that was recommended earlier this year (FORUM, March '60). This proposal was laid over to the 1961 convention, after further study by an enlarged committee to include additional membership from each district, a step that could make widespread agreement or acceptance more difficult to obtain than with a smaller committee.

Also voted down by deferment were proposals for granting affiliate membership to those structural and mechanical engineers whose work is done mostly with architects. The real objection was fear lest this help ambitious engineers to "take over" architectural assignments.

Philip Will Jr., of Chicago, and Henry L. Wright, of Los Angeles, both unopposed, were elected president and first vice president, respectively. Previously first vice president, Will is the



A.I.A. AWARDS at San Francisco included presentation of the 1960 Gold Medal to Ludwig Mies van der Rohe by President John Noble Richards (photo above), and its 1960 Fine Arts Medal to Painter and Muralist Thomas Hart Benton (below).



first A.I.A. president in almost a decade who is a partner in a large office and one noted for outstanding design. Modest and businesslike. Will also has intense interest in architects' office organization problems and changing professional responsibilities, and the Institute under his administration can be expected to concern itself more intensively with these matters. In the contest for the second vice presidency (a post Will occupied in 1956-58) James M. Hunter, of Boulder, Col., former chairman of the committees on the profession and education, was successful over nationally less-well-known though respected L. Bancel LaFarge of New York, and I. Lloyd Roark Jr., of Kansas City. Incumbent Raymond S. Kastendieck, of Gary, Ind., was reelected treasurer, over Gerson T. Hirsch, of New York.

Forty-three members advanced to the rank of Fellow at the convention were:

George Edward Beatty, Brooklyn; Martin Luther Beck, New Jersey; John Joseph Carey, Alabama; Mario Joseph Ciampi, northern California; Gilbert Harold Coddington, Columbus; Neil Joseph Convery, New Jersey; Charles Francis Davis Jr., Alabama; Charles H. Dornbusch, Chicago; Lathrop Douglass, New York; Robert Alexander Eyerman, Northeastern Pennsylvania; O'Neil Ford, San Antonio; Wayne Solomon Hertzka, northern California: John Hunter Jr., Central Pennsylvania: Paul Robinson Hunter, southern California: Perry Bertil Johanson, Washington state; A. Quincy Jones, southern California; Kenneth Stone Kassler, New Jersey; Bradley Paige Kidder, New Mexico; Vincent George Kling, Philadelphia; Louis Bancel LaFarge, New York; Geoffry Noel Lawford, New York; Robert Murray Little, Florida South: Allan Gordon Lorimer, New York; Harold Batchelder McEldowney, Chicago; John Wishart McLeod, Washington-Metropolitan; H. Augustus O'Dell, Detroit; John Hayes Pritchard, Mississippi; Joseph P. Richardson, Massachusetts; Lutah Maria Riggs, Santa Barbara; Burton Romberger, Pasadena; Chester Orville Root, Coast Valleys; Robert Watson Schmertz, Pittsburgh: Walter Scholer, Indiana Society of Architects: Daniel Schwartzman, New York; Solis Seiferth, New Orleans: John Walter Severinghaus, New York: Chloethiel Woodard Smith, Washington-Metropolitan; Harvey Partridge Smith, San Antonio: Robert Fitch Smith, Florida South; Hugh Asher Stubbins Jr., Massachusetts; Robert Law Weed, Florida South: David Reichard Williams, Dallas: Minoru Yamasaki, Detroit.

## Visitors to Guggenheim rate building over art

The building for the Solomon R. Guggenheim Museum in New York, rather than the art it houses, attracts nearly four out of every ten (38 per cent) visitors to the structure, according to a Gallup poll. The survey found that 53 per cent of the visitors come to see both the art and the Frank Lloyd Wright architecture of the building, while only 5 per cent come to see the paintings alone.

## Providence, Philadelphia unveil master plans

Two of the nation's oldest East Coast cities received master plans, and cost estimates, for their long-range rejuvenation and modernization last month.

In Providence, a \$102 million downtown renewal and face lifting to be completed by 1970 was proposed in the report of a special "demonstration project" study. This was sponsored by the City Plan Commission and the Downtown Business Coordinating Council, and was financed with \$57,000 of local funds and a \$108,000 HHFA federal grant. (And unpaid advisory committee volunteers contributed an estimated 3,500 man-hours of service.) The key to the program would be relocation of the New Haven Railroad's tracks and terminal at a cost to the railroad of almost \$2 million, which would be offset in part by the sale of its present holdings. Some of the other major ingredients of the plan: four large midtown parking garages to cost about \$8.2 million; an improved traffic circulation system; a \$4.8 million statefinanced adult education center; a \$28 million civic center on the present railroad station site, including a theater, heliport, 500-room hotel, and new city, state, and federal office buildings; a \$5.5 million sports arena and convention hall; a pedestrian shoppers' mall on Westminster Street with cross malls into Mathewson and Union Streets; a new \$3.8 million office tower on the present City Hall site. By month's end, 24 of the city's business and civic leaders had decided to form a citizens' redevelopment corporation to help turn the plan into reality.

In Philadelphia, Mayor Richardson Dilworth and Dean G. Holmes Perkins, chairman of the City Planning Commission, released the outlines of a comprehensive plan for redevelopment and reorganization of the city over the next 20 to 40 years. Based on the neighborhood concept, this plan divides the city into ten major districts and 56 different community centers. To help make each of these as self-sufficient as possible, the plan seeks to provide the means for increasing numbers of people to reach major community facilities. Whenever possible, new facilities are to be located as close as possible to large numbers of people. This plan also is especially noteworthy, says Perkins, because it includes the most thorough analysis of cost ever included in any city's comprehensive plan. About \$921 million of local tax funds and \$521 million of self-sustaining city outlays would be required, and about \$9.2 bilcontinued on page 9

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lion of investment by private capital. State and federal assistance funds would total about \$1.7 billion. At the present \$25-million-a-year rate of capital investment by the city, the plan could be completed in 37 years; if the present *percentage* of city spending for capital improvements were to be maintained it would require only 28 years with no increase in tax rates.

## Renewal aid \$517 million short of requests

Federal URA Commissioner David M. Walker reported last month that virtually all federal urban renewal grant authorizations available for the fiscal year ending June 30 have been exhausted. Simultaneously, the American Municipal Association and the U. S. Conference of Mayors released the results of a survey indicating that grant applications through June 30, '61, will total at least \$517 million in excess of the additional \$300 million authorizations that will be available in this period under existing law.

Walker made his report at the annual Mayors' Conference meeting in Chicago. Since the 1959 Housing Act became law last September 23 and made \$350 million of authorizations available for the current fiscal year, said Walker, URA has approved 150 new projects that will require grants totaling \$210 million, plus increases for old projects exceeding \$70 million. By June 30, he added, practically the entire \$350 million will have been reserved or earmarked.

Walker also reported two other gratifying developments to the mayors:

▶ The number of projects completed or under execution stage loan-andgrant contracts now totals 405, or more than half of the 767 active projects initiated since the Title I program was launched in 1949. "This definitely suggests that our cities, small and large, are beginning to come to grips with urban renewal," he declared.

▶ A recent analysis of completed projects—those that have received their final federal grant payments—reveals an average increase in tax revenues of 300 per cent. By now, said Walker, he doubts that the mayor of a single community that has a reasonably well advanced project can question the soundness of urban renewal as a financial investment.

Results of the joint AMA-Mayors Conference survey of future renewal grant needs were released by AMA headquarters in Washington. Based on a questionnaire that was answered by 446 cities up to May 1, the AMA reported that applications from these cities for new or increased grants during the current calendar year would exceed \$763 million, and their 1960 applications would amount to at least \$424.2 million. Assuming that half of the 1961 applications would be filed by June 30, applications through June 30, '61 would total over \$1,019 million from these cities alone, or \$517 million more than the total authorizations that will be available through that date under existing law.

For the next three-year period, 1962 through 1964, cities that answered the questionnaire estimated that their federal grant applications would total \$969.8 million, or an average of \$323.3 million a year. For the following fiveyear span, 1965-69, they estimated their needs at \$1,765.9 million, or an annual average of \$353.2 million. In view of the fact that some cities had not yet answered the questionnaire, and others were not always able to estimate their distant-future requirements, the AMA recommended legislation for a ten-year federal grant authorization program at an annual rate of \$600 million a year.

## Enlarged bridge will bring city more traffic questions

When the George Wasnington Bridge between upper Manhattan and northern New Jersey was designed in the twenties, provision was made for a lowerlevel deck to be built later to accommodate rapid-transit facilities. After the bridge was opened in 1931, however, its bus and auto traffic zoomed (up from 5.5 million vehicles in 1932 to a near capacity of 38.4 million in 1959). Meanwhile most commuter railroads in the area declined or failed, and in 1955 the bridge-owning Port of New York Authority decided to develop the lower level with six more auto lanes, boosting its motor vehicle capacity 75 per cent. (The top level has eight lanes.)

## News contd.

Last year this double-decking, to be completed in 1962, began in earnest. It will cost \$25 million for enlargement of the bridge itself, but more than six times that amount, an estimated \$158 million, for additional road approach systems and for improved connectors to various expressways and thruways in upper Manhattan and the Bronx (see photos). A major feature of the program will be a 12-lane expressway across upper Manhattan to a new Alexander Hamilton Bridge across the Harlem River to be erected by the State Department of Public Works just a few blocks below an existing bridge at 181st St. Alexander Hamilton Bridge and its connectors, says the Port Authority, "will provide a necessary link in the northern bypass route around Manhattan's congested area. It will connect the George Washington Bridge Expressway to the Cross Bronx Expressway, which in turn will connect to the New England Thruway to the northeast and to the Bronx-Whitestone Bridge and new Throgs Neck Bridge leading to Queens and Long Island. It will also provide a connection to the Major Deegan Expressway leading north to the New York State Thruway and other Westchester and New England highways and south to the Triborough Bridge."

A few weeks ago, James Marston Fitch, professor of architecture at Columbia University, took sharp issue with the Port Authority's wisdom in deciding to accommodate more autos instead of developing transit facilities on the lower level of the George Washington Bridge. Notwithstanding the Authority's position that its extensive bridge improvement program will keep through traffic off congested city streets. Professor Fitch protested that it also would stimulate a great increase in auto traffic into New York and intensify its local street traffic snarls. At the spring meeting of the Academy of Political Science, Fitch said the Authority's continued on page 11



"SPAGHETTI APPROACHES" being built at the Manhattan end of the George Washington Bridge over the Hudson River (left) and for the new Alexander Hamilton Bridge over the Harlem River (right), only a half of a mile farther east, by a 12-lane expressway connector.

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auto-instead-of-transit decision illustrates how American cities generally lack any coherent transportation plan at either the national or local level, and their future growth is often endangered by "irrational manipulation."

"It is quite possible to kill a city, just as it is possible to kill a sick patient by making his survival a matter of a 'Darwinian' struggle between infected man and infecting microbe," said Fitch. "Passenger service, and especially commuter service into the cities, has collapsed without a finger being raised to prevent it. The auto's impact on the central city has been everywhere disastrous. It has not merely taken over the street, it has dissolved the living tissue of the city. Its appetite for space is absolutely insatiable; moving and parked it devours urban land, leaving the buildings as mere islands of habitable space in a sea of dangerous and ugly traffic. Our streets have become the most inhumane landscapes in the world."

Co-panelist Louis Winnick, executive director of the New York State Temporary Commission on Economic Expansion and former research chief for the New York City Planning Commission, found that the auto had not been completely detrimental to the city, however. If the automobile had not been developed, he observed congestion in city streets probably would be infinitely worse by now. "The city was even more badly designed for a mass horse and buggy age than for a mass auto age. By encouraging a vast outward extension of the urban area, and by increasing the average speed at which traffic flows, the auto has likely spared the city from a very much greater degree of congestion."

## Shelter debate stirs more pro and con fallout

The inconclusive national debate over the advisability of a large-scale atomic bomb shelter program that had dragged on through the fifties showed no signs of early resolution in the sixties. Nevertheless, spring brought several incidents and pronouncements that kept the argument warm, if not radioactive, and just as unsettled as ever.

▶ Nuclear Scientist Dr. Edward Teller, sometimes called the "father" of the hydrogen bomb, suggested to a New York audience last month that all future motion picture theaters be built underground, to provide ready-made shelters for as many as 2,000 persons. All other new large buildings also should be designed with basement and subbasement shelter areas, he said. "Every citizen, especially in cities and suburban areas, should be within a tento-15-minute walking distance of a bomb shelter." Dr. Teller advocated a federal shelter program that might cost between \$40 and \$80 billion, because "the problem of a shelter can be solved not by individuals but only if it is undertaken as a common effort."

Governor Nelson Rockefeller this spring failed in an energetic personal effort to persuade the New York legislature to adopt a law requiring mandatory construction of individual home shelters by all New Yorkers, or, alternatively, voluntary construction of such shelters, to be stimulated by state tax forgiveness. In the end, however, he did obtain a special \$2.4 million civil defense appropriation for the express purpose of financing an intense public relations program, and of paying for prototype shelters of various shapes and sizes to be widely exhibited around the state. After this program bears its desired fruit, he is expected to renew his campaign to make New Yorkers provide whatever shelter they need pri-



MANHATTAN DOCK AREA MOTOR HOTEL Billed as the "world's largest urban motor hotel," this \$9.5 million, 21-story, 448-room hostelry will be started next month, putting a Miami sundae at the Hudson River end of 42nd St. close to most of New York's biggest trans-Atlantic liner piers.

The basement and first five floors will garage 350 cars; the upper 16 floors of guest rooms, restaurant, garden terrace, and public areas will look across the river to the New Jersey palisades and will be topped with a swimming pool. The 27,000 square foot block-front site adjoins an exit from the city's West Side elevated express highway—virtually a motel location—and was purchased for \$1 million, or about \$37 per square foot.

Architects and interior decorators will be Morris Lapidus, Kornbluth, Harle & Liebman. The Glickman Corp., headed by realty syndicate specialist Louis J. Glickman will finance erection by the Diesel Construction Corp. with a \$3.5 million mortgage and \$5 million cash to be obtained from syndication subscribers who are offered monthly income and principal distributions that will total 11 per cent a year. marily on a private, individual basis. To set an example, he commissioned Architect Peter Ogden, of Greenwich, Conn., to design family shelters which the governor will build at his own expense in his New York City and Tarrytown residences, and in the Executive Mansion in Albany.

▶ In Washington, General Curtis E. LeMay, Air Force Vice Chief of Staff, told a Congressional committee that he favored defense spending for offensive weapons rather than for civilian bomb shelters, which in his mind represent "Maginot Line thinking."

## Indiana architects back Urban Planning Week

When Indianapolis held its first Urban Planning Week observance recently, the Indiana Society of Architects joined with the Indianapolis Chamber of Commerce in giving ten commendations for noteworthy projects and activities that have helped revitalize the city. On the award jury were Chicago architect Richard Bennett: University of Notre Dame architecture department chairman Frank Montana, and Indianapolis Metropolitan Plan Commission executive director Calvin S. Hamilton. Another highlight of the week was a panel discussion telecast by Mayor Charles H. Boswell, by Ray Thompson, vice president of the Indiana architects group, and Jack Harris, executive director of the Civic Progress Association.

Hamilton was the key figure in organizing Planning Week, which also included a large civic luncheon at which Gwilym A. Price, board chairman of Westinghouse Electric described Pittsburgh's successful urban renewal program. The Indianapolis observance increased interest and generated important support for the city's planning and renewal activities, said Hamilton, and it will be repeated next year with a larger schedule of awards, exhibits, and radio and TV programs.

#### Brief

To prevent the development of a "super-metropolitan government," supervisors of nine counties and the mayors of 53 cities in the San Francisco Bay area met in Berkeley last month to establish an Association of Bay Area Governments. This body will have power to discuss area problems and make recommendations to city and county governments, but no other authority. Initial annual budget: \$55,000, subscribed on a per capita basis. END



Albert Kahn Associated Architects & Engineers, Inc. Bryant & Detwiler, Gen'l Contractor mpressively modern ...

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## People

## Redeveloper Bonan depends on design for investment safety; Saarinen wins Kentucky commission

Performance takes precedence over publicity or platform appearances for New York Builder **S**. (for Seon) **Pierre Bonan**. He shuns trade or Rotary-type gatherings, and prefers the increased, unhurried, fireside leisure that public anonymity allows to the person who has not surrendered to the urgencies of promotion campaigns. Consequently, although he is one of the country's leading urban redevelopers, he also is perhaps its least known in relation to his importance.

For an impressive program of Title I projects in five different East Coast cities. Bonan has engaged the services of four well-known architectural offices. For his \$17 million University Towers apartment and shopping center in New Haven, Conn., now more than one-third completed, he employed Kahn & Jacobs. For the \$60 million West End apartment project in Boston that was started in March he chose Victor Gruen. For the \$12 million section of Philadelphia's so-called Society Hill, or Washington Square East project, which he expects to have under construction this fall, he has engaged I. M. Pei (who also will be architect for the other half of this project that was awarded to Webb & Knapp, of New York). Meanwhile, he also has engaged Gruen as site planner and architect for a 66-acre \$100 million commercial, industrial, and residential redevelopment in Stamford, Conn. for which he was designated as sponsor last January, and has commissioned Harrison & Abramovitz as architects for a pending \$18 million apartment project in Brooklyn. (Other projects are negotiating in Jersey City and Paterson, N. J.).

Formal contracts covering Bonan's Brooklyn project, known as Cadman Plaza, have been delayed while New York City's much-criticized redevelopment agency has been undergoing reorganization (see below). In the meantime a group of promoters seeking to erect a cooperative housing development on the site, at lower "rentals," has attempted to get the official sponsorship of this project transferred to itself. But Bonan, having invested considerable time and money in developing plans under his original agreement with the city, has no intention of bowing out without a contest. Unless the city changes its previous Title I land resale procedure, man-of-action Bonan will be a vigorous bidder for the property when it is auctioned, even if he has been displaced as the officially approved sponsor-developer. His cosponsor in Brooklyn, and in Philadelphia, is **T. Roland Berner**, investor and a director of Curtiss-Wright Corp.

In moving into urban redevelopment in 1953, Bonan decided that he could not afford to "gamble" with cheap, flimsy architectural design if his projects were to have longterm equity investment value. People renting in redevelopment areas will be a selective and discriminating market. In coming years, Bonan feels, the tables will be turned, and suburbanites finding themselves even more harrassed will seek new attractions in the cities from which people earlier sought to escape. With his wife and three young children. Bonan now lives in Greenwich, Conn. (one of the few suburbs that he esteems), while frankly admitting to his inherent affection for larger cities and his hopes of returning to one to live.

Bonan was born in Manhattan 43 years ago, the son of a French silk importer who had become a naturalized citizen. Hs has always preferred to be known as Pierre; it helps to reduce the confusion of frequently being miscalled Leon.

After Pierre was graduated in 1938 from Columbia College, he started to study law, but the war interrupted, and he did not obtain his degree from Brooklyn Law School until 1946, when he was admitted to the bar. Happenstance made him a homebuilder and general contractor in the New York area, however, and eventually he organized his own general contracting firm, Bonwit Construction Co., in association with Martin W. Witte, with whom he went through a large part of the war with the Pacific fleet. During the last ten years, he estimates, Bonwit or affiliated or subsidiary corporations, has done about \$40 million in all types of construction.

His main preoccupations stray from building. As a gourmet, and rating himself only as an "amateur" chef, he would like to own and operate a first-rate French restaurant and resort.

#### MAJOR COMMISSIONS AWARDED

In Louisville, Ky., last month, Robert B. Hensley, president of Watterson City, Inc. and of Life Insurance Company of Kentucky, disclosed the selection of Eero continued on page 14



BONAN (L.) BOSTON'S MAYOR COLLINS (SEATED), AND JOHN HANCOCK INSURANCE PRESIDENT ELLIOTT

## People contd.

A Product Report for Architects...

## **Inside Window Washing**

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Territories open for qualified Sales Representatives. Direct representation in Canada. Saarinen to design a \$50 million "architectural showcase" of office buildings, apartments, luxury motel, public auditorium and a heliport on a 55-acre tract at an expressway interchange about 15 minutes from downtown. Originally Saarinen was engaged to design an office, research, and manufacturing center there for the Reynolds Metals Co. before it decided to consolidate all such operations in Richmond, Va. The newest development will be known as Watterson City, in honor of the late Henry Watterson, former editor of the Louisville Courier-Journal.

In Chicago, Sigurd E. Naess and Charles F. Murphy Jr. were designated as the supervising architects for that city's proposed \$67 million civic center; the offices of Loebl, Schlossman & Bennett, and Skidmore, Owings & Merrill will be associate architects. In Baltimore the 23-story office building designed by Ludwig Mies van der Rohe for Metropolitan Structures, Inc. won the redevelopment-design competition (FORUM, April '60)—to become the first segment of that city's huge Charles Center downtown rebuilding project.

Overseas, Professor Jean Tschumi, winner of the 1960 Reynolds Memorial Award (FORUM, May '60), won an international competition to design and erect a \$10 million headquarters building in Geneva, Switzerland, for the United Nations' World Health Organization; **Eero Saarinen** won the second prize of \$5,800. In Melbourne, Australia, the office of **Welton Becket**, of Los Angeles, was engaged to design a 400-room, \$11 million hotel for the Intercontinental Hotels Corp.

#### MULTIPLE MOSES REPLACEMENTS

In relinquishing several of his municipal offices to become head of New York's 1964 World's Fair, **Robert Moses** was being replaced by a number of successors, each of whom found that Moses, though going, was far from being quietly forgotten.

In redevelopers' eyes, the most important Moses replacements were the three members appointed to the new Housing and Redevelopment Board that is taking over the Title I program formerly directed by Moses as chairman of the city's Slum Clearance Committee. The new board's first chairman is young Realtor J. Clarence Davies Jr., 48, son of a famous Bronx developer of about four decades ago, and until his appointment the head of the recently reorganized city Real Estate Department. (Famous Banker Earl B. Schwulst, president and chairman of the Bowery Savings Bank-the nation's largest-declined the appointment.) Serving with Davies are Attorney Walter S. Fried, formerly Region I Administrator for HHFA, who quietly but effectively rode herd on Moses' Title I operations on becontinued on page 16

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## People contd.

HOUSE & HOME: WALTER DARAN



DAVIES (SEATED), FRIED (L.), AND WEAVER

half of the federal government for the past few years, and **Robert C. Weaver**, former New York State Rent Administrator, Deputy State Housing Commissioner, and board chairman of the National Association for the Advancement of Colored People.

Another Moses tempest arose, when the Post disclosed last month that the Moseschaired Triborough Bridge & Tunnel Authority had sold an East River tunnel exit roadway for \$115,000 to a building company headed by former NAREB president John W. Galbreath, of Columbus, Ohio, and his partner Peter B. Ruffin, builders of New York's huge Socony-Mobil Building (FORUM, Jan. '55). To be sure, the roadway was purchased subject to an agreement to keep it open perpetually, yet under zoning regulations its acquisition had the effect technically of enlarging the plot for another new Galbreath-Ruffin office building, which could consequently be built with a larger floor area than would otherwise be permitted. The Post reported that Governor Nelson Rockefeller said he was "aghast" after reading an account of the roadway sale.

#### HONORS AND AWARDS

At commencement exercises of the University of Washington in Seattle this month, Minoru Yamasaki, '34, will receive the university's 1960 Most Distinguished Alumnus award. At Yale University a few weeks ago, **Eero Saarinen**, who received his fine arts degree there in 1934, was given an Award of Distinction by the annual Yale Arts Association.

An offbeat honor has been garnered by Architect Aloysius Schuszler, of Cleveland, Ohio, a 1960 George Washington Honor Medal, awarded by the Freedoms Foundation for composing the lyrics of Our Good American Home. END

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Gordon Cornwell, imaginative architect, designed this high school located in Traverse City, Michigan; used Vampco window walls, doors and windows.





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1. ROOF INSULATION. Roofmate\*, a lightweight, rigid insulation board, is waterproof . . . does not need vapor barriers or water cut-offs to keep its insulating effectiveness. Further, this dry insulation eliminates a major cause of blistering. It installs conventionally . . . hot bitumens can be applied directly.

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 PARAPET FLASHING. Saraloy 400, because of its unique pliability, conform easily to most surfaces, including highly irreg ular shapes. Easily fabricated on the job, can be readily adhered to built-up roof concrete, metal, wood, masonry, and glass reinforced plastics.

- 3. PLASTERBASE. Styrofoam<sup>®</sup>, bonde directly to the inside of exterior masonr walls, makes an excellent base for plaste Eliminates furring, lath, and saves labor cost: In addition to its use with plaster, Styrofoar can also be used to effect similar economies i drywall construction.
- 4. FOUNDATION INSULATION Scorbord<sup>®</sup> (patent applied for), with th

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THE DOW CHEMICAL COMPANY

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\*Trademark

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# PROTECT A BUILDING

exclusive scored "snap-off" feature, effectively insulates foundation perimeters-keeps moisture out, heat in. New thicknesses and pre-scored widths make it easy to meet the new FHA-MPS requirements with Scorbord.

- MOISTURE BARRIER. Polyfilm<sup>®</sup>, Dow's high quality polyethylene film, makes an ideal moisture barrier under floor slabs. Also excellent for use as temporary enclosure, curing blanket, and moisture barrier for walls and roofs.
  - **5. CAVITY WALL.** Styrofoam, Dow's expanded polystyrene, keeps heat in and moisture out *permanently*. Its low "K" factor, unyielding water resistance, durability, and high mechanical strength make it a su-

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## perior cavity wall insulation.

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7. EXPANSION JOINT. Saraloy 400, a new elastic sheet flashing, *permanently* seals expansion joints. Saraloy 400 has exceptional elastic recovery, making it expand and contract along with the materials to which it is bonded. Pliable and easy to install, Saraloy 400 can be readily cut and fitted on the job.

> FOR MORE INFORMATION including other application suggestions, contact your nearby Dow sales office or write to THE DOW CHEMICAL COM-PANY, Midland, Mich., Dept. 1707LH6.



# Ideas of the future

# add magnificence to a sanctuary

Among the many forward-looking innovations at St. Luke's Methodist Church in Oklahoma City are Heywood-Wakefield de luxe model TC 725 chairs that provide individual seating for 1700 worshipers. Comfortable and most attractive, they assure seating privacy. A special tan and gold tweed fabric is used on the coil spring seat cushions, padded backs, and also on the outside backs of the chairs. Pew ends of solid walnut with contrasting light birch crosses were specially designed by the architect. Blending perfectly with either modern or traditional interiors, Heywood-Wakefield individual seating adds dignity to any religious haven.

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# Here's a Shining Example of Functional Lighting without Glare by LITECONTROL

The illumination of a display room devoted to trays, trophies, jewelry and other gleaming items, represents some special problems. Reflection can get out of hand unless controlled. The task can be a challenge for the architect, contractor and lighting equipment manufacturer.

For the new display room of the L. G. Balfour Company, illustrated, Litecontrol's luminous lens ceiling was a happy choice. The merchandise is gently accented by light of the precise intensity required. There is no excess brightness to distract or strain the eyes. The removable lenses lift out quickly for easy servicing of the fixture.

This equipment is one of Litecontrol's most popular systems. You'll find it and other standard, cost-saving units right in your catalog for your next store, office, bank, school or other commercial installation.

INSTALLATION: L. G. Balfour Company, Attleboro, Mass. AREA SHOWN: Showroom ARCHITECT: Charles G. Everett, Pawtucket, R. I. ELECTRICAL CONTRACTOR: A. C. Burt, Attleboro, Massachusetts DISTRIBUTOR: Graybar Electric Co., Inc., Providence, R. I. FINISHES: Ceiling — Off-White. Trophy Cases — Mahogany CEILING: Litecontrol Luminous Lens-Ceiling, using Holophane # acrylic lenses, 40 watt Rapid Start strip fixtures on 24" ce #6024 acrylic lenses; INTENSITY: Average, 75



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



The strength and intrinsically decorative qualities of wood make it the ideal structural material for open-plan homes. Clean-limbed post and beam construction gives understated dignity to this home. Hugh Scott, architect. Because it combines so beautifully with other materials . . .

# for new answers...look to WOOD

Wood is the architect's key to harmonious design. No other design component can match wood's ability to bring out the best in other structural and decorative materials, even as it asserts its own integrity.

Wood welcomes the contrasting textures of rough stone or polished tile. Its richness of grain adds warmth to the clarity of glass and the bright efficiency of steel and copper. Wood suavely accepts the diverse pattern of rugs and drapery fabrics.

Equally at ease with other natural materials and with the products of man, wood combines a capacity for creating a fresh design idiom with a familiarity that is at home in any structure . . . on any site. For more information on designing with wood, write to:

Wood Information Center, 1319 18th St., N.W., Washington 6, D.C.





Wood is historically, *naturally* right for construction exposed to the elements. Resistant to climatic changes, wood weathers beautifully, requires a minimum of maintenance. The architect: Paul H. Kirk.

The coldly functional kitchen of the '30s is happily obsolete. Today, wood paneling and built-ins establish a relaxed, livable atmosphere in even the most efficient kitchens. The architect: John Rawlings.



Front view hot food section, main kitchen



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W. B. Tabler, Architect New York City



Staff dining room cafeteria



Coffee Shop



One-story construction?





Floor space valuable?

Don't want long runs of ductwork?

# 9 times out of 10 this is the most economical way to heat and cool a one-story building!

With the new Carrier Commercial Weathermaker\*, year-round air conditioning can be designed and installed more economically than ever in one-story commercial or industrial buildings. It isn't necessary to give up an inch of valuable floor space, because this Weathermaker unit installs on the roof. And it isn't necessary to install expensive and unsightly ductwork, because the unit connects directly to a ceiling air grille. Notice the application here.

This unit is also designed to install with a minimum of time and trouble. It needs no water, no refrigeration piping, no charging with a refrigerant. One or more units can be installed as required, and with the following capacities: 7.5 tons of cooling and 200,000 Btus of heat ... or 10 tons and 250,000 Btus. What's more, the motor-compressor is protected by a 5-year warranty.

For complete details about this Carrier Commercial Weathermaker, call the Carrier dealer near you. He's listed in the Yellow Pages. Or write Carrier Corporation, Syracuse 1, New York.

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This Carrier 48B Commercial Weathermaker puts both the heating and cooling plant in the most economical of locations—the roof! It is supplied ready for fast one-unit installation. It is factory charged with refrigerant, equipped with refrigeration piping and quickly connected through the roof to a ceiling air grille.

ERYWHERE

BETTER AIR CONDITIONING FOR EVERYBODY

Another New York skyscraper has been reinforced with USS American Welded Wire Fabric. This is Rockefeller Center's new forty-eight-story Time & Life Building, an outstanding example of contemporary architectural design. The exterior steel columns are encased in stone-faced concrete which project from the walls and serve to accent the vertical sweep of the tower.

The frame supports short span, lightweight concrete slabs reinforced with USS American Welded Wire Fabric. Each slab is 8'0" long and 4" thick. When asked why the fabric-reinforced short-span design was selected for this structure, W. B. Scofield, partner in the structural engineering firm of Edwards & Hjorth, said "This system provides first-class, fireproof construction with a long record of satisfactory service in addition to its proven economy, speed of construction, and occupancy flexibility."

**USS** American Welded Wire Fabric was also used to reinforce the concrete fireproofing encasement of the columns, girders, and beams. Fabric is excellent for this application because the small, closely spaced members reinforced this thin concrete best. In addition, fabric is easily shaped to fit the contours and is sufficiently rigid to maintain the required shape.

Please write American Steel & Wire, Dept. 0246, 614 Superior Avenue, N.W., Cleveland, Ohio or contact our nearest sales office for complete information on these or any other uses of USS American Welded Wire Fabric. USS and American are registered trademarks

Short-span fabric-reinforced floor system in Rockefeller Center's Time & Life Building. American Welded Wire Fabric was furnished in long rolls and merely unrolled perpendicular to the beams and on top of the forms. It was draped from the top of the slab over the beams to the bottom of the slab at mid-span. Thus, the reinforcement is in position to best resist both positive and negative moments. The economy of steel placement is apparent. In total, over six million square feet of short-span slabs reinforced with Welded Wire Fabric have been used in New York's Rockefeller Center.

Owners: Rockefeller Center, Inc. and Time Inc. Architects: Harrison & Abramovitz & Harris Structural Engineers: Edwards & Hjorth General Contractor: George A. Fuller Company John Lowry, Inc. Fabric Distributor: Fireproof Products, Inc.





American Steel & Wire Division of United States Steel



Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors Tennessee Coal & Iron Division, Fairfield, Alabama, Southern Distributors United States Steel Export Company, Distributors Abroad

# ways to lick sun **heat** and **glare!**



THE OFFICE on the left is exposed to sun heat. So the architect chose  $L \cdot O \cdot F$  Heat Absorbing Plate for the windows. This glass transmits less than 47% of the total solar radiation (heat) to keep interiors cooler.

The office on the right is also exposed to direct sun rays. The architect, in this case, chose *Parallel-O-Grey®*. This plate glass reduces sun heat, too, but it affords greater protection from sun glare because it transmits less than 45% of average daylight.

**THESE TWO KINDS** of glass reduce sun heat to lighten load on air-conditioning equipment. Both are polished *plate* to provide top-quality clarity. But each of these heat-resisting glasses has another individual characteristic: **HEAT ABSORBING PLATE** has a pleasing pale blue-green color that makes a room *look* cooler.

**PARALLEL-O-GREY** has a neutral grey color. Colors seen through it remain essentially unchanged . . . tones are only subdued.

Wherever you want to make tenants more comfortable . . . wherever you want to reduce cost of air-conditioning equipment and operation . . . consider using one or the other of these special kinds of L·O·F plate glass.

Both products are also available as the outer pane in *Thermopane*<sup>®</sup> insulating glass units to further reduce load on air-conditioning equipment and to save heat in winter.

For additional information, call your L·O·F distributor or dealer (listed under "Glass" in the Yellow Pages). Or write to Libbey Owens Ford Glass Company, 811 Madison Avenue, Toledo 3, Ohio.



Heat Absorbing Plate Glass as the outer pane of *Thermopane* adds year-round comfort for tenants at 1600 Madison Avenue, Toledo, Ohio. Architects: Bellman, Gillett & Richards, Toledo. **PARALLEL-O-GREY** Plate Glass reduces sun heat and glare in the East Ohio Building, built by Tishman Realty & Construction Co., Inc. in Cleveland, Ohio. Architects: Emery Roth & Sons, New York.

## SOLAR HEAT TRANSMISSION

1/4" Regular Plate Glass	 79.9%
¼" Heat Absorbing Plate	 46.3%
¼" Parallel-O-Grey	 46.6%

## AVERAGE DAYLIGHT TRANSMISSION

1/4" Regular Plate Glass	89.1%
¼" Heat Absorbing Plate	74.7%
1/4" Parallel-O-Grey	44.2%



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Master-Set's specially developed paper-thin mounting sheet holds tiles rigidly in place—fits snugly with a tight bond, conforming smoothly to wall contours. Individual tiles are easily cut or snapped from sheet.

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with 75% open area for better bonding

American Olean's new Master-Set\* Mounted Tile cuts glazed tile installation costs substantially especially on long corridors and large wall areas.

With Master-Set, as many as twelve  $4\frac{1}{4}$ " tiles are set as one unit, covering up to  $1\frac{1}{2}$  sq. ft. at a time.

At the same time, Master-Set assures good appearance—thanks to American Olean's precision sizing which provides straight, even, uniform joints throughout the job without the need for trowel adjustment.

Now available in all standard glazed tile sizes-in bright, matte and Crystalline glazes-and in some Scored Designs.

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AMERICAN OLEAN TILE COMPANY • EXECUTIVE OFFICES: 1502 CANNON AVE., LANSDALE, PENNSYLVANIA • FACTORIES: LANSDALE, PA., OLEAN, N. Y. LEWISPORT, KY., MEMBER: TILE COUNCIL OF AMERICA, PRODUCERS' COUNCIL • A SUBSIDIARY OF NATIONAL GYPSUM CO. CBS Laboratories, Stamford, Conn. architects: Skidmore, Owings and Merrill, NYC. floor: Armstrong Custom Corlon (homogeneous vinyl) Tile, No. 474, Sahara Beige.

# There's an Armstrong Floor precisely right for each particular interior... at the CBS Laboratories, Stamford that floor is

# Armstrong CUSTOM CORLON TILE

Right now, this room's a cafeteria. Two hours ago, it may have been the scene of an executive meeting. This afternoon . . the place for a demonstration or employee get-together. For a floor to suit each and every requirement of this multipurpose interior, the architects chose Armstrong Custom Corlon Tile. Its rich burl graining contrasts dramatically against the geometric structure. Spilled foods and grease won't harm this homogeneous vinyl tile. And the fact that Custom Corlon Tile will provide year after year of excellent service and economical maintenance makes its initial cost a rewarding investment. Technical data on Custom Corlon Tile: uses: above, on, or below grade; surface resistance: greaseproof, excellent for acids, alkalis, many solvents; dimensional stability: superior; ease of maintenance: superior; static load limits: 200 lbs. psi; underfoot comfort and quiet: excellent; gauges: 3/2", 1/8"; sizes: 9" x 9", 12" x 12", 18" x 36"; colors and designs: burl graining and Imperial Series (a terrazzo effect) in over 30 colors, including plain black and plain white.

Valuable services for architects. Your Armstrong Architectural-Builder Consultant—a flooring expert—can help you select the one floor just right for each job. Since Armstrong makes every type of resilient floor, he is not limited in his recommendations. And, for solving extraordinary problems, he can

enlist the services of the Armstrong Research and Development Center, the Bureau of Interior Decoration, and the Installation School. Call the Architectural-Builder Consultant at your Armstrong District Office or write direct to Armstrong, 306 Rooney St., Lancaster, Pennsylvania.



### **Armstrong Floors price list**

Approximate installed prices per sq. ft. Over concrete, minimum area 1000 sq. ft.

15¢ - 25¢	30¢ - 45¢	50¢ - 65¢
Linoleum Tile .0625" Asphalt Tile ½" (A, B, C, D and greaseproof) Asphalt Tile ¾" (A, B)	Linoleum Tile .090" Asphalt Tile ¥6" (C, D) Excelon Tile .0625" (vinyl-asbestos) Linoleum .090"	Excelon Tile ½" (vinyl-asbestos) Excelon 3/2" Linoleum .125" Battleship Vinyl Corlon .070" Cork Tile ½"
80¢ - 95¢ "Futuresq" Vinyl Corlon .070" "Futuresq Supreme" Vinyl Corlon .070" Cork Tile ¾" Rubber Tile ½" "Tessera" Vinyl Corlon .090" Linotile ½"	\$1.00 and over "Imperial" Custom Corlon Tile $\frac{1}{32}$ " Custom Corlon Tile $\frac{1}{32}$ " Cork Tile $\frac{5}{16}$ "	\$1.00 and over Rubber Tile ¾" Custom Vinyl Cork Tile ½" Opalesq Vinyl Tile ½"

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Whenever you're in a quiet room -look up. If there is a beautifully textured acoustical ceiling, chances are it's Forestone\*. *The sounds you never hear* are absorbed by Forestone. This deep-etched woodfiber tile meets the Class C requirements of Federal Specification SS-A-118b...exclusive Biotox processing protects it against termites, mildew and mold. Forestone is available in four distinctive textures for all types of installations including ceiling boards for grid systems. Refer to Sweet's File or call your Simpson Certified Acoustical Contractor (look under Acoustical Materials in the Yellow Pages) for full information, or write Simpson, 1009F White Bldg., Seattle.





The new PITTCO<sup>®</sup> "900" Series-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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> \*T.M. Pending-Patent Applied For A.I.A. File No. 10-B-Glazed Units

Designing a school ... an office building ... a hospital? You'll want samples of STASO KolorspeK in Dutch Blue, Mosaic Gray, Cinnamon, and Black Opal.

Request your Gold Treasure Chest of colors today, from your Darlington brick distributor, or write Central Commercial Company, Chicago, Illinois.

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Efficient temperature control will be just as essential in your clients' buildings in 5, 10, 20, or more years as it is today.

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Unmatched service is just one of many advantages you and your clients get with Johnson Control. Your local Johnson representative will be glad to supply full details. Johnson Service Company, Milwaukee 1, Wisconsin.



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# Projects

# A roundup of recent and significant proposals





MULTIPLE-CURVED POLICE HEADQUARTERS IN PHILADELPHIA



For Philadelphia's police administration building, Architects Geddes - Brecher - Qualls chose an unusual shape (half plan, left): two round towers connected by undulating corridors. Through the main entrance (center), visitors enter a public lobby but will not normally be allowed above the ground floor. Precast concrete wall sections three stories high will combine loadbearing and mechanical functions: air-conditioning units will be set in the spandrels, and risers in the joints between them. Cost: \$4.5 million.

#### HOUSTON SKYSCRAPER

The window wall of the First City National Bank tower in Houston (left) will be recessed 5 feet behind marble-faced exterior columns and projecting floor slabs. At the foot, a separate banking floor will rise the equivalent of three tower floors. Architects: Skidmore, Owings & Merrill; Wilson, Morris, Crain & Anderson, consulting architects.

#### MARBLE TOWER IN CHICAGO

"Tallest marble office building in the world" is the billing given United Insurance Co. of America's home office (below), a slim 40-story shaft going up in Chicago. To one side of the tower there will be a granitepaved plaza, a reflecting pool, and an ice-skating rink. A restaurant and cocktail lounge adjoining the tower will face the plaza. Architects: Shaw, Metz & Associates.





# No need to position circular Fandaire Air-Cooled Condensers to meet prevailing winds. Just set it anywhere for easiest piping.

Here's the newest, most advanced air-cooled condenser on the market – Fandaire! This modern low silhouette condenser is engineered around a new high-heat dissipating fintube of exclusive design and manufacture. In operation, the entire spiral of fintubing is surrounded with a circle of swiftly moving cool air for highest cooling efficiency. Every degree in temperature drop is fully utilized as this circular design captures the wind from *any* direction, regardless of placement or location. A powerful fan pulls cool air in and pushes warm used air up and away. Fandaire's constant gravity tube drainage gives continuous movement to condensate.

With its low, clean-lined silhouette, Fandaire does not detract from the general architectural effect of the building. And weighing  $\frac{1}{3}$  less than conventional installations, the Fandaire usually can be positioned where needed, without guy wires or extra bracing. Savings in piping and installation alone may be considerable.

Where there is a problem of architectural compatibility, or of cost or performance, chances are the new Fandaire Air-Cooled Condenser is the best solution. Engineered in sizes from 3 to 120 tons per unit, there is a Fandaire model for practically all single or multiple installations. Get complete information today.

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# Projects contd.



NEW YORK CITY'S CONVERTIBLE STADIUM

Shown above is a baseball stadium proposed as the home of New York City's Continental League team. It is designed to be converted to football by swinging the lowest rows of seats out to form a rectangle, thus adding 5,000 seats to the baseball capacity of 55,000. To prevent columns from blocking sight lines, Architects-Engineers Praeger-Kavanagh-Waterbury plan to cantilever two tiers of seats.



### FOR NEW YORK'S FINEST, NEW TRAINING FACILITIES

All New York City's police training programs will be concentrated in the \$7.4 million, eight-story building above, joined to a low drill hall and gymnasium to the left. Two precinct stations will also occupy the building. Kelly & Gruzen's design calls for an aluminum curtain wall on a steel frame. The main building's columns will be finished in black granite; the end walls, in gray glazed brick.



#### CLASSIC LINES FOR LONG ISLAND CHURCH AND CONVENT

The contemporary basilica above is to be the church for the Parish of St. Anthony of Padua, in East Northport, N. Y., and just visible to the right is a proposed convent. The church's exterior will be white marble, brick, and stained glass. Architects: Ballard, Todd & Snibbe.

#### HIGH-RISE APARTMENTS IN ST. LOUIS

The twin 20-story apartment towers (shown below), based roughly on a square but sharply indented to accommodate a strip of balconies up each side, are a Webb & Knapp proposal for southwest St. Louis. The strongly vertical look of Hellmuth, Obata & Kassabaum's design stems from the exterior reinforced concrete columns, which form 6-, 12-, and 18-foot bays. Each floor will have 12 apartments, evenly divided among efficiency, two-bedroom, and one-bedroom units.



#### ELECTRIC COMPANY OFFICES IN LONG BEACH

From the sign on the roof to the "electric living center" at the bottom, tenants and employees of the Southern California Edison Co. will be reminded of the company's product. Between vertical aluminum fins, electrically operated horizontal louvers will control natural light, and the inside air will be heated and cooled by an electric heatpump system. At night, bright lights will play over all four sides, making the ten-story building visible from harbor, beach, and freeway. Architect: Kenneth S. Wing.



continued on page 73



**EASY TO HANDLE.** Mechanic easily connects a length of 6-inch copper tube. More than 16,000 pounds of Anaconda Copper Tube, Type M, in sizes up to 8 inches, was used for the sanitary drainage systems. Architect and Engineer: California State Division of Architecture. Mechanical Engineer: Division of Architecture. General Contractor: Robert E. McKee, Inc., Los Angeles. Plumbing Contractor: E. O. Nay, Inc., Pasadena.

# COMPACT COPPER SANITARY DRAINAGE SYSTEM GIVES NEW CALIFORNIA HOSPITAL MORE USABLE SPACE



**CLOSE WORK LIKE THIS** is possible only with copper tube. Water and drainage lines hug the ceiling, giving ample basement headroom. Even in tight quarters, connections are easy to make. Sizes in this photo range from %" water lines to 4" for drain and vent lines. Copper tube sanitary drainage lines in the hospital building and administration wing of the new Fairview State Hospital at Costa Mesa, California, eliminated wasted space in furred areas and allowed ample headroom in the basement. Equally important to the project owners, however, was the fact that copper tube drainage systems are easier to install, are long lasting, require less maintenance than other materials.

Copper tube was used also for the hot and cold water lines and for the radiant heating system.

**TREND TO COPPER** "The factors important to us as mechanical contractors are the work-saving features of copper tube. It has proved to be easier to handle, more adaptable to space problems, less trouble to test, and as a consequence, faster to install than other methods considered standard." B. J. Sabin, Manager, E. O. Nay, Inc., plumbing contractor on Fairview State Hospital.

Specify Anaconda Copper Tubes and Fittings – Types K and L for water supply and heating lines; Type M and the new lighter weight Type DWV for sanitary drainage systems. Anaconda wrought and cast solder-joint fittings for pressure and drainage applications. Write for Publication C-33. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.



# Projects contd.



#### SCULPTURED CONCRETE SYNAGOGUE NEAR CHICAGO

The skillful handling of concrete which Architect Minoru Yamasaki has demonstrated on several occasions is shown again in his design for a synagogue for North Shore Congregation Israel in Glencoe, Ill. (above). The sanctuary, centered in a walled garden and surrounded by a covered walkway, will be roofed by concrete fan vaults. The elongated diamond shapes between the vaults will be double skylights of clear and stained glass. Associated architects: Friedman, Alschuler & Sincere of Chicago.

## \$20 MILLION OFFICE CENTER IN SAN FERNANDO VALLEY

Panorama City, Calif. is the site of three office buildings (below) designed by Welton Becket & Associates, which will be built by Developer W. H. Brownyard. Twin towers 13 stories high will flank a landscaped plaza; a third tower will have 20 stories and a parking deck behind. At ground level the walls will be recessed 8 feet to form a covered arcade around the towers' perimeter. The smaller towers will be of reinforced concrete; the tallest, of steel.



#### GIRLS' SCHOOL IN DALLAS

Lack of space forced the Hockaday School in Dallas to plan a completely new campus (right). In the fall of 1961, the school's 500 students will move from their present colonial buildings in a residential section out to northwest Dallas and the modern campus designed for them by Harwood K. Smith & Partners. In the foreground: an auditorium, classrooms, and dormitories.



#### GUATEMALA CITY SCHOOL

The Connecticut architectural firm of Sherwood, Mills & Smith, commissioned to plan new quarters for the American School in Guatemala City (right), faced some buildingsupply and cost problems. To solve both, they decided on reinforced concrete for the structural framework and thinshell hyperbolic - paraboloid roofs. They eliminated corridors, providing, instead, exterior walks between buildings. END





ARCHITECT: Frazier, Raftery, Orr & Fairbank, Geneva, III. CONSULTING ENGINEER: Wm. A. Gavelek, Elgin, III. CONTRACTOR: A. J. Ironsides Heating & Ventilating, Elgin, III. WHOLESALER: Inland Supply Company, Elgin, III.



The Church of the Brethren at Elgin, Illinois, publishes numerous religious papers. In the office and factory of this organization, the 300 ton cooling load of the two buildings is handled with chilled water, circulated by four B&G Universal Pumps. Two additional Universals are used as condenser water pumps.

Universal Pump motors are specially constructed and selected for *extra quiet* operation. Long *sleeve* bearings are used in both motor and pump—another assurance of smooth vibrationless operation and long life. The oversized shaft is made of special alloy steel with an integral heat-treated thrust collar to absorb end-thrust. Water leakage is prevented by the diamond-hard "Remite" Mechanical Seal—a B&G development.

Note, too, that vertical split case construction with removable bearing frame permits easy servicing without breaking pipe connections or motor leads.



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Battery of B&G Universal Pumps used to circulate chilled water through cooling system. No vibration eliminators or flexible connections are needed.

#### **B&G BOOSTERS SERVE DUAL PURPOSE**

One PD35 Booster is used to circulate hot water for heating and cold water for cooling in building connecting plant and office; one 2" Booster circulates boiler water through fuel oil preheater.

# Bright-colored stainless . . . inflatable partition . . . packaged wall . . . foam dome

Products



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## COLORFUL STAINLESS

In a bid to wrest more of the curtainwall market away from anodized aluminum, Washington Steel Corp. has developed a new process, *ColorRold*, which coats stainless steel in any of 11 bright colors, three of them metallic. To make these strong colors possible, the Stoner-Mudge Division of American-Marietta Co. compounded a liquid plastic coating, an acrylic with an affinity for stainless, and Washington Steel has been testing the formula for the past three years on its MicroRold stainless steel sheet and strip. So far, these tests have shown that Color-Rold has good fabricating, toughness, and weathering characteristics.

A panel can be field-repaired if it suffers damage in shipping or erecting. Plastic is simply brushed or sprayed on, using an aerosol bomb, and allowed to cure in the air. Cured this way, it will be tackfree in about a week. Otherwise, if quicker drying is called for, the patch may be dried under infrared lamps.

In the mill, high-speed coating equipment spreads the plastic on sheets or coils in thicknesses from ½ to 2 mils. Immediately afterward, high-speed ovens cure the sheet at moderate temperatures. If needed, strippable plastic coatings or adhesive paper may be added for protection, though these are unnecessary in most cases. ColorRold can be formed, drawn, and bent like uncoated stainless, without cracking or peeling.

Since ColorRold is designed to compete with anodized aluminum, Washington Steel will sell it at a competitive price, charging a premium of 12 cents per square foot over the cost of uncoated stainless. Colored stainless is now available in coils and sheets up to 48 inches wide in all popular gauges.

With the help of Color Consultant Howard Ketcham, 11 colors were chosen: white, gray, yellow, green, black, red, blue, turquoise, gunmetal, bronze, and gold, supplied in either a high or a low gloss finish. Washington Steel recommends a 50 glossimeter sheen for general architectural use. Smooth surfaced ColorRold may be varied by adding texture, embossing, or burnishing to achieve special effects.

Up to now, Washington Steel has been producing ColorRold in limited quantities in its own plant, but Pre-Finish Metals, Inc. of Elk Grove Village, Ill. will apply the coatings to MicroRold when its new facilities are completed.

At the same time that Washington Steel announced ColorRold, Allegheny Ludlum reported success with color coatings on stainless, too, although only black and brown are available now. Blue, green, red, and gray are being field-tested and will be offered later this year.

Successful application of *Hinac*, a chromate-base coating made by the Heintz Division of the Kelsey-Hayes Co., to stainless steel was worked out by technicians from both companies. The coating is applied by spraying, brushing, or rolling, then curing at 350 degrees F. Though coated stainless sheet can be formed, Allegheny Ludlum expects the more usual procedure will be to coat after forming. Costs for this coating have not yet been announced.

Manufacturers: Washington Steel Corp., Woodland Ave., Washington, Pa., and Allegheny Ludlum Steel Corp., Application and Development Dept., Brackenridge, Pa.



#### PNEUMATIC PARTITION

A partition that puffs up to ceiling height makes a temporary wall in restaurants, hotels, classrooms, or other large open spaces which must occasionally be divided. Airwall works by air pressure. A tire pump, inserted in a valve part way down the panel, inflates a rubber tube in the telescoping molding at the top, and air pressure holds the panel securely against the ceiling. When the partition is no longer needed, the panel is deflated and taken away. No floor or ceiling attachments are needed, a firm ceiling being the only requirement. Airwall is not intended for use with suspended acoustical or luminous ceilings unless there is a rigid beam to hold the partition.

Airwalls are custom made in heights for specific jobs. To allow for slight ceiling variance, a 2-inch rise of the panel's continued on page 76

# Products contd.



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Industrial Development Dept. UNION PACIFIC Railroad OMAHA 2, NEBRASKA top is usually sufficient, but a rise of as much as 3 inches is possible. Thick felt padding on top of the molding prevents ceiling damage. Standard panels are 36 inches wide, those with doorways 42 inches, allowing for a 36-inch door, and end panels are as wide as needed for a tight fit. Tongue-and-groove joints hold panel edges together so that the partition appears to be unbroken. Several finishes may be ordered-hardwood veneer, laminated plastic, or vinyl. All panels are 2 3/16 inches thick, stuffed with expanded styrene. According to the manufacturer, Airwall's tight fit at ceiling, floor, and wall, plus the porosity of its core material, combine to offer sound retardance equal to that of a 2 by 4 stud-and-plaster partition.

The size and finish specified govern costs, but a sample Airwall 15 feet long, 8 feet high, faced with plastic, costs about \$875. Included in this amount are three standard panels, one door panel, and an end panel.

Manufacturer: Airwall Inc., 16706 S. Garfield Ave., Paramount, Calif.

## THREE-IN-ONE CEILING

Sigma III, a new version of Wakefield's original Sigma ceiling, has been trimmed in size and price. This simpler version has straight-line acoustical baffles, lay-in diffusers, and a 4-foot module. At the intersection of the baffles, there is a removable cap where supports for thin mov-



able partitions may be inserted (see drawing). The new version costs \$4 to \$5 per square foot compared to \$7 to \$9 for the more elaborate original ceiling.

Manufacturer: The Wakefield Co., Vermilion, Ohio.

#### PACKAGED WALL

Intended for building one- and two-story schools, hospitals, clinics, and offices, this frame-and-panel wall system is designed



to go up quickly and economically. It consists of Stran-Steel's familiar nailable steel studs, special bridging members, interior and exterior panels of porcelain enamel steel, and aluminum extrusions for mullions and jambs (see vertical section and sketch of bridging member above).

Stran-Wall goes up like this: Base channels go down first, anchored to the floor. Then studs are raised at corner and control points, temporarily braced, and welded or screwed to the base channels. Another channel goes on top, and remaining studs are set at proper modules. The all-important bridging channels come next, screwed or welded in place, and openings are framed. Porcelain panels are clipped into place, beginning with continued on page 78



# 

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This roof deck was protected all winter with a single ply of Certain-teed 40# Roofers Base Sheet



So that interior work could progress all winter, the 70,000 square-foot roof deck shown here was dried in last fall with a single ply of Certain-teed 40 # Roofers Base Sheet. The absence of "fish mouths" and wrinkles testifies to the sheet's ability to withstand exposure to the elements.

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CERTAIN-TEED PRODUCTS CORPORATION Ardmore, Pennsylvania • Plants and offices throughout the United States the bottom row and working up. In the last steps, windows, doors, and aluminum extrusions are fastened, and joints sealed.

Several sizes and shapes of panels are available, based on a 4-foot module. Sample prices: \$4.75 per square foot for a wall of porcelain enamel on both sides, and half-and-half operating and fixed sash; \$3.25 per square foot if the wall's interior surface is dry wall.

Manufacturer: Stran-Steel Corp., Div. of National Steel Corp., Detroit 29.

#### FOAM SANDWICH

In a new Detroit plant, Koppers Co. is producing foam-filled sandwich panels for wall construction. The core is Koppers' expandable polystyrene, Dylite, bonded to skins of any conventional building material, such as plywood, hardboard, or aluminum, to make a strong, lightweight, insulated panel.

Panels may be selected from a modular component catalogue or designed to specifications. Standard panels are available in sizes up to 4 by 24 feet and thicknesses to 12 inches. A 4 by 8 foot panel, 2 inches thick, faced with ¼-inch plywood skins, will sustain a load in column of over 22,000 pounds before it fails. Interior partition panels cost about 20 per cent less than conventionally built partitions. Exterior wall panels sell for less than \$1 per square foot.

Manufacturer: Koppers Co., Box 65, Housing Dept., Monaca, Pa.

## SMALL BORER

This portable boring machine is so compact that it fits under buildings, reaching areas inaccessible for a large truckmounted unit. To reinforce footings under existing buildings, the machine's main function, an operator needs about 5 feet of headroom, either in a basement or under a foundation.

The machine's power comes from a reversible motor. Once inserted in a hole, there is no need to remove the shaft: additional lengths are fed through the top, and cuttings are pulled up the shaft by cable drums. The drill cuts a hole 12 inches wide and up to 22 feet deep.

This small borer was invented by



Thomas J. Murray of the Thomas J. Murray Foundation Co. and redesigned by Professor A. G. Holmes of the Mississippi State University Department of Mechanical Engineering, who also improved the lift mechanism. The machine weighs 150 pounds and costs \$2,000.

Manufacturer: Thomas J. Murray, 614 Freemont Dr., Jackson, Miss.



▶ The first foam dome, built entirely of polyurethane panels "welded" into a continuous structure by foam mortar, was erected in Ottawa by the National Research Council of Canada. Nine different geometric shapes of Hooker Chemical Corp.'s Hetrofoam were molded by Long Sault Woodcraft Ltd.

▶ In the next two or three years, ice may become an important building material in the Arctic, M.I.T.'s Ice Research Laboratory is testing ice reinforced by glass fibers, producing an alloy which increases the strength of ice about ten times. Like concrete, structural members of ice could be cast in forms. One problem still to be licked: surface melting in the warmer months.

▶ A silicone called Fiberguard has been added to Tectum wood products, making them water repellent. Fiberguard is mixed in the basic binder formula rather than applied as a coating.

A new system for spray-application of decorative vinyl finishes has been developed by the Metal & Thermit Corp. It permits aluminum or steel parts, either textured or plain, to be sprayed after forming, eliminating the need for special handling during fabrication. END



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# Editorial

# Urban renewal: an election issue

This year for the first time urban renewal will be an issue in a presidential election. Both parties and all avowed and unavowed candidates are working up a position on urban renewal. This at least indicates the coming of age and the national character of an issue that this magazine has been concerned with for a long time.

Before the hurly-burly begins, it would be well to sort out facts and principles. It would be tragic if the issue were to be lost in the largely irrelevant battle of federal "spenders" versus "budget-balancers." For the job of rebuilding our aging, obsolescent cities is one of the biggest and most pressing before the country. A recent M.I.T.-Harvard study estimates that it would require some \$42 billion a year above present construction expenditures, from all sources, to bring U.S. cities up to a "modest standard" of adequacy and decency in the next decade. The job is indeed so big that it will require all available, combined private, federal, state, and local efforts to make a dent in it.

The federal role is the crux of the matter. For such is the nature of the land problem (the worst urban areas are exactly those where the costs of individually held small tracts are so high and over-all values so low that private effort is impotent to put them together for improvement) and the division of tax resources (two thirds of all taxes collected go to the federal government), that no urban renewal on the scale needed can get started without the initial impetus of federal funds. Federal money cannot solve everything, it can only break ground. The only relevant issue, therefore, is the extent of federal participation. Here there may be honest division of opinion, for there must be some limits drawn within available resources, priorities, and principles of government.

The major fact, overlooked by many, is that federal funds for urban renewal act only as "seed" money, nothing more. The federal government does not enter the real estate business or wind up owning anything, but simply helps finance the "write down" of inflated land costs so private developers can go ahead profitably. An Urban Land Institute study shows that the limited amount of urban renewal so far instigated has generated about seven times its own volume in private and public construction. Hence appropriation of relatively small but steady federal funds—say up to \$400 or \$500 million a year in maximum cash outlay—can exert enormous leverage. Not only is this "seed" money more than recouped, by dependable calculations, through the increased construction and taxes generated, but it widens the framework of private and local initiative.

Indeed, the prime effect of the federal urban renewal program is to release private energies. This is shown clearly, for instance, around continued on page 85



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# Editorial continued

Chicago's Lake Meadows project, which has helped generate many blocks of private upgrading and development (FORUM, Jan. '60, page 96). This stimulating force is recognized in the business-sponsored Committee for Economic Development's latest report on local and area development, which calls for a larger federal role in meeting unprecedented metropolitan problems. The committee points out that the federal government is already heavily involved through its highway program, through FHA insurance of private home building, through port and airport subsidies, and disposition of defense contracts, and that such federal encouragement of local economic development has gone on since the founding of the republic.

In principle, urban renewal is part of the federal obligation in the national welfare, for cities more and more represent a great national resource and a crucial part of the nation's physical plant. This principle has gone unchallenged since the Housing Act of 1949 and its Title I instrument, which needs some sharpening and reform to expedite procedures but remains a viable instrument. The underlying proposition is that clogged, rundown, or obsolete city areas, like obsolete industrial plants, run up the costs of living, transportation, and overhead, with deleterious effects on the economy as a whole and on foreign trade, not to mention the social fabric.

The only alternative put forth is to do little or nothing—or what amounts to much the same, leave urban renewal wholly to city, state, and private development. To be consistent, those who think thus should also call for an end to FHA, the highway program, and all other forms of federal "intervention." Such complete laissez faire was not possible even in the slower moving, underpopulated world of the nineteenth century. In the immense technological changes of the jetmoving twentieth century, with a population expansion that by 1970 will add the equivalent of 15 of today's largest metropolises to the urban scene, the U.S. citizen simply will not wait. And it would be something new in the American character if the nation did not rise to the challenge of great works, and find the pragmatic means to accomplish them.



## Unbuilding America

The unlovely asbestos shacks that house the Federal Aviation Agency are located on some very choice real estate: smack in the center of the mall that, once upon a time, linked the Washington Monument to the Lincoln Memorial. The shacks were first built during World War II, with the assurance that these would be "temporary structures." Well, tempus has fugited, and the asbestos huts are still there, a little drearier, enhancing the mall not at all. Question: Would it be easier to move Washington Monument than to budge these?


On the surge of an unprecedented wave of building, the performing arts are seeking collaboration with the building arts. Object: a revolution in theaters, both civic and experimental—plus a fitting new technology.

## Building for the performing arts

"Dancing and building," said Havelock Ellis, "are the two primary and essential arts. The art of dancing stands at the source of all the arts that express themselves first in the human person. The art of building, or architecture, is the beginning of all the arts that lie outside the person; and in the end they unite."

But unfortunately, not much comity is evident when architecture builds for its sister arts. Of theaters, a producer back from a recent tour said: "The worst we played in wasn't the old one with the dirty dressing rooms nor the big one with only 25-foot stage depth; the worst one was the new theater that had a fly loft above the stage almost entirely filled with heating ducts where stage properties should have been hung. Why can't the architect give us the plan and the space we need to work in?"

On the other side, a frustrated architect complains: "They don't know what kind of planning and space they need themselves—and they resent an architect trying to tell them."

The complaint is, however, not so remarkable as the attempt to resolve it. In Lincoln Center, where the effort is most concentrated, advisory committees and technical consultants from the performing arts are closely involved in the entire planning process. For example, in the excitingly promising, still-unwrapped plans for the Repertory Theater at Lincoln Center, Architect Eero Saarinen collaborated with Scenic Designer Jo Mielziner and Director Elia Kazan at every stage.

To develop new standards of collaboration, meanwhile, several groups are working: The Board of Standards and Planning for the Living Theater and, under the auspices of ANTA, The U.S. Center of the International Association of Theater Technicians, both trying to encourage better theater building. These groups, along with the older American Educational Theater Association and the brand-new American Community Theater Assembly, are particularly interested in developing an understanding between the people who use and those who plan the theater.

The recent grants of the Ford Foundation to eight groups of architects and theater professionals for collaborative planning efforts is, perhaps, the outstanding indication of a rapidly growing recognition of the need for the performing arts to find fitting architectural accommodation.

All these programs are as yet too young to show results, and an uneasy collaboration is, meanwhile, trying to build an almost totally new physical structure for the performing arts in America. Significantly, except for fancy, front-of-the-house renovation, the commercial or Broadway-type theaters are hardly involved. Instead, up to now, most new building has taken place in the educational theater realm. In this field, James Jewell, chairman of AETA's architecture project, estimates that a construction rate roughly tripled since World War II has brought high school and college facilities up to date. Still, Joel Rubin, member of the board of research of AETA, expects that up to 750 new college theaters will be built between now and 1970, and 40 per cent of all new high schools are planning separate theater facilities to supplement the traditional "assembly" type of auditorium.

In the eye of a wide-angle lens, the traditional golden horseshoe of New York's soon-to-be-replaced Metropolitan Opera looks stretched and distended, perhaps to match the changes ahead in architecture for such facilities. But perhaps the significant increase in construction activity is reserved for the civic and community theaters. Ranging from the multistructure Lincoln Center in New York (page 95) to the Arena Stage in Washington, D. C. (page 99), such building activity has quadrupled since World War II and may yield 1,000 new theaters by 1970, some authorities think.

Remarkably, the boom is hardly keeping pace with the increase in activity occurring in the performing arts themselves. Last year, for example, 150,000 college students put on over 4,000 full-length play productions before a total audience of upwards of 5 million. More convincing: 70 per cent of all colleges now offer theater instruction. Meanwhile, in the area of civic and community performing arts. there are in the U.S. more than 1,500 active theater groups, not to mention 1,100 symphony orchestras, 750 opera groups, and endless numbers of choral and dance groups.

All this activity is the mark of an America coming of age. The performing arts: opera, symphony, the dance, and drama—and the increased interest in them shown nationwide—are the manifest expression of a nation turning toward urbanity and culture, with the money and leisure to indulge therein. As part of this upsurge, it is, perhaps, quite proper that there arise a wide divergence of ideas, plans, and goals in the building of a suitable physical plant.

For one thing, the performing arts themselves have widely differing, unmatched problems, and even where problems are shared, they vary in emphasis. All the arts, for example, ideally want to be seen and heard under best

conditions. But for symphony, the great effort is to create a sonically "live" hall, with a rather long reverberation time. To this cause much is often sacrificed (e.g. adequate seating capacity). In the drama, however, visibility becomes the paramount consideration. It is often said that any seat farther than 65 feet from the stage is too far for good sight-or, put more eloquently, for a proper audience-performance relationship. Of what use acting before someone who cannot see the actors face? Physically the desire in drama to bring the audience as close to the performers as possible tends to widen the house, whereas the desire for good sound in concerts tends to preserve a traditional rectangular shape.

Even opera, the art that bridges between symphony and drama, has requirements distinct from either of them. It needs neither the *extremely* long reverberation time nor the intimate audience-performance relationship. But unlike most drama, opera is generally "larger than life," demanding vast, deep stages, backstage areas equipped to handle mobs, and a large space for an orchestra which is hardly to be seen, but must be heard—and with phrases to match the singers on the stage.

Except for the fact that, ideally, the dance cannot show itself to as many people at one time as the opera, the congruence between these two forms is closest. Indeed, the dance, which Havelock Ellis puts at the beginning of the performing arts, can take place in several kinds of rooms basically planned for other purposes, as long as the stage has continuous and open access to the wings, a requirement which, nevertheless, removes any relationship to the more flexible open-stage theaters for drama.

These and countless other varying needs are behind the almost vehement issue that theater professionals take with the idea of a multipurpose auditorium. The phrase "a multipurpose theater is a no-purpose theater" is a routine recital. This truth, planners say, is especially evident when they try to match the performing arts with their near relatives: the circus and iceshow extravaganza, or their more remote relatives: the convention, trade show, and sports events. These "spectacles" can, perhaps, be installed together in their own centers, but the hope that the more cultured performing arts will be able to use the same facilities is generally foredoomed.

As in so many areas of building, the problem ultimately becomes a matter of economics. If single-purpose auditoriums can be kept in active use, by all means, there should be built a group of buildings like Lincoln Center or a single building with several theaters like the contemplated Washington, D.C. cultural center (page 94). (Or, perhaps, instead of a single "monument," the compound "cultural center" should be sewed into the fabric of the community.) But, in most cities, a many-theater choice is not open. In these cities, a second line is feasible: that of building one large theater for opera, dance, and traditional drama, and another small nonproscenium-arch theater for the experimental drama. This combination, though generally in the same building, is a more typical European solution. Theater planners, however, should

not make the mistake of assuming

The many moods of the performing arts reflect in the expressions on the audience's faces and in the poses of the performers themselves.



that within each of the several performing theaters flexibility is undesirable. As Edward Cole, the capable executive officer of Yale's School of the Drama, puts it: "There appears to be a trend toward a variety of styles and techniques of production calling for the multiform theater, rather than the multiuse theater." So far, this demand for a multiform theater is most evident in Cole's own field. But, again, in symphony, the idea of mechanically adjusting wall or ceiling panels to balance room characteristics to the particular needs of the music has often been considered, even if merely debated. (Exceptions: Toronto's new O'Keefe Center and the new Philharmonic Hall at Lincoln Center plan actual installations.) Even in opera, that most rigid of the performing arts, flexibilities would be desirable. For example, as Juilliard's Director of Juilliard's Opera Department Frederic Cohen put it: "For a Mozart or chamber opera, the orchestra pit should be shallow, but for Wagner and Straus, it should be way down and out of sight."

While these still-small needs for flexibility in the other arts are sure to increase as experimentation and change in the art forms themselves inevitably take place, it is the drama whose needs are already most varied. Indeed, some professionals see the need for two kinds of drama theater—the traditional proscenium arch stage and the stage open on three or four sides.

The open-stage theater, or "experimental" theater, represents the most exciting change in the performing arts since the end of the seventeenth century, when "Belasco's box" (as Critic Walter Kerr terms the prosceniumarch or "picture-frame" stage) appeared in the legitimate theater.

This development is not entirely new. In truth, it is really a recurrence of older forms of theater. The reason for the re-emergence of the more flexible open-stage theater is not only that Shakespeare and other playwrights of the earlier time are enjoying a revival, it is that much modern drama is in intimate and direct focus on people and relations between them. The proscenium-arch stage, on the other hand, is more effective in the presentation of a drama of illusion and setting. Because the 33 Broadway houses and their dozen or more road theaters are generally older theaters, some critics feel that "Belasco's box" has boxed the dramatic theater in.

The problem is especially evident when one realizes the extent to which Broadway productions have determined theater forms everywhere. A community or college may have to choose between a theater which can take all the stage trappings of a touring Broadway show, or a more flexible auditorium for home-grown drama—like building a football stadium or an extracurricular athletic facility. The problem of the Broadway theater is, thus, an American problem. For example, because Broadway shows are lighted with movable equipment, specially engineered and installed for each show, many theaters in other cities have not the installations required to inexpensively light local shows. Meanwhile, the devices which could equip an auditorium for electronic presetting of several lighting patterns for several shows are stymied merely because Broadway generally has direct current and the automatic equipment takes alternating current.

The intricate problems of building

codes, for example, often make a proscenium arch mandatory by their requirements of a fire curtain. However, these and other restraints are being licked in the educational summer stock, and experimental community theaters all over America (largely by reducing audience capacities so the codes do not apply). Much of this has taken place in New York's "off-Broadway" theater. But, indeed, the relatively recent New York proliferation is merely the professionalization of something that has been going on since the forties, when, say. Margo Jones established her theater in the round at the State Fair Grounds in Dallas

Out of this grass-roots movement, out of this amateur and characteristically American movement which picked its own strands from the European avantgarde theater of the twenties, a whole new trend in building for the performing arts has come. From the converted barns, classrooms, and stores of the experimental theater a revolution was born. That revolution is now stirring all the performing arts in a way perhaps unmatched since the Renaissance. The results deeply affect building for the performing arts, not only in terms of the experimental theater itself, but in terms of the larger civic and educational theaters now taking form on the American architect's boards. These two revolutions are, in turn, stirring a balancing revolution in the technology of the theater. The scope of these respective revolutions, detailed on the following pages, are now evident. What is not so evident is the goodness of the result: the assurance that the performing arts and the art of architecture can fulfill Havelock Ellis' prescription to unite.

PHOTOR: RALPH MORSE-LIFE; YALE JOEL-LIFE; CENE COOK; ALFRED EISENSTAREDT-LIFE; LEONARD MCCOMBE-LIFE; HALSMAN; MICHAEL ROUGIER-LIFE; EILEEN DARBY-GRAPHIC HOUSE





Building for the performing arts

## The big, civic theater

Outsized, awkward, and machinery-ridden, it is nevertheless the stage on which America's democratic, artistic aspirations are tried out. The backbone of the American democratic stage is the graceless but hallowed municipal theater, with its supporting vertebrae, the high school and college theaters. Two forces are currently pulling these significant cultural structures in different directions. Touring Broadway companies and the seductive arguments of the multipurpose impressarios are urging bigger halls in an effort to meet their higher traveling and operating costs; on the other hand, the more stringent require-



Indeed, it appears at first glance that the back of the big American theater is being torn asunder by these conflicting requirements. Both in the case of reconstructed palaces (such as Seattle's old, acoustically impossible Civic Auditorium, which will be gutted to accommodate a smaller hall designed to more exact engineering specifications) and in new constructions, the precise specifications of acoustics and stagecraft are battling against the immeasurable appetities of the public. But, as may be seen in each separate category of the big theater that follows (civic auditoriums, school and community buildings, and cultural centers), this two-way tension is not without its cultural advantages.

#### The civic catch-all

Under the single roof of the civic

auditorium must be found room for such multipurposed events as arena spectacles and xylophone solos. One device now used to make transitions between these events is the tilting floor, which allows a flat arena to become a conventionally sloping theater by means of a pivot and hydraulic lifts (see the Santa Monica Auditorium, above). Another device is a disappearing stage. In Pittsburgh's bowl-shaped Public Auditorium, scheduled to be completed next spring, a stage visible



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Queen Elizabeth Theater in Vancouver, aglow for an evening of big theater, makes the most of its overhead mechanical necessities by melding them into a sculptural pattern with the boxes and galleries (left). The architects, Messrs. Affleck, Desbarats, Dimakopoulos, Lebensold, Michaud, Sise, have answered the typically big-theater demand for a second auditorium by tucking it in at the back of the main hall where the same facilities can serve both (left, below). From without, the theater's glass facade allows it to seem a dramatic extension of the restaurant and plaza that complete the block.

Portland's Coliseum, designed by the Portland office of Skidmore, Owings & Merrill, is a lesssophisticated answer to the demands of the big theater (above, right). A swooping bowl 350 feet in diameter is placed within a 560-foot-square glass cage. Inside the multipurpose bowl there are three locations for a portable stage equipped with a hydraulically raised backdrop and cantilevered proscenium.

Civic Auditorium in Santa Monica (right) adjusts to its several purposes by means of a tilting floor devised by Architect Welton Becket. In the photo the stage end of the floor has been dropped 5 feet, preparing the hall for a dramatic performance.







THE BIG. CIVIC THEATER

to spectators seated across the bowl is swallowed up by its own proscenium, which is then lowered hydraulically to form another section of seats.

Despite such convincing evidence of the dramatic prowess of multipurpose machinery, municipal auditoriums cannot be all things to all men. The vast arena for touring shows and civic athletic events is certainly needed, but it can be no substitute for the carefully crafted auditorium—particularly if the arts are to be performed according to standards that urban American audiences now expect. A simpler auditorium and a more precise definition of its proper function is necessary lest the audience, one evening, be swallowed in place of the seats.

#### **Big theater on campus**

In college communities and highschool oriented communities, the big theater provides a unique opportunity for pooling what money and talent are available for the local performing arts --without the added pressure of touring Broadway shows.

The vast (diameter: 400 feet), saucer-shaped structure that has been designed by Architects Harrison & Abramovitz for the University of Illinois at Urbana is one of many oncampus auditoriums that have fallen into a trap very much like that which has snared civic auditoriums. Whereas the civic danger is to design a hall for Broadway spectacles, the collegiate danger is to design one for basketball. Mercer Island High School (left) has a tentlike auditorium by Seattle Architects Bassetti & Morse which is used at night for high-lighting community arts and during the day for feeding 350 students. Critics claim that such conflicting uses should not be put under one roof; but if they must be, this 900-seat auditorium at least provides a roof that compliments the performing arts.

High School auditorium in Cedar Rapids, Iowa (left, below) by Leo A. Daly, seats only half the student body (750). The size was reduced so that a professionally equipped "little" teaching theater could be afforded for the speech department and community dramatic performances.

Clowes Memorial Hall (right), which Architect John M. Johansen has planned for the Indianapolis campus of Butler University, is a 2.200-seat auditorium that will be usable both for symphonies and for intimate drama. The capacity of Johansen's proposed auditorium can be reduced to 900 (with another 400 sitting in the first rows of the shallow balconies) by raising the forestage up into the orchestra. The medieval-looking dramatics of its shape fit over a 15-foot module that was determined by the spacing required for exits in aisleless "continental" seating.







FHOTOS: E. J. CYR

Illinois' \$7.5 million assembly hall can hold upwards of 18,000 spectators for basketball, can be reduced by lighting controls and partition curtains to an "intimate theater" for 1,800. But the architects allow that performance conditions will be "no more professional than in the out-of-doors."

Another, and perhaps more ideal, answer to the challenge of the theater in an academic community is to think small (as was done in the case of the 'Cedar Rapids High School theater shown on the opposite page) and to avoid multipurpose mechanisms so that available funds can be devoted to a structure best suited to the specific demands of one kind of show (e.g., theater but not dance).

Yet a third answer, which is being tried in such unlikely places as Fayetteville, Ark. and Flint, Mich., is to develop a college-community cultural center which allows a town to encourage home-grown talents as well as to provide professional facilities. Nine years ago at Fayetteville, Architect Edward Durell Stone laid out a sprawling, \$1 million arts center (FORUM, Sept. '51) that is still considered the most exemplary in the country in terms of the variety and professionalism of its facilities (including a 300-seat proscenium theater convertible into a theater in the round) and in terms of its community scale. For Flint, Smith, Hinchman & Grylls are designing the \$20 million Flint College and Cultural Development, which will comprise



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seven separate structures and which, unfortunately, may err somewhat toward municipal monumentality.

#### The perfect instrument

None of the large cultural centers that are springing up like green oases across this arid continent are, of course, growing naturally. In New York, Montreal, Washington, and other metropolitan areas they are being forced into existence with prestigeseeking ruthlessness, the object being to design a perfect instrument for shows "not competitive with Broadway" but if possible even more professional and excellent. Striving toward perfection, the creators of Lincoln Center have driven the cost upward from \$70, million to well past \$100 million.

The questions the centers raise are: whether their producers can find the material for their projected year-round seasons; whether they do not elevate the arts to too lofty a level; whether The National Cultural Center in Washington, if built to this model (left), would have a span of some 800 feet (N.B., the Pentagon is 900 feet on a side) to shelter three major structures: an opera house, a symphony hall, a dramatic theater. There will also be two lesser auditoriums, a restaurant, and a "grand salon." Besides making this grand plan work, Architect Edward Durrell Stone will have to find a way to make each hall seem full enough in theater-wary Washington.

Montreal's Place des Arts, as programmed by the Raymond Loewy Corp. (left, below), expresses its financial dependence on stores and restaurants by putting them along the front of its superblock. Above, on a raised platform, are the 1,250-seat theater, the \$,100-seat Great Hall, and the 500-seat Petite Salle.

Lincoln Center, despite its economic and planning difficulties, has achieved a unifying stylistic harmony that sets it apart from the usual municipal effort. As seen in the model at right and located on the site plan below, the buildings are: Harrison's Metropolitan Opera House (center row of photos), Philip Johnson's Dance and Operetta Theater (at left in bottom photo), Abramovitz' Concert Hall (in background of photo top row, right), Saarinen's Repertory Theater (beside the opera house in photo top row, left), and Belluschi's Juilliard School complex (at far right in bottom photo).

each hall does not become an instrument too precious for playing.

A close look at the centers reveals, however, that for all their exterior formalism, the individual theaters in them are full of innovation. For example, the Repertory Theater planned for Lincoln Center (opposite page) is now generally acknowledged among professionals as the "most experimental" theater in the U.S., with a stage that can advance beyond the proscenium arch like that at Stratford, Ontario



(page 100), and with aisleless "continental" seating like that now being built into Harvard's Loeb Drama Center (page 104).

Lincoln Center's Philharmonic Hall, more conservative in form, will have one of the most elaborate types of acoustical modifiers: an adjustable scrim, through which light and ventilation may pass from outlets above. On the scrim adjustable, reflective acoustical panels are hung, and the scrim itself may be hung at various heights to either absorb or reflect sound. Such an intricate device is needed to permit flexibility in the hall, for even here conflicting needs (symphony concerts vs. organ recitals) and capacities must be reconciled.

It appears, thus, that in the rarified halls of the cultural centers as well as in more modest auditoriums the dominant tensions of the big American theater cannot be avoided. The challenge to architecture will be to make the most of this awkward fact.



Building for the performing arts

## The experimental theater

Ideas of a new generation, operating in "off-Broadway" lofts, abandoned night clubs, campus gyms, and circus tents, have begun to permeate the entire theater world.



By far the most creative work in the American theater over the past ten years or so has been done not in the formal, proscenium-arch palaces along Broadway, but on the small, often tacky "off-Broadway" stages that have sprung up all over Manhattan, and in the improvised dramatic workshops on U.S. college and university campuses.

This development is a part of a world-wide move that has been under way for at least 40 years: a move to break out of the confining straitjacket of the proscenium arch (and all that this implied) and to re-establish intimate contact between actor and audience. This desire for a close actoraudience relationship is, of course, nothing very new: it existed in the Greek, the traditional Japanese Kabuki, and the Elizabethan theaters. Indeed, the formal, raised proscenium arch, with the stage beyond, did not become popular until the late Renaissance. Its use today is motivated in part, at least, by commercial considerations.

With the advent of the movies (and the subsequent loss to the commercial theater of a large portion of its traditional audience) actors, directors, and playwrights began again to hope for a truly "intimate" theater. At the same time, playwrights became increasingly interested in the sort of "realism" typified by such plays as Thornton Wilder's *Our Town*—i.e., plays in



The "Small Theater" at Mannheim is one of two playhouses contained in Germany's new National Theater building. The "Small Theater" was designed primarily for the drama, but can be used also for opera, ballet, concerts, and lectures. To serve such a wide range of uses, the architect planned for six different stage-audience variations (right). A large part of the stage area is in sections supported on hydraulic lifts; by lowering these, an orchestra pit for as many as 90 musicians can be created. The plan-diagrams at lower right explain some of the other variations made possible by use of hydraulic lifts and movable seating (in these diagrams, the stage area is at bottom, main seating area is at top): the top row shows, first, a proscenium-arch arrangement with an orchestra pit; second, a proscenium arch with widened forestage; and, third, steps up to stage for Shakespearean performances. These three arrangements will seat 606 spectators. The bottom row shows, first, a theater in the round with 674 seats; second, a central stage plan for 680 seats (this is shown also in the pictures at left and right); and finally, a seating plan for lectures and concerts, which will accommodate up to 870. A long, elevated bridge extends across the full width of the auditorium to the rear of the main seating area, and this bridge contains facilities for lighting, projection, sound-control and stage direction. The suspended steps on either side of the auditorium afford access to this bridge and can be closed off from the seating area by means of suspended wooden screens. The building was completed in 1957 (architect: Professor Gerhard Weber).



which the audience is no passive spectator, but is asked virtually to participate in the drama being developed before its eyes.

All these moves inevitably created demands for a new kind of theater architecture—a stage as open as possible, a seating pattern as flexible as possible, and a total absence of physical barriers between stage and seating area. Such theaters are now, at long last, being designed—and a few have actually been built. Of these, the most radical is the "Small Theater" at Mannheim, Germany (pages 96-97). Its flexibility is so great as to permit at least six entirely different stage-and-audience variations, ranging all the way from a traditional proscenium-arch arrangement — for many modern plays are still being written for a proscenium stage—to a theater in the round. Its capacity varies from about 600 seats to 870. The means employed to achieve such flexibility are fairly expensive (hydraulic lifts, etc.) but the results are impressive. A less-expensive, but nearly as flexible, theater was built in 1951 for the University of Miami in the form of a circle (below). Here the use of scaffolding tiers of seats and of a revolving stage allows for four or five different arrangements, including a theater in the round and a three-sided platform stage.

These two arrangements-the theater



in the round and the U-shaped seating plan (plus variations on these two themes)—seem to be the most popular open-stage plans, and several theaters have been designed recently to permit only these two arrangements. To many stage designers, such a two-phase plan seems entirely too limiting: they would prefer an auditorium that could accommodate stages of any shape and almost any size in just about any location. In some of the small, improvised "off-Broadway" theaters — many of which are located in former nightclubs or lofts—this unlimited flexibility has been achieved by ingenious if primitive means. There is, however, one important limitation, and that is the size of the audience. For various reasons (e.g., building code restrictions, etc.) a maximum capacity of 299 seats works well for most "off-Broadway" theaters. This capacity means that no spectator is likely to be more than 25 feet away from the open stage, whatever the exact seating plan may be, so that problems of acoustics tend to be minor. But if a completely flexible theater were to be designed for a capacity of 1,500 to 2,000 seats, the problems of acoustics, lighting, sight lines, etc. would be almost insurmountable. For this reason, theaters of a capacity of more than about 800 seats have had to retain a fairly rigid seating-and-stage relationship, so as to be able to manage

Teaching theater at Sarah Lawrence College (top left) has a capacity of about 500 seats and is used for drama, ballet, lectures, concerts, and even as a night club-cabaret. The stage can be extended forward into the audience by raising the floor of the orchestra pit. Completed in 1951 (architect: Marcel Brewer).

Teaching theater at the University of Miami (bottom left) is located under a 100-foot diameter dome and has a capacity of 400 seats. These are placed on scaffolding tiers designed in rectangular and triangular forms that can be rearranged to produce at least five entirely different stageaudience relationships (see plan diagrams). The egg crate suspended from the center of the dome contains lighting and a cooling fan. Completed in 1951 (architects: Robert M. Little and Marion I. Manley).

"Arena Stage" theater planned for Washington, D.C. (right) will seat 750 when it is completed next year. Designed as part of Washington's Southwest Redevelopment area, "Arena Stage" will become the new home of an established dramatic group whose present facilities are located in a former brewery on the Potomac. Although "Arena Stage" was designed primarily as a theater in the round, it can also be turned into a horseshoe-shaped playhouse by the removal of the folding tier of seats opposite the main entrance. Above the central stage area there will be a tall fly-loft (the roof is shown raised in the model photo) which is to contain the lighting grid, catwalks, and storage space for flying set pieces (architect: Harry Weese).



acoustics and lighting more effectively.

Yet, even the bigger theaters have benefited from the trend toward greater openness as demonstrated "off Broadway." The most impressive example of this can be found in the Festival Theater at Stratford, Ontario (below, center). Its capacity is almost 2,200 seats, arranged in a 225-degree arena pattern around a deeply projecting forestage. In this ingenious plan, no seat is farther than 70 feet from the stage, so that there is a real sense of intimacy between audience and performers despite the great size of the auditorium. The new Repertory Theater for Lincoln Center, which is being designed by Eero Saarinen, will be based upon the principles tested at Stratford.

Much of the pioneering work toward these new developments in theater design was done at colleges and universities, whose facilities, in the past, have tended to be rather primitive. In some instances, a gymnasium would be turned into a flexible theater by the use of bleacher seats and modular boxes; in others, a multipurpose auditorium would be given an added dimension as a theater by extending its stage far out into the audience to create a threesided platform. More recently, it has been possible to build fully equipped experimental theaters on several campuses: Harvard's Loeb Theater (page 104) will be one of the most imagina-





Central stage arrangement in Milan's Teatro Sant' Erasmo (left) seats 250. No seat is farther than 30 feet from the octagonal stage. Both actors and spectators enter from two side entrances, and lighting is contained in balconies above these entrances. The irregular form of the auditorium contributes to the intimate atmosphere of the theater. It was built in 1952-53 (architects: Antonio Carminati and Carlo de Carli).

Festival Theater at Stratford, Ontario (right) was designed primarily for Shakespearean productions. Its deep, projecting stage has a permanent balcony and peripheral steps. Although the seating capacity of the Festival Theater is close to 2,200, no spectator is farther than 70 feet from the stage-a feat achieved by arranging the seats in a 225-degree horseshoe pattern on two levels. The original Festival Theater was housed in a tent, and the radical seating pattern was developed in this informal setting by Director Tyrone Guthrie, Designer Tanya Moiseiwitch, and Promoter Tom Patterson. By 1955, sufficient funds became available to enclose the playhouse with a permanent structure. "It makes no sense to call this adventurous, self-determined house the best new theater on the American continent." Critic Walter Kerr has written; "it is the only new theater of any consequence on the American continent." (Architects for the final structure: Rounthwaite & Fairfield.)



tive facilities of its kind ever built when it is completed this summer; Dartmouth is planning an elaborate center for art, drama, and music, designed by Harrison & Abramovitz; Wellesley's new Art Center (FORUM, July '59) has a small teaching theater with adjoining rehearsal room, and with a movable stage that can be shifted back and forth between rehearsal and theater areas; and Frank Lloyd Wright's Dallas Theater (FORUM, March '60), which also serves Baylor University's drama school, contains enough experimental equipment to serve as a laboratory for some time.

And much of the flexibility developed in these small experimental and educational theaters is beginning to rub off on the traditional, proscenium-arch theaters as well. Forestages that extend out over orchestra pits, movable seating areas, etc., are becoming increasingly common in traditional theaters

PETER SMITH

and are being installed whenever such theaters undergo remodeling. Even the single-purpose structures now being built in Europe and the U.S. incorporate degrees of flexibility formerly considered unthinkable.

So, as the barriers between actor and audience begin to disappear we may see a major renascence of the theater as a genuinely popular art form. To achieve that objective, architecture will have to play an important part.

MAX FLEET

## Making the theater work

The theater is dependent on specialists for successful design —specialists in acoustics, audiovisual devices, staging, seating, lighting. On these pages, five prominent men in these fields describe their role in theater design.

Implicit in these pages is the fact that today's theater is really a complex mechanism. Strange as it sounds, the many needed experts agree that none among them can be allowed to become pre-eminent. It is the architect who must carry the responsibility for moderating the inevitable conflicts between the design specialists.

It cannot be overstressed that early conferences, attended by all the chief experts and presided over by the architect, are the one way of securing the best from all while ironing out conflict.

Nothing is said here about dressing rooms and backstage facilities for actors—not forgotten, but of necessity deferred.



### Theater acoustics can be excellent, if technical knowledge is amply applied. BY ROBERT B. NEWMAN

What does "theater acoustics" mean? Reverberation? Speech? Music? These are important, but there are other aspects of theater acoustics which are often overlooked. First, the theater must be quiet. Any extraneous noise can spoil the performance, no matter how carefully we control echoes and reverberation.

▶ If the theater is outdoors, or only partially enclosed, the site must be well-protected from traffic noise by natural or artificial barriers. Don't count on trees! The Greeks and Romans (sketch A) had quiet sites. They also had steep seating sections which reduce the absorption of sound by the intervening audience.

▶ If the building is enclosed, its roof and walls must be heavy and free of holes that leak sound. The roof must be quiet in the rain. Thin metal or plastic domes and fabric tents are always noisy in the rain.

▶ If the building is shielded against outside noise, it must usually have air conditioning — and this completely inaudible. There is no air-conditioning system made which is quiet enough without special duct lining, noise traps, resilient mountings, etc.

Then as to noises from the lobbies: lobbies must be shut off from the theater with doors which can be closed. Curtained openings give no protection. Most theaters have scene shops: this means that hammering and noisy shop activity must be made completely inaudible. This cannot be solved by scheduling. It must be solved by construction. Sometimes two or three theaters share one building: if these are to work well together, they must be completely isolated by rather complex construction.

Having obtained quiet, we can design for uniform distribution of sounds, loud enough to hear and sufficiently separated to provide good articulation. These matters are deter-

Robert B. Newman was one of the founders of Bolt, Beranek & Newman Inc., acoustics consultants of Cambridge, Mass.

mined by the shape of the room and by finish materials. For the most part, the wall and ceiling surfaces should be hard, sound-reflecting materials such as plaster or wood. They should not absorb sound. The audience must be so arranged that it can receive sound reflections directly from ceiling and wall surfaces: a deep underbalcony space (sketch B) which shuts off the line of sight from the ceiling deprives these people of a great deal of useful sound energy. Sketch C shows some corrective measures: a higher proscenium opening, a ceiling shaped to distribute reflected sound more uniformly, a reduced balcony overhang. If the shape is bad acoustically (sketch D), other reflecting surfaces must be introduced to counteract the concentrations of sound. The final sketch shows a scheme which avoids such problems.

If a loudspeaker system is required for effects or amplification, the loudspeakers must be carefully placed to preserve maximum directional realism of the amplified sound. This almost always means that the loudspeakers must be placed above the proscenium opening—never at the sides, as is so often mistakenly done. One should never be aware of the operation of a good sound system.

The audience itself is the principal sound absorber for the control of reverberation in the theater. Fabric-upholstered theater chairs are a must to stabilize the reverberation characteristics with varying audience size. Sometimes additional sound-absorbing treatments must be used on remote wall and ceiling surfaces to establish just the right amount of reverberation, but this is difficult to generalize.

If the theater designer today applies the technical knowledge available, he can provide the users of the theater with excellent hearing conditions at the very first performance. There are no miracles, however, and it is impossible to hope that a 2,200seat theater will have the speech intelligibility of a 500-seat playhouse.

### Audiovisual devices give today's theater a new versatility. BY H. J. SCHLAFLY

The architect of today's theater seldom is allowed to luxuriate in a singlepurpose design. The arena he blueprints must be many things to many people. Frequently, the hall must be prepared for a political rally, a temperance lecture, a town meeting, or a community sing.

In short, the theater is a communications center for the transmission of ideas, information, decisions, entertainment, and culture. As such, it has a vital stake in the new field of group communications. Thus, the architect of a new theater must incorporate in his plans communications devices and systems, just as he provides for lighting and acoustics. The adaptation of modern communications devices, far from infringing on the dramatic art, can augment it and give it new dimensions:

▶ High-brilliance projection equipment and rear-projection screens make possible higher levels of room lighting —for note-taking or reference. Rearscreen techniques allow giant audiences to enjoy a giant replica of their speaker (see sketch) though he speak no giant words; these techniques make it possible to create moods without bulky, expensive backdrops and flys. Two recent Broadway shows used rear-screen slide projection in this way.

▶ Multiple-screen displays permit visual material to be retained—or recalled as cross-reference material either at the desire of the viewer or the lecturer. Moreover, the projection devices may be multiplexed to permit slides, motion pictures, or large-screen television to be displayed on a single screen. The multiplexer selection may be controlled from the lectern or from a point in the audience.

▶ A new device automatically cues presentation effects from the actual words of the speaker's script, thus eliminating the chance for error. A prepared presentation, such as a play or lecture, can be supported by preplanned automatic control of special effects from live cues. Slides change, motion picture projectors start and stop, prerecorded sound effects are heard, curtains open, lights come up or dim, spotlights operate — all through automatic call-up.

To be sure, the auditorium or meeting room is not used exclusively for the preplanned presentation. But the less-formal panel discussion or audience-participation program also benefits from a capability to call up information for study or reference. Remote control and automatic selection techniques for these purposes are just now being recognized and explored. Microphones, both on stage and in the audience, as well as amplifying, recording, and playback equipment, have reached a high degree of specialization; these should be an integrated part of an auditorium facility.

Modern group communications requires the concentration of specialists,



but the application of this specialty is within the command of every forward-thinking planner of group-assembly facilities. Proper presentation can save time, promote understanding, persuade opinion, advance culture and education. It is essential that we be aided by, but not ruled by, these new products of our own inventiveness.

H. J. Schlafly is Vice President for Research and Development of TelePrompTer Corp., New York.

### Automation must aid the theater if live drama is to survive. BY GEORGE C. IZENOUR

The American theater has been a technological desert for too long. The theater of every epoch has used its available technological resources to the limit, and without embarrassment. That is, every epoch except the present one in the U.S.A. There are no practicing engineers in the professional theater today. Theater technology, if such it can be called, is taught or practiced as a rather rustic and unsophisticated craft. Moreover, the architecture of the theater suffers from inexperience: the typical architect designs but one theater in his career, with no opportunity to overcome the mistakes and shortcomings of that first attempt.

Thus, a catalyst is needed—a man who understands both the design problems of the producing theater and the capabilities of modern theater technology in terms of systems design. From this understanding will come a control system and only from this system can there develop a totality of design that will satisfy the needs of the theater in terms of architecture. It should be as though the building and its control system were inseparable. One functions *because of* the other.

We are witnessing a basic change in the theater which is driving the design of the stage toward extreme flexibility. From this change, the actor will emerge as the dominant personality. Design, per se, will be relegated to a more abstract function: how the space is dynamically manipulated and lighted.

No single form of theater presentation should be developed to the detriment of others. A marriage of all forms is both esthetically sound and technically possible. The fusion of these seemingly opposite design considerations will require the ultimate in terms of machinery and, more importantly, the subtlety with which the machinery is to be controlled. Since the theater has always reflected the total life of its epoch, it cannot, in our age, help but become the supreme example of the ultimate in technology.

A first attempt to utilize the principles and equipment of modern technology in the theater is being made at the Loeb Drama Center, at Harvard University. Harvard's Loeb theater. which utilizes this new versatility, is the first of a half-dozen theaters which will apply technology to the production of dramatic art. This building, designed in collaboration with Architect Hugh Stubbins, will provide a facility which can be converted in a matter of 15 minutes to any one of three theater forms: a proscenium-arch theater, an Elizabethan playhouse, a theater in the round, or variations of all three.

The first seven rows of the orchestra can be split into two equal sections, each of 72 seats with each of these sections moving as a unit. Thus, we can achieve any of several relationships between the audience and the actors. And we can provide a space which can be in continuous use, for the conversion from one stage type to another will not require that the space be idle for several days, as happens in most existing theaters when they are converted from one form to another. I believe that this is truly the theater of the future and that the university theater is the place where it should be experimented with, because the university theater is the only laboratory that the contemporary theater possesses. Here is the place to learn to manipulate the third dimension, that allows us to treat space as the true plastic element that it is. Such notions will be resisted, because these new ideas threaten many of the traditions of the theater. Yet, the technological revolution is inevitable: if the contemporary theater is to improve its economic health, it must admit its technological ills, which are frustrating its artists by compelling them to use outworn technical methods which compromise the final result.

EDITOR'S NOTE: The Loeb theater, in which Mr. Izenour's ideas are exemplified, will be completed in a few weeks. FORUM will publish an article on this theater later in the year.



HARVARD'S DRAMA CENTER —as proscenium-arch theater



-as Elizabethan theater



<sup>-</sup>as theater in the round

George C. Izenour is the Director of the Electro-Mechanical Laboratory of the Yale School of Drama, in New Haven, Conn.

### The audience problem: to strive for maximum enjoyment by a maximum number. BY BEN SCHLANGER

What are the important human considerations in planning a theater for comfort and safety? The designer who must cope with this problem-the problem of moving people in and out of the theater, and seating them once they have arrived-must consider it in two parts:

> The routine problem: how do people get into the theater? Where will they wait for late-arriving companions? How will they be seated comfortably? Is there adequate space for intermission relaxation?

> The emergency problem: how can the building be evacuated quickly, without danger of panic?

In dealing with the routine problem, the designer must remember that the audience will spend some 80 per cent of its time watching and listening to the performance. Thus, priority must be given to creating an environment which will enhance the enjoyment of the performance. This does not suggest that subsidiary considerations, such as getting people in and out and caring for them during intermission, can be ig-



Conventional seating

nored. But it does suggest that provision for these ancillary functions must not hinder the creation of a space in which the audience can see and hear well.

Ben Schlanger, a New York consulting architect, is noted for his work in the field of theater design.

The designer must gauge two types of audience reaction: one real and easily determined, the other subjective. For example, a member of the audience whose view is obstructed will react simply by complaining that he cannot see, or he will be vaguely distressed, usually not to the point of complaint,



Continental seating

by the even more important angle of view and distance from the performance when these are not ideal. Not so easily determined are purely subjective reactions: a complaint, for instance, that the music he hears in the theater does not compare with music from his hi-fi set at home or with sound quality in other halls. The designer, of course, must deal with this kind of reaction, as well as with those which are more easily measured. The objective must always be to provide a space which will yield an enjoyable experience for a maximum number of people.

This objective is apt to be compromised too much when pressure for greater house capacity runs high. For example, a town which builds a hall for touring companies will often elect a theater in which capacity is too great to permit maximum audience enjoyment. On the other hand, if the theater is built expressly for a community group, the demands are likely to be higher. The typical audience is more apt to complain about its inability to

see and hear a production of local origin and talent than it is about a touring production.

Are the routine problems likely to conflict with the emergency problem? In planning a theater for optimum comfort and enjoyment, must standards be sacrificed for reasons of safety? With existing building-code restrictions, it is often really necessary to make such sacrifices. But where more enlightened codes prevail, it is found that a single solution will satisfy both the routine problems and the emergency problem.

For example, a plan which involves continental seating, as shown in the photo, eliminates center aisles. For more comfortable row spacing and safer egress, this type of seating is superior to a conventional plan with center aisles. In many auditoriums, continental seat-



Continental seating plan in theater at the University of Arizona.

ing, with rows spaced a generous 42 inches apart, would allow the same seating capacity as conventional seating with rows spaced only 36 inches apart. Thus, important leg room and passage clearance can be obtained without any cost in extra floor area. The lateral flow of the continental seating plan to multiple exit doors easily reached along the side aisles eliminates the disorganized flow of traffic likely to occur in a multiple-aisle seating arrangement. In every emergency situation, the audience should not have to calculate any movement at all. In the continental plan emptying the theater becomes nearly automatic.

### Theater lighting must create a mood for the production.

Theater lighting for auditoriums, like the architecture itself, must whet the visual appetite of the audience and set off the work of art from its surroundings. Theater auditoriums and their lighting separate and define the difference between the work of art on stage and the outside world. The great room which houses the audience must be primarily planned for all attention to be focused naturally on the stage. Of course, the lighting plan must not be so conspicuous that it detracts from the art of the stage.

Different types of productions require differing emphasizing techniques. For example, theaters devoted to "spectacle" performances, such as grand opera, should have more impressive and spectacular lighting than a theater which is devoted to plays. The Philadelphia Academy of Music (see photos) is a good example of what spectacular lighting should be. This 103-year-old house was relighted as part of a masterplan renovation, undertaken three years ago to celebrate the building's centennial. The photos show the effect of this renovation scheme: the new lighting plan includes the three basic necessities of all theater lighting:

▶ Functionalism: the light by which programs are read. The consultant must provide sufficient light between acts so that programs can be read, and enough so that the auditorium does not look dark.

Ambient luminescence: the light which creates a pleasing environment. This is more difficult to achieve. The room must be bathed in a rich, glowing light, helping to create illusion.

A play of brilliance: the sparkle, glitter, and glamour that separates the world of the play from the everyday world. In an opera house, a huge sparkling chandelier can in part give a strong illusion of sequins scattered throughout the theater.

These three basics must always be present in the lighting of all theaters. The quality and intensity in each instance will depend upon the character of the theater itself. It is not so important in a playhouse to have as much "atmosphere" as in an opera house. In



Before . . . the chandelier in Philadelphia's Academy of Music lacked a "play of brilliance."



After . . . spotlights above the chandelier accentuated it, giving it sparkle and glitter.

a community playhouse, in which everything from Tennessee Williams to Gilbert & Sullivan will be performed, the lighting must provide enough atmosphere so that the world of art can easily be separated from the outside world.

The basic components in all theater lighting are the same, but the lighting design will differ from a prosceniumarch theater to an open-stage theater:

▶ In a proscenium-arch theater, the

visual conditioning should begin in the lobby, which should be excitingly and brilliantly lighted, yet not so subtly exciting as in the auditorium itself. The lighting should progress in brilliance through the various entry areas. In the auditorium the eye should be attracted to the curtain, which should be richly lighted, suggesting the excitement of the world of imagination into which the audience is about to enter, and then imperceptibly dimmed for the performance. At intermission, the audience must never really leave this world of imagination. Stepping into the lobby, the audience should move into a great salon removed from reality.

In open-stage theater, the lighting must provide a setting for the production. But this must be entirely different from that of the proscenium type. In the open type, the surroundings of the auditorium must be played down, the audience must feel that there is no space enclosure in the room. Excitement of the imaginary world cannot come from lighting of the hall. Indeed, the excitement actually must come from seeing the audience in the room. In the open theater, the audience should enter through a great lighting frame-the lobby area. This entryway should provide the glamour and glitter, because once inside the room, there should be no atmosphere except that of the open stage and the audience.



Richard Kelly, architect, lighting designer, and illuminating engineer, heads his own lighting consulting office in New York.





### Gallery

## Fearless Frank Furness



LDER Philadelphia fanciers of architecture knew what the moderns were talking about a year or two ago when they began using the term *new brutalists*. For old Philadelphia had an old brutalist, Architect Frank Furness, who, during a decade soon after the Civil War, 1874-84, broke the city's well-bred calm by building a series of monstrous, brooding, violently detailed masonry structures, several of which still are weighing down old neighborhoods with their stirring ugliness. But, as these buildings have approached a venerable age, the bland curtain walls of today's commercial classicism have begun to fence in their massive old walls. The aged monsters' day is passing; unassisted, Venetian Gothic cannot withstand industrialism. For instance, the Provident Life and Trust Co. bank (left, and pages 112 to 115) has been demolished, and the United Fireman's Insurance Co. (above) is now unrecognizable, although the ghost of Frank Furness must still haunt the sites.

Architectural historians have decided that what Furness was attempting in his wild ten years actually was much the same as the most recent brutalist. He was sick and tired of the genteel academism that had enveloped the architectural tastes of that cultured place, Philadelphia, and most of the rest of the world. He was not the only one to be bored, or annoyed. Across the sea John Ruskin had already unleashed his campaign for the Gothic, and Eugene Viollet-le-duc's *Dictionaire Raisonné* was a book Furness admired. The young architect, born in 1839, was a son of a leading intellectual and a violent abolitionist, the minister to the First Unitarian Church of Philadelphia. He studied with Richard Morris Hunt in New York, went off to the Civil War, won the Congressional Medal of Honor, returned to Hunt's office after the war, then, in 1867, came home from New York and began designing mild structures that give little hint of the excitement that was to come. But when Frank Furness, 33, received the commission for the Pennsylvania Academy of Fine Arts, in 1872, he began to shape his mighty blows against classicism.

There is little doubt that his buildings, new, were even more shocking than they are today, for Furness emphasized differences in masonry textures and colors which have since been blurred by years of grime. These decorations and details were enlarged as if to match structures twice the size of those that wore them. They were called aberrations by other architects of the day, but their

Gentler Gothic was a later characteristic of Frank Furness' architectural style. But imagination still permeated and enlivened the form, as shown below in switching towers for the P. & R. railroad (1886) and buildings and ironwork at the zoo in Fairmount Park, on the facing page. At bottom are the entrance pavillions to the zoo; above, a "cottage" and detail from the gate.



vitality was deep, and endured. Another way Furness' fiery strength was continued was in the mind and pencil hand of a young draftsman named Louis Sullivan, who worked for him in 1875 before striking out for Chicago. Also, in the early 1910's, a young immigrant boy named Louis Kahn must have been impressed by Furness' buildings in Philadelphia.

Furness did not go on with his smashing style forever. After a rocking decade he acquired partners and a substantial office and moderated into the Railroad Gothic style shown on these pages. His impetuosity turned to the expression of the reigning taste, but, however refined, it remained strong. Even in his days of classicism he had had a lyric touch with iron ornament.

Heroic boldness, however, is what will always come to mind when the name Furness comes up. In 1870, his father, the triumphant abolitionist, made a fiery, accusing speech to the American Institute of Architects, urging them away from conformity: "With all our freedom we do not tolerate oddness. We insist in this country on everything being cut to a pattern. . . . It is an adventurous thing in this land to set before us anything of which we cannot tell at once what we think. We resist it as a personal insult, and take satisfaction, the law of taste, into our hands, and condemn it." Reverend Furness then went on to demand, as Viollet-le-duc had, the recognition of a new age of materials and forms in architecture. There is no certain evidence that his son Frank was in the audience, but if so, he was probably plotting his own architectural abolitionism.—W. McQ.











PERRY E. BORCHERS



Provident Life and Trust Co. bank, now demolished, had a large main banking room with skylight. The iron roof trusses were decorated with lead ornamentation painted gold; walls and floors were tiled. This building, completed in 1879, was thought by many to be Furness' masterpiece. While it was being built, a Philadelphia newspaper commented: "With this front, there seems to have been a new surprise every few mornings, and there has been a constant strain on the public mind as to what might be coming...."





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#### GALLERY

Ironwork detailing in the Provident Life and Trust Co. bank was, appropriately, as graceful as the stone detailing (right) was rugged. Furness and his later partners built a complex of many wings for the bank, completing the final one in 1897. These varied in style, however; one of them was a ten-story office building in the French chateau style (1890) supported by huge A-frame iron trusses eight stories high.

Most of the data for these pages was assembled by Herbert McLaughlin and Bruce Falconer, who are engaged in a continuing study of Furness' work. Most of the photographs are by Falconer.







## The new urbanites: nature

This is the first of a twopart survey of the biggest problem facing cities—the great influx of rural, lowincome Negroes, intensifying slums and segregation.

For three decades, the biggest U.S. cities have operated like whirlwinds, drawing millions of new families in from the countryside, scattering millions more out into the suburbs. Neither group ever meets the other, for their economic and social separation is too great. The outgoing group is urban middle- and upper-income white, while the incoming one is largely rural lowincome black. Yet only now are the dozen largest U.S. cities beginning to realize that their character is irrevocably changed by this most massive of all population shifts, posing the biggest problems in housing, planning, rehabilitation, and assimilation ever to face the cities. The problems are so big that FORUM is treating them in two parts: This month their nature and dimensions, next month the solutions to the most pressing problem, housing.

In the last decade alone, the great population shift has reached an all-time peak, as the bald statistics show:

▶ In Chicago, whites have been leaving the city at the rate of 40,000 a year, while Negroes have been inflowing at the rate of about 18,000 a year. By 1965, Chicago, now 19 per cent nonwhite, will probably be at least 26 per cent Negro. In Chicago's first heavy Negro influx from the rural South following the first World War, its nonwhite population reached only 8 per cent by 1940.

▶ In Philadelphia, Negroes have moved into the central city about twice as fast as whites moved out, both migrations accelerating over the past decade. Today, Negroes make up about 27 per cent of Philadelphia's population, but the future is foreshadowed in this fall's school registration, which will be an estimated 50 per cent nonwhite.

▶ In Detroit, the past decade has seen some 100,000 white families move out, while some 80,000 new families moved in, mostly nonwhite, but including white families from Kentucky's and Tennessee's hill country. Detroit's peak migrations came in the automobileboom years of 1950-52 and 1955, and then mostly from the Deep South. Today Detroit is about 22 per cent nonwhite, compared to 10 per cent in 1940.

▶ In Washington, D.C., Negroes are now in the majority, comprising probably 55 per cent of the population. The city has about 11,000 Negro inmigrants a year, most of them from Georgia and the Carolinas. Washington's school population this fall will be at least three quarters Negro.

▶ In New York, with a nonwhite population of over 1.2 million, still only 12 per cent of the total, about 10,000 Negroes enter annually. There is an additional yearly influx of some 20,000 Puerto Ricans, most of whom, though technically white, face the same adjustment problems as Negroes. In peak years, as many as 34,000 Puerto Ricans have come to the city. New York's total population is slowly declining, as whites continue to vacate the city faster than newcomers enter.

These great migrations, unlike those of the past, focus almost entirely on the city. In the first half of this century, over 73 per cent of total U.S. population growth was in metropolitan areas, and that percentage climbed early in the last decade to 97 per cent. At the same time, the growth of suburbia, which was only one-third again as fast as central cities, jumped up to seven times the central-city rate in the last decade. In the next 15 years an estimated 50 million additional people will live in suburbs, while central cities will absorb only 10 million more.

Meanwhile, in the last two years migration from rural areas has noticeably slackened. William Wheaton of the University of Pennsylvania estimates that in-migration to Philadelphia has dropped 50 per cent, because sources

## and dimensions BY DAVID B. CARLSON

are beginning to dry up. Irene Taeuber of the office of Population Research, Princeton University, confirms this: "The great reservoirs of Negroes in southern agriculture are so reduced that they can furnish only a fraction of the migrants of the future." Hence the tide has probably passed its peak.

But even if rural sources were to dry up completely tomorrow, cities would still have the gigantic problem of assimilating the nearly 2 million persons, largely low-income Negroes, who have moved into northern cities in the past two decades.

#### Michigan water

Many factors impelled the great migration. A folk song favored by Negro Pianist Jelly-Roll Morton runs:

- "Mississippi water tastes like turpentine...
- But Michigan water tastes jes' like sherry wine."

And to the sharecroppers in the collapsing farm economy of the South, Michigan water has indeed looked like sherry wine, though once in Detroit or some other industrial metropolis, that old turpentine taste may return. A great magnet to the dispossessed was the wartime and postwar prosperity in the great industrial cities of the North and Midwest, where the southern Negro found a measure of economic security he has not known since he was forced off the plantation. Here also, though it weighed less than economic factors, was a chance for a greater degree of social acceptance than the South would ever afford. Though many migrants are aware that not all northern white society will accept them as brothers, at least there is the chance for some measure of equality. More important, there is a first fumbling step toward freedom.

The background of these new urbanites is vital to an understanding of the challenge they pose for cities. Like any large mass of people, they form a heterogeneous group. As Robert Weaver, consultant to the Ford Foundation and member of New York's Housing and Redevelopment Board, points out:

"Some are new arrivals; some have urban backgrounds; some are financially secure; many are low income; many are in the process of economic, social, and educational mobility. Census figures on migration, valuable as they are, do not tell the whole story. Dependence upon such restricted data is bound to give a distorted picture and blind us to the elements which offer the most promising avenues to solution." The largest problem lies in the vast majority of newcomers, white and nonwhite, who have no familiarity with city life and are frequently unwilling to bend to its inexorable demands.

East of the Mississippi, the new urbanites come from two groups: 1) the Negro sharecroppers, mostly from Georgia, the Carolinas, and the Deep South; and 2) white, low-income families from the hill country of Tennessee and Kentucky. On the West Coast—where Los Angeles' nonwhite population has been increasing twice as fast as its white in the past decade the great source of migrants is the Middle South and Border States. California still draws a large influx of Mexicans from the Southwest.

White or colored, the new urbanites are usually young (a majority are in the 15-to-29 age group) and generally have several children. They are rural or small-town oriented, with social life centered on the family. They are often incredibly impoverished, by urban standards. Their values frequently lead to difficult adjustment. Housing is likely to be less important to them than other things. Saving means little to them, for they have long been used to living from hand to mouth on an uncertain future. Thus, they are easy prey for the dollara-week installment sellers who load them up with the glittering toys of urban society - television, automatic dish washers, hi-fi phonographs, and automobiles. In their original homes, religion was generally wrapped in a revival-meeting atmosphere, and the decorous, quiet nature of urban religious experience is likely to seem tame by comparison. White or colored, the new

urbanites are, as Ely Aaron, chairman of Chicago's Mayor's Committee on New Residents, says, "proud, clannish, sensitive about their lack of education. They are suspicious and they don't know this business of working with other people."

#### The changing city pattern

Some observers maintain that this latest immigration will surely be absorbed by the cities, as others have been absorbed in the past. But this tends to de-emphasize the most important single fact of the latest migration—color. Says Irene Taeuber: "The barriers of color make assimilation for Americans who speak English more difficult than it once was for those whose languages, religions, and cultures were alien, but whose skin color was white."

The new urbanite comes initially with hope of a better job, and it is the sort of job he gets that largely determines his living pattern. As most new urbanites are unskilled, they frequently wind up in the lowest categories of the "service industries"—as busboys, dishwashers, messengers, or at the bottom of the construction trades. Even for those who have skills—and there are many who do, though their percentage is small—bias prevents them from joining unions to practice their skills or secure top wages.

In Washington, D.C., for example, Negroes are largely excluded from the building trades. Only last month, the National Urban League asked Vice President Nixon to act against the exclusion of Negro electricians from government construction projects in Washington. In New York, where Negroes generally have a better chance for employment than elsewhere. Negro longshoremen are still kept from working the luxury-liner piers where tips are juciest. Over-all statistics reflect the painfully slow progress of the Negro. In 1955, 42 per cent of all white workers were in professional, managerial, or white-collar occupations, while only 12 per cent of working nonwhites were in that category. Negroes complain that continued on page 190

# Some progress in Pittsburgh

vocue photograph by Walter Evans, © 1960; reproduced with permission of Conde Nast Publications, Inc.

### Criticism

Out of a disappointing collection of buildings, the new gold-tinted Hilton hotel steps forward to make a point.

#### BY OGDEN TANNER

Perhaps more than any other urban renewal project in the U.S., the long-watched development of Pittsburgh's "Golden Triangle" has stood as a symbol of What Could Be Done. The idea of clearing a whole slum at the confluence of two rivers, and turning it into a shining new city-in-a-park, has fired the imagination of civic leaders elsewhere, as well as proving of immense promotional value to Pittsburgh itself. Sadly, however, no amount of stirring talk can dispel the feeling that Pittsburgh's mighty Point, brilliant in its first concept, has turned out to be pretty much of an architectural flop.

On approaching the Triangle today over the new Fort Pitt Bridge above the Point, or looking down from the cliffs higher up, one becomes painfully aware that its windswept, unfinished spaces are populated mainly by a growing system of highway ramps, and a crowd of lonely metal buildings standing silently apart (1). The three original office towers of Gateway Center, cold and heavy in their cruciform steel sheaths, seem already overage. The new state office building, of a completely different unrelated design, is garish in its bright blue metal walls and harsh white colonnade. The gray metal spandrels and stone trim of the telephone building behind it are curiously dull and lifeless. Even the darkly glistening glass slab of the new Gateway No. 4, while considerably more refined, seems in context only another slightly newer, slicker, curtainwall cliché.

At the head of this procession of odd metallic toys, the glittering new Pittsburgh Hilton Hotel (2) provides some cause for greater comfort. Driving up to the building from the bridge approach, the visitor is welcomed by a pleasant plaza set off by planting, flapping flags, and a strong, simple colonnade with gray glass and gold trim marking the lobby front (3). Two long rows of columns are the legs from which the floors of the main building are cantilevered outward. At the building ends they are connected by a continuous shear wall covered in warm travertine and adorned with a large (and perhaps superfluous) emblem of the hotel. Over the front door, a restaurant sits atop the widely project-



2. The Hilton: high tower to the front, low ballroom over shops.



3. Approach: a pleasant plaza, a strong, simple colonnade.



4. Entrance: a sheltered driveway, a restaurant with a view.



5. Joints: a logical separation, but some meetings by chance.



6. Lobby: space, light, and a wall of glass toward the park.

ing main entrance canopy or porte-cochere (4). Its front follows the driveway curve; the restaurant gains fine views; guests come into the hotel dry. The tower has behind it its separate elevator-service shaft in golden-buff brick and concrete; below this a broad, three-story section is removed to the rear so that the large ballrooms can be clear-spanned without interference from the columns of the tower. Each element is logically separated and massed.

The meeting of these elements, however, does not seem as logically resolved. Particularly disturbing is the way the low ballroom-kitchen mass squeezes tightly under the cantilever of the tower, neither staying away nor advancing far enough to make an entirely satisfying joint (5). In several places above this as well, walls butt into each other in an apparently accidental manner. (The parking in this picture, incidentally, will eventually give way to a landscaped park, letting the employees' dining room, generously located on the ground floor instead of somewhere in the basement, look out through glass walls to its own unobstructed river view.)

Inside the porte-cochere entrance, the hotel's main lobby has ample seats, space, and light, looking out on the entrance plaza and view for its entire length (6). At either end, simple, well-detailed stairs lead up to the ballroom mezzanine (7), where one still has the view-and, unlike the experience in the confusing interiors of some hotels-a sense of where one is. The ballroom itself is of the now-familiar multiple-use variety that Architect William Tabler pioneered to good advantage in previous Statler and Hilton hotel plans: one huge, columnless space spanned by 120-foot girders, divisible by means of giant rolling partitions into different combinations depending on the number and size of meetings being held (see plan opposite). In addition, a line-up of eight meeting-dining rooms to one side can be similarly rearranged for varying smaller groups.

On the main floor, Tabler has put his considerable hotel experience to work on a model of easy access and self-evident circulation. Inside the main entrance, the visitor has three clear options: to go right to the lobby and front desk, left to elevators and restaurants (which have their own separate entrance at the left), or walk straight ahead down a broad main hall which leads back to a rear entrance and coffee shop opposite the Gateway office buildings (8, and plan). On the other side of the hotel, he may walk down a parallel secondary corridor (9) by an attractive series of shops to a drug store at the other corner. Joining these corridors at the back is a convenient cross-corridor lined with airline ticket offices, barber shop, newsstand, and other services, keeping the front of the hotel clear for the major functions of reception and view. He can enter this system at any one of five hotel entrances and easily find his way about.

From the front entrance and elevators, the visitor can go directly to a men's bar and grill without going through the lobby, or walk upstairs to the main restaurant above the driveway (10). Here the



7. Mezzanine: a foyer for ballrooms; a sense of where one is.



8. Main hall: from any entrance, a clear means to get around.



9. Side hall: attractive shops along a crisp arcade.







10. Restaurant: busy ceiling, busy decor, wonderful view.





11. Elevators: quiet lobbies, with a touch of gold.



12. Bedrooms: space and equipment for the traveler's needs.

bar and cocktail lounge are separated from the large dining space by a small bandstand in the shape of a carousel. The Hilton decorating staff may have gone a little overboard with garden furniture, pergolas, planters, and scalloped lamps. But then the ceiling is also a pretty busy assortment of lights, loudspeakers, and bulbous air diffusers. At any rate, the view of the rivers is superb.

Continuing upstairs, a guest has little trouble finding his way to his room, through quietly tasteful elevator lobbies and corridors trimmed in gold metal (11). In the studio-type bedrooms (12), the half-window, half-wall division allows both a good view and freedom to place furniture against part of the outside wall. Columns, thin and flat, do not jut seriously into the rooms (see plan). The average traveler's needs are nicely taken care of: a small dressing space near the bathroom and closet is set off from the room by a low storage unit. Telephones have a new direct dialing system, with fingerholes marked for room service, valet, etc., as well as a red light which indicates messages taken while the guest is out. It is probably no coincidence that in this well-designed hotel the service is good.

While no architectural milestone, the Pittsburgh Hilton is at least an honest, carefully worked-out scheme, with a certain clarity, comfort, and glamor of its own. Like almost all the other new buildings in this steel-and-aluminum-producing city, it is sheathed in metal: in this case aluminum (the fifth in that material since Alcoa's own handsome building went up in 1952) and, in a literal symbolization of its site, anodized gold.

Happily, the Hilton gold is a light, soft, grayishgreen, a far cry from the bilious yellow of earlier processes. While not comparable with the darkly rich, weathering bronze of a Seagram's tower, the light gold goes well even in the Triangle's disparate surroundings. It is used on a strong, uniform grid of 8-by-9-foot "picture frame" panels (13), which not only give the hotel's tower a deep textural character, catching the sunlight with glittering effect, but offer some sunshading and rain protection for the windows (the verticals also provide hollow space for air-conditioning risers and conduit). Actually, two-thirds of the frames are real windows; the others conceal solid wall behind an opaque gray glass, which gives much the same first impression as the transparent gray glass used for view. Architect Tabler might be condemned by some for "fudging" the separate expression of wall and windows here, but the "blind window" is nevertheless an ancient compositional device for avoiding interruptions in an over-all pattern.

Despite some shortcomings — which include a rather crude and probably unnecessary neon sign atop the service shaft (14)—the new Hilton marks a welcome step forward at the Point. There is reason in its details, and it functions pleasantly and well. It seems a pity that its grim neighbors, and the Point as a whole, were not thought out with the same care.


13. Windows: a "picture-frame" grid, with function and effect.

ARCHITECT: William B. Tabler (David P. Dann, project manager). LANDSCAPE ARCHITECTS: Collins, Simonds & Simonds. INTERIOR DESIGNERS: Statler Hilton Studios, Inc.; David T. Williams, Inc. ENGINEERS: Seelye, Stevenson, Value & Knecht (structural); Jaros, Baum & Bolles (mechanical, electrical). GENERAL CONTRACTOR: Turner Construction Co.



<sup>14.</sup> View from the park: among grim neighbors, a glint of hope.

The custom-tailored office buildings by Architects Skidmore, Owings & Merrill owe their polish to painstaking attention to detail.

# SOM's details of distinction

"God is in the details," Mies van der Rohe likes to say. God may not be in all of SOM's details, but a high and discriminating intelligence most certainly is. Over the past dozen years or so, the detailing of curtain walls, interiors, furniture, and special fixtures that went into SOM's office buildings has established a standard of near-perfection which many architects the world over are trying to emulate and many manufacturers of building products are constantly trying to meet.

The secret behind the sleek polish characteristic of SOM's buildings is, quite simply, hard work and tireless research. It is not at all unusual for SOM to erect a full-size mock-up of a large chunk of a proposed building on some suburban lot (as they did in the case of Union Carbide-left) in order to study curtain-wall details, partition and ceiling systems, desks, settees, filing cabinets, and even doorknobs. These full-size mock-ups are not only a help to contractors; they also enable SOM's designers to put all the executives of a client-corporation through a dry run, showing them exactly what sort of office has been earmarked for them, and giving each a choice of several alternatives in colors, finishes, window-treatment, and furniture. From such detailed studies emerges a finished building that holds few surprises -excepting the surprise of seemingly effortless perfection.

The details shown on the next five pages reflect the development of SOM's detailing idiom over the past 12 years. The early details are familiar because they have now become the stocks-in-trade of the building industry; the new details are prophetic of what the industry will produce tomorrow.



SPANDREL COLUMN PANEL COVER V2" PLATE GLASS STAINLESS STEEL MULLIONS

Curtain wall of New York's new Pepsi Cola Building, hung outside the structural system, consists of  $\frac{1}{4}$ -inch-thick aluminum spandrels and  $\frac{1}{2}$ -inch-thick sheets of plate glass, separated by H-shaped aluminum mullions spaced about 13 feet apart. Detailing is so precise that the spandrels project only  $\frac{1}{2}$  inch beyond the plane of the glass.





**Double wall** of Warren Petroleum Building in Tulsa, Okla., has columns set 5 feet back from the outer face of the structure. The actual enclosure of the interior is floor-to-ceiling glass; but another curtain of gray glass and aluminum at the outer face of the building supplies sun protection. The galleries between the two ease window washing.

**Flush wall** of the Union Carbide Building (now nearing completion in Manhattan) is in the same plane with the outside face of columns and beams. It consists of  $\frac{1}{4}$ -inch plate glass, black stainless-steel spandrels and column covers, and natural stainless mullions. Each spandrel and half of its adjoining mullions were fabricated in one piece.



PHOTOS: (ABOVE) GEORGE CSERNA; (BELOW) C LOUIS CHECKMAN



**Recessed wall** of Hartford Fire Insurance Building (now under construction in Chicago) is also 5 feet back, but here the columns are on the periphery, and the recessed "curtain wall" is part of the interior partition system. This wall-type permits a great variety of structural expressions. Two other new SOM buildings will have a similar wall.



### Ceilings and partitions

Lever House in New York (completed in 1952) has a standard office ceiling of acoustic tile, recessed light troffers, and air-conditioning diffusers — all arranged in an orderly pattern.

Inland Steel Building in Chicago (completed two years ago) has no interior columns, presents a completely flush ceiling surface with continuous, recessed lighting troughs.

Connecticut General Building in Hartford (completed in 1957) has an open ceiling grid that permits maximum flexibility in air conditioning. The deep baffles are of perforated steel filled with glass fiber, and act as sound absorbers. Modular partitions lock into a slot in the bottom edge of half the baffles.



Manufacturers Trust Building in New York (completed in 1954) has a luminous ceiling of corrugated plastic, held between narrow aluminum runners. The broader runners contain airconditioning diffusers also.













### Furniture

Just as SOM's curtain walls become an integral part of the partition system-which, in turn, is integrated with the ceiling package—so most office furniture is also becoming an integral part of the building, both in module and in detail. The executive desks at Union Carbide (1) are steelframed and detailed to relate to the partition system. This is true, also, of low side tables and conference tables (3 and 4). Filing cabinets which are used to screen secretarial pools have been redesigned in several details, now can be combined with SOM-designed coat closets (2). Even seating units, as in the lobby of the Reynolds Metals Building in Richmond, Va. (5), have been specially designed to reflect the squared-off shapes and neat lines of other elements of the structure.





SERNA

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### Special details

No detail, however small, is left to chance. Light switches at Union Carbide are plastic buttons set into the stainless-steel joint covers between partition panels (1). A simple handle marks an otherwise concealed door set into a wall of slim, stainless-steel ribs (2). Door hinges are neat, unobtrusive cylinders (3). Specially designed drinking fountains (4) fit into the modular wall pattern. Signs throughout SOM's buildings use typography in keeping with over-all design (5). Filing cabinets are often built in to reduce appearance of clutter in office areas (6). Elevator doors (and other openings) are not punched into walls, but designed as framed, floor-to-ceiling panels (7). And horizontal bars, like this one (8) in the Pepsi Cola Building, make effective handles for tempered glass doors. In short, every element, however small, of any given building is part of a single design idiom, and contributes to the unity and quiet elegance of the whole.





PHOTOS: GEORGE CSERNA-1, 2, 4, 5, 7; J. ALEX LANGLEY-3. 6; © EZRA STOLLER-8 It frightens conservative realtors and inspires wild rumors, but it also is producing \$500 million worth of redevelopment in numerous cities—and hopefully a profit for his stockholders.

# The wheeling and dealing

In his combined role as developer, builder, and investor, William Zeckendorf has no equal. No other single company can match in diversity, immensity, or complexity the operations of his celebrated Webb & Knapp, Inc.

Much of Zeckendorf's architecture —thanks to Architect I. M. Pei—is well known for its quality, but his financial dealings are an enigma. He borrows big money, often at big interest rates; he enters into preliminary negotiations for many big projects, some of which he drops before the consummation of formal commitments; he sells out almost as often as he buys in. He seems always to be on a tightrope and headed for stupendous success—or a calamitous fall. It is small wonder then that few understand his operations, that these

frighten many conservative realtors, and that he is almost always plagued by rumors of impending trouble. Today these rumors are thicker than ever—inspired by several obvious Webb & Knapp setbacks and retrenchments, and compounded by the problems of the tight money market.

As if to deny these rumors, Zeckendorf has also extended his commitments in other directions in recent months. Examples: purchase of three New York financial district buildings for close to \$9 million; purchase of the Roxy theater in New York in February for about \$5 million; and the purchase of all the real estate of a Texas life insurance company (except its home office) for about \$3 million.

In addition to his extensive activity in buying, selling, and operating existing properties, Zeckendorf has boldly led Webb & Knapp into a growing number of new construction ventures during the past decade. Unconcerned with providing a more precise figure, Zeckendorf estimates that his new building ventures completed since 1950, plus those under construction or firmly committed for early starts, total about \$500 million in gross value, including land (see list, page 216).

### **Capital** generation

Zeckendorf's purpose in launching so much construction sounds simple. "The basic objective of Webb & Knapp," he says, "is the generation of capital value." The same principle applies when Webb & Knapp buys existing buildings and large tracts of land too, but new construction is one of the most direct and immediate ways of generating capital. Under favorable conditions, a building will not only produce operating income upon completion, but upon being sold, either outright or under a sale-leaseback arrangement, it may also yield a substantial profit.

Historically, however, construction requires a considerable initial investment before it produces a stream of income or a profit from its sale, and Zeckendorf has required great quantities of cash. As a matter of fact, the secret of Zeckendorf's operation is adequate cash-on hand or borrowed. This sometimes requires that he abandon his least promising projects when he needs money. Three years ago he stopped short before making a binding contract for a vast Boston redevelopment project because other extensive urban-renewal commitments were firming up in New York, Washington, and elsewhere. His enthusiasm over the challenge of the New England job had not diminished, however, "but any interest in Boston" he said, "has got to

be tempered by the limit of our capabilities and money." On occasion Zeckendorf has profitably rescued projects of others that were faltering for lack of sufficient cash to carry through.

#### The money squeeze

Zeckendorf's great need for money in recent months has not been so easily satisfied. As more and more of his large construction projects have been advancing and tight money conditions have been plaguing him (as they have everyone seeking credit or new capital), there have been many indications of the strains these combined forces have placed on his company's financial structure. For example the latest W & K annual financial statement, released last September, said a 1958 net loss of \$6.3 million (\$9.6 million before federal tax carry-back adjustment) "was due in large part to the high interest cost of money" for its far-flung urban redevelopment projects. Another example: Last December, a W & K subsidiary obtained a three-month extension (later extended to August 1) on a \$3.1 million payment due the 20th Century-Fox Film Corp. on an option to buy its 267-acre studio property in Los Angeles.

Last month, despite rumors to the contrary, W & K's financial position appeared to be improving considerably. With his catlike ability to land on his financial feet, Zeckendorf was completing a number of major profit-taking sales that would assure W & K of a profit approaching \$2 million when its 1959 statement is issued, and possibly more than that in its 1960 report. Equally important, ever ebullient Zeckendorf now says that he has also obtained new commitments, or can



# of William Zeckendorf

choose between new offers, which will provide all the cash he will require for all of his current or impending construction projects. Other evidence:

▶ Without naming principals or disclosing details he claims to have signed up a partner who will provide \$20 million to continue the purchase of the \$56 million 20th Century-Fox site and launch the first phases of its long-term development which will involve about \$500 million of construction.

▶ Financing arrangements are also said to have been completed for the entire \$27 million of equity (above \$53 million of permanent mortgage financing) for the first stages of the Place Ville-Marie project in Montreal. This will consist mainly of \$12 million that W & K already has invested in this project ("and not a penny of it borrowed") plus \$6 million of securities held by its Canadian subsidiary and about \$7 million anticipated from the permanent financing of a large new \$12 million shopping center in London, Ontario.

▶ For some \$20 million of equity investment that will be needed for the immense Hotel Zeckendorf (over a permanent mortgage commitment for \$27 million from Prudential) Zeckendorf is now considering alternative offerings of both private and publicly subscribed financing.

▶ Further cash needs for his string of Title I projects will be relatively modest. Most of the initial investment for their land and planning has already been made, and on FHA Section 220 mortgages for 90 per cent of estimated value (including a 10 per cent allowance for the builder's profit), a sponsor needs virtually no permanent cash investment. On the large Lincoln Square project he is already negotiating with a partner who will purchase a major interest in the project, and he is prepared to negotiate current contracts to sell or sell-and-leaseback all of his other Title I projects subject to completion.

### Help from Shylocks

In the financial world, Zeckendorf's fame as a borrower is as great as his reputation as a builder or developer in other circles. If eyebrows have ever been raised at his borrowing, it has not been because his projects were not soundly conceived. Rather, they have been raised at the amounts he has obtained or at the interest rates he has sometimes paid. In his annual report, Zeckendorf did not elaborate on the "high interest costs" that were a major cause of W & K's \$6.3 million net loss in 1958. But a comparison with the 1957 report showed \$26.2 million of increased borrowing and a \$3.1 million increase in interest payments (excluding real estate mortgage debt and certain conventional-rate longterm notes and debentures). This meant that he had paid at least 11 per cent interest on the increased margin of debt. As a matter of fact, to obtain money to make money, Zeckendorf has borrowed short-term funds for W & K at rates as high as 20 per cent a year in some instances. A man who refuses to be intimidated by his own indebtedness and who exudes a degree of pride in his rationalization, he says: "Which company must have the greater courage and ability? The one that makes only 2 per cent profit after paying conventional interest rates, and will probably go broke in time, or the firm that can advance after paying Shylock rates of

18 to 20 per cent to swing a deal? A borrower must be able to put up virtually gold-plated collateral to obtain cash from tough lenders. A banker might take a chance on your integrity sometimes—but Shylocks will lend only on a sure thing, and then only an amount less than they feel they could recover by immediate disposal of the collateral in case of default."

Zeckendorf does not always deal with Shylocks; he also borrows for W & K from some of the most staid institutions. He proudly tells of meeting an officer of Morgan Guaranty Trust at 5:30 one evening and—before the end of a 20-minute cab ride—obtaining an informal commitment for an \$8 million development project loan. By noon the next day, less than 18 hours after the first conversation on the subject, he adds, the formal commitment was issued.

#### **Profits in perspective**

Just as Zeckendorf is not overly concerned about high interest rates, he is not unduly perturbed by W & K's \$6.3 million net loss in 1958, the first red ink on its books since the company's stock went on the American Stock Exchange in 1952. "This is a development company, like an investment trust. Our liquidating value is what counts, and not our current operations," he says. While the company was registering a deficit on its operations in 1958, the net liquidating value of its 20 million shares of common stock rose from over \$4 per share in 1957 to more than \$6 per share at the close of 1958. He would really be concerned, he says, any year that current operations were in the black but there was no increase in net worth.

For the six years from 1953 through

continued on page 195











# Pile drivers in paradise BY OGDEN TANNER

### Since statehood, Hawaii has erupted with new tourists, tracts, and traffic jams. Hope for the future: good architecture, and a unique, state-wide development plan.

Five and a quarter hours southwest of San Francisco by jet, the newest, farthest-out state is celebrating its first anniversary this month to the roar of the bulldozer and the ceremonial thump-thump of pile drivers under the palms. New hotels and cooperative apartments are rising balcony to balcony near jam-packed Waikiki beach. where land, if it can be found, goes for \$30 and more a square foot. In suburban Honolulu, California ranch houses creep out steadily across the canefields and up the mountain valleys, as giant shopping centers arise over double-decked parking to serve a bumper auto trade. Construction, up from \$89 million put in place five years ago to \$175 million in 1958, has already passed sugar, pineapple, and tourists as Hawaii's No. 1 nondefense industry, and an astounding \$400 million in projects-some of it on paper, to be sure-is estimated for the year ahead.

Hundreds of small businessmen, builders, and investors are cashing in on Hawaii's boom and its influx of tourists, which will hit 250,000 this year, compared with less than 50,000 in 1950. Every self-respecting cab driver and secretary in Honolulu has a piece of a new cooperative to live in, to rent to tourists, or to sell at a profit. Among the bigger operators, Tycoon Henry J. Kaiser is adding some 400 units to his big Hawaiian Village on Waikiki, completing a \$13 million Permanente cement plant to serve the blossoming construction industry, and starting sitework on "Hawaii Kai," a 6,000-acre, \$350 million resort community for 75,000 at nearby Koko Head (where he has also built himself a new \$2 million house). Sheraton Hawaii Corp., which took over four

Waikiki hotels from Matson Lines, has a raft of projects under way, including a new 210-room addition to the Princess Kaiulani (hurried up with concrete "slip-form" construction) and six more hotels being planned by Honolulu Architects Wimberly & Cook. Between Waikiki and downtown Honolulu. Seattle Architect John Graham has under construction a 23-story office tower topped by a revolving restaurant, next to his 56-acre, 7,000-car Ala Moana Shopping Center for Hawaiian Land Co., Ltd. For a site near the Ala Wai Yacht Club. Graham is also starting working drawings for a huge cooperative apartment tower, whose 1,040 units are already selling nicely from plans at \$17,000 to \$32,000 each. Down the line at Maunalua Bay, Hilton has applied for a zoning variance to build a new hotel next to the Waialae country club. And while hotel and airline men argue whether a shortage of rooms or flights is holding up Hawaii's glorious future, a one-time blacksmith named Joe Pao has completed 2,500 low-cost houses on Oahu and is planning 25,000 more.

#### The land squeeze

A boom of Floridian proportions on a handful of Pacific mountaintops was almost bound to have its problems. Hawaii's even, 75-degree Though weather allows single-board wall construction and whole sides of houses left open to the breeze, the islands' sun, salt, and high humidities can play havoc with roofing, metals, and paint. Construction wages are mounting sharply, though they are still below mainland scale, and freight rates for steel and lumber are high, giving rise to consistent, and occasionally flam-

volcanoes pushed up out of the sea, ranges in character from the vast desert crater of Haleakala to the quiet green of tropic coves. It is a land loved in legend by the Polynesian seafarers who found it in long canoes, by the kings who fought to unite it, by the missionaries who came to teach and tend their needs. Away from the boom of Pearl Harbor, Bishop St., and Waikiki, the land and history are still there: in a hospital on Molokai (top left): in Honolulu's royally columned judiciary building with its statue of mighty Kamehameha I in front; in the graceful drying nets of the little fishing village of Milolii on the Kona Coast; in a steepled New England church buried in the volcanic jungle near Kalawao; in the patterned canefields and rugged coastlines that make Hawaii one of America's most

richly spectacular states.

The land of Hawaii, a chain of

HAWAII



KAUA

(Present and proposed resort areas indicated by crosshatching.)

MAUI

AHOOL AWE

50 MILES

HAWAII

HILO

boyant, experiments with concrete shells, folded plates, lift-slabs, and precast and prestressed techniques. Mainland malihinis, local architects point out with some satisfaction, have put in more than one unneeded furnace, but most of the business goes to 125-odd resident architects and 1,800 contractors. Some of their work is handsome, some a kind of caricature of Miami. But, like Hawaii's population as a whole, the building industry happily mingles Japanese, Caucasians, Hawaiians, Filipinos, and Chinese with generally fast and workmanlike results, despite a few misgivings about the adequacy of building codes.

What concerns Hawaiians more about their boom is that over 90 per cent of it is happening on Oahu, which



has less than 10 per cent of the state's land area of 6,451 square miles (about the size of New Jersey) but more than 80 per cent of its 666,000 population (including 57,000 military). Amply living up to its English translation ("the gathering place"), Oahu now surpasses such tightly settled countries as Belgium, Japan, and Puerto Rico with an over-all population density of 772 persons per square mile. A high percentage of the island, moreover, is in unbuildable mountain forest preserve (white on map), military areas, plantations (hatched); much of the rest, as in the other islands, is held by a few large family estates. It is perhaps not surprising that land values on Oahu have tripled since 1950, that some key areas have risen to 400 or 500 per cent. Most building takes place on land leased for 55 years.

OAHU

ALLUA

Following Hawaii's sudden, almost unexpected achievement of statehood, for which it had been petitioning nearly 50 years, the boom has also produced serious worries about the islands' "tourist image." The new hotels, shops, and drive-ins of Honolulu have plenty of customers. But many recent visitors who pictured a quieter South Sea idyll have found themselves surrounded with the same old new mainland honkytonk, not to mention those pile drivers outside the window, and beach boys more interested in discussing their investments than in fetching an umbrella or a smile.

The dream of local planners is to relieve the pressure on Oahu by developing the rest of Hawaii. As island farm workers and mainlanders continue to drift into the already crowded city island, some investors are beginning to drift out to the "neighbor islands" (a phrase now preferred to "outer islands"). Where the plush Hana Maui Hotel used to be the only major non-Oahu resort, the Kona Coast area of the big island, Hawaii, now has the new 100-room King Kamehameha and other hotels, complete with their own hula-hula hello. On Kauai, the oldest, most spectacularly eroded and verdant island of the volcanic chain, the Kimball Estate plans a 100The people of modern Hawaii came in cattleboats to work the plantations, in warships to avenge Pearl Harbor, in Pan American Clippers to see the sights. A good many of them stayed, and the housing developments began to creep Los Angeles-style up the hills of Honolulu, and out into the sugar cane beyond. Last year came statehood, wild celebration, and election campaigns with a flavor of Ireland and the Orient, in leis and aloha shirts. Now, at Waikiki, where Kaiser's Hawaiian Village boasts both grass shacks and a TV station mast, the people come in by the jetload, for big luau banquets, for a paddle with the beach boys in an outrigger canoe, for a sweet whiff of paradise you don't get in Des Moines.



room cottage colony at Poipu Beach, and a Los Angeles builder named Sam Falzone is entering the out-island sweepstakes with his own 300-room "village" next to the Waialua golf course.

#### **Planners at work**

The new state, meanwhile, is at work on its own programs. In addition to plans for Honolulu airport expansion and a raft of new public buildings (including plans for a new state capital, and Honolulu's own 10,000-seat civic arena and concert hall), the State Planning Office under Frank Lombardi has commissioned several surveys. Planners Harland Bartholomew & Associates have completed land studies of all the islands and specific development plans for Oahu's Waimanalo Valley and Hawaii's Kona Coast. Accountants Harris, Kerr, Forster & Co. have done a study of hotel operation in the islands, and Economic Consultants John Child & Co. have analyzed 13 successful (and three unsuccessful) resort areas elsewhere from the Riviera to Japan. Maui County has completed its own master land use plan, and Oahu. Hawaii. and Kauai counties have others under way. Lombardi's office, aided by Child, by Planner Harold Wise, and by Transportation Consultants Law & Wilson and Tudor Engineering Co., is well along on a state transportation and general plan. To bind together Hawaii's eight major islands, now linked by two airlines, studies are being made of alternative route systems and vessels for an interisland ferry service.

To open up the other islands to tourists, the planners have proposed, and the legislature has partly authorized, a six-year, \$50 million publicimprovements program aimed at encouraging construction of some 12,000 new out-island hotel rooms by 1970, when total tourist traffic to Hawaii may reach 1 million. Of the total expenditures close to \$27 million would go for highway work, \$6 million for parks and historic sites, \$5 million for water systems, \$8 million for boat marinas, \$1 million for golf courses. The largest share (\$14-\$15 million) would go to the relatively undeveloped "Garden Island" of Kauai, where canyons, waterfalls, and rugged green coast lines have provided backdrops for more than one Hollywood South Sea classic. Here new scenic roads would be cut through mountain forests, lagoons would be dredged for swimming and deep-sea fishing craft, a major yacht harbor opened up, the way paved for dude ranches and vacation homes. On Molokai, a virtually undeveloped island only 30 miles from Waikiki, new water systems would clear the path for 500 hotel rooms, water-sports facilities, possibly a hunting lodge. Maui, home of firegods and the vast Haleakala crater, would get new parks, parkways, and boat landings. Hawaii, bigger than all the other islands combined and still actively volcanic, would receive help for four expanding resort areas (see map). One top-priority recommendation: a \$2.6 million runway extension at Hilo's General Lyman Field to attract jet flights direct from the Coast.

In attempting an over-all plan, Hawaii has set both a tough assignment for itself and an example for older mainland states struggling with similar problems. Among its goals: 1) to conserve its agricultural lands and encourage a greater diversity and selfsufficiency of crops; 2) to prevent premature and scattered urbanization; 3) to allot land for a wide range of public uses: 4) to preserve and make accessible areas of scenic and historic interest; 5) to develop a balanced transportation system; 6) to cooperate with the military in land needs; and 7) to encourage localities to adopt ordinances insuring orderly and attractive community growth (Honolulu's stiff antibillboard ordinance is not a bad start).

If the problems are familiar, the locale is unique. As U. S. population continues to shift west, and looks to new vacation and retirement lands, Hawaii is bound to grow as a major national playground of one sort or another. But Hawaiians would do well to guard their special gifts, or the real paradise could be lost. The architecture of the 50th state is becoming as spectacular as its scene (top to bottom): an entrance gallery of Honolulu's new Ala Moana Shopping Center, by Architects John Graham & Co., and its vast doubledecked parking; the thin-shell concrete of Windward City Shopping Center by Architects Wimberly & Cook: Oahu's Waianae High School, by Lemmon, Freeth, Haines & Jones; the prestressed concrete structure of the new Diamond Head Apartments by Vladimir Ossipoff; Waikiki's Surfrider Hotel, by Gardner Dailey; a new sunscreened branch of the Bishop National Bank, by Wimberly & Cook; the University of Hawaii's Methodist House by Lemmon, Freeth, Haines & Jones; Honolulu's Palolo public housing, by Edwin Bauer; Kauai's St. Sylvester Church, by Bauer & McAuliffe; and Welton Becket's glittering Hawaiian Village dome



















KAM





### **Bright Ideas**

### Cheaper school bonds . . . textured concrete . . . up-and-down stages

**?** How to obtain lower interest rates on school bonds despite the rising cost of building money.

Have a central agency spread the risk by selling consolidated bond issues secured by the reserves and taxing power of many school districts.

Whether the borrower is an individual or a community, the higher the credit rating or the greater the security, the lower the risk and the lower the interest rate. In some cases, the security can be increased and the interest rate lowered by pooling or spreading the risk, as the insurance companies do.

Last month the state of Pennsylvania demonstrated how this theory may be applied to school financing. The State's Public School Authority issued a new type of bond that will reduce interest costs for local school districts that finance their construction through this agency. Previously this authority had sold a separate bond issue for each school district which needed money for new schools. The buildings were then erected under a lease-purchase type of arrangement with the authority. These bonds were not direct obligations of the state, but were backed by the "rents" each school district pledged to pay to the authority and by the income or taxing power of each district. (In addition, the State Department of Education was required to withhold state aid money from any district in arrears in its "rent" payments to the authority, and to send this money directly to the authority to be applied against the school district's "rent" payments.)

Under the new system the Authority sells a single consolidated bond issue which covers a whole group of school districts at once (the initial \$16 million issue will finance 12 schools in ten school districts). Most important, the new bonds include a clause

that pledges the consolidated "rents" and taxing power of all of the districts participating in the state plan to make good the default of any one district. Thus, the bond purchaser does not have to be concerned about the ability of any single district to meet its obligations; this risk has been minimized through the pooling procedure. The state authority charges each participating school district a "rent" calculated to cover its debt service 1.2 times. The extra margin of payment is allocated to a redemption account and to a general reserve fund which the authority may use to cover the default of any individual district. The authority is not therefore restricted to individual reserves for each separate district.

No direct comparison can be made between interest costs for individual school districts, each having a separate credit rating, and the cost on a consolidated issue with the added feature of pooled risk and security. Over all, however, the Authority's financial advisors believe that the average saving for all school districts that participate in the new plan will probably range between ¼ and ½ per cent.

**?** How to obtain attractive textured surfaces for precast concrete panels.

When making the panels, line the forms with various materials that will impress interesting patterns in the concrete.

Concrete does not have to be dull and uninteresting. Several recent examples illustrate simple, inexpensive ways to give it interesting texture and character.

The exterior wall surface of Yahannan's Restaurant in the Lennox Square Shopping Center in Atlanta, for instance, has a random pattern of tan and brown two- to three-inch



exposed aggregate (see photo). This effect was obtained by making large precast panels in forms in which the stones were set by hand in a shallow bed of sand. After the panels had cured, the sand was brushed off the face of the panel leaving the stones exposed.

For the Pearson Candy Co. warehouse in St. Paul, the owner wanted a dense, bumpy concrete wall surface that would present an interesting appearance and discourage children from marking on it. This was obtained by placing a layer of gravel in the bottom of the form and covering it with a sheet of plastic. The



finished panel has a dimpled texture (photo, above) imparted by the stone mold.

A wrinkled texture (photo, below) may be produced by lining the form with crumpled wax paper.



**?** How to provide stage facilities in a community building without sacrifice of floor area for other purposes.

Install a theater-type elevator platform that rises from the floor level to form a stage or dais.



For some community affairs, such as head-table dinners, lectures, forums, concerts, and dramatic presentations, it is an advantage to have a dais or stage. For other events, such as bazaars, dances, and receptions, only a large unencumbered floor area is required. For an institution that can afford only one large assembly space this presents a constant problem, usually solved by the laborious job of moving temporary stage or platform facilities in and out for different events, and storing this impedimenta when not in use.

In the auditorium of the New Hurley Reformed Church in Wallkill, N.Y. a device of the modern theater was used to avoid this annoying situation. At one end of the auditorium a large, 15 by 30 foot section of the floor can be raised as high as 3 feet above the floor any time there is need for stage facilities, a platform, or a dais. This stage (see photo) is lifted by two huge oil-hydraulic cylinders powered by an electric motor oil pump and is sustained by supporting blocks when carrying a live load. When not in use the platform is lowered to become another section of the floor. This installation cost about \$20,000. (For about \$30,000 a four-cylinder fully self-sustaining unit could have been installed.) END

### New Architectural Concepts in Fire-Toughened Tempar-Glas VIRGINIA GLASS PRODUCTS CORPORATION

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WHITE—Stress BLACK—Temp. C—Compression

T=Tension

Graph shows radical temperature changes at sudden air-blast quenching, which follows intense heat of Tempar-Glas furnaces.





# For a growing hospital... comfort conditioning



Mary Washington Hospital, Fredericksburg, started back in 1899 in a five-room frame cottage. Today, after 61 years of progress and steady growth, the Hospital boasts 150 beds, a 20-bassinet nursery and completely modern facilities throughout . . . including Acme-system comfort conditioning for the recently added third and fourth floor nursing units.

The patients, of course, are the primary beneficiaries of the year 'round comfort that Acme air conditioning provides but they're not alone in their appreciation, for John T. Ellington, Fredericksburg contractor who installed the system, had this to say... "When I take on a job, I prefer to buy from one manufacturer, if the equipment meets specifications. I selected Acme because their equipment not only met specifications, but was available for fast delivery so we could meet our deadline. Further, there were no installation problems with the Acme chiller, cooling tower or multi-zone air handler. These units are factory assembled and pre-tested ... no need to assemble on the job. I just put them in the building and hooked them up."

Mr. Ellington stated, too, that "this June will complete two years of continuous operation and there hasn't been a service call involving the Acme equipment."

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## Abroad

### A continuing review of international building





#### BERLIN UPLIFT

Berlin's Church of the Epiphany was left as an empty, roofless shell after 1945. Various attempts were made to restore it, but none succeeded until Architect Konrad Sage decided to span the shakey brick walls with a lightweight truss of aluminum pyramids (being assembled in photo below). Besides weight (8 tons), other technical advantages of Sage's solution are that the roof lets in more light to the church from above and serves as an excellent acoustical baffle. Architecturally, the strong but light roof gives the church an upward lift that can be felt within and without.







#### LONDON SERVICE

London's most thoroughly contemporary corporate tower (in terms of mechanical systems) is the 13-story Castrol House, designed by Architects Gollins, Melvin, Ward & Partners. If it had not been for the municipal planning authority (which did not permit four additional stories to be added to the tower) and the owners (who insisted that the entire site be built on), the building might also have made an architectural and planning contribution to London's downtown.

#### SWISS SILO

Another sort of tower is this 100 foot Swiss silo convenient to the Lausanne rail yards. The silo's striking, angular stair tower (at right in photo) is split by a glass divider so that officers on their way up to the penthouse board room may see how far they are rising. Below the offices and above the 3,300ton storage area is a mezzanine floor housing the complex grain-sorting and distribution system.









#### GERMAN FLEXIBILITY

The new principle of flexibility in apartment planning (FORUM, May '60) has arrived in Germany. In Gustav Hassenpfulg's design for a 16-story "point tower" along Berlin's apartment row in the Hansa section, no columns or bearing walls are required between the inner core and outer wall, giving tenants a choice of partition arrangements. The two alternatives shown with the floor plan at left convert a balcony into interior space; one for a larger living room, the other for an extra room in a doctor's office.

#### ROMAN CULTURE

The winning design in Italy's national competition for a cultural center in the heart of Rome was by Architect Manfredi Nicoletti. His plan is to raise a 14-acre platform some 15 feet above the ancient urban grid, to put parking beneath the platform and five building groups atop it. The center will be made economically feasible by a block of shops (separated from other buildings by the elongated water strip—see model photo, right) and by an office building, but will be more notable for its modern art museum, university laboratories, and high-rise National Library. The library's four towers of stacks, joined at the center by a glass stair well, rise above the low-lying reading rooms and the museum (above).



HOTOS: COURTESY "LABORATORIO FOTOTECNICO IND

Abroad contd.







#### RIO CULTURE

On a magnificent site in the harbor of Rio de Janeiro, Architect Affonso Reidy has designed a cultural center composed of an art school (top block in model photo, right), a library and exhibition hall, and a theater. The school is already built and is joined to the nearly completed library by a bridge and a sculpture garden designed by Burle Marx. The library is a threestory glass cage hung within a W-shaped concrete frame shown in construction, above.



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### Books

### Sullivan's lives . . . parks' demands . . . AIA's products

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LOUIS SULLIVAN AS HE LIVED. By Willard Connely. Published by Horizon Press, New York, N.Y. 322 pp. 5%/" x 9%/". Illus. \$6.50.

Willard Connely's achievement in writing the first definitive biography of Louis Sullivan is, substantially, to thicken the image of his tragedy, until now only illusory. For certain it is that Louis Sullivan was a tragic figure and therein lies one condition of the response to his work, undiminished 36 years after his death.

But Sullivan's tragedy is not pathetic, for although he carried seeds of it within himself, he never stopped fighting it. This is good to know, and Connely's new book relates it heartfully.

At the same time, the new biography details with precision the day-by-day life of Sullivan's incredible career. It tells where he lived, who worked for him, and who his friends were. It tells about his close friendship with his brother and some of the details about his ill-starred marriage. There are, too, vignettes worth telling for themselves. There is, for example, the story of Frank Lloyd Wright poking around the art shops and book stores collecting for the master's Lake Park house. There is the picture of George Elmslie, for some strange reason later appointed Sullivan's literary executor by his friends, sweeping Sullivan's own valued drawings into the waste basket. There is, again, the scene at Owatonna, Minn., when, desperately wanting the work, Sullivan nevertheless told the school board off and thereby lost the job.

It is undoubtedly an oversimplification, but if there were easy reasons for Sullivan's wasted last years, they had less to do with a conspiracy of philistines and more to do with his imperiousness, his pride, and his monumental temper. They not only lost him work, they lost him every human relationship that meant anything to him. They lost him his brother, his wife, his partner, and his ablest assistants. Yet many came back, and others stuck hard, and kept him alive and going to the end.

This story, of a man who lived out a

quarter century after his largest triumphs like a Greek tragedy, is untold in his own autobiography.

"His autobiography," writes Connely of the previous book's publication by the A.I.A. at almost the moment of his death in 1924, "turned out to be a semibiography, for it broke off with the World's Fair in 1893. Up to that point it presented a certain record without which Sullivan, as a man and a character, although not as an architect, would have been almost lost to history, even as Shakespeare."

It is little wonder that Sullivan, looking back at nearly half his life when his overwhelming abilities had ceased being effectively used, should shrink from discussion of it. But it is a wonder that he could then write about the early part of his life-his triumph-"glowing with the fire of youth recaptured" as Connely puts it. Unfortunately, this is a wonder Connely does not penetrate. Of Sullivan's triumph and tragedy, and his persistent fight, Connely writes sympathetically and with scholarly detail. For Sullivan's continued zest and persisting hope, one must read between the lines. This, for anyone interested in the giant of modern architecture, is well worth doing.

THE DYNAMICS OF PARK DEMAND. By Marion Clawson. Published by Regional Plan Association, Inc., 230 West 41st St., New York 36, N.Y. 40 pp. 81/4" x 11". Illus. \$3.

If there are any remaining doubts about America's critical need to preserve open recreation space, and do it fast, this slim volume should dispel them. Prepared for New York's Metropolitan Regional Council and Regional Plan Association by Dr. Marion Clawson, eminent land economist of Resources for the Future, it outlines in hard facts and figures a frightening growth by 1985: population gains of 60 to 75 per cent, a near doubling of personal income, shorter working hours and more vacations, fast increases in mobility. Add to these the increasing tensions of urban living and Americans' discovery of the "good life," and Dr. Clawson finds that demand for outdoor recreation in New York region municipalities will more than double, while demand for county and state parks will rise five to eight times.

Together with a preceding report (The Law of Open Space) and two more to come soon (Nature in the Metropolis, The Race for Open Space), this book is a document to be read, and used, by Americans concerned about their crowding nation.

continued on page 166

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TEMPRITE PRODUCTS CORPORATION BIRMINGHAM, MICHIGAN Manufacturers of a complete line of electric drinking water coolers 1960 BUILDING PRODUCTS REGISTER AIA. Edited by Theodore W. Dominick, A.I.A. Published by The American Institute of Architects, Washington 6, D.C. 326 pp. 9" x 11". \$25.

Books contd.

This is a remarkable index to the American building industry and its products. It was compiled over a period of almost ten years, and it will now be reissued annually, with additions, corrections, and elaborations. In all probability, the *Register* will become the most important reference book available to architects and builders in the U.S.

The reason is that here, for the first time, an attempt has been made to anaalyze, in compact form, all available building materials in the many different phases of construction. Thus it is now possible to compare performance standards of similar materials produced by competing manufacturers—indeed, to discover what standards of performance need to be specified in each category. The book will be of particular importance to job captains and specifications writers, who will find it an excellent guide both to available materials, and to more detailed technical data about such materials.

Needless to say, this first issue of the *Register* is merely a beginning, however impressive. Before long it will be necessary to establish uniform testing procedures by which materials may be evaluated, and a more effective method of compiling information on all available materials. To achieve both objectives, the editor of the *Register* will need help from the profession and the industry as a whole. Meanwhile, this is a big forward step toward making American building scientific.

THE TECHNIQUES OF URBAN ECONOMIC ANALYSIS. Edited by Ralph W. Pfouts. Published by Chandler-Davis Publishing Co., P. O. Box 36, West Trenton, N.J. 410 pp. 51/2" x 81/2". Soft cover, \$4.25; Hard cover, \$5.

This is a highly technical volume which analyzes the pros and cons of the economic base theory of urban economic analysis. For several years, this theory, which holds that urban growth is primarily dependent on growth of "basic industries" (i.e., industries which import goods and capital from outside the city) has been a center of controversy among urban economists. While most agree that some sort of theoretical tool is vital to an understanding of the phenomena of urban growth, and essential to forecasting, there has been little agreement on the efficacy of the economic base theory, which many economists feel is too narrow, and useful only for analysis of small communities. This volume professes to follow a neutral course and to present the arguments for and against the conventional approach. In fact, the later chapters, which muster ammunition in favor of the newer input-output metropolitan analysis, are a pretty solid indication that the economic base theory is on its way out. END



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Excerpts

New architects . . . tragic embassy . . . mobile workers

### INSIDE THE ARCHITECT

Dean Philip Youtz of Michigan University's College of Architecture and Design was asked to give a portrait of the architect when speaking of the Detroit Architectural Sales Representatives' Institute.

The image of the architect has changed radically in our century. For one thing his clients are different. He rarely works for an individual unless he is designing a house. In most jobs he is commissioned by a corporation of some kind, the board of directors of a bank or store or real estate company. Where formerly he worked directly with the school principal or superintendent, he now meets with the school board and explains his ideas to the Parent-Teachers Associations.

In addition to being an applied art and a practical science, architecture is also becoming a business. In both small and large offices, the salesman encounters men who are managers and who may do very little designing or calculation. This group of architects has specialized on the executive functions of architecture, and its members talk the same language as the businessmen who are their clients. This new architect is cost-conscious to a high degree. Often he seems oriented as much toward economics as toward esthetics or structures.

The modern architect is the leader of a growing number of specialists whose knowledge is needed for the successful planning and execution of a modern building. Many of this group work outside the architect's office so that the task of coordinating their efforts on the project may demand considerable diplomacy. To mention a few of these men, there is the realtor, the planner representing the city, the banker or mortgage man, the engineer, the manufacturers of structural and mechanical components, the suppliers of basic materials, the lawyer, the contractor and subcontractors, the interior designer, the landscape architect, the furnishings manufacturer, and the renting agent. The erecting of a building has become a group undertaking requiring the pooling of many types of technical skill and of specialized knowledge. The advantages of this new organized approach to the building job are the sharing of a responsibility and the competent assistance on all phases of the work. The disadvantages are the wellknown frustrations of committee action. A good many buildings are war memorials reflecting the battles of experts.

The image of the architect has changed to meet the new conditions of our industrial economy. Formerly the architect was a historian and a scholar seeking his patterns in the past. This was true even as recently as when I attended professional school and struggled with Beaux-Arts problems. To show you how this has changed, I recently attended the annual meeting of the Archaeological Institute in New York. I found scholars, linguists, and experts on chronology, but no architects. Today, when architects travel they study contemporary buildings and compare notes with their colleagues abroad on the latest new developments. Architecture has become a contemporary profession reflecting the current progress of society. The architect now designs for the future not the past.



#### THE LION AND THE EAGLE

Britons continue to have mixed feelings about the new U.S. Embassy in London, designed by Eero Saarinen. One of the most mixed criticisms was written by R. Furneaux Jordan in "The Observer."

Is it not just that in London Mr. Saarinen was instructed to do the wrong thing?

This was a rot that we began, 30 years ago, with our absurd William and Mary Embassy in Washington. Yet that hardly excuses Mr. Stone's Hollywood set in Delhi, nor this more subtle blunder in Grosvenor Square.

First, however, on the credit side, let us be thankful that a conscious, positive, and unapologetic architectural statement has been made. Second, let us be thankful that the whole of one side of a big London square has been rebuilt to a single design.

Third, the building has good scale. The tall ground floor, with its hint of magnificence behind, is a podium for the rest of the building. Its height is intensified by the small scale of the upper stories. The lower floor is a foil to the rest—that is good.

What then has gone wrong? The building falls between two stools—diplomatic delicacy and American status-seeking.

Diplomatic immunity from building and continued on page 174





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### Excerpts contd.

planning regulations left the State Department free to build a mile-high skyscraper if it wished. Therefore it became coy and polite; it fell over backward in telling its architect to remember the Georgian scale of Grosvenor Square. There is no Georgian architecture in Grosvenor Square. Hence the false humility—the Georgian proportions and height.

Then the other "stool"—the status line —came into action. For all its sham politeness this building had also to be American, new, crisp, and glamorous. Hence the rather aggressive, staccato modeling of the façade, the perpetual gilding, the costume jewelry that overbedecks it all. Every detail contradicts the original and overpolite intentions.

The rather childish controversy over the zenophobic nature of the 35-foot golden eagle—which has yet to come—is false. The eagle is consistent with the architecture which in its turn is consistent with the tragedy of Americanism.

### ARCHITECTS AND WORKMEN

The "Inland Architect" recently gave an intimate view of the on-site relations between architects and workmen.

An architect's day in the field is spent in close association with the American construction worker.

That worker today is a rugged, though motorized individual. Today everyone drives his own car and carries his workshop in his trunk. Many job sites look like suburban train stations with the multitude of vehicles, from the most modest Ford to the Coupe de Ville.

Of all the tradesmen, the glaziers are the most amusing; the plumbers the most complacent. The roofers seem to be the most careless (probably the nature of their trade); the carpenters the most fastidious. The masons are jolly, but the electricians are far too independent. The cement masons work the hardest, but the machine operators seem to accomplish more in the working day. The sheet metal men work the shortest day, and the dry wallers are usually the last to leave.

The universal problem in the building trades today is the undependability of the workers. There are days when no one shows up, and the job is at a complete standstill only to follow the next day with eight different tradesmen all showing up and in each other's way. The building trades do have their prima donnas, as I suppose do our own ranks. Too few of them use independent thought. They insist on ideal conditions in relation to weather, sequence of work, and ease of installation.

Some tradesmen work through rain, snow, and extreme cold; others pack their tools and retreat to the comfort of their automobiles at the slightest suggestion of foul weather. For the most part the building trades craftsmen know their specific trade, and we architects can learn much from them.

continued on page 178



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Water retention is the ability of a mortar to retain its moisture longer, and hence its plasticity, when spread out on porous brick or block.

Because of its inherent physical characteristics, plus the air-entraining agent intermixed into Brixment during manufacture, Brixment mortar has very high water-retaining capacity. It resists the sucking action of the brick. It gives the bricklayer more time to bed the brick properly before the mortar stiffens, thus helping to secure a good bond.

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### BRIXMENT MORTAR ALSO COMBINES THESE 8 OTHER ESSENTIAL CHARACTERISTICS



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IMPRESSED WITH SMOOTH OPERATION ... "Our Directors and I decided to modernize our elevators. We took the Westinghouse Eye-Opener Demonstration and were very much impressed with the smooth operation of the elevators. Result ... we bought Westinghouse Elevators for the Hazleton National Bank Building."



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ALL YOU DO IS PRESS A BUTTON ... "The Westinghouse elevator demonstration proved to me that here was one of the truly outstanding examples of automation. All you do is press a button and a computer takes over. It measures time, weighs passenger load, counts cars and corridor calls, and dispatches cars to where they are needed. It's remarkable."



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WESTINGHOUSE ELEVATORS AND ELECTRIC STAIRWAYS

#### **DESIGN FOR TAXATION**

The Ford Foundation's Paul N. Ylvisaker, who believes that municipal taxing and spending as currently practiced are fairly primitive arts, recently made a number of advanced suggestions to the New Jersey State Planning Conference.

1. Local government, and for that matter all three levels of government, ought to broaden and diversify their tax base. Reliance on the property tax as the major source of local revenue is a prime example of a built-in encouragement to irrational patterns of local action and expenditure. 2. I would also invite more sharing among governments in the same revenues and services. Only partly as a way of equalizing the tax burden and tax resources; more so because the principle of shared interests introduces diverse ways of looking at the same problem. Local government needs the additional perspective on its problems of state and federal outlooks, and even though I'm a local-



government man at heart, I would admit that the prod of an occasional state or federal standard imposed from the outside, the stimulus of an occasional clash of interests, does a whale of a lot to keep us from the sleep into which we too naturally otherwise fall.

The same principle applies horizontally as well as vertically. To give an example, it's about time suburb and central city sat down and had a long argument about the relative merits of spending available tax dollars on renewing old cities and building new suburbs.

3. We need a variety of facilities to tackle planning, and along with this a perspective on urban development which will make long-range planning something more than an exercise in unreality. Business, if run well, should be planning five years ahead; families, for the 10 to 20 year span of their children's education; but governments, at the very least, for the whole life of the next generation.

We obviously need a method for deciding which expenditures made now will save money in the future: a prime case in point is the acquisition now rather than too late of open land whose future uses for recreation, drainage, transportation routes, etc., is already apparent. Another case is the reorientation of tax and urban renewal policy to encourage rather than discourage the conservation of residential property and by providing some form of a depreciation account to avert the present end result of slum profiteering followed by the costliest public acquisition and demolition.

4. Is there anything that can be done to prepare the governmental executive and John Q. Taxpayer more adequately for the healthy and profitable "battle" which must everlastingly go on between them—the political campaign of sales and resistance? There still are not the facilities for explaining and selling the services of government which are accepted as givens (in fact, considered normal operating costs) by private industry.

Unless the politician and planner have the facilities—and with them the obligation—to spread regularly before us what "public products" they are selling, what claims they can make for these products, what price tags are attached, and how these services are supposed to fit into a coherent package, taxpayers are forced to buy unspecified assortments of pigs in unfathomable layers of poke.

To match the advantage such an "advertising account" might give the sellers, we ought to give the taxpayer some consumer protections which would fill the massive gaps between the occasional election, general jury investigation, Hoover Commission, and newspaper editorials our judgments now get lost in. Citizen's budget commissions — especially when they have risen above the short-run interests which too often have created or captured them—are prototypes of the institution, or process, I'm groping toward.



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Simplified cross sections of ceiling-to-floor-above areas show old way left and Q-Air Floor right. Average compaction is one foot.

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cities they are frequently prevented from attaining the same professional status as whites. Negro doctors, for instance, are generally excluded from practicing in most voluntary hospitals.

even as doctors and lawyers in northern

"By and large," says Raymond Vernon in his Anatomy of a Metropolis, "the distribution of jobs influences the distribution of population far more than the other way around." The jobs that are open to the new urbanite are most often found in center city or on its fringes in so-called "gray areas." The newcomer is restricted not only to jobs which his limited skills and the community's bias dictate, but also to jobs reached easily and cheaply by public transportation.

Economic insecurity causes the new urbanites to see advantages in living at the congested center of the labor market, and social insecurity causes them to huddle together in groups of their own kind in the cheapest possible housing. Poor housing is no deterrent to a sharecropper family that has lived six or seven to a crumbling wooden shack with no sanitary facilities whatever. And, if the price of urban slum housing seems outrageously expensive (as much as \$28 a week for a two-room apartment), the new urbanite manages to afford it, particularly if his wife works also. A majority do, contributing to the family's income, and also to the family's instability, a major dilemma.

The confluence of new urbanites by the thousands in the fifties has set off a massive explosion of slums and devastating congestion in the worst, most obsolescent housing in center cities. The trickle-down theory of housing has worked to the extent that in most northern cities well-to-do Negro families (usually at least second-generation city dwellers) move into marginal areas previously occupied by lower-income white families. But these families and areas in turn are constantly pressed by the daily influx of newcomers, who start through the same cycle: living first with friends or relatives, then in rooming houses, then moving to converted tenements divided into more pieces than a Swedish wedding cake. The only people who profit from this pattern are the slumlords and unscrupulous real estate dealers who help break down previously

white neighborhoods to get housing prices considerably higher (25 to 30 per cent higher in some cities) than those that white home buyers will pay.

#### Forced school segregation

The pattern of residential segregation in turn sets a pattern of school segregation that works every bit as effectively in the North as in the Deep South. Because new urbanites are usually compressed in the oldest parts of central cities, they must send their children to the oldest, most obsolescent schools. Their children, instead of being made a part of the diversity of peoples that converts a city into a fundamental instrument of democracy. are shut off from the vitality of other races and cultures. This kind of segregation is one of the most oppressive shackles on the development of a strong, new urban society, and it cannot be broken by anything less than complete freedom to choose living and educational accommodations. New York's experiment in transporting a few school children out of the ghetto long distances in an effort to by-pass residential segregation is not working, and many school authorities doubt that it will work.

The problem of school segregation is further intensified by the many teachers who commute from the suburbs, with no vital interest in the long-term welfare of the community in which they teach. In such circumstances teachers become, as Dr. Dan Dodson of New York University has observed. "trained bureaucrats who are not essentially different from those trained by colonial powers for service in their undeveloped possessions." If schools are thus neutralized in their traditional role as assimilators of new citizens, there is little hope that other institutions can take up the slack.

Most big cities have made serious efforts to build a school system to solve the problem. New York, of course, has had the most difficult time, for many of its newcomers are Puerto Ricans, 50 per cent of whom on disembarkation do not even speak English. The city has hired large numbers of Spanishspeaking teachers, set up special school curricula for slow learners (a majority in some schools), and made a concerted effort to cut down the num-

For the new urbanite, a first fumbling step toward freedom.



ber of "drop-outs" from junior high and high schools. Yet schools in new urbanite neighborhoods are generally far inferior to those in other areas. In Baltimore, the Citizens Housing & Planning Council, a private group, has been coordinating its work with the schools in recent years, as the primary step to helping new urbanites acquire urban living techniques, and believes that the effort has been highly rewarding. And in Washington, a policy of assigning or promoting teachers based on a merit system has been termed instrumental in raising the level of public school education since schools were fully integrated in 1954.

The Supreme Court's 1954 decision barring educational segregation made it clear that "separate but equal" facilities were, in fact, unequal. Yet most northern cities so far have not advanced much further than many southern cities in this respect. New York, which is as advanced as any, is still being strangled by fiscal attitudes which have, to quote Dr. Dan Dodson again, the effect of relegating new urbanites to a status of "permanent, uneducated, unskilled and exploited cheap industrial-type occupations." The only conscionable solution to the key problem of equal education is to develop a completely free environment, total rejection of residential segregation.

### Needed: order and purpose

"The genuine problems of social disorder in which Negroes and Puerto Ricans are involved." says Oscar Handlin, historian and author of The Newcomers, "can best be solved through the development of communal institutions under responsible leadership, that will give order and purpose to their lives." The development of "communal institutions" and such "responsible leadership" has been painfully slow. For one thing, the exodus of middle-income families to the suburbs has sapped many cities of their vitality and deprived political leadership of the background of a well-educated, fairly prosperous electorate that breeds responsibility.

A tragically small number of large northern cities have made dramatic efforts to strike to the heart of the total problem. One of these is Philadelphia, where housing standards for Negroes have been rising rapidly, a comparatively free housing market has developed within the city (Negro home ownership has risen 90 per cent in six years), and job opportunities have been increasing for all, regardless of color. Industry has been moving back toward the city, particularly in search of skilled labor. This not only is providing opportunities for many skilled nonwhites, but is reducing the attraction of unskilled newcomers to the city. Much of the credit for this salutary turn of events goes to a progressive city administration, which has battled strongly against residential segregation and has taken many actions to equalize job and housing opportunities. The city's Human Relations Commission recently urged Negroes to buy homes in all-white neighborhoods, with inevitable criticism from the Board of Realtors. Commission Chairman John R. Carroll replied simply that the advice "is based on our conviction that racial segregation is a major threat to the economic stability and health and welfare of our city."

Many observers blame Negroes themselves for a lack of support in city efforts toward equalization, and there appears to be a Negro power vacuum in most cities. In New York, which has more Negroes than any other city, no Negro political leader has yet appeared who has worked independently of Tammany Hall, with the exception of Congressman Adam Clayton Powell, who has done almost nothing to ease directly the problems of urban life for his district's citizens. And the recent court troubles of Powell (for income-tax evasion) and Manhattan Borough President Hulan Jack (on conspiracy charges) have done great damage to future leadership, according to several Negro intellectuals. As Edward Holmgren of Chicago's Urban League says: "Negro politicians get their patronage and influence in the ward and keep quiet about civil rights, housing, and employment, and do not press for integration."

The lack of political leadership hits the new urbanites particularly hard, for they are by and large the most oppressed of an oppressed minority. Yet in most northern cities middleclass Negroes themselves shun the *continued on page 194* 

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### THE NEW URBANITES continued from page 191

newcomers. Edward Holmgren maintains that "middle-class Negroes have an absolute abhorrence for lower-class Negroes. They feel that the lower classes bring them into disrepute and oppobrium." This schism not only creates tension among Negroes, but makes it more difficult for the new urbanites to assimilate socially and culturally within their own communities.

### Not yet a full response

So far, no political device has been concocted that insures a completely free housing market. This failure includes such city laws as New York's, which forbids discrimination in the sale or rental of private housing. Urban renewal was largely devised to end the growing imbalance of urban populations, which was much less apparent in 1949 than it is today. Yet that program has intensified residential segregation and speeded more white families to the suburbs than it has attracted back to the city. Morton Grodzins, of the University of Chicago, contends that the renewal program is too small, and cannot do the whole job. "Anything less than a massive program may have admirable local effects for particular population factions, but does not attack the basic problem of bifurcation of races on urban-suburban lines." And Robert Weaver believes that "in the wake of new slums and blight created by the relocation incident to urban renewal, more pressure has been placed upon middle-income white families to leave the city."

The new urbanites will some day become as valuable citizens as the migrants who flooded into New York, Boston, Chicago, Philadelphia, and other great cities in the late nineteenth century. Neither the cities themselves, nor their private citizens, have fully responded as yet to the latest challenge, nor have they met the problem of basic injustice which overshadows it. Says Oscar Handlin: "The experience of the past offers a solid foundation for the belief that the newest immigrants will come to play as useful a role as any of their predecessors. They themselves need only show the will and energy and their neighbors the tolerance to make it possible." END



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william zeckendorf continued from page 131

1958, W & K's cumulative profits before federal taxes totaled \$13.1 million. Contributing to this, however, were \$45.3 million of profits from the disposal of capital assets (and the company would have registered a loss in each of these years if it had not harvested these \$45.3 million of profits from its obviously successful capitalgeneration operations). Indeed, unless it takes big profits by liquidating some of its holdings from time to time, W & K is almost bound to show occasional operating loses, he explains. The book loss in 1958 was caused partly by the fact that few properties were sold that year-capital appreciation profits taken that year were only \$4.2 million, compared with \$10 million in 1956, and \$14.8 million in 1957.

One other reason why W & K's realized profits have not been higher is because its expenses are high-particularly administrative and corporate expenses over and above regular operating expenses on real estate holdings. For the six years from 1953 through 1958 these totaled \$31 million, and in 1958 alone amounted to \$7 million. Zeckendorf holds that these expenditures for a top-notch staff and design department and for project promotion and similar purposes all help create and advance the capital generation objectives of the company and that this money must be plowed back into the company to stimulate growth and future incomeboth operating profits and capital appreciation. Nevertheless, an effort is now being made to trim this large overhead as much as 50 per cent this year.

Part of this retrenchment will include disbanding of W & K's own design department headed by Architect I. M. Pei, an operation that was costing approximately \$1 million a year. Pei established his own architectural office some time ago, and in the future W & K will continue to use the services of this office, but on a contract basis. Much of Zeckendorf's success in building ventures can be attributed to his insistence on good design and his willingness to spend the extra sums necessary to get it.

### A riddle answered

Instead of talking at length about profits—or the lack of them—Zeckendorf in his annual reports repeatedly *continued on page 198* 



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This new skyscraper has a basement full of train tracks



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gineers & Contractors, Greensburg, Pa., D. R. Stough, Manager



calls attention to the steady growth in the net liquidating value of W & K common stock. From 1952 when it was first traded on the American Stock Exchange to Dec. 31, 1958, its stated value has risen from 65 cents a share to more than \$6 a share, after satisfaction of all outstanding indebtedness and obligations but before income taxes on capital enhancement. On the other hand the 1958 W & K balance sheet, after deducting its main debt items, totaling \$181 million, indicates a liquidating value of less than \$2 a share.

Last month, Zeckendorf answered this riddle. His estimate of net liquidating value in his annual report is based on an annual appraisal by the company's officers of each property on its books at the end of each year. But these appraisals are not the company's book values (costs or costs less depreciation) for these properties and are not otherwise used in the annual report.

According to these appraisals, W & K real estate investments at the close of 1958 were worth \$248 million, or \$102 million better than net book values of \$146 million. On the other hand the value of many of the securities and other investments, including mortgages held by W & K, were downgraded by the officers. These receivables, with face values or costs that totaled \$26.8 million, were carried at a market value of only \$18.8 million, or discounted 30 per cent.

Zeckendorf says the validity of these real estate appraisals can be judged by the fact that over the years W & K properties have almost invariably been sold at prices equal to the officers' appraisals, or better. For example, the \$45.3 million of capital profits realized between 1953 and 1958 reflect sales totaling \$45.3 million more than acquisition or book values.

To reassure stockholders on the merits of these officers' appraisals, Zeckendorf also wrote in his 1958 annual report: "Your company retained two independent appraisers . . . to check some of the officers' values. After examining certain properties selected at random (with no opinion expressed as to properties not examined), these companies stated that their appraisals of the properties examined are in reasonable accord with your officers' values."



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## GLASWELD-PURE COLOR, PURE DESIGN

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In the Sunday School wing, blue Glasweld window insert panels set off the rough textures and subdued tones of the brick and wood exterior.

Interior view of white Glasweld outside wall (opposite page) accentuates the contrasting wood battens and delicate colors of stained glass.



The geometric design of the interior of the steeple, paneled in white Glasweld, as it is seen, star-shaped, from directly below.



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### william zeckendorf continued on page 198

### Hope for stockholders

Zeckendorf also faces another riddle. With W & K's net liquidating value constantly rising, but with arrears on its \$6-a-year cumulative first-preferred stock amounting to \$48.75 per share (this has been worked down from \$116 per share in December, 1952), the question arises: when will W & K's common stockholders begin receiving dividends. or benefit from all the capital generation W & K has achieved? This, says Zeckendorf, is a problem of how to get the "golden eggs" out of the hen without killing the bird. He is studying several plans to do this but is not ready to discuss them publicly. Nevertheless, he has demonstrated considerable confidence of his own in W & K common stock. Under a pending capital structure reorganization plan he will exchange a one-million share issue of \$1.50-a-year cumulative second-preferred stock (almost the entire issue owned by Zeckendorf) for 8 million shares of newly issued common stock. This reshuffle will increase total common stock to 28 million shares and give Zeckendorf and his family control of a little more than 50 per cent. It indicates that he will have to be sensitive to the interests of holders of the common stock, for under this plan he will receive no dividends until other common stockholders do.

There is also assurance for investors in the conservative guide lines that W & K is following in its redevelopment activities. As a rule the company is interested only in projects in cities of at least 100,000 population and within walk-to-work distances of the central business districts. It prefers projects that are eligible for FHA-insured multifamily housing mortgages, and, before making any commitments, it completes an extensive housing market analysis and relates prospective rents to those that will be approved by FHA.

Comforting, too, is the fact that future operations in this field will require less cash than in the past. Until recently, the cost of generating and planning W & K's extensive program of Title I projects was in the range of \$2 million a year, but, as more and more have moved into the execution stage, this burden is easing, and FHA's liberal urban renewal mortgage commitments will usually carry the projects *continued on page 210*  One of the most exciting "specifiable" products to Grant Pulley & Hardware Corporation arrive on the architectural scene in years is Grant's Gold Closet Rod A dramatic departure in design and i function from any such product Gold anodized ON GRANT'S NEW GOLD CLOSET ROD! track, smart black nylon "snap-in" carriers, simple NAME: installation and great durability have combined to win FIRM NAME: praise from architects, builders and consumers alike ADDRESS: Write today for complete specification data

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#### WILLIAM ZECKENDORF continued from page 202

to completion without the need for quantities of cash.

Moreover, the small amount of W & K cash put to work in these projects produces relatively big returns. Zeckendorf says that the \$50-million Park West Village Title I project which W & K is erecting in New York willafter completion-show a profit of \$1.5 million a year: "that's equal to all the cash we put in it." Zeckendorf esti-

mates that the cash needed for developing a Title I housing project is usually two or three times prospective net annual income-plus, it might be added, three or four years of sweat and tribulations and an inestimable quantity of real estate experience and know-how.

In the hotel field, second only to the office building field in the W & K sphere of interest, the company is also steering a conservative course. Son



William Zeckendorf Jr., executive vice president and hotel operations chief, says that the company is interested in hotels in only five large metropolitan cities: New York, Chicago, San Francisco, Los Angeles, and Washington. (Motel competition deters hotel investment elsewhere.) Hotel investment appeals to Zeckendorf-and for three good reasons: 1) the return on invested capital is higher than in most other real estate situations, as high as 30 to 40 per cent in favorable cases; 2) the profit potential is not limited by long-term leases, for room rents can be revised overnight, making a hotel an excellent hedge against inflation; 3) the real estate appreciation or capital generation potential of a hotel on sale-leaseback arrangements is often exceptionally great. W & K has arranged a saleleaseback on every existing hotel it has acquired; it holds the fee only long enough to arrange such a deal.

#### Specter vs. inspiration

Zeckendorf's fast-moving operation often terrifies his more timid fellow realtors. Concerned lest a mishap for W & K would have repercussions on the rest of the real estate world (as a collapse of U.S. Steel would hurt all other industry), one of the more fearful realtors recently told a friend, seriously and literally: "Sometimes I can't sleep. Every night I pray that nothing untoward will happen to Bill Zeckendorf."

Others share this concern, but express a concurrent admiration for his genius, imagination, and boldness. Not all of his grandiose projections materialize, they observe; but a substantial number do. More than that, they add, every community needs and can benefit from the rare combination of vision and action personified by Zeckendorf. He is the kind of leader or pioneer who stirs men's minds to greater advances, and to new forms and new scales attuned to modern times. Even were he to stumble, they say, the tangible new buildings and city improvements that he has created would remain intact, and would continue to influence the replacement of other obsolete structures and the redevelopment of cities with better buildings and in better patterns.

For a list of W & K's far-flung projects, see page 216.

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

Mr. Paul E. Grunau, center, talking over an installation problem with Mr. Morton R. Spence, left, of Rundle-Spence, National Tube Distributor, and Mr. Leslie Smith, National Tube's representative in Milwaukee. This type of round-table discussion indicates the close relationship between contractor, National Tube Distributor and National Tube.

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#### WILLIAM ZECKENDORF continued from page 210

#### Webb & Knapp's far-flung U.S. projects

New York • Hotel Zeckendorf, 2,000-room luxury hotel (and office building), construction to cost about \$53 million on \$17 million site Webb & Knapp sold and leased back from Prudential. Excavation almost complete. • Canada House office building (50 per cent interest), \$10 million. Completed. • West 34th St. office building. Completed and sold to Kratter interests for over \$20 million. • 1407 Broadway office building, \$30 million. Completed. • UN Plaza office building and cooperative apartments, \$45 million. Ready for construction. • East 33rd St. apartment, \$2.5 million. Completed. • First Ave. and 79th St., block-front apartment, \$8.5 million. Under construction. • Baychester, the Bronx, motel, \$7 million, under construction; industrial park in planning. • Hotel Drake, 176-room addition, \$5 million. Under construction. • Hotel Taft, 900-room and 600-car addition, \$16 million. In planning. • Hotel Manhattan, complete refurbishing, \$18 million. Completed. • Central Post Office Annex (and loft building), 30- to 40-story structure to cost \$75 million or more. In planning. • Post Office substation, West 42nd St., \$3 million. Completed. • Roosevelt Field, regional shopping center, \$40 million; commercial and office buildings, \$20 million; industrial park, \$11 million. Completed. . Flushing office and store buildings, \$3 million. Ready for construction. . Flushing apartment building, 400 units, FHA Section 207 project. \$8 million. In planning. • Seventh Ave. and 53rd St., cooperative apartment, \$21 million. In planning. . Palace of Progress, office and merchandise-mart tower over Pennsylvania Station, \$150 million. 1955 proposal shelved. • Title I projects: Park West Village (66 per cent interest), \$50 million, first section of 858 units completed; additional 1,664 units and shopping center under construction; Kips Bay, \$25 million, 1,140 units, shopping center and professional building, under construction; Lincoln Square, \$70 million, 3,700 units and shopping center, to be started this month.

**Denver** • Mile High office building, \$30 million. Completed. • Courthouse Square, hotel under lease to Hilton, and department store, \$45 million combined. Both completed.

Dallas-Fort Worth • Great Southwest industrial park, \$20 million. Under construction.

Philadelphia • Rittenhouse Square apartments, 409 units, FHA Section 207 project. \$10 million. In planning. • Ford Apartments, 1,300 units, FHA Section 207 project, \$21.6 million. In planning.
• Country Club apartments, 1,200 units, FHA Section 207 project, \$20.2 million. In planning. • Title I, Society Hill project, 720 apartment units, plus town houses, \$35 million. In planning.

**Chicago** • Lake Shore Drive, twin 27-story apartments, 676 units, FHA Section 207 project, \$13.5 million. In planning. • Title I, Hyde Park project, 540 apartment units, plus 235 town houses and shopping center, \$18 million. 60 per cent completed.

Andrews Manor, Md. • Garden apartment project, 414 units, and shopping center, adjacent to Andrews Air Base (two-thirds interest), \$7 million. Completed.

Los Angeles • Century City, development of former 20th Century. Fox site, being purchased for \$56 million, will involve \$500 million of apartment, office-building, and department-store construction over a period of more than ten years (see article).

**Louisiana** • Industrial and housing development of 28,000-acre former Godchaux sugar plantation. Total, \$30 million. Under construction; 120 houses sold through 1959.

Washington, D.C. • Title I, Southwest project, apartments, office buildings, shopping center, hotel, theater, \$100 million. First section of 512 apartment units and shopping center (\$10 million), started January 1960.

Sacramento • Office building, shopping center, and department store, \$15 million. In planning.

Flint, Mich. • Motor Inn and office, \$4 million. In planning.

Pittsburgh • Lower Hill redevelopment, \$16 million. In planning.

San Francisco • 30-story apartment, \$12 million. Ready for construction. END

#### Sour mushrooms . . . vain advice . . . disturbing school

#### MUSHROOMS AND MISSIONS

#### Forum:

Your critical "crusade" for more esthetic architecture will have to take on a more missionary aspect, with believers in all fields of building engineering and construction, if we are to convince the "leatherheeled" executive and "nut-and-bolt" maintenance man of the advantages to be gained.

Most building clients with a limited budget want floor space with four walls around it, period. One elevation faces a street; O.K., put face brick on it. The other three walls are block. Fenestration? Sounds expensive. What is it? We don't care what it looks like as long as it's cheap and guaranteed.

Unless you can convince the skeptics that good design is as economical as bad design, we will have to live with the rubbish that pops up like mushrooms in sour soil.

Your short article on the proposed sta-

dium for Washington, D.C. (FORUM, May

'60) carried the statement that the stadium

design "won reluctant approval" from the

Commission of Fine Arts. Actually, the

commission stated that it could not approve

the design of the structure as it was pre-

sented (photo, left), after making recom-

mendations for changes in the design. The

commission has advisory powers only in

the matter; and the Armory Board, for rea-

sons of its own, chose not to follow the

commission's advice as to either site or

Your April article, "The new rivals:

architects and designers," compares the

Montreal Concert Hall and Lincoln Square's

Philharmonic Hall with respect to seating

capacity (3,100 vs. 2,600) and reverberation time (1.7 vs. 1.9). This is termed, in

the case of the Montreal Hall: "A quick

ARCHITECTS AND DESIGNERS

DAVID E. FINLEY, chairman

The Commission of Fine Arts Washington, D.C.

VERY RELUCTANT

Forum:

design.

Forum:

C. BLASIER JR, Southfield, Mich.

#### readiness to sell out quality of performance to numbers." The judgment of acoustical excellence

The judgment of acoustical excellence is at least partially dependent upon the vagaries of personal taste. Carnegie Hall, for example, has a reverberation time of 1.7 (the same as is being planned for Montreal). The principal halls in London, Tel-Aviv, Philadelphia, Edinburgh, and Stuttgart have reverberation times that are even lower. All of these are generally considered among the world's finest.

Our refusal to eliminate potential audiences and numbers of performances is not a "sell-out," but rather a statement of the belief that community service, good acoustics, and sound economics can be compatible.

> JOSEPH W. LOVELACE The Raymond Loewy Corp. New York City

#### SHOPPERS AND CENTERS

Forum:

The basics of shopping-center construction (FORUM, April '60) need much attention. With all we are supposed to have learned about laying out a center, we seem to continue to miss some of these basics.

Too many times recently I have stood in front of our store on opening night and watched Mr. and Mrs. Shopper fight their way out of the parking lot because the exits were so small they couldn't pass the incoming traffic without tying up both lanes.

Too many times have I watched customers burdened with packages standing on the mall peering out in the dimly lit parking area with little or no identification, trying to locate their car.

To what avail is the Merchants' Association spending some \$50,000 on a grandopening promotion if all we succeed in doing is antagonizing our potential customer with our inadequate physical plant?

What about public toilet facilities for the young mother with youngsters? Should there be a meeting place for the Garden Club, the Boy Scouts, and a host of other eivic and promotional events, tying the center in as an integral part of the community? Are these facilities too expensive or can we afford not to have them?

Are there any answers from a design standpoint that can solve one of our bigcontinued on page 218



DEL ANICERS PHOTOGRAPHE

gest problems in a mall-type center, namely, in-center traffic? The tendency to design the center around the major tenant forces traffic to congregate around the major store, and makes satellites out of a good percentage of the other tenants because of customer resistance to walking any distance to reach those other stores.

J. M. FINCH Director of Shopping Center Promotions Walgreen Drug Stores Chicago

#### Forum :

The average developer would be far better off by devoting his energies to the development of smaller shopping centers, leaving the large regional centers to those with large organizations, substantial resources, and the ability to take and absorb the long wait from the time the idea of a shopping center is born until it is completed and in operation. Time is the average developer's greatest asset. By concentrating on developing neighborhood centers he can more fully exploit his contacts with supermarket, drug, and variety chains. This will enable him to put together two or three small centers during the time he might be struggling, perhaps unsuccessfully, on one large regional center. Planning, layout, and architectural design, however, are as vitally important here as they are in the large center.

One of the most difficult problems facing the large shopping-center developer today is that of adequately preparing for the steadily rising real estate tax burden he will have to shoulder. I know of several cases in which real estate taxes, after several years' operation, have exceeded the original estimates as much as 50 per cent.

I would like to make this prediction as to a possible future development in the field of financing. There is in our area an organization presently working on plans for buying from the shopping-center developer his entire electrical distribution and lighting system and leasing it back. If this plan proves successful, you will see it applied to many other areas including eventually even the fixturing of stores. This could result in a complex financing program where the developer may be able to get by with little or no equity capital. It will also provide an opportunity for the merchant to devote all of his financial resources to merchandise, advertising, and promotion. While such schemes may have pitfalls and will require the soundest possible economic analysis by the developer, they may again provide the opportunity to those of limited equity to get into large-scale development.

GUNNAR MYKLAND, manager Cherry Creek Shopping Center Denver, Col.



#### DISTURBANCES

Forum:

I had occasion to inspect the "School in the sun" (FORUM, May '60) by Paul Rudolph and noticed a number of items that disturbed me:

1. Sunshades are provided on the north elevation.

2. Sliding glass doors are provided on the outside walls of the boys' and girls' toilet rooms. (I hope they replaced the clear plate glass that I saw with obscure glass.) I am sure those who want to "play hooky" will find the outside doors convenient.

3. The chalkboards extend from floor to ceiling.

4. Note the open corridor wells (photo above). I hope no one falls through these openings.

5. Corridor and stair walls have a sand finish, which I find easily scratches the skin.

6. The open balcony in the cafeteria makes a convenient means of bombarding the students below without detection.

> L. ALEX HATTON, architect Orlando, Fla.

#### FOOTPRINTS

Forum:

I read your March review of my Building Footprints, the series of equal-scale plans of famous buildings published by the "Students' Publications of the School of Design," Raleigh, N.C. . . .

The drawings shown are, however, not the work of the students at Raleigh; some were drawn directly by me; a few by some students of the School of Architecture of Tulane University in 1956-57; and most of the collection was drawn in the School of Architecture of Tucumán, Argentina, by

Mr. J. Rey, A. Kotowicz, and Mr. G. von Zieglar, under my supervision.

The students of Raleigh gave me this nice opportunity for a kind of "preview" of my future book, which will be published by the University of Buenos Aires, with six more plans and more text, at a bigger size than shown in FORUM.

> EDUARDO SACRISTE, architect Buenos Aires

#### ANONYMOUS BUILDINGS

#### Forum .

This is a protest against anonymity in architecture.

As an observer of the architectural scene, I am fequently interested in determining the person responsible for a building which draws my attention, either for its excellence, or lack thereof. However, it is only infrequently that I am able to ascertain the architect's name without great effort. In a recent visit to Penn Center I was able to identify the renting agent (boldly emblazoned on the façade), and even discover the name of the maker of the model of the buildings, but the architect went unsung.

I would suggest the inclusion of the architect's name on a logically and centrally located spot-cornerstones are obscurely placed-on new buildings. For older buildings of outstanding merit, an example has been set by Chicago, which has proudly acknowledged the authorship of the Adler-Sullivan Auditorium with an austere plaque.

JOHN L. LEONARD Phoenix

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