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## Architectural Forum May 1960

#### VOLUME 112 NUMBER 5

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## News

### ACTION puts cost of total urban renewal at \$42 billion a year over current spending

What would it cost to accomplish the normal expansion of all urban centers of the U.S., the elimination of all of their slums, and the renewal of all of their deteriorating areas to a "modest standard" of desirable, safe, sanitary, and decent conditions during the next ten years?

Would the combined expense for this growth and regeneration have inflationary effects on the national economy, or would the economic activity it stimulated increase national prosperity?

The gross cost would be approximately \$100 billion a year, or \$42 billion a year more than outlays of about \$58 billion annually now being made for these purposes (estimated as of 1958), according to a research report made last month to a directors meeting of ACTION (the American Council to Improve Our Neighborhoods) in Boston. At the same meeting, however, there was little agreement on whether spending for these purposes at this rate would prove a blessing or a burden on the economy.

The cost estimate, reported by Martin Meyerson, vice president and



NEUTRA REACHES SEMIFINALS IN DUSSELDORF THEATER CONTEST

In a design competition for a municipal theater in Dusseldorf, Germany, the Jury selected three "first" place plans, including this sharp glass-walled structure by Los Angeles Architect Richard Neutra (model). Sharing top honors with Neutra (and winning about \$3,500 each) were Architects Bernhard Pfau, of Dusseldorf, and Friedrich Brockmann, of Hanover, Germany. A final decision on which design to adopt will be made by the end of the year, after the three winners have had an opportunity to submit more detailed or modified plans. Only two other foreign architects besides Neutra were invited to compete: Le Corbusier and Mies van der Rohe. All entries were anonymous during the judging. research director of ACTION, and director of the M.I.T.-Harvard Joint Center for Urban Studies, was developed from an intensive case study of an east coast city of about 300,000 population made by Reginald R. Isaacs, professor of city planning at Harvard, and John W. Dyckman, University of California economist. Projected on a national scale, the Dyckman-Isaacs study estimated that "total renewal" could be achieved by the following increased outlays in major categories of building, modernization, and community improvement:

▶ For private expenditures for ordinary maintenance, repair, and rehabilitation, a boost from today's rate of \$15 billion to \$25 billion a year.

▶ For federal, state, and local public expenditures for official redevelopment and urban renewal projects, an advance to \$5 billion a year from the current spending at a rate of less than \$1 billion. (Meyerson later suggested that this \$5 billion projection might be higher than necessary, inasmuch as it was based on conditions found in an old eastern city, whereas many newer western cities would require relatively less public renewal activity.)

▶ For private expenditures that are generated by official public redevelopment and renewal projects, an increase from \$4.5 billion to \$13.5 billion a year.

For regular new private building for normal community growth, an advance from \$26 billion to about \$31.5 billion a year.

▶ For new schools, public buildings, community facilities, and roads, sewers, and utilities, an increase from \$10 billion to \$20 billion a year.

▶ For all other miscellaneous spending for improving urban environments, an increase from \$1.5 billion to \$5 billion a year.

The \$58 billion spent for all types of urban growth, redevelopment, and renewal in 1958 represented 13 per cent of the Gross National Product that year, said Meyerson. If the nation's economic growth continued at a rate of 3 per cent a year, he pointed out, expenditures of \$100 billion a year in 1970 would then represent 16 per cent of GNP. But if a 5 per cent growth rate were achieved, by 1970 the expenditure of \$100 billion a year *continued on page 6*  would still represent only 13 per cent of GNP.

After Meyerson had outlined these proposed expenditures for urban growth and total renewal, Walter E. Hoadley Jr., treasurer of Armstrong Cork Co., told the ACTION meeting that one of the nation's biggest problems during the sixties would be how to meet all of its needs, including extensive urban renewal, without incurring inflation, or, "how to balance our unlimited desires with our limited resources." Without disputing the need or desirability of urban renewal, Hoadley stressed that both private and public expenditures ultimately must be financed out of national savings. He noted that, if debt is incurred in an unbalanced relation to income or savings, inflation will result, savings will decline, and the entire economy could be disrupted.

On the other hand, Gustave Amsterdam, chairman and president of Bankers Securities Corp., of Philadelphia, suggested that the public purpose served by urban renewal justified increased federal expenditures for this purpose. In the latest federal budget, he said, roughly 60 per cent of expenditures are allocated for defense; 8 per cent for agriculture, representing 12 per cent of the population; 7 per cent for veterans, representing 37 per cent of the population; and 0.2 per cent for urban renewal, representing 64 per cent of the population. The population explosion is concentrated in its metropolitan areas, said Amsterdam. Federal expenditures for renewal, at least up to a rate of \$1 billion a year, would not be inflationary, he declared, nor would such federal assistance involve any local "loss of freedom."

There is no question that spending for urban growth and renewal ought to reach \$100 billion a year by 1970, said Jervis Babb, chairman of the area development committee of Committee for Economic Development. But he made no estimate about what portion should be public. Babb said his committee is still drafting a policy statement on the public interest in urban renewal to be submitted for approval by the full C.E.D. John Nixon, director of C.E.D.'s Area Development Committee, likewise avoided giving any clue to the stand this committee or the full C.E.D. might take on urban renewal. As a teaser, he deliberately ended a talk on economic base studies and urban renewal with a question. Noting that "the automobile has depopulated cities of taxpayers and allowed both industry and upperincome families to move to taxfree suburbia," he asked: If cities could develop practical means for taxing

those who have moved to the suburbs, but who benefit from the fact that they are still within the metropolitan area, would this be preferable to the present system of federal taxes and federal grants to help finance the writedown subsidies involved in public urban renewal programs?

Those who took up Nixon's question felt that local area taxation might be preferable, but that it would be impractical. Effective, equitable metropolitan taxation would be possible only through metropolitan government, and the widespread introduction of that is still largely unattainable. In the meantime, as it was pointed out by Joseph W. Lund, chairman of the Boston Redevelopment Authority and former president of the National Association of Real Estate Boards, the continuing erosion of the \$300 billion of real estate values in central cities, if urban renewal programs are not pressed, will be just as much a loss and just as detrimental to the national economy as the deterioration or loss of any other national resources or assets.

#### New York State creates its own rental FHA, will give builders more low-interest loans

With some polite but pointed criticisms of FHA for its failure to be more helpful, New York's Governor Nelson Rockefeller and the legislature have just created a brand new precedentsetting system for financing middleincome rental and cooperative housing in New York State. Chief architect for the system was Otto L. Nelson Jr., chairman of the governor's Task Force on Middle-Income Housing, as well as vice president in charge of housing for the New York Life Insurance Co.

In effect the state has created its own combination FHA and Fanny May direct loan agency for rental housing, to be known as the State Housing Finance Agency, or SHFA. To raise the mortgage funds that it will lend to rental and cooperative housing builders at below-the-market interest rates the state has pledged its credit, indirectly, to support bonds or debentures that will be exempt from both state and federal taxes.

This tax exemption is probably the most important feature of the New York plan, because it will enable the SHFA to borrow for only about 4 per cent, and then relend its funds to builders for an additional  $\frac{1}{2}$  per cent (equivalent to FHA's insurance premium). This will reduce over-all interest expenses about one-quarter to one-third, and the savings will be passed along to the housing occupants in lower rents or carrying costs. Also of considerable importance will be the availability of loans from the state under fixed conditions that should eliminate the discounts and fluctuating adjustments on the principal amount and terms of loans that banks or other lending institutions often impose on borrowers.

Initially, the state program anticipates making loans totaling about \$105 million a year for five years. Inasmuch as the SHFA's borrowing will not be a direct obligation of the state (although a contingent liability), this will not affect the state's debt or budget - just as FHA's outstanding contingent liability is not reflected in the federal debt or budget. Potentially, therefore, authority to increase the volume of SHFA loans could be voted periodically, whenever a higher ceiling is necessary, just as FHA's insuring authority is increased periodically as needed without any direct additional financial burden on the federal government. As Nelson noted in submitting his plan to the governor, an initial "state guarantee fund of \$20 million would be able, on the basis of federal [FHA] experience, to insure \$2 billion of mortgages." This would be virtually the only direct expense of the state, and eventually would be repaid out of reserves accumulated from the service charges on the loans.

In actual operation, the SHFA will make 90 per cent mortgage loans under terms generally comparable to FHA rental and cooperative housing rules, and all projects financed with state loans will be required to abide by SHFA-approved rent schedules. In selling its tax-exempt bonds or debentures to raise funds to lend to builders, SHFA will pledge as security the stateguaranteed mortgages it holds. This guarantee, an indirect use of the state's credit, consists of a "declaration of intention" by the legislature to back SHFA bonds or debentures in the event of default-if its initial or accumulated reserves and proceeds from foreclosed projects prove to be insufficient to cover its obligations.

Several passages in Nelson's report to the governor give a revealing insight into the basic objectives of the financing plan:

"What concerns the Task Force is that a large number of middle-income families have been forced into suburban residences by lack of suitable accommodations at reasonable rents or carrying-charges in close-in locations and that this imbalance which is injurious to the economy of our state and cities has been brought about in part by governmental housing policies not equally beneficial to all housing. The outward trek of the middle-income family has been greatly accelerated by federal home mortgage programs greatly favoring the suburban singlefamily house. . . . The new agency should complement the operation of the FHA, be more limited in scope, and serve areas of housing in the state of New York insufficiently serviced by FHA; more specifically, rental and cooperative multifamily housing in urban areas for middle-income families. . . . In addition, there should be considerable improvement in the speed and simplicity of procedures in a local program which is not true of a nationwide program that must necessarily be hampered by more administrative red tape and system rigidity. . . . Finally, a local program does not contain the inflationary characteristics of a national program and need not be hedged and limited by reason of such considerations."

As an instrument to raise the "billions rather than hundreds of millions of dollars" necessary to close the middle-income multifamily housing gap in New York, the SHFA would not constitute "competition or interference" with private institutional lenders, the report declared, "because this agency would be empowered to lend only to produce housing at costs and rentals below the capability of the private institutional lenders to finance; in short, the state agency would lend only to finance housing which could not otherwise be built."

### Auto smog-control law adopted in California

Something new under California's otherwise sunny skies was enacted last month—the first state law to control automobile-generated smog.

Under the new statute, expected to serve as a model in other states where automobiles are a serious source of air pollution, a motor vehicle fume-control board in the State Health Department, which will also include representatives of the state highway, motor vehicle, motor patrol, and agriculture departments, will have authority to establish standards and certify motor-vehicle fume-control devices. One year after the board has approved the exhaust *continued on page 9* 



JEAN TSCHUMI WINS \$25,000 REYNOLDS AWARD FOR NESTLE HEADQUARTERS

Jean Tschumi, noted Swiss professor of architecture and twice president of the International Union of Architects (1954-1958), last month received the \$25,000 Reynolds Memorial Award for 1960 for his Y-shaped, seven-story Nestlé International Headquarters Building in Vevey, Switzerland, on the shore of Lake Geneva.

Dr. Walter Gropius, chairman of the A.I.A. jury that makes this annual award for "the foremost contemporary structure in the world whose creative use of aluminum could significantly influence the architecture of our times," said selection of the Nestlé Building was unanimous. Professor Tschumi's use of aluminum was neither novel nor sensational, the jury noted, but by its sensitive use throughout the structure achieved "quietness and serenity which enhances his architectural conception, . . . provides an impression of lightness and works well together with the glass in producing reflections of lake, sky, and landscape."

The basement and ground floor of the award-winning structure are constructed of reinforced concrete, while the upper floors have a welded steel frame with a glass and aluminum curtain wall (photo at top). The ground floor and reception hall have only a glass wall, so motorists on the main road can look through and see the lake.

The jury commented that building-code and insurance requirements, and the ready availability of pre-engineered building components in the U.S., may explain why no American structure has yet won the Reynolds Award.





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devices of two different manufacturers, all new or used cars sold in the state will have to be equipped with them; within two years all commercial vehicles; and within three years all used cars. Counties have the right to exempt locally registered vehicles from the requirement, but to do so must officially declare that the county has no smog problem, and must make a smog survey and reaffirm the county exemption every two years. Vehicles from outside the state are not subject to the law, but are not so numerous as to constitute a serious problem.

Estimated costs for automobile exhaust devices have ranged from \$15 to \$100 each. None is being mass produced yet, but with potential sales of about 700,000 a year for new vehicles and over 7 million for used cars in California alone, competing Detroit auto or accessory producers are expected to develop practical units posthaste.

### Building code ills aired at Capital conference

New variations on an old theme were heard in Washington last month at a National Housing Center conference to explore the possibilities of overcoming needless and obsolete building code restrictions that increase costs and hamper construction.

A long-time critic of codes, William B. Tabler, chairman of the national A.I.A. building code committee, gave a bill of particulars on San Francisco building rules that he claimed would increase the cost of his new Hilton Hotel by about \$3 million. He said he is spending \$50,000 out of his personal funds to oppose some of the code provisions that are impeding this \$25 million project. If some conflicts cannot be eliminated, he said, the project may even be abandoned. Some of his complaints:

▶ San Francisco requires every hotel bathroom to have a ceiling at least 7 feet, 6 inches high, compared with ceiling heights of only 7 feet, 1 inch in many cities, including others in California.

▶ Fire exit rules for public rooms in San Francisco hotels are the same as for theaters; they require exits to the street. More specifically they ban assembly halls for more than 1,000 persons on the second floor, or for more than 300 persons on the third floor or higher. So far, Fire Department officials have been adamant in prohibiting a 3,000 seat third-floor auditoriumballroom Tabler designed, although he is still hopeful of obtaining a variance. > Vent piping requirements for hotel bathrooms are so excessive and confusing in San Francisco that an extra \$40,000 would have to be added to plumbing estimates to cover their interpretation.

New and better building products have often "died in the laboratory" or been delayed for years in their introduction because of restrictive building codes, charged A. J. Watt, vice president of U. S. Gypsum Co. "The black cloud of how we will get a new product into a code is a problem plaguing all manufacturers," said Watt. He said he could cite cases where the introduction of a new product was held up two years because of conflicting code requirements.

Douglas Whitlock, board chairman of the Structural Clay Products Institute. took issue with segments of the building industry that have sometimes urged adoption of a single federal building code. Any such blanket effort to solve the code problem, he warned, would only weaken the advances in code modernization that have been achieved in recent years through the four major organizations that now sponsor model codes: the Building Officials Conference of America, the National Board of Fire Underwriters, the International Conference of Building Officials, and the Southern Building Code Congress. Citing a steady increase in the number of municipalities that have adopted the uniform codes of these groups, Whitlock said: "What we need is not another code, but wider use of their excellent existing ones."

### Bering Strait and English Channel spans proposed

Surface transportation to virtually any continental area in the world except Australia would be possible within a decade if two mighty bridges proposed recently by practical designers were placed under construction within the next five years.

In San Francisco, T. Y. Lin, renowned authority on prestressed concrete and engineering professor at the University of California, Berkeley, disclosed that he had designed a bridge to cross the 50-mile Bering Strait and link Alaska and Siberia (see photo). Lin's structure would consist of 250 prefabricated prestressed concrete spans, each 1,000 feet long and supported on prefabricated piers. Bering Strait has a uniform depth of only about 180 feet across its entire width, and piers and spans would both be floated out to their emplacement sites



BERING STRAIT SECTIONAL BRIDGE

(photo above). Basically each span would be a tied arch; an 80-foot-wide roadway—broad enough to carry both railroad and highway traffic—would serve as the tie. Lin said he developed his design at the request of Senator Warren Magnuson (D, Wash.), chairman of the Senate Commerce Committee. Construction would pose no engineering difficulties and would require less than five years, he said. "The only problem is that there are no decent roads leading to Bering Strait yet on either side." Cost? Under \$1 billion.

In London, the Channel Tunnel Study Group has received plans for a 21-mile bridge across the English Channel from the British engineering firm of Dorman Long, Ltd. Two U.S. and French construction firms, Merritt-Chapman & Scott Corp., and Compagnie Francaise d'Enterprises, assisted in preparing the plans, and the three organizations would jointly build the structure. It would cost about \$560 million and require about five years for building. Offered as a substitute for a proposed tunnel in the same Dover-Calais area (FORUM, July '59), the bridge would be about 110 feet wide and would consist mainly of spans of 740 feet. Two spans of about 1,500 feet each would be about 200 feet above the water-high enough to permit the passage of the world's largest ocean liners. About 140 reinforced concrete piers would carry the structure, which would require some 800,000 tons of structural steel. The greatest depth in this area is about 120 feet.

## St. Louis planning unit favors tower proposal

By unanimous vote, the St. Louis City Plan Commission has recommended redevelopment of a five-block tract facing the city's Mississippi river-front Jefferson National Expansion Memorial Park with a group of high-rise luxury apartment towers instead of low, solid, predominantly commercial buildings.

The commission had to make a

continued on page 11



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choice between the rival plans of Kansas City Redeveloper Lewis Kitchen and St. Louis Builder G. J. Nooney (FOR-UM, March '60). Kitchen proposed three 28-story luxury apartment buildings (1,008 dwelling units) and supplementary store and office facilities, to cost a total of \$37 million. Nooney proposed two long connected sevenstory office buildings (with a total floor area of 250,000 square feet), a 600room motel, and a 300-room hotel, to cost a total of \$26 million.

In a 12-page report for the mayor and aldermen, the commission stated that the Nooney plan "does not seem appropriate for the new front door of the city," whereas the Kitchen plan "appears more in keeping with the need for a striking new entrance to St. Louis." Elaborating on the reasons for its decision, it added that "the demand for new office space and hotel accommodations . . . can be met by new developments at a number of different locations in the downtown area. However, the luxury apartments in the [Kitchen] proposal do not appear to be feasible in other locations. The park development on the river front makes the location presently being considered uniquely suitable for residential redevelopment." On the economic side, the report added that, at present tax rates, the Kitchen plan would eventually yield the city \$160,000 a year more in taxes than the redevelopment Nooney proposed.

Before giving their final approval to



#### STRUCTURAL STEEL BACKLOG GROWS

Through the 1958 recession and until the steel strike began last July, the backlog of unfilled orders for structural steel declined steadily. At the start of 1958 it was 2,778,000 tons, and by the start of the strike it was down to 1,678,000 tons, according to American Institute of Steel Construction. However, a healthy increase in orders has taken place since the year-end settlement of the steel strike; at the end of March the backlog stood at 2,439,000 tons, up 11 per cent from December 31 and up 45 per cent from July 31. either plan, the Aldermen also will receive recommendations from the city's art commission, redevelopment authority, and the mayor.

Meanwhile designers disclosed that the soaring stainless steel arch for the adjacent park designed by Eero Saarinen may rise as high as 619 feet, rather than to its originally proposed 590 feet. Its ultimate height will not be known until working drawings are completed, and the arch's thickness at the top has been determined, based on the space required for elevators that will carry visitors to its observation platform. Last month the House approved a \$1.6 million federal appropriation to advance the park and arch construction during the coming year, and the Senate approved a \$4.6 million appropriation. The city also is contributing substantially to the cost of the project, and, if all goes well, now hopes to see it completed on schedule in time for the city's 200th anniversary celebration in 1964.

### Contractors cautioned on business pitfalls

The business end of building came in for extended discussion during the annual convention of the Associated General Contractors of America in San Francisco, including some pertinent advice from both a banker and a subcontractor.

Robert L. Gordon, vice president and manager of Los Angeles' Bank of America National Trust and Savings Association, described two situations that dismay lenders. "Many contractors, when particularly hungry, will deliberately bid low just to get a job to cover overhead and keep crews busy. But in more than a few such cases, costs are figured too low, mistakes are made, unexpected conditions develop, and losses are taken. In other instances contractors will build up heavy overhead in the form of engineering departments to which they become attached sentimentally or because of commitments, and they frequently find themselves in the position of having to carry this overhead for extended unproductive periods between jobs. With strong engineering and estimating departments a contractor will bid many more jobs than he normally would expect to bid just to keep his people working. The over-all result is that bid lists become too long, unwise bids are made, prices are too low, and on occasion, losses are developed instead of profits."

The building industry is no exception



INDUSTRIAL OUTLAYS TOP '59 RATE

Continuing their strong, steady uptrend during the first quarter of 1960 expenditures for new private industrial construction totaled \$640 million, a 34 per cent gain over the first three months of 1959. Outlays for new stores, restaurant, and garage building were \$430 million, or 23 per cent better than comparable 1959 spending, the Department of Commerce reported. Total private nonresidential construction was up 18 per cent over the first quarter of 1959; total private construction of all kinds was up only 3 per cent, reflecting a 3 per cent drop in residential building. Expenditures for new public educational building continued on the moderate decline they experienced through 1959, and were 9 per cent below last year's comparable first-quarter outlays. Total public construction was off 14 per cent, and caused a 2 per cent drop for the quarter in the combined total of private and public construction.

to Parkinson's Law, that work will always expand to use up the time available for it, said William P. Scott Jr., president of the Mechanical Contractors Association of America. "You well know that if a bid is to go in tomorrow, and today the bid is postponed two days, even though your staff has virtually completed its job. they will take the extra two days to finish the bid. Similarly, if we figure that four men will install a mechanical job in a year, and the general contractor takes a year and a half, those four men stav on the job the extra six months. And there goes your profit." Speaking for his own company, Scott said that whereas it used to bid for mechanical jobs directly to the owner, it later decided that "it was of greatest importance to our company's success to be under the direct control of a reliable general contractor, who would coordinate not only our work but that of the other subs, and what is more important, finish the job on time. The profit on a job depends greatly upon the speed and cooperation of the general contractor." He deplored the fact that some other general contractors deliberately seek whatever profits "can be beaten out of the subs."

END



## People

## Builder-realtor Marvin Kratter wins Realty Man of 1960 award: Savage named public housing chief

"Talk fast," pleads busy, telephone-possessed Lawyer-realtor Marvin Kratter, young (44) recipient last month of the 1960 Realty Man of the Year award of the Masonic Real Estate Square Club of New York.

There are pressing reasons why restless, hefty Kratter ("you can say I'm 6 feet, 200 pounds") has little time for superfluous words these days. As president of the Kratter Corp., he is directing construction of New York City's largest single apartment building, a \$22.3 million project on the Los Angeles Dodgers' former Ebbets Field ball grounds in Brooklyn. (Applications for its 1,317 units, to rent for an average of \$30 per room, already exceed 6,000.) With William Zeckendorf, Kratter also completed the sale and leaseback last month of New York's celebrated Hotel St. Regis, which Zeckendorf acquired in February from the estate of Vincent Astor for about \$14 million. On another day last month he conducted a seminar on the public ownership of real estate for the benefit of the Wharton School of Finance. (Because Kratter was too busy to go to Philadelphia, he insisted that the entire class travel to New York.)

As if the confusion were not already great enough, Kratter completed a real estate transaction of his own: to accommodate his rapidly expanding activities in real estate and construction he moved his offices into larger space in a tower on 5th Avenue.

It was largely because of his formation of Kratter Corp. as a publicly owned stock company that Kratter was given the real estate award. The citation read ". . . in recognition of his great contribution in opening a new area of investment by combining the economic advantages of real estate ownership with public corporate ownership, characterized by market liquidity."

Through this corporation (its stock was the third most actively traded on the American Stock Exchange during the week of March 28) Kratter already has invested some \$26 million of stock-holder funds in real estate properties valued at approximately \$100 million. Kratter estimates that more than 7,000 of the corporation's 8,000 stockholders are "first time" real estate investors. Not a syndicate, Kratter Corp. is a real estate investment company with a portfolio of diversified properties. The advantages of collective, corporate

public ownership over syndicate ownership, according to Kratter, are 1) greater safety, by the pooling of risks, so healthy ventures will support any that might go amiss, 2) liquidity via easily traded listed stock, and 3) greater flexibility in capital growth and tax depreciation situations.

Brooklyn-born Kratter began to invest in real estate for himself shortly after receiving an economics degree from Brooklyn College in 1937 and his law degree from Brooklyn Law School in 1939. A corporation lawyer-accountant he did not enter real estate until 1954, when he joined the staff of syndicate investor Louis J. Glickman. A year later, Kratter opened his own realty investment office, and in the four years before "going public" in April 1959 handled syndications throughout the nation involving properties valued at more than \$200 million. These included purchase of the \$20 million Fordham Hill apartment project in the Bronx erected by Equitable Life shortly after World War 11 (subsequently resold for a substantial profit), and the group of three Wilshire Boulevard office buildings in Los Angeles erected by Tishman Realty & Construction Co. The Los Angeles buildings were transferred to the Kratter Corp.

From his new 29th-floor offices (heavily carpeted in blue to complement his neat dark suits, white shirts, and white silk ties) Kratter can now gaze out the window at the Empire State Building, ten blocks south, which he confesses it is one of his highest ambitions to own one day. Much sooner-this spring or summer-he plans to further another of his ambitions: major participation in the redevelopment of lower Manhattan. He plans to bid at public auction for the choice Battery Park Title I project site. In an auction the ability to talk fast often pays off.

#### REALTOR PUBLIC HOUSING BOSS

Although the National Association of Real Estate Boards traditionally urges all of its members to oppose public housing, President Eisenhower for a second time has nominated a realtor to be commissioner of the federal Public Housing Administration. Pending Senate confirmation, the new commissioner will be Bruce C. Savage, 53, of Indianapolis, head of one of the largest residential real estate sales organizations in Indiana. He will succeed Realtor continued on page 14



KRATTER

## People contd.

**Charles E. Slusser**, of Akron, Ohio, who resigned late last December after a wearying six-and-a-half-year term during which the administration had consistently whittled down the federal public housing program (FORUM, Jan. '60).

Savage, however, is one of the rare realtors who also is a member of the National Association of Housing and Redevelopment Officials, and that association considered his appointment encouraging. NAHRO President **Charles Farris**, of St. Louis, said "NAHRO is enthusiastic about the Savage appointment. He is particularly

WALTER DARAN



SAVAGE

well qualified. He believes in the program. When he was a member of the President's Advisory Committee on Housing in 1953, Savage stood up and was counted in favor of the public housing program. In view of his business as a realtor, we believe this was the exemplification of courage. Under his administration, I am confident we will see a reawakening, and a strong dynamic leadership working to carrying out the program the way that Congress intended."

Former NAHRO President Ernest J. Bohn, of Cleveland, who also had been seriously considered for the appointment, recalled Savage's service on the 1953 Advisory Committee's subcommittee on lowrent housing, of which Bohn was chairman. As a NAREB representative, Savage first was inclined to be hostile to public housing, said Bohn, "but when he found out what public housing was all about and became convinced it was something we must have, he was for it all the way. He had to learn about public housing the hard way. He is an honest-minded person. It was a case of intellect overcoming emotion." The appointment of Savage, "a man definitely sold on public housing," is an indication that the administration is now determined to continue the federal program, said Bohn. "Under Savage, it will be in good hands. Within the limitations imposed by Congress, I am sure he will do the best job anybody could."

#### FAIR AND FESTIVAL DESIGNERS

As plans for the 1964 New York World Fair progressed last month, the executive committee appointed Architect Wallace K.

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Harrison as chairman of the design board. For assistants he will have Architects Gordon Bunshaft and Edward D. Stone, Industrial Designer Henry Dreyfuss, and Engineer Emil Praeger. Engineering consultants will be Gilmore D. Clarke, of Clarke & Rapuano, and W. Earle Andrews, of Andrews & Clark. Pending contract



HARRISON

arrangements covering a salary of approximately \$100,000 a year for six years and legislation to exempt him from conflictof-interest technicalities involved in his multiple public offices and in serving the fair, **Robert Moses** accepted the fair presidency, to be effective May 15.

For the Century 21 World's Fair Exposition in Seattle in 1962, Herbert Rosenthal, of Los Angeles, will be chief exhibition designer. Rosenthal previously headed the graphics department of Welton Becket & Associates, and earlier was chosen by the State Department to design the U.S. exhibit for the Izmir International Trade Fair in 1951 and 1952. One of the main buildings for this \$50 million Seattle fair will be a permanent 160,000 square foot coliseum and sports arena designed by Seattle Architect Paul Thiry.

Meanwhile Philadelphia's Redevelopment Authority was studying a preliminary report on the feasibility of a gala five-months (May to October) Philadelphia Festival in 1963 to dramatize the city's urban redevelopment, planning, architectural, and cultural progress, and particularly the scheduled completion about then of its Independence Hall National Historical Park, its Penn Center rebuilding and its Society Hill redevelopment and conservation project. Architect Oskar Stonorov was the first to propose the festival to demonstrate "the case for urban living." He received \$8,000 from the redevelopment agency to formalize his ideas, which call for outdoor concerts, art shows, cultural exhibits, fireworks, and guided tours of the city's many historic structures.

#### STONE TO DESIGN PUBLIC SCHOOL

To add quality to its school designs, obtain new ideas, and to extend its roster of architects well beyond the city limits, New York City's Board of Education included Edward D. Stone and Los Angeles *continued on page 16*  Photo above, Senior High School, Janesville, Wis. Law, Law, Potter & Nystrom, Architects.

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## People contd.

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NG THE FUTURE

Architect Paul R. Williams among a group of eight independent architects commissioned last month to design new public schools. Stone, who had not sought but was requested to take the assignment, will design a new \$2.4 million elementary school adjoining the Lincoln Square Title I redevelopment project, which will include the Performing Arts Center. Williams will design an elementary school in Harlem. More out-of-city and out-of-state architects will be considered for other schools in the future, said Joseph R. Weiss, the board's superintendent of design. (Last month Stone also was selected to design a Football Hall of Fame to be built near the New Jersey site where Rutgers and Princeton played the first U.S. intercollege game in 1869, and was given an honorary membership "for distinguished leadership in contemporary international architectural design" by the National Society of Interior Designers.)

#### HONORS AND AWARDS

In London on March 28, at a luncheon attended by Ambassador John Hay Whitney, U.S. Architect and City Planner Clarence S. Stein received the Ebenezer Howard Memorial Medal, named for the originator of the British garden city concept and awarded to those who have done most to forward the planning ideas of Sir Ebenezer.



MORGAN

A simple but significant tribute has been paid by the National Council of Architectural Registration Boards to Sherley Warner Morgan, FAIA, Emeritus Director of Princeton's School of Architecture and, since 1956, secretary-director of the New Jersey Board of Architects. On a special page dedicating its annual report to Morgan, NCARB salutes him for "outstanding ability and leadership," for his many services for architectural education, and as one "who like Saul, 'stands head and shoulders above the rest.'"

The National Institute of Arts and Letters has given its 1960 Brunner Award (\$1,000) to Philadelphia Architect Louis I. Kahn.



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... Far at sea, one of the nation's deadly new submarines cruises undetected, an elusive, power-laden sentry of the "Silent Service." Her crew lives and works in comfort and safety — in a climate precisely regulated by a pneumatic control system.

... Across the continent, pneumatic controls assure safe air conditions in the highly critical processing areas of an atomic energy facility. Pneumatic controllers of extreme sensitivity operate constantly to assure safe disposal of waste air and prevent the escape of contamination.

These are but a few examples of the ways in which modern pneumatic controls play a vital part in regulating the environment in which we live and work — helping to create made-to-order indoor climate for every purpose, controlling temperatures and humidities to a degree undreamed of when Professor Warren S. Johnson invented the first automatic temperature control system back in the 1880's.

#### Inventor at Work

Though he was probably unaware of the fact at the time, Professor Johnson became the founder of the automatic temperature control industry when he devised a practical way to eliminate the problem of classroom temperatures that seemed to zigzag forever between shiver and swelter.

His first attempt at control — the "annunciator" system — merely called the janitor's attention to overheating, or lack of heat, by ringing a bell in the furnace room. The janitor would then open or close the classroom dampers, as required.

But this land-based version of a ship's telegraph soon gave way to an all-electric method, utilizing a thermostat in each room that would open and close the dampers automatically. And so, the first system of automatic heat regulation was born.

#### The Electro-Pneumatic System

Intrigued with the possibilities of his long-awaited discoveries, Professor Johnson in 1883 left his post at Whitewater, Wisconsin, State College and came to Milwaukee to devote full time to refining and marketing the Johnson System.

His second major achievement, an electro-pneumatic control system, occurred almost at once. By successfully uniting the forces of *electricity*, for thermostat operation, and *compressed air*, for valve and damper operation, he developed a far more dependable and fully automatic control system. Finally he was ready to go out and revolutionize the comfort standards of the world. In 1885, he incorporated the business which today bears his name.

With branches established in Chicago, St. Louis, and New York, the Johnson thermostat on the wall soon became a familiar sight in the leading buildings of the day. Schools, prominent residences, and small business buildings were first to enjoy the comforts and economies of automatic control. They were followed closely by colleges, hospitals, public buildings, offices, stores, and industrial plants.

#### From Mikado to Czar

Acceptance grew, markets widened. The fame of automatic controls traveled fast and far. Before 1890, the city of Berlin, Prussia, had written a report about the efficiency of its Johnson System. Later, the palace of the Mikado in Japan was equipped with Johnson Control. The King of Spain and other European royalty became Johnson customers. A special installation was made in the Kremlin in Moscow!

#### Single Responsibility

Professor Johnson had the foresight to realize that the key to his success depended upon the *proper application* of his controls. Accordingly, he determined, from the outset, that his company should *never sell devices*, but should sell a *principle of control*. This meant that each system would have to be planned, manufactured, installed, and serviced by Johnson to meet the exact needs of the individual building.

Over the years, this policy of complete responsibility by a single specialized organization has insured owner satisfaction and saved untold millions of dollars for Johnson customers.

Carrying out this policy has also resulted in the closest possible working relationship between the Johnson organization and the nation's consulting engineers and architects, in a joint effort to provide ever better control of thermal conditions.

#### Many Johnson "Firsts"

The history of the thermostat and the Johnson Service Company coincides with the period when other pioneers were busy introducing innovations in heating, cooling, and ventilating methods and in developing full-scale air conditioning. Working closely with the research staffs of these manufacturers, Johnson engineers were able to supply the most effective controls for every new development in basic equipment. This cooperation has continued and flourished to the present.

Over the years, the Johnson Service Company has been the source of a never-ending flow of new ideas, which have included virtually all of the key developments in the field of automatic temperature control!

By far the most important was the all-pneumatic control system, perfected in the 1890's and still the standard everywhere. Others include the all-metal thermostat, the famous *Dual* or day-night thermostat, the heating-cooling thermostat, summer-winter thermostats, the airstream thermostat, mastersubmaster thermostats, supersensitive gradual-acting thermostats, and powerful piston damper operators.

Another famous development was the Humidostat or humidity regulator. And, of course, the Comfostat, an exclusive Johnson instrument that controls room temperatures in relation to humidity conditions. The popular pneumatic control center, for centralized supervision and control of modern airconditioning systems, also was first perfected by Johnson.







#### **Uninterrupted Progress**

As the concept of controlled environment gathered momentum, so did Johnson. Important "firsts" became routine jobs, as the industry looked to Johnson for the answers to new control problems. From the simple comfort needs of the buildings of the 80's and 90's, to the history-making demands of the first scientifically air-conditioned building, down to the most complex requirements of today's commercial and industrial buildings, Johnson has been the leader in the pneumatic temperature control field.

Today, wherever you go, you'll find the important buildings are equipped with Johnson Control. From the fabulous Fontainebleau Hotel to the mammoth Merchandise Mart to the famous UN Secretariat Building . . . in schools, hospitals, sprawling defense plants, research laboratories, vital military installations, shopping centers, in buildings of *every* size and type and in ships at sea . . . there are temperature and airconditioning control systems by Johnson.

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This is by no means the end of the story of the thermostat. For against this unmatched background of innovation, experience, and service, Johnson's never-ending search for new and better controls will inevitably lead to dramatic new ideas in the years ahead. As the day of completely air-conditioned cities approaches and as new and unprecedented demands for precision controls evolve, the forward-thinking Johnson organization will always be ready with the right answers.

The Johnson research and development staff and facilities have been expanded three times in the past four years. And final plans for the next major expansion are already underway! In the future then, as in the past, you can continue to look to Johnson for the world's finest controls!

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Park Plaza Apartments Pittsburgh, Pennsylvania National Floors, Inc.

### The next time you're in Philadelphia take a good look at the

### Einstein Medical Center ... another installation with

Take a good look at the clean, simple lines of this striking monument to modern-day medicine. Notice how beautifully everything fits—the synthesis of approximately 11,400 sq. ft. of LUPTON Type "H" curtain-wall units, 549 LUPTON "Master" projected aluminum windows, and 732 LUPTON double-hung aluminum windows with the overall architectural concept of the building.

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See SWEET'S (Sections 3 and 17) for the Michael Flynn Aluminum Curtain Wall and Window catalogs, and write for further specific information. Inquire about LUPTON Comfort-Conditioning\*—the new curtain-wall system that cools, heats, and ventilates. A call to the nearest LUPTON representative (see the Yellow Pages under "Windows—Metal") will bring fast action without obligation.

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The Einstein Medical Center (Northern Division),



Broad Street and Tabor Road, Philadelphia, Pa. Architect: Abraham Levy, Philadelphia. Contractor: James McGraw Co., Philadelphia.

Walter P. Chrysler High School Field House, New Castle, Indiana. Architects: Ralph E. Legeman & Associates, A.I.A., Evansville, Ind. Design covered by U.S. Patent No. 2,761,181.

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### CHOOSES THE GYM FINISH THAT LEADING SCHOOL ARCHITECTS SPECIFY

This outstanding athletic and community center was made possible by a Citizens Lay Advisory Committee, which sponsored the project and arranged the financing.

Consistent with the Committee's determination to have only the best, Hillyard TROPHY finish was chosen for the playing floor. This beautiful, no-glare and non-slip finish is the favorite of coaches, players, television producers and spectators, alike.

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As shown in the photos, this unique design provides for excavating and pouring the bleachers on the earth as framework. The roof is supported at grade line by trusses incorporating haunches for support as an integral unit, without need for supporting columns. Spectator entrances and exits are at grade level. Seating capacity, 9,252. Building contains 81,555 sq. ft., with a construction cost of \$10.41 per sq. ft.





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8

Space-Conditioning: a total concept by Mills. Control • Comfort Privacy • Efficiency Beauty



# steel pipe

### keeps the steel blades flying

This blossoming business of community ice skating has grown into a sizeable—and profitable—market. Best assurance of profitability for the installation of an ice-making system is the elimination of costly maintenance and repairs. It's a job that calls for strong, durable *steel pipe*.

With dependable *steel pipe* there's no danger of damaging the refrigerant lines, no bending and sagging. *Steel pipe* has *proved* its place in many applications like this. Whenever there's a new application, it pays to stay with dependable, time-tested materials. The skating rink is just another example of the many kinds of jobs that steel pipe can do best.

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### Projects

### A roundup of recent and significant proposals



NERVI'S FIRST U.S. WORK: A NEW YORK CITY BUS TERMINAL



Italy's master builder, Pier Luigi Nervi, has designed a soaring bus terminal for the Port of New York Authority as part of the George Washington Bridge expansion program. Everything about this terminal is big: it will straddle a 12-lane expressway and stretch 400 feet along it, it will shepherd 50,000 New York-New Jersey commuters into 2,000 buses every day, and it will cost \$13 million. The roof will consist of two rows of triangular concrete slabs (photo left). Alternate triangles, each formed of 36 precast concrete sections, will project upward on huge trusses. Spaces between the structural members along the sides of the terminal and under the projecting roof triangles will be open for ventilation of the bus platforms inside and the expressway three levels below.





### ROUND WASHINGTON STADIUM

Plans for a new stadium in Washington, D. C. (left) drew some unhappy comments from the Fine Arts Commission but won reluctant approval anyway. The Commission objected to the proposed roof line, a circle which dips at the main entrance (top photo), again at the opposite end, and rises near first and third bases. One critic called the roof a "whoopsi-doodle," but its designers defended the curves as offering more good seats at baseball games. The stadium will cost about \$10 million and will seat 42,000 baseball fans or up to 50,000 at football games. The Armory Board will open bids this month. Architects and engineers: George L. Dahl of Dallas, Osborn Engineering Co. of Cleveland, and Ewin Engineering Associates of Washington, D.C.

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Architectural Forum / May 1960



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### to heating some sections of a building while you cool others. You can furnish balanced comfort simultaneously to different, determined areas with either filtered, cooled and dehumidified air; or filtered, heated humidified

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air-or a mixture of these in any desired

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McQuay "MC" units, of course, feature the famous McQuay Ripple-Fin coils for highest efficiency and Dura-Frame "V" channel construction for strength and rigidity. When you use McQuay, you can be sure that engineering research and know-how have produced the finest, most efficient and dependable equipment available. McQuay, Inc., 1609 Broadway Street N.E., Minneapolis 13, Minnesota.



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AIR CONDITIONING . HEATING . REFRIGERATION





#### NEW YORK CITY MIDDLE-INCOME COOPERATIVES

These two apartment projects, twin 25-story towers and a single serpentine building in the background (which is under construction), will add 645 apartments to New York City's middle-income housing supply. These cooperatives, near the tip of Manhattan and within walking distance of city, state, and federal office buildings, will sell for an average down payment of \$875 per room, plus carrying charges of about \$30 per room. All three structures will be of reinforced concrete and brick. Most apartments in the towers will have terraces. Middle Income Housing Corp. is the developer, and the Municipal Credit Union and N. Y. State Credit Union League are sponsors. Architects: Kelly & Gruzen.



#### LOS ANGELES MEDICAL OFFICE BUILDING

Ground will be broken in Los Angeles this month for Westwood Wilshire Medical Plaza (above), a \$6 million, 12-story center, where there will be about 100 medical and surgical suites for rent. Above the second floor, the façade will be a striped pattern of exposed exterior columns, faced in white marble, glass mosaic tile spandrels, and glass. The first floor will be occupied by a bank, drugstore, restaurant, and shops. Paul R. Williams & Associates of Los Angeles designed the building for Owner Morris Linde.

### Projects contd.

### NEW HAVEN MEDICAL-DENTAL CENTER

Ten stories of medical-dental offices will be added to New Haven's Church Street redevelopment project, replacing two apartment towers previously slated for the same plot. The three-acre site is a triangular island accessible from all sides and close to the

Grace-New Haven Community Hospital. In Caproni Associates' design, reinforced concrete wall panels taper to slim columns. A low ratio of glass to solid wall will insure privacy. The architects and the developers, headed by Edwin V. Larsen, are of New Haven.





GLASS-ENCLOSED COLLEGE LIBRARY ON STATEN ISLAND

In the master plan for Wagner College, on Staten Island, N. Y., Architects Perkins & Will picked a prime spot for the library. the reading room will overlook The Narrows, Brooklyn, and Governors Island. Conforming to the hilly site, the library will rise two stories in front and three in the rear. Precast stone will sheathe the four stair towers at the corners; heat-absorbing glass and brick cavity walls will be the other exterior materials. Perkins & Will estimate the total cost, including furniture and fees, to be \$975,000.

### KANSAS CITY OFFICES

Jackson, Miss. Industrialist R. E. Dumas Milner plans "the first skyscraper to be built in Kansas City in a quarter of a century" (right). The skyscraper's exact height and skin have not been determined, but Milner says it will rise at least 18 stories, perhaps 25. The building's principal tenant, the Traders National Bank, has given its name to the building and will occupy 30,000 square feet of it. Architect: Thomas E. Stanley.

continued on page 65



### New Architectural Concepts in Oven-Toughened Temparglas VIRGINIA GLASS PRODUCTS CORPORATION

Specially pre-stressed, fully tempered glass products, for today's architecture: Virginia All-Glass Entrance Doors, Temparglas Spandrels in 22 Firefused Colors Brand New: Virginia's Frameless<sup>+</sup>Temparglas Sliding Door, (3/8" and 1/2" thickness) Brochure: Virginia Glass Products Corporation, Martinville, Va.





### Projects contd.

#### ENGINEERING RESEARCH CENTER IN MARYLAND

In rapidly expanding Montgomery County, Md., where several federal agencies have moved in the last few years, Washington Technological Associates, Inc. will build this engineering research and development center (right). A closed passageway will connect the first unit, two large floors of laboratories and shops, to the second, a six-story administration and design building of lift-slab construction. The small round conference and cafeteria building will be roofed with folded plate concrete. More folded plate, either concrete or plywood, will cover walkways around a reflecting pool. The three-part center, expected to cost \$3 million, was designed by Rinaudot & Coupard, Bethesda, Md.



#### CITY WITHIN A CITY: NEW YORK OCEAN-FRONT COMMUNITY

Breezy Point Peninsula, a narrow arm of Queens County, N. Y., jutting into the Atlantic south of Brooklyn, has been tagged "the world's largest privately financed community" by its developers. According to their plans, drawn up by Architects Brodsky, Hopf & Adler, Breezy Point, though part of New York City, by itself would rank 47th among the largest U.S. cities by 1970. Twelve apartment neighborhoods, one of which is shown at right, will cluster around community centers, schools, churches, parks, shopping centers, and libraries. Part of Breezy Point's two miles of sandy beach on the ocean side will be converted to boat basins. Northern Properties, Inc. and Finkle, Seskis & Wohlstetter purchased Breezy Point for \$17.5 million.







#### LAS VEGAS JET-AGE TERMINAL

The six-sided passenger terminal above will be the nucleus of McCarran Field in Clark County, Nev., a \$4.5 million airport planned for an initial capacity of 16 jets (left). The hexagon's three thin concrete shells will be poured in place, using the same form, then joined together. The shells' peaks will be 40 feet above ground, the arcs filled in with glass so that passengers waiting or dining will have a view over the field and countryside. Baggage, ticketing, and office space will be concentrated in a V-shaped, two-level structure connected to the terminal by a short pedestrian bridge. Two other bridges fan out from the hexagon to loading fingers. Architects: Welton Becket & Associates; John Replogle of Las Vegas, associate architect.

### A SIDEWALK CAFE IN CENTRAL PARK

A. & P. heir Huntington Hartford, an admirer of European sidewalk cafés, has offered to build one in Central Park (right), a gift to the City of New York. He commissioned Edward Durell Stone (designer, too, of Hartford's Gallery of Modern Art, planned for a site facing the park but several blocks west) to plan a restaurant appropriate to the site and its surroundings, "gay, accessible, ornamental, and within the means of the average family and the tourist." Stone's design is a concrete rectangle open on two sides.





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### Products

Portable laboratory . . . language cubicles . . . on-site pipe . . . aluminum tones . . . compact heaters



### LAB ON WHEELS

Instructolab, a classroom laboratory no bigger than a desk, carries equipment for 1,000 experiments and a projector which shows them as they take place. It is portable enough to be wheeled from room to room or even carted to another school in a station wagon. By plugging in the demonstration table and setting up a movie screen, any classroom can be converted quickly into a science room.

Three educators and a laboratory equipment manufacturer developed the movable laboratory as the answer to a long-felt problem: how to present simple scientific experiments in elementary schools, where there might not be a laboratory at all, while using techniques and equipment the equal of more advanced schools.

Instructolab is a self-contained unit which can be set up almost anywhere. In addition to a stock of chemicals, gases, etc., carefully labeled and numbered in accordance with an accompanying manual, Instructolab is outfitted with a Bunsen burner, a built-in sink and a 5-gallon water tank, and several other pieces of apparatus. An important adjunct is the actomatic projector, which shows threedimensional objects as well as printed material and slides. The rolling laboratory contains a stock of 400 chart transparencies and a transparency roll on which the instructor writes exams or notes for projection before his class.

Instructolab measures 3 by 5 feet, is made in wood and steel, and has a 30-foot cord which connects to a 110-volt outlet. The complete unit costs \$1,783; the projector, if bought separately, is about \$50. The price includes everything but the projection screen.

Manufacturer: Laboratory Furniture Co., Inc., Old Country Rd., Mineola, N. Y.

#### LANGUAGE LABS

Electronic language laboratories, in which soundproof student booths are ranged around an instructor's console, combine the benefits of group instruction and private tutoring. Intended primarily to speed the learning of foreign languages, both systems described below may also be used for speech therapy, remedial reading, and voice training.

American Seating Co.'s *Electronic Learning Center* gives the instructor 16 "lines of communication" with students, but with these she can control up to 36 students, since some of them would be listening to the same lesson simultaneously. Four-channel magnetic tape dispenses four tracks of information at once, which could be four lessons of varying complexity or four different languages. Each console has four tape decks. In their cubicles students use fixed microphones to record their responses and hear their own voices through earphones. When the instructor wishes to check her students' work or to give special help, she tunes in. Student units, connected in twos and fours, and the instructor's console are cream-colored steel, with matching swivel chairs. The cost of a 24-student



system, plus the console, is \$8,000 to \$10,000, which includes servicing and instructions. The units will be ready for the fall term.

Another laboratory system, this one called the *Medallion* and manufactured by the DuKane Corp., differs in one major respect from the system above. From this console (not shown), the teacher controls up to 50 students, but they would not all have the same kind of equipment. In this system, there are four types of student cubicles: an empty booth for individual study; an audiopassive booth in which the student listens to tapes or to the instructor's voice; an audioactive

continued on page 68





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### Products contd.

booth in which he can listen and speak; and an audioactive-compare booth, which gives the student a transistorized twintrack tape recorder so that he can record, listen, and compare his diction with that on the tape. All four units are the same size, one student to a unit, and they may be installed either side-by-side or back-toback. Plug-in amplifiers, switch panels, and tape units are used to upgrade the simplest booth to a more complex one. Consoles and student booths are willow green steel trimmed in aluminum; work surfaces are tan plastic. A 50-station classroom, including the console, costs from \$7,000 to \$10,000, depending on the complexity of the units ordered.

Manufacturers: American Seating Co., Grand Rapids 2, Mich. and DuKane Corp., St. Charles, Ill.

### INSTANT PIPE

The machinery shown below forms concrete pipe right in the ditch, at a rate of 8 to 12 feet a minute. Pipe made by this method is already in use as irrigation equipment, and its developer, R. Fuller, is adapting his system to storm and sanitary sewer construction.

The form is an inflated rubberized fabric tube, like an enormous sausage casing, resting in a rounded ditch. A winch-drawn cable pulls a double-hoppered forming machine over the form. As it moves along





the ditch, the machine lifts the form just enough to tuck concrete under it; at the same time, the machine pours concrete over the form's top. Two hours later, the form is collapsed and pulled out.

Fuller's inflatable forms are 50 to 300 feet long, and they have been used to lay pipe 12 to 48 inches in diameter. Machines and forms will probably sell for \$12,000 to \$25,000, depending on size.

Manufacturer: Fullerform Continuous Pipe Corp., 2727 No. Central Ave., Phoenix.

#### HOT BASEBOARD

Modular plug-in electric heaters, a Westinghouse product, are designed to line unobtrusively the perimeter of homes, apartments, offices, and schools. These heaters, more compact than previous



models, project only 2¼ inches from the wall and are only 6½ inches high, yet their output is 250 watts per lineal foot. A simplified finned heating element (see drawing) accounts for the unit's small over-all size.

Westinghouse offers the heaters in standard two-foot sections, 9½-inch control boxes, "universal" corners, and outlet sections. Electrical connections to the control box may be made either from the bottom (floor) or back (wall); the other units simply plug in to it and each other. The control box thermostat maintains temperatures within 2 degrees of setting. Plugged together, the units form a continuous baseboard. The color scheme is charcoal and beige (on steel), but units may be painted other colors.

Manufacturer: Westinghouse Electric Corp., Staunton, Va.

### TAILOR-MADE PANELS

As a service to architects who want to design their own curtain walls, the Alumiline Corp. offers the *Syntek Contour Panel* as part of its Series 969 curtainwall system. Syntek panels were developed jointly with the Rohm & Haas Co., manufacturers of the acrylic thermoplastic (Plexiglas) used in the panels.

continued on page 70





IRVICO'S mass production of "ALUMINUM GRIDSTEEL" now enables the designer to achieve the "custom look" in grillework economically.

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### New Pittsburgh Hilton opens with McKinney Hinges

Once again, McKinney Hinges have been installed in one of the exciting showplaces of America. This time it's the new Pittsburgh Hilton, located at the heart of Pittsburgh's Gateway Center. The hotel's 807 guest-room doors are equipped with durable McKinney Butt Hinges. On service doors opening to 180°, McKinney Wide Throw Hinges were installed to assure dependable operation under the toughest conditions. It is through trouble-free operation on

Architect: W. B. Tabler, New York

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Hardware Specification: Adon H.

Construction Company, New York

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#### Editorial

# The city as "end product"

In a refreshing type of discussion last month, officials dealing with housing and city redevelopment weighed their "end product." This meeting at Chapel Hill, N. C. was organized by The National Association of Housing and Redevelopment Officials and dealt with the final quality of city rebuilding as it is affected by financing and market surveys, and also by architecture. As Architect Chloethiel Smith sharply reminded another speaker, architectural design is far from being only another "aspect" or "factor." It is the matrix into which all financial and market policies are fed. The physical, tangible product that is shaped by design is all that the public sees and feels; it is all that good financing and marketing can lead to. Unless this product is found to be attractive as well as sound, the public, being perfectly free, is likely to choose something else. Indeed, it is because cities were found to be tangibly ugly and repellent, and not only because they were found inefficient, that people began leaving them in such alarming numbers in the first place.

The rediscovery that architecture plays a primary role has led to a quiet revolution in the attitudes of government toward architecture. Some of the smarter city regimes have used architecture in a creative manner which the discussions at Chapel Hill can clarify and expand.

One of the leading means of securing developers who would use better architecture and planning has been a special kind of government-sponsored competition. These have been described in FORUM when held in cities such as Philadelphia, San Francisco, Baltimore, or others. The outcome has been a kind of project far above average, designed by top planners and architects. But the procedure has problems too. Briefly, it invites developers to submit competitive schemes, including plans and design, of what they propose to put on the project area. The chief problem has been the huge cost to private developers of paying for the research, planning, design, and presentation work required for a first-class scheme, when it is known in advance that the chance of winning is mathematically one in five or ten.

The best discussion of the competition procedure was by William Slayton, Zeckendorf's chief lieutenant. Slayton proposed, first, that redevelopment competitions be based on design only—this after the city had passed on would-be competitors' business qualifications. (Those accepted might even be paid to hire an architect.) Second, the winner must be picked by the city, which would use well-qualified architectural and other jurors but must retain ultimate responsibility. Third, the basis of the competition must be kept simple and presentations must be limited to conceptual plans and simple models. Fourth, the competition must be based on a fixed land price. *continued on page 93* 



DEALERSHIPS AVAILABLE IN CERTAIN AREAS . WRITE HUMPHREY DIVISION . ARKLA

#### Editorial continued

(Developers, it has been found, will load land at any stated price with just about as much construction as the price warrants.)

Objection was made by James McCormack of URA's Land Branch that selection of a developer solely on the basis of a design could never be other than subjective; he proposed that the choice of developers could be made on an objective basis, such as the lowest proposed rentals or sales prices which, he added, could get the city away from highpriced redevelopments.

But this line of argument seems to miss the whole point about the cities' competitive troubles. Unattractiveness is what causes the cities to suffer. This cannot be overcome with still further sleazy building. As Slayton remarked, the biggest part of the redevelopment job is to persuade people to come *back* into deserted city areas instead of settling in some established suburb where schools, recreation, and other attractions are on hand and waiting. This competitive persuasion demands that city redevelopment must show extra attractiveness, extra drama, imagination-stimulating new amenities, of the sort that have roused enthusiasm of the communities where these have been offered. Only by imagination can the fading support for urban redevelopment, such as it has received, be fanned into active participation.

There are too many indications that perhaps David Walker, the URA administrator, holds the humdrum values higher. It is said that he would like to make a big showing with redevelopment projects rapidly completed, without "wasting time" on better planning and architecture. Speed is of course laudable but it is not the main value.

"What does the city think of *you*?" asked Mr. Doxiadis, the architect for the striking Reynolds Metals project for Eastwick in Philadelphia. "What are six months' delay, in the life of a city, compared to excellence for half a century?"

As for curing delay without losing quality, that is a separate subject.



#### Lamps of culture

Apparently stimulated by his victory in decorating city buses with revenue-producing billboards (FORUM, Aug. '59), New York's Mayor Robert Wagner has come up with a brilliant new idea for easing his city's financial woes. Now Mr. Wagner proposes to rent out the lampposts. The possibilities, of course, are heady to contemplate ("This Light Brought to You Courtesy of Con Edison Electric," "Lean Here, Tired Friend-Your Four Roses Dealer," "Be Our Guest-Fido Dog Food"). For that matter, why stop with mere lampposts, when the sides of public trash baskets, mailboxes, and fireplugs lie virtually unexploited and the broad surfaces of the very streets and sidewalks remain a disappointing blank? The fact that a few pedestrians and motorists might be wiped out while trying to read the messages should not be allowed to block such civic pioneering. There are really only two minor obstacles. One is that total lamppost revenue has been estimated at \$1 million, a faint glimmer indeed in the glare of overall budget needs. The other is that not even New Yorkers will take it.





# A school in the sun

#### In the hot climate of Sarasota, Paul Rudolph stages a rhythmic dance of architectural shapes.

The spectacular, fresh appearance of this new academic wing for an old senior high school at Sarasota, Fla. reflects an energetic educational program. Somewhat over a year ago Sarasota's school board, headed by Philip H. Hiss, drew national attention with a flock of new schools, almost all of them designed by young local architectural talent. The most striking of these structures was Riverview High (photo below, and FORUM, Apr. '59) by internationally renowned Paul Rudolph, who began his architectural practice in Sarasota and is today the architectural dean at Yale. Now Riverview has been surpassed by the new Senior High wing—also by Rudolph.

Both of Rudolph's structures—Riverview and this —are two stories high, and both are composed of glass-fronted classrooms at each floor, strung on both sides of central corridors. At the second level the corridors are bridgelike open passages, under a raised-up roof like an open shelter. Both schools are built on skeleton steel frames.

In both schools the most remarkable architectural feature is the sunshading—in each case supported by a widely extended auxiliary stucture and designed to shade the generous glass against the glaring light and heat of the southern sun. At Riverview the sunshades are long rows of horizontal concrete slabs, held in front of the school's glass window wall on their own lightweight steel framework, and producing an effect like foliage. At the Senior High the shading is by means of the elaborate card game shown at the left—an arrangement of vertical concrete sheets suspended from the widely outreaching *text continued on page 99* 





Like a house of cards, the new Senior High wing (left) is a rhythmic composition of planes, contrasting sharply with the linear structure of the earlier Riverview school (above).







Typical detail of column beam, and slab is shown in the diagram above. Over the column the slab is dropped to the bottom of the paired beams; a diaphragm connects the beams and transmits the loading to the column; the enclosed space is used to carry mechanical services from the center of the school structure.

The new wing provides only for classrooms, gym, and cafeteria (plan, left); more classrooms, a library, and an auditorium will be added later replacing the outmoded facilities of the original school building.



Behind a parking space and bus shelter, the angular building sits atop the only noticeable hill in Sarasota.



Emphatic rhythm of the structure is revealed in the two-story central core of the cafeteria.

Formal stairway, leading up to the entrances of the school, is partially sheltered by a stepped canopy.



roof. These sheets are arranged to let through view and air but to intercept those bands of sunlight that would otherwise strike the window wall behind.

Yet Rudolph is not a naïve functionalist, and this sunshading opportunity has lured him into an exhibition, an architectural dance. From any distance except directly close up, the sunshading, brilliantly white-stuccoed, fools the eye into thinking that it is the building. It even plays with space more vigorously than the interior does. The sunshade assembly moves forward and back, up and down (with the notched roof); it takes horizontal leaps at low, intermediate, and high level; it uses long spans alternating with short ones in a repeated double beat, with a rhythm of pattern as emphatic as John Cage's music. So important to Rudolph is this musical or dance rhythm that he continues his sun dance at the southeast end of the building where it shades very little (photo, left); and even the canopy over the long flight of entrance steps (photo, page 98) is broken into separate horizontal slabs, running an arpeggio of their own.

Inside the building, the plan yields comparatively tame box-shaped rooms, but even here Rudolph gives the students a lively effect of opening up space by treating some of the walls and floors as if they were sliding panels left slightly ajar, leaving open slots where the world outside can be contemplated through glass—looking upward through clerestory windows, or sideward under hung partitions, or downward through slots in floors.

This play with openings of light and space is, of course, a modern continuation of the great drama of baroque architecture, and is especially effective in the cafeteria of this building, a two-story room (photo, page 97). The architect's game has annoyed structuralists who are disappointed to find no "foldedplate" construction though that is the appearancethe structure is simply a wide-spanning post-andbeam-and-slab system with a dip in the slabs where the double beams occur (diagram, page 96). The arrangement may also cause some acoustical annoyance because the light-deflecting baffles may also reflect sound. The arrangement has annoyed some local art critics, unprepared to feel the effect or to understand the scheme. It has raised some questions for serious critics about making the incidental elements of a building the main show. The experimentation may also lead to some other problems unforeseen.

There is little question, however, that Rudolph's song and dance has made the world seem to students like more of a place for a high adventure of the spirit, and that, on the highest point of land in Sarasota, it has made a fascinating monument out of energetic education, for an energetic town.



Main entrance is covered but not enclosed, and opens through the building. The hung stairway is the route to the outdoor corridors that run down the center of the second floor.

Tall lighthouses above the gymnasium are glazed on two sides with obscure glass. Egg-crate grids beneath them further baffle the direct sunlight indoors.



Central corridors on the second floor are sheltered without impeding the easy circulation of fresh air. Openings ventilate not only the corridors themselves, but also are intended to pull air through the classrooms' inner windows. This works well. Students find this building cooler than the older, conventional wing.

The 78,437-square-foot building cost \$1,038,000, excluding fees, equipment, and site development— \$13.37 per square foot, including sheltered exterior areas at one-half area value, basement at full value.





SECTION



Typical classroom is glazed at both ends: toward the central corridor (above) and toward the outdoors beneath the broad eaves (right). When sliding glass walls are kept open in adjacent classrooms, some acoustical bounce is

reported from the flat concrete planes, but air is kept moving through the classrooms, and direct sunlight is blocked. A close-up of the exterior wall, with its armor of plaques against the sun and sky glare, is shown opposite.





# Apartments

## ... a boom in

Not since the booming twenties has there been so much interest in apartments as today, and never was rental housing more essential to the nation. To help measure the present market, and to help weigh today's cost and quality of output against need, FORUM herewith presents four articles on apartments:

▶ A quantitive measurement of the coming apartment boom (right). It seems to promise mostly upper-bracket rental units.

An inquiry into what is succeeding and what is not, and why, in the most ambitious effort yet to put back tall and low apartments, with plenty of "garden living," into the heart of the city— Detroit's Lafayette Park (page 104).

▶ A collection of new ideas in apartment planning and technology (page 114).

 ▶ A critical revisit to an outstanding success— Pittsburgh's 30-year-old Chatham Village development—to search out its neglected secrets (page 118).

Unfortunately, the current inquiry reveals little progress in the large low- and middle-income apartment range, which is not represented in this report. How to try to serve this large housing need will be discussed in future issues. As the U.S. steps into the adjectiveridden sixties, it is pictured as being on the brink of a wide variety of discoveries and adventures. One of the biggest and most exciting adventures in the field of construction will be a boom in apartment building that will eclipse the musty records of the twenties.

Last year provided a stepping stone for the coming apartment boom. There were 231,500 apartment units



Apartment building in the next decade will total 3 million new units, nearly twice as many as were built in the previous boom, 1920-1930. Last year's \$31,500 units were the most for any year since 1928.

built in 1959, the highest postwar total and only slightly below the peak of the twenties (1927) when 257,000 apartment units were built. In 1960, an estimated 270,000 units will be produced, and there could be considerably more if the tight mortgage market eases a little. Moreover, the ratio of apartments to all new residential units built is approaching the 20 per cent level of the twenties. This year apartments will account for about 17 per cent of all new nonfarm units-the highest since 1949, the peak of the FHA-inspired apartment boom under Section 608. This also represents a definite turn-around from the decade following World War II, when apartment construction averaged only 13 per cent of total residential building.

The new boom, unlike its 1920-1930 counterpart, will probably build grad-

# the upper brackets

ually to a peak through the coming decade. Economist Miles Colean estimates that apartment construction for the next five years will average about 250,000 units annually, but in 1965-69, the average will be closer to 360,000. Altogether, a record-breaking total of 3 million apartments may be built during the decade, nearly twice as many as were built in the twenties.

There are several reasons underlying the renascence of apartment building, but two stand out above the others: 1) the composition of the population is ideally designed for an apartment boom; 2) the groups which are traditionally inclined to rent will have more money than they ever had before.

These groups include young couples or single individuals between the ages of 20 and 24, and older couples or individuals over 55. By 1970, the former group will have grown by 6 million persons (a larger increase than the same group experienced in all the last 80 years), and the latter group will have expanded by nearly 7 million. The



**Population** growth in the age groups that are the biggest renters underlies the coming boom. Within the next decade, youngsters (20 to 24 years) and oldsters (over 55) will grow from a total of 24 per cent of the population to nearly 27 per cent.

two groups combined will add a total of nearly 7 million new households (counting 4.2 million single-person households for the over-55 group) to the nearly 52 million households already in existence. Besides these two basic groups, the group between the ages of 25 and 29 will also expand rapidly in the next decade, and this category is also characterized by a large percentage of renters.

#### The key question

Barring an economic collapse, these age groups will have more income to spend for housing than ever before, particularly the older group, because of expanding social security benefits, lifeinsurance and pension-fund payments. The key question is, however, will they have sufficient income to afford the sort of rental housing that is likely to be built?

The dilemma of rental housing in the sixties will be doubly difficult because it was never resolved in the fifties. Since the war, it is estimated that no more than 40 per cent of all private rental housing built was really middle income, by any reasonable standard. Whether builders would not build apartments with moderate rentals because they believed families would rather live in suburbia, or whether families moved to suburbia because there were no moderate rental apartments in the city is another chickenegg proposition. The simple fact is that there was little moderate rental housing built. Of course, the federal government's persistent support of home ownership, under the FHA and VA programs, greatly influenced builders, who could make more and easier profits in that area than under the FHA's rental programs. And then, there was the tragic climax to the one significant federal effort to get rental housing built. This was the rental program under FHA's Section 608, which allowed high land appraisals and frequently permitted the builder to get a 100 per cent-or even higher-mortgage. The result was the highest volume of apartment building since the twenties (nearly half again as many apartment units were built in the five peak years of Section 608 as all other FHA

multifamily programs have inspired since 1934)—and a subsequent Congressional investigation that discouraged the federal government from making any sensible, broad-gauge plan of apartment mortgage insurance. Many of the builders who participated in the 608 program were blacklisted from FHA programs, and many others were repelled by the stigma that FHA attached to participants in the program.

Since the 608 program collapsed, the volume of middle-income rental housing has been even smaller than it was in the late forties. Yet, housing economists feel that builders may find ways to tap the vast market for middleincome rental housing, even though the bulk of new apartments built through the sixties may still be in the luxury class. The pivotal factor, they say, is the same one that has been, in the past, most frequently cited by builders as the reason why they cannot build more moderate rental apartments-high building costs, including taxes and financing.

#### The cost spiral

Since 1947, apartment construction costs have risen 62 per cent; land prices, even by the rough measures available, have more than doubled (the percentage increase varies from city to city, and with the site's proximity to any city's central business district): and mortgage charges today are as high as they have been at any time since the thirties. These factors, plus high taxes, have forced most apartment builders to concentrate either on luxury apartments in city locations, or suburban apartments to compete with tract housing. For example, Chicago Developer Ferd Kramer says that high interest rates are holding back middleincome housing in the Windy City, where, he adds, "there is a lot of stuff going up at \$45 to \$75 a room." Kramer himself has been nipped by high interest rates, and has stopped work on his middle-income (around \$33 continued on page 209



# plus row houses in Detroit



In the slum-surrounded Lafayette Park Title I Project, a demonstration of a new kind of city living is under way.

In the urban murk around Detroit's strangling downtown there is something new. Here, in a few blocks torn from the slums, sit a 21-story apartment slab and 21 sets of row houses in a classically peaceful arrangement, a serene community with as composed an air as the old neighborhoods of Bath, England.

The 186 low habitations, backstopped physically and financially by the apartment slab, do not imitate the architectural style of Bath or of suburban U.S. homes transplanted to the city, in their confident steel and glass façades. Nor are they merely a new kind of garden apartment. Instead, they are a hybrid dwelling developed specifically for city living, and an astonishing one, available for cooperative purchase at reasonable prices by families who do not want to desert the city for the suburbs.

The quality of the neighborhood's comfortable repose can hardly be caught by the camera, but demands a stroll down the pedestrian walks. The camera, for example, cannot convey the deftness with which Detroit's own strident contribution to the world's landscape, the automobile, has for once been digested here into a city street scene, instead of being allowed to dominate it. (This upstaging of the auto was done politely: the designers simply set the houses on a platform of lawn  $3\frac{1}{2}$  feet higher than street level.)

Like nearly all urban building, Lafayette Park was created not only by strong minds but daring money, and it is a financial gamble whose result today is still undetermined. It was Herbert S. Greenwald, a highly persuasive real estate financier who had already proved other architectural visions to be economically practical, who began this redevelopment. He died in a plane crash in 1959, before Lafayette Park was completed, and before his persuasiveness could be brought to bear fully on the Detroit public. That is where the project is now, in the lap of the public.

The apartment house has been finished for a year and is 98 per cent rented. The houses have been finished since January, but only about a third of them are sold. Those families who have bought into the project acclaim it as a real opportunity to create a neighborhood which could transcend the converted antiquity of Washington's Georgetown or New York's Greenwich Village—but to learn how the rest of Detroit is taking the project, turn the page.

#### Lafayette Park's pioneering architecture . . .

The low flat-roofed dwellings which occupy 15.7 of the 21 acres developed so far (site plan, right) look from a distance much like horizontal slices cut from a typical tall Mies apartment building and set down on the ground. But up close, on the site, this is not true; setting them on the ground gives them an entirely different character a spacious urban luxury midway between the feeling of conventional row houses and Mies's usual apartments.

In the case of the one-story courthouse (right and page 110) of which the project has 24, the ground-owning character is easy to ascribe. Each has a private back yard beyond its floor-toceiling glass end wall. The yard is formal, is enclosed precisely by a trim brick wall, is tailored to the midcity feeling of the entire project, but is undeniably a private piece of turf.

Even the two-story "town houses" (page 108), of which the project has 162, feel more like houses than the usual duplex apartments, although these do not have private yards. Part of this comes from the fact that their groundfloor level definitely is on the ground; their upstairs bedrooms really are upstairs; they really have basements.

Even more emphatic in the creation of this new kind of urban environment is what happens inside the courthouse or the town house. The sizing of the rooms, the swing of the doors, the proportioning of the surfaces, are all done with the usual dignified precision of this architect, but the houses totally lack the regimented feeling which many people get when they enter a Mies apartment which is merely one of several hundred in the same stack. A proof that the occupants of the Detroit row houses really are relaxed is manifest in the very diverse systems of decoration they have used very successfully in these uniform houses. Ranging from colonial to Eames, these interiors are neither a shock nor a disaster, as the inept decoration of a precise Mies high-rise apartment usually is. Despite their floor-to-ceiling end walls of glass, the Mies houses are amenable to a wide range of furnishings.

Each courthouse occupies about 1,680 square feet of ground area, each town house, 880, not including its share of roads and walkways, but taking in a parking space. One of the reasons for the very simple look of the arrangement of row-house units is the absence of all-too-frequent garbage cans and other unsanitary clutter. A basement tunnel channels the handling of this for each house row.

The project was financed on five FHA guaranteed loans totaling \$7.5 million, the largest ever to be processed through the Detroit FHA office. Total construction cost of the apartments and row houses exclusive of architect's fees and sitework was \$6.7 million. Land cost, after Title One write-down, was \$355,000.

#### ... and the fight it faces

The 70 families who, by the end of last month, had moved into the pioneering one-story courthouses and the twostory town houses of Lafayette Park were themselves pioneers. Indeed, the chance to pioneer, to be part of a unique and significant new community, was, for many, an important factor in deciding to settle there.

The attraction of pioneering, of course, involved the architecture. But it also had to do with three features of the low-rise sections of Lafayette Park, unique anywhere but particularly unique in suburbanized Detroit: the project was downtown, it was a cooperative, and it was interracial.

These features, not necessarily attractive to a mass market, ought, nevertheless, to be sufficient to attract a sizable group of precisely the kind of people the center city needs: more people, many more, similar to the 70 families in the houses and the nearly 340 families in the adjacent high-rise apartment—people of urbanity, diversity, and leadership.

But last month there were 116 houses still empty, and some people in Detroit who had stood staunchly by the project were wondering whether they had been right in doing so.

The questioning comes at a crucial stage. Greenwald's associate, Samuel N. Katzin, now working through young Attorney Daniel Levin, a Detroiter who moved to Chicago to work for Greenwald shortly before his death, hopes soon to build on the other side of the park (see site plan, right). The socalled Lafayette Extension, which would continue the park to still-prestigious Jefferson Avenue, is nearly cleared and ready for developer bids. Both areas are part of the plan by Mies and Planner L. Hilberseimer.

Altogether, the total planned neighborhood of around 7,000 persons (FORUM, March '57) was shrewdly figured just big enough to hold its own.

Until and unless it is all developed following the high standards of the presently completed small segment, there is a measure of risk for the 70 families who committed themselves to ownership of the cooperative houses. But if there's a chancey fate, it is nothing compared to Detroit's: the bold planning vision on which Detroit has staked its future depends on these people in Lafayette Park who are willing to take charge of their personal piece of the city. For these few, it has seemed at times as if breaking Michigan's virgin wilderness could hardly have been tougher.

Happily, the new settlers are people with diverse abilities. Among the residents of the houses are 14 doctors and dentists, eight practicing lawyers, three brokers, several accountants, an architect, a planner, and several builders. There is a policewoman, a minister, a newspaperman, a judge, the vice president of a downtown bank. Most of *(text continued on page 112)* 



Public park will run down the center of the redevelopment area, dividing the completed part (left, shown shaded) from further extensions. The original site plan for the entire area, whose fate now is in some doubt, called for five more high-rise apartment towers (A) with the additional row houses (B,C), for parking structures (D), for a shopping center (E), a public school (G), and a communal clubhouse and swimming pool (H).

Below, left, is a photograph of typical Detroit row housing of another era; below, right, a view of the Mies row houses from the apartment slab.







#### Two-story houses (1) are 17 feet 61/2 inches wide and 38 feet deep on the ground floor, with living room, kitchen, and dining room there and three bedrooms upstairs. The designers gave all bedrooms big window walls by notching one plan into the next on the second floor, giving alternate units their two-bedroom exposures on different sides of the long row of attached houses. Typical interior of a town house (2) shows a familiar Mies character in the detailing of the little staircase: steel, but neat and unpretentious at this scale. All houses (courthouses as well as the two-story models) are air conditioned from central units downstairs in each block; the owners are charged for this extra electric load by meter according to their use. Exterior maintenance in the price of the co-ops includes mowing grass, washing exterior windows, clearing snow, and landscaping, which had just been begun when these photographs were taken last month. The two-story town houses sell for \$20,500 to \$25,000, on a plan which calls for \$1,035 to \$4,854 cash down and monthly payments of from \$174.52 to \$242.88, a similar but slightly less costly version of the schedule for the one-story courthouses.

Apartment-house slab is in the familiar clear and graceful Mies style for multistory buildings. It is far enough away from the row houses not to overshadow them, but provides an appropriate visual backstop for the nicely organized game of low units on the ground before it (3). The two-story lobby level (4) contains services (except for heating, which is in a penthouse) and management offices, and also houses a food store-in a temporary location, awaiting the construction of a shopping center as a part of the redevelopment project. The biggest apartments have two bedrooms and rent from \$190 to \$235 per month. The single-bedroom corner apartments rent at \$150 to \$190, and efficiency apartments start at \$85 per month and go as high as \$135, depending on location and on size. Photographs of living rooms in typical apartments (5, 6, 7) reveal the long, wide views of midtown Detroit available from this location. Plan of a typical floor, left.





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Single-story courthouses vary in size from two to four bedrooms (see plan, right). In the example shown on these two pages, one bedroom normally facing on the court has been removed to create a 36-foot-wide living-dining room (4). The houses' long, narrow kitchens are equipped with electric stoves which fold down on the counter for cooking, but otherwise are stored in the wall (1). Entry and stair hall indicates immaculate detailing of houses (2). Under each courthouse is at least 1,300 square feet of basement; at the rear of the long unit of linked houses is a common hallway for service reached by an outdoor stairway at the blank end (3). Note how the depressed parking spaces before the courthouses minimize the parked cars as an aspect of the landscape. These courthouses sell for \$25,-000 (two bedrooms) to \$34,000 (four bedrooms). Down payments range from \$1,587 to \$6,647; monthly carrying charges range from \$208 to \$333. 4

ARCHITECT: Mies van der Rohe. PLANNER: L. Hilberseimer. LAND-SCAPE ARCHITECT: Alfred Caldwell. STRUCTURAL ENGINEER: Frank J. Kornacker. MECHANICAL ENGINEER: William Goodman. GENERAL CONTRAC-TOR: Herbert Construction Corp.



#### (continued from page 106)

these people have been helpful in getting Lafayette Park established. The lawyers, for example, were able to give the cooperative agreement a final smooth edge. One of the stockbrokers has developed a form which a potential buyer can use to compare his present housing costs in a rented or owned home to the costs of a co-op home. When it came time to decide on management for the first cooperative section, the people involved decided to do it themselves-which meant employing a maintenance staff, handling financial and tax matters, and a myriad of other things. They have done a good job.

#### Mothers at the office

Perhaps the most obvious distinction the residents of the Park have over residents of more conventional suburbs is the high incidence of career wives and mothers. At least 14 have full-time careers, and many more work part time. This is one of the reasons why, as yet, there is no all-morning coffee-klatsch at Lafayette Park, and why there is correspondingly less cliqueness. Most people are simply too busy. Because Lafayette Park is within walking distance of downtown Detroit and within five minutes by cab from the many cultural activities around Wayne State University, there is plenty of opportunity for anyone to be busy. Conversely, people are not forced to do "busy" work at home. Windows are washed and grass is cut by a staff of employees.

This doesn't mean that neighborliness is lost or that people aren't friendly. But friendliness is less likely to be "sticky" in the Park than in conventional suburbs. Often, without prior planning, people will get together over cocktails and then go their separate ways for dinner and evening activities. There is, so far, little "keeping up with the Joneses" because the "Joneses" don't live next door. The Lafayette Park stereotype family doesn't exist.

Perhaps nowhere is this more evident than in terms of family composition. The 70 families have 42 grade- and high-school-age children. There are somewhat fewer college-age and grown children. Surprisingly, there are more children in the apartment house than might be expected. Because they are in the midst of a still unsettled renewal area, some 22 of the grade-school children attend a modern version of the one-room school set up by the Detroit Public Schools System in a town house loaned by the developers. Next year, this school is supposed to be installed in a new four-classroom unit in the park, but although plans are being prepared, construction has not begun.

The school is a good example of the way Lafayette Park has thrived, more or less despite its problems. Ruth Belew, the teacher who keeps all eight grades plus a kindergarten going with only one assistant, rented an apartment in the tower last year, then took on her difficult assignment after a group of parents asked that she be so assigned. They did this because she was herself interested to take up the challenge. So far she has had remarkable success, often with the help of parents and others who step in to instruct in special-subject areas. Perhaps strangely in these times, she is helped by the students, all average or above in intelligence, who often instruct each other with great effectiveness.

Although the residents of the adjacent apartments are normally less a part of the community than Ruth Belew (and less a community themselves), interaction between the apartment-house residents and the residents of the court- and town houses is in some respects significant. At least one very busy and independent grandmother selected an apartment near her son-in-law and daughter's courthouse, but carefully out of a direct line of vision. At least one enterprising eightyear-old from the town-house group is doing a flourishing business walking dogs for apartment residents. Almost everyone living on the side of the apartment building overlooking the town-house group have binoculars on their window sills-for viewing the boats on the river, of course.

Whether the binoculars help or not, four families moved from a tower apartment to a town house, and more are now considering a move. More commonly, people came to rent an apartment and ended up buying a town house. This is due, in large part, to the effective persuasion of Deborah Maxon, chief of sales for Lafayette Park and a courthouse resident with her husband and three adult children. Mrs. Maxon, whose husband had been transferred to Detroit from Chicago, was hired by the late Herbert S. Greenwald and installed in a trailer rental office on the site in February 1957, before construction started. Thirty-two people rented apartments from plans before she had a model to show. All of them ultimately moved in, some after a two-year wait. In the same period, 18 people applied for courthouses, eight of whom ultimately moved in. But no one applied for a town house.

This tendency persists. Now, with 116 town houses still to be sold, almost everyone has a theory about why they have not sold more rapidly. The most common theory, and the one Samuel Katzin and Daniel Levin are counting on to carry the proposed development of the low-rise parcels on the other side of the park, is that people do not want two-story houses, while they do want closed yards. The original plans called for brick-walled entrance courts on the front side of the town houses, which would have provided a private yard at the front while maintaining the fine open vista over common lawns at the back. This plan, perhaps the best of both worlds, was given up in favor of the present hedge plantings on the front courts to bring construction costs down. Mies, it is said, reasoned that permanent brick walls or easily maintained hedges would be the only proper possibilities. He is probably right, and will be proved so after the planting has grown, but meanwhile, the hedges are not very persuasive privacy.

#### Lots of courthouses

Be that as it may, the fact is that the town houses did not sell well and the courthouses did. Therefore, Katzin and Levin, with Builder Associate Sheldon Rose of the old Detroit firm of Edward Rose & Sons, plan to start 60 courthouses, all one story, late this spring on readied parcels across the park. These houses, which will not be Mies-designed (but will copy the Mies manner), are to sell for \$20,000 to \$25,000 (about the same as the town houses and nearly \$5,000 less than the present courthouses). They will be cooperatives built under FHA Section 220, with mortgages running 40 years and requiring 10 per cent down.

With the new courthouses under way, Katzin and Levin hope to start 680

#### Six families with a stake in downtown

new apartment units in twin structures by Mies, with a parking structure between them. Then, adjacent to the apartments they will be prepared to build a 60,000-square-foot shopping center with a 200-plus car parking lot.

If all goes well, Lafayette Park will, then, within the next year, have only two more low-rise parcels and a highrise section remaining vacant. This will be a great satisfaction to Katzin and to the cosponsoring group, the Citizens Redevelopment Corporation of Detroit. CRC, whose \$500,000 revolving fund is tied up in Lafayette Park (under an agreement with the city, CRC has been paying taxes and interest on land optioned to them, who, in turn, planned to sell the land to Greenwald and Katzin as they could develop it), is most anxious to move on.

Now, all this sounds hopeful. The apartment building is now a success, and the one-story court and two-story town houses, while undoubtedly not a financial success, are certainly proving a social success. Further development, after a year's delay, is now indicated. The new team organizing around Katzin is learning fast. Perhaps they may even learn fast enough to return the proposed houses to Mies's hands where they belong.

All is not as sanguine, however, in the Lafayette Extension. Here, six or eight developers have indicated an interest in acquiring parcels for building. Most of them have submitted highly speculative designs for consideration. Up to now, City Planner Charles Blessing has staunchly stood by the basic principle of mixing high- and low-rise developments and he tends to place on the high-rise developer the responsibility of providing the contiguous low-rise construction. Nevertheless, the pressure to turn the extension into a real-estate speculator's dream will increase, and the balance may subtly shift away from low-rise housing.

Serious as the problem of the Extension is, the more general fate of renewal in Detroit is more serious. There is sentiment in the housing authority to rebuild the adjacent area, next slated for renewal, as an imitative suburban colony "to compete," as one official put it, "with St. Clair Shores." But, the 70 families settled in Lacontinued on page 222



Planner Walter Blucher, shown in the living room of his two-story town house with a son, Stephen, has espoused group housing here since 1933. When he returned to Detroit recently as executive director of the Southeastern Michigan Metropolitan Community Research Corp., he bought a house in Lafayette Park for three reasons: it was downtown, it was in a cooperative, it was interracial.



Stockbroker Tom Watson lives in a town house with his wife Mickey and twins Jay and Tina. He knows the economics of cooperative house ownership because he was president of River House Corp., Detroit's only other cooperative, before moving to Lafayette Park. Watson, who has devised a chart comparing costs of buying a cooperative over renting or owning a house separately, is a staunch booster of the project.



Dentist Charles Haithman, who occupies a town house with his wife Charlotte, and their daughters Susan, Diane, and Sally, is only a few minutes from his office by car. Charlotte Haithman, who finds time to go to art school, likes the simple and uncluttered architecture of the house, finds it easy to care for.



Newspaperman Raymond Girardin and his wife Mary came to look at an apartment and ended up buying a town house. Previously they had been downtown apartment residents. One of the few native Detroiters in Lafayette Park, Girardin likes to look at the sky line from his living room. They have a cottage across the river in Canada for week-end use, now wonder if they'll want to leave the air-conditioned house next summer.



Mrs. Josephine Gomon, the first executive director of the Detroit housing Commission, occupies a one-room apartment in the Pavilion Apartments, is often visited by her grandson Michael Nunn (above). Mrs. Gomon, who has civic committee meetings in her apartment for 35 or 40 people, finds it convenient to be near her daughter and son-in-law, Guy and Jean Nunn. The Nunns, shown in the living room of their courthouse with daughter Christopher (below), have careers. Jean Nunn is an attorney, Guy Nunn is radio director of the United Automobile Workers.



#### Apartments

# Design for urbanity

A rich supply of ideas for the design and technology of apartments is evolving to serve a new generation of urbanites.

Whatever the economic and cultural trends may be that are making apartment dwellers out of American plainsmen, there is no doubt that the movement has been hurried along by an impressive number of improvements that have recently taken place in apartment design. These improvements and innovations, many of which try to compensate for the basic disadvantages of living in a tower, range in scale from site planning to the detailing of airconditioning ductwork. Admittedly, some of the apartment trends and developments may appear insignificant when compared with advances made in other building types; but when regarded as the first stirrings in a field that has remained static for many decades, they suggest that U.S. architects and realtors may yet develop a pattern for pleasant urban living.

What sort of pattern will it be? In the twenties, Le Corbusier proposed an apartment house consisting of what he called "superimposed villas." Tomorrow's apartments—with a few exceptions such as the luxury building in Los Angeles, by Architect Victor Gruen (see below)—will not be "villas"; but



they may very well be patterned after small suburban houses in unit plans and with many amenities. They will certainly be in competition with such houses-and in competition with lowrise apartments, whose substantial merits still outweigh most of the familiar comforts offered by high-rise towers. Indeed, apartment living, which used to be closely identified with single people, childless couples, or older couples with grown children, is rapidly becoming the most available form of family living for many couples with children who prefer urban living to suburbia. This means, of course, that

the basic premise in apartment planning has shifted considerably. The shift is discernible in several trends, all of them worth noting:

#### More "point apartments," fewer slabs

The "point" or square tower apartment plan shown below (by Architects Kelly & Gruzen for Chatham Towers, New York City) is typical of this unit layout: four apartments per floor on the upper 16 floors, with each apartment getting a corner location and,



hence, cross-ventilation. (In slab buildings, the corner apartments at each end rent much faster than those in the middle.) In this scheme, all living rooms have a corner location and a generous terrace, there is a family space and eating counter off the kitchen, and there is plenty of storage (including walk-in closets). All these are important assets. In cities with a height limitation on buildings, "point" apartments run into cost problems, for they need two elevators which, in turn, do not become economical in "point blocks" less than about 20 stories high. Still, even in lower-rise apartments there is a trend away from slab buildings and toward a more irregular planpattern, which gives each apartment a corner location.

#### New plans with cross-ventilation

Where height limitations make more than four apartments per floor a necessity, new plans have been developed that give all apartments throughventilation. One good example is the proposal by Architects Ballard, Todd & Snibbe, which has duplexes with access



FIRST FLOOR

corridors on alternate floors, throughventilation on every bedroom floor (above). Another is the new apartment in Boston, by Architect Hugh Stubbins (below), which has several through-



apartments on one floor. Even in airconditioned apartments, tenants seem to like more than one exposure.

#### Private "patios" in the sky

Private terraces are popular not only with apartment builders (because they increase the FHA room count) but with tenants as well. Levitt House (now Le Havre Apartments) in Whitestone, N.Y. (below) has a planting



bed covering part of the balcony to increase the garden feeling. One of the "Golden Gateway" proposals for San

Francisco by Architects John Carl Warnecke, Gardner A. Dailey, and Victor Gruen (below) has terraces surrounding every apartment floor. As a result, each apartment has outdoor space equal to about 25 per cent of its en-



closed space-a major move in the direction of "superimposed houses."

#### Communal spaces within the building

For children to get together inside the building on rainy days, some architects have provided communal lounges every three or four floors. The design by Holsman, Holsman, Klekamp & Taylor for Chicago (below), is a partially skip-stop apartment building, with



lounges bridging the space between apartment towers at every access level. A laundry room is located off each of these lounges.

#### Bigger kitchens for eating in

Apartment experts seem agreed that most families in lower- and middleincome brackets like kitchens big enough to eat in-as well as a formal dining space. While this is often dif-



ficult to achieve within a tight budget, several compromise solutions are on record: one, by Architects Pomerance & Breines, shows a flexible arrangement of the partition between kitchen and dining area allowing for either a dining alcove off the living room, or a big kitchen with dining space-or both, by the use of folding partitions (above). Some apartments in Washington Square Village, Manhattan, by Architect S. J. Kessler (with P. L. Wiener as consultant), have a kitchen-



dining arrangement in which a passthrough counter is used as an eating bar (see above). But the ideal layout is that shown in the Tulsa, Okla. apartments by Architects Harrell & Hamilton (below), which have a large break-



DRESSING - BATH









fast area *within* the kitchen, as well as a formal dining space off the living room.

#### Dressing room/bathroom combinations

In New Haven's University Towers, by Architects Kahn & Jacobs, dressing rooms and bathrooms are treated as a single unit, divided only by sliding doors (top left). This arrangement is coming into increasing use in efficiency apartments; but even in the threebedroom apartments by Mies van der Rohe in Newark (left), the master bedroom has a dressing room/bathroom combination. (Note: in New York's Washington Square Village, the combination of dressing and bathroom facilities has been further emphasized in some apartments by the use of the same floor tile in both areas.)

#### More and better storage

The apartments proposed for San Francisco by Architects Wurster, Bernardi & Emmons and DeMars & Reay have storage facilities directly off the public corridors, rather than in basement areas (left). But even inside the individual apartments better storage is being provided: the Charles River Park apartments proposed by Victor Gruen for Boston (bottom left) would have three large walk-in closets in every three-bedroom unit. At least one such closet, measuring about 6 by 7 feet, seems highly desirable in any apartment.

In short, apartments are being designed more and more to appeal to families with children, which means that they are being planned more and more like single-family houses stacked one on top of the other. But better unit plans alone will not always attract such families; better materials and equipment, better amenities and better services must be offered also. Here are some that have proved attractive to people used to the comforts of singlefamily homes:

#### **Better exterior finishes**

Where codes permit, apartment buildings can offer their tenants a more sophisticated façade, using some of the



best curtain-wall techniques developed to date. In the Colonnade Park Apartments in Newark, N. J. (above), Mies van der Rohe and Metropolitan Structures, Inc. were able to supply a sleek curtain wall at very reasonable cost: \$4.50 per square foot. And, despite the use of this elegant, aluminum façade, rents could be kept to \$41 per room.

#### **Better interior finishes**

Builders have found that new building techniques can produce **smoother** (and more easily maintained) finishes. One of these techniques is the use of plastic-coated plywood forms for poured concrete, which can produce nearly fin-



ished ceilings and exterior and interior walls requiring only paint, paper, or in some cases roll-on plaster. The method, adapted from other building types, is shown above being used in the construction of the Beverly Hilton Hotel, by Welton Becket & Associates.

#### Greater plan flexibility

In luxury apartments it is possible for tenants to make adjustments in some unit plans to fit their own needs. (The flexible, three-bedroom apartment shown below, designed by Architects Kahn & Jacobs and Paul Resnick and Harry F. Green for 700 Park Avenue in Manhattan, has "borrowed" a fourth bedroom from its neighbor.) In fact, some tenants can bring in their own designers to plan the apartment layout for them. This flexibility is made possible by the concentration of utilities, by wide-span framing, and by modular





fenestration. In short, where an apartment building brings in an income close to that expected from a first-class office building for the same amount of space, some of the flexibility common in offices can be offered to the tenants.

#### Better acoustic privacy throughout

At 700 Park, all party walls are the usual gypsum lath and plaster clipped to gypsum block and plaster, making a wall of 4 inches. In addition, intraapartment walls are framed with steel studs to which gypsum lath and plaster are attached with isolation clips. The resulting partition is about 3 inches



thick (above) and is only slightly less soundproof than the thicker wall. A dachshund's bark would be heard through both, but not normal conversation. Other ways of achieving acoustic privacy include insulation of ducts (especially exhaust ducts from kitchen and bathrooms), double utility walls between back-to-back fixtures.

#### More air conditioning

Because few apartments can be designed for more than one or two exposures and complete cross-ventilation, central air conditioning is being introduced in upper-middle-income units as well as luxury flats. And New York Life's middle-income Lake Meadows project in Chicago, by Skidmore, Owings & Merrill, has a modified central system in its latest residential building. The system is designed so that fresh air infiltrates into the apartments around window frames and is recirculated, heated, or cooled by underwindow fan-coil units in each apartment (below)



to which a central pump feeds warm water during the winter and chilled water during the summer. The building is zoned to permit simultaneous cooling on the south side and heating on the north side when the season is changeable. Hallways are ventilated by filtered, dehumidified air from central air supply ducts. By virtue of this system and other added amenities, these new apartments rent at approximately \$50 per room as compared with \$33 for the earlier units. In Mies van der Rohe's Colonnade Park apartments (below), a compromise between no air conditioning and a hope of it was achieved by providing a special, fresh-air grille in the spandrel beneath each window. This fresh-air grille is built into a seat-height cabinet, and provides conventional ventilation until



the tenant can have a specially designed air-conditioning unit installed in the cabinet. The resulting appearance is much neater than that of the usual window units installed by tenants pretty much at will.

#### **Better equipment**

In addition to dishwashers and washing machines (some in special laundry rooms)-which are becoming more and more common-apartments are providing better traditional equipment. Most important in this category is improved elevatoring. In buildings like the Weequahic Towers in Newark, N.J., the elevators will function automatically, as in new office buildings, but according to a frequency pattern developed from studies of commuters' schedules. In urban apartment structures, various methods and devices are being employed to provide greater security from loiterers in self-service elevators (such as the arrangement whereby all elevators from basement floors stop and open at the lobby floor before proceeding to the apartment levels). And elevator ratios are being further perfected: one elevator for every 110 bedrooms is now advocated for high-rise apartment buildings.

#### More parking facilities

Apartment tenants have learned to expect parking space for at least one car per family. (Actually, zoning laws vary on this point: New York City calls



# Chatham Village revisited

After nearly 30 years, a great pioneer rental community is barely in its prime, and going co-op. Moral: fine planning is a sound investment.

For close to three decades now the pleasantest middle-income community in Pittsburgh, not to mention a good many other American cities, has been a tree-shaded enclave of brick row houses and parklike gardens, complete with its own clubhouse, tennis courts, and woodland trails-all within a ten-minute drive of downtown, and priced at less than \$20 per month per room. The name of this urban Eden: Chatham Village, one of the earliest, most famous, and in many ways still the most successful of America's planned "garden" communities. Where other housing experiments have contributed ideas and then themselves declined, Chatham continues admirably to prove its point. And now, after a fresh appraisal prior to being turned into a cooperative, it seems only started on an unusually long and happy life.

When Pittsburgh's Buhl Foundation set out in 1929 to conceive Chatham Village with Planners Clarence Stein and Henry Wright, the point they hoped to demonstrate was that a largescale, moderate-income housing development, carefully studied and soundly designed, could provide both a good place to live and an excellent long-term investment. The site they chose was a wooded hillside of 46 acres only two miles from the Triangle, overlooking a small public park (see aerial photo, right). Two years of exhaustive studies indicated that traditional detached houses for sale, then as now, are not always the answer: a given piece of land would accommodate fewer dwelling units and no real open space, and would cost some 25 per cent more than

grouped housing-too much for the market the Foundation wanted to explore. The scheme finally settled on was a community of 197 row houses for rent, arranged in varied patterns around interior parks, charmingly and solidly designed in a neo-Georgian style by Architects Ingham and Boyd-and occupying only 16 acres, or about 30 per cent, of the total site. Around the edge of the community, where the land started to drop off into a valley, four acres were set aside for a major playground, basketball court, softball diamond, and three tennis courts (for which tennis-playing residents now pay the outrageous sum of \$6 a year). The remaining 25 acres, really too steep to build on, were given over to a wooded greenbelt linking up with the existing park to protect the community on three sides. An old manor house on the point of the hill was converted into a club, which families may use for everything from bridge classes to nursery school for all of \$5 a year. From a picnic grove next to the club, some two miles of walking trails descend through the greenbelt forest, which Chathamites proudly point out they still share with squirrels, raccoons, and several dozen varieties of birds.

#### Variety and human scale

Perhaps the greatest success of Chatham Village is its happy adaptation of planning principles (pioneered by its authors in earlier housing experiments in Radburn, N.J. and Sunnyside, N.Y.) to a site some builders would have passed over as too difficult. Dwellings are grouped on three large, rounded blocks with their service sides and garages toward the roads, their living sides facing in over low-hedged private gardens to common parks and pedestrian paths (plan below). In Chatham both buildings and parks have variety and human scale, two amenities not captured in many garden-apartment



Chatham's pattern of ourving superblocks and private parks stands out against ordinary street development on Pittsburgh's Mt. Washington, not far above the city's new "Golden Triangle" downtown. At left is a public playground; at right, Chatham's own ball field and tennis courts. Steep woods below a clubhouse (bottom) complete the greenbelt.

projects that followed it. There are actually seven kinds of units, currently ranging from \$91 a month for the smallest two-bedroom home to \$149 for the largest of four bedrooms (plus \$10 for a garage either underneath or in a nearby garage compound)-a real bargain compared with other rentals in Pittsburgh and elsewhere, especially when Chatham's surroundings and facilities are considered. Though rented like apartments, each unit has the atmosphere of a house, and is referred to as such. Each has its own private entrance, living spaces downstairs, bedrooms above. There is no reason to complain about the "people upstairs," nor are neighbors forced to gape at each other through their side windows as in many modern housing tracts. Chatham's homes are economically grouped in combinations of four and six, separated by relatively soundproof party walls. They are relieved of any oppressive "row house" look by being stepped vertically up and down the rolling ground, with occasional horizontal offsets for further variety. Materials were chosen not solely on the basis of first costs, but to last: the slate roofs, brick walls, stone steps, and doorways have required a minimum of maintenance. The designers took especially astute advantage of the terrain to create many courts, terraces, steps, and garden corners; old trees were carefully saved and generously supplemented by box hedge, rhododendron, dogwood, and flowering crab arranged by Landscape Architects Griswold & Kohankie. This landscaping, carefully maintained by six gardeners (there are also five painters, two general maintenance men, and five others

in office and custodial staff), has in fact grown in so lushly that houses are virtually hidden from each other (and the camera) in late spring and summer.

#### Low turnover, high health

Life in Chatham Village, as one might suspect, has been more pleasant and stable than in many less-thoughtfully designed U.S. neighborhoods. Today's average resident has been there slightly over ten years; 66 of the 197 have lived there more than 15 years; and 37 can claim over 20 years tenancy, many of them "charter" residents. A good handful of children born and raised in the Village have grown up, married, and returned to raise their own children there, to the delight of grandparents. Turnover has been remarkably low, and in the last 17 years the present manager can recall only one tenant who had to be asked to leave (for chronic late payment of rent). Even in the depression years of 1932-33, the first years of the project, occupancy was 97.5 per cent, and it has been a full 100 per cent since 1942, with a sizable waiting list.

It is perhaps no surprise that Villagers are mainly middle-income professional types—lawyers, teachers, architects, junior executives—and unlike the residents of some newer suburbias, they cover a healthy range of ages and interests. There are old-fashioned basket picnics and three-legged races on the Fourth of July, and a big steak fry on Labor Day. Yet those who prefer to stick to their own knitting can have all the privacy they want.

Children can be safely left outdoors to play in sandboxes placed in almost every court, or to ride their tricycles up and down the paved inner walks instead of on heavily traveled streets. Dogs and cats were given up some years ago, and the old garages won't quite fit the finniest modern cars, but many residents regard these drawbacks as blessings in disguise. The only major improvement Chatham has had to make has been \$100,000 for additional underground wiring for all the new appliances and a master TV antenna.

#### Life begins at 30

For Charles F. Lewis, first director of the Buhl Foundation and Chatham's guiding angel, and for the Foundation's board of managers, the remarkable experiment has more than paid off. Over the years the community has not only demonstrated that sound concepts of urban land use and design hold up extremely well, but it has also returned a steady 4½ per cent—as good or better than the Foundation's high-grade bonds —reinvested and compounded semiannually to retire the cost in 31 years.

Now the Foundation plans to sell the Village to its residents under the new cooperative provisions of the 1959 Housing Act. Sponsors are the trustees of the nonprofit Foundation for Cooperative Housing (among them Chatham Planner Clarence Stein); organizing the project is the Foundation's operating subsidiary, the FCH Co. of New York. FHA has accepted FCH's application under the amendments to Section 213, which now allow the agency to guarantee 97 per cent of the mortgage on cooperatives formed out of existing properties. The mortgage in Chatham's case would be the full 97 per continued on page 221

Chatham's plan applies famous "Radburn" principles to row housing on a rolling site. Blocks are large, streets curving and lightly traveled. Cars are kept on the perimeter in unobtrusive, walled courts. A lively series of parks, courts, and malls is created within the blocks; tennis courts, clubhouse, and picnic groves are just across the street. At the main corner of the development (top left), a food store, drugstore, and beauty shop, in the same slate-roofed style, fill residents' immediate shopping needs. Across from this a small apartment building of one-bedroom units and another garage compound have been added to round out accommodations and control the entrance to the Village.





Chatham's living is pleasant living, in the city. A resident can park, and wash, his car in a garage "compound" hidden off the street; many have their garages underneath the houses (above). Inside each block (right) individual gardens look out on shaded parks dotted with sandboxes and little peakroofed garden shelters; major play equipment is across the street. An impromptu ball game in an inner court (below) is safe from traffic, easily supervised from row houses designed with charm, variety, and scale.










## Concrete Parthenon

BY PETER BLAKE



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"Air view" of model shows a transparent roof, used here only to reveal the pattern of the structure. The actual roof will consist of 16 independent concrete slabs, separated by 6.5-foot-wide slots of glass.

Nervi's prize-winning design for the Palace of Labor at Turin is a surprisingly classical hall; a runner-up, a giant catamaran of concrete.

This is turning out to be a notable year for Pier Luigi Nervi, Italy's brilliant innovator in reinforced concrete engineering. He is about to receive the annual Gold Medal of the Royal Institute of British Architects. His three newest and greatest stadia near Rome (FORUM, March '58) will be focal points of the Olympic Games this summer. He is working on his first structure in the U.S., a bus terminal for Manhattan-see page 61. And he and his son, Antonio, have just won first prize in a competition for the design of the great, new Palazzo del Lavoro-Palace of Labor-to be erected in Turin this year.

The new palazzo is an important milestone in Nervi's long and remarkable career. It will be the largest enclosed structure he has ever built, covering some 580,000 square feet of floor space, and in form it will mark a new and unexpected departure for one of the great sculptors in concrete. What Nervi has done in this palazzo is to produce an extremely simple, classical building such as Mies van der Rohe might have done, and one far removed from the plastic type of structure for which Nervi is best known.

Before discussing the reasons for Nervi's "return to classicism," one must try to describe this fantastic palazzo. It is a square building measuring about 520 by 520 feet, and 75 feet high. Its flat roof is supported on 16 gigantic, cross-shaped columns, each of which carries a steel-ribbed umbrella structure topped by a concrete slab about 125 feet square. These umbrellas are entirely independent of one another, a fact which is dramatized by 6.5-feet-wide glass slots that separate each roof slab from the next. The building is enclosed with glass.

The palazzo has three levels: a main floor just below grade, and two mezzanines forming a gallery around a great, square well in the center. The mezzanine floors are independently supported on a more traditional column system. To make this fact quite clear, Nervi left all 16 of the huge, cross-shaped pillars entirely freestanding, 12 of them rising through 45-foot-square openings in the mezzanine floor slabs, the remaining four standing in the central well. These openings in the mezzanines are large enough to accommodate all vertical circulation, stairs as well as escalators. The pillars are tapered from a width of 18 feet at the base to 8 feet at the top to further dramatize their height.

Nervi had several reasons for making his palazzo so classically simple. To begin with, the building will house exhibitions, which require large, anonymous, open spaces. Second, a future use of the palazzo, envisioned in the competition, was as an industrial school, and for this a simple, rectangular structure seemed most easily adaptable. Finally, the building had to be completed in only 17 months, which made standardization of parts absolutely essential.

Thus Nervi seems to have arrived at the same sort of "universal space" concept long advocated by Mies van der Rohe—but he arrived at it by way of his own practical reasons. And in attaining the classical ideal of universality, Nervi produced a structure classical in proportions and scale as well.

There may have been another reason for Nervi's return to "classicism." For some time now, he has been one of the most articulate critics of certain "false and artificial structures . . . in modern architecture." He has called such buildings "eloquent examples of the most open antifunctionalism in statics and construction," and condemned the "arbitrary nature of their forms, which clearly run against the laws of construction." But, most importantly, he has reaffirmed an ethical basis of all architecture: "I have come to the conclusion," Nervi wrote last year, "that for all great structures, without exception, the indispensable premise for architectonic beauty is correct technique." Be that as it may, Nervi's palazzo has both the beauty and the correct technique.



Plan of upper mezzanine (top) shows how Nervi left his great, cruciform pillars entirely freestanding: the four central pillars stand in the well of the building, while the remaining 12 pillars rise through 45-foot-square openings in the mezzanine. Detail of lower mezzanine (bottom) shows that openings are large enough to contain the stairs as well as 16 escalators, each with a capacity of 5,000 persons per hour. The mezzanines will be supported on a simple column-grid. Plan and elevation of one of the great pillars (opposite) show its tapering silhouette, from 18 feet across at the base, to 8 feet at the top. The umbrella ribs are of steel, with steel stiffeners required to resist buckling.



## ... second prize: a concrete catamaran.

A second prize in the Turin Palace of Labor competition went to plans submitted by the Architects Mollino and Bordogna, and the Engineer Musmeci. In over-all plan, the M-B-M project is fairly similar to Nervi's scheme but in structural concept, the two schemes are miles apart.

In fact, the M-B-M project was presented with three optional structural variations to allow selection of the one that could be put up most rapidly. All three structural systems involve a single vault spanning about 350 feet, using either concrete or steel, or both. At each end of the 350-foot span there is a flared and cantilevered extension of the structure to accommodate several galleries, running the full length of the building, which also are designed to contain classrooms if and when the palazzo is converted into an industrial school. The central span with its two cantilevered extensions looks like a giant catamaran, resting on its hulls.

The three structural variations are shown in the diagrams at right. Scheme A is entirely of concrete, with crossed arches forming a basket-weave ceiling. The thrust of the structure is discharged to the foundations through a series of concrete buttresses. Scheme B is a mixed structure: the side galleries are all concrete, but the central span is a space frame made largely of steel, suspended between the concrete galleries. Finally, Scheme C is another concrete structure; but in this scheme the great span is bridged by a kind of truss whose compression members are of concrete and whose chords are steel.

To some Italian critics, the M-B-M project represented a more accurate solution of the competition program than that submitted by Nervi. To outsiders, the differences in form between the two projects are of great interest: the classical approach of Nervi, versus the free-swinging, baroque approach of M-B-M. Both may be equally valid in terms of engineering, and there is probably a place for both directions. Here, Nervi, who can swing as freely as any poetic engineer, chose rectangular geometry and the jury agreed that his choice made better sense for an urban site and for the purpose at hand.



Plan at gallery level (above) shows possible division of peripheral spaces into classroom areas. Diagrammatic sections (below) reflect the three different structural systems proposed by Mollino and his collaborators: the top section shows an all-concrete structure with crossed arches. This is seen also in the model photo (opposite), which has a transparent roof for purposes only of explaining the structure—the actual roof has concrete planks alternating with slots of glass. The middle section (below) shows the central span bridged by a space frame, and the bottom section shows a concrete-and-steel "truss" system. The drawings on the opposite page give an impression of the architectural effect of these two alternatives.







## Three levers of Walter Gropius

The makers, shakers, and molders of the modern world-such men as Einstein, Shaw, Matisse, and Wright-all lived under a very special set of historical conditions. They lived to be old (in some cases, extremely old) in a period of fantastically accelerated social change. Unlike the great prophets of past times, they survived not merely to see their predictions come true: they lived on into a world in which their works had become commonplace, the very warp and woof of the everyday world. The prophet had overrun his prophecy. This situation, so novel in human affairs, creates a dilemma both for them and for the age that has so hugely profited from their efforts. It means that they exist for it at two distinctly different levels: they have simultaneously the scale of legendary heroes and of colleagues and contemporaries.

Walter Gropius, at the age of 77, is such a figure. The founder of the world-famous Bauhaus is still a practicing architect in Cambridge, Mass., with the greatest volume of work in his entire career. He has around him a group of associates who chronologically could be (and intellectually are) his grandsons. He is still a fully active member of a profession which has been powerfully shaped by standards that he himself established, 40 or 50 years ago, in another land. Gropius thus moves in a world which is doubly of his making: made by him then and being made by him again today.

The revolution which he began that April in 1919 was to set off a widening circle of repercussions which would ultimately leave not a corner of the globe untouched. Who would have guessed, that windy day in Weimar, when Gropius signed the contract with the Grand Duke to take over the state school of arts and crafts which he renamed the Bauhaus, that theories were thereby being unleashed which would one day shape buildings and artifacts, fabrics and furniture, on the islands of Japan, the coast of Brazil, the steaming valley of the Tigris? And how could that young German have guessed that these same theories would guide him, decades later, in the design of buildings in (of all improbable places!) Athens and Baghdad for (of all unlikely clients!) the U.S. government and the republic of Iraq. How elliptical is history!

Throughout a long and active life in international architecture, Gropius has simultaneously played three separate but interconnected roles: educator,

## They have been strong enough to move the world.

BY JAMES MARSTON FITCH

designer, critic. His contributions in all three fields have been impressive, though they have fluctuated in relative importance from decade to decade. The disasters of modern history have played a large role in this fluctuation, sharply dividing his life into several distinct phases. From 1907 to 1914, he was a brilliant young architect: this phase was truncated by World War I. From 1919 to 1928, he functioned primarily as an educator. He fled Hitlerite Germany in 1934: first to London, where he was an architect again for three years; then to Harvard in 1937, there to be an educator for the next 15 years. Since his retirement in 1952, he has become again a fulltime practicing architect.

This is, of course, a diagrammatic account. Gropius has always been an outspoken and consistent critic, especially of the social aspects of architecture and city planning. His criticism was perhaps most trenchant (as it was probably most comprehensive) during the Bauhaus days; but his recent essay, "The Curse of Conformity," proves there has been no diminution of his social convictions. He has been a continuously influential architect. It was with the design of two spectacularly advanced buildings that his career began; periodically during his middle years he designed some outstanding buldings, including those for the Bauhaus itself; and it is as the architect for the great new university at Baghdad that the final phase of his career may be capped. But it is not upon criticism or design, important as they have been, that his influence and his fame will rest. The main lever with which Walter Gropius moved the world was an educational creation: the great school of the Bauhaus.

### Gropius the educator

Young American architects who have reached maturity since World War II are often no more aware of the significance of the Bauhaus than would be a jet pilot of the Wright Brothers. So it is possible, in such circles, either to deny the historic contribution of the Bauhaus or else to blame the school for all sorts of disasters which have subsequently overtaken design. Yet Gropius himself says in 1960 that, if he had his life as an educator to live over, he would feel it necessary to change his ideas "only in detail." There is no arrogance here; this is the serious and sober conviction of a modest man. Whose estimate is correct? Whose judgement corresponds



MODERN FORM, HALF A CENTURY OLD

Time, that most remorseless of all critics, has dealt gently with Gropius' early work. The Fagus factory (1) and the Cologne Exposition building (2) from Kaiser Wilhelm's Germany no less than the Dessau Labor Exchange (3) or the Siemenstadt flats (4) from the hectic twenties all show that essential modernity of form which is internal proof of the continuing validity of their design principles. most closely to objective reality?

If the ideological positions which Gropius staked out for the Bauhaus are analyzed, and if the body of work which grew out of them in the following decade is studied, it can only be concluded that these principles were not mistaken in 1919 and are not obsolete today. To list them briefly is not easy. Gropius himself found it necessary to reiterate, amplify, and develop them repeatedly after the publication of the first manifesto. But in essence they were these:

▶ "The Bauhaus believes the machine to be our modern medium of design and seeks to come to terms with it."

▶ All design must recognize this fact of life and distill a new set of esthetic criteria from it. For architecture, such a process would lead to "clear, organic [form] whose inner logic will be radiant and naked, unencumbered by lying façades and trickeries."

▶ The Bauhaus teaches "the common citizenship of all forms of creative work and their logical interdependence on one another."

▶ The scale and complexity of modern problems necessitates collaborative design. "Any industrially produced object is the result of countless experiments, of long, systematic research." The design schools must therefore give students "the common basis on which many individuals are able to create together a superior unit of work."

▶ The education of the designer "must include a thorough, practical manual training in workshops actively engaged in production, coupled with the sound theoretical instruction in the laws of design."

This was the program that catapulted the Bauhaus into prominence, making it the most important single force in the world of design in the period between the wars. Every field of design registered its influence: architecture, painting, typography; furniture, fabrics, silver, and pottery; even billbcards and stagecraft. And everywhere its influence was benign. This program had the capacity to regenerate design because it was based on an essentially correct analysis of the relation of forces between design and production in an industrialized world.

Is this program obsolete? Have conditions changed in any important respect since then? If anything, the situation Gropius faced in pre-Hitler Germany has grown steadily more acute. Industrial production grows continuously more complex, dominating every aspect of life; the designer is more and more removed from any real understanding of it or control over it; and design itself deteriorates into a process of mere cosmetics. Robbed of any firm base in function, design is the prisoner of fad and fashion. Far from having "outgrown" the need for a Bauhaus type of education, a cold examination of the facts would show that design needs it more than ever.

Though the Bauhaus curriculum was not adaptable to the Harvard Graduate School, the Gropius philosophy of design was. It made Harvard into a leading center of architectural studies and produced a whole generation of designers who are now among the leaders of the profession. And the durability of the Bauhaus concepts is proved by the fact that designers have been coasting for decades upon the momentum generated by the first great experiments at Weimar and Dessau. Yet education for design has not followed the precedent of continuous factual investigation and research initiated by the Bauhaus; instead, it seems to have taken the opposite path. Is there an institution anywhere today which faces its problems as squarely, as profoundly, as did the Bauhaus in its day? This writer, at least, does not know of any such.

Two arguments, both of them esthetic, are brought against the Bauhaus today. The first is that it established a *style*: the second is that that style is "bad." These charges, though related, are not at all the same thing. Gropius has always denied that he had any ambition to establish a style; on the contrary, he has always maintained that it was a basic methodology of design that he sought. He wanted "not to supply a new set of recipes but to inculcate a new set of values reflecting the thought and feeling of our time." A democrat at heart and a tireless advocate of collaborative work, he has rejected the dictatorial connotations implicit in the issue of style. When a tree was planted in his honor on his 70th birthday, he said that he hoped it would be "a tree in which birds of many colors and shapes [could] sit and feel sustained." And, a few years later: "I realize that I am a figure covered with many labels ... Bauhaus Style, International Style, Functional Style have almost succeeded in hiding the human core behind it all," he said, and he was "eager" to escape the trap. There is something at once comic and sad in the repeated efforts of this great man to disentangle himself from a semantic snare which is of no real consequence anyway. For whenever any group of men agree upon a common method of accomplishing common tasks, a common system of expression (i.e., a style) will ultimately appear. Ours is the first period in history which this cultural certainty has embarrassed.

Gropius has himself become the victim of industrialism's fantastic capacity for mimicry and multiplication. A powerful designer, committed to a "supra-personal" style of expression, he has always attracted students and disciples; and as his fame



PHOTOS (BELOW) : "BAUHAUS 1919-28," CHARLES T. BRANFORD CO.





THE BAUHAUS PRODUCED A NEW VOCABULARY OF FORM

Gropius and his associates produced a wide range of prototypes of astonishing durability. His own designs for the Bauhaus complex (1) and the Adler car (2); Marianne Brandt's silverware (3); Marcel Breuer's elegant metal chairs (4); and Paul Klee's gay and gentle satire (5) all had enormous progeny.



and influence spread, he was paid the compliment of piracy and parody of what he designed. The same thing happened to the Bauhaus. It furnished the world with a new set of prototypes; too often the world merely made them into stereotypes. A third of a century later these prototypes may well be inadequate for today's tastes and sensibilities. But this does not alter the fact that the Bauhaus was hugely responsible for giving the Western designer the first stylistic freedom he had enjoyed since the end of the medieval period.

The other charge against the Bauhaus runs thus: it created a "style" which was "bad" because it was "cold," "inhuman," "narrowly functional," "mechanistic," etc. These are the judgements of those who took no part in the great esthetic battles of the twenties and who are consequently in no position to understand the terms of that revolutionary struggle. The only way form could work itself out of the eclectic morass was to come clean and clear. Evaluations must take account of this historic fact. The struggle for modern form was very bitter, with no quarter asked or given; and opinion was polarized around extreme positions. After all, for purely esthetic reasons, the Bauhaus was twice driven out of its home (by reactionaries in Weimar in 1925; by the Nazis in Dessau in 1932). It was denounced as "art-bolshevism which must be wiped out," and storm-trooper cries summoned the "national German spirit" to "rescue" German art from the modernists-a task which Hitler later accomplished with gruesome thoroughness.

Fortunately, the prophets of change were also militant: Gropius was neither first nor alone. The struggle actually took place on two fronts: one, to throw out the old corrupted forms; the other, to replace them with new form, "radiant and naked," based on science and reason. Wright had of course fought on both fronts, attacking the "unwholesome and unholy craving" for eclectic ornament, while creating a new and original system of his own. But the most wickedly effective attack on ornament had come from the Viennese Architect Adolph Loos. In a famous essay, "Ornament and Crime," he wrote: "The artist used to stand for health and strength, at the pinnacle of humanity; but the modern ornamentalist is either a cultural laggard or a pathological case." Loos held that no ornament was permissible to civilized man: the Papuans, since they are aborigines, could be excused if they "tattoo their skins, decorate their boats, their oars-everything they can get their hands on. But a modern man who tattoos himself . . . [is] either a latent criminal or degenerate aristocrat. . . . The true greatness of our age [is] that it can no longer bring

forth ornament. We have vanquished ornament," Loos boasted, "and broken through into an ornamentless world. . . . Freedom from ornament is a sign of mental strength."

It was in these terms that the battle was fought. It should not be surprising if the new forms were cool and abstract, ventilated and lighted by reason. Much of the work aspired to be "functional," extracting its formal qualities directly from the task performed. That ambition requires no apology. Certainly much of the new form drew its inspiration from the machine, since most of the great figures of the period were fascinated by it. Paintings, ballets, movies, and music celebrated the forms and movements of machinery. Le Corbusier's famous dictum, "the house a machine for living," was echoed by Gropius: "We want an architecture adapted to our world of machines, radios, and fast motor cars." The new forms, in short, were the very language of Western humanism at that time.

Gropius, even in those enthusiastic years, was no blindly uncritical worshipper of technology. "Mechanized work is lifeless, proper only to the lifeless machine. . . . So long as the machine economy remains an end in itself, rather than a means of freeing the intellect from the burden of mechanized labor, the individual will remain enslaved and society will remain disordered." He aspired to the mastery of the machine by the designer in order to create "the new building of the future"—serene and anonymous. His ambition here parallels Wright's earlier search for an architecture of "absolute poise" as a "background or frame of life."

A most notable quality in the "style" of Gropius and his Bauhaus colleagues has been its amazing durability. Time has its own special method of isolating the meretricious and ephemeral in art and of subjecting it to the merciless ridicule of distance. Yet precious few objects from this period have worn better than Gropius' Chicago Tribune Tower (1922) or Adler automobile (1930). And certainly there is nothing dated about Paul Klee's paintings or Mies's Barcelona chair. Such durability is internal evidence of the continuing validity of many basic elements in the Bauhaus idiom.

### **Gropius the architect**

One might almost say of the whole corpus of Gropius' work that, from 1911 to 1960, it shows very little development; but this is only true in the sense that it was almost completely developed at its very birth. Gropius leapt into maturity at an early age, with scarcely any fumbling. Simple truth entitles him to say "I had already found my ground in









HIS SOBER, RATIONAL IDIOM SURVIVED TRANSPLANTING

Gropius shared with Mies and the late Eric Mendelsohn the kind of personal stamina which enabled them to survive war, fascism, and exile. And like them, Gropius had evolved a system of expression which, because of its "supra-personal" concept of form and its explicit social commitment, also survived transplanting. First he worked in England, where he designed Impington College with Maxwell Fry (1); and then, after 1937, in America where he built his own house (2), a wartime housing project with Marcel Breuer as associate architect (3), and the Harvard Graduate Center (4). Always his idiom was flexible enough to adjust to changes in the environment, physically, technically, socially, without any radical distortion. architecture before the first World War, as is evidenced in the Fagus Works (1911) and the Cologne *Werkbund* Exhibition in 1914." One has only to glance at the glass-and-metal curtain wall of the Fagus factory or the elegant, smoothly turning spiral of the *Werkbund* Exhibition stair towers to realize how prophetic was his vision. And after the fiveyear hiatus of the war, his buildings resume their march, displaying his authentic command of his métier. The Bauhaus complex at Dessau is a classic: given the same program, there is nothing to be added or subtracted today. And the workers' housing at Törten or the great blocks of flats at Siemenstadt set standards still unsurpassed.

Even exile did not seriously disturb his work, however painful it must have been for him personally. He carried his great ability with him to England where, in association with Maxwell Fry, it flowered as gracefully in the Impington College scheme as though it were a native. And then it survived the much more radical transplantation to America in 1937. His own house in Cambridge (1937) and some wartime housing projects in Pennsylvania (1941) show him responding felicitously to American experience. But other American projects of this same period seem to drop below the high standards he himself had set. Both the Frank residence (1939) and the Harvard Graduate Center (1949) seem oddly dated, dangerously close to being clichés of his own earlier work.

He must have been thinking of this period when, in 1959, he ruefully observed: "I have been a 'nobody's baby' during just those years of middle life which normally bring a man to the apex of his career, when seed sown earlier should have come to fruition." Yet even then he had already embarked upon one of the largest and most significant projects of his whole career-a project which, by its very nature, must be closest to his heart. Though this commission for the new University at Baghdad might have come to him "20 years too late," it nevertheless shows the seed of his lifetime coming to a splendid fruition. All those qualities that have come to be associated with his architecture-its sobriety, its luminous rationality, its meticulous attention to functional necessity, and immaculate solution of structural problems-all these are found in the Baghdad scheme. And we find something more: here in the cradle of civilization, under the impact of an exotic culture and a tropical climate, can be seen a kind of grave poetry emerging in his and his associates' architecture, a statement at once more poetic

#### 1952-1960: A LATE AND SPLENDID FLOWERING

An apartment in Berlin (1), an American embassy in Athens (2), an entire new university in Baghdad (3) are some of the commissions of Gropius' latest period since his retirement from Harvard in 1952. As in the life work of all fine artists, these recent buildings express many of the same concepts so firmly stated at the very start. The Baghdad university project is specifically the work of The Architects Collaborative International (a corporation recently founded by the partners of TAC); in charge of the project were Walter Gropius, Robert McMillan, Louis McMillen, and Morse Payne, associate.



PHOTOS (BELOW) : ROBERT D. HARVEY STUDIO





## Gallery

## Jigsaw city



A tent of 1849 and houses of the sixties.



Six miles off Cape Cod, on the vacation island of Martha's Vineyard, lies one of the most improbable little towns in America. Oak Bluffs, Mass., a Victorian village plunked down in the midst of chaste colonial surroundings, consists of hundreds of tiny houses crowded on 20-foot lots along narrow, crooked streets. Designed and cut out on the jigsaw tables of island carpenters a century ago, they drip, like real gingerbread houses, with different kinds of icing, each obviously intended to outdo its neighbors.

The total result is architectural anarchy. Individually, however, each building, bargeboard, balustrade, or cornice is an amusing bit of woodworking whimsey—and sometimes a thing of beauty.

Today Oak Bluffs is a typical summer resort, with all the honky-tonk that springs up around an excursion-boat terminal, but its beginnings were surprisingly sedate and spiritual. The original town was one of tents pitched by island Methodists for a week of summertime devotion and picnicking. There were only nine family tents at the start in 1835, but by 1859 there were more than 500 clustered around a big-top tabernacle. Then houses began to appear, but they were really tents of wood. Their eaves mimicked the scalloped canvas of tent flies, their roofs the tents' steep pitch, their doors and windows the arched tent openings.

As the island retreat took on a more permanent character, Yankee businessmen from the mainland began to see its commercial possibilities. They bought up surrounding land, built a wharf, and otherwise encouraged resort development. Oak Bluffs boomed. The scroll saws hummed as 1,000 little houses were cut from the carpenters' scrimshaw patterns and priced attractively at \$150 to \$600. In 1879 the big top was struck for the last time and replaced by a steel tabernacle, which still dominates the scene.

Then the boom collapsed, and the jigsaws went quiet. Today, only about 300 of the original houses remain, tightly clustered in the center of town. They are owned mostly by summer people who sometimes attend the tabernacle services on Sundays, but spend much of their vacations on their porches, gently rocking in chairs as old as the houses, idly chatting with their neighbors on adjacent porches, and smiling back at wide-eyed sight-seers who never before have had so much amusement looking at architecture.—J. C. H.



Lacy trimmings and odd little windows give each Oak Bluffs cottage the delicate charm of an old-fashioned valentine.









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GALLERY

The exuberant carving of Oak Bluffs' bargeboards, balusters, and blinds is matched only by the fanciful colors with which they are painted.







Photographs by Joseph C. Hazen Jr.





## Lower cost for high buildings

A new system of construction is proposed to yield substantial savings in time and building costs. It is a radical, challenging idea, aimed at present inefficiencies.

No bigger problem confronts building today than construction costs. While the cost of living has risen 50 per cent since 1946, construction costs have soared 83 per cent, and are still rising.

On these pages FORUM presents an idea that could well lower building costs substantially. It is not the only idea of its kind to arise recently, but it comes from a more practical source than usual. The proponent of the idea, Sigurd Nielsen-Eltoft, is a thoughtful ironworker who has spent his working life erecting steel structures. He is a member of the ironworkers' union with wide experience in construction.

Hence, his proposal cannot be discarded as being out of touch with daily practice.

This is a radical proposal, such as a good workman would make to meet a basic problem. If adopted, it would upset many traditions, but it could also help to push a traditionally hidebound part of the building industry into the twentieth century. Its effect would be felt on multistory building as well as other major areas of construction. The proposal calls for serious consideration.—ED.

Multistory buildings are erected today by much the same techniques and equipment used 70 years ago, when steel framing first entered building. Essentially, the technique is to raise tall structures as if they were simply multiples of two-story buildings, one atop another, a piecemeal approach to construction that brings excessive waste and inefficiency.

First, the steel frame is erected piece by piece, after which the heavy hoisting equipment, used for only this one phase of construction, departs the scene, long before the hoisting requirements for the building as a whole reach their peak. Second, subflooring is installed; materials for the subflooring

#### BY SIGURD NIELSEN-ELTOFT

and all other elements are raised in elevator hoists. Third, conduits, shafts, pipes, and plumbing fixtures are installed, again piece by piece. Fourth, curtain-wall panels and window enclosures are applied from inside by the same technique. Finally, moving again from the bottom up, electrical work, wall backing, ceiling, and finishing operations are completed by successive waves of the crafts. These are the major stages of present-day multistory construction, with some overlap between stages. Significantly, while great technological progress has been made in other areas of steel construction-a notable example is the swift prefabricated-unit construction of large ships-no comparable advance has been made in multistory building. This technological lag is caused by a failure to systematize and exploit the apparatus of construction.

A new system is proposed, through a refinement of present techniques and equipment, which would speed construction and cut costs in two basic ways:

▶ By the application of preassembly techniques to large, integrated building components, and the use of prefabricated subflcor components, the new system would speed completion of the three-part building shell—frame, floors, and curtain walls.

▶ By hastening completion of the integrated shell, the subsequent phases of construction would be permanently sheltered and thus could be started earlier and completed without interruptions of bad weather.

#### **Basis of method**

This system, examined in more detail below, could reduce the construction time on many buildings by as much as one-third to one-half, yielding substantial savings in construction costs.

Essence of the idea, proposed by Ironworker Nielsen-Eltoft, involves the preassembly of large building sections at ground level, including steel frame units, certain utility components, and curtain-wall panels. The system uses prefabricated subfloor panels. The preassembled sections are hoisted into place by specially designed cranes. The cranes can operate on the building frame, as shown here, or alongside the building, with their traveling bases supported at street level. The combined hoisting capacity of a pair of cranes is 90 tons. Though designed for multistory construction, the proposed system may be equally appropriate for other types, such as industrial plants.

The basic components of a structural frame are repeated throughout a skyscraper, resulting in a correspondingly frequent repetition of identical operations. Such duplication occurs not only in the framing members but in the subflooring system, in facilities for vertical distribution of utilities, in lavatory installations, and in exterior curtain-wall closures. The crux of the proposed system lies in integrating the erection of these five elements and in improving the processes for assembling and placing them.

The steel frame in particular, because it has extensive duplication of parts, lends itself to preassembly at the site. In the proposed system each preassembled frame unit would comprise all its structural members and would be up to five bays in length. two stories high, one bay in width, with interconnecting beams of a second bay, as shown in the sketch at left. Preassembly would take place in one or more areas at street level or on platforms above the street. In each area, structural elements would be received, positioned, and supported in a template jig, which would hold each column and interconnecting beam in exactly the position it would occupy in the building's skeleton. The jigs would be reused for all frame units.

To raise these preassembled units into place would require specially designed cranes, embodying no new principles but adapting presently known types to provide the necessary versatility and hoisting capacity. Operating in pairs, the cranes would have a combined hoisting capacity of 90 tons. For lower story lifts, up to 150 feet, two pairs of cranes could be used, enabling lifts of 180 tons. The cranes would operate in one of two ways:

▶ They could operate at street level alongside the building. The gantries, which support the cranes, would then be extended vertically as construction progresses. This method could be used on some types of building up to 25 stories.

▶ The cranes, as shown in the sketches at right, could operate on the

structural frame of the building itself, using the frame as a supporting trestle. In this case they would move over the frame at each erection level, much as conventional whirley cranes travel on trestles. This method would be used for buildings of greatest height. The cranes would ascend from one erection level to the next under their own power. The crane cabs would have facilities for traveling independently of their gantries. Further, the cranes could travel in either of two right-angle directions under maximum load. These capabilities would be essential to the construction efficiency on which this system is based.

### **Concurrency of construction**

In most instances, it would be possible to lift and secure in place other elements besides the steel frame. For example, the subflooring system would be secured to the frame during the assembly operation. Such integration would eliminate the need for temporary decking at alternate floors, now required by building codes. This simultaneous assembly of framing and subflooring constitutes the backbone of the erection system and contributes substantially to the efficiency of the proposed system.

By traditional procedures, using piecemeal methods and guyed derricks, the rate of frame erection averages two floors every five days, exclusive of the installation of subflooring. The proposed procedure could raise the average to three or four floors per day, including the preassembly and placement of subflooring, utility-distribution facilities, and lavatory facilities.

Because conduits for vertical distribution of utilities can be grouped around common vertical axes, they lend themselves to preassembly. Similarly, lavatory-toilet installations, which are identical at each floor, could be preassembled into completed units at ground level, then hoisted into position. The great advantage of such preassembly is its efficiency: the provision of stationary, well-equipped assembly shops at ground level, plus *in toto* placement, is obviously more effective than the setting up of jerry-rigged shops many times over on each floor as the building rises.

Immediately after completion of the subfloor concreting, curtain-wall closure would begin. The curtain-wall components would be preassembled into panels one bay wide and one or two stories high, then raised into position by the two cranes, operating independently.

Once this operation is completed, the cranes would be dismantled and lowered to the street on the building's materials elevator. Finally, the roof decking would be placed and the completed building shell-frame, floors, and curtain walls-would provide shelter for the performance of finishing operations. The interior of the structure at this time would be completely accessible for all the remaining post-framing and interior-finishing operations. The labor force could then be adjusted to any required size, and the remainder of the construction schedule adjusted to occupancy requirements.

### **Problem of organization**

The worth of the proposed system hinges on its ability to effect reductions in time and costs. If it is indeed capable of the achievements outlined here, how can the new system be put to use?

To introduce a new method of construction presupposes a definite over-all control of technique. But under present practices, general contractors of large buildings have no such control. They have abdicated their preregatives and cannot elect the course of procedure for their operations. The loss of control over method, the dissipation of responsibility, the lack of centralized organization and direction, and the retention of traditions that have nurtured disorder-all these factors underlying the technological lag in multistory construction stem from a common source. This is the practice of farming out the performance of essential elements of construction to subcontractors. As long as the general contractor cannot retain control over operations of the subcontractors, he will be unable to institute any

of the proposed method improvements, or to make any other concerted attack on the problem.

Everyone who is engaged in the work of multistory construction seems to be trapped in the web of these traditions. The general contractor cannot inaugurate a new steel erection technique, regardless of its merit, because this is the exclusive preserve of the steel erector. In turn, the steel erector himself cannot introduce these improved techniques and equipment, because he is restricted solely to erection of the structural framework. The plumber cannot launch a system of preassembling the components of his installations, because he is unable to call for periodic use of the hoisting equipment. Hidebound traditions similarly prohibit any effective improvement in the procedures for placing utility-distribution facilities and curtain-wall closures.

Traditions blind each of these performers to the primary fact that they are all on the scene for only one purpose: to get a job done. Yet not one among them is able to perceive the entire project as an integral enterprise, of which their individual functions are but linking parts in the whole. This accounts for much of the waste and inefficiency of today's construction techniques.

To be sure, multistory construction can be extricated from its present plight. Indeed, the waste of present methods exposes the multistory field to thorough rehabilitation. With its promised efficiencies, the proposed system could bring multistory construction costs into balance with present levels of technology. To realize the full potential of the proposed system would require the cooperative planning, integration, and execution of the several functions which comprise the total construction operation. In reality, the proposed system involves no more than bringing to multistory construction the disciplined methods normal to sound practice in other fields. This is the responsibility of the contractor. Without his effort, along with the cooperation of the various crafts, this vital segment of building cannot break free of nineteenth-century tradition and inefficiency.

Key elements in the system are the cranes, which operate together in hoisting of frame sections, then work independently in hoisting other preassembled components. Sketches show three steps in the handling of preassembled frame sections. The cranes are designed to travel in two directions, under maximum load, moving on track units

as shown. Such flexibility and heavy-duty hoisting performances are essential to the efficiency of the system. The cranes used here are modifications of the conventional whirley crane, widely used in industry. The modification, involving a constantly balanced platform developed by Nielsen-Eltoft, the system's proponent, reduces the weight of the cranes without sacrificing hoisting capacity. Other design changes allow the cranes to be easily assembled and disassembled into component units for transport to other job sites. The system promises substantial savings in construction time and cost.



# Bicycle-wheel







## roof spans 240 feet



No supporting columns are needed under the auditorium's 240-foot-diameter roof, which weighs only one-third as much as a conventional roof. Flutter, once a major problem in cable structures, is eliminated by the use of a dual cable system (sketch) which is self-stabilizing. In this type of roof, the cost per square foot declines as the span increases.

## Utica's steel cable-hung roof weighs only 14 pounds per square foot.

The suspension roof atop the new municipal auditorium in Utica, N.Y., presages a new era in the design of long-span buildings. The building's bicycle-wheel roof, 240 feet in diameter, indicates the feasibility of this kind of enclosure for great spans-up to 1,800 feet with today's equipment, according to Engineer Lev Zetlin, designer of the roof system. He foresees even broader spans, when better equipment is developed for handling longer cables. Architects Gehron & Seltzer, designers of the auditorium, predict the use of this suspension system in a variety of long-span buildings: theaters, stadiums, supermarkets, manufacturing plants. Unlike conventional construction, where square foot costs increase as the span is enlarged, the costs of this kind of roofing actually decrease with increased span. The cost of this roof was about \$5 per square foot.

The design refinement that now makes this a practical roof system is Zetlin's elimination of the destructive phenomenon of flutter in the cables. In the new auditorium, two sets of cables -each with 72 prestretched strandsare connected at the periphery of the building to a concrete compression ring and at the center to two steel tension rings. The top set of cables is strung to the upper face of the compression ring, the bottom set to the lower face, as shown in the photo and sketch at left. Struts between the top and bottom cables act as stabilizing elements when loads are put on the system and as dampeners of any flutter that might occur in either set of cables. The trick in Zetlin's design is this: loads imposed on the upper set of cables decrease the tension in these cables and, at the same time, increase the tension in the lower cables. Thus, there is no change in the horizontal pull on the compression ring when a load is added, because the differences in added horizontal components in the upper and lower cables cancel one another out.



Activities within the new auditorium will include trade expositions, ice shows, boxing, concerts, conventions. The height of the roof-45 feet at the center, its lowest point-is sufficient for circus aerial acts. The building contains 3,200 permanent upholstered chairs, 2,300 portable chairs, and 1,000 telescopic seats which fold back into wall pockets when not needed. **Bright Ideas** 

## Building in the round . . . financing for economy

**?** How to reduce the cost of enclosing a distinctive industrial building.

Consider the advantages of a circular building, if it will be adaptable to the owner's operations.

When Architect A. Bruce Etherington, of Oakville, Ont., first proposed a conventional rectangular structure for the Canadian Charts & Supplies Co. in booming Trafalgar Township, near Toronto, estimated costs exceeded \$8 per square foot-about the average for industrial buildings in that section of Canada at that time. But at the suggestion of John Wilkes, president of the company, Etherington also studied the practicality of a circular building which would be practical because the company's various operations could be located in a circular assembly line adjoining a central inkmixing and engraving department. Inasmuch as a circle encloses the greatest area with the least perimeter it was not entirely a surprise when Etherington's second design resulted in a structure that cost only \$6.51 per square foot. When the building was complete three unanticipated bonuses became apparent: 1) a reduction of about 20 per cent in operating expenses; 2) improved worker morale reflected in a decreased rate of employee turnover; 3) natural perimeter ventilation making the building about 10 degrees cooler in the summer than more conventional buildings. No trouble was experienced in obtaining mortgage financing

for the 120-foot diameter building according to Etherington and now that expansion is needed plans are being drawn "to shoot its first satellite round building into orbit"



to house its office activities (see sketch). Later, another separate, detached round structure may be erected to house inflammable inks. The main building also could be expanded by adding a curved bay around any or all of its original perimeter.

**?** How to obtain 100 per cent financing for a new office building that can be leased to a major tenant for only a nonprofit or net-cost rent.

In exchange for the low rent, combined with what amounts to a lease-purchase deal, have the tenant "guarantee" the mortgage on the property.

Sometimes it is better for a company to rent office space; in other cases it is more advantageous to own a building



(FORUM, March '60). Through an unusually complicated real estate deal, the U.S. Life Insurance Co. enjoys some of the benefits of both renting and owning. It recently moved into 40 per cent of a new 17-story building in New York City for a rent of only \$4 per square foot, or virtually the same net cost as if it had been the owner. And, at the end of 30 years, the company will acquire free and clear title to the entire \$8.1 million project merely by paying the original cost of the underlying land.

The involved process for achieving these unusual results was the idea of Wylie F. L. Tuttle, president of Collins Tuttle & Co., agents and present co-owners of the building with National Properties, Inc., headed by Chicago Realtor Samuel W. Banowit. Tuttle and Banowit already are launching another large new office building in Chicago that may be financed on the same formula, and Tuttle says his new technique can enable almost any top-credit corporation to save 20 per cent or more on rent expenses while simultaneously buying a building on the installment plan without any initial cash investment.

In the most simplified terms, Tuttle obtained 100 per cent financing for the building by having the General Electric Pension Trust buy the land and lease it back to the building corporation for 30 years for 5½ per cent of its value per year. Simultaneously the Trust made a 30-year mortgage loan for the full cost of the structure for 5 per cent interest, plus amortization. As a condition for such liberal financing, the Trust required U.S. Life to lease the entire building from Tuttle and Banowit for 30 years for a rent adequate to cover all operating costs, mortgage interest, amortization, and ground rent. However, U.S. Life's lease also had to be assigned to the Trust as collateral so that, in the event of foreclosure, the Trust could call on U.S. Life's

rent payments for the entire building to protect the Trust's mortgage and land investments.

Under normal conditions, U.S. Life will pay only \$4 per foot for the space it initially occupies and for later expansions. To accomplish this, U.S. Life, as part of the total complex deal, subleases the entire building back to Tuttle and Banowit for the identical rate of its initial lease from them (neither party makes or loses a penny on this part of the deal), and for the space it actually occupies pays Tuttle and Banowit only \$4 per foot on a sub-sublease.

For conceiving and putting the complicated deal together, without a cash investment but with a considerable investment in time, overhead, and real estate ingenuity that benefits all parties, Tuttle and Banowit will receive for 30 years all profits from the operation of that part of the building not occupied by U.S. Life. At the end of that period, when the mortgage has been fully amortized, U.S. Life will purchase the land from the Trust at its original cost. Simultaneously, the original ground lease will expire and the building will thus become the free and clear property of U.S. Life as the owner of the land. At that stage however, as part of the original deal, the insurance company will also lease the entire property to Tuttle and Banowit again for a ground rent (a return on its cash investment) plus 50 per cent of the building's net earnings.

The result is that U. S. Life although technically a tenant, is charged only a net-cost or owner's-expense rent in return for pledging its credit on the master "standby" lease and thereby making the whole project posible with 100 per cent financing. And, for only the cost of the land, it ultimately becomes the owner of the project that was created on the strength of its credit or mortgage guarantee.



New Brian "Uni-Rim" design eliminates conventional metal rim. Lavatory is available in color or snowy white.



Brian lavatory can be installed on any type counter top-marble, tile, plastic or wood.

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Coletti Brothers, Architects

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A continuing review of international building







## BRAZILIAN CLASSIC

Rising above the water front in Blumenau, a Brazilian city founded by German immigrants in the last century, is a cathedral designed by two of this century's most emminent German religious architects, Dominikus and Gottfierd Boehm. The cathedral's roof is a series of reinforced concrete shells supported by four parallel rows of 16 columns. The first three bays form the cathedral's porch and shelter the baptistry (photo at left). The final three bays, nearest the altar, are filled with decorative glass, the work of the German-Brazilian Artist Lourenço Heilmar (left, below). The remaining bays are filled with rough stones of pink, native marble. Because of its classical poise and its contrast of open and closed spaces, the cathedral offers an environment for worship that is both suggestive of another, older world and dramatic in its own right.



PHOTOS : COURTESY "L'ARCHITECTURE D'AUJOURD'HUI"

#### GREEK TOURIST

Greece has initiated a tourist building program that, something like our Foreign Buildings Operations, enlists the country's best architectural talents. This hotel, by Architect Aris Konstantinidis, is one of the first results of the program, and is located on the island of Andros in the shadow of a haughty, native villa. By contrast, the hotel looks open and informal and transient. The bedroom wing (in photo at left) overlooks the harbor, is joined by the glazed dining room to the kitchen wing (at right in lower photo).

#### ALGERIAN SOLUTION

These French-built apartments in Dienan El Hasan, Algeria gain all the benefits of highrise buildings (increased density, shared structure, unobstructed views) without actually taking the tenants away from the soil. Architect R. Simounet built the terrace apartments into the face of a steep (40 degree) slope, each terrace being a series of concrete vaults. Some apartments take advantage of the duplex possibilities of the side-hill site, while others are selfcontained boxes. As seen from below, the apartment terraces, for all their modern planning, look strangely traditional.





#### JAPANESE DRAMA

Architect Yoshinobu Ashihara dramatized the structural strength of the new Japan Air Lines hotel in downtown Tokyo by emphasizing every other horizontal floor beam. Each beam is large enough to carry all the mechanical equipment (including a highvelocity air-conditioning system) and most of the horizontal stress (including provision for Tokyo earthquakes) for two standard stories. Interim floor beams were trimmed to a minimum for further emphasis.

## Abroad contd.



#### BRITISH SURPRISE

When seen across the Wiltshire Downs (photo above), Princess Margaret's Hospital at Swindon, designed by Architects Powell & Moya, looks as aloofly monumental as the U.S. Air Force Academy. But when observed at closer range, the scale and materials of the buildings and the charm of the plan do much to mitigate the institutional impression. Grass terraces are used to separate the hospital's major departments (photo below), and a surprising variety is allowed in the detailing of the individual buildings within their reinforced concrete, slate-faced frames. Throughout the hospital appear landscaped courts of sudden beauty.





PARISIAN TRIMNESS

Outside Paris, looking trim and somewhat more British than French, is this apartment development, designed by the architectural firm L'Agneau, Weill, Dimitrijevic, Perrottet. Eleven four-story walk-up apartment buildings are grouped around a large central park; automobile traffic is restricted to the periphery. Into the façades of the reinforced concrete buildings are set aluminum frames, holding either plasticized wood panels (11/2 inches thick) or window sections with wood-panel spandrels. A noncontinental feature of the larger apartments' plan is provision for a children's playroom.



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## Books



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Shopping centers . . . city wages . . . racial housing

SHOPPING TOWNS U.S.A.: THE PLANNING OF SHOPPING CENTERS. By Victor Gruen and Larry Smith. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 288 pp. \$13.50.

This large, handsome volume tells just about all that needs to be known about building a shopping center, and at the same time makes it appear sufficiently difficult to discourage armchair amateurs. The two experts, Architect Gruen and Real Estate Consultant Smith, guide the reader through the maze of detail that goes into large shopping-center developments-particularly those designed by Architect Gruen. The book covers everything from site location and development, zoning and traffic planning, to financing and various schemes for promoting the center. Its pages are crowded with photographs, drawings, and tables, including a lengthy examination of 21 major shopping centers, located throughout the U.S.

Perhaps the weakest feature of this otherwise complete volume is the lack of specific financial data, particularly for the 21 case-study centers. While it is understandable that developers might be hesitant to reveal operating statistics, land costs, etc., this information would have rounded out the analysis.

**EXHIBITION AND DISPLAY.** By James Gardner and Caroline Heller. Published by F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 192 pp. 8%" x 111/2". Illus. \$13.75.

More and more exhibitions are being put on by government agencies and private businesses every year, and more and more architects are being commissioned to design them. Unfortunately, not many architects (or industrial designers, for that matter) really understand the nature of exhibition design beyond certain fundamentals, such as circulation patterns and lighting. If they want to find out more about the subject, this new book will be the best possible guide.

The book deals, first, with principles of exhibition design and, second, with its practice. There is also a short chapter on procedure. Under these headings, the authors have succeeded in covering every conceivable aspect of the problem, with considerable emphasis on what it is that attracts people to certain kinds of exhibits, and what it is that makes them stay away in droves from others. There is an analysis of different techniques as they relate to specific audiences: the very "pure" exhibition technique of an art museum, for example, versus the lively, animated, and colorful technique of a big, popular trade



fair (such as the Montecatini pavillion at the 1955 Milan Fair, pictured above). The writing throughout is fresh and interesting, and no punches are pulled in criticising past failures. Altogether, a very fine job.

WAGES IN THE METROPOLIS: their influence on the location of industries in the New York Region. By Martin Segal. Published by Harvard University Press, Cambridge, Mass. 211 pp. 53/4" x 81/2". \$4.75.

The New York Metropolitan Region Study, of which this is the fourth published work, seems to become more optimistic as it goes along. There are, to be sure, no grounds for expecting that, by the time the final, synthesizing volume is published toward the end of this year, the study will be given an award by the New York Chamber of Commerce; it is too realistic for that. But there are also no signs that the study will end by urging a mass exodus from the metropolitan area.

The picture of New York given by this volume is of a generally flexible employer —one who is able to adapt his wages to the market's demands. The city is not, as is widely believed, a low-priced labor area —with the exception of a few industry types—and it is these low-paying industries, generally, that are now on their way out of the city.

The report also gives an impressive picture of New York as a city that can afford to pay for experimental labor. The "incubator" industries that are fostered by this quality are doing more, perhaps, for the long-run economic health of the city than any other factor.

AMERICAN BUILDING ART. The Nineteenth Century. By Carl W. Condit. Published by Oxford University Press, New York, N.Y. 371 pp.  $7V_2'' \times 10''$ . \$12.50.

This is a comprehensive, scholarly account of the ways by which engineers and architects contributed to the growth of building technique during the nineteenth century. It is the first of two volumes, written by the author of *The Rise of the Skyscraper*, a study of the Chicago school *continued on page 161* 

### 156

## Books contd.



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of architecture. Carl Condit is professor of general studies at Northwestern University, where his chief course is History of Science.

Professor Condit deals with wood framing, iron framing, the wooden bridge truss, the iron bridge truss, the suspension bridge, the iron arch bridge, the railway train shed, and concrete construction. Among the famous structures discussed are the greatest works of Louis Sullivan, Roebling's Brooklyn Bridge, and Eads's Bridge in St. Louis. There have been a number of architectural studies of nineteenth-century America, but this is probably the first book to encompass the whole record of American engineering achievement during this period.

STUDIES IN HOUSING AND MINORITY GROUPS. Edited by Nathan Glazer & Davis McEntire. Published by the University of California Press for the Commission on Race and Housing. 228 pp. \$6.

This is perhaps the most important volume in an important series, which is being undertaken by the Commission on Race and Housing. While the first book in the series, Where Shall We Live, outlined the general characteristics of the complex social syndrome that makes up discrimination in housing, this latest work probes seven specific situations, analyzing in detail many of the peculiarities and singular patterns that make the problem so perplexing. It covers minority housing in southern cities (Birmingham, New Orleans, Atlanta), western cities (San Francisco, San Antonio, Houston), and northern cities (Detroit and New York) and, while emphasizing the particular traits of each individual situation, it does also draw some general observations, some of which may be surprising. For instance, the studies indicate that prejudice alone, "in its pure form," is much less of a factor in housing minority groups than are various economic considerations. Also, a rise in the economic capacity of a minority family is an "extremely powerful force" in improving its housing, although there are exceptions, such as in Birmingham, where middle-class Negroes are becoming increasingly balky about buying better housing if it means living in segregated neighborhoods.

Another provocative generalization is that "housing is not a dynamic element in improving the general position of groups in society." Housing, alone, plays a minor part in the assumption of a middle-class role, say the editors, relative to the "dynamic" factors of prejudice, economic capacity, and "middle-class attitudes." Housing for minority groups seems seldom to achieve the status that it does for the white suburbanite. For example, nonwhites, even where they have improved their economic position, still tend to spend less for housing than whites of the same economic capacity. Yet the implication is clear that if prejudice were reduced, this discrepancy would vanish.





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#### Excerpts

#### Bureaucratic housing . . . Godly churches

#### NO URBICULTURE, PLEASE

An editorial in the "Wall Street Journal" last month expressed that august paper's disapproval of the various proposals for a Federal Department of Urban Affairs.

The government's housing programs are a costly chaos of bureaus and agencies in which duplication of effort, or worse, flourishes. Now a group called the National Housing Conference has suggested a remedy.

The proposal is to create a new Department of Housing and Urban Redevelopment to be headed by a Cabinet officer. If we may say so, we think it is not a very good answer.

The fact that there is a Department of Agriculture does not prevent our farm programs from being a scandalous mess. Having a Department of Defense hasn't stopped the waste and feuding in the Pentagon. Indeed elevating a federal activity to cabinet level is likely to make the activity proliferate. It is surely not wholly coincidental that "welfare" spending has soared since the creation of the department of Health, Education, and Welfare.

And the one thing the federal housing programs do not need is more proliferation. There is far too much of that as it is, and in fact that is the trouble. The right way to deal with the housing bureaucracy is to reduce the role of government in housing, for there is no more reason why Washington should subsidize the housing industry than there would be for it to subsidize the auto industry.

We realize that "When in doubt, establish a bureau" is an accepted rule in bureaucracy. But we hope that in this case Congress will have the sense to refuse to put an expensive new roof over the government's rickety housing projects.

#### CHURCHES BY GOD

The church and its architects must achieve in their new buildings the terrible beauty of religious art. This challenge was set forth by Charles Lake, a Baptist minister, and Paul Chapman, director of Packard Manse, in the church publication "Motive."

Church buildings are built not for ministers or for architects, perhaps not even to satisfy the needs of congregations, but to the glory of God. The criterion for authentic church building is solely that. Whims of the building committee and idiosyncrasies of the principal donors are not justifiable criteria. If modern churches were built to satisfy the audience, the power of the Almighty might never be represented. Architecture for worship is religious art.

Church polity dictates whether bishop or congregation or presbytery takes the initial step in building, and the economy of modern society has dictated that architects shall draw the plans, but within this framework only he should build who builds from the motivation of the encounter of man with God. But at the same time the architect is communicating to man with the language of form, light, space, and substance. It is in his life that the Truth which the congregation has known must be verified lest he pile stone on stone and never see God or his own talent as a sacred gift. His is the task to question, to criticize, to search until the partnership of builders finally achieves in American churches the terrible beauty of religious art.

#### FUNCTION VS. ART

The theory that architecture must free itself from functional dogma before it can become art has perhaps never been better stated than by the Norwegian Critic Josef Franck. His 1956 essay "Is There a Modern Style?" was recently reprinted by "Industrial Design."

Architecture today can only in the rarest cases be art, notably when its practical goals are very simple and do not make unreasonable demands on the significance of form, as in churches. Buildings that simply fulfill their mission have nothing to do with art. We are no longer in a position to form all our objects with sculptural sensitivity. We also need things that belong in an entirely different world of ideas.

In truth, the growth of art and design concepts in our time has not shown the ability to make these distinctions, but quite the reverse. In the period of Art Nouveau, people tried to turn everything into art, and the movement ran aground on the ever-more-practical demands that could not be satisfied by art objects. With the growing worship of the machine, utilitarianism acquired an outright religious glorification, and the time was ripe for a new style of unity: puritanical functionalism. One of its dogmas was that all form for the sake of art must be abolished as harmful to usefulness (how absurd, for it is axiomatic that every work of art is an end in itself, thus without a specific goal). So there arose a style that sought to prevent all free choice in matters of form; all forms must give the impression continued on page 176



that they had been produced by machine. Everything, everything, no matter whether it fitted with function or not, was pressed into geometric forms to create a new universal harmony, and the plastic arts tagged along willingly in the hope of getting in on the bargain.

But it is in no wise desirable to elevate every object to the level of art. The cleavage between artwork and object of use is widening daily, and unless we can distinguish the two, neither can fulfill its potential. We do not need a universal style, but we might wish instead that each thing be given its characteristic form. The style we called functionalism, by altering the whole world of form to mere decoration, did achieve a common imprint, but it can no longer impart character. We must be able to see harmony as something else than the common stamp of style and form.

We must learn that there are beautiful objects that have nothing to do with art. A residence that is a work of art is not necessarily pleasant to live in, because every work of art exerts coercion, limits our freedom of movement and flexibility, and demands that we adjust to it.



#### NONCONFORMING COMMUNITIES

Angus McClaskey, president of Canada's vast Don Mills industrial and housing development, recently gave his very realistic views on land use to "Urban Land."

There seems to be a fixation in North America that we must have the singlefamily dwelling on its separate lot. This seems to be a status symbol. Maybe the reason is that we thought we had so much land that we could go on that way indefinitely.

We know that in European countries they have found better ways to use their land. I am not suggesting that the singlefamily dwelling, the detached house, is going to disappear from our landscape—not at all. We are going to continue to build them, but I am convinced that in the future we will see a greater variety of housing types.

We are going to make much better use of our land. Our communities are not going to have that deadly uniformity of appearance. We will see communities develop in a combination of single-family dwellings, multiple dwellings, garden homes, multiplexes-the whole panorama, low-rise and high-rise, and so on. We will be increasing the densities, for if we are going to make better use of land we will have to increase the density; but in increasing density, we are still going to provide better places in which to live. This is not a case of "sweating the land." We can increase density and save on land, money, services, and still create a much better physical environment. In the future we will not see so much uniformity of income level in our various communities. Now we start out on a project that is beamed at a certain bracket-either the medium high, or low income bracket. I am not suggesting that \$100,000 houses should be next to the \$15,000 house. We have to remember human nature, but I do think our communities will be planned on a more economically integrated basis.

#### **RENEWAL DEFINED**

Speaking before the National Retail Merchants Assn. the new president of Sears, Roebuck, Charles H. Kellstadt, called for business leadership in urban renewal.

In addition to the important humanitarian aspects of urban renewal, the participation of all American businessmen in the redevelopment programs of their cities is also one of economic self-interest. No business concern can thrive in a failing community, and no community can progress without the leadership and enthusiasm of its merchant members.

Urban renewal means: Management of our cities with efficiency and foresight comparable to that quality of management accomplished by business and industry. END



Photo courtesy of National Concrete Masonry Association

## Atlas Masonry Cement provides the right mortar

"Shadowal" concrete block has often been described as "the block with a thousand faces." Used here in combination with square blocks by Architect Mario J. Ciampi, San Francisco, this unit has created a striking and distinctive example of the role concrete block plays in today's building plans. And to lay up the new concrete masonry units, Atlas Masonry Cement continues to be the preferred cementing material for mortar. It helps produce a smooth, workable mortar ...

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# IN CHICAGO...

Al Rubin, leading masonry contractor, gets maximum crack resistance with



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



#### galvanized masonry reinforcement

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

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

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

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



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

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

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AT WORK—Advanced Planning resulted in a truly versatile 4680 square foot gymnasium area, Oakview Junior High School, Skokie, Illinois; Dr. Homer O. Harvey, Superintendent; Orput-Orput and Associates, Architects.



A FOLDING PARTITION, 20' high by 65' long, gives important flexibility to this gymnasium. With electrically powered partition closed there are two smaller courts each large enough for a gym class. With partition open, the Oakview Junior High School has an auditorium for glee club and band concerts, stage plays, community activities and assemblies; gym area for wrestling demonstrations, badminton, golf, touch football, AAHPER Fitness Tests, or a regulation basketball court.



10 SETS OF 5-TIER FOLDING STANDS provide a seating capacity for 500 and are set up in 10 minutes by two men. An equivalent capacity in portable stands would require 4 men working 1 hour. In addition to obvious labor-cost saving, no additional storage space is required. In the first year of experience the folding stands have been effectively used a minimum of once a week for academic, sport and community purposes, according to Dr. Homer O. Harvey, Superintendent..



**6 BASKETS AND BACKSTOPS** are arranged to give both boys and girls 3 each for refereed games or free-throw practice. Five of the six baskets are retractable and easily handled by even the girls' gym instructor. When weather is inclement the gym is opened to students during lunch hours giving them a place to sit and talk or practice basket shooting. Approximately 142 boys out of 170 enrolled in school, participate on either the school or one of the many intramural basketball teams.

\*A VERSATILE PLAN showing Flexi-Gym at its practical bestisthis dimensional view of a high school "idea" gym designed by the Brunswick Planning Service. It includes 14,400 square feet on main floor and balconies; seating for 5200; can be divided into 5 separate areas for physical education, sports, assemblies, dining areas, study areas, other educational and community purposes.

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## CONSTRUCTION DETAILS FOR HORMICA" "SNAP-ON WALL" TIM MILLING 20101011 Plywood Wall ANCHOR STRIP 11/4" 1/4" Plywood 45° Bevel Beige Formica #879 Fasten strips securely with glue and finishing nails. Considerable pressure is exerted by buckling of Formica sheets. Countersink finishing nails. 14" 4" Royal Walnut Formica No. 17-BG-44 in 17" Strips snapped in floor to ceiling NOTE: To eliminate need for sub-wall, apply vertical anchor strips directly to 2"x4" studs. Use larger panels of Formica. ALTERNATE IDEA

Door, Window, Fireplace, etc.

Cut each Formica panel slightly smaller than preceding one.

#### WALTER GROPIUS continued from page 133

and more lyrical than he had usually permitted himself.

The quality which has distinguished Gropius' career from that of Wright or Mies van der Rohe has been its explicit social commitment. This has had important consequences for his architecture, since he has always interpreted it to mean not merely the solution of socially urgent problems in architecture but also their expression in "a teachable [i.e., communicable] supra-individual language of form." The pull of social reality, like the tropism which turns flowers to the sun, has oriented Gropius away from the intimate, the personal, the subjective. And this has necessarily restricted the color and passion of which, as an artist, he might otherwise have been capable. Even so, it is obvious that temperament alone would have prevented his committing such acts of subjectivism as Ronchamp or Taliesin. And sheer rationality would never have allowed him to ignore climatic fact and physiological reality as contemptuously as did Mies in the Farnsworth house.

Still another strand bound Gropius to the factual and objective: his perennial concern with the impact of industrialism upon architecture. This interest was apparent in his first two buildings. The Fagus Works project was actually a building for industry: his design needed "only" to express this fact. But the Werkbund Exhibition building was simply an exhibition hall. Theoretically, it could have taken either a monumental or a domestic form. He chose instead to cast it also in an inescapably industrial mold. This decision reflected his personal conviction (as well as the Werkbund's official position) that the new architecture could only spring from "real cooperation between the best artists and craftsmen on the one hand and . . . industry on the other. . . . Mass production and division of labor must be made te produce quality."

One obvious expression of this principle would be the application of advanced industrial techniques to the production of architecture itself, i.e., prefabrication of components. As early as 1909 he outlined the possibility of producing standardized, prefabricated panels from which a wide variety of houses could be assembled. He returned to this theme in Weimar in 1921 and again in Dessau in 1927. He designed a prefabricated dwelling for the 1927 *Werkbund* Exhibition; for a German manufacturer in 1931; and still another for the General Panel Corp. in America in 1945. Those who profess to see in Gropius an antihumanist, intent on regimenting people into a single stereotype, should read him more carefully here. They will find that, though he proposed "to accept the challenge of the machine in all fields of production," he always proposed to dictate the terms of that collaboration. Man was to run things, not the machine. In the case of prefabrication, the factory would produce not a single house but a whole family of elements out of which various houses could be designed to meet various conditions of site, climate, budget, and family size. Here, as elsewhere, he visualized "diversity within unity."

#### Gropius the social critic

The very structure of his mind has always propelled Gropius into social speculation. Unlike Wright or Mies, he was unable to focus his whole attention upon the individual building to the exclusion of its social setting. Like Le Corbusier, he was compelled to examine the larger organism of which the individual building was but a cell. "My idea of the architect as the coordinator—whose business is to unify the various formal, technical, social, and economic problems that arise in connection with building—inevitably led me on, step by step, from study of the function of the house to that of the street; from the street to the town; and finally to the still vaster implications of regional and national planning."

Not only was he led on, step by step, to examine the fabric of modern society; he was forced to comment on it. And though this often led him into exposed positions, it is to his credit that he always chose the principled (rather than the merely expedient) course of action. Rather than submit to the reactionary demands of the Weimar government in 1925, he moved the Bauhaus, lock, stock, and barrel, to Dessau. When fundamental differences between himself and the staff appeared in 1928, it was he who resigned rather than wreck the Bauhaus. And in 1934, rather than face life in Hitlerite Germany, he left his homeland forever.

The same kind of forthrightness has marked his public positions as an American citizen. Thus when the *Saturday Evening Post*, that bastion of middleclass American complacency, gave him the chance to speak his mind, it was the "curse" of American conformism that he chose to attack: "Our biggest man-made objects—our cities—have steadily grown

continued on page 204

more chaotic and ugly, despite brilliant individual contributions.... For all the heroic efforts of conservationists, a good deal of our loveliest countryside is being bulldozed out of existence, a sacrifice to commercial exploitation . . . regional character and community spirit [wage] a losing battle against the conformity imposed by mass production . . . and the natural feeling for quality and appropriateness is dissipated in the giddy tumble from novelty to novelty."

Nor has he hesitated to speak out on other shortcomings of American democracy. When he went to New Orleans to accept the A.I.A. Gold Medal, he found himself in a city which dictated a racially segregated convention. Though this had caused acute discomfort among some of the architects, Gropius was one of the very few publicly to protest. He hoped he "could live long enough to attend a future A.I.A. convention from which the shadow of segregation, which now so deeply disturbs our minds, has been at last removed."

The ferocity of the attacks leveled against him and the Bauhaus, even in the pre-Hitler days in Weimar, seems hard to explain in rational terms. For Gropius was never other than what he appeared to be-a consistent and principled democrat. Certainly, the sociopolitical perspectives embodied in his early manifestoes seem modest enough. The individual might be "enslaved" and his society "disordered": yet Gropius argued that any solution depended upon "a change in the individual's attitude toward his work, not on the betterment of his outward circumstances. . . . Only work which is the product of inner compulsion can have spiritual meaning." At a distance of four decades, this sounds like an almost Tolstoyian doctrine of personal regeneration: it is not even a call to trade unionism, much less to political action. "A blunter rejection of Marxism and kindred Utopias is inconceivable," said one of his defenders. "It is clearly stated (in the Bauhaus manifesto) that harmonious creation is an ethical problem to be solved by the individual."

Non-Marxist the Bauhaus might have been. But Utopian it certainly was—and this alone was enough to bring down upon it the blind and bloody wrath of Hitler. Yet, in retrospect, the plans of those early days are filled with a youthful idealism, like Eden before the Fall. Thus it is recorded that "a vegetable and fruit farm, leased from the state, was worked by the Bauhaus and made the kitchen independent of price fluctuations in the markets. A plan was being evolved for single houses and apartments . . . the construction of these community buildings was to be directed by the Bauhaus and was to provide contracts for its workshops." It all sounds more like the Brook Farm of Transcendentalist New England than the uneasy German Reich.

In an effort to protect (or at least to isolate) the Bauhaus from the political convulsions around it. Gropius forbade any political activity on the part of the staff and student body. But this did not save them from the Nazis. For though the political program of the Bauhaus might extend no further left than a kind of mild cooperativism, its esthetic program was far more radical, and this the fascist madmen understood. The Bauhaus stood for the complete liberation of the creative personality from the servile eclecticism of the past. It called for the fullest and freest examination of the fundamentals of design and for the reconstruction of the world of visual form. In this posture, the Bauhaus was naturally aligned with all that was healthiest in German art and culture. The men who came to its defense are proof of this: the Architects Behrens, Mies van der Rohe, Poelzig; the Novelists Werfel, Sudermann, Hauptmann; the Painters Klee, Feininger, Kokoschka; the Composer Schönberg; the Producer Reinhardt; the Scientist Einstein. Gropius was on the side of life: this the Nazis could not forgive.

In 1954, at the age of 71, Walter Gropius visited Japan for the first time. There he found a modern architecture which his life's work had done much to create. But there also he was face to face with that traditional Japanese art and architecture which had done so much to reshape the artistic theories of the Europe of his youth: again the elliptical confrontation of made and maker. In that old architecture he saw expressed the principle he had always advocated: endless variety within a fundamental unity, a rich diversity which was not hostile to the organic whole. "For the first time in my life I felt myself with the majority," he observed with unwitting poignancy. It is sad that he should ever have felt isolated, for he has always tried to act in the interests of the many, not the few. Not many creative people have tried so consistently as he to speak for the majority; and though there may have been many times when it seemed he fought alone, he should be assured he is alone no longer. More perhaps than he can know, the majority is with him.-END.



Sweeping glass façade in new wing of Roger Williams General Hospital contrasts sharply with brick façade of the old. L·O·F *Vitrolux®* heattempered polished plate glass was used in spandrels, *Thermopane®* insulating glass in the windows.



## every new room is a cheerful solarium!

There was a look of surprise on the visitor's face as he approached the new wing at Roger Williams General Hospital, Providence, R. I.

"Why, it doesn't look like a hospital at all!" he exclaimed to his friend.

We overheard this remark with interest because we had come here to get, firsthand, people's reactions to this remarkable hospital addition.

Viewed from the outside, the building looks more like a modern college dormitory—more hospitable than "hospital". The warm color of the glass spandrels suffuses the all-glass façade. There's an aliveness—a warmth—that contrasts sharply with the old brick building it adjoins.

We entered this new wing through welcoming glass

Crisp curtain wall design is by architects Howe & Prout, Providence, R. I. Hunter Green Vitrolux in large spandrels, Gun Metal Vitrolux in the small.







William E. Sleight, Director of Roger Williams Gener

Window walls of Thermopane flood lobby with sunlight.

doors into a spacious, paneled lobby filled with sunlight coming through a large window wall.

Director William E. Sleight showed us through the new wing. On the first floor, pleasant offices and a medical library. Cheerfully painted private and semiprivate bedrooms on the second floor. On the third floor, which is the "intense care" section, the rooms have large glass windows in the corridor walls so nurses can observe patients more easily. The same was true on the fourth floor, the pediatrics division.

Mr. Sleight said the new wing had been occupied, since September, 1959.

Question: And how do you like it, as compared with the old building?

Mr. Sleight: It's wonderful! So much more daylight. So much more cheerful. We feel that the large *Thermopane* insulating glass window areas contribute greatly to our pleasant and comfortable surroundings.

Question: Could you explain a little more fully?

Mr. Sleight: Well, this wing is air-conditioned year 'round. The old one wasn't. And although we have operating

> Playroom in pediatrics section appeals to children. Large windows create a friendly atmosphere.

sash, we never have to open them, even in muggiest weather. In winter when it gets down to zero, we're still comfortable near the *Thermopane* windows and can enjoy the view outside.

Question: Do you figure that *Thermopane* will save on your heating and air-conditioning costs?

Mr. Sleight: I'm sure that it will, although we haven't been operating long enough to prove anything. One thing I've noticed, the windows don't frost up like they do in the old building.

Question: You have a parking lot and heavy traffic outside. Does the noise bother you?

Mr. Sleight: *Thermopane* helps there, too. Seems to muffle outside noise.

Question: How do the nurses and patients like it here in the new wing?

Mr. Sleight: Why don't you ask Miss Caggegi? She's our Associate Director of Nurses.



Miss Caggegi: I've worked in this hospital for 20 years. There's no comparison between the old and new wings. There's so much more light. It's so bright and cheerful and quiet. Who wouldn't prefer working in these surroundings, if the work load and other factors are equal?

NANCY T. CAGGEGI Associate Director of Nurses

There's a difference in the way patients relax in the new building.

They're happier. They don't ask to have their beds shifted, because all of them can see outdoors. And they don't request electric fans as patients do in the old building.



We next visited the downtown offices of the architects, Howe & Prout, designers of the wing, and interviewed Mr. Donald J. Prout.

Question: Why did you design curtain walls into the new building?

DONALD J. PROUT Architect

Mr. Prout: They gave us a far more clear-cut design. They're less costly to build, and take less time to erect.

And the glass in the windows and spandrels will keep ts appearance, year after year, much better than most naterials.

Question: Do glass curtain walls create any problems luring construction?

Mr. Prout: No, they're relatively easy to put up. No special tools are required. The "skin" goes on fast. It's undamentally the same as installing the windows themelves. And, do you know, not a single glass spandrel was damaged during construction.

Question: What is your theory of using wall-to-wall windows in the patients' rooms?

Ir. Prout: Everyone enjoys sunlight, especially shut-ins. And being able to see outdoors without neck-craning elieves boredom. One reason we specified double glazng was so patients could enjoy the view without discomfort of drafts.

Question: What were the other reasons for using insulatng glass?

Ar. Prout: To reduce air-conditioning and heating costs.

Question: Why did you use so many small panes of glass, ather than larger ones?

**Ar. Prout:** Primarily to create horizontal lines. And we ometimes have winds of hurricane velocities. If any

You can see outside from any bed position in the new wing. Patients often feel "shut in" in an older room shown on right.



Window areas in rooms of new wing are almost twice that of old wing. This is a visitors' waiting room.

panes need replacing, it can be done so economically.

Question: How do you keep heat out of the rooms in summer?

Mr. Prout: Here, again, insulating glass helps. In addition, protruding aluminum grid sunshades were installed above the windows facing south. These are designed to keep out rays from the high summer sun, yet permit the welcome rays from the low winter sun to penetrate deep into the rooms to keep patients more cheerful.

We left Providence with the feeling that the new wing at Roger Williams General was truly a hospitable place to be hospitalized.















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#### APARTMENT ECONOMICS continued from page 103

per room) Prairie Shores project until he can get better financing. The first three buildings in the project are 100 per cent leased, Kramer adds, indicating that there is plenty of demand for middle-income housing in Chicago. By contrast, the market for luxury apartments in Chicago has softened considerably—few of the newer projects are





fully rented. Mortgage Broker George Dovenmuehle poses the dilemma facing Chicago builders, and builders in many other cities, however, when he says that lower mortgage rates alone probably would not get any significant amount of middle-income housing built. The basic problem, he believes, is land cost and the cost of clearing city land. If land were available, say some Chicago planners, one- and two-bedroom apartments could be built and rented for about \$28 per room per month.

The importance of cheap land in the cost equation can be seen in southern California where, builders claim, there is an overabundance of middle-income apartments, most of them built in major cities. Demand for these units seems to be slackening (due largely to the poor design of many projects, say several local builders and architects), and there is a growing market for luxury units, complete with swimming pools, patios, or balconies, and even two-car garages. One builder predicts that Los Angeles will experience a 100 per cent increase in luxury units within the next year.

In New York City, luxury units have long dominated the apartment boomlet, which last year saw 18,230 new units continued on page 210



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APARTMENT ECONOMICS continued from page 209

built, compared to 15,340 in 1958. Indications are that 1960 will be even bigger, but the emphasis is still on luxury including many high-cost cooperatives, which dominate Manhattan apartment building as they do in no other U.S. city. Much of what little middle-income apartment construction has been built in New York City has been done by nonprofit or limited dividend groups, which have built a relatively small number of projects with cooperative units for sale on terms as low as \$16 to \$19 per room per month. And most of New York City's middleincome apartments are built in Queens, the Bronx, and Brooklyn. Still, less than one quarter of all apartment units built in the city in 1959 had rents suitable for the \$5,000 to \$7,500 income brackets.

#### **Biggest headache: money**

Of all the elements in building cost, none has been so pivotal as the costand availability-of mortgage money. The 608 program demonstrated that financing alone could be the key to a larger volume of apartment building. However, since that experience, and the subsequent investigations, the federal government has devoted most of its effort to making the financing and building of apartments more difficult. Following the 608 investigation in 1954, FHA's regular apartment mortgage insurance program, Section 207, showed a contraction from 11,442 new units insured in 1954 to a bare 528 units just two years later. In the past two years, 207 has been liberalized, and the 1958 volume bounced back to 11,266 units. Last year, insurance written under Section 207 was 22 per cent ahead of 1958.

Although returns on investment are still limited under federal insurance programs, builders can garner returns of 20 per cent and better—if their financing is right. The key to this equation is that FHA programs require much lower ratios of equity capital to mortgage debt than do conventional mortgages, and thus the leverage is much greater. One of the nation's largest apartment builders, operating in many cities, says that, as a rule of thumb, unless a 207 project indicates a potential return of at least 20 per *continued on page 216* 



## STRUCTURAL PANELS

Kraft paper HONEYCOMB sandwich cores add durability and economy to pre-fabricated structural panels. Cores can be bonded to almost any facing material . . . reduce panel weight for easy handling, speedy installation—lower finishing, labor and shipping costs. And they're tough! HONEYCOMB sandwich panels resist moisture, temperature extremes, years of weathering.

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Where, then do you put the miles upon miles of wire a modern office building needs now — and the additional miles it's sure to need tomorrow? More and more architects are reaching this logical conclusion: In Cellufor.

Since Cellufor provides wiring raceways 6" o.c. under every square foot of floor area, no worker need ever be more than inches away from electrical, telephone, and dictation service outlets. Whenever a tenant needs a new connection, he has an electrician drill through the floor and pull up the wires — anywhere in the room! Circuits can be changed — new service outlets installed or relocated — without costly alterations.

Many buildings with a future use this floor with a future — including Union Carbide office building, New York City, and Kaiser Center office building, Oakland, California.

There are other advantages of Celluflor — savings of steel, footings, construction time, and overhead. See Sweet's — or write for Catalog 270.



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EP-3

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## The only 300# asphalt shingle with

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 Giant mineral granules produce an appearance that's genuinely distinctive. Rich, massive, lustrous.

• 18" tabs, instead of the conventional 12", give "Bar-Fire" roofed homes that long, low appearance—fewer vertical lines!

 Multi-layer construction, plus extra weight, spell super weather worthiness, long life, extra fire protection!

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Layer of granules and fire-blocking vermiculite.

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Philadelphia apartment builder-owner says-

# "THE DECORATOR DESIGN SOLD US ON GENERAL ELECTRIC BUILT-IN AIR CONDITIONERS"



"650 Room Air Conditioners take care of all 237 apartments in our new building," says Harry Gold, President of Stone Construction Company, builders of Stafford House. "A 9,500 BTU\* unit cools and dehumidifies each large living room perfectly. A 5,300 BTU\*

Harry Gold room perfectly. A 5,300 BTU\* room air conditioner does a fine job in bedrooms.

"We chose the General Electric Built-In *Thinline* model because of the interior baffle. It's so easy to decorate. And furniture can be placed anywhere since the baffle prevents cool air from blowing directly on those sitting right in front of the unit.

"The aluminum case for the unit impressed me, too. It can't rust out but will last indefinitely as a permanent part of the wall."

The only true built-in room air conditioner with the decorator baffle is the General Electric *Thinline*.

The Golden Value Line of the 60's also includes 16 other different *Thinline* models . . . ranging from 6,500 to 16,000 BTU's.\* There's a General Electric *Thinline* 

Room Air Conditioner to solve every cooling problem ... to fit almost any wiring or installation need.

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The outside grilles of General Electric Room Air Conditioners are aluminum, as attractively modern as the building itself.



The decorator baffle on Built-In Thinlines fits perfectly with any decor. It can be painted as it is here, papered, panelled or hidden by a picture. Stafford House has 237 apartments. All living rooms are large, air conditioning is perfect.



## Now it can be told

This engraved marble tablet recently uncovered in one of the long-lost Phrygian caves shows how Midas fooled the public. This stuff wasn't 14-karat at all. The "Midas Touch" is nothing but a myth. Midas used ColorRold\* Stainless Steel, developed by Washington Steel Corporation. Gotta give the old charlatan a lot of credit though—he knew a good thing when he saw it.



\*ColorRold, an organic coated stainless steel, comes in eleven harmonizing colors, can be formed and drawn or textured and highlighted in an infinite number of designs and effects, now available for your architectural or product needs.

#### WASHINGTON STEEL CORPORATION and ColorRold® PRODUCERS OF MicroRold® STAINLESS STEEL

WOODLAND AVENUE

WASHINGTON, PA.

cent on capital investment, he will not touch it.

The problem of not being able to borrow enough money is, of course, even knottier than that of high interest rates. Builders complain that lenders will not let them have enough to build needed amenities into new apartments, and that without these amenities they cannot successfully compete with other housing, or establish a sound long-term property. Thus, if a lender will write a mortgage covering only part of the amount the builder originally sought, the builder must cut heavily into those features of his project that are not strict necessities. As the competition for the apartment market gets stiffer, these amenities are becoming increasingly important, say the builders, and must be recognized by the lenders.

Assuming a builder can skirt past the first obstacles of financing terms and building costs, he still has two other large hurdles before he can realize a satisfactory return on a long-term apartment investment, if he intends to operate it as a long-term investment. These hurdles are taxes and operating costs.

The tax situation does not penalize the builder who builds and sells his project promptly as it does the builder who wants to own it as a long-term investment. The basic difficulty is that after seven to ten years, the accumulated cost depreciation reaches the point where the builder-investor suddenly finds that his mortgage and amortization payments are actually more than his permissible depreciation write-off. Builders-owners of the 608 apartments are just beginning to face this problem, and some of them are solving it by swapping properties among themselves. With each swap, the property can be put on a new depreciation base and written down all over again. One big builder, who has not had to face the problem yet, says that theoretically, it might even be possible for a builder-owner to sell his properties to another corporation which would in turn be owned by the parent corporation.

Unlike taxes, operating costs cannot be reshuffled and simply have to be suffered. The upward march of such costs, including insurance and wages as well as maintenance, has been as relentless as that of building costs. Expenses in 1958 reached new peaks, according to the *Journal of Property Management*, and the upward move in vacancy rates last year, affecting luxury units in some cities and many substandard units in outlying districts of large metropolitan areas, make costs seem an even heavier burden.

#### The shape of the boom

In the face of such a complex and seemingly impregnable cost barrier, it is difficult to see how the coming apartment boom can do much to relieve the critical shortage of middle-income urban housing. Some observers see cooperatives as the answer to the middleincome dilemma, but, even with the latest liberalization of FHA's Section 213, there has been no rush by builders to participate in that program. In 1958, only 7,200 units were insured under that section, and last year's volume was even lower. Costs to the consumer are probably lowest under the cooperative setup-one FHA official estimates that \$120 per month in carrying charges for a 213 co-op would equal a \$150per-month rent in a regular apartment -but if builders are not attracted to the program, it will not do the job. It may be, as some builders in the program say, that builders in general have not realized the potentials of the 213 program yet. They point out that a builder can get a profit on his land plus his usual builder's profit and be out of the project as soon as the last unit is sold. Whatever the reasons, 213 has not yet solved the middle-income problem.

Many economists feel that builders will probably not be able to meet the potential demand for middle-income rental housing in the sixties without federal aid, in some more workable form than present programs. It has already been demonstrated that it is not difficult to build rental accommodations for high-income families that can afford the best. But if the pattern were to persist in the next decade, in the face of a vast build-up of unmet demand for moderate rental housing, it could precipitate the most critical housing dislocation since the end of World War II. END





#### FRAMING DETAILS

Lightweight, load-bearing, nailable steel framing can be delivered in lengths precut for the job, and handled without the aid of machinery. Windows, available in a variety of designs, slip in place quickly. Panels are hung from the integral "j" girts and simply snap in place without exposed fastenings—without welding, riveting or mispositioning.





WALL CROSS SECTION


# IT'S REVOLUTIONARY! IT'S LOAD-BEARING! IT'S ONE-POINT RESPONSIBILITY!

Here's a complete modular wall system which integrates lightweight nailable steel framing with architectural porcelain panels and aluminum extrusions. The steel framework is load-bearing and specially designed to hold the thermally efficient panels without additional framing or attachment operations. This skeleton-and-skin coordination not only saves during construction, it provides unlimited design possibilities. Foundations or footings need not be heavy or complex. The structural load-bearing framework of Stran-Steel has a high strength/weight ratio. Architectural panels and other collateral materials attach without secondary members. Panels are hung from the integral "j" girts and simply snap in place without exposed fastenings—without welding, riveting or mispositioning. Windows, available in a variety of designs, slip in place quickly. And the integrated fit of joists and beams eliminates the need for dropped ceilings or boxed beams. The complete Stran-Wall system—including panels, insulation, nailable steel framing, and aluminum mullions for doors and windows—is available from one source, your Stran-Steel architectural products dealer. For specifications and details, mail the coupon or call him. He's listed in the Yellow Pages under Steel.

# NEW STRAN-WALL SYSTEM

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Forward-looking construction—functional today...adequate tomorrow. Mahon M-Floors are an important component of the First National Bank Bldg., Minneapolis. Architects and Engineers: Holabird & Root & Burgee, Chicago. Associate Architects: Thorshov & Cerny, Inc., Minneapolis. General Contractor: Naugle-Leck, Inc., Minneapolis.



Mahon M-Floors offer the architect and engineer economical structural advantages and easy electrical servicing of every square foot of floor space . . . give the client an ideal steel sub-floor and a raceway capacity that will not be outmoded by future electrical demands. Lightweight, high-strength steel cellular M-Floor sections are precision made by Mahon in various depths, gages and gage combinations to meet your design requirements . . . savings on foundations, installation time, construction convenience are dividends. Any type of floor covering can be used over the concrete fill . . . standard service fittings can be located wherever they are needed. To find out what versatile M-floors can do for you . . . your applications . . . your project costs . . . contact your local Mahon architectural representative, write for descriptive Catalog M-60 or see Sweet's Files.



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To create an overall theme of elegance and beauty for this completely modern hotel, architects Perry, Shaw, Hepburn & Dean specified porcelain enamel steel panels. The supplier chose Inland enameling iron for its uniform flatness and excellent enameling characteristics. Finished panels were delivered to the site set in metal frames. They were extremely easy to install and provided 15,000 square feet of refreshingly colorful design.

SHERATON

Porcelain enameled panels are simple to

Modern Construction

clean, acid-resistant, weather-resistant and colorfast. They completely eliminate later refinishing costs generally required with ordinary painted panels —make present and future maintenance of this attractive hotel extremely economical.

For complete information on the economy and efficiency of curtainwall construction, call or write the curtainwall manufacturer nearest you, the Porcelain Enamel Institute, or Inland Steel Company.

Montag, Inc., manufacturers of the porcelain enameled panels used, selected 16 gage, stretcher-leveled enameling quality steel supplied by Inland Steel Company—had no trouble meeting architect's specifications for color (grey), size and flatness.



# CHATHAM VILLAGE continued from page 120

cent of \$2,220,000, the Buhl Foundation's total investment to date plus transfer and administrative costs, to run for 40 years. Present tenants will have first option to buy their homes; indications from a recent tenant meeting are that 90 per cent or more will. They will pay an average of \$500 down, assume interior maintenance, and pay no more in monthly carrying charges than they now pay in rent (of their new monthly payments, around \$850 a year will now be deductible in taxes and interest). Chatham's houses, built in 1932 and 1936 on cheap land at low depression prices, cost about \$8,700 each including land and site improvements; they will be sold for an average of \$10,000, the current book value (including a small convenience shopping center, and 19 onebedroom apartments built in 1956 to round out the community). For mortgage purposes, the houses are estimated to be worth close to twice that. Furthermore, they are being credited with an official remaining life of at least 55 years. Compared with some of today's housing, which may not last gracefully for 20 years, a total useful life of 85 is respectable indeed.

The experience of Chatham Village suggests a good many obvious morals for those who wish to draw them. One is that a well-planned, self-contained community is an unusually secure real estate investment, for institutions, and for others willing to forego today's quick killings; even without FHA help, Chatham and well-designed newer co-ops would make good conventional loans. Another moral is that there is still a fertile and largely untilled middle ground between the limitations of pigeonhole city apartments and the disadvantages of a long commute to a suburban house. Yet another is that quiet, safe interior parks and natural exterior greenbelts are more than ever essential to intelligent land use, providing the daily recreation and breathing space so desperately needed as cities spread steadily in an almost unbroken fabric across the land. Few builders would want to, or could afford to, duplicate Chatham's quaint slate roofs and Georgian gardens, especially in the light of new row-housing materials and ideas. Yet, until new pioneering is done, Chatham has much to teach. END





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Safety Bath is especially adaptable where new medical facilities are being planned. Many architects are considering incorporating a special Safety Bath room with one or more units.

Safety Bath fills a definite need. Patients can, in most cases, bathe themselves, thus relieving overworked attendants for other duties. The unit is simple to install, portable, sanitary and safe (UL approved).

A partial list of satisfied users includes: VA hospitals; Baptist Memorial Geriatric Hospital, San Angelo, Texas; Pope Nursing Home, Weymouth, Massachusetts; Oceanciew Rest Home, Redondo Beach, California; Greystone Rest Home, Wellsville, Ohio; St. Michael's Hospital, Newark, New Jersey.

Illustrated literature and prices upon request.



# **APARTMENTS IN DETROIT** continued from page 113

fayette Park, with a few staunch outside friends like Blessing and CRC Executive Director Jim Bell, may yet carry the day by proving the virtue of their way, for now it *is* their way.

As with any significant new development in any field, a final appraisal should not be attempted until all the evidence is in. At Lafayette Park this will take many years—as it did at its predecessor, Chatham Village (see page 118)—but there are a few things that can be learned now from the experience of people who have been living there.

Most significant, perhaps, is the comment of Planner Walter Blucher, who moved his family into a town house when he returned to Detroit to head up the Metropolitan Community Research Corp. of southeastern Michigan: "We came here," said Blucher, "because we believed in this kind of hous-



ing, and we wanted to be a part of a truly internacial community—and, we were tired of keeping a big yard. We've had lots of minor annoyances and many little problems to solve, but we haven't ever regretted our decision."

The "minor annoyances" (which Blucher declined to enumerate) are spelled out again and again by other residents: the basements leak, the front doors bind, the large uninsulated windows condense, soaking the draperies. Almost everyone would prefer some sheltering overhang for the large glass, and west exposures have proved hotly unpleasant. The "little problems" are also apparent: On Lafayette Street, for example, sidewalks to the downtown area are practically impassable. The school, which should have been started by now, is not begun. Smoke and dirt from the clearance in the adjacent extension have been unpleasant. Finally, Detroit Edison, who provide steam for the heating system, refuses to charge the cooperative as a single customer, thus boosting charges appreciably.

Problems, as anyone involved in construction knows, seem to plague any building just occupied. At Lafayette Park, unfortunately, the problems came up just as the Greenwald organization was regrouping itself after the boss's untimely death.

There is little doubt that if Greenwald had lived, many things would have been easier. Not the least of these would have been the relationships between the city and citizens of Detroit and the project. The fact is that from the beginning the pioneering Lafayette Park renewal has been a tough one to bring off. Like many cities, Detroit had been spread and suburbanized until the vacuum left downtown was hard to fill. And, unerringly, the people who picked the slum-infested area for renewal had picked the center of the vacuum.

Perhaps the most serious error was that of trying to clear slums, raise tax revenue, and re-establish an urban residential core, all at once. In a different location, and with the single objective of re-establishing an urban core, Lafayette Park would now be an unquestioned success. But having gone this far toward the impossible, Detroit will, no doubt, still rally enough to push all the objectives through. If so, she will attain a veteran's standing in the struggle to save cities. END

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At minimum installation cost (and space), the new Santa Ana Public Library is getting a unique 11-zone Landmark comfort system that's highly efficient, draftfree, super-quiet, and extremely flexible. It provides – and maintains – perfect heating and cooling throughout the building despite varying solar heat gains, constant temperature changes caused by large groups of people assembled in concentrated areas. All eleven zones of the Landmark system are controlled by a central time clock. Each zone has its individual automatic heating-cooling thermostat with a selector switch to turn each zone "on" and "off." For complete facts on the new Landmark – and how its flexibility may solve

For complete facts on the new Landmark – and how its flexibility may solve many of your heating-cooling problems – call your local Lennox Comfort Craftsman. Or write Lennox Industries Inc., Commercial Division, Des Moines 5, Iowa.

Patents Pending

2nd floor-three zones Three Landmarks cover 10,000 sq. ft.reading rooms, offices, club rooms

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main reading room, children's library, lecture room, smoking lounge

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# **DESIGN FOR URBANITY** continued from page 117

for a minimum of space for one-fifth car per family, a maximum of one car; Detroit requires space for only one-half car per family.) As a result, apartments are providing anything from surface parking space (where land is cheap) to multilevel garages, as in Architect Bertrand Goldberg's project for Marina City, Chicago, which has 18 floors of drive-up parking topped off with 40 floors of apartments in its twin, cylindrical towers. While this proposal seems a trifle bizarre, garage planners are agreed that parking garages are bound to grow in size as long as it does not pay to operate a garage of less than 60-car capacity. Because this is so, other developers may follow the lead of Boston's Prudential Center in expanding

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their garage plans to incorporate parking space for nearby commercial structures in one huge subsurface garage. If parking garages are placed under apartment structures, the column spacing for the entire building may be changed by the parking pattern: columns spaced 26 feet on centers will permit three cars to park in each bay on the garage levels, whereas shorter column spacing tends to produce inefficient garage plans. Another way of dealing with the parking problem is to cover a large portion of the site with a singlelevel garage, to turn its roof into a landscaped plaza, and to put the apartment towers on top of that. This is planned in the pentagonal tower designed by Architects Meathe & Kessler for Detroit's Lafayette Park Extension, with the result that more than half of the parking will be out of view, and much of the site (except for the portion used up by the building) will be left to pedestrian use.

## And better site development

To compensate tenants with children for the loss of private gardens (which they might have enjoyed in suburbia), apartment builders are providing increasingly elaborate outdoor facilities on the site. Capitol Park Apartments, in Washington, D. C. (below), can boast play areas, a wading pool, and a poolpavilion on their grounds. The Le Havre Apartments (page 115) have swimming pools and tennis courts for the use of tenants. And others are on the way with even more extensive facilities.

If these developments continue, the builders of urban apartments will soon be producing an agreeable environment for those who must or want to live in the city. END



0011200



# Look for the label that assures WEATHER-RESISTANCE

This label stands for unmatched weatherability among glassfiber reinforced panels, because it signifies that the panel is made with PARAPLEX P-444 acrylic-polyester resin. Years of Rohm & Haas research on many types of resins for reinforced panels have established that the best weather resistance is achieved by a combination of acrylic and polyester resins. PARAPLEX P-444 represents the most effective combination for imparting outdoor durability, *plus* pleasing appearance, high strength, excellent light transmission, and easy installation. Only Rohm & Haas supplies this proper combination, in PARAPLEX P-444. We will be glad to send you the names of panel manufacturers.



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HERE IS THE APPARATUS used to make the torture scratchhardness test in the research laboratories of Foster D. Snell, Inc. A steel bit with a half-inch chisel type edge was dragged back and forth repeatedly over the treated and untreated surfaces of the concrete specimens at an angle of 30° from the horizontal and under a load of 20 pounds. Machine was operated at 19 cycles per minute.

# CAN YOUR FLOORS SURVIVE THIS TORTURE TEST?

LAPIDOLITH makes concrete floors *highly resistant* to the worst traffic conditions, as proven by the Torture Test conducted by the independent research organization of FOSTER D. SNELL, INC. The Foster D. Snell, Inc. torture test applied to untreated concrete resulted in severe damage to the floor.

These actual and unretouched photos of the torture test prove conclusively that LAPIDOLITH imparts a higher degree of scratch and abrasion resistance to concrete, actually changing the nature of the concrete. Typical concrete sealers with "alleged" hardening qualities offer scratch and abrasion resistance only as long as the surface film remains continuous and unbroken. Once this surface film is removed or broken, which occurs during normal traffic wear, the concrete "treated" is as vulnerable as untreated concrete.

The fact remains that there is no floor sealer that can possibly function as anything more than a sealing compound when applied to set and dry concrete. Floor sealers simply cannot chemically harden concrete. Sonneborn has an excellent and a complete line of floor sealers and curing compounds which Sonneborn recommends for specific purposes for which curing and sealing compounds are designed. Sonneborn does not, and will not recommend a curing and sealing compound as a concrete floor hardener. Sonneborn recommends LAPIDOLITH as the best treatment for hardening concrete floors.



HERE IS WHAT HAPPENS when concrete is not treated. After 500 strokes, the untreated concrete shows wear of 0.0035 inch; the equivalent of  $3\frac{1}{2}$  mils. The surface is broken and badly worn.



ANOTHER SPECIMEN OF THE SAME CONCRETE was treated with a coat of typical sealer. After 500 strokes, the surface showed wear of 0.0007 inch, the equivalent of 2/3 of 1 mil. The surface appeared unbroken. But, look what happened when the sealer was stripped away. Photo is of block abraded after stripping by paint and varnish remover. The concrete showed erosion to a depth of 0.0027 inch; or the equivalent of 2.7 mils. The surface was broken and badly worn away.

# LAPIDOLITH hardened concrete floors can take the grind of day in and day out traffic.

# Here are some additional facts about LAPIDOLITH:

1. ONLY LAPIDOLITH CONTAINS DYNEX<sup>®</sup>. Because of Dynex, LAPIDOLITH not only chemically hardens the surface, but *penetrates deeply* into the sub-surface pores and capillaries giving *greater HARDNESS IN DEPTH*. Proof of hardening in greater depth is shown in chart below. These radioactive tracer tests, were conducted by FOSTER D. SNELL, INC.



2. RESISTS INSTANTANEOUS ACID ATTACK. LAPIDOLITH protection permits enough time to flush off acids before the concrete is harmed. (Proof of acid test available on request.)

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# Forum

# Eager designers . . . poor Princeton . . . frilly schools . . . lost leadership

# ARCHITECT VS. DESIGNER

Forum:

I always admire your forthrightness and eagerness to take a position on a question.

However, in the article "The new rivals: architects and designers" (FORUM, Apr. '60) I am amused by your presumption that an architectural license is axiomatically a panacea of esthetic judgment. Conversely, in your opinion, the absence of such a license is an automatic demeaning of the industrial designer's esthetic values.

Who, then, is responsible for those imitation-ancient and cliché'd modern stalagmites, some of which are appropriately hued in pastel turquoise, pink, or gold, currently rising throughout the country? Engineers, I suppose.

> ROBERT P. GERSIN Robert Gersin Associates, Inc. Industrial designers New York City

#### Forum:

The secrets behind the growing interest of designers in the planning and design phases of architectural projects (FORUM, Apr. '60) are easy money and weak enforcement of architectural licensing laws against both unlicensed practitioners and licensed architects aiding unlicensed persons to practice architecture.

The unsuspecting and uninformed public, as usual, is the victim. The designer is neither a challenge nor a rival to the competent architect and could never dabble in architecture without the tolerance and assistance of the qualified professional.

> HENRY SANDIG, architect New York City

## Forum:

It is true that many industrial designers are often concerned mainly with "what sells," but isn't this a valid criticism for many architects as well?

The industrial designer's specialty is mass production. His concepts of materials, techniques, and accuracy are geared to the machine rather than the hands of a mason, carpenter, or steelworker. For this reason he should limit his architectural inclinations to the field of prefabrication, where his understanding of mass production methods can be put to best use.

There is one area in which the industrial designer can make a contribution to custom

architecture—his approach to design. He is primarily concerned with the "how" and "why" of a problem, whereas the architectcatalogue expert of today is often so concerned with "what" and "where" that he tends to neglect these more basic considerations. Rather than protest in self-righteous indignation at the intrusion of the industrial designer into architecture, we in the profession would be wise to welcome him into our growing club of specialists.

FRED STEPHENSON Pontiac, Mich.



# ARCHITECT AND CLIENT

Forum:

Robert Osborn's deft and clever drawings of the architect and client (FORUM, Apr. '60) certainly express the situation in detail. I would like to have an extra copy for framing.

> J. W. ANDERSON, director of planning AMP Inc. Harrisburg, Pa.

Forum:

... we plan to mount them in our conference room.

> ARTHUR R. COGSWELL JR. City Planning and Architectural Associates Chapel Hill, N.C.

■ A few extra copies are available for the asking.—ED.

## POOR PRINCETON

Forum:

Your recent comments about the architectural situation at Princeton (FORUM, Feb. & Mar. '60) have given additional hope to the many of us who have been disturbed by that situation. In 1956 when we were graduate students, a group of us became worried by policies which we felt were robbing Princeton of her ability to progress as a teacher of architecture and as a leader in the development of new campus building.

We found great agreement among the alumni and faculty. The notion of isolating the School of Architecture was especially unacceptable to the faculty, and, of course, we all felt dejected and somewhat ashamed at the architectural face Princeton proposed to present to the public in her new buildings.

A committee has been formed and stands ready to meet with the trustees.

I cannot tell you how determined we are in this matter! We believe that Princeton cannot survive as a leading educational force if it fails to accept the present architectural challenges, for its response in this area is only an indication of its over-all educational purpose.

> RALPH R. DRURY, assistant professor Department of Architecture Carnegie Institute of Technology Pittsburgh

# HOSPITAL CRISIS

Forum:

Your January issue dealing with modernization was most interesting for its breadth and vision as well as for the detail of individual examples.

A real modernization crisis now exists with respect to most existing hospitals, even in many of those which are only a few years old. The crisis is most acute in large hospitals in large cities. The money currently being spent on the modernization of hospitals is to a considerable extent misdirected and frequently results in making conditions worse rather than better. Yet, there are principles for orderly modernization which, if articulately brought to the attention of the public, could do a great deal of good.

> ISADORE ROSENFIELD, architect New York City

# TRUMP FRILL

Forum:

The Trump Plan, featuring big lecture halls and small seminars for secondary schools (FORUM, March '60), appears to be a jazzed-up version of the preceptorial continued on page 240

system which was installed at Princeton by Woodrow Wilson. This august university, at which FORUM recently leveled some welldeserved criticism, has long advertised that her cherished tradition of small seminars has always required far more faculty members than does the less-glamorous classroom system.

Granting the assumption that each student rates at least one class period per day in a cozy seminar for 12 (they can't snooze in giant lecture halls and daydream in tiny study carrels all day!), a little old-hat arithmetic will demonstrate that the average high-school staff simply doesn't have enough hours in its day for this kind of educational frill.

> WILLIAM D. WILSON, architect Holden Egan Wilson & Corser New York City

# Forum :

I have read with much interest your article on the Trump Plan. You have done an excellent job.

J. LLOYD TRUMP, director Commission on Experimental Study Utilization of Staff in Secondary Schools Urbana, Ill.

## **NERVI'S PRINCIPLES**

#### Forum:

I enjoyed immensely your article on Nervi's methodology (FORUM, Feb. '60), especially because it was written by my colleague, Clovis Heimsath, with whom I shared the experiences of a Fulbright grant in Italy in 1959.

To supplement the article, I would add that Nervi's main principle in building is that form in structure is a logical consequence of the requirements of statics. Every element in the Sports Palace in Rome embodies this principle.

A good example is the row of long, slender columns circling the outside of the building (photo below). Each column has a cross-section of a three-pointed star not only to avoid buckling due to the excessive 1/r ratio but at the same time to avoid a stodgy heavy column which would have been necessary to satisfy action, eliminating moment from the column and resulting in a graceful form.





Another example of this principle is the interesting geometric shape of the piers (photo above). At the top of the pier the cross-section is elongated in the direction of the span of the dome in order to provide a greater moment of inertia in absorbing the moment from the dome. The change in cross-section lower down tends to create a hinge in the pier reducing the moment transmitted to the foundation and subsequently reducing its size.

The same analysis can be carried through for all the structural elements of the building, giving the conclusion that the beauty and originality of Nervi's forms are based on his powerful knowledge and intuition of the flow of stresses.

> KIRA V. KROCK New York, N.Y.

# WITHOUT SPYGLASS

Forum:

The Gordon-Enesey Columbus Memorial (FORUM, Apr. '60) answers the question of whether or not modern art can build a monument. Their design shows it is possible. So apt is the design that not even the addition (to placate the traditionalists) of a statue of Columbus-complete, of course, with spyglass and chart in hand, peering heroically into the distance-would detract much from the intended effect.

> S. M. LURIA Noank, Conn.

## LEADERSHIP ABANDONED

#### Forum:

In the early fifties America seemed ready to assume the position of a leader in architectural development. Wright had entered another period, his last, of fruitful creation, Gropius had formed T.A.C., Breuer was building his logical and refined houses in New England, Mies van der Rohe's poetic apartment towers had just risen on the lake shore of Chicago, on the West Coast were the newly built houses of Neutra. Wurster, and others including the erectorset Japanese home of Eames, plus Belluschi's simple and moving Zion Lutheran

Church, and in Florida a young graduate of Harvard, Paul Rudolph, was adapting Gropius' ideas to the tropics. None of this has been lost, but it has not led American development, which has been sidetracked into shells and screens.

It is a very curious thing that Wright, who began by damning eelecticism and imitation of the "look of the thing" in his work, damned also the legitimate and progressive European adaptation of his ideas, as in Gropius, et al. Then a few years ago he praised the embassy in New Delhi, a beautiful building but a landmark in retrogression. What would he think of Stone's new cultural center in Washington, D.C. -or his service station at Idlewild Airport?

America has twice abandoned world leadership in architecture. First after the Chicago fair of 1893, and second with the U.N. assembly and the New Delhi embassy, both times in the name of beauty as proclaimed by businessmen-architects - first Burnham, now Harrison and Stone. Why? THOMAS G. KILLIAN

Copenhagen, Denmark

#### GOOD SHOW

#### Forum:

At the regional meeting of Association of Collegiate Schools of Architecture in Houston, Professor Melvin Rotsch of Texas A & M had an accomplished actor read, on tape, your criticism of the Guggenheim Museum (FORUM, Dec. '59). He then had slides made of your illustrations.

The whole thing was a superb show beautifully illustrated and presented in a live and compelling way-a great teaching device. I wanted you to know that your written words are not forgotten.

HOWARD BARNSTONE, architect Bolton & Barnstone Houston

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