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Cover: Detail photo by Wallace Litwin of concrete canopy at Atlanta's new shopping center (story, page 120).

VOLUME 111, NUMBER 4

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

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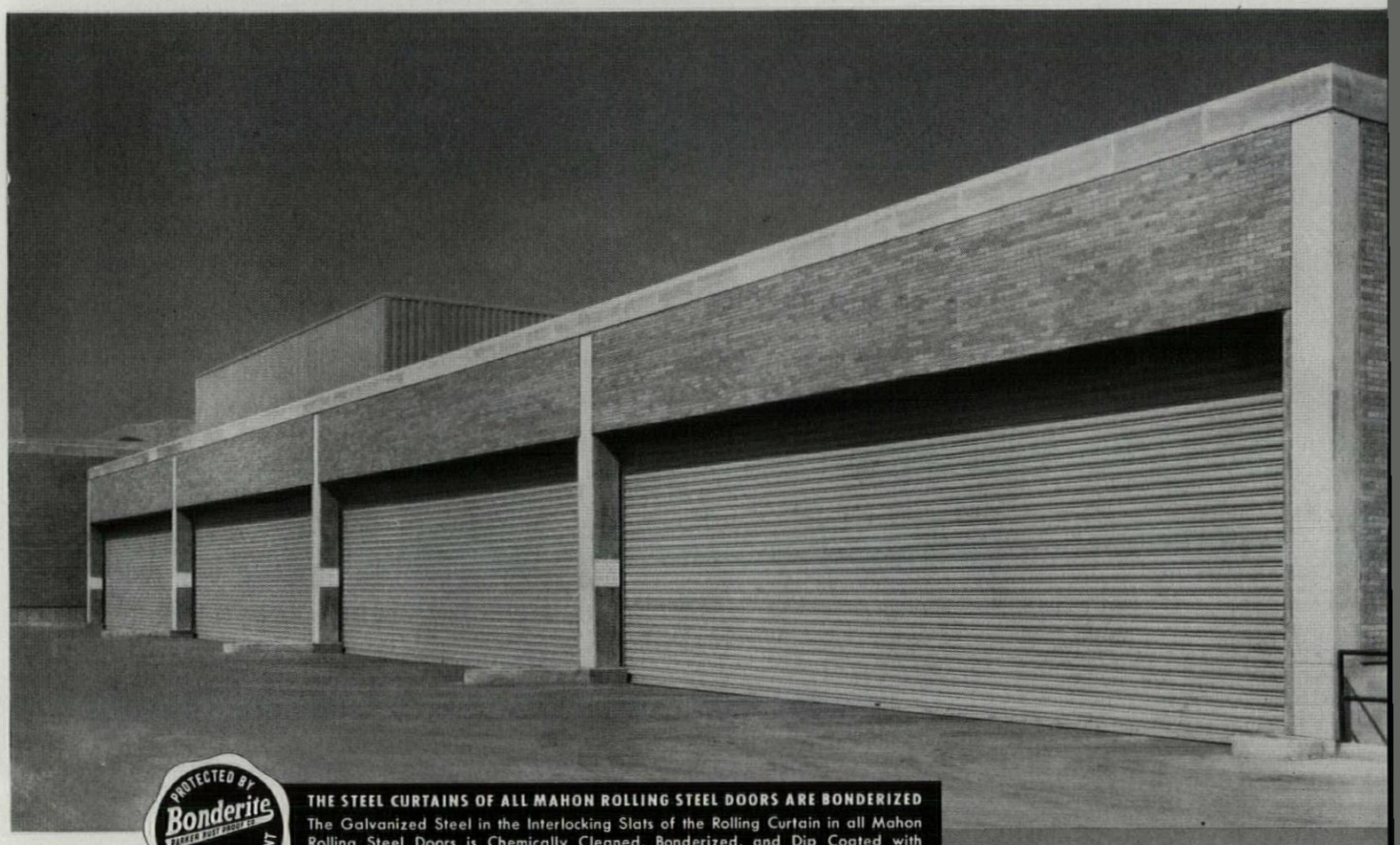

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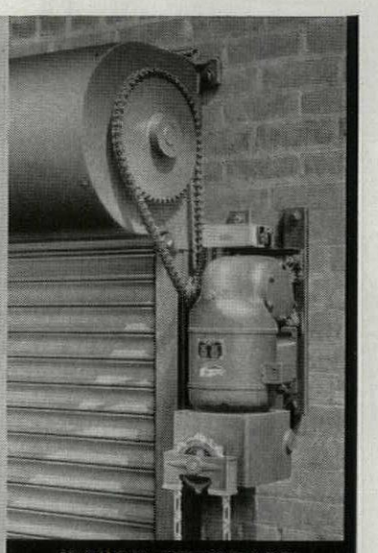

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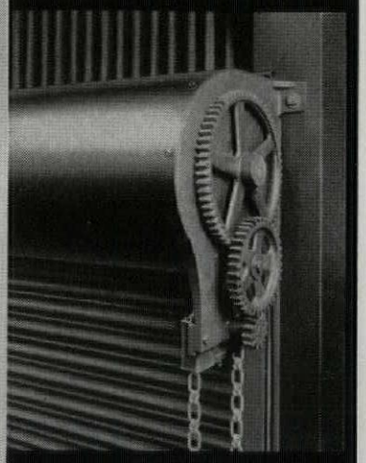

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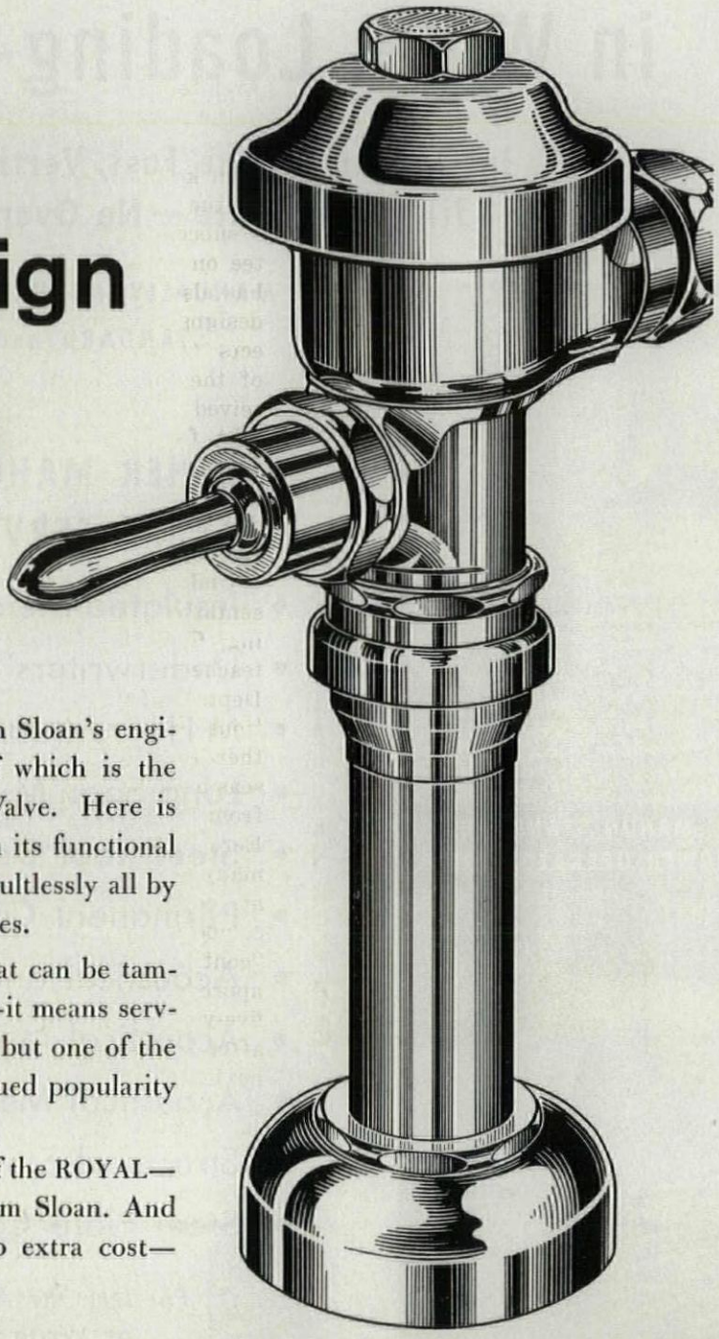

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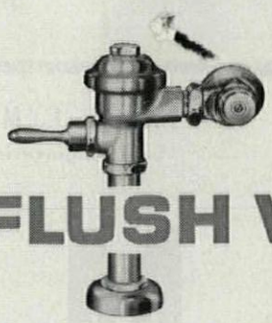

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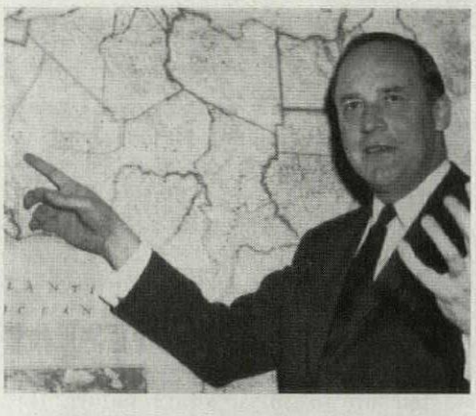
State Dept.'s modern design program abroad suffers severe setback under attack of House subcommittee

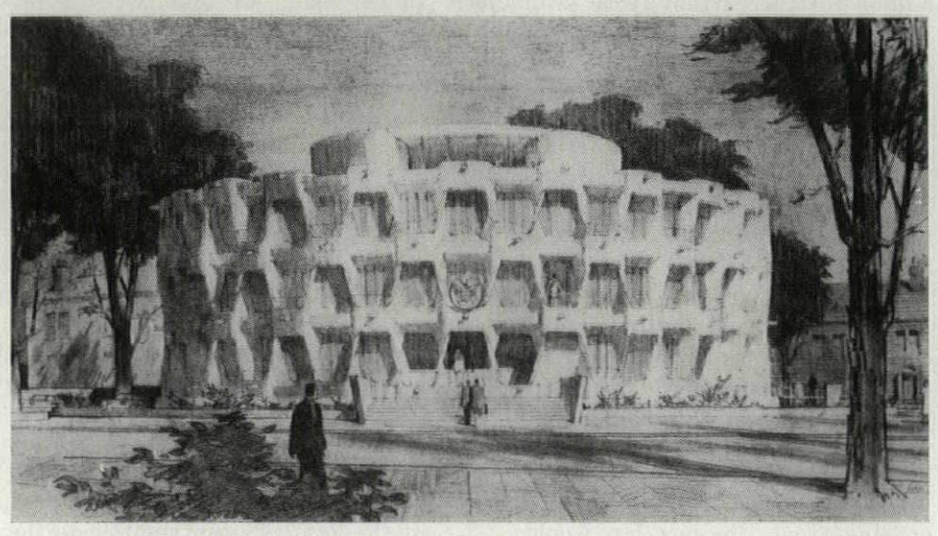
Architect John Johansen's proposed Celtic tower design for the U.S. embassy in Dublin (photo below) has been killed. The death blow was dealt by the amateur architectural critics of a subcommittee of the House Committee on Foreign Affairs. This same group has also reacted sharply to the modern designs proposed for several other projects of the Foreign Buildings Office of the State Dept., which in 1957 received a citation of honor from the AIA for ". . . having achieved a new form of expression, . . . in which the architecture graciously pays homage due an established style from a government that is a guest."

Under the chairmanship of Representative Wayne L. Hays (D), a Flushing, Ohio, farmer and former history teacher, the Subcommittee on State Dept. Organization and Foreign Operations has threatened to make no further funds available for State's overseas building program unless it refrains from giving another commission to Eero Saarinen and unless it allows many more architects to have a chance at commissions, preferably through competitions. Further, to assure its "control," the subcommittee decided to approve only a two-year, instead of a five-year, extension of the program after its current authorization expires next year.

UP



REPRESENTATIVE WAYNE L. HAYS



PROPOSED DUBLIN EMBASSY BY JOHN JOHANSEN THAT IRED HAYS

Because of the inescapable "purse string" domination of this subcommittee, officials in charge of State's building program have diplomatically agreed to submit preliminary plans for all new projects to the subcommittee for architectural approval.

Congress adjourned last month without enacting any new legislation covering this program, but it will still have ample time to do so at its January session. By then, friends of the program hope architect-educated Secretary Christian A. Herter will find time to use his influence to moderate the effects of the subcommittee's attacks on FBO designs. Exactly how Herter might reason with Chairman Hays is problematical, however, in view of some of the latter's recent utterances. For instance, at a discussion of the Congressional group's plan to exercise an architectural veto over projects, Hays was asked whether the subcommittee would have the services of an advisory architect for this purpose. Replied Hays: "Do you think as a matter of good taste that an architect knows more than you or I do?"

Hays and other subcommittee members were especially critical of Saarinen's London embassy design and Johansen's Dublin design. During subcommittee examination of FBO Director William P. Hughes about a project for Paris, Hays declared: "If I thought you were going to use what seems to be your pet architect, Saarinen, I would never call another committee meeting as long as I am in Congress to give you a nickel to build anything."

Hays's main complaint has been that new FBO projects often clash with the architecture of adjacent buildings, and thus lower U.S. prestige and arouse ill feelings against the U.S. overseas. Of the new London embassy, he said: "I am critical of the architecture in correlation to the other architecture there. I heard about it . . . from the British side, and they think it is sort of a monstrosity. . . . I didn't encourage them to say this, I just asked them what they thought of it." Asserting that he is not opposed to modern architecture *per se*, Hays later expressed his approval of the New Delhi embassy

continued on page 6

designed by Edward Durell Stone.

In complete disagreement with testimony by FBO Director Hughes that the proposed Dublin embassy had been reviewed and enthusiastically approved "by everyone in Dublin from the Lord Mayor on down," Hays, in an interview, declared that he had refrained from displaying the Dublin design on the floor of the House, because that would have "killed the entire program." In his view, said Hays, the now-abandoned Dublin design "looks as much like a Gaelic tower as the Capitol looks like an aircraft carrier." Rep. Leonard Farbstein (D, N.Y.) thought the proposed tower "looks a bit modernistic, or 'beatistic'—perhaps the beatniks think it is good." Said subcommitteeman Representative Clement J. Zablocki (D, Wis.): "It looked to me like a glorified tent or a series of flapjacks with a pat of butter on top. But who am I to criticize? I do not classify myself as a qualified critic of either modern art or modern architecture."

Although Hays criticized FBO for allowing a "little clique" to control its program, the 58 FBO projects awarded since 1954 have actually gone to 55 different architectural offices. The only designers to do more than one building were Saarinen (Oslo, by direct award, and London, won in a competition), Sherlock, Smith & Adams (two projects in Manila), and Weed-Russell-Johnson Associates (Lagos, Nigeria, and Leopoldville, Belgian Congo). Since Saarinen won the London commission in a "restricted" competition in 1956, he has been appointed to the FBO's Architectural Advisory Panel, then composed of Colonel Harry A. McBride, as chairman Pietro Belluschi, Henry A. Shepley, and Ralph T. Walker. (At present this panel is composed of Waldemar J. Gallman, director of the Foreign Service, as chairman; and Architects William Wurster, Edgar I. Williams, and Saarinen.)

Commenting on Hays's call for more "competitions" in which "various architects might be allowed to submit general renderings," FBO Director Hughes told the subcommittee: "The disadvantages of such a procedure are simply that it costs more money, it takes more time, and more people have to visit a post, because, obviously, the architect has to go and examine the site and has to talk informally to people at the post —not only the people in the embassy, but the local planning commission and the fine arts commission." Open competitions, other sources observed, might also upset what Hughes described as the FBO's procedure for "public relations" checks on each prospective architect "to see that he is not an espouser of causes and confines himself to architecture." Moreover, they could result in an unseemly "hawking" of U.S. architectural services abroad by hoards of architects descending on cities where projects were contemplated.

BALTAZAR KORAB

AN ALUMINUM SHOWCASE, which serves as the regional sales headquarters for Reynolds Metals in Detroit, was opened for business last month. It was designed by Architect Minoru Yamasaki.

Important benefits for rental housing, co-ops, and urban renewal included in new housing law

After a long tussle between the Congress and the President that included two vetoes, a compromise housing bill was adopted by Congress last month, and White House spokesmen gave "positive assurances" that the President would sign it.

As the dust settled, it appeared that neither the Congress nor the President had won a clear-cut decision. The new law did not contain the $50 million direct-loan program for college classroom construction that the President found unacceptable in the earlier bills, but it did authorize an additional $250 million for the existing college housing loan program, including $25 million reserved for "additional educational facilities" and $25 million for student nurse and intern housing facilities. The new law also set new urban renewal grant authorizations at a total of $350 million for the current fiscal year and $300 million for the next—$50 million more than the President wanted and $300 million less than Congress originally legislated. The authority to make contracts for federally subsidized public housing was set at 37,000 units, a compromise between the President's desire for none and the 45,000 that Congress had wanted.

Of far greater importance to cities —and to architects and builders—however, were several new urban renewal and public housing provisions, and many technical changes which liberalize FHA's rental and co-op mortgage insurance programs.

On the urban renewal and public housing fronts the new law would:

- Authorize federal relocation payments where displacement from an urban renewal area is the result of any governmental activity, including both the highway program and approved voluntary rehabilitation programs.
- Increase maximum relocation allowances for individuals or families from $100 to $200, and for businesses from $2,500 to $3,000.
- Prohibit hotels and transient facilities in redevelopment plans except on satisfactory independent demonstration of need.
- Permit the cost of appropriate public improvements serving an urban renewal project to be included as part of the community's "grant-in-aid" credit in calculating the federal subsidy, where the improvements were started up to three years before the final grant contract for the renewal project was signed with the U. S.
- Permit up to 20 per cent (formerly 10 per cent) of total U. S. grants to be used for renewing nonresidential areas for nonresidential purposes under certain limitations.
- Remove existing federal limitations on incomes of public housing occupants and allow rent and income schedules to be set by local agencies, subject to federal approval.
- Allow land in urban renewal areas to be transferred to local public housing agencies for the same price as offered to private purchasers (thus giving public housing an additional subsidy).
- Allow local losses for tax exemption or remission on public housing in urban renewal projects to be credited as part of the locality's contribution to the net cost of the project, thus giving the locality another credit in computing

the amount of the federal grant.

Among the most important changes the new law made in FHA programs for urban housing:

▸ *FHA Sec. 207.* Rental project mortgage limits are still set at 90 per cent of estimated project value, but have been increased from $2,250 to $2,500 per room for garden apartment buildings and from $2,700 to $3,000 per room for elevator buildings, plus extra allowances of up to $1,250 per room for both types of buildings in official "high cost areas." Maximums for projects that average less than four rooms per dwelling unit are increased from $8,100 to $9,000 per unit in garden apartments, and from $8,400 to $9,400 in elevator buildings—plus "high cost area" adjustments. Interest limits are raised from 4½ to 5¼ per cent.

▸ *FHA Sec. 213.* Co-op project mortgage limits on a room or unit basis are now the same as for Sec. 207 (above). However, these mortgages will now be approved for as high as 97 per cent of replacement cost for regular management-type projects which are sold before the start of construction. For "investor-sponsor" projects, which do not have to be marketed until completed, the limit was raised from 85 to 90 per cent. The maximum-mortgage differential on regular management type projects—90 per cent of estimated replacement cost, or 95 per cent if more than half of the co-op purchasers were veterans—has been eliminated.

Three other important Sec. 213 co-op changes: 1) the interest ceiling was raised from 4½ per cent to 5¼ per cent on management-type projects; 2) appropriate community and commercial facilities are now eligible to be covered by the mortgage; and 3) for the first time existing buildings are permitted to be turned into co-ops with FHA-insured financing. In the last case, mortgage terms will be the same as for new construction, except for one major qualification: loan-to-value ratios will be calculated on "appraised value," instead of on estimated replacement costs.

▸ *FHA Sec. 220.* Urban renewal apartment project mortgage limits which are still set at 90 per cent of replacement cost may now, on a room or unit basis, go as high as the dollar amounts set for Sec. 207 projects (above). The new provisions also allow the mortgage to cover certain non-dwelling facilities that serve both the project and adjacent housing.

▸ *FHA Sec. 221.* Mortgages for multi-family relocation housing for persons displaced by urban renewal or other public projects may now be made for a maximum of $12,000, instead of $10,000 per unit in "high cost" areas. These are 100 per cent mortgages.

▸ *FHA Sec. 231.* This entirely new section covering housing for the elderly replaces all former FHA rules. It allows mortgages for 90 per cent of replacement costs for new construction, or 90 per cent of estimated value on existing structures (or corresponding 100 per cent loans to nonprofit sponsors) up to maximums of $9,000 per unit in garden apartments, or $9,400 in elevator buildings—plus extra allowance up to $1,250 per room in "high cost areas." (Against the President's wishes, the new law also establishes a program of direct HHFA loans at below-the-market interest rates, provided that private financing is unavailable. Because the necessary appropriation to launch this program was not voted by Congress, the program cannot be started until at least next year, after Congress meets again.)

New labor, highway, public works laws affect building

In two out of the three major measures affecting construction adopted by Congress, in addition to the new housing legislation (above), President Eisenhower won substantial victories: in the passage of the labor relations law and in enactment of an increase in federal gasoline taxes to help keep the big federal highway construction program rolling on a pay-as-you-go basis. On the third measure, the annual public works appropriations bill, however, the president suffered a setback. It was on this bill that Congress overrode an Eisenhower veto for the first time since Ike took office 6½ years earlier.

Two provisions in the new labor law give official recognition to the unique nature of construction industry employment. It formally legalizes (or exempts) so-called "pre-hire" employer-union contracts in the building industry that may be negotiated before any workers are employed on a particular project, and it authorizes only a seven-day waiting period in construction before an employee can be compelled to join a union (compared with 30 days in all other employment). This applies only when employers and unions have negotiated union-shop agreements.

Under the new highway financing bill the federal tax on gasoline was increased from 3 to 4 cents a gallon until July 1, 1961. The President had advocated an increase to 4½ cents for a five-year period. After July 1961, the new law provides for the diversion of about $800 million a year to the highway fund out of the manufacturers' tax on new autos and the excise taxes on new auto parts and accessories that now go into the Treasury's General Fund. The President opposed this future diversion, and can be expected to seek repeal of this provision next year in favor of continued highway program

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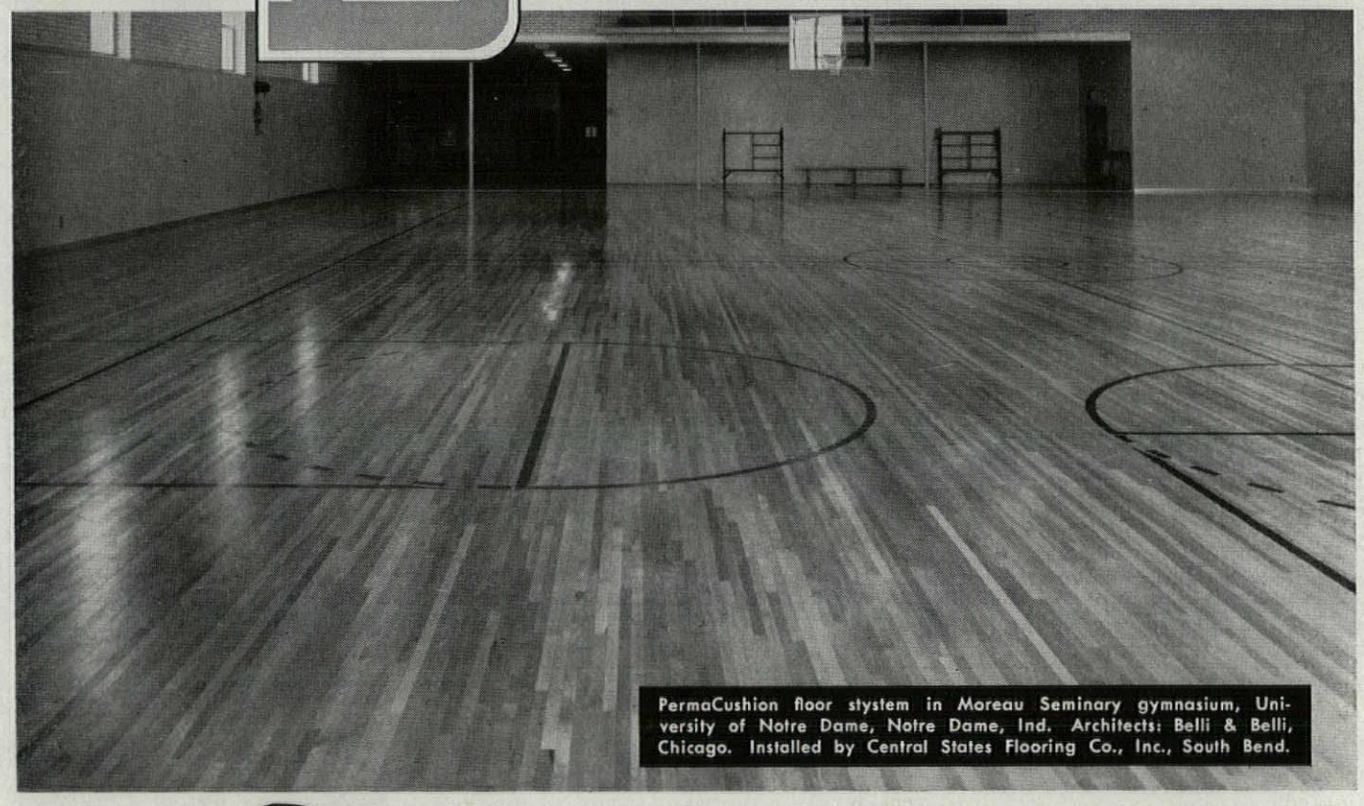
ELLWOOD JOHNS

"TALLEST AND HEAVIEST" steel frame erected in the past quarter century was the boast made last month when the 60-story Chase Manhattan Bank Building in the heart of New York's financial district was topped out by Bethlehem Steel Co. ironworkers. The 53,000 tons of structurals for this 810 ft. tower are exceeded only by the 58,500 tons in Rockefeller Center's RCA Building and the 58,000 tons in the Empire State Building. The building's 40 main supporting columns each can carry loads up to 7,900 tons, or 50 per cent more than the Empire State's most massive columns. Architects: Skidmore, Owings & Merrill. Consulting structural engineer: Weiskopf & Pickworth.

FOR ND NOTRE DAME'S NEW MOREAU SEMINARY GYMNASIUM:



PermaCushion floor stystem in Moreau Seminary gymnasium, University of Notre Dame, Notre Dame, Ind. Architects: Belli & Belli, Chicago. Installed by Central States Flooring Co., Inc., South Bend.

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The new $1.2 billion public works bill that was passed over the President's veto authorizes about $885 million for projects under supervision of the Army Engineer Corps; the remainder is for the Reclamation Bureau and other units of the Department of the Interior, and the Tennessee Valley Authority. The President's main objection to the bill was that it authorized 67 new projects that were not in the administration's budget and would cost a total of about $800 million over an extended period of years. In his second veto message he also criticized the 2½ per cent across-the-board reduction as a budget-trimming gimmick that might only "impede orderly work" and ultimately cause increased costs.

Jersey plans rail relief with toll road surplus

Metropolitan area transportation officials all over the nation will have their eyes on an unusual state-wide referendum in New Jersey next month that would authorize the diversion of surplus New Jersey Turnpike revenue to subsidize deficit-ridden commuter railroad lines.

If voters approve, the state will place its credit behind $430 million of outstanding Turnpike Authority bonds maturing through 1988, and in exchange the state will be allowed to use the surplus earnings of the toll road, variously estimated from $315 million to $570 million during this period, to bolster and improve railroad commuter and other mass-transit services. Approval will also be required from two thirds of the turnpike's bondholders, who originally loaned their money with only the road's revenue pledged to cover interest and redemption payments.

The New Jersey plan, backed by such diverse supporters as Democratic Governor Robert B. Meyner and the New Jersey Association of Real Estate Boards, contemplates grants to carriers for the purchase of rolling stock and other equipment, and rebates on special aid to help them offset the burden of local real estate taxes. Pointing out that the need for railroad relief has arisen largely out of heavy taxes against railroads that most other forms of transportation escape, the *Wall Street Journal* quipped editorially that the proposed New Jersey public assistance might appropriately be called "a counter-subsidy subsidy." Likewise observing that the plight of many railroads has arisen out of highway competition, *Engineering News-Record* has commented that "the important point to date is that, if the proposal is adopted, precedent could conceivably be set for a new principle, namely transportation is so indivisible that revenue from all its forms can justifiably be pooled in order to make the whole system work."

Public asked to pay $10 per share for renewal

Instead of seeking funds only from large corporations or wealthy individuals, Paterson, N.J., Chamber of Commerce leaders have decided to enlist the aid of ordinary citizens as "stockholders" at only $10 a share—in a limited-dividend community development corporation to rebuild the city's central business district.

Initially the Chamber is seeking $1 million in small subscriptions that will permit every interested citizen to become a stockholder in Paterson. Serving as "seed money," the funds will enable the proposed corporation to start $8 million to $10 million of new buildings. Its first venture would be a 200-unit middle-income apartment project within walking distance of downtown Paterson. Stock dividends would be limited to 8 per cent; surplus income would be used to reduce rents.

$500,000 suit filed in architects' dispute

As embarrassed as if they were compelled to observe a public brawl between two of their friends, Minnesota architects squirmed last month as the press prominently reported a bitter "professional conduct" dispute between two Minneapolis architects. First, it was revealed, the AIA has revoked the membership of Albert O. Larson, partner in the firm of Larson & McLaren. Second, Larson filed suit against the AIA and Robert G. Cerny, partner in the firm of Thorshov & Cerny, Inc., seeking $500,000 in damages, as well as Larson's reinstatement in the AIA.

The dispute began last fall, when Larson, a resident of Edina, a Minneapolis suburb, wrote a letter to a local newspaper branding as "extravagant" a proposed Edina high school design by Thorshov & Cerny. The letter also asked: "Just why should we build a new senior high school except to satisfy the vanity of the architect and create a monument to the school board?" The proposed school was a matter of public controversy, because the school district was seeking approval for a $4,650,000 bond issue for it and for alterations to an existing school.

At the election, the bond issue was rejected, 2,504 to 1,730. Two weeks later Cerny told the school board that his firm would file "unprofessional conduct" charges against Larson through AIA, asking it to revoke his membership, and would request the State Board of Registration for Architects, Engineers, and Land Surveyors to withdraw his license. Retorted Larson: "All my comments on the school situation here were made first as an interested taxpayer, which I am, and secondly as an expert having broad experience in the matters under consideration."

In November the state board unanimously dismissed Cerny's charges against Larson and stated that "all

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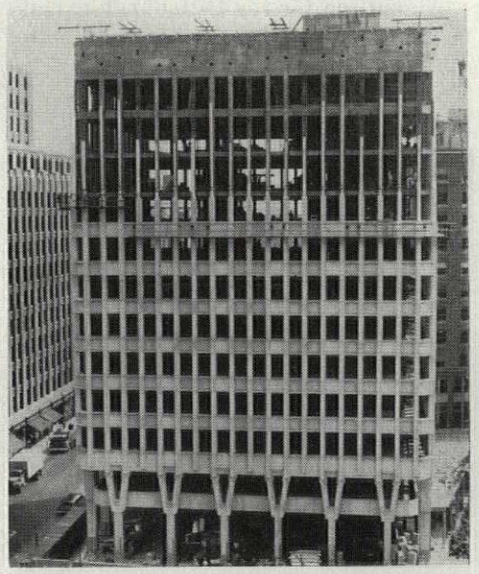

BOLD EXTERIOR COLUMNS of the Massachusetts Blue Cross–Blue Shield headquarters, nearing completion in Boston, serve a double purpose. They not only allow unobstructed interior space but also house the ducts for the high-velocity hot and cold air system. The Y columns at the base, and the building's chamfered corners are intended to emphasize the building's freestanding campanile character. Associated architects: Anderson, Beckwith & Haible and Paul Rudolph.

phases" of Cerny's complaint had been considered and no cause for legal action found. However, AIA, acting on the recommendation of its North Central States regional judiciary committee, revoked Larson's AIA membership.

Meanwhile, back in Edina, voters had approved a substitute $4 million bond issue, to pay for an addition to Edina's present high school—rather than to build a new building—plus a new elementary school. The suggestion for the addition was made to the school board by a citizens advisory committee on a motion by Larson. It was designed by Lang & Raugland, of Minneapolis.

Experimental apartments planned in Pittsburgh

Pittsburgh was given a blueprint last month for a bold experiment in achieving a "technological breakthrough" in urban housing design, construction, site layout, and cost reduction that could benefit every large city. Within the next few weeks ACTION-Housing, Inc. (the Pittsburgh area's Allegheny Council to improve Our Neighborhoods) is expected to announce the acquisition of a close-in tract for the project and to have in hand promises from some of the nation's leading corporations to participate in the research.

An outline for the Pittsburgh experiment conceived by ACTION-Housing was detailed in the report of a study of its feasibility made by Martin Meyerson, director of the Joint Center for Urban Studies at M.I.T. and Harvard University and Vice President for Research of the national ACTION organization (the American Council to Improve Our Neighborhoods), and by Burnham Kelly, M.I.T. professor of city planning. Pointing out that the extensive postwar redevelopment for which Pittsburgh is already famous has been concentrated almost exclusively in commercial and industrial projects ("neither the imagination nor the purse of the public at large has been attracted to residential development"), the Meyerson and Kelly report issued by ACTION recommends three ways to stimulate improvement in housing in the Pittsburgh metropolitan area:

The first would be the proposed "technological breakthrough" demonstration project, which would include both high-rise and walk-up apartments, town houses, and detached single-family homes in a wide range of rents and prices. The purpose of this would be to encourage advanced thinking about housing materials, assembly, design, and equipment." It would focus on the outreaches of technical ingenuity," says Meyerson, "intriguing architects, building materials producers, and labor to vie with each other and to complement each other in outgoing efficiency, economy, and livability."

To accomplish this, ACTION-Housing already has asked city and county officials to approve a moratorium on inhibitory zoning and building-code restrictions in the demonstration area. It also has obtained assurances that U.S. Steel, Alcoa, Westinghouse, Pittsburgh Plate Glass, Koppers, and other leading building products producers will make available new materials and equipment for testing in new construction. To help provide intermediate equity financing, civic leaders are planning to establish a Pittsburgh Development Fund similar to the nonpartisan business community foundations or corporations that have made loans to builders and given other decisive assistance to redevelopment in Cleveland, Detroit, Buffalo, and Philadelphia.

The second phase of the proposal would be a coordinated housing rehabilitation program, including increased public spending for neighborhood public amenities, and, when necessary, "seed money" for private rehabilitation work to be made available from the Pittsburgh Development Fund. "Rehabilitated housing without a refurbished neighborhood setting is self-defeating," says Meyerson's report. "Public expenditure in a rehabilitation area must be commensurate with neighborhood needs. . . . Not all requirements have to be met in an initial rehabilitation period. But the residents and potential purchasers or tenants must be given assurance that the needs will be met according to a specific time table."

Finally, there would be an over-all housing program on a metropolitan area basis, including a dependable, comprehensive market analysis service that would benefit not only builders, realtors, and mortgage lenders, but also consumers and public officials. "Given analysis of existing housing conditions, of housing preferences, of costs, of the requirements of different groups in the population and their ability to pay, of trends in residential development, and other pertinent facts," the report points out, "decision-makers could act in response to the real rather than to an imagined housing market situation."

Probably the most successful coordinating and programming agency for such an over-all metropolitan area housing program would be a well-staffed, well-financed, and persuasive public agency, Meyerson declares. If that proves impossible or unacceptable to the 129 diverse municipalities that comprise Allegheny County, he suggests that ACTION-Housing could provide citizen-organization leadership to direct the program.

PITTSBURGH HILTON, the newest structure in the Gateway Center redevelopment, will be ready for its first guests this fall. Its three-dimensional curtain wall consists of windows and opaque glass panels set deeply into frames of gold-colored aluminum. The 807-room, 24-story hostelry was designed by Architect William B. Tabler. It occupies a site leased from the Equitable Life Assurance Society, and it is linked to other buildings in the Gateway Center complex by underground passages.

Briefs

Alcoa has earmarked more than $30 million for a research and development center "of a scope without precedent in the world's metal industries" to be started within a year on a 2,400-acre site at Merwin, Pa., 28 miles east of Pittsburgh. Architects for the campus-type project will be Harrison & Abramovitz.

The U.S. Chamber of Commerce has issued a call to member companies for case histories that will help it compile a record of the unnecessary expenses and problems created by the Davis-Bacon Act that regulates wages and worker classifications on all federal contracts involving more than $2,000 of construction work. The Chamber says the extra bookkeeping required by the act is a substanial cost item for small firms and adds an inflationary expense to all government contracts.

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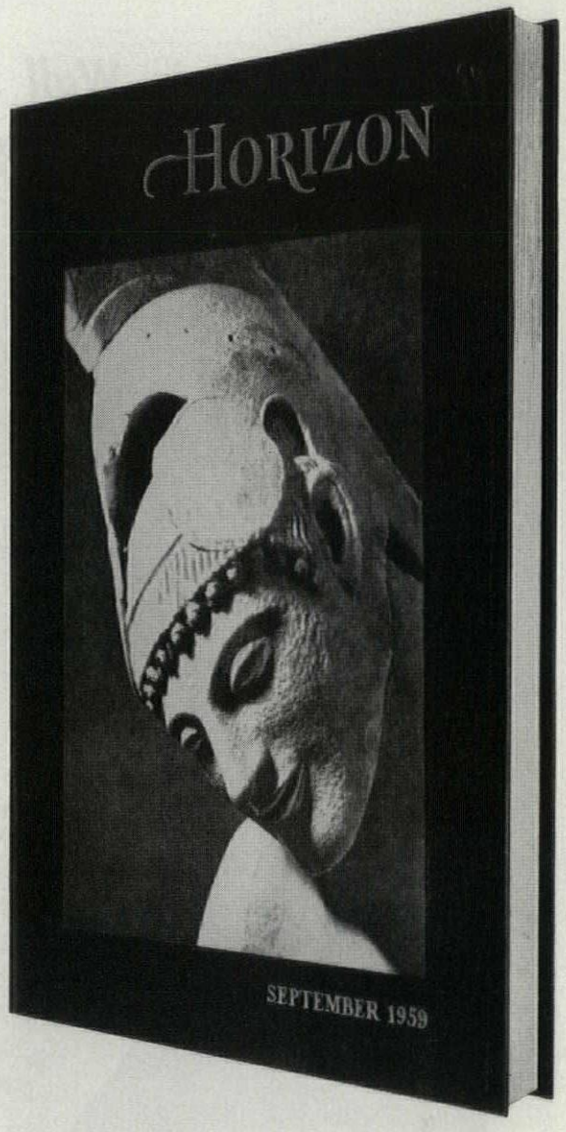

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The initial demand for HORIZON far exceeded expectations. And no additional subscriptions have been invited since the turn of the year.

What does it look like? HORIZON is a big (9¼" x 12¼", 132 or more pages) bi-monthly magazine in book form—with hard covers, made to last. Its contents are permanent in value and interest. Every issue is rich with pictures, more than one-third in full color.

HORIZON is printed here and abroad by three methods on three textures of paper. No advertisements intrude. It is probably the most beautiful magazine in the world.

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What does it cost? Each case-bound issue of HORIZON is comparable to a limited-edition book costing $10 to $15, or more. But the price is $3.95 per copy, and the annual subscription rate (6 issues) is $18.

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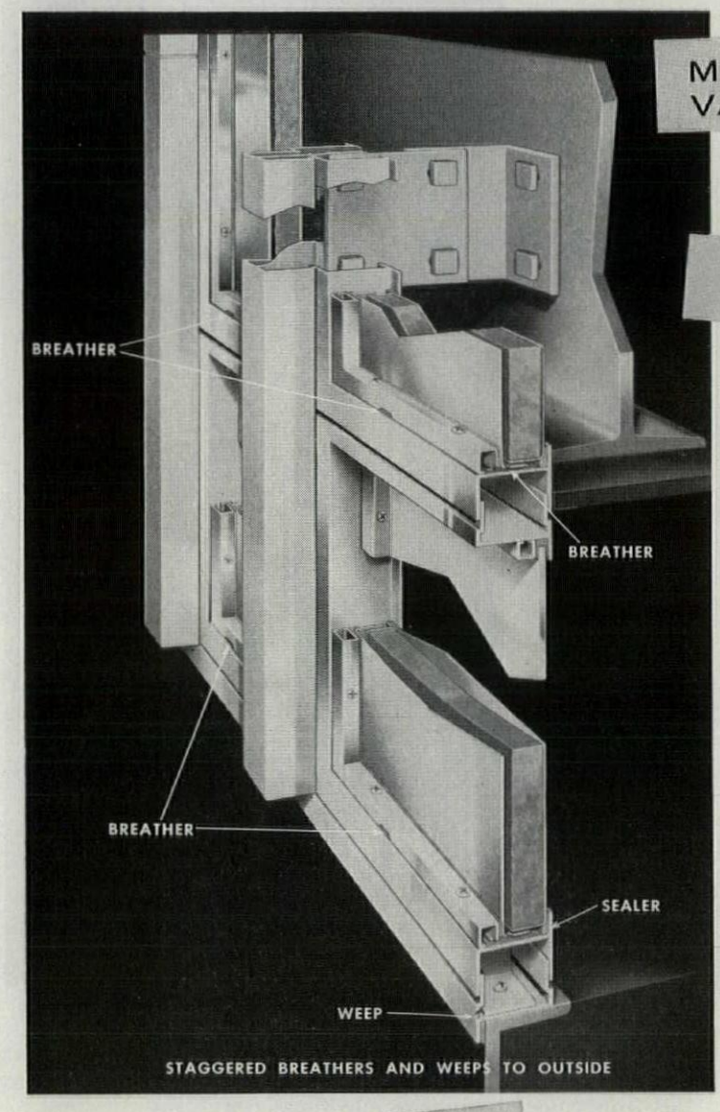

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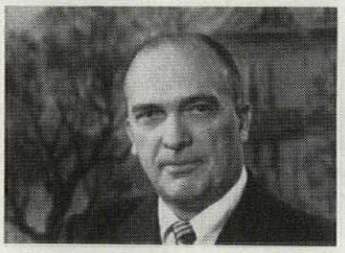
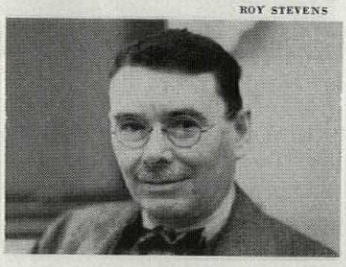


KITCHEN

ROY STEVENS



ATKINSON

"If there is one thing I have learned in urban renewal, it is that I cannot afford not to hire the best architect, the best mechanical engineer, and the best structural engineer I can find."

That was the declaration last month by one of the nation's top realtor-redevelopers, Kansas City's handsome, tall (6 ft.) **Lewis E. Kitchen**. What added importance to his statement was Kitchen's growing role as a developer of urban renewal projects on a national scale. He is deep in the competition for the large $62 million Golden Gateway project in San Francisco and a $30 million project in St. Louis and has hopes for others in Detroit and Louisville.

A man who knows his own mind when engaging designers, builders, and other associates, Kitchen says: "I don't like to inject out-of-towners into the local scene. When you bring in foreigners, you get in trouble." In San Francisco, Kitchen chose the local office of Skidmore, Owings & Merrill, headed by Partner **Nathaniel "Nat" Owings**; for the St. Louis project he selected the local firm of Russell, Mullgardt, Schwarz & Van Hoefern.

The St. Louis project Kitchen hopes to erect would consist of a group of apartment towers on a nine-acre plot on Third Street opposite the Mississippi river-front Jefferson National Expansion Memorial Park. In this commanding park and river location, he has proposed two 40-story apartments, or, if city planning officials decide that these might overpower the park's soaring 600 ft. memorial arch by Architect **Eero Saarinen**, three 30-story buildings, or four 20-story structures.

In his well-known Quality Hill development adjacent to downtown Kansas City, Kitchen is completing a $2.5 million apartment building designed by local architects Kivett & Myers & McCallum. In 1951 five 11-story apartments costing $1 million each were completed in Quality Hill. Next in order are a $2.5 million Cliff House Motel and four more apartment buildings to cost another $16 million. The five original buildings, a joint venture of Kitchen and Banker **William T. Kemper**, were sold earlier this year to New York Syndicate Specialist **Robert Futterman**, to give Kitchen working capital for his newest ventures.

When not engaged in civic affairs at other locations, busy Kitchen, born in Kansas City in 1905, works in a modest sixth-floor office in the City National Bank Building there. (Some of his side roles: board chairman of the city's Philharmonic Society, trustee of its Museum and Art Institute, director of the Fire & Marine Insurance Co. and member of the Build America Better Committee of the National Association of Real Estate Boards.) Although he studied at the University of Nebraska and the University of Kansas City Law School, Kitchen entered real estate in 1927 as a building manager for a leading Kansas City realty firm. In 1934 he established his own realty company.

ARCHITECTS AND DRAMA CRITICS

Paths of architects and theater critics do not cross very often, but last summer there were two incidents, one pleasant, the other not so pleasant.

The discordant incident arose between Architect **Edward Durell Stone**, and *New York Times's* Theater Critic **Brooks Atkinson**. On eight weeks notice a New York committee, arranging a festival to mark the 350th anniversary of Henry Hudson's sailing up the Hudson River, drafted Stone to design a $160,000 roofless, demountable theater-in-the-round to be set up over Central Park's Wollman Memorial roller-skating and ice-skating rink. But after it opened, Atkinson gave no "rave" notices to the architect's product. Instead, in two reviews he twice "panned" the large 2,500-seat bowl and its plain, bare, 40 ft. diameter stage. Terming this theater "impractical" and having "no focal point," Critic Atkinson lamented: "Alas, the open stage under the open sky is like an open mind—nothing stays inside. . . . A moody drama like *Carmen Jones* cannot be sung without losing most of its power on a circular stage overwhelmed by the tall buildings of New York. . . . With nothing to roof or enclose it, *Carmen Jones* fritters away its color and heat in alien circumstances."

For a pleasanter conjunction of architects and theater critics, the Ford Foundation announced that it was willing to put up about $150,000 to bring some members of both groups together. The Foundation's objective is to give a team or teams of qualified architects and theater designers an opportunity to design through the model phase an "ideal theater" with all its devices. Until October 15 anyone professionally connected with the theater—

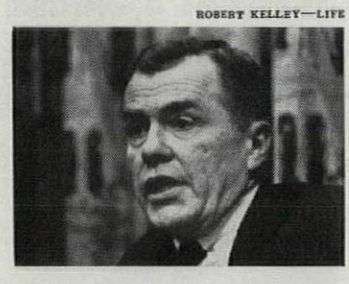
continued on page 14

critics, directors, playwrights, designers, or architects—may nominate candidates to be given grants for this purpose. No direct applications or self-nominations will be considered, and each nominee will be required to designate the designer or architect who would be his associate. Later a panel of similar professionals (who, by Foundation rules, will be permanently anonymous) will select a team or teams to receive these awards, whose names will be announced about February 15.

URBAN STUDY COMMITTEE NAMED

The Democratic National Committee has decided urban renewal may become a national political issue of considerable importance in the years ahead. To guide the Democrats in shaping policy in this field it has established a 23-member Advisory Committee on Urban and Suburban Problems of the Democratic Advisory Council that includes some of the best known names in urban redevelopment and housing. Chairing the committee, which held its first formal meeting in Washington last month, is Mayor **Richard C. Lee**, of New Haven, Conn., which has won national acclaim for

ROBERT KELLEY—LIFE



LEE

its effective, comprehensive redevelopment program. Other members include **Catherine Bauer Wurster**, of the University of California, Berkeley (wife of Architect William Wurster, head of the university's School of Architecture); **William L. C. Wheaton**, director of the Institute for Urban Studies, University of Pennsylvania, and president of the National Housing Conference; Washington's **B. T. Fitzpatrick**, former general counsel for HHFA; New York Redeveloper **James H. Scheuer**; Mayor **Robert F. Wagner Jr.** of New York; Mayor **Richardson Dilworth** of Philadelphia; and New Haven Development Administrator **Edward J. Logue**, secretary of the group.

In taking over the chairmanship of the committee, Mayor Lee said: "America is facing a terrible urban-suburban crisis. . . . Each year more acreage slips into slum status than is cleared by the present slum-clearance program. . . . We do not intend to concentrate our energies on building an

continued on page 16

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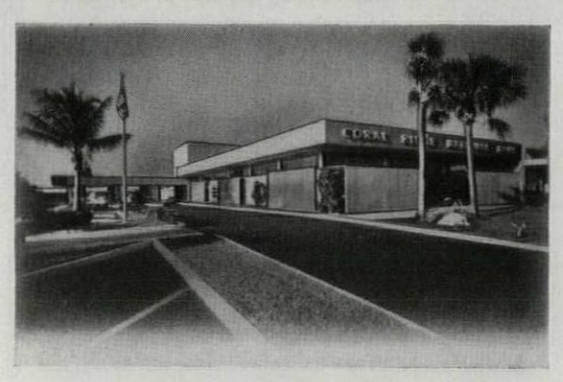

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indictment of Republican policies in this critical area. We prefer to make a simple and straight forward statement of the problem which will be readily understood and accepted and to prepare a sensible program which can achieve acceptance first in the Democratic Party and then in the nation as a whole."

JERUSALEM DESIGN COMPETITION

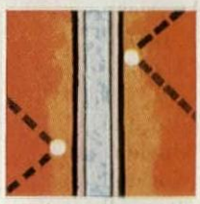
Mayor Ruhi Khatib has invited American architects to submit entries in a design competition for a new Jerusalem Library and Cultural Center. For the winning design of a complex including an auditorium seating 500, a dining hall (and kitchen) for 250, a folklore museum, a covered parking area, and an air-raid shelter, all "in conformity with the general architecture of the city," the award will be 150 Jordan dinars (about $420), plus a contract for detailed plans, and, if desired, supervision of construction. Details of the competition, closing December 31, can be obtained from the City Engineer's Department, Municipal Corporation of Jerusalem, Hashemite Kingdom of Jordan.

People in brief

James F. Neville, 52, director of Wherry Act properties for the Navy and a former FHA zone commissioner, was named last month to head a new rental housing department of the National Association of Home Builders, established because of the increasing interest of home builders in rental housing.

Chester H. Knowles, assistant commissioner for operations for the Urban Renewal Administration, was appointed last month as HHFA Regional Administrator for the Middle Atlantic states, headquartered in Philadelphia, succeeding **David M. Walker,** recently appointed Urban renewal commissioner in Washington.

Albert M. Greenfield Jr., son of the Philadelphia realtor and former planning board chairman, **John B. Kelly Jr.,** son of the Philadelphia builder and brother of Princess Grace of Monaco, and **John S. Trinsey Jr.,** chairman of Rebel Hill Park, Inc., have teamed up to develop a hotel, office building, and four apartment buildings, all 20 stories high, 15 miles west of Philadelphia facing Valley Forge Park. The four young promotors of the $30-million venture, each 32 years old, were immediately engaged in a skirmish with some of the natives of the area, who opposed rezoning of the tract from its present agricultural classification. END



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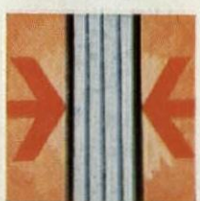

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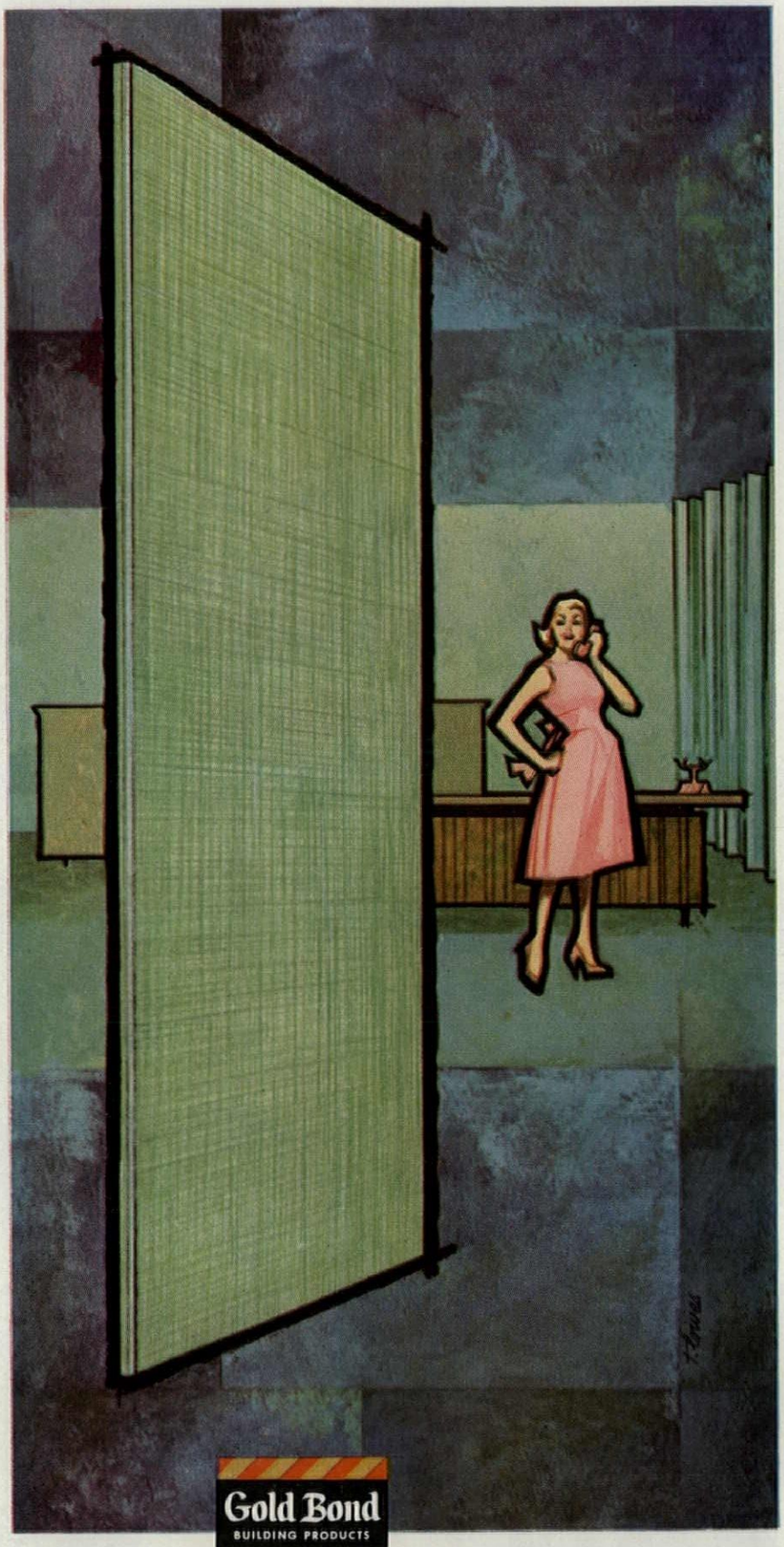

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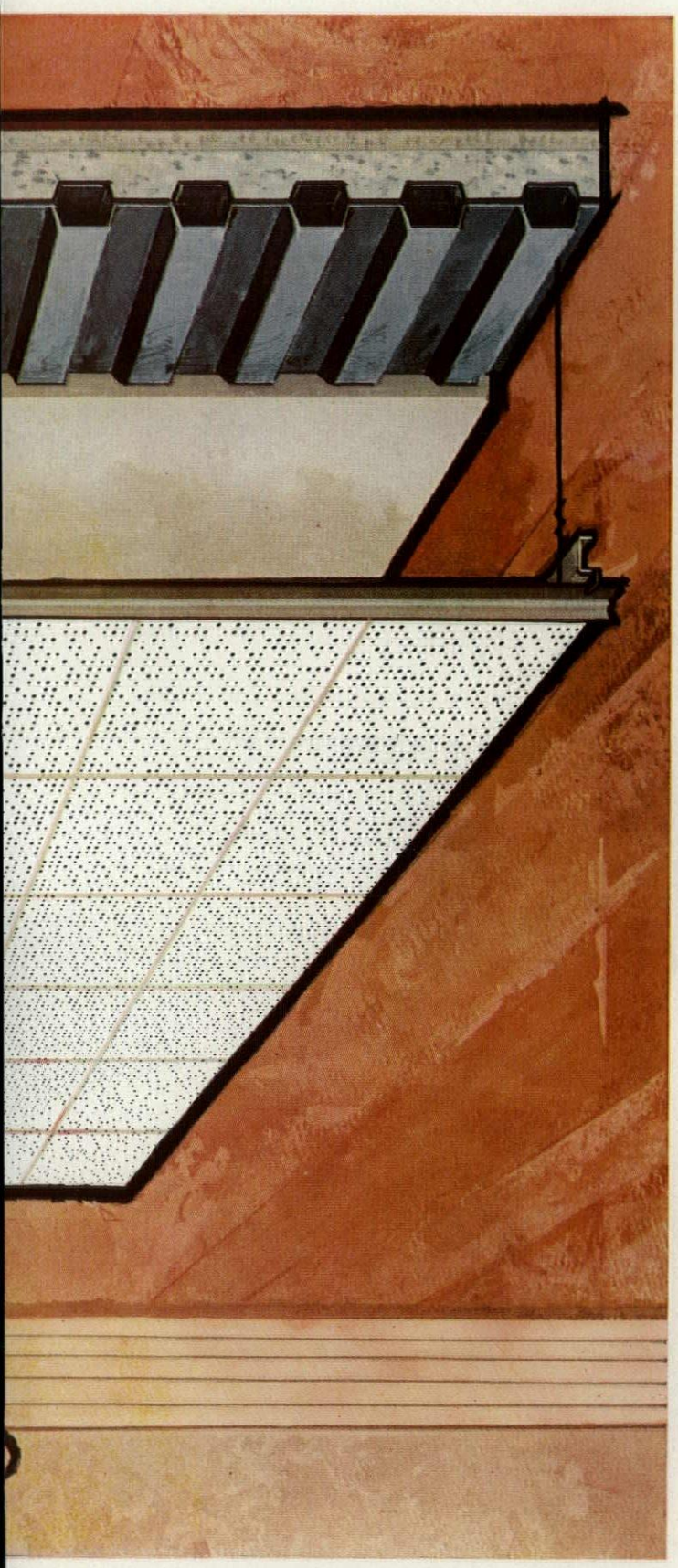

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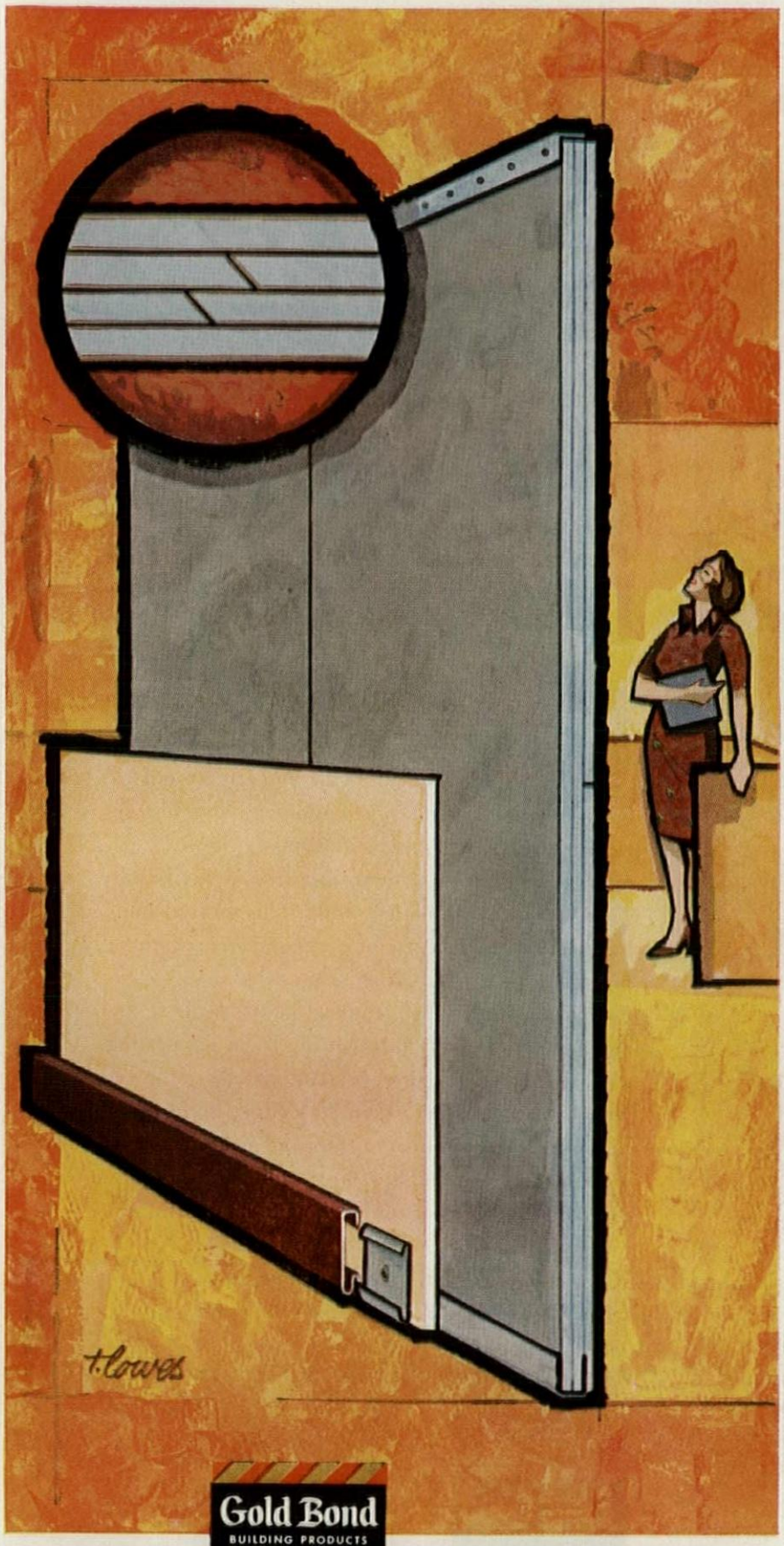

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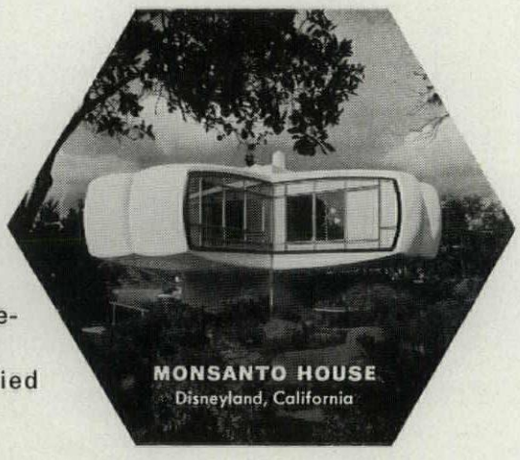

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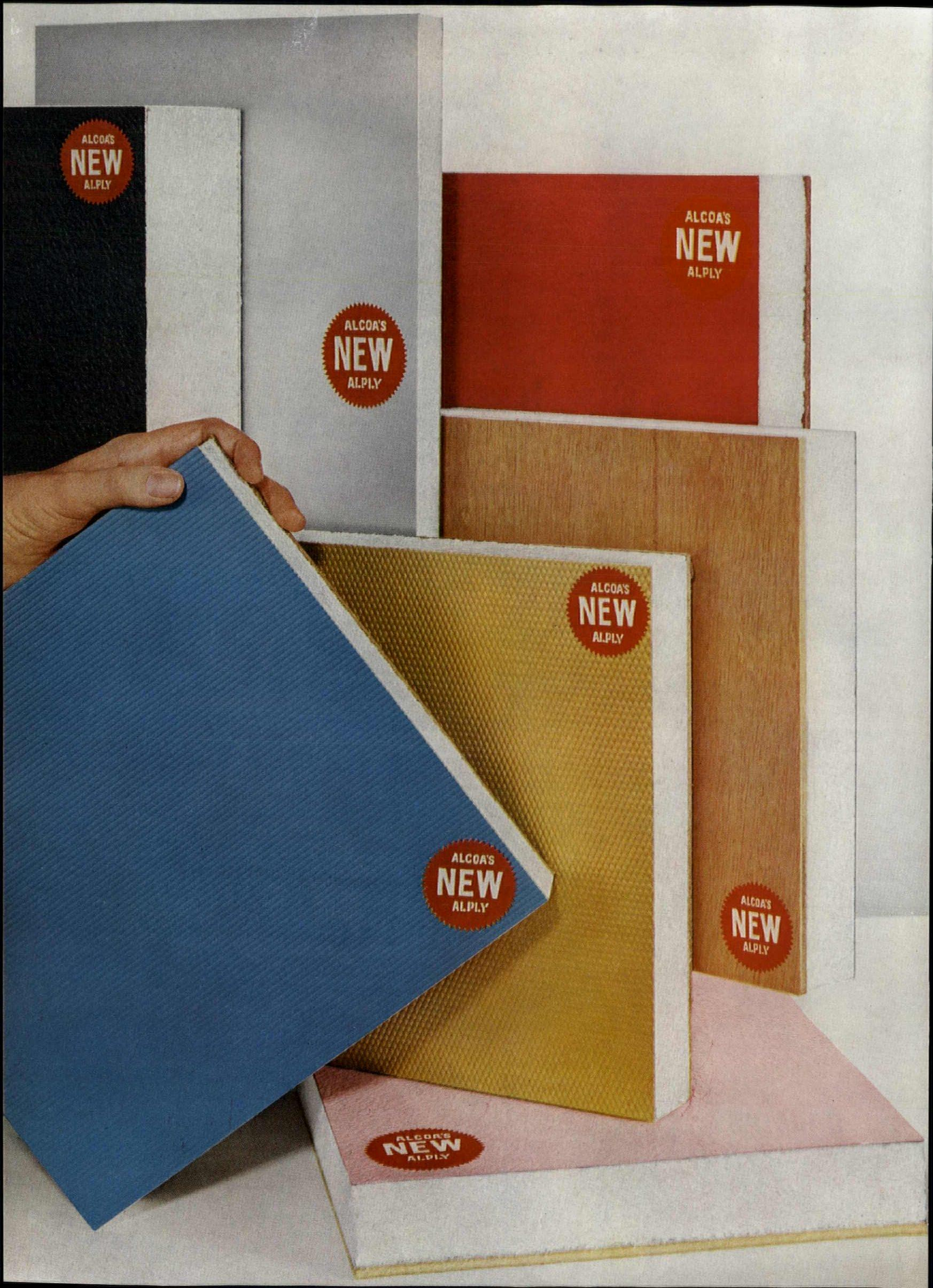
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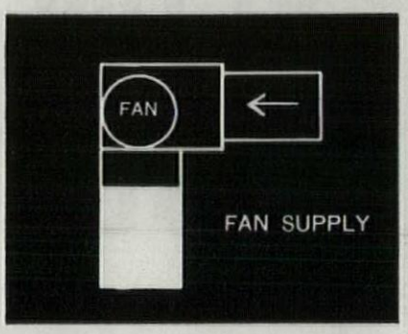

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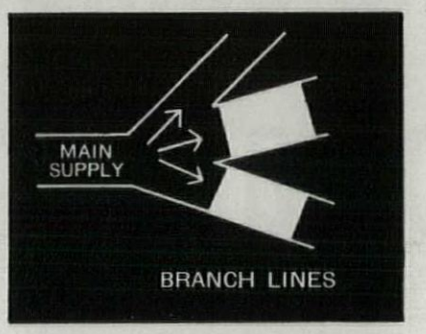
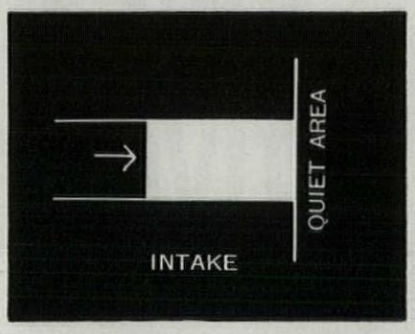
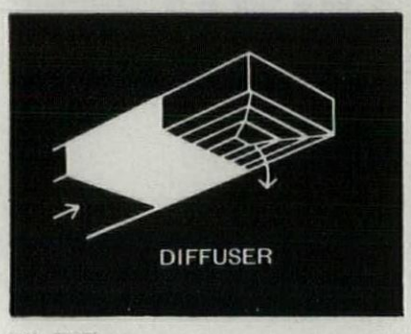


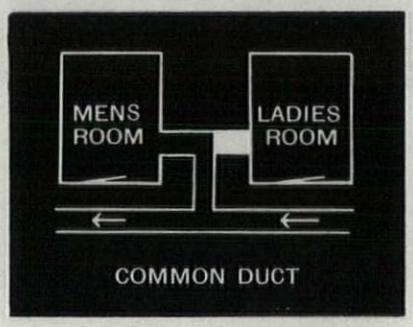
(2) Branch Lines—Selective treatment of special areas where additional noise reduction is essential.



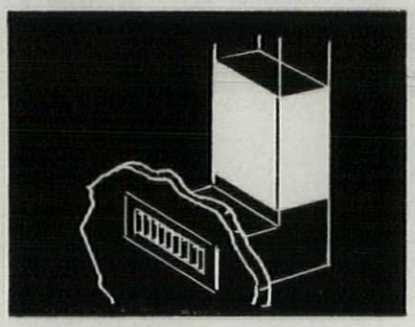
(3) Critical Areas—Prevents noise from entering or leaving rooms such as conference rooms or studios.



(4) Diffusers—Prevents duct-transmitted noise from entering rooms requiring a greater degree of quiet.



(5) Common Ducts — Prevents "cross talk" between rooms such as lavatories or conference rooms.



(6) Return Duct Systems—Prevents transmission of fan noise in return systems.

Get This Important New Book . . . Write today for your copy of the AIRCOUSTAT Selection Manual, a quick guide to the right unit or combination of AIRCOUSTAT units to eliminate duct-transmitted noise in all air handling systems. Write KOPPERS COMPANY, INC., 3110 Scott St., Baltimore 3, Md.

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SOUND CONTROL

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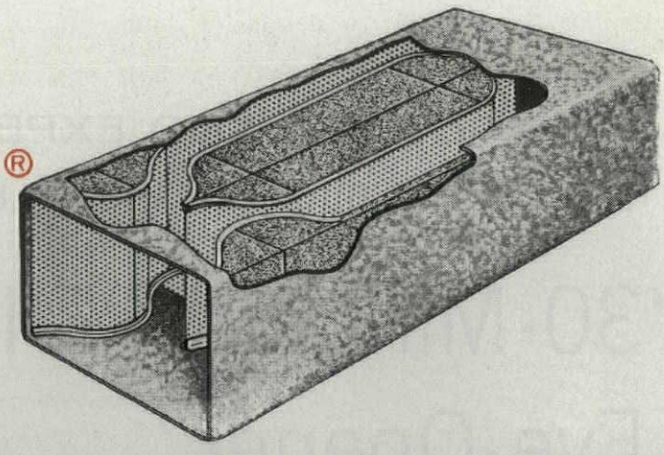
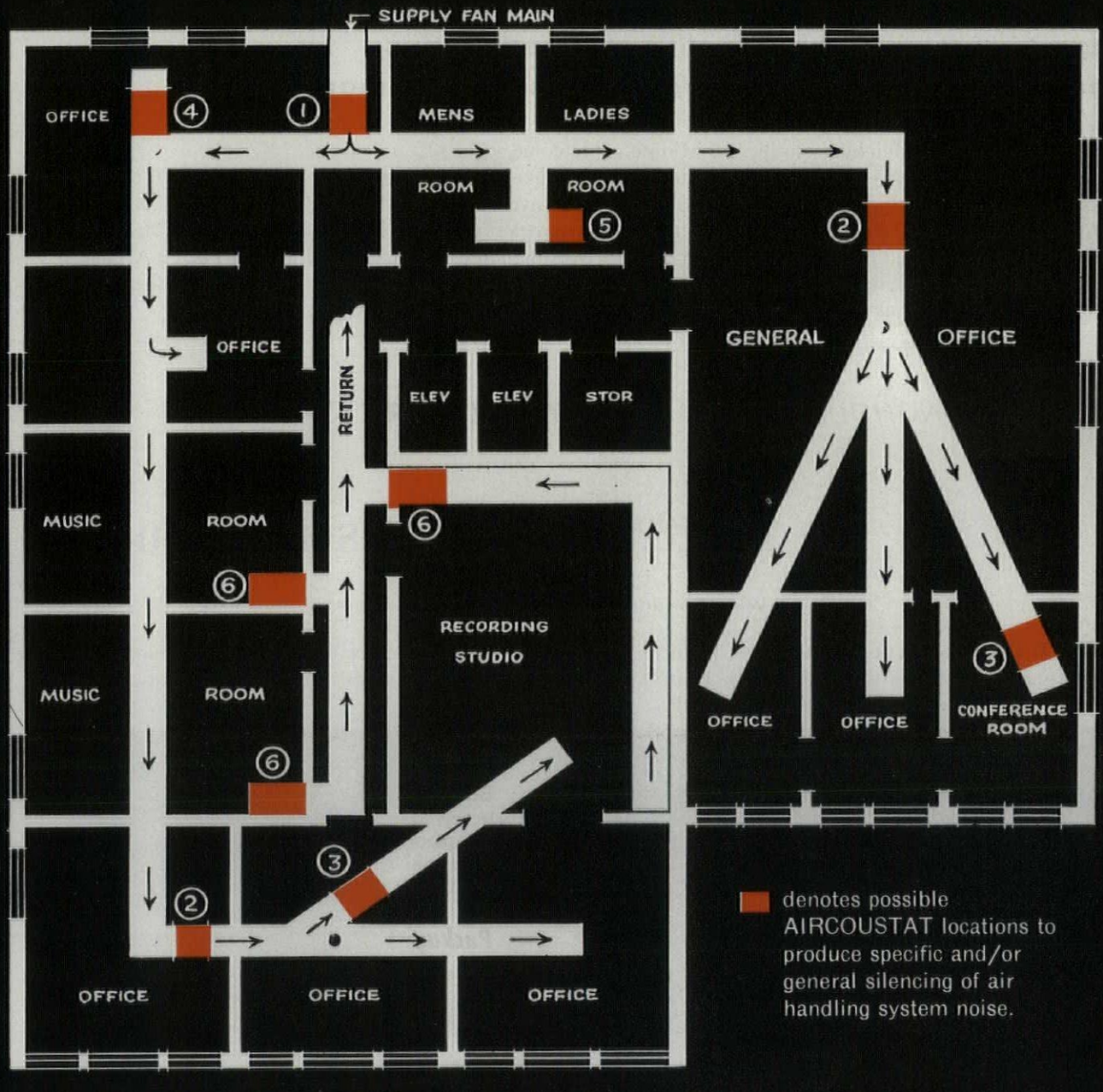




WE INVITE YOU TO EXPERIENCE
THE WESTINGHOUSE ELEVATOR

"30-Minute PRE-INVESTMENT Eye-Opener"

Judge for yourself the benefits of Westinghouse Operatorless Elevators during this dramatic demonstration!

Here are a few preview highlights from the "30-Minute Pre-Investment Eye-Opener"—a proof-of-performance elevator demonstration especially tailored for busy executives. It takes only thirty minutes of your time, and it is an experience you'll value because it not only concerns the efficient operation of your building, but also assures complete tenant satisfaction for the years to come.

Make arrangements now to see the "30-Minute Pre-Investment Eye-Opener" by writing on your letterhead to: R. H. Wagner, General Manager, Westinghouse Elevator Division, 150 Pacific Avenue, Jersey City 5, New Jersey—or call the Westinghouse Elevator Division Sales Office in your city.

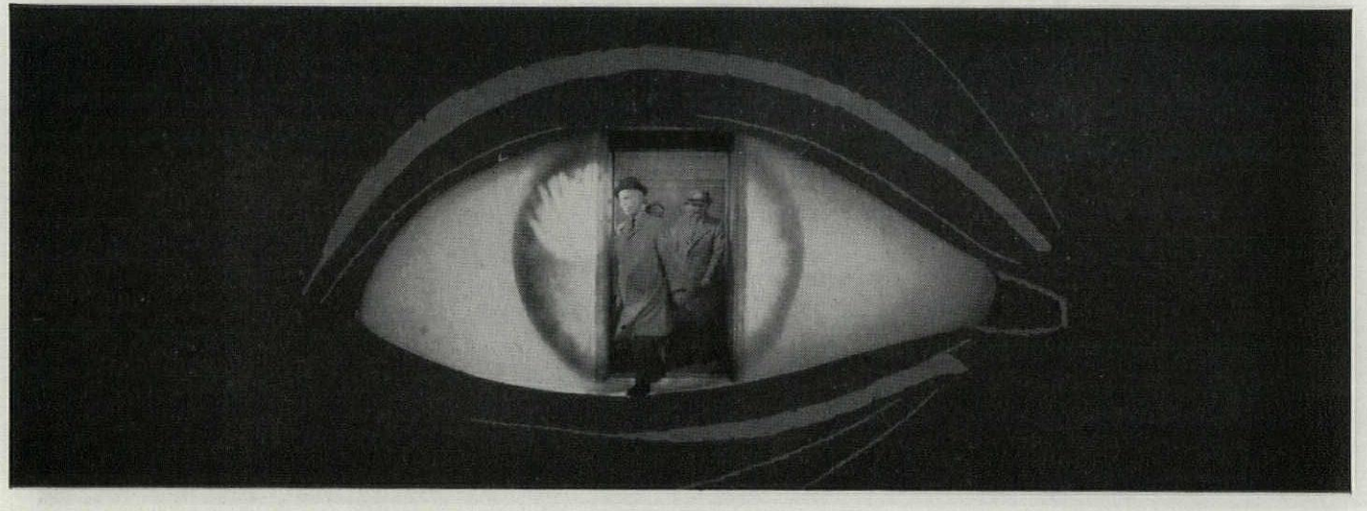
WESTINGHOUSE ELEVATORS AND ELECTRIC STAIRWAYS

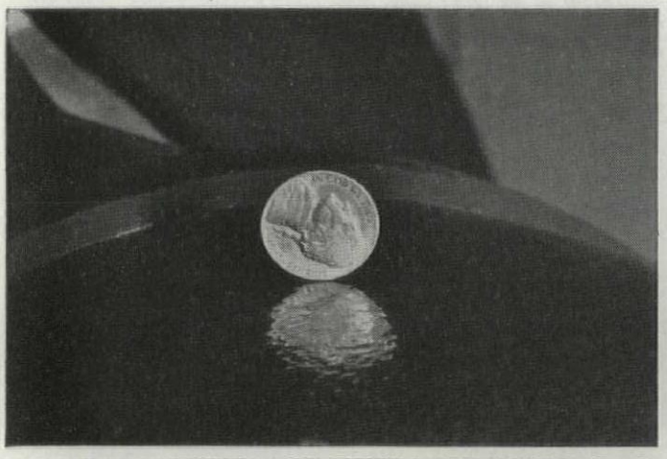
YOU CAN BE SURE...IF IT'S Westinghouse

J98773AA

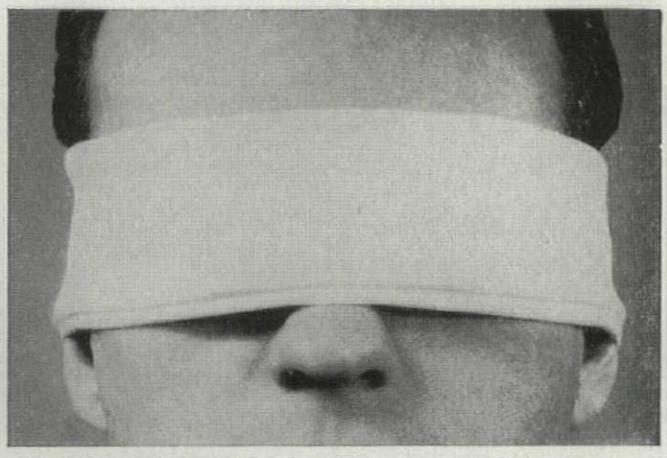
Watch Westinghouse Lucille Ball-Desi Arnaz Shows CBS-TV Fridays

DOORS THAT SEE. You don't watch these Traffic Sentinel controlled doors—they watch *you*. Door movement is governed entirely by passenger traffic and *not* by fixed time intervals. You'll learn *how* in the "Eye-Opener" demonstration on Operatorless Elevators.

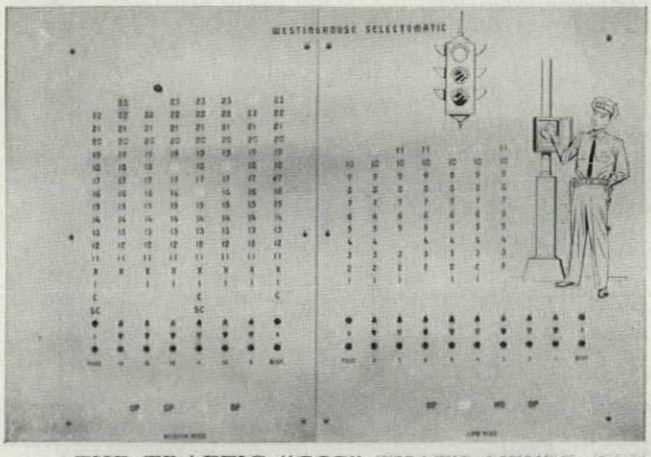




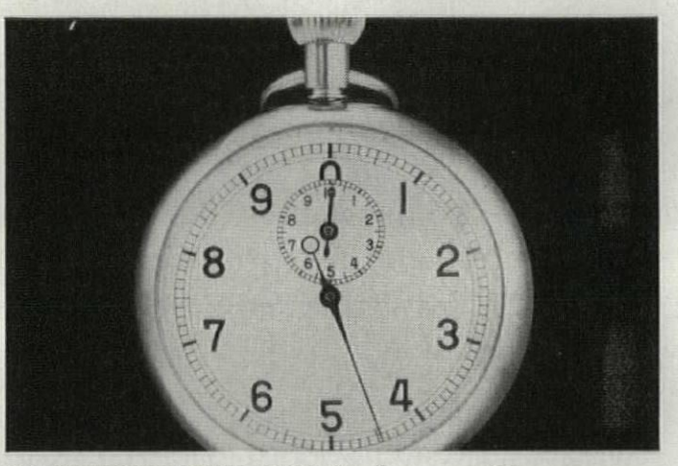
BALANCING ACT EXTRAORDINARY. Look behind the scenes in the machine room. Try the "balancing act" yourself that demonstrates vibration-free machinery—"standard equipment" in Westinghouse Operatorless Elevator Systems.



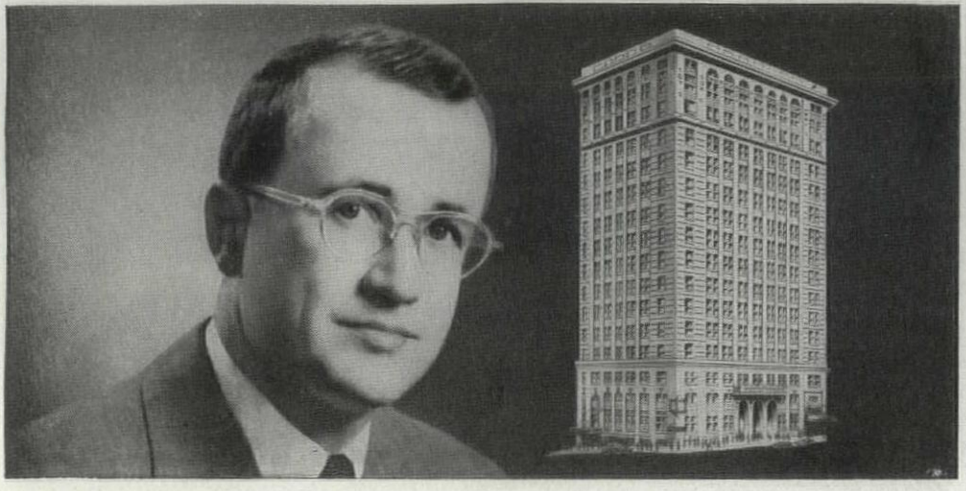
AH, SO SMOOTH. Make this unusual blindfold test right in the elevator as it goes through its incredible Synchro-Glide paces. It's a ride so smooth, it's hard to tell when the elevator stops!



THE TRAFFIC "COP" THAT'S NEVER OFF DUTY. See this Westinghouse marvel—the Automatic Traffic Pattern control system that's on duty 24 hours a day, 7 days a week. It senses the difference between a coffee break and a rush hour—and does something about it and other changing traffic patterns instantly and—*automatically!*



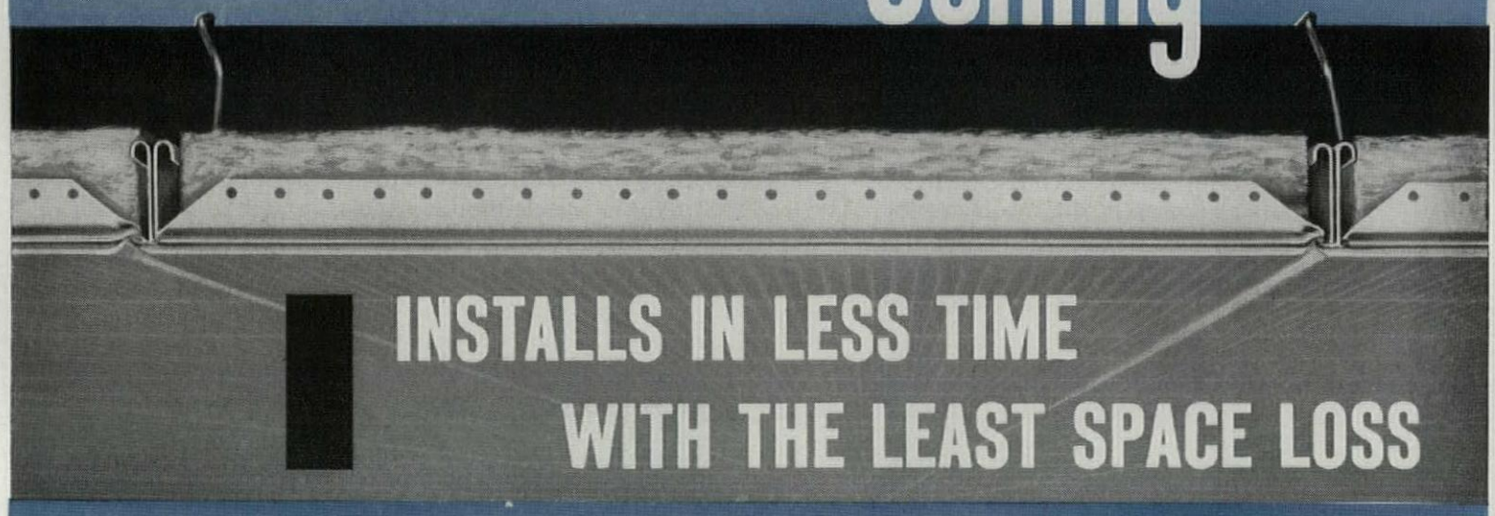
SPLIT-SECOND TIMING. See for yourself how a Westinghouse system instantly dispatches a loaded car . . . varies door-open time for passengers leaving or entering an elevator. Watch how it provides just enough time to unload and load on the main floor. Finally, check floor-to-floor time and marvel!



"This demonstration is really an eye-opener. The Westinghouse automatic elevator system is perfection in vertical movement. It offers demonstrable proof that an up-to-date electronic system is not only luxurious, but safe and efficient, too. I recommend this 'Eye-Opener' to anyone planning a heavy traffic building—it's most impressive from beginning to end."

James M. Kemper, Jr., President
Commerce Trust Company
Kansas City, Missouri

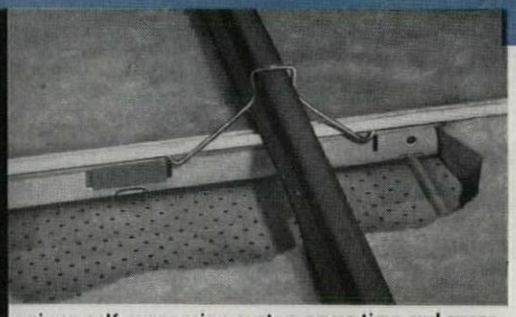
EASTERN'S *ALL-METAL ACOUSTICAL* Silent Ceiling



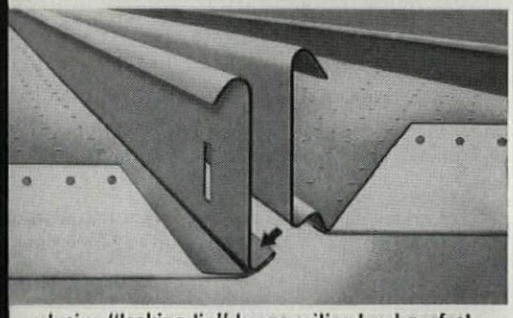
INSTALLS IN LESS TIME WITH THE LEAST SPACE LOSS

When you specify the Eastern all-metal acoustical "Silent Ceiling," you get an exclusive self-contained suspension system that provides maximum ceiling height . . . eliminates time-consuming, space-wasting T-bar installations. You get an ingenious "locking-lip" design that interlocks each panel to assure a non-shifting, vibration-proof surface. You get the widest choice of modular-sizes, too . . . up to 8 feet long . . . all installation-ready. And, of course, you get an acoustical system that's rated Class "A" in flame resistance.

Write for detailed specifications and prices.



unique self-suspension system saves time and space.



exclusive "locking-lip" keeps ceiling level-perfect.

MAIL THIS COUPON TODAY!

Acoustical Division, Eastern Products Corp.,
1601 Wicomico St., Baltimore 30, Maryland

Please send, without obligation, full details on the new Eastern "Silent Ceiling".

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STREET_____

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F

Eastern Products Corporation

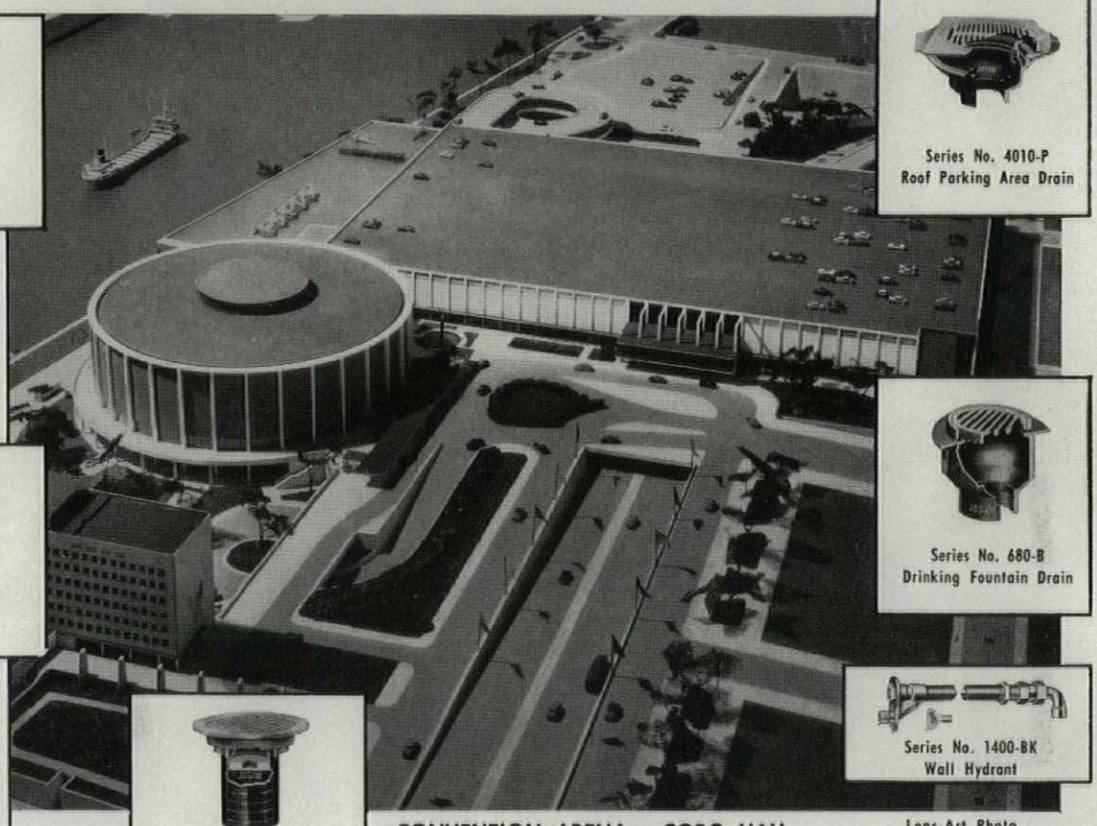
SILENT CEILING

Josam

PLUMBING DRAINAGE PRODUCTS USED THROUGHOUT NEW DETROIT CIVIC CENTER BUILDING

another example of C.P.D.*

Co-ordinated Plumbing Drainage



Series No. 1480-B
Shock Absorber

Series No. JH
Grease Interceptor

Series No. 3610-B
Leveleze Floor Drain

Series No. 1180-T
Backwater Valve

Series No. Y-1610
Cleanout

Series No. 4010-P
Roof Parking Area Drain

Series No. 680-B
Drinking Fountain Drain

Series No. 1400-BK
Wall Hydrant

CONVENTION ARENA — COBO HALL

Lens-Art Photo

*

Owner:	Civic Center Commission, Detroit, Michigan
Architects and Engineers:	Giffels and Rossetti, Detroit, Michigan
Mechanical Contractors:	Page Plumbing & Heating Co., River Rouge, Michigan
	The Stanley Carter Co., Detroit, Michigan
Plumbing Supply Wholesaler:	O'Connell Supply Co. Dearborn, Michigan

The great new Civic Center Building arising on Detroit's famed river front will get the maximum in performance and dependability from its plumbing drainage system because Josam Plumbing Drainage Products are used throughout. Every Josam Product conforms to standards developed through 50 years of specialization in plumbing drainage and therefore performs its specific function in coordination not only with the entire plumbing drainage system but with all other structural elements. Leading buildings everywhere have secured the benefits of easy installation, peak performance and lasting satisfaction through *Co-ordinated Plumbing Drainage by Josam — and it costs no more than a mismatched mixture of products. For complete details including latest plumbing drainage developments, write for Catalog "K".

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Concrete structural members in the McGregor Memorial Conference Building, Wayne University, Detroit, are beautified with plaster. A base coat of RED TOP* Cement Plaster on USG® Diamond Mesh Metal Lath is finished to a dense, durable surface with RED TOP* Gauging Plaster and Lime.
Architect: Minoru Yamasaki & Associates, Birmingham, Mich.
Plastering Contractor: M. A. Santoro, Inc., Detroit, Mich.

PLASTER CAPTURES THE CONTOURS OF CREATIVE THOUGHT

Varied in effect as the imagination that visualizes it, plaster transforms a creative idea into enduring reality

The interplay of plane and angle in the honeycomb design of the school building illustrated on the opposite page requires a construction material with complete flexibility of form. The answer—plaster!

Plaster's natural adaptability has been greatly increased by United States Gypsum research, a continuing effort that has also created new plaster and plastering systems that are lighter, stronger, more durable and more easily installed than ever before.

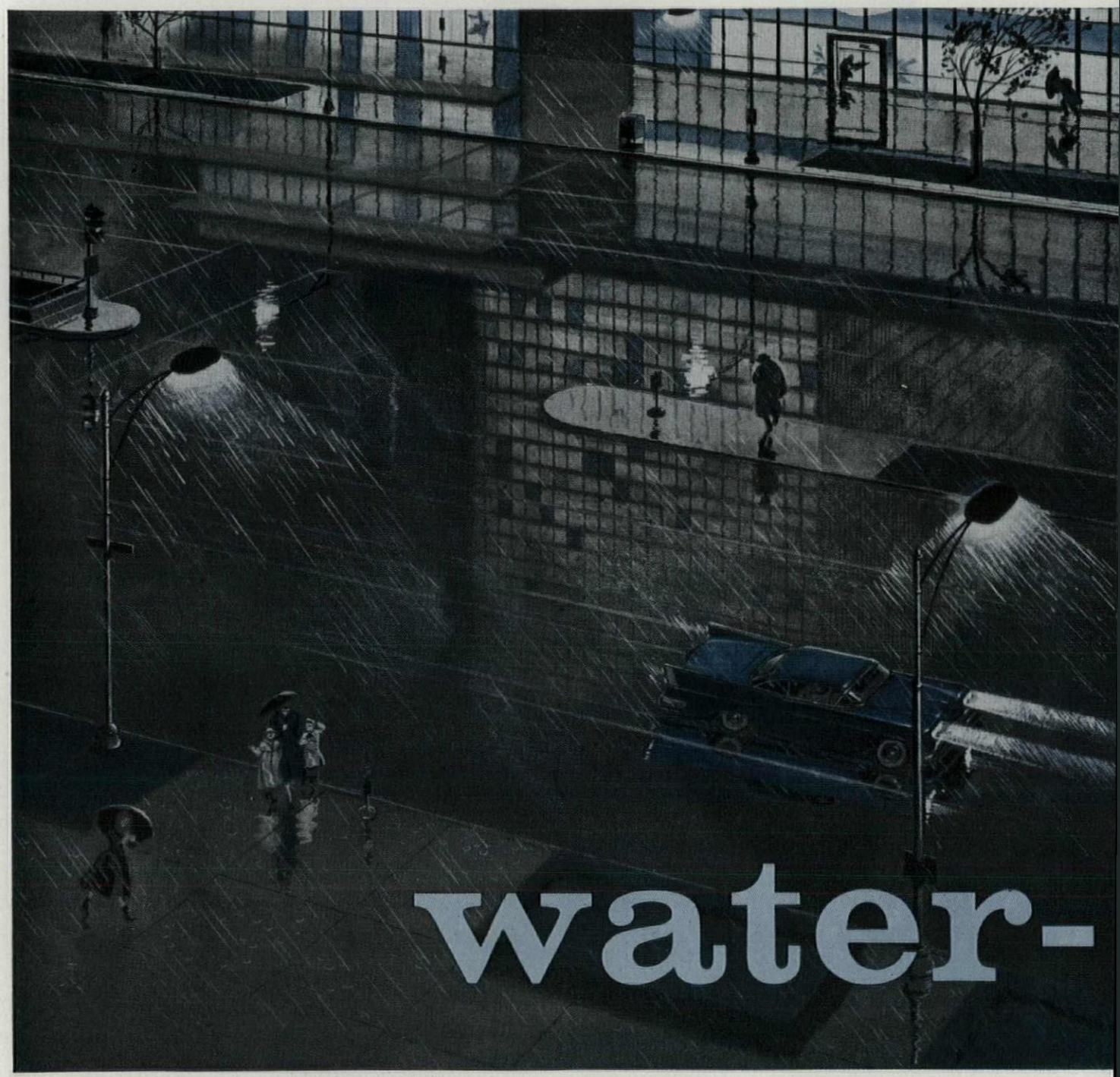
For any architect seeking new expressions in form and texture—lath and plaster, erected by skilled craftsmen, truly *capture the contours of creative thought.*

U.S. UNITED STATES GYPSUM

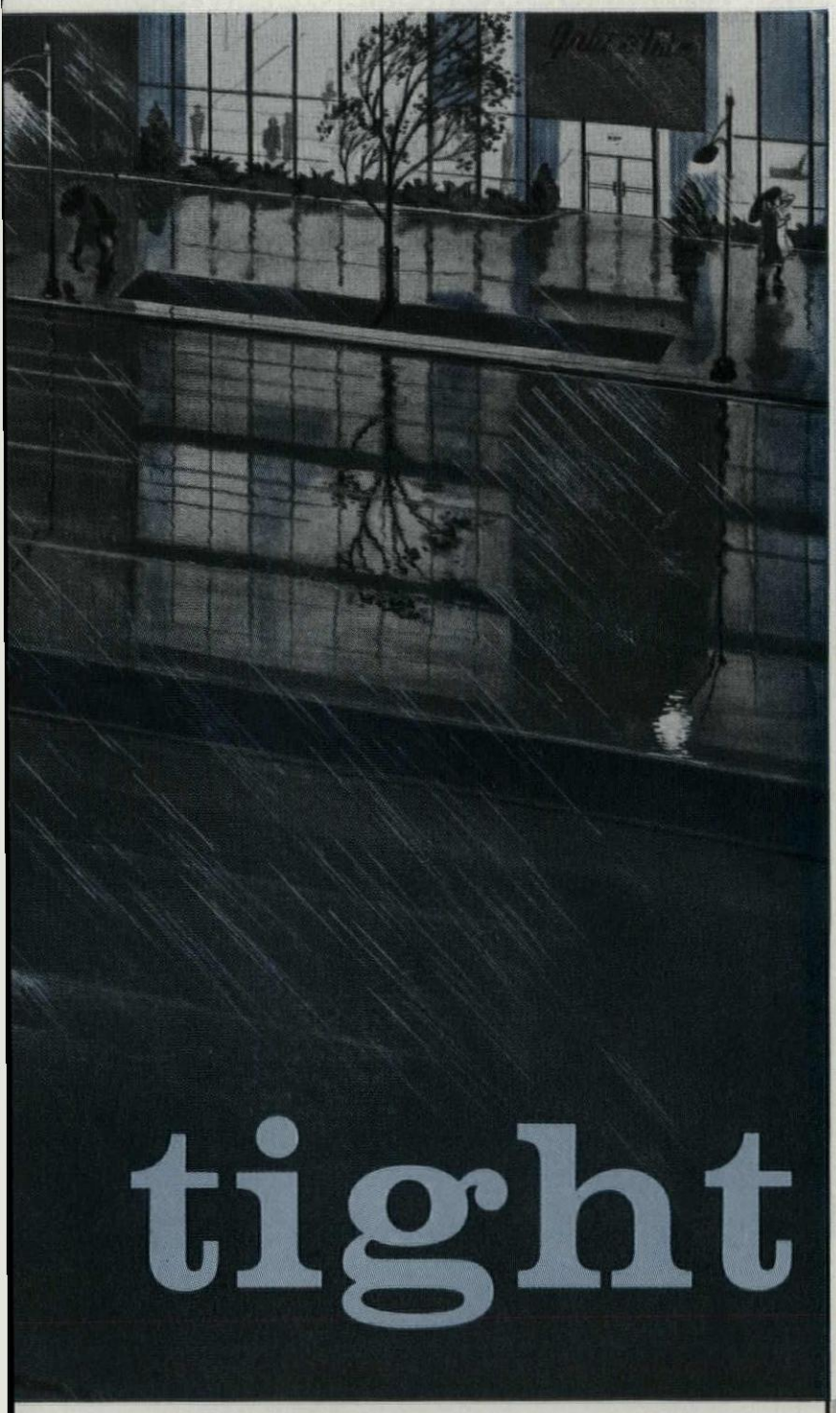
UNITED STATES GYPSUM

the greatest name in building

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



Four new Kawneer unit wall systems for every
Remarkable design flexibility allows you to use
In addition, they conquer one of curtain wall's
they are watertight!



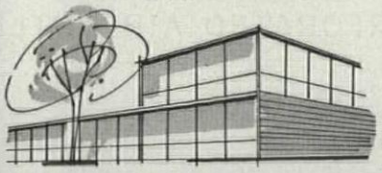
tight

building, every budget. them imaginatively. major problems...

Remove any doubts *you may have about curtain-wall's performance by getting the full story on the four new Kawneer Unit Wall Systems.*

SERIES 1000 *a grid and panel facing system for new and old buildings.*

For use as a metal wall system for new construction with special adaptation for modernization of old buildings. Wide range of anchoring systems and mullion stiffeners make the Series 1000 adaptable to many types of buildings.



Design Character: equal thin-line faces on vertical and horizontal grid members. Flat appearance with minimum shadows.

Sash Types: sliding, casement, projected.

Sealing and Glazing: dry gaskets or mastic type.

SERIES 2000 *a system for low rise buildings*

Pre-assembled wall units designed for wall areas up to 4' x 13' without added anchorage. Light horizontals and three vertical mullion depths of 2¾", 3½", and 4½". Flexible for wall units of low cost or small span per unit.

Design Character: dominant verticals of several optional depths. Wall units may be of either standard or optional designs.

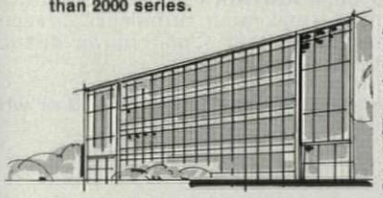
Sash Types: casement, projected-in, projected-out, top hinged.

Sealing and Glazing: dry gaskets or mastic type.

SERIES 3000 *a system for low rise buildings.*

Pre-assembled wall and door units designed for areas up to 4' x 16' without added anchorage.

Heavier horizontals and three vertical mullion depths of 3½", 4½", and 6" give design boldness and greater flexibility of vertical span than 2000 series.



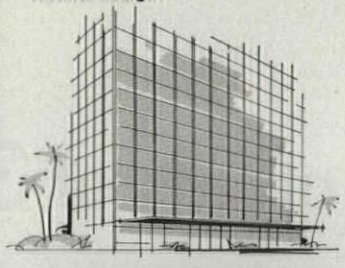
Design Character: dominant verticals in wide range of either standard or optional designs.

Sash Types: casement, projected-in, projected-out, top hinged, center pivoted.

Sealing and Glazing: dry gaskets or mastic type.

SERIES 4000 *a system for high rise buildings*

Pre-assembled wall units designed principally for multi-story use. Mullion profile and glass line is variable to conform to architectural design.



Design Character: dominant verticals or two-way grid as desired. Units assembled to order using standard details and basic shapes but with a choice of profiles.

Sash Types: center pivoted, top hinged, projected-in, projected-out, casement.

Panels: any type

Glass: any type

Sealing and Glazing: dry gaskets or mastic type.

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Mail to: KAWNEER COMPANY, Dept. AF-109, Niles, Mich.

Dear Sirs: Please send me free book containing complete information and representative details on the four new Kawneer Wall Systems immediately.

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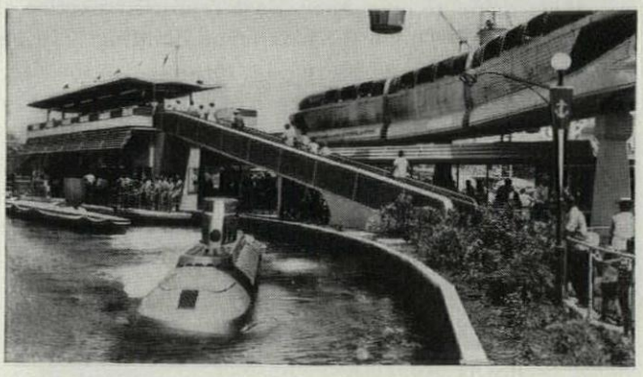
SPEEDWALK®

PASSENGER CONVEYORS

Continue to make the BIG NEWS in mass transportation

DISNEYLAND, CALIFORNIA — JUNE 15th



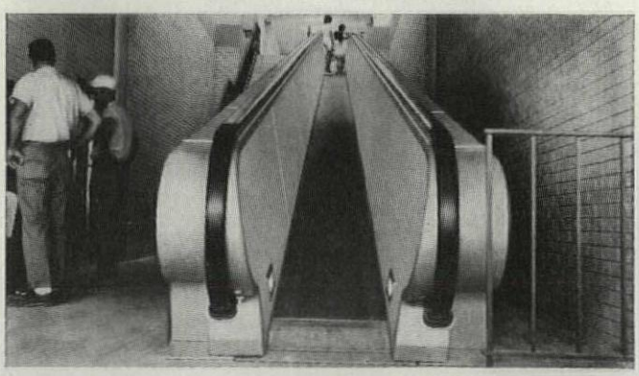
An S-A SPEEDRAMP Passenger Conveyor carries visitors to the Monorail station where they board trains of the Disneyland-Alweg Monorail System . . . the first daily operating monorail in the United States. This SPEEDRAMP installation is a part of the fabulous new attractions visited by millions this summer at Disneyland '59. This modern mode of transportation was unveiled June 15 to a coast-to-coast TV audience and also received acclaim in nationwide publicity.

The first successful commercial passenger conveyor or "Moving sidewalk" was put into operation several years and some millions of safe passenger miles ago. Yet, month after month, SPEEDWALK Passenger Conveyor Systems continue to make news in the mass transportation field. Shown here, are but three typical examples of SPEEDWALK Big News events for 1959.

NAVY PIER, CHICAGO — JULY 17th

The press featured the fact that one new way of transportation — the St. Lawrence Seaway — became the mode of transportation for a second new system of travel — "the moving sidewalk," July 17th. It all came about when the Nordlake Line's S.S. KAARINA steamed away from her Navy Pier Dock, bound for Europe with the first passenger conveyor belt system destined for overseas installation. The SPEEDRAMP Passenger Conveyor will be placed in service at Lausanne, Switzerland, in the ultra-modern "Innovation" Department Store.

ATLANTA, GEORGIA — AUGUST 3rd



City-size Lenox Square Shopping Center, one of the world's most beautiful, most complete and without question most modern shopping centers, opened its doors to the Atlanta, Georgia area public, on August 3rd. The million square foot shopping center became the first of its kind to offer customers the advantages of a "Moving sidewalk."

(See Lenox Square feature in this issue.)

SEE THE "SPEEDWALK" MOVIE . . . WRITE FOR FREE SHOWING DATE

Write for SPEEDWALK Conveyor Brochure.

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ENGINEERED BULK HANDLING SYSTEMS
MATERIALS HANDLING PRODUCTS
SPEEDWALK® PASSENGER CONVEYORS
STAINMASTER® BALL BEARING UNITS
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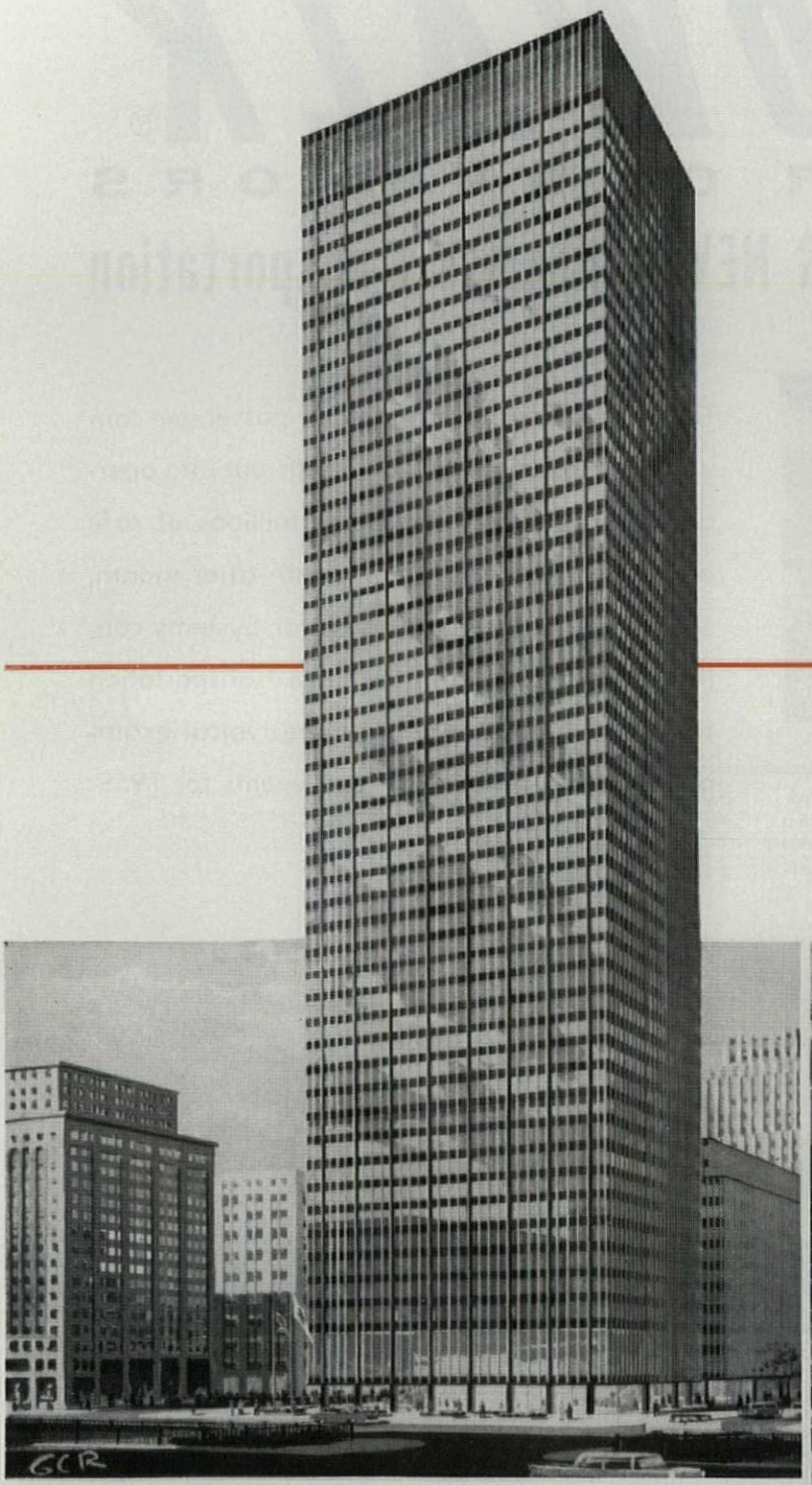
SEE THE MONTGOMERY ELEVATOR COMPANY REPRESENTATIVE OR THE STEPHENS-ADAMSON REPRESENTATIVE IN YOUR AREA.

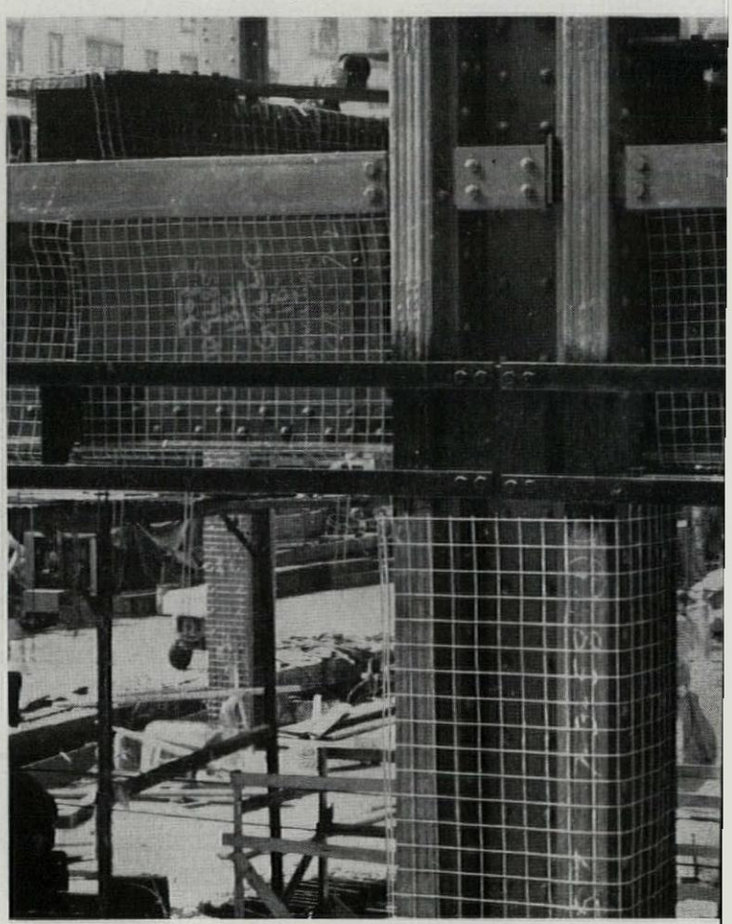


Concrete work in **is reinforced with**

JUST north of Grand Central Station a new skyscraper is rising to join New York's storied skyline. It is the 52-story Union Carbide office building. During the razing of the Hotel Marguery, formerly on the site, and the erection of the new skyscraper, Grand Central trains operated below—on time, without interruption.

USS American Welded Wire Fabric was used throughout this building to add strength and durability to concrete work. To meet the differing requirements of

USS American Welded Wire Fabric style 22-1212 was used to reinforce the thin layer of concrete encasing the structural steel for fire protection. The closely spaced small members of fabric ideally suit it for this reinforcement to prevent crack-causing stresses due to temperature changes and structural deflection. The fabric readily shapes to the steel and retains its rigidity in the bent form. Large sheets can be applied to speed construction.



Architect: ..... *Skidmore, Owings & Merill*
Consulting Engineer: ..... *Weiskopf & Pickworth*
General Contractor: ..... *George A. Fuller Company*
Concrete Contractor: ..... *Knickerbocker Construction Company*
Fabric Distributor: ..... *Carroll-McCreary Company, Inc.*

new Union Carbide Office Building

USS American Welded Wire Fabric!

concrete slabs, fills and fireproofing, three USS American Welded Wire Fabrics—of varying weights—were used.

American Welded Wire Fabric has long been used successfully and economically in practically every form of structure. It has an enviable record of successful structural application in the world's tallest and largest buildings. For more information on American Welded Wire Fabric, write to American Steel & Wire, Dept. 9295, 614 Superior Avenue, N. W., Cleveland 13, Ohio.

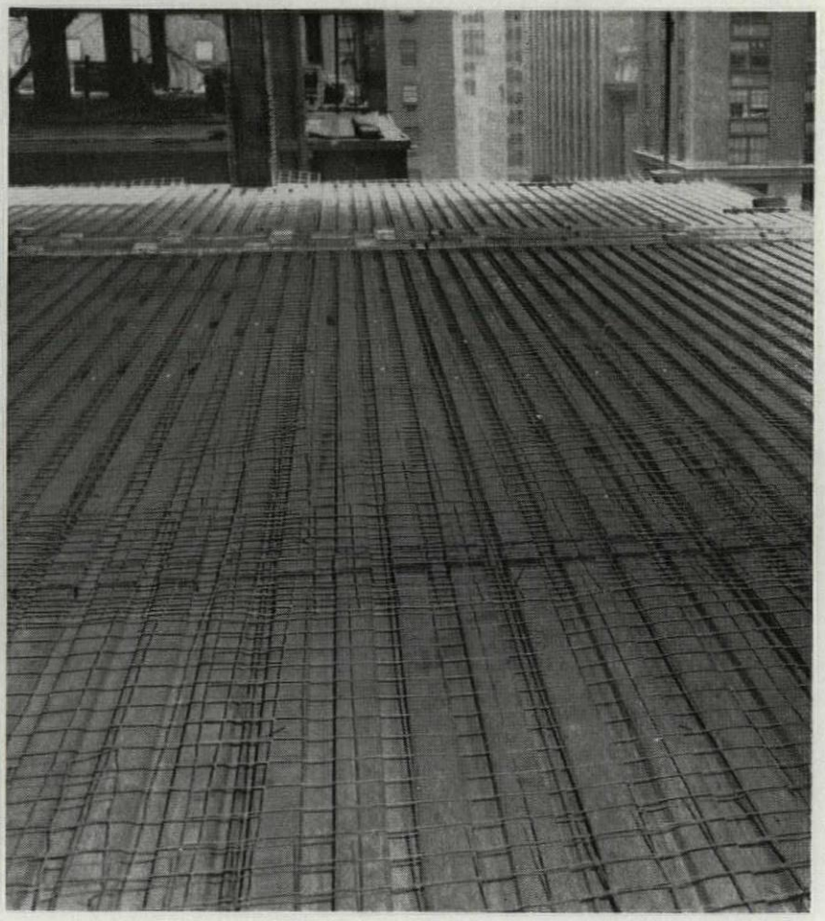
USS and American are registered trademarks

American Steel & Wire Division of United States Steel

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

Short span concrete slabs are structurally reinforced with a rectangular style of USS American Welded Wire Fabric. The high yield point of the cold-drawn wires permits higher working stress, thus reducing the amount of steel to be handled and installed. It is easily draped and placed at points of maximum stress due to positive and negative movement. Long fabric rolls speed installation and assures continuity of slab action through continuous reinforcement.

The designers and owners specified that distributed reinforcement be used in the concrete fill over cellular metal decking to prevent temperature and shrinkage cracking. USS American Welded Wire Fabric style 44-1212 was selected. The small diameter closely spaced wires provide the needed protection against unsightly cracking.



you can both **HEAT** and **COOL** with these large capacity

McQuay SEASONMAKERS

These extremely popular large capacity McQuay Seasonmakers enable you to provide year 'round comfort at any desired temperature level . . . heated, filtered air in cold months, and cooled, dehumidified, filtered air in warm months . . . when used with a hot or chilled central water supply.

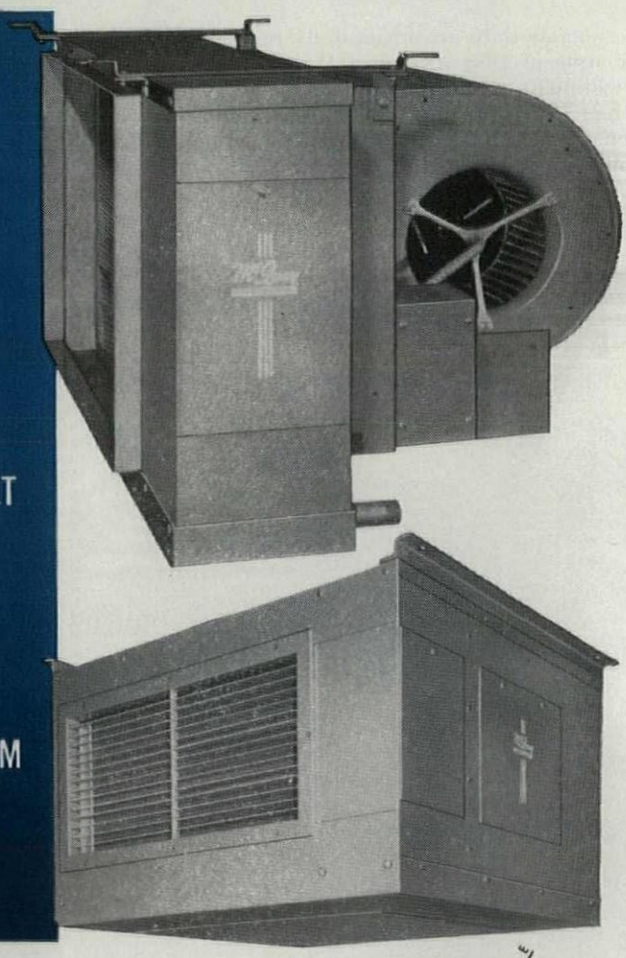
They are particularly designed for commercial or residential applications where a direct air distribution system is necessary, or for use in medium to large areas requiring 2, 3 or 5 tons capacity. Units are also available for refrigerant operation.

You'll like the 3-speed, quiet operation and the double drain pan with ½" insulation for protection against sweating and the auxiliary drain pan to catch condensate from the control or shutoff valve. In fact, you'll like everything about these McQuay Seasonmakers. For complete information, see your McQuay representative, or write McQuay, Inc., 1609 Broadway Street N. E., Minneapolis 13, Minnesota.

2-3-5 TON CAPACITIES

3-SPEED QUIET OPERATION

3-ROW COILS FOR MAXIMUM HEAT TRANSFER



Write for catalog No. 721 for complete selection and capacity information.

McQuay Means Quality

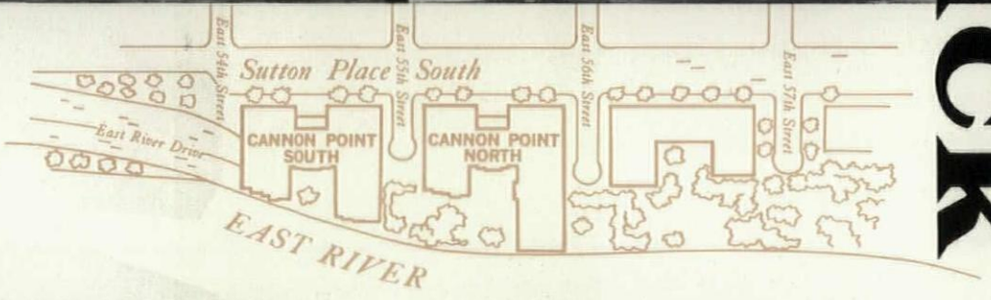
McQuay INC.

AIR CONDITIONING • HEATING • REFRIGERATION

HANLEY BRICK

Cannon Point North and South
New York, New York

Architect: Paul Resnick
Associate Architect: Harry Green
Owner: Gross Brothers
Supervising Engineers:
Blitman Construction Corporation



Always Part of New York's Skyline

New York's skyline pattern changes, but the content remains much the same.

Modern architects, regardless of the type of construction or structure they design, think first of two traditional building materials—brick and tile.

And with more reason than ever before. Hanley Company Duramic® Glazed Brick and Structural Glazed Facing Tile offer time-tested qualities of strength and durability, plus a wide array of shades and colors that give free play to the architect's creative talents.

Cannon Point North and South, pictured above, are among the newer additions to New York's skyline, the latest contribution to modern, graceful urban living. Cannon Point North features Hanley Duramic Jumbo Brick No. 735 Coral Pink, and Cannon Point South features Hanley Duramic Jumbo Brick No. 723 White Fine Speck.

HANLEY COMPANY

Administrative Office: One Gateway Center, Pittsburgh 22, Pa.
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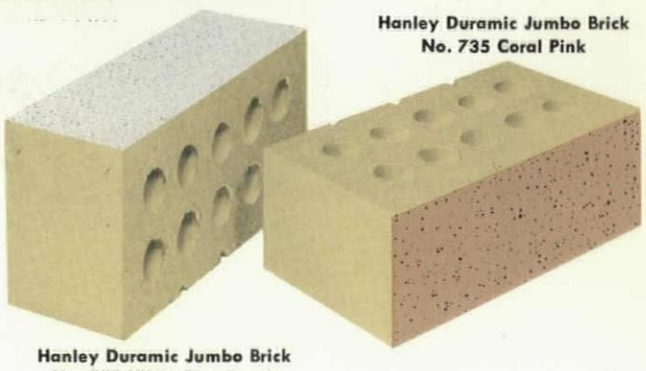
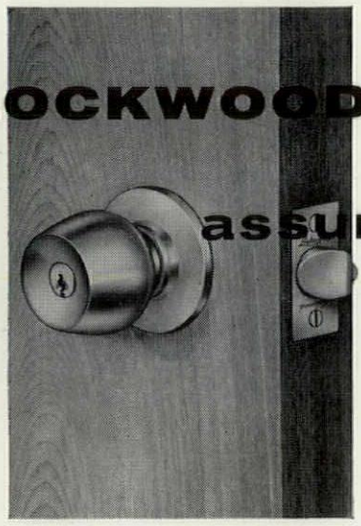


Hanley Duramic Jumbo Brick
No. 735 Coral Pink

Hanley Duramic Jumbo Brick
No. 723 White Fine Speck

LOCKWOOD hidden features

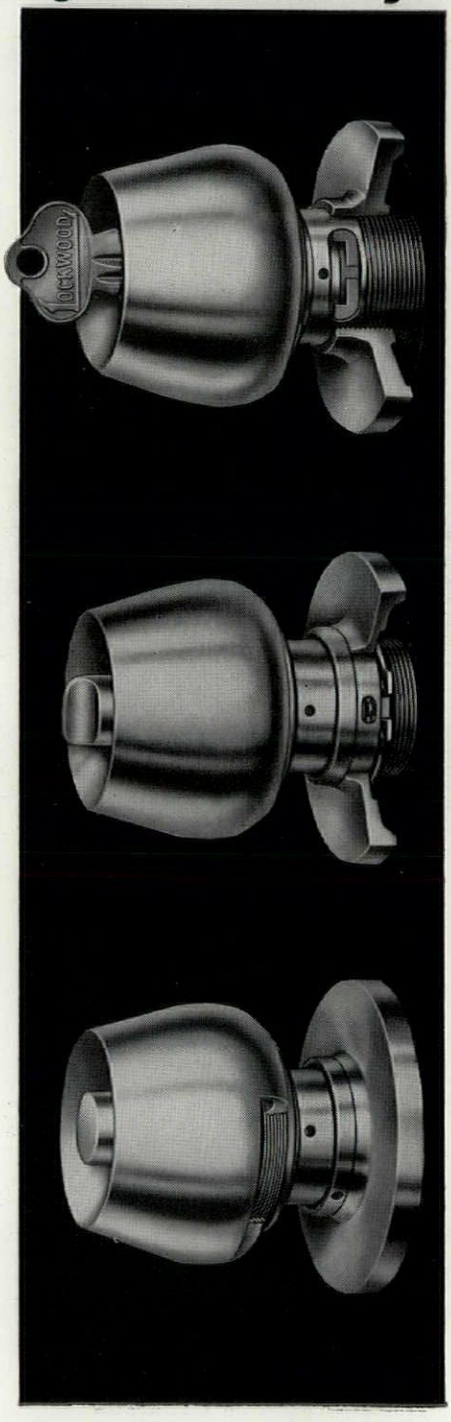
assure year-after-year satisfaction



Significant mechanical refinements have recently been engineered into Lockwood heavy duty cylindrical locksets.

When you specify LOCKWOOD, you can be sure of continuously smooth, trouble-free lockset operation because of important *hidden features* such as these:

See our condensed catalog 18eLO in Sweet's Architectural File, or write for a reprint.



NO KNOB-WOBBLE

Lockwood's precision bearing makes "knob-wobble" an impossibility. The knob shank rides smoothly in the counterbored housing cap. Both parts are brass forgings.

STAY-TIGHT ROSES

Lockwood's exclusive "stay-tight" roses prevent the installation from loosening in service. The rose retainer-spring locks in grooved thread-ring.

LONG-WEARING ALUMINUM KNOBS

Cast aluminum knobs have forged brass shanks ensuring long service. Shanks are screwed in and pinned. (Note pin at lower edge of cutaway section).

LOCKWOOD

LOCKWOOD HARDWARE MANUFACTURING COMPANY, FITCHBURG, MASS.

When it rains, it shines

On a rainy day in Chicago, the Morton Salt Building shines. It has Stainless Steel curtain walls, and rainfall keeps them clean. They may need an occasional washing, but no painter, scraper, or sand-blaster will ever have to touch the Stainless Steel walls. Think of the savings in maintenance!

Low first cost, too. The Stainless Steel panels are much lighter —and less expensive. Construction time and labor costs are low because the panels are factory-assembled into complete floor-to-ceiling wall units and delivered ready to install. A small crew hoists them and bolts them into place.

The panels are 8′6″ wide, 5′9″ high and 2″ thick. Exterior is 20-gage, 18-8, Type 302 Stainless Steel. Vertical flutes pressed into each panel eliminate optical distortion. The sash, mullions and all detail in the curtain wall areas are Stainless Steel.

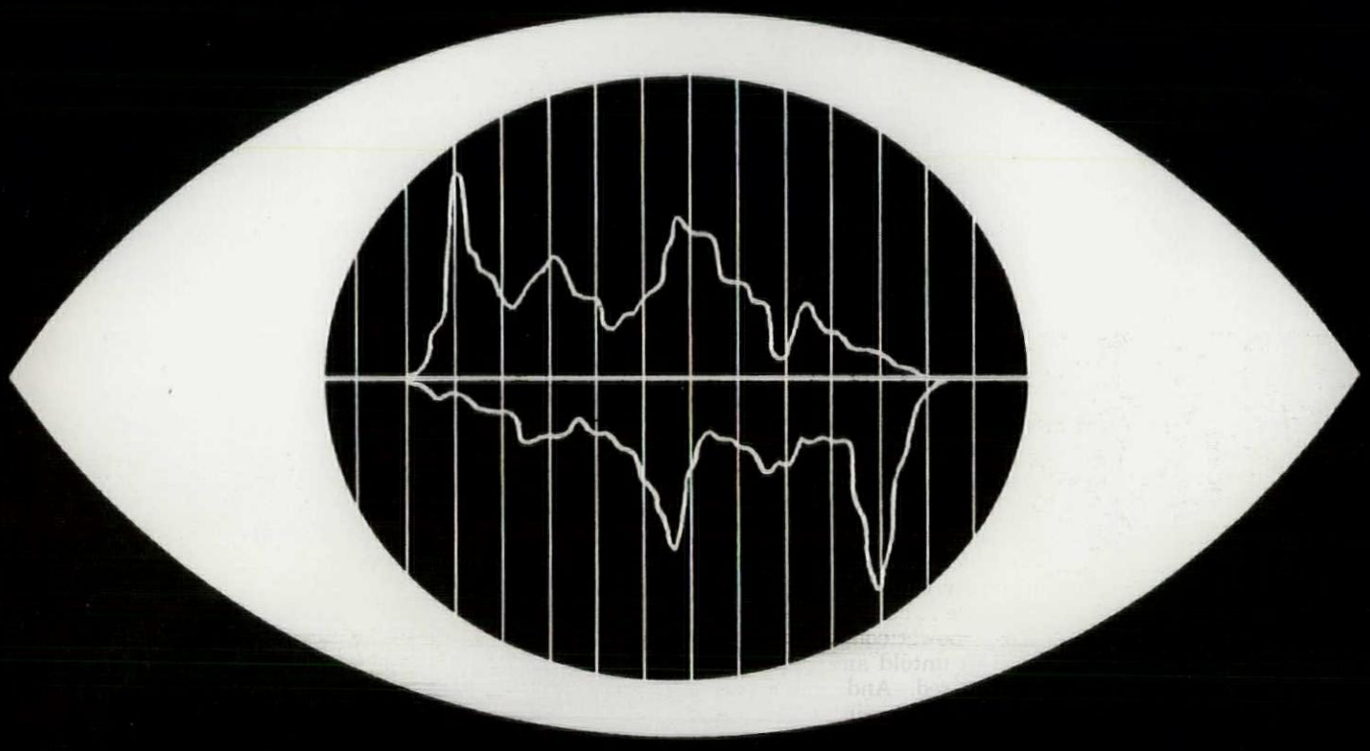
Wouldn't cities be beautiful if all buildings looked as good as the Morton Company's? Remember Stainless Steel curtain walls. They're well worth their salt.

USS is a registered trademark

Morton Salt Building, Chicago, Ill.
Architects: Graham, Anderson, Probst & White, Inc., Chicago, Ill.
General Contractor: Sherman, Olson, Inc., Chicago, Ill.
Panel Stamping: Commercial Shearing & Stamping Co., Youngstown, Ohio

USS **United States Steel**

Check Up On Elevator Performance...



Through The Eyes Of HAUGHTON elevonics*

*Haughton's advanced program in elevator systems research and engineering, with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance.

Now—elevator performance in any building can be precisely measured under *all* traffic conditions for any predetermined time period. Through our development work in Elevonics*, new instrumentation has been created that "sees" every move an elevator makes . . . and automatically charts a continuous visual record of starts, stops and waiting time.

This information is of incalculable value to evaluate the quality of elevator service. And it provides, for the first time, a truly uncontestable basis for sound corrective action.

This is but one of many ways that Haughton skills and experience are shaping the new technology in vertical transportation . . . and creating superior new standards for design, modernization, maintenance.

Swift, smooth, dependable elevator service is an unfailing source of satisfaction for building occupants, visitors and owners. Be certain *your* elevators are doing the best possible job. Ask your Haughton representative to let you see them in action—through the eyes of Haughton Elevonics.

EMBLEM OF EXCELLENCE IN VERTICAL TRANSPORTATION

HAUGHTON ELEVATOR COMPANY

DIVISION OF TOLEDO SCALE CORPORATION

EXECUTIVE OFFICES AND PLANT • TOLEDO 9, OHIO

FACTORY BRANCHES TO SERVE YOU COAST TO COAST

Embodying the latest concepts in styling and structure, the new Community Savings Bank of Rochester, New York, provides attractively modern and efficient quarters for banking operations as well as top-quality rental space.

Air conditioned throughout, the building offers an ideal thermal environment under the direction of a Johnson Pneumatic Control Center.

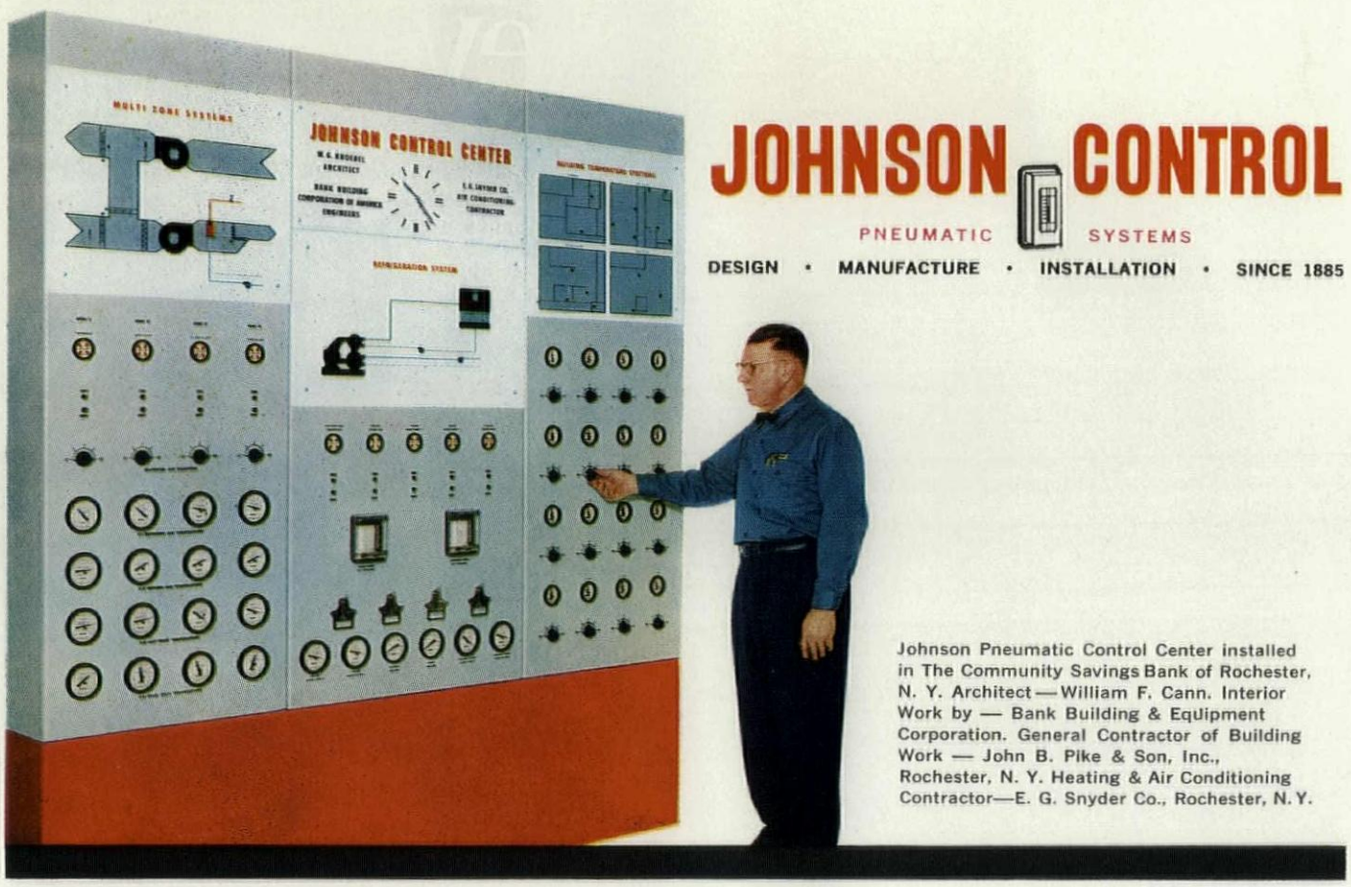
From the Center the engineer operates four central multi-zone systems that supply conditioned air to 16 individually controlled zones. The temperature in each zone is indicated at the panel and can be reset, if required, from this central point to assure continuous comfort. All equipment can be started and stopped pneumatically from the Center.

The impressive advantages of centralized pneumatic control make it practical for smaller commercial buildings such as this as well as the larger buildings. It makes a building more profitable to operate . . . simplifies an otherwise complex job, cuts fuel and power consumption, prolongs equipment life. It saves an untold amount of time, minimizes the supervision required. And it assures a consistently comfortable climate for business efficiency.

A nearby Johnson engineer will gladly explain how a Johnson Control System with a Pneumatic Control Center can be applied to any new or existing building. Johnson Service Company, Milwaukee 1, Wis. 105 Branch Offices.

ASSURE A MODERN CLIMATE FOR BUSINESS

with Johnson Pneumatic Control



JOHNSON CONTROL

PNEUMATIC SYSTEMS

DESIGN • MANUFACTURE • INSTALLATION • SINCE 1885

Johnson Pneumatic Control Center installed in The Community Savings Bank of Rochester, N. Y. Architect — William F. Cann. Interior Work by — Bank Building & Equipment Corporation. General Contractor of Building Work — John B. Pike & Son, Inc., Rochester, N. Y. Heating & Air Conditioning Contractor—E. G. Snyder Co., Rochester, N. Y.

Its name:

Moulin Rouge Motel

Its location:

Miami Beach

Its architect:

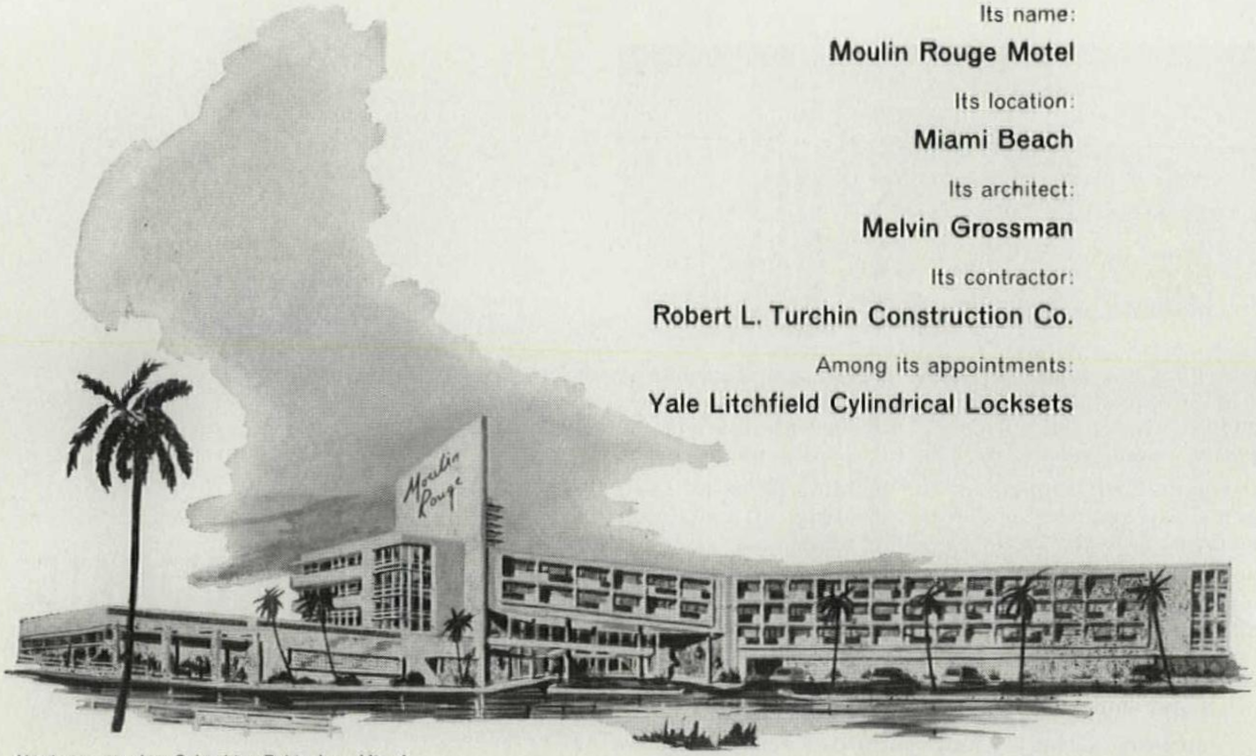
Melvin Grossman

Its contractor:

Robert L. Turchin Construction Co.

Among its appointments:

Yale Litchfield Cylindrical Locksets

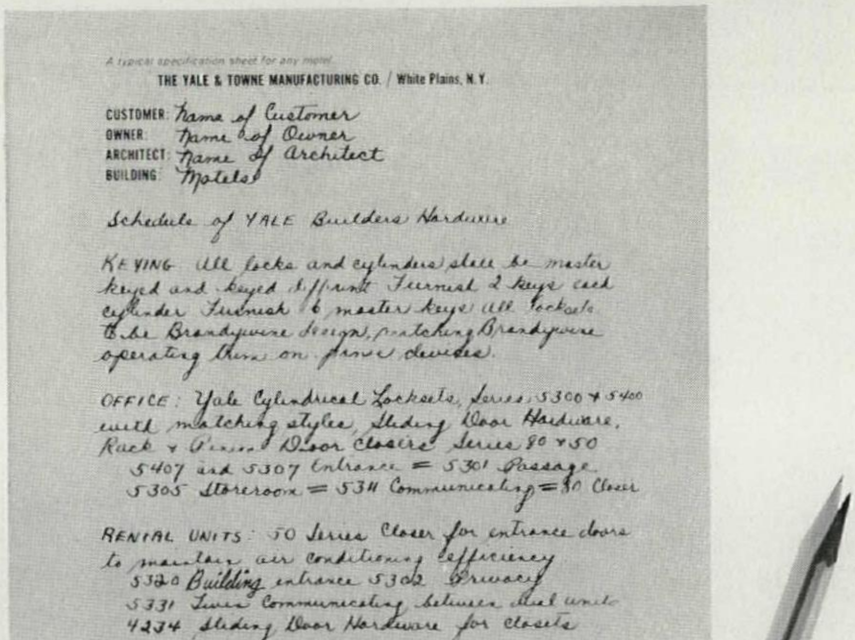


Hardware, courtesy Schachter-Robin, Inc., Miami

A pleasanter way to end a long drive is hardly more imaginable than to arrive at the new Moulin Rouge Resort Motel at Miami Beach. Like so many buildings of originality and character, the Moulin Rouge is secured by Yale locksets. Here—as in famous commercial and residential buildings the world over—Yale locksets impart decorative distinction as they provide the highest degree of security. Your own problem of decorative locksets—is it difficult and unusual? Then contact the Yale Lock & Hardware Div., White Plains, N.Y.

YALE & TOWNE

YALE—REG. U. S. PAT. OFF.



A typical specification sheet for any motel

THE YALE & TOWNE MANUFACTURING CO. / White Plains, N.Y.

CUSTOMER: Name of Customer
OWNER: Name of Owner
ARCHITECT: Name of Architect
BUILDING: Motels

Schedule of YALE Builders Hardware

KEYING: All locks and cylinders shall be master keyed and keyed different. Furnish 2 keys each cylinder. Furnish 6 master keys. All locksets to be Brandywine design, matching Brandywine operating trim on panic devices.

OFFICE: Yale Cylindrical Locksets, Series 5300 + 5400 with matching styles, Sliding Door Hardware, Rack + Pinion Door Closers Series 80 + 50
5407 and 5307 Entrance = 5301 Passage
5305 Storeroom = 5311 Communicating = 80 Closer

RENTAL UNITS: 50 Series Closer for entrance doors to maintain air conditioning efficiency
5320 Building entrance 5302 Privacy
5331 Communicating between dual units
4234 Sliding Door Hardware for closets

RESTAURANT: 5308 Utility for corridor locking + unlocking
5305 Storeroom 10AR Panic Devices, opening out
50 Series Closer for entrance

Photo: F. S. Lincoln

Fashion Institute of Technology, New York, N. Y. • Architects: DeYoung, Moskowitz & Rosenberg • Contractor: Depot Construction Co.

HIGH FASHION goes to school

New York's new Fashion Institute of Technology is a striking example of how an architect can create beautiful design with today's modern maintenance-saving materials. Setting gold framed, double-hung aluminum windows into a background of rich brown colored aluminum panels, the architects, DeYoung, Moskowitz & Rosenberg, have created a truly outstanding building. Curtain walls, windows and architectural metalwork were fabricated by General Bronze. See our catalogs in Sweet's.

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GENERAL BRONZE CORPORATION · GARDEN CITY, N.Y.

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But don't tell that to Joe Grunch. He calls that thing below a "perfectly good house"—didn't he build it of perfectly good parts?

Of course Joe is no architect. But even good architects can make Joe's mistake (sometimes) about venetian blinds. Grunch-type blinds are often hard to spot. It's only *after* they're installed that poor functioning and mounting maintenance costs reveal their fundamental lack of unified design.

Why risk getting stuck? You *can* specify the Flexalum® Twi-Nighter, *the only venetian which was designed your way — from scratch, as an integrated whole.* And since it's assembled locally *only* by licensed Flexalum manufacturers, you're sure of getting all the Twi-Nighter's designed-together components — never any "perfectly good" standard parts.

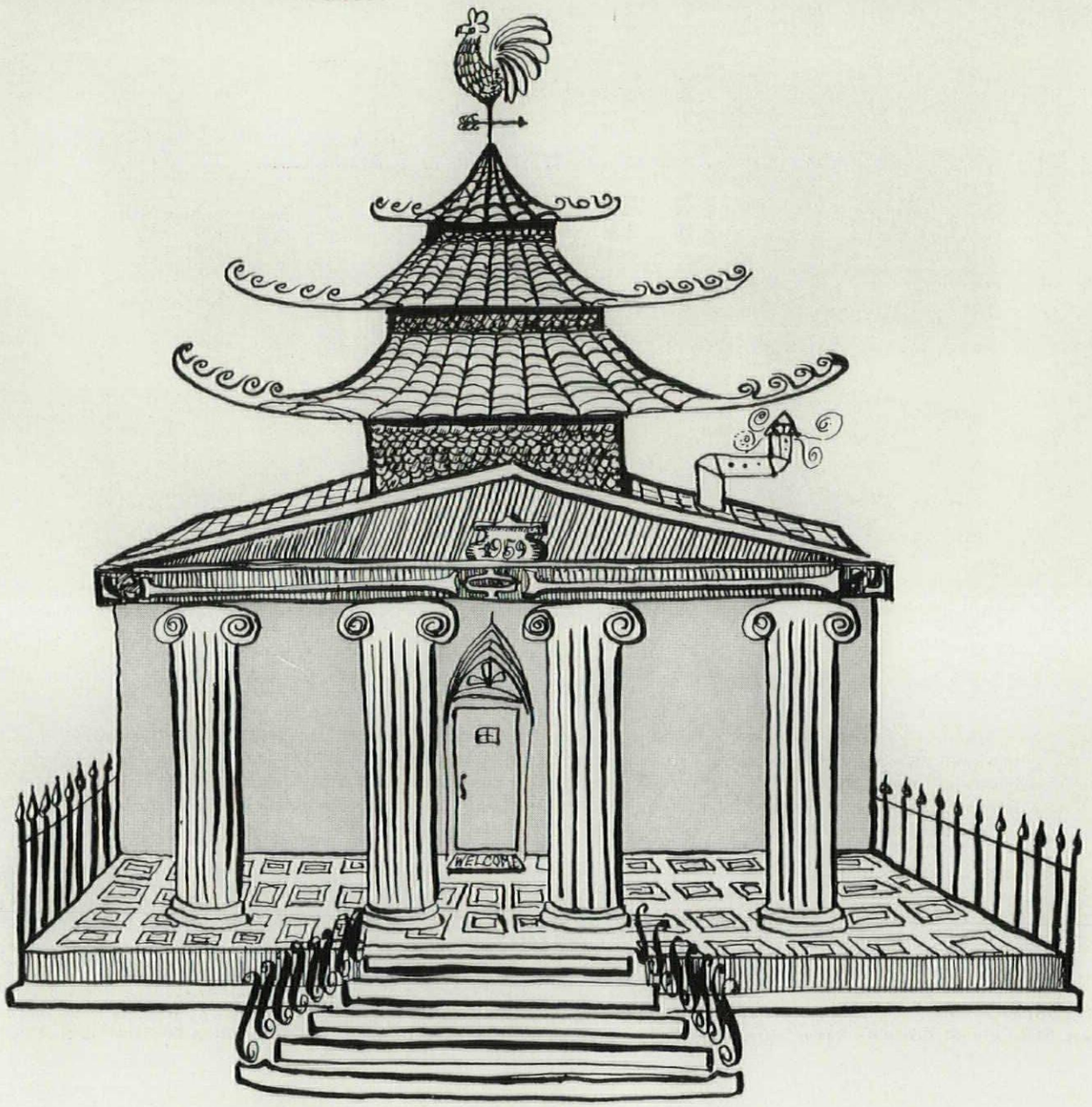
Ask to see the specifications. By following the chain-reaction of integrated design from component to component, you can see *why* the Twi-Nighter is a much better blind. But you don't have to be an architect to see *how* it's better. Even those of your clients who can't tell their headrail from their bottom rail will notice the difference at a glance.

They'll see that it's neater, lighter, more compact. Tilt it—the slats stay where you put them. Close it—the room isn't dim, it's dark. Test the cord-lock—this blind is safe—it can't come crashing down. Note the smooth operation. All dead-weight has been eliminated. It's so free of stress, so perfectly coordinated that *we guarantee every part, in writing, for a full five years.*

So don't blur your building — and risk maintenance expense — with grab-bag-type blinds. Specify Flexalum Twi-Nighters. You owe it to your edifice.

For our latest specs, write to: Dept. AF-10, Bridgeport Brass Co., Hunter Douglas Division, 405 Lexington Avenue, New York 17, N. Y.

Diverse Parts Do Not a Whole Thing Make



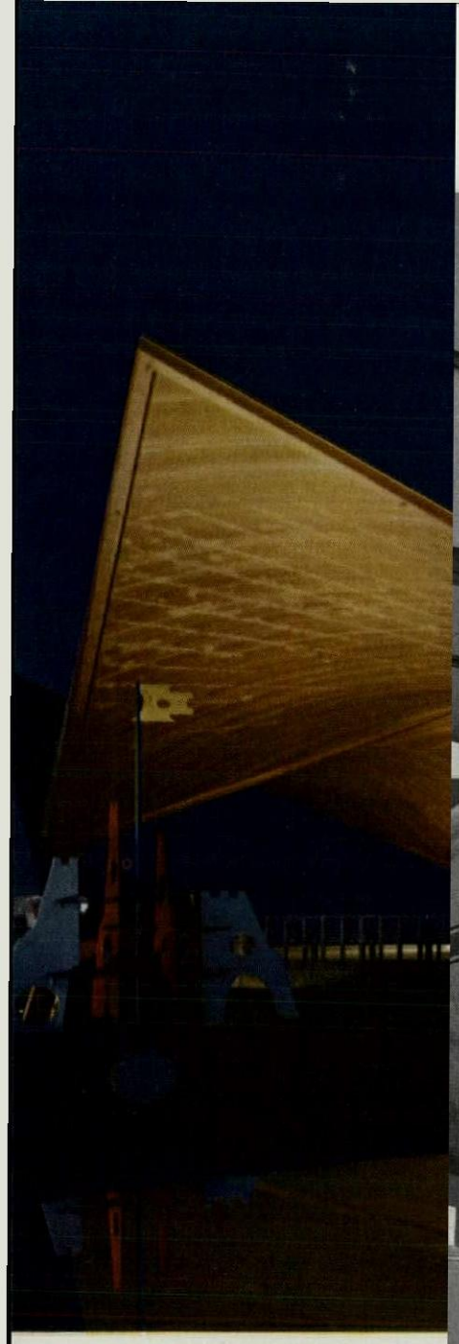
"Topaz by Cartier"

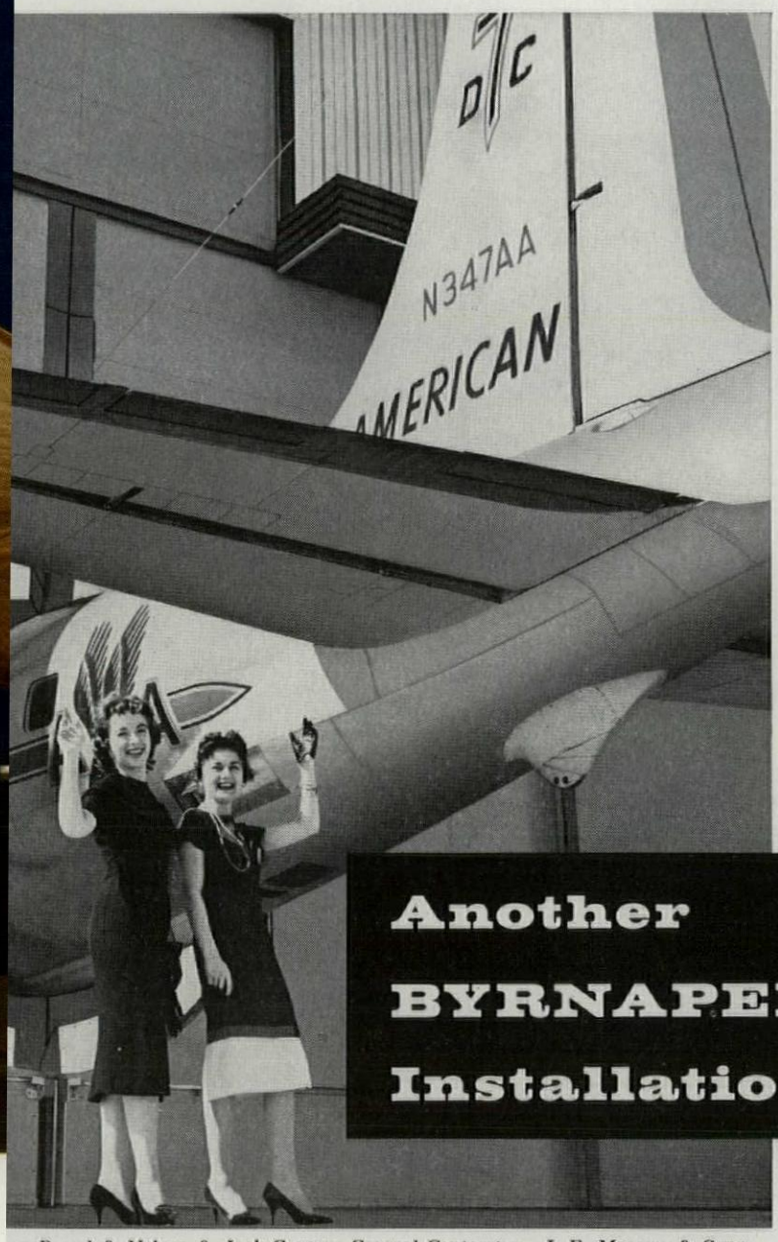
EXCITING THINGS ARE HAPPENING IN WORTHINGTON AIR HANDLING EQUIPMENT

Try as hard as you like you can't dream up an installation—standard or multi-zone, vertical or horizontal—where Worthington air handling equipment won't fit. The fan section may be mounted with front, top or bottom discharge. Install them as you wish, where you wish—saving valuable space, time and installation costs. Any wonder we call them jewels of great value. Worthington Corporation, Ampere Station, East Orange, N. J. In Canada: Worthington (Canada) Ltd., Brantford, Ont.

12-22

WORTHINGTON





Another BYRNAPERTURE Installation

s—Broad & Nelson & Jack Corgan; General Contractor—J. E. Morgan & Sons

merican Airlines utilizes the Byrn-
—this time in their new $1,350,000
nd maintenance facility at Dallas
d.

naperture—an exclusive hangar door
ature by Byrne—consists of a series
le segments, operated either by hand
power, which fit snugly around the
fuselage. Providing a completely
ght closure for the portion of the
which maintenance work is per-
t makes possible a reduction of up to
angar construction costs. While the use of the Byrnaperture is pictured with a DC-7, it is equally adaptable for larger aircraft such as the Boeing 707. In this installation two door openings are provided, each 155 feet wide by 32 feet high.

If you are looking for the most advanced ideas in door engineering—whether for airplane hangars or industrial purposes—Byrne should be your logical first source. Let us send you full information—or, better yet, sit down with you to discuss the door requirements for any project you may have in process or under consideration.

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BYRNE doors, inc.

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Byrne Doors, Ltd., 381 College St., Toronto 2B, Ont.

HE HANGAR AND INDUSTRIAL DOOR TECHNICAL COUNCIL

Corning Glass Works Building, 717 Fifth Avenue, New York City.
Architect: Harrison and Abramovitz and Abbe. Fixtures by Globe.

With a world of glass to choose from

Harrison and Abramovitz and Abbe chose a unique crystal and opal glass panel to control the lighting in the reception room of our new building at 717 Fifth Avenue.

The panel is our Crystopal Pattern No. 71. You'll see why our glassmakers combined these two types of glass when you step into the room.

You will be aware of a subtle, sophisticated control of light. For the crystal prisms transmit a high level of illumination while lowering brightness. The dash of opal reduces reflected glare, blends the various lamp hues into a single warm tone.

An added benefit *only* glass can confer: the impression our room makes on your hundredth visit will be the same as your first.

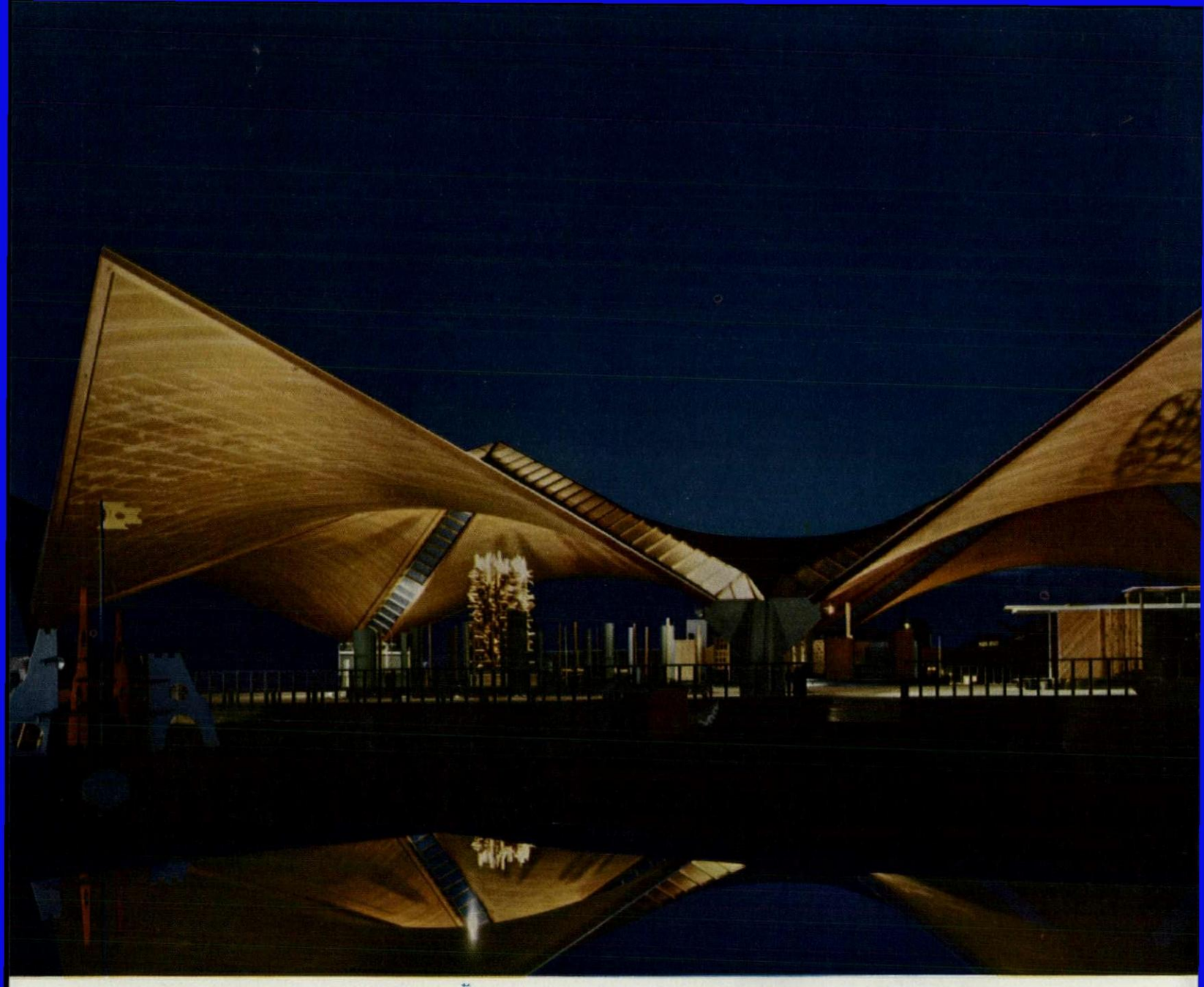
For these glass panels won't fade. Warp. Or discolor. The lighting effect the architects planned into the room is there to stay.

We hope you can arrange to visit our new building soon. You'll find it a three-dimensional textbook on how to use glass as a structural, design, and light control medium.

Meanwhile send for a free copy of our "Commercial Lighting Application Guide." It's a useful working bulletin that explains how to achieve the kind of lighting you see here. Write: Corning Glass Works, 64 Crystal Street, Corning, N. Y.

CORNING GLASS WORKS

CORNING MEANS RESEARCH IN GLASS



Forest Products Pavilion ☆ Oregon Centennial Exposition ☆ John Storrs, Architect

YOU EXPECT THE UNUSUAL WITH WEST COAST LUMBER

Seven sweeping hyperbolic paraboloids of the Forest Products Pavilion at the Oregon Centennial Exposition graphically demonstrate the freedom of design with wood. Thematically an expression of dynamic form, the building strikingly illustrates the qualities of warmth and freedom inherent in the living material, wood. Separation of the soaring sweep of paraboloids was achieved with skylights which give a studio quality to the light within the structure. Acoustics are of concert hall fidelity.

West Coast lumber makes the sequence of transition from imagination to drawing board to fabrication as easy as it ever can be.

Design with West Coast lumber; specify West Coast lumber; it keeps your imaginative horizons limitless.

WEST COAST LUMBER

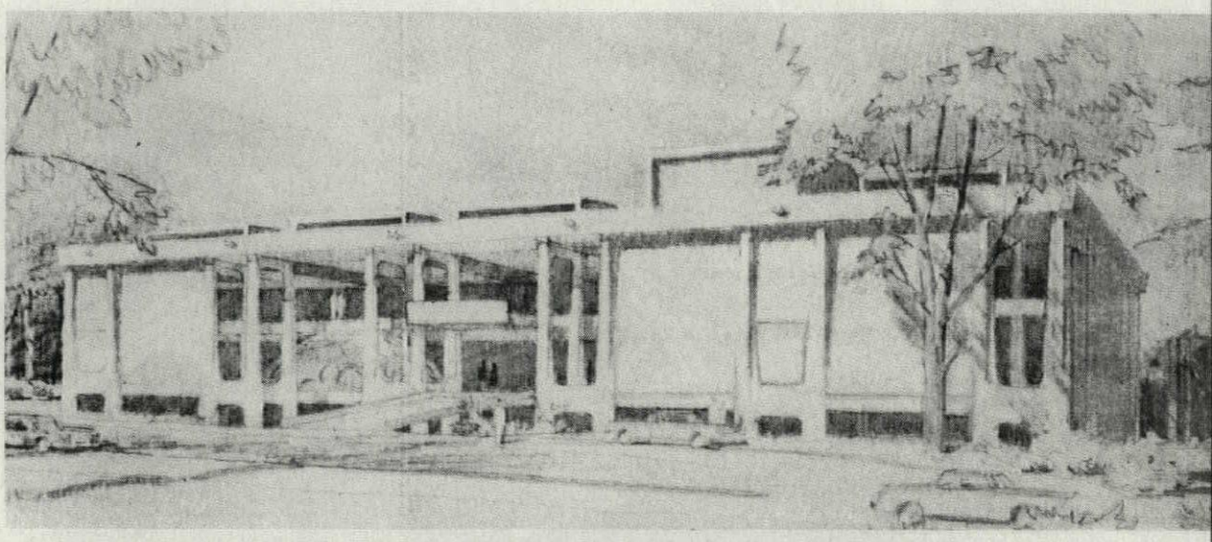
Douglas Fir • Western Red Cedar • West Coast Hemlock

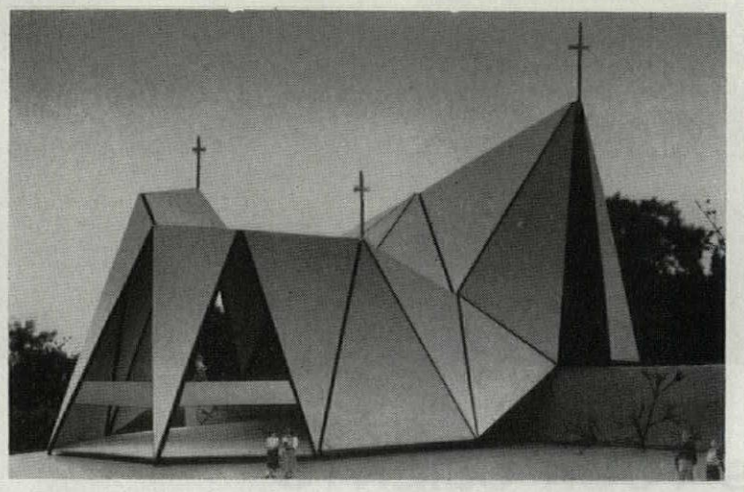
For detailed construction information concerning the Forest Products Pavilion, write:

WEST COAST LUMBERMAN'S ASSOCIATION

1410 S. W. Morrison Street, Portland 5, Oregon

A roundup of recent and significant proposals





CHURCH IN THE SUBURBS

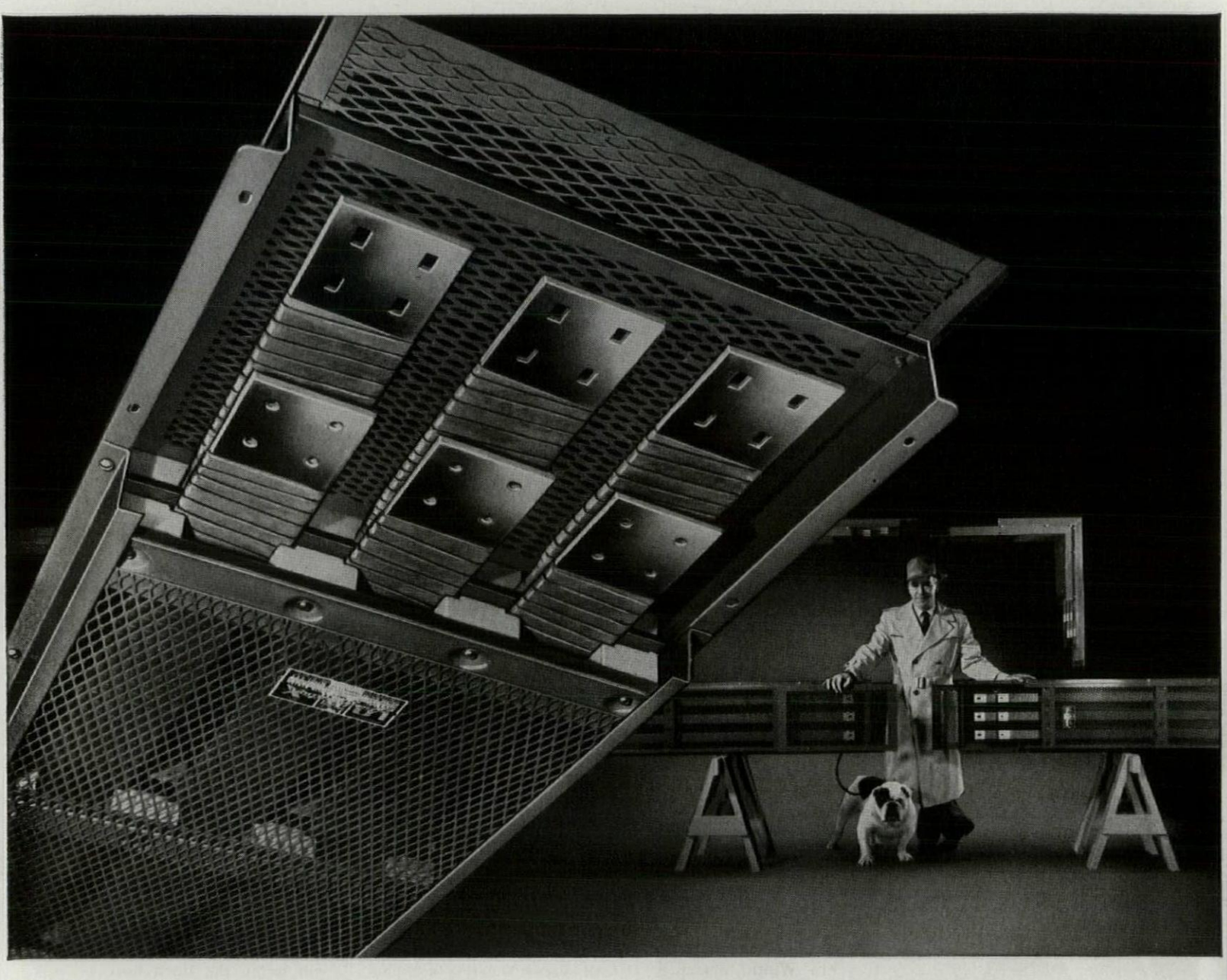
Despite the angular appearance of the Congregational Church above, the interior plan is circular, a shape the architects thought appropriate to a commuter community, West Norwalk, Conn. "We wanted to make it a continuing experience," says Victor Christ-Janer, who designed it with Robert Damora. Entered through a porch (right), the narthex curves around the church's far side, then leads into the oval worship area. An unusual seating arrangement—pews grouped in three sections, two side by side and one triangular formation—eliminates a main aisle and allows worshipers to filter out to the narthex at three points.

REGIONAL MUSEUM ON NEW YORK-TO-BOSTON PARKWAY

At the point where the Bridgeport-Fairfield town line crosses the Merritt Parkway, an ambitious group of Connecticut residents plans a regional museum of art, science, and industry (above). Their architect, John M. Johansen, has based the design on clusters of four concrete columns, each shaped for lateral bracing, which join each other in shell vaults overhead. Spaces between the columns are filled with precast concrete wall panels or glass. Visitors will cross a footbridge spanning a sunken garden to enter. Once inside, they will get a close-up view of the moon's surface (the model will already have been glimpsed from outside) and historic and current exhibits. Down one flight will be a planetarium (inside the moon) and an auditorium. An observation gallery looking down on the moon, classrooms, library, offices, and a regional gallery will be on the third floor.

"FLOATING MALL" SHOPPING CENTER IN SAN DIEGO

A shopping-center mall raised above a 1,000-car "indoor" parking lot will be built in San Diego County (below). The May Co., developer of the Mission Valley Center, will build two department stores, one at either end of the mall. By cannily placing the main entrance at the middle of the mall (up moving stairs from the parking level), the developers guarantee that shoppers will be exposed to the smaller shops lining the way to either department store. Architects: Albert C. Martin & Associates; Frank L. Hope & Associates.



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Lo-X Bus Duct assures lower balanced voltage drop . . . extra current carrying capacity

Increase the safety margin against unexpected power fluctuations! BullDog BUStribution®—using a paired phased arrangement of aluminum bus bars—neutralizes magnetic fields, assures uniform balanced current distribution and low voltage drop. Exclusive "paired phasing" acts to distribute current equally throughout the cross-sectional area of each conductor . . . balances current among all conductors . . . reduces impedance to a minimum. Full use of the conductor material assures extra capacity, allowing the LO-X feeder system to operate at top efficiency.

And LO-X offers these additional operating advantages. The duct has no moving parts . . . thus nothing to wear. It is prefabricated . . . adapts to any building contour. Exclusive scarf-lap joints assure rigid connections . . . speedy installation. BullDog's five-step silvering process of aluminum bus bars guarantees maximum conductivity at connection points. Special spring-type cup washers at the joints give a positive *bolted* connection.

For a distribution system that guarantees top performance and long, continuous service specify *Bus Duct by BullDog* . . . it will readily adapt to your client's changing power needs.

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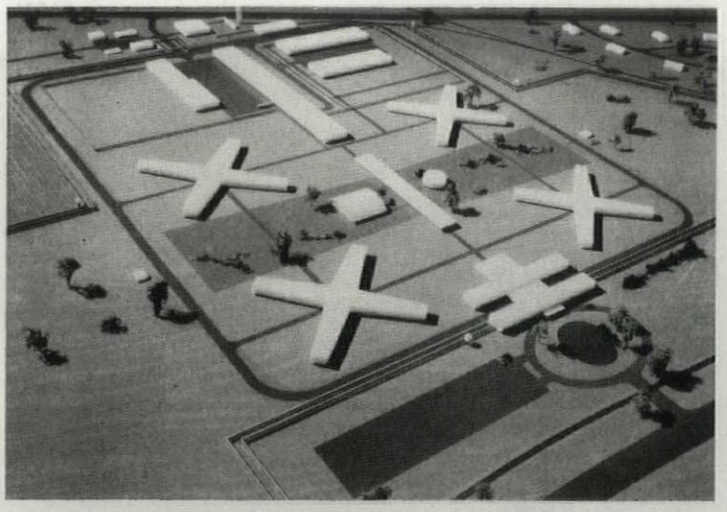
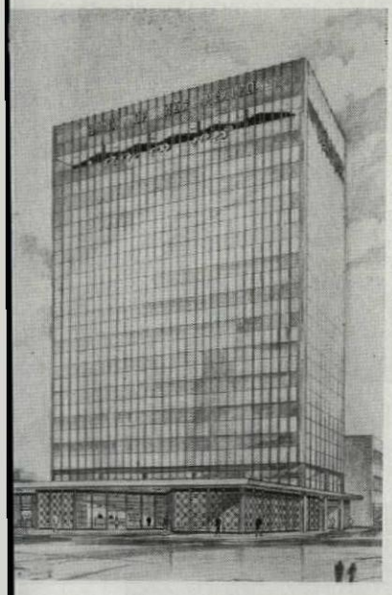


MEDIUM-SECURITY PRISON IN MISSOURI

Bids will be asked this month for a medium-security prison at Moberly, Mo. (above). Because this institution's purpose is education and rehabilitation, Architect Marcel Boulicault laid it out like a campus. Each reinforced concrete cross will contain 320 inmates in separate rooms, a total of 1,280 prisoners. At the gate there will be administrative offices, in which new prisoners will be classified for assignment and those about to be released will be given complete freedom. Consulting architects: Curtis & Davis of New Orleans.

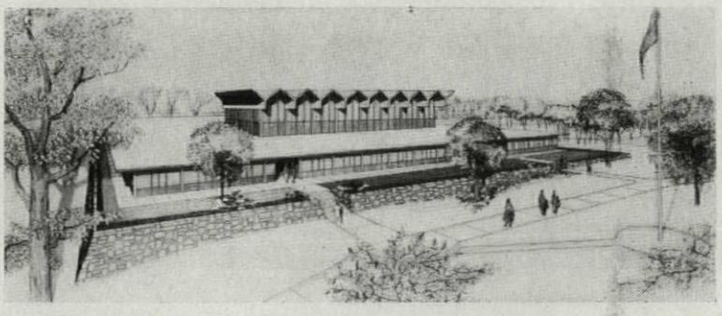
NEBRASKA ADULT EDUCATION CENTER

When the Center for Continuing Education in Lincoln is complete, the University of Nebraska can hold simultaneous conferences for 831 adults and 469 teen-agers in self-contained quarters. The nine-story adult unit, right, has hotel rooms on seven floors, restaurants and conference rooms on the lower two, and an auditorium wing. The "youth center," left, will contain 16-to-a-room dormitories, a cafeteria, and conference rooms. Architects: Welton Becket & Associates, in association with Selmer A. Solheim & Associates.



NEW MEXICO'S TALLEST

The Bank of New Mexico building (left), designed by W. C. Kruger & Associates for downtown Albuquerque, will be the tallest building in the state —14 stories. If additional office space is needed, it can be expanded by adding three more stories. The bank will occupy the lower floors, and a luncheon club, the top floor. In between are rental office floors. The end walls, facing east and west, will be windowless. Among other investors in the project are Winthrop Rockefeller, Trammell Crow, Dallas financier, and W. C. Kruger. Construction has started, and the completion date is December 1960.

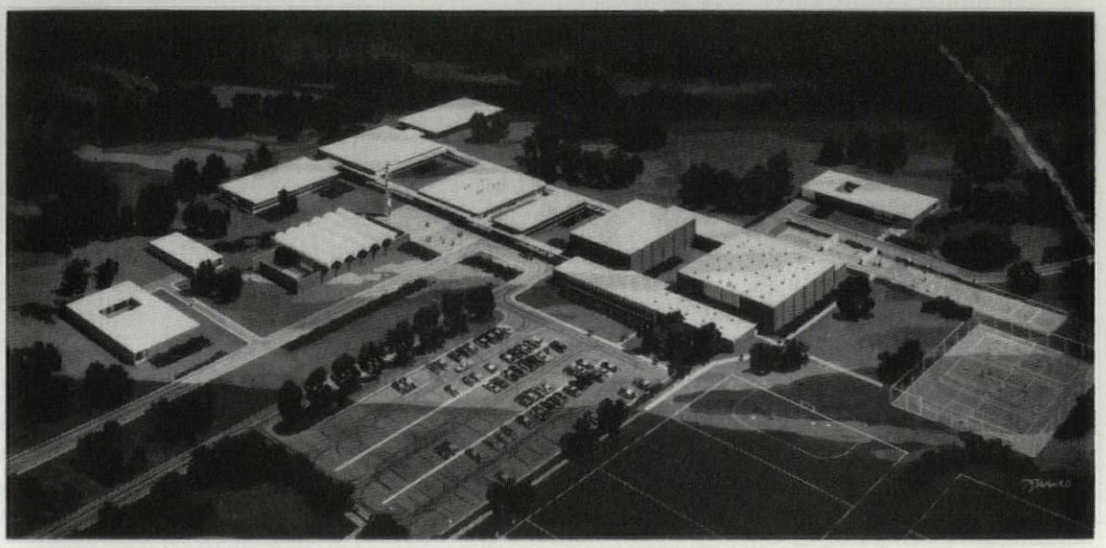


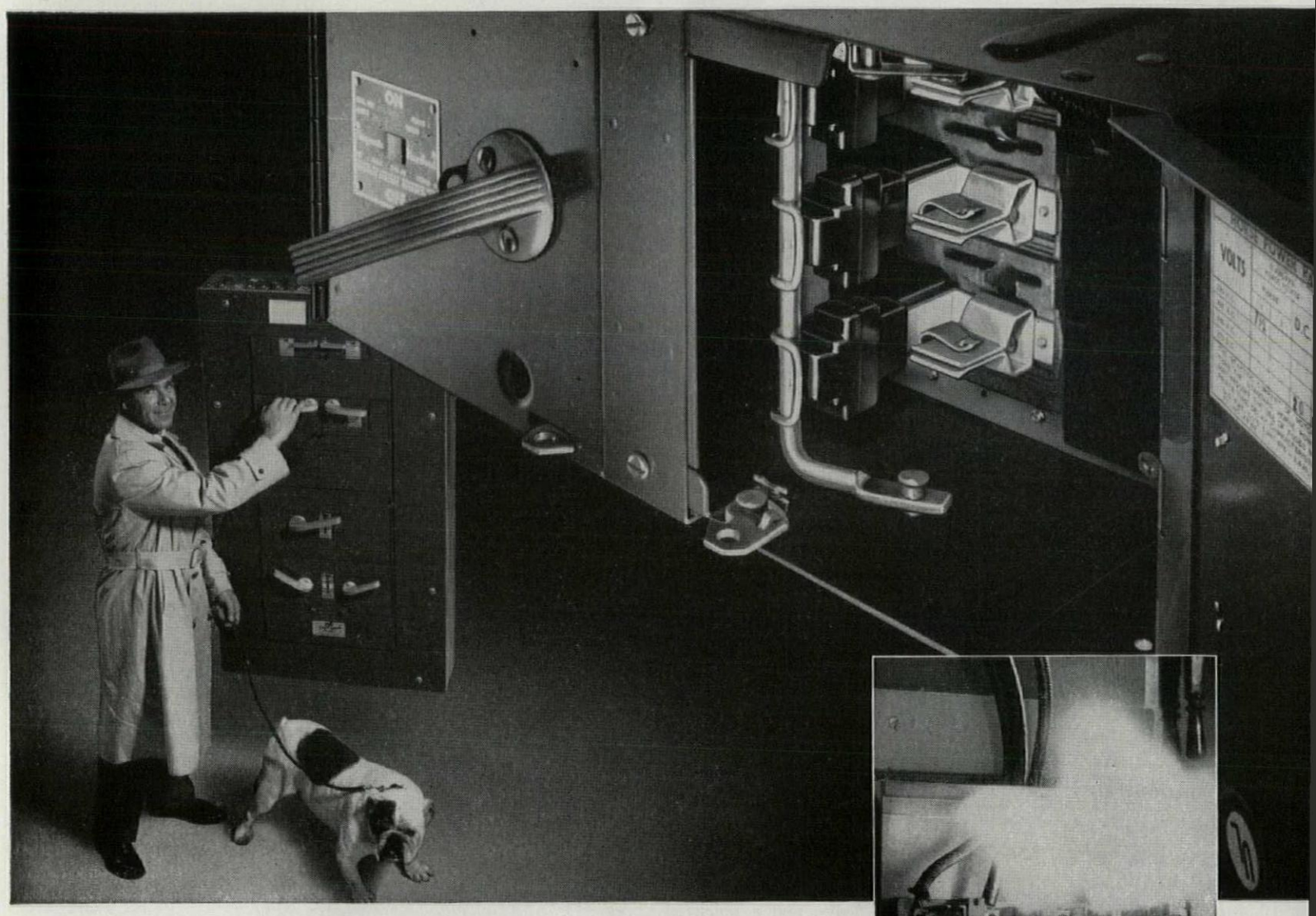
TRAINING CENTER, ST. LOUIS, TOPPED BY DRILL HALL

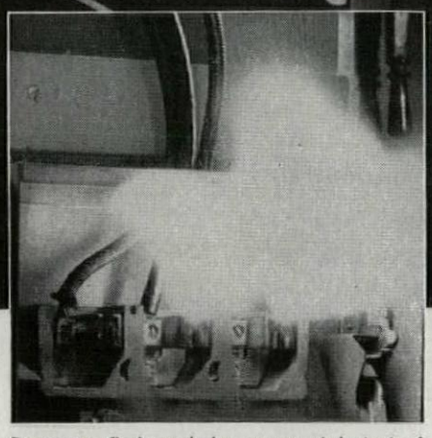
The sturdy martial appearance of the building above is not an accident. It is to be the Naval and Marine Corps Reserve Training Center in St. Louis and will be filled with classrooms and topped by a 20 ft. high drill hall. For reasons of defense, Architects Hellmuth, Obata & Kassabaum chose porcelain enamel metal panels for the exterior—their nonporous surface makes decontamination easier. The building's wide corridors and special basement rooms can double as shelters. Shelters and all, it will cost $1 million.

CAMPUS HIGH SCHOOL IN TULSA

Architects Murray, Jones, Murray of Tulsa drew up the master plan for Bishop Kelley High School in Tulsa (right), part of which is under construction and will open next September. A nucleus of 26 classrooms, a gymnasium, cafeteria, and quarters for the Christian Brothers, who will teach the 500 boys expected to enroll, will be expanded later to include a courtyard and tall carillon tower, tennis courts, baseball diamond, parking space, a chapel, rectory, and living quarters for teaching nuns. Cost: about $1,000 per student.







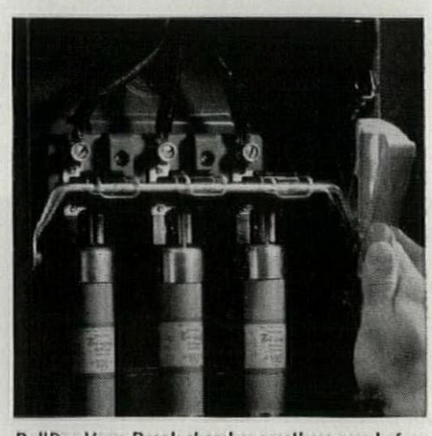
Dangerous flash explosion occurs at instant of "break" in open knifeblade switch . . . causing blades to burn, pit, deteriorate. (This photograph and the one below are unretouched.)

FOR SAFETY'S SAKE, SPECIFY VACU-BREAK POWER PANELS

Here are some basic facts why BullDog Power Panels with Vacu-Break* units are tops in safety and performance. Vacu-Break design minimizes destructive arcs because contacts are housed in compact chambers that extinguish the arcs immediately. Result: maximum safety . . . virtually no pitting or burning of contacts . . . minimum maintenance. Vacu-Break switch units are "quick-make, quick-break" with an interlocking safety mechanism. Contacts are *directly* attached to operating handle. No tricky toggles or springs. You get positive, safe switching always. And when the handle is in OFF position, you *know* the switch is *off!*

The Clampmatic* design provides clamped-pressure switching contacts to prevent overheating at these points. Needless heat-generating areas are eliminated because there are no hinged, current carrying parts . . . and all conductors are silvered. BullDog switches also withstand severe fault currents. In recent tests, standard BullDog switches with Amp-Traps** were subjected to a 100,000-amp short circuit current. *They were undamaged!*

For safety's sake—and superior performance—specify BullDog Vacu-Break Power Panels.



BullDog Vacu-Break chamber smothers arcs before they can cause damage. Both are 100-amp, 600-volt switches, operating under 90-ampere, 440-volt load with 40% to 50% power factor.

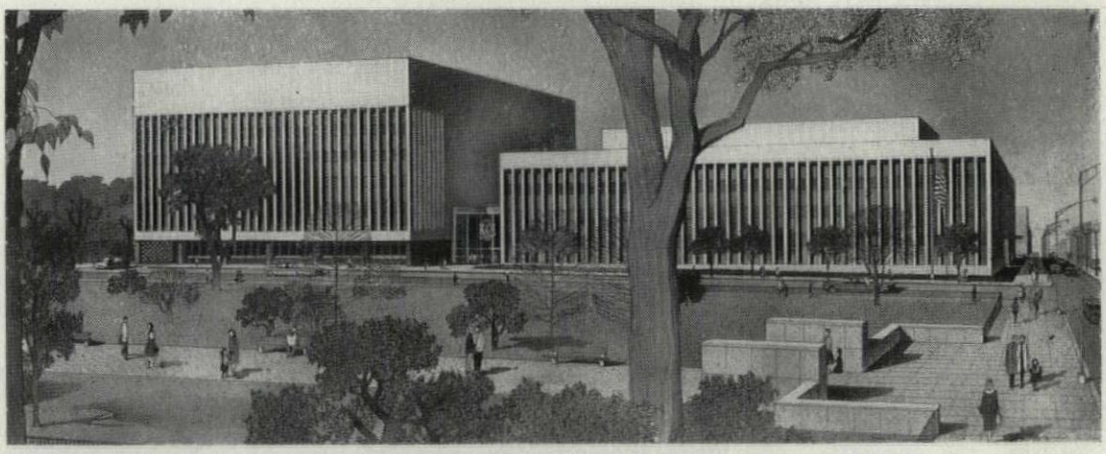
BULLDOG ELECTRIC PRODUCTS DIVISION
I-T-E CIRCUIT BREAKER COMPANY
BOX 177 • DETROIT 32, MICHIGAN

In Canada: 80 Clayson Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

**Vacu-Break and Clampmatic are registered trademarks of the I-T-E Circuit Breaker Company. **Amp-Trap is a registered trademark of the Chase-Shawmut Company.*

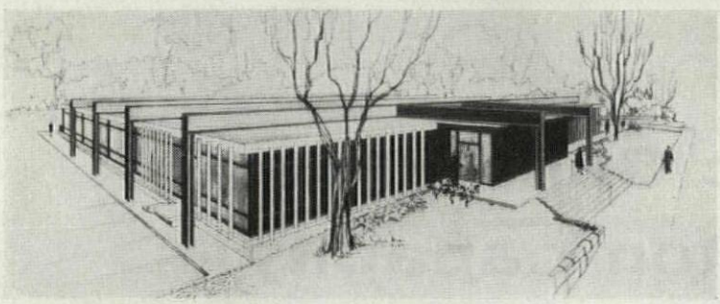
ST. LOUIS COOPERATIVE

A luxury cooperative apartment building (up to $50,000 for four bedrooms) will be built in the west section of St. Louis by the Millstone Construction Co. from plans by Richard Hafner. Named for its address, 801 Skinker, the new building will be 17 stories high and will contain 30 or 40 apartments, all with floor-to-ceiling windows shielded from the sun by projecting slabs. A roof garden, terrace, and sun deck are planned for the top floor.



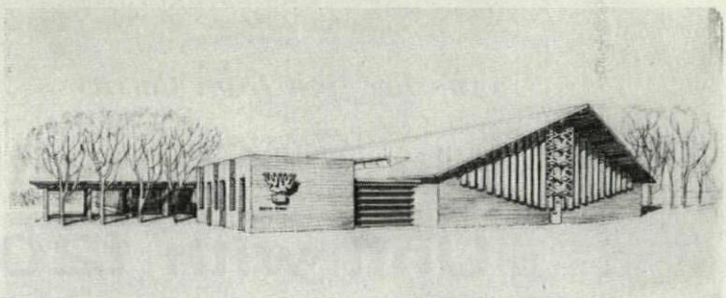
BROOKLYN U. S. COURTHOUSE AND FEDERAL OFFICE BUILDING

In Brooklyn, the General Services Administration will build a $16 million federal center (above) consisting of a six-story U. S. Courthouse and a four-story Federal Office Building. The two will be joined at ground level by a high-ceilinged walkway and linked visually by the striped pattern of limestone piers on both façades. Up to the second floor, the courthouse will be faced in granite. Both buildings will be air conditioned. The design is the work of two New York firms, Carson & Lundin and Lorimer Rich & Associates.



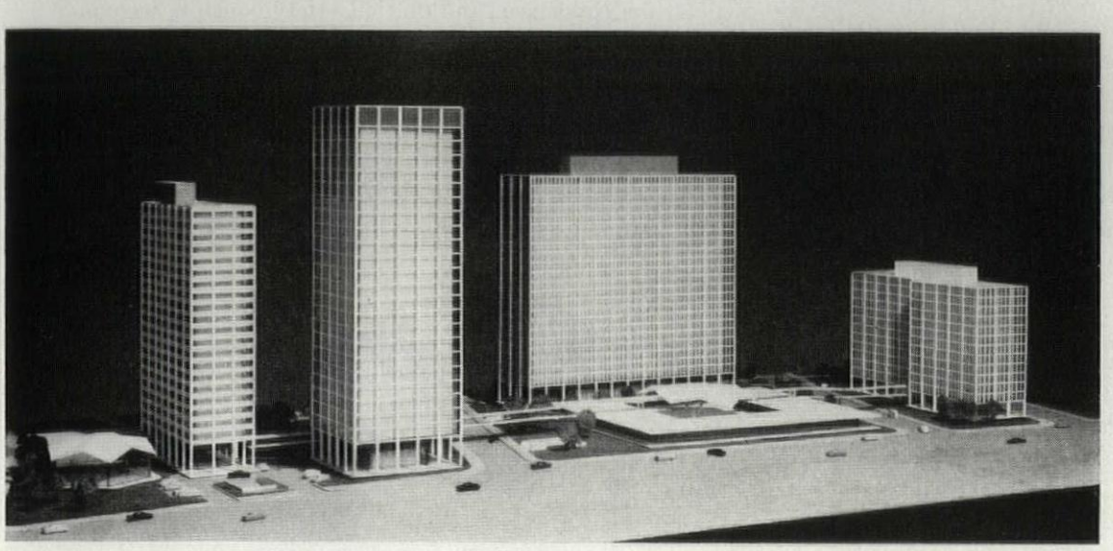
OIL COMPANY HEADQUARTERS NEAR KANSAS CITY

By suspending their roof-ceiling system from 36 in. I-beams, three Kansas City architects offered their client, the Hudson Oil Co., column-free office space which can be shuffled as needed. The nonload-bearing exterior walls will be insulated metal panels, glass, and solar fins to control sun and glare. The new offices, to be completed in Westwood, Kan. next summer, are on two levels. Associating architects: David Mackie & I. Lloyd Roark and John Lawrence Daw.



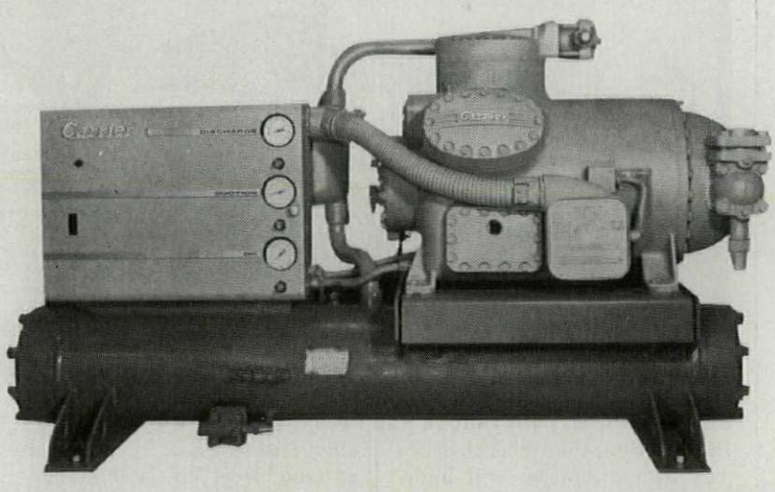
SYNAGOGUE-ON-A-BUDGET IN NEW JERSEY

Faced with a small budget, New York Architect Percival Goodman designed a small, flexible synagogue in Springfield, N.J., to fit his clients' needs. Folding partitions divide the main hall into three sections: a sanctuary, which seats 300, a lounge, a social hall and stage. For Holy Day services the hall can be opened to seat more than 1,000. Construction will be glue-laminated timber wood decking, and used brick. Associate architect: Stanley James Goldstein.



SMALL CITY IN LOS ANGELES

Recently announced plans in Los Angeles would create a "city within a city" on three square blocks along Wilshire Blvd. The sponsors, headed by New York Developer George Warnecke, hired Charles Luckman Associates to design the five-building, $30 million center. The scheme, left to right, calls for a 340-room hotel, a 22-story office tower, and two apartment buildings, the smaller one a cooperative. In the center: a one-story commercial area. The unifying architectural theme, Luckman says, will be the exterior columns on all buildings. END



COMPLETELY FACTORY ASSEMBLED

Models 6G, 6L

Another first from Carrier

New Hermetic Condensing Unit with 120-ton capacity!

With the introduction of the 6G and 6L, Carrier again leads the industry—offering complete hermetic condensing units with capacities up to 120 tons for both air conditioning and refrigeration installations.

Advance design provides this new Carrier 6G and 6L line with many distinct advantages for any job. For example:

1 Consisting of a compressor, motor, water-cooled condenser, safety controls and motor starting and protection equipment, these machines are all entirely factory assembled and wired. They arrive on the job site ready for installation, saving the time and cost involved in engineering assembly and wiring in the field. If desired, they can be specified without a water-cooled condenser for use with evaporative or air-cooled condensers.

2 Their modern hermetic compressors eliminate the problems of motor mounting, coupling alignment and shaft seal maintenance.

3 Their compactness provides space-saving installation. Notice that the compressor is mounted on the condenser, and that all safety controls are conveniently grouped on a control panel also mounted on the condenser.

For complete information about the modern Carrier hermetic condensers with capacities from 10 to 120 tons, call your Carrier dealer listed in the Yellow Pages. Or write Carrier Corporation, Syracuse 1, New York.

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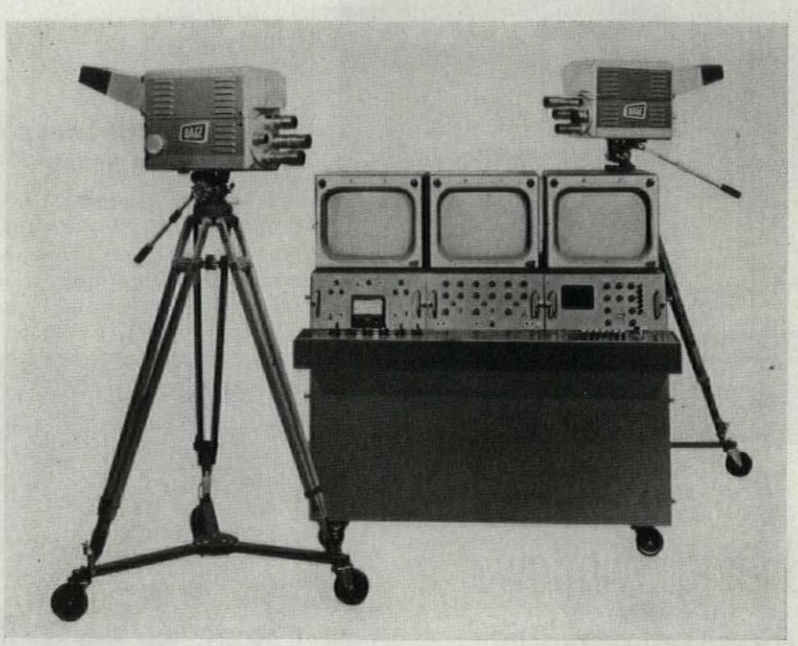


MOBILE TV SYSTEM FOR SCHOOLS
rolls easily from room to room

Schools that want to supplement regular instruction with closed-circuit television can now do so without building a TV studio. For such schools, a division of Thompson Ramo Wooldridge has developed what it calls "a complete TV studio on wheels." The three-piece *Model ETS-1 system* (above) costs $11,800 and consists of two cameras equipped with view finder, hood, and rear-controlled four-lens turret, and a mobile console with video monitors, camera control, sync generator, power supply, and wave form monitor. The system is small enough to fit comfortably into a panel truck and pass through a 30 in. door. Shelf down, the console is 30 in. high, 28 in. wide, and 45 in. long. When needed, other equipment can be added to the basic system, and the console can take on more controls.

The new system makes audio-visual TV lessons as easy to present as films and slides. No special training is needed to operate it, and programs can be presented over any large TV set, slightly modified.

Manufacturer: Dage Television Div., Thompson Ramo Wooldridge Inc., Michigan City, Ind.

READY-MIXED CALKING COMPOUND
cures to tough, weatherproof joint

Maintz architectural calking compound, based on DuPont Hypalon, is factory-mixed under precise controls to eliminate on-the-job measuring and mixing. Applied by either gun or knife, Maintz cures to form a resilient, rubberlike material which is said to be weather-, water-, and bacteria-proof. It is available in 12 colors and costs about $15 a gallon, slightly less in 5 gallon pails.

Manufacturer: West Chester Chemical Co., Box 39, West Chester, Pa.

CONCRETE PLAY SCULPTURE
cast locally from rented molds

For city children a nostalgic Michigan sculptor designed the *Playwall*, a concrete play form which looks like Swiss cheese for a sandwich of Paul Bunyan proportions. When two curved walls are put together, they form a semicircular enclosure. The rounded holes (up to six in a wall) make handy toe and hand rests for climbers, and crawlers might pretend the holes are really caves.

Sculptor James E. Miller (who grew up in the country) invented a complex system of molds for the sculptures, and these may be rented from him, then set up for casting by a local concrete firm from instructions which accompany the molds. Where relatively short distances are involved—up to 300 miles from his home near Ann Arbor, for instance—Miller casts the forms himself and ships them

continued on page 62

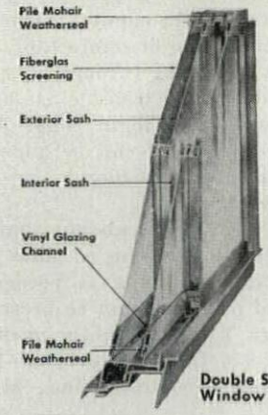
Architect: James, Meadows and Howard, Buffalo, N. Y.

Modern Fleetlite Sliding Windows Chosen for Tower Dormitory on the University of Buffalo Campus

Rising eleven floors above the University of Buffalo campus is the new Tower Dormitory... a masterpiece in concrete, brick and colorful terra cotta with row upon row of Fleetlite Aluminum Double Windows.

In planning this campus home for over 400 student residents, University authorities selected Fleetlite double windows for reasons of both comfort and economy. By a simple adjustment of the interior and exterior sliding sash, students may enjoy indirect ventilation regardless of the weather. No stuffy rooms, no drafts, no possibility that rain or snow will damage furnishings.

Fleetlite double windows also mean double economy. A "blanket of air" insulation between the sash results in more efficient heating and subsequent fuel savings. At the same time, there is economy in maintenance. Durable aluminum requires no painting; vinyl plastic replaces putty; and, since all sash may be removed from the inside for cleaning, costly and dangerous outside window washing is eliminated.



Double Sliding Window

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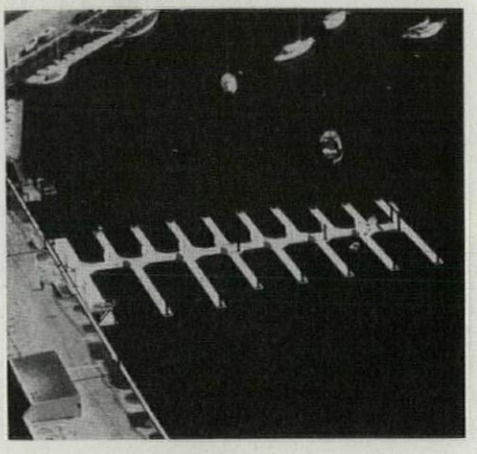
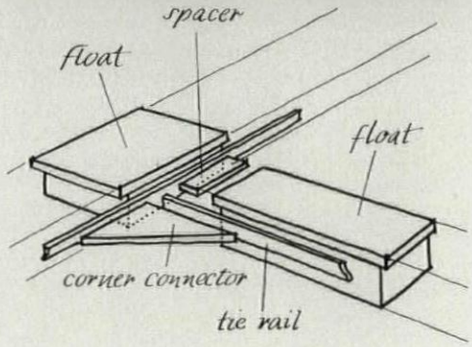
by truck. In either case, the finished walls are set in place by a small crane and embedded 1 ft. in the ground. When ready for small climbers, the sculptures are 5 ft. tall, 6 ft. across, and 2½ in. thick. The cost estimate for renting and shipping the molds, concrete casting, and installation is $310 for two walls.

Manufacturer: James E. Miller, 12860 W. Ten Mile Rd., South Lyon, Mich.

PRECAST CONCRETE DOCK UNITS join to form fingers and walks

Like large dominoes, precast concrete dock units, called *Unifloat*, line up in a variety of ways for small-boat moorings. Used as marinas, floats may be strung out single-file, fingers at right angles (see photo and drawing), or they may be grouped





more elaborately by angling fingers obliquely from walkways.

Unifloat is a hollow block of lightweight expanded shale aggregate concrete, wire-mesh reinforced, with a 6 in. lip projecting above the water line. In assembly, the units are held together by plywood tie rails bolted into threaded inserts cast into the floats. Enough space is left between one float and the next to allow for slight movement. The float formations are held in place by pilings or cable anchors. Currently, floats are produced in 8 ft. lengths and 3, 4, 6, and 8 ft. widths. A much larger size, suitable for industrial use, is being developed. Unifloat costs about the same amount as a first-class wood dock, but is almost maintenance-free and offers a splinterless, cool, nonskid surface.

Because Unifloat's bulkiness limits shipments to relatively short distances from its California home port, Fibrecrete is

licensing manufacturers to produce Unifloat in other parts of the country.

Manufacturer: Fibrecrete Corp., 1617 W. Gaylord St., Long Beach 13, Calif.

LEAD-FILLED FABRICS deaden sound and vibration

A family of lead-filled fabrics called *Coustifab* combines lead's sound and vibration-deadening qualities with the flexibility of fabric. First used to reduce noise and vibration in aircraft, Coustifab performs more workaday chores as a vibration-deadener in business machines. In the construction field its acoustical properties make it a suitable material for wall panels, folding doors, ceiling and wall coverings.

The name Coustifab covers all the lead powder-filled vinyl-coated fabrics made by the Cordo Chemical Corp.—cotton duck, glass fabric, and the newest, aluminum foil laminated to glass fabric. All are finished in glossy gray or, in the case of the glass fabrics, topcoated in other colors. Although they vary somewhat in their specific properties, in general they offer fire resistance, high sound transmission loss, and vibration dampening. Foams, such as urethane, polyether, or fire-resistant vinyl, can be laminated to these fabrics for both high- and low-level sound absorption. Weights vary from 2 to 15 pounds per sq. yd. In quantities of 25 to 50 yds., prices start at about $4 a yd. for cotton duck and run up to $11 a yd. for the heaviest glass fabrics.

Manufacturer: Cordo Chemical Corp., 34 Smith St., Norwalk, Conn.

MAHOGANY GRAIN WALL COVERING imitates wood veneer's texture

Because it reproduces the texture of wood, including surface irregularities as well as the grain, L. E. Carpenter's *Hondura Viertex* comes close to looking like mahogany veneer. It is most successful, of

course, in the brown shades, such as nutmeg, benedictine, honey, and colonial, but it is available in eight other colors as well. Hondura is a tough vinyl wall

continued on page 64

covering, 54 in. wide, cotton backed, and is applied to the wall with Carpenter's F-11460W paste. According to the manufacturer, it can be wiped clean with a damp cloth and will not crack, chip, peel, or scratch. It costs about 56 cents a sq. ft.

Manufacturer: L. E. Carpenter & Co., 350 Fifth Ave., New York 1.

PREFINISHED HARDWOOD PANELS resist scratches and stains

Aiming for a durable finish on hardwood paneling, Harbor Plywood Corp. bakes synthetic resins into its plywood panels under infrared lamps. This process makes a hard surface that resists stains, scratches, and fingerprints. All that is required to keep paneling in top-notch condition, the manufacturer says, is an occasional swipe with a damp cloth to remove spots. In addition to prefinished paneling in nine woods, Harbor manufactures molding to match and color-coordinated materials, such as putty sticks, stains, and topcoats for finishing raw woods. Panels are available in two sizes: 4 ft. by 7 ft. and 8 ft. by 10 ft., and they may be nailed

or cemented to the wall. Prices run from about 40 cents to 76 cents per sq. ft., depending on the wood chosen.

Manufacturer: Harbor Plywood Corp., Aberdeen, Wash.

FAST-DRYING ALUMINUM PAINT prevents damage from overspray

Dri-Spray Aluminum, a new paint manufactured by the Tropical Paint Co., dries almost instantly in the air—so quickly, in fact, that any overspray particles blown on nearby structures or cars can be dusted off, making drop cloths or other protection unnecessary. This fast-drying property makes it appropriate to applications which would ordinarily require several coats. Instead, the surface is simply sprayed continuously until the film is the proper thickness. The manufacturer rec-

ommends it for inside or outside spray application on metal, wood, concrete, or plaster and suggests that it is especially suitable to bridges, fences, tanks, and smokestacks. Dri-Spray is 100 per cent aluminum pigment in a fast-drying vehicle of synthetic resins and costs $6.80 a gallon, which will cover 200 sq. ft. with an average dry film thickness of 2½ mils.

Manufacturer: Tropical Paint Co., Cleveland 2.

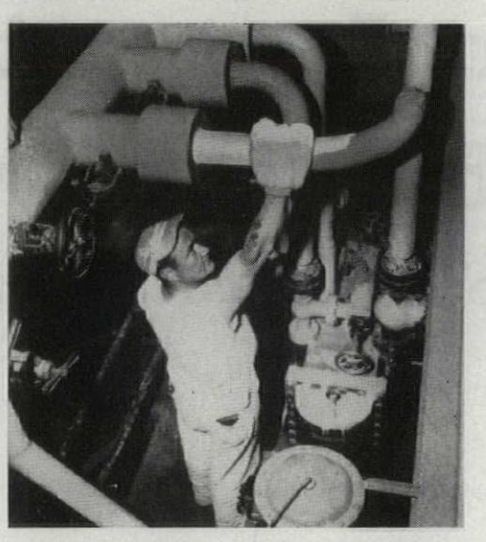
GOLD-COLORED ALUMINUM SKIN gleams on Kaiser Center exterior

The nearly completed Kaiser Center in Oakland is wrapped in gold-colored aluminum skin, a new sheet developed by Kaiser Aluminum & Chemical Corp. as a standard product. Because the color is inherent in the alloy rather than applied as a coating, the gold is said to be sunfast and to eliminate matching problems. Kaiser calls it *Number 80 Architectural Sheet* and produces it in stucco, ribbed, diamond, square, wood grain, pebble grain, leather grain, and fluted embossed patterns. The sheet's maximum width is 60 in., its maximum length 30 ft., and it may be ordered in thicknesses from 0.060 in. to 0.125 in. The cost per pound is 55 cents to 60 cents in quantity lots.

Manufacturer: Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland 12.

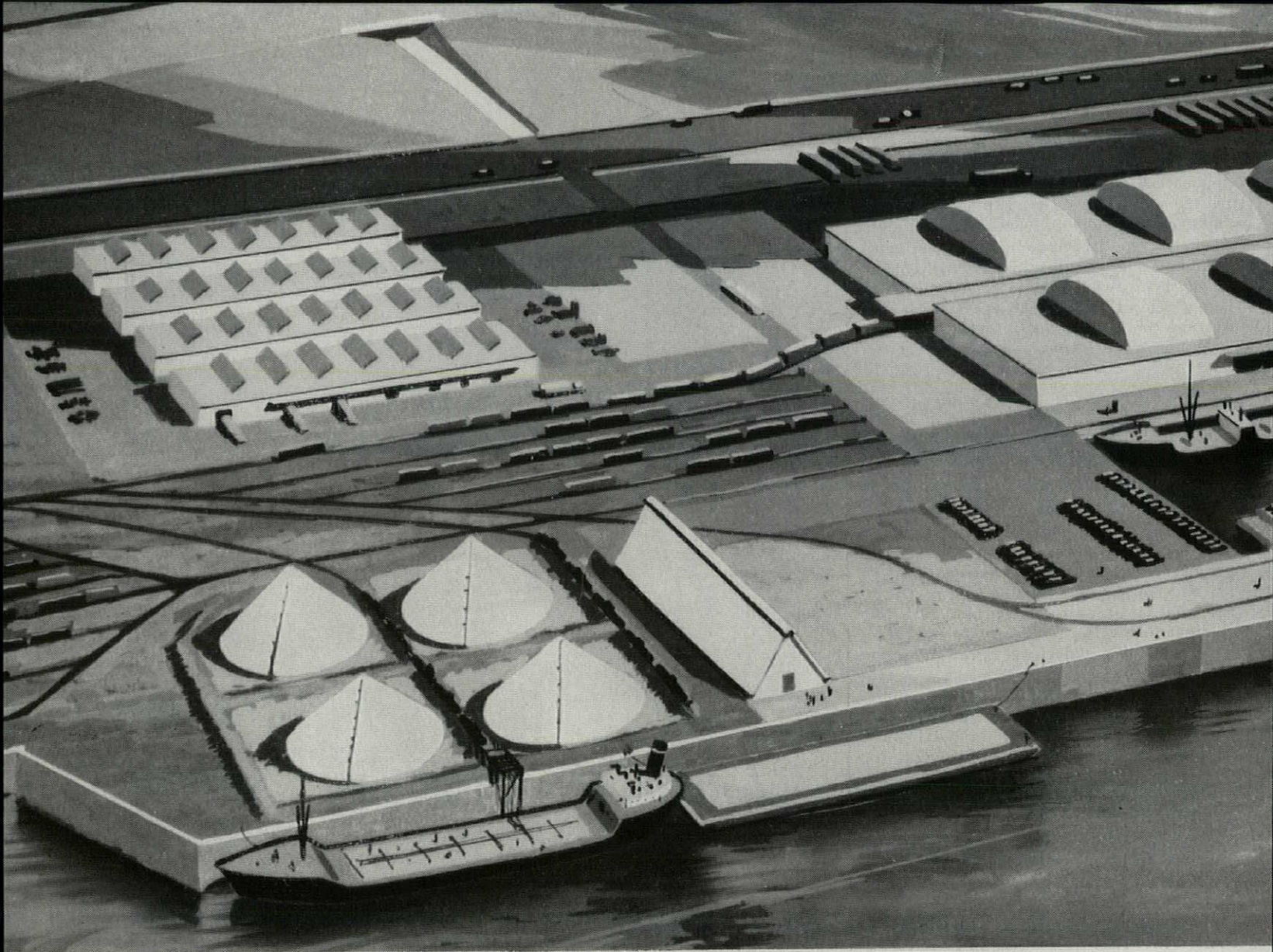
PAINT MITTEN reaches corners, encircles pipes

A versatile addition to a painter's equipment is a *Paint Mitt* which squeezes into hard-to-paint corners and wraps around curved surfaces. The mitt is made of lambskin in two styles—with and without thumb—and costs $2.25. To use, the



painter dips his mittened hand lightly into paint, then applies it to the surface. The resulting "mitt finish" matches the texture of roller painting.

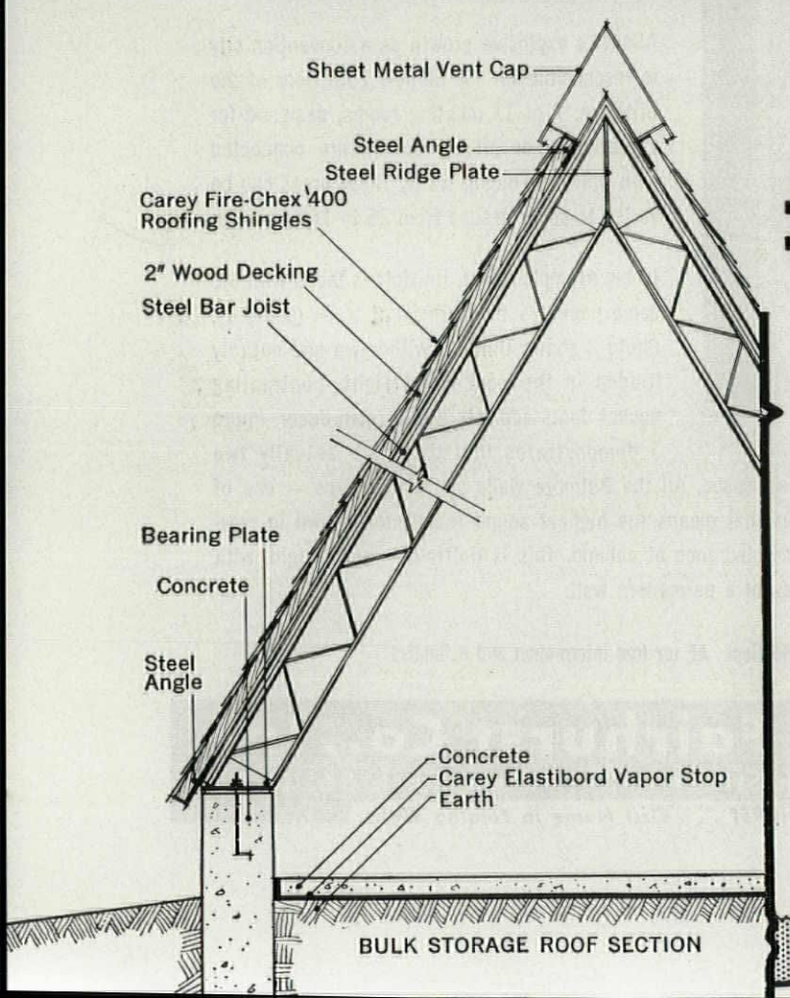
Manufacturer: Bestt Rollr Co., 160 S. Brooke St., Fond du Lac, Wis. END

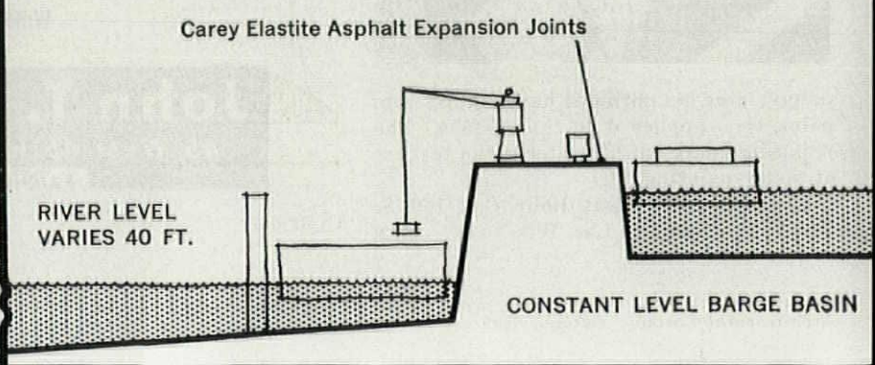


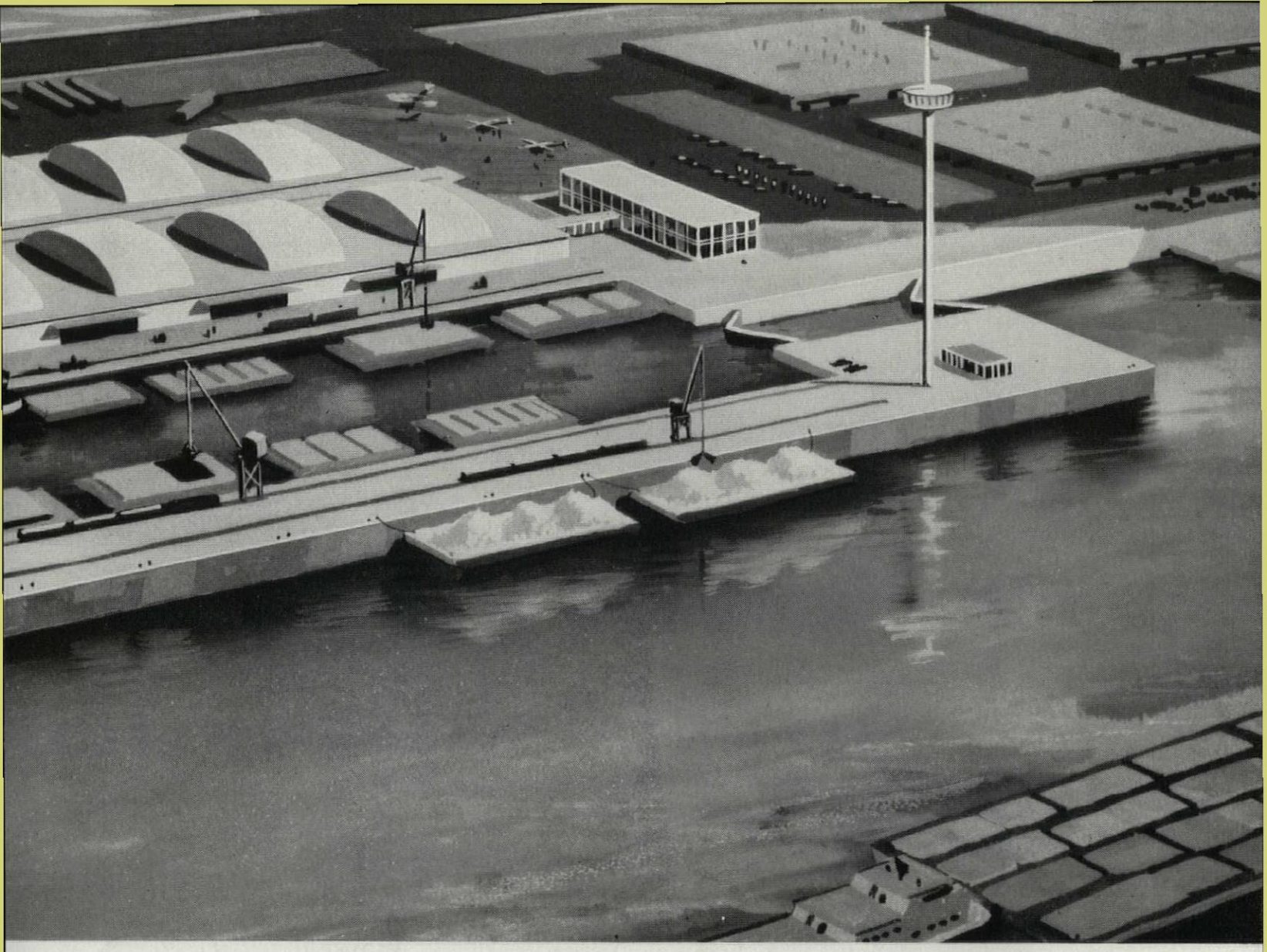
Smith & Entzeroth, a.i.a.
plan an

inland port facility

for St. Louis Missouri







The growing importance of the mid-continent as a center of manufacturing and distribution has focused national attention on the need for integrated transportation facilities for domestic and international commerce.

In recognition of this expanding need Carey commissioned the architectural firm of Smith & Entzeroth, St. Louis, Missouri, to design a prototype installation combining air, rail, truck and waterway transportation and including all transfer and storage accommodations.

After considerable research Messrs. Smith & Entzeroth selected a new industrial site on the Mississippi River, north of the city of St. Louis and adjacent to St. Louis County's new circumferential truck route. At this point barge lines, railroads and highway carriers could efficiently unload, load and transfer every type of cargo to or from any destination in the mid-continent. Via the inland waterway and the Port of New Orleans exporters and importers can reach markets all over the world quickly and conveniently.

To handle expanding air-freight traffic a cargo port is located nearby so that all shipping can be coordinated with surface carriers.

In the development of this project a number of Carey Building Products were used in ways that may be interesting to other architects and to engineers and contractors. Detail sheets and brief specifications on these uses have been prepared by the architects and are available from your Carey representative. Or, you may prefer to write The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio. Dept. AF 10-59.

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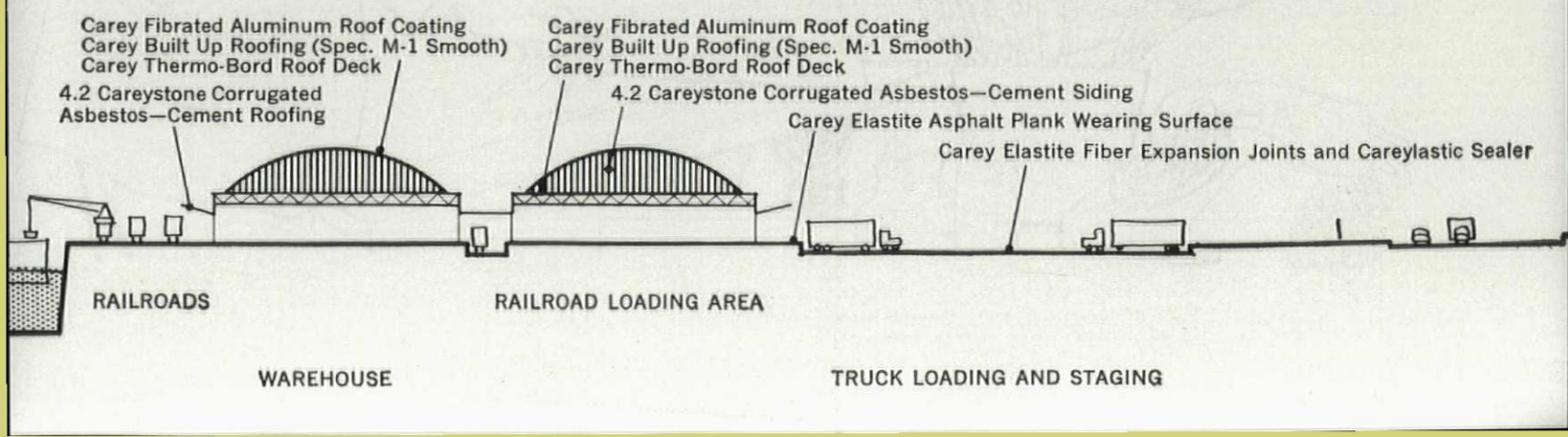

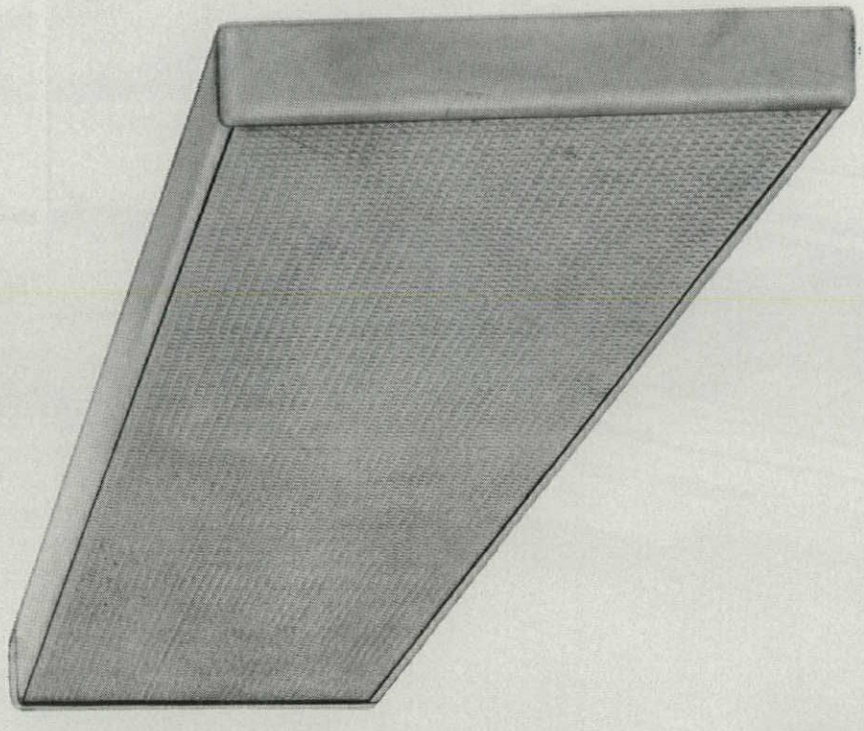

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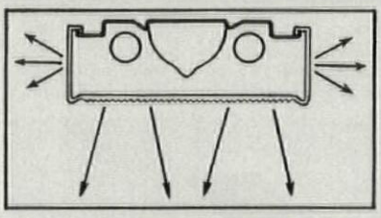
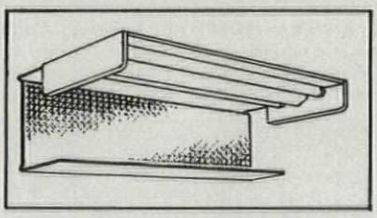


The fine-textured prismatic lens floods low-brightness illumination downward. The low-brightness diffuser sides send soft light out across ceilings, reduce brightness contrasts.



For maximum rigidity, the combination lens-diffuser is supported along its full length. Safety hinges permit access from either side of lens diffuser, cannot be accidentally dislodged.

To learn more about Prismalux by Lightolier, write today for a complete brochure to Dept. AF-109.

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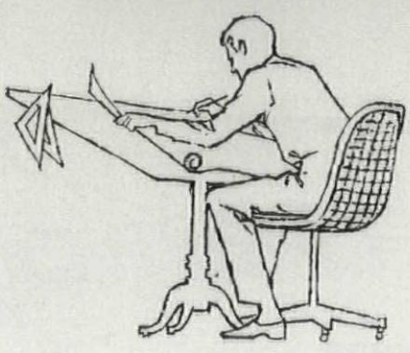

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National Elec. Wholesalers

FLORIDA
Miami:
Farrey's Whlse. Hdwe. Co.

GEORGIA
Atlanta:
Electrical Wholesalers
Noland Co.
Augusta:
Hart Electric Sup. Co.

ILLINOIS
Chicago:
Efengee Elec. Sup. Co.
Englewood Elec. Sup. Co.
Harlo Elec. Sup. Co. Inc.
Hyland Elec. Sup. Co
Metropolitan Elec. Sup.
Steiner Elec. Co.
Wholesale Elec. Sup. Co.
Elgin:
Fox Elec. Sup. Co.
Rockford:
Englewood Elec. Sup. Co.
Springfield:
Springfield Elec. Sup. Co.

INDIANA
Ft. Wayne:
Mossman-Yarnelle Co.
Gary:
Englewood Elec. Sup. Co
South Bend:
Englewood Elec. Sup. Co.

IOWA
Des Moines:
Weston Lighting, Inc.

KANSAS
Kansas City:
W. T. Foley Elec. Co.

KENTUCKY
Louisville:
Henry J. Rueff Co.

LOUISIANA
Baton Rouge:
Electrical Wholesalers Inc.
New Orleans:
Interstate Elec. Co.

MAINE
Bangor:
Standard Elec. Co.
Portland:
Holmes Elec. Supply Co.

MARYLAND
Baltimore:
Excello Public Serv. Corp.
Salisbury:
Artcraft Elec. Sup. Co.

MASSACHUSETTS
Boston:
Mass. Gas & Elec. Light Co.
Henry L. Wolfers, Inc.
Pittsfield:
Carr Supply Co.
Springfield:
Eastern Elec. Sup. Co.
Worcester:
Atlantic Elec. Sup. Co.
Benjamin Elec. Sup. Co.

MICHIGAN
Detroit:
Madison Elec. Co.
Michigan Chandelier Co.
Flint:
Royalite Co.
Grand Rapids:
Purchase Elec. Sup. Co.

MICHIGAN (cont.)
Jackson:
Electric Wholesale Sup. Co.
Pontiac:
Standard Elec. Co.
Saginaw:
Schmerheim Elec. Co.
Standard Elec. Sup. Co.

MINNESOTA
Duluth:
Northern Elec. Sup. Co.
Minneapolis:
Charles A. Anderson & Co.
Northland Elec. Sup. Co.
St. Paul:
Lax Elec. Co.

MISSOURI
Kansas City:
Glasco Elec.
St. Louis:
M. K. Clark

MONTANA
Great Falls:
Glacier State Elec.

NEBRASKA
Lincoln:
White Elec.
Omaha:
Electric Fix. & Sup. Co.

NEVADA
Reno:
Western Elec. Dists. Co.

NEW HAMPSHIRE
Portsmouth:
Mass. Gas & Elec. Light Co.

NEW JERSEY
Atlantic City:
Franklin Elec. Sup. Co.
Cherry Hill-Delaware Township:
Flynn's Camden Elec. Fix. Co.

NEW MEXICO
Albuquerque:
The Lighting and Main. Co.

NEW YORK
Binghamton:
Freije Elec. Sup. Co.
Buffalo:
Buffalo Incand. Light Co. Inc.
Niagara Falls:
Hysen Supplies Inc.
Poughkeepsie:
Electra Sup. Co.
Rochester:
Rowe Electric Sup. Co.
Syracuse:
Superior Elec. Corp.

NORTH CAROLINA
Charlotte:
Independent Elec. Sup. Co.
Durham:
Noland Co.
Greensboro:
Elec. Sup. & Equip. Co.
Kinston:
Kinston Elec.
Winston Salem:
Noland Co.

NORTH DAKOTA
Fargo:
Northwest Elec. Sup. Inc.

OHIO
Akron:
The Sacks Elec. Sup. Co.
Canton:
Electric Sales Co.
Cincinnati:
B. & B. Elec. Co.
F. D. Lawrence Electric Co.
Richards Elec. Sup. Co.
Cleveland:
The H. Leff Electric Co.
Midland Elec. Co.
Columbus:
Elgee Elec. Co.
The Loeb Elec. Co.
Dayton:
Duellman Elec. Co.
Springfield:
The W. W. Elec. Co.
Toledo:
Gross Elec. Fix. Co.
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Fluorescent Sup. Co.
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Power Elec. Co. Inc.
Kingston:
Anthracite Elec.
New Castle:
Midwestern Elec. Co.
Philadelphia:
Ace Lighting Fix. Co.
Gold Seal Elec. Sup. Co.
Sylvan Elec. Fix. Co.
Pittsburgh:
Allied Elec. Sup. Co.
Argo Lite Studios
Scranton:
Lewis & Reif, Inc.
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Nashville:
Nashville Elec. Sup. Co.

TEXAS
Austin:
Southern Electric Sup. Co.
Dallas:
Rogers Elec. Sup. Co.
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VIRGINIA
Arlington:
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Noland Co.
Lynchburg:
Mid-State Elec. Sup. Co., Inc.
Norfolk:
Noland Co.
Roanoke:
Noland Co.

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Huntington:
West Virginia Elec. Co.
Wheeling:
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WISCONSIN
Appleton:
Moe Northern Co.
Eau Claire:
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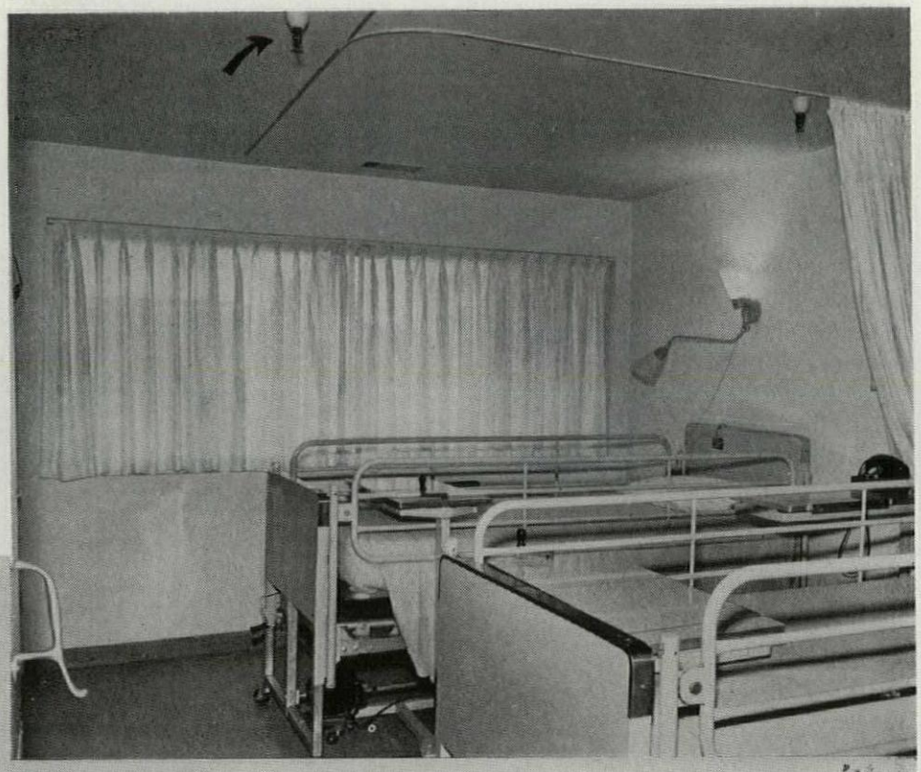
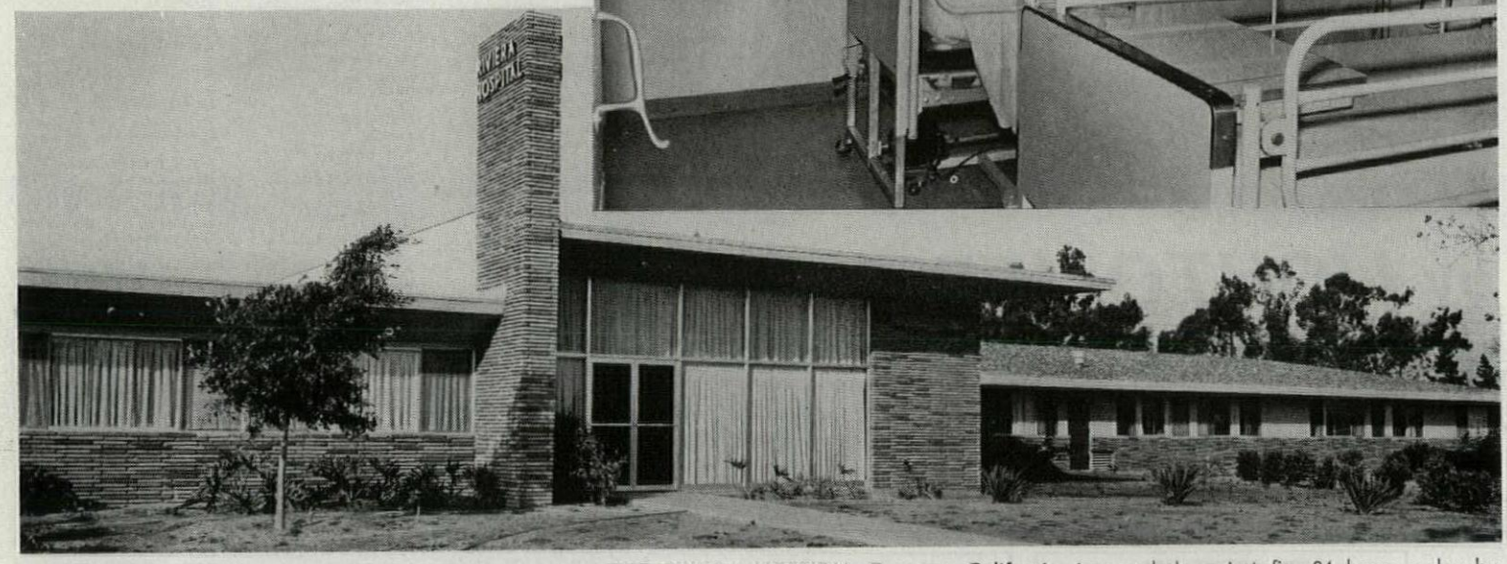
CANADA
Montreal:
L. D. G. Products, Inc.
The Gray Elec. Co.
Union Electric Sup. Ltd.
Quebec City
La Cie Martineau Electric Co.
Toronto:
Revere Elec. Dist.
Toronto Ltg. Studios

HAWAII
Honolulu:
Hawaiian Light & Sup. Co.

Fire-Safe HOSPITAL



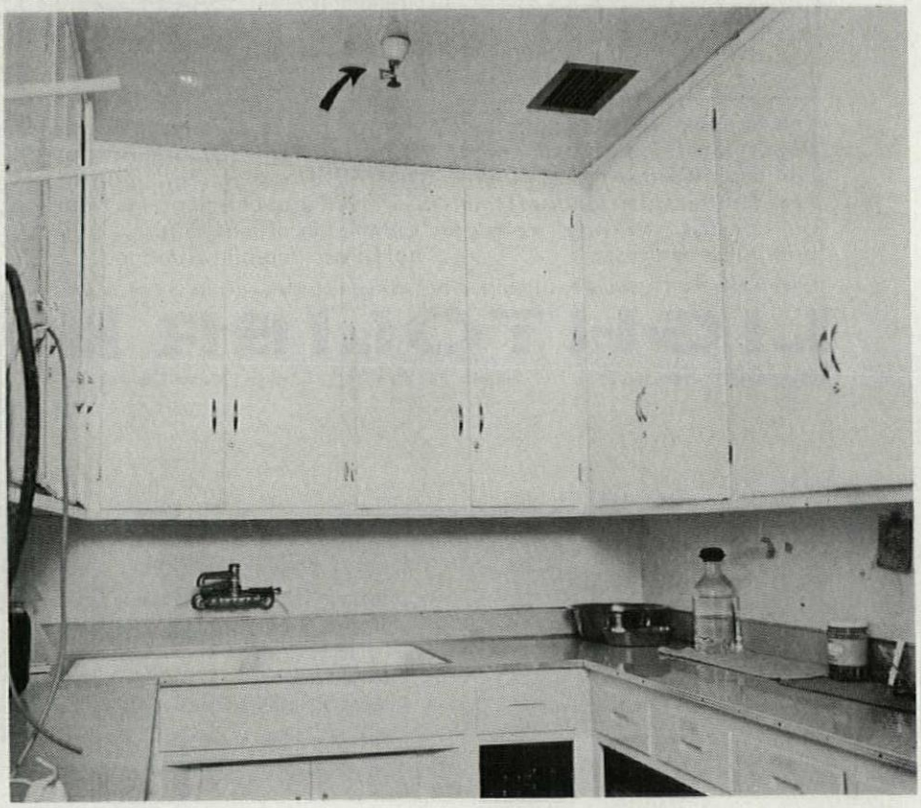


THE RIVIERA HOSPITAL, Torrance, California, is guarded against fire 24 hours a day by automatic sprinklers. On April 10, 1958, at 2:30 A.M., a sprinkler fused over a fire of unknown cause in a small surgery clean-up room. Within seconds, an alarm was ringing and water had knocked the flames out. Sleeping and infirmed patients were not placed in danger.

Among the many considerations involved in the design of a hospital are safety and economy.

Long-range economy can be achieved by including an automatic sprinkler system in the design of a hospital. The need for costly enclosures and insulation of structural supports is eliminated. And the record of successful extinguishments by automatic sprinklers has resulted in reduced insurance premiums for all buildings where sprinklers are installed.

Not a single life has ever been lost from fire in a completely sprinklered hospital. Automatic sprinklers stop fire at its source —thus protecting life and property at all times.



FOR FURTHER PARTICULARS WRITE TO:

National Automatic Sprinkler and Fire Control Association, Inc.

60 East 42 Street, New York 17, N. Y.
MUrray Hill 2-8691

OLNEY HIGH SCHOOL, PHILADELPHIA, PA. ARCHITECTS: BORIE & SMITH.

Every Architect, every Builder, every City or Town official, every Citizen recognizes the need for *economy in school building.* Not all, however, understand how true and lasting economy can be achieved. The beautifully illustrated, 24 page MIA brochure "Modern School Building" is a fully documented study of *true values* in school design. Write now for your free copy. *And remember . . .* ***You'll always be proud of***

Marble

MARBLE INSTITUTE OF AMERICA, INC.

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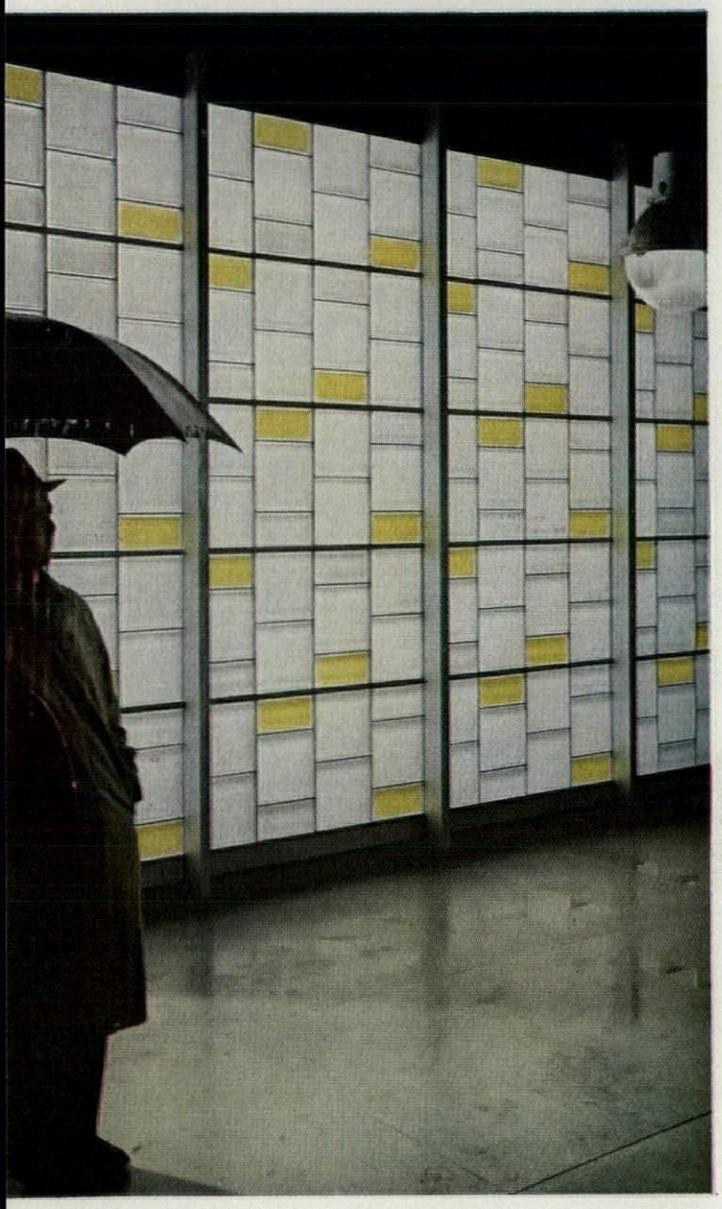
THINLITE

...the only prefabricated curtain wall system that controls daylight!



Soft light from interior through solar-selecting panels enhances beauty of building at night.

The design flexibility of prefabricated THINLITE Curtain Wall offers a unique challenge to your creative ingenuity.

A complete curtain wall system, THINLITE incorporates factory-fabricated panels—two inches thick. Also provided are all necessary metal parts, such as struts and other accessories, to permit the erection of a complete wall.

Prefabricated THINLITE has these advantages:

- Flexibility in architectural design
- Daylight control
- Double-gasketed weather-proofing system
- Simplicity of erection
- Low solar heat transmission
- Thermal insulation
- Vision and ventilation—with fixed and operating sash

Design freedom outside... daylight control inside—

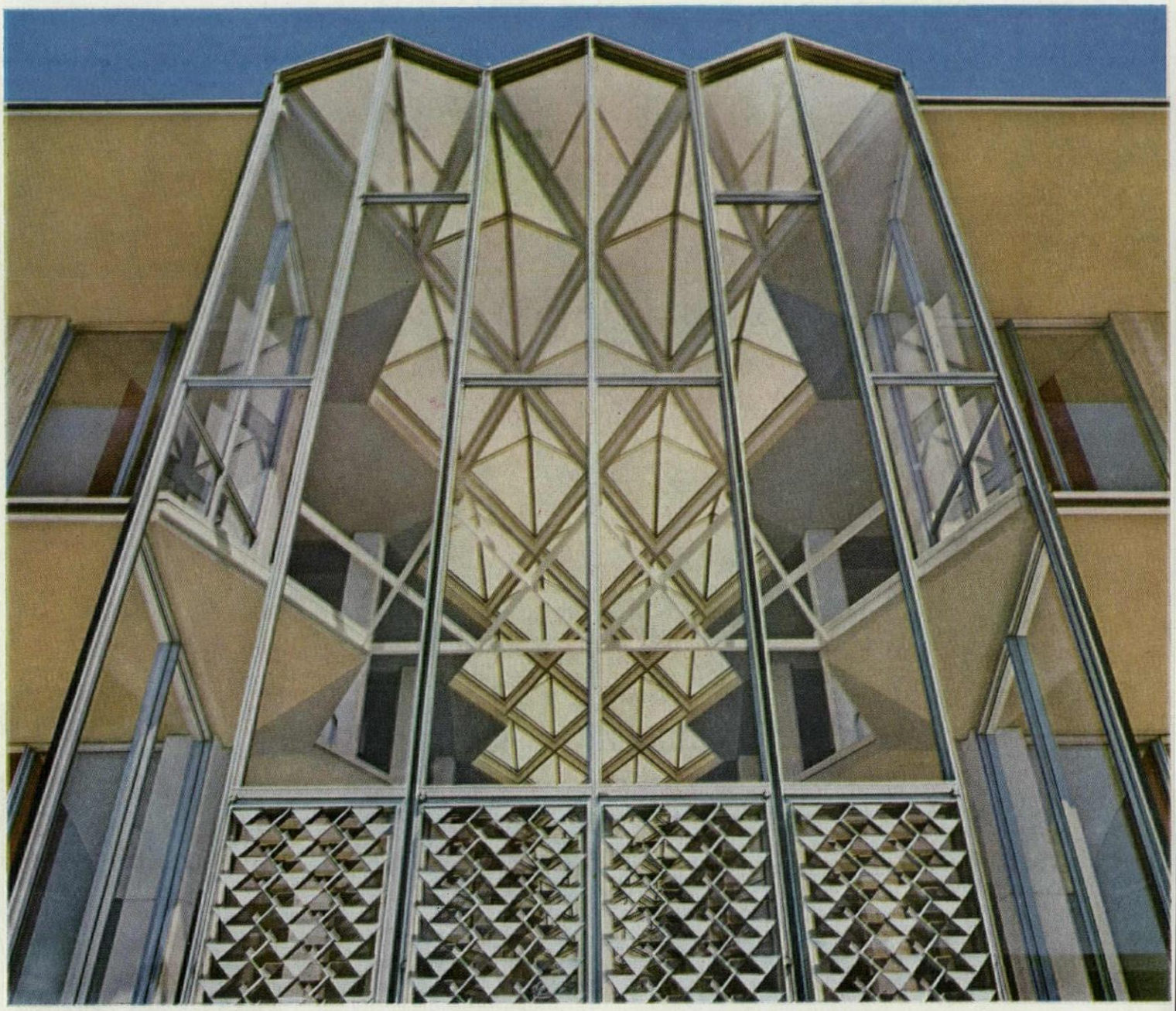
THINLITE Curtain Wall offers a new dimension in design flexibility... plus built-in daylight control. Available in four standard panel styles and a variety of colors. Custom styles to specifications.

For complete data file on this radically new curtain wall system, write:
Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-10, Box 1035, Toledo 1, Ohio.

wall patterns in glass...

THINLITE CURTAIN WALL
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO



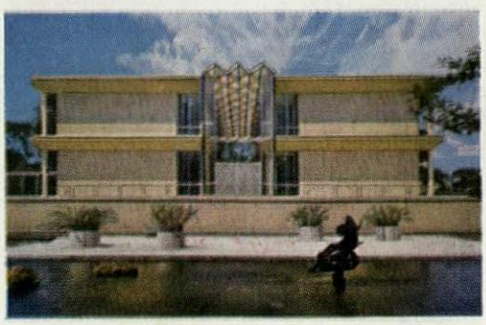
Aluminum blends with diverse styling at Wayne University

The amazing ability of aluminum to combine with diverse historical influences in the creation of extraordinary functional beauty is clearly illustrated in Detroit's Wayne State University McGregor Memorial Conference Building.

In a structure that ingeniously blends modern, classic, Renaissance and oriental moods, Alcoa® Aluminum provides a distinctive contemporary touch with handsome sculptured doors in natural Alumilite* finish. A black porcelain-enameled aluminum strip forms a vertical accent along the fascia. Inside, an aluminum skylight in honeycomb pattern provides an elegant contrast to the straight classical lines.

Aluminum's versatility makes it practical for virtually any architectural style. Its other practical advantages include: lighter weight that assures lower labor and handling charges and faster erection; corrosion resistance that eliminates painting and expensive maintenance.

For news of the latest developments in architectural applications of aluminum, look to Alcoa. As the pioneer and leader in this field, Alcoa is in a unique position to help you.



Contact your Alcoa sales office for more information, or write Aluminum Company of America, 1822-K Alcoa Building, Pittsburgh 19, Pennsylvania.

*Trade Name of Aluminum Company of America

Building: McGregor Memorial Conference Building, Wayne State University, Detroit, Mich.

Aluminum Screen Sculptor: Lee DuSell, Syracuse, N. Y.

Architect: Minoru Yamasaki and Associates, Birmingham, Mich.

General Contractor: Darin & Armstrong, Inc., Detroit, Mich.

Aluminum Subcontractor: Moynahan Bronze Company, Flat Rock, Mich.

Landscape Architect: Eichstedt-Johnson Associates, Detroit, Mich.

Your Guide to the Best in Aluminum Value

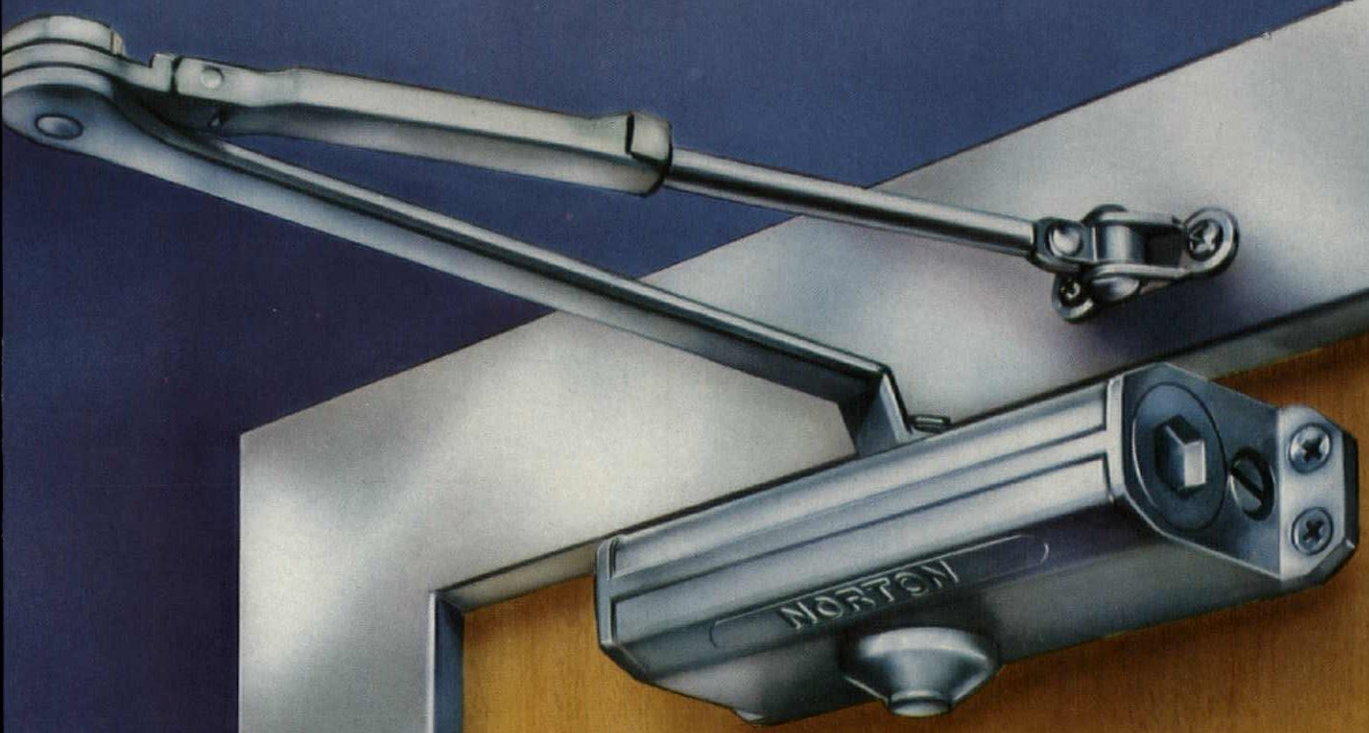
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

... the architect's metal!

For exciting drama watch "Alcoa Presents" every Tuesday ABC-TV, and the Emmy Award winning "Alcoa Theatre" alternate Mondays, NBC-TV

ANOTHER NORTON first!



new TRIMLINE

SURFACE-MOUNTED DOOR CLOSERS

set new standards of architectural harmony with the clean-lined simplicity of contemporary door design.

SEE THE FOLLOWING PAGES FOR FULL DETAILS

MODERN DOOR CLOSERS FOR MODERN DOORS
...built to serve, not for years, but for a lifetime.

Note how perfectly the TRIMLINE closer

NORTON

TRIMLINE

The "New Look" in Door Closers for the "New Look" in Doors

As architectural "gingerbread" has continue giving way to the clean, uncluttered look, th need for door closers to match has grown in creasingly urgent. Norton design has alway kept well ahead of that need, but never at th cost of reducing efficiency for the sake of com pactness or styling.

THERE'S A NORTON CLOSER TO

More New-Look NORTON Closers For New-Look Doors

Engineered for today's demanding service requirements, styled for the modern look in today's doors and trim, yet with no deviation from traditional Norton quality and operating efficiency.

SERIES 750 CORNER-TYPE CLOSER

New extruded aluminum closer for metal or wood exterior doors with narrow top rail.

Powerful as it is, this unique closer is amazingly inconspicuous because it blends so smoothly with the door's top rail. The arm channel is set into the top rail so that it cannot be seen. Full rack-and-pinion mechanism combines with a special spring to assure maximum durability and unvarying efficiency. Handles the heaviest of standard exterior doors with ease.

EXTRA-COMPACT FULL SURFACE CLOSER

A miracle of compactness... projects only 1½ inches from door... less than half as much as regular surface-mounted closers. Nevertheless, this closer is designed and built in the Norton tradition to withstand constant use, maintaining full closing power and top operating efficiency at all times. For interior doors only... Models 702N and 703N.

SERIES 704 FOR HEAVIER DOORS

Norton developed this series to satisfy the many requests for closers like 702 and 703, but heavier and more powerful. Shell is of molded aluminum enclosed in a wrought metal covering of pleasing modern design. Projects only 2″. Suitable for doors up to 3′6″ x 7′... regular or holder arms... surface-mounted shoe only.

harmonizes with this modern narrow-rail door.

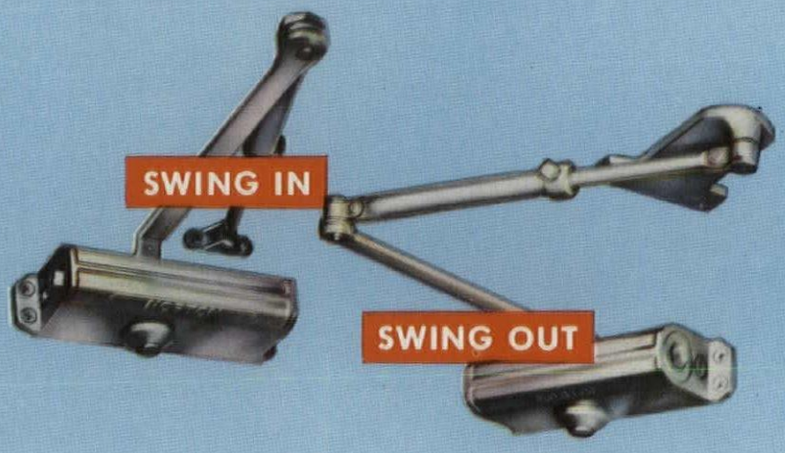
Norton's outstanding new *Trimline* series is product of this policy. The trim, modern lines hich suggested the name make *Trimline* clos-rs ideal for the narrow-rail doors now so widely sed, but they are equally at home on any door. *Trimline* closer mounts neatly on the top rail, iminates hangovers, blends beautifully into he trim, and unobtrusively complements the esign of the door.

TIME-TESTED MECHANISM

rimline closers are true liquid-type closers with ll the rugged dependability of the time-tested, lorton-originated rack-and-pinion mechanism roved virtually indestructible in thousands of stallations. They are powered by a specially esigned spring of highest-quality steel.

Closing speed can be precisely regulated with mooth, quiet operation throughout the swing f the door. The shell is lightweight aluminum, leal container for the Nortol fluid which pro-des both checking action and constant lubri-tion of every part. *Trimline* closers are non-anded, too; can be used on doors opening ther left or right.

The same Trimline closer serves for doors that swing out or in, right or left...is practically invisible from outside.

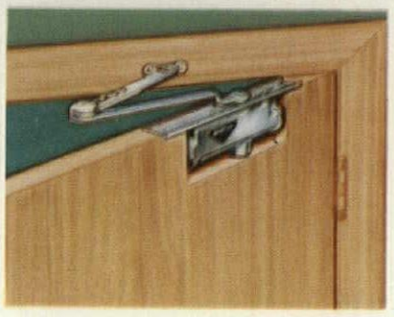


The *Trimline* series comes in sizes B, C, D and E, to handle doors of all standard weights and sizes...any desired type of arm. Send today for detailed specifications. No obligation...just mail coupon on page 4 of this insert.

MEET EVERY DESIGN REQUIREMENT

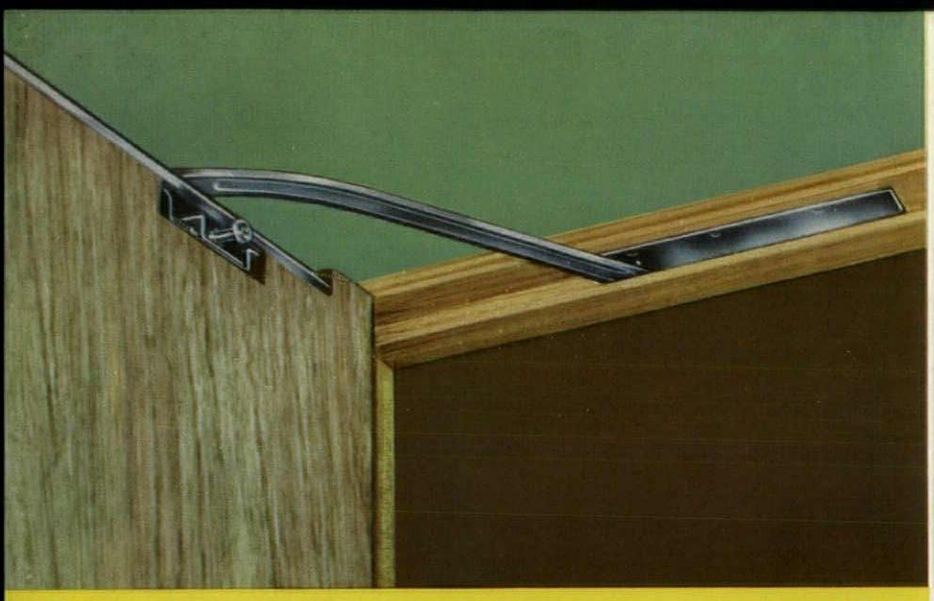
NORTON INADOR® CLOSERS

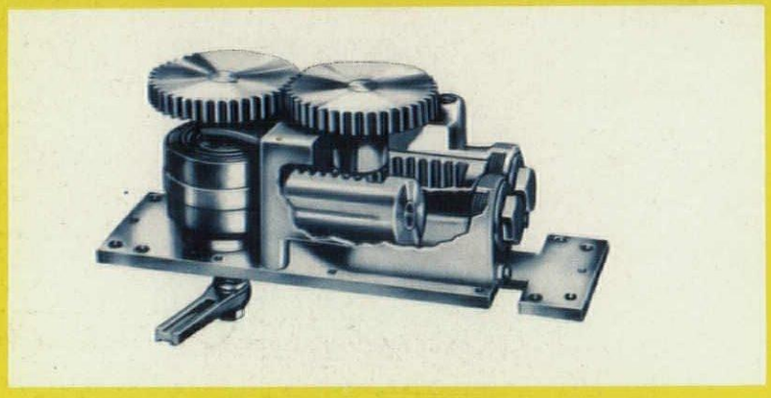
The out-of-sight closer that never intrudes upon the clean lines of modern door design.



The name INADOR applies not merely to a single model but to a complete line of single-acting closers for metal or wood *interior doors* hung on butts. Correctly installed, the INADOR closer is virtually invisible, since the entire mechanism fits snugly in the top rail of the door.

INADOR closers are available with all types of arms and mounts needed to take care of practically any specification. And, when you specify INADOR, you are specifying easy, efficient, almost maintenance-free operation for many years to come.





Norton lintel-concealed door closers

Here's the closest approach yet to a completely invisible door closer. Size for size, it matches any surface-mounted exposed-arm closer in power. It can also be equipped with a concealed arm as illustrated, providing almost 100% concealment when door is closed. Double-piston action used in no other concealed closer permits this one to be changed from right to left hand in the field. All other advantages of Norton Surface-Mounted Closers PLUS maximum concealment for harmony of design.

Closers like this have served for 50 years or more!

Among the most widely used of all closers is the Norton Standard Model Full Surface Closer shown above. Here is the up-to-date version of the original Norton Door Closer, hailed as "revolutionary and challenging" when introduced in 1880. Many thousands of similar Norton Door Closers are still in daily use in some of America's best-known public buildings after 30 years and longer in continuous service. Available in sizes B, C, D, E and F, with standard fittings to meet every door closer need.

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Rush me a free copy of your latest loose-leaf catalog and data book

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NORTON®
DOOR CLOSERS
Berrien Springs, Michigan

A TRIUMPH SCORED
BY CAPRI® CERAMIC MOSAIC TILE...

for unmatched beauty and elegance . . . virtually indestructible . . . unlimited variety in colors, designs and shapes . . . easy, economical maintenance . . . low cost installation . . . **guaranteed against: fading, crazing, thermal-shock** . . . historically proven to resist rugged weather and the elements of time.

CAPRI CERAMIC MOSAIC TILES harmoniously and artistically complement the freedom and simplicity of Modern Architectural Design. Architect Leo Kornblath said, *"Capri Ceramic Mosaic Tiles were incorporated in our plans because they provide a dramatic combination of color and texture, at competitive cost, while completely maintenance free."*

Our thanks to the Hon. John Cashmore, distinguished President, Borough of Brooklyn, for his commendation of Capri Ceramic Mosaic Tiles and the combined efforts which went into the construction of the America Fore Building.

The City of New York
Office of the
President of the Borough of Brooklyn
JOHN CASHMORE
PRESIDENT

August 6, 1959

Mr. Philip Spina, President
Standard Tile Company, Inc.,
854-856 Rockaway Avenue
Brooklyn 12, N. Y.

Dear Mr. Spina:

One of the newest additions to our Brooklyn Civic Center redevelopment program is the "America Fore Insurance" building. This structure is exceptionally well-designed and one of its most attractive features is the use of Capri Ceramic Mosaic tile as part of the modern exterior wall surfaces, especially highlighting the upper portions of the building.

I am happy to compliment you on your development of this product for architectural building purposes in this country and your success as a Brooklyn concern.

The recent completion of this building and its contribution to our important Civic Center program is a credit to you and all others responsible for this building.

Yours very truly,
John Cashmore
President.

"America Fore Building"
(Downtown Brooklyn)

Architects — Lapidus, Kornblath, Harle & Leibman
Builder — Brooktown Building Corp.

Tile Contractors — Port Morris Tile Co.

We pledge ourselves to continue our tireless search for *even greater* scientific and artistic advances in the development of CAPRI CERAMIC MOSAIC TILES . . . Gems of clay, spawn from the slopes of Mt. Vesuvio and manufactured by those *Master Craftsmen*, SAV of Naples, Italy . . . for those Architectural Monuments that have made — "America the Beautiful".

Write on your business letterhead for free Tile Sample Chart . . . and put in your request now, for our forthcoming illustrated Brochure . . . "THE HISTORY OF CERAMIC MOSAIC TILES".

Capri®

STANDARD TILE CO., INC.

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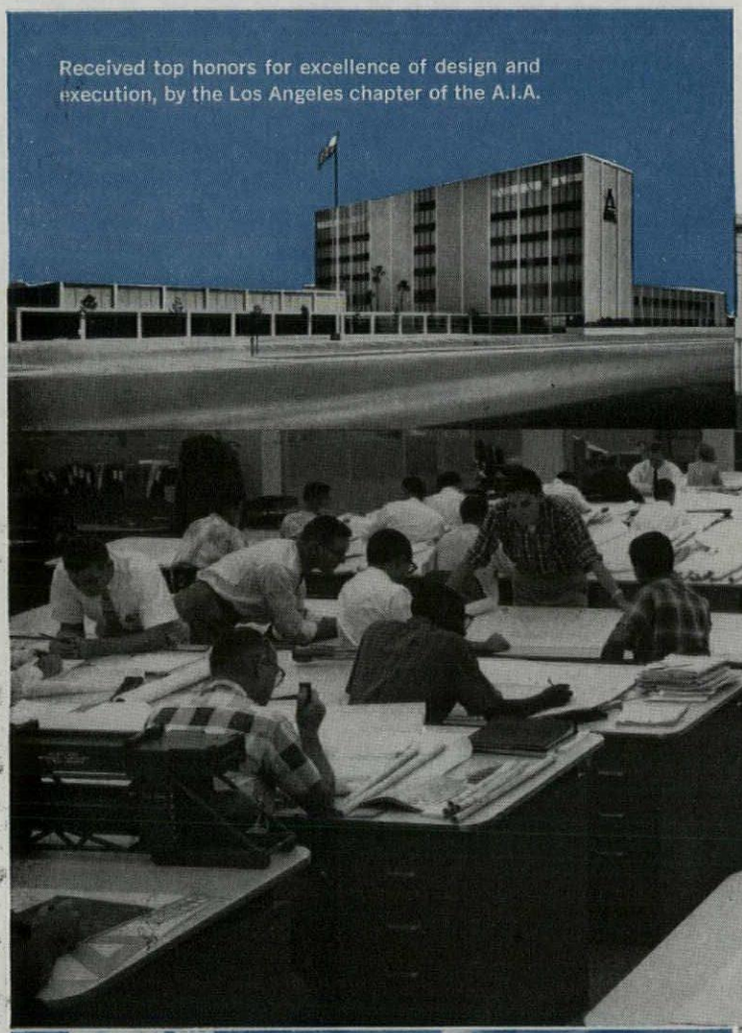
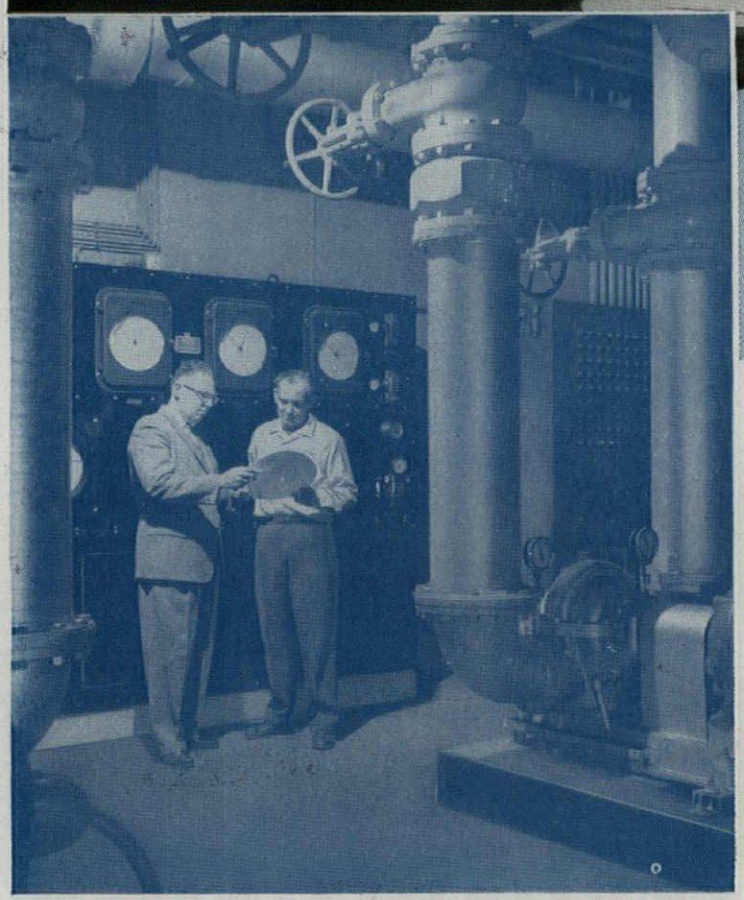
In Northrop's



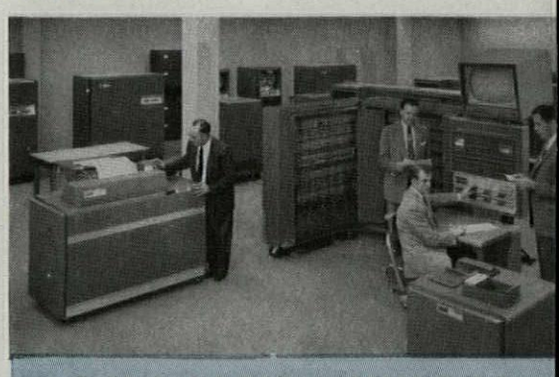
Received top honors for excellence of design and execution, by the Los Angeles chapter of the A.I.A.



NORTHROP CORPORATION, SCIENCE RESEARCH CENTER, HAWTHORNE, CALIF.

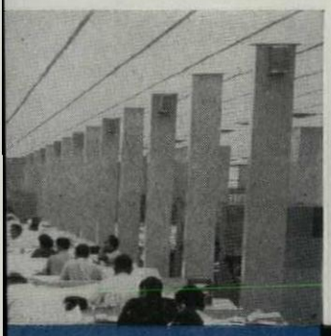
Architects and Engineers	PEREIRA & LUCKMAN, Los Angeles
Mech. Contractor	SCOTT CO.
Air Conditioning Contr.	F. B. GARDNER CO., INC.

LEFT: Powers Central Control Panel includes recording, controlling, and indicating instruments, for regulating 28 supply fan systems and two 400 ton centrifugal refrigeration compressors.

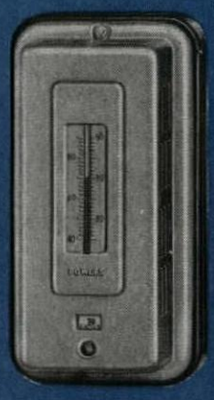


Partial view of Computer and Datamation Center.

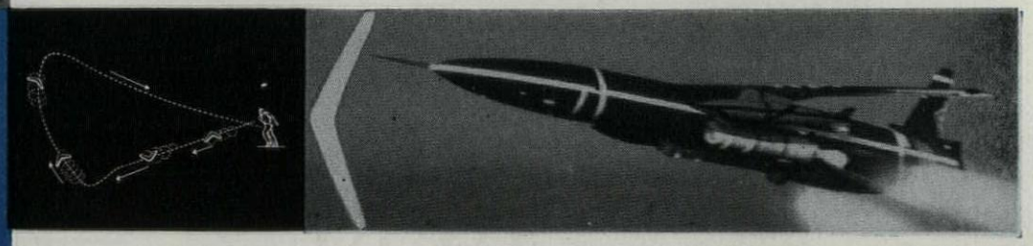
Award-winning Science Research Center



POWERS control system regulates the climate of progress



Powers Pneumatic Thermostats maintain set temperature day after day without daily checking or readjusting. Here they control mixing dampers in Multi-Zone air conditioning units; also re-set submaster thermostats in air discharge from single zone units.



Accurate control – essential for ancient and modern guided missiles

U.S.A.F. Northrop SNARK, the world's first intercontinental guided missile, has repeatedly made successful round trip flights over the Atlantic. After traveling up to 3,000 miles they have returned where launched at Cape Canaveral, Florida, landing in a simulated target area. Snark is only one of many Northrop products made for the armed forces.

Accurate Control of Thermal Environment

in Northrop's engineering research center contributes to more efficient utilization of creative abilities of engineers and scientists. In the large ultra modern drafting room is one of the nation's extensive "shadow-free" lighted ceilings. Here as in all other spaces optimum temperatures are provided by a Powers Pneumatic Control System.

Powers has the know-how and experience to handle important jobs like this. Users often report – Powers control systems are lowest in annual cost of ownership, they cost less to operate and maintain.

For Your New Building –

ask your architect or consulting engineer to include a Powers Quality System of Temperature Control. You'll benefit from Powers complete responsibility for a correctly engineered control system, proper installation, continuous successful operation and prompt service if required, from offices in 85 cities.

THE POWERS REGULATOR COMPANY

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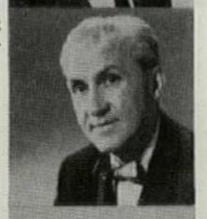
Cafeteria can feed 800 persons in 30 minutes.

Air Conditioned comfort is maintained in the attractive executive offices.

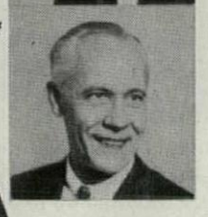
JURORS
Pietro Belluschi
F.A.I.A.
Chairman

Edward H. Fickett
A.I.A.

George Fred Keck
R.A.



Joseph H. Orendorff



"The members of the jury looked for certain qualities which they believed to be very important in promoting higher standards of community planning. They hoped to find examples which could best be adapted to the requirements of the average housing development. They gave, therefore, more weight to economy and logic than to novelty."

1959 Awards

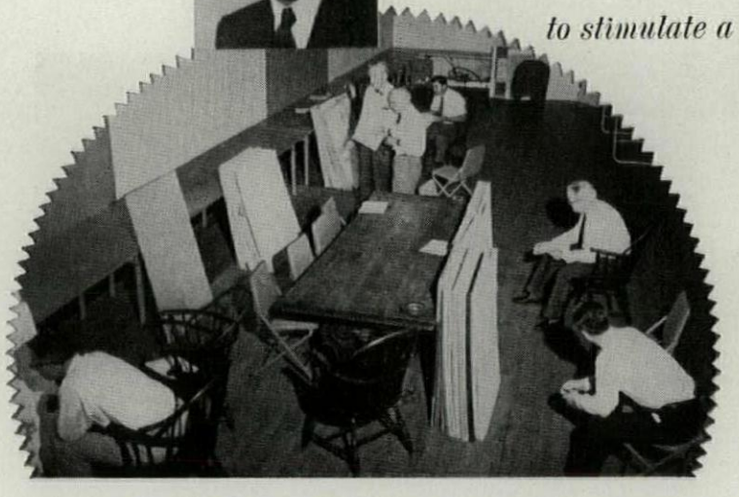
Reginald Roberts
A.I.A.

A. Gordon Lorimer
A.I.A.
Professional
Advisor

Mastic Tile Corporation of America

$25,000 Annual Design Competition

to stimulate a major contribution to better living for the middle income family



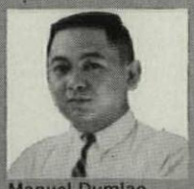
GRAND PRIZE
$10,000

Howard R. Meyer, F.A.I.A.
Dallas, Tex.

James Reece Pratt, A.I.A.
Dallas, Tex.

John Harold Box, A.I.A.
Dallas, Tex.

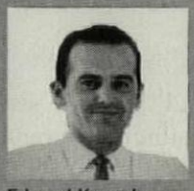
SECOND PRIZE
$5,000



Manuel Dumlao
Birmingham, Mich.

John Buenz
Birmingham, Mich.

Robert Burley
Birmingham, Mich.



Edward Kovach
Birmingham, Mich.

THIRD PRIZE
$3,000

Paul A. Kennon
Birmingham, Mich.

Chartier Newton
Birmingham, Mich.

Heinz-Henning Huth
Birmingham, Mich.

Philip J. Kinsella, Jr.
Birmingham, Mich.

MERIT AWARDS
$250 each

Richard A. Miller, New York, N. Y.
Robert Zion, New York, N. Y.
Harold Breen, New York, N. Y.
Peter Bradford, New York, N. Y.
Larry E. Charity, New York, N. Y.

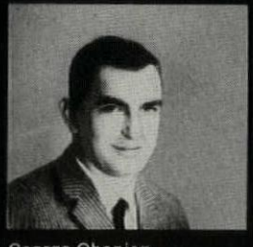
Hayahiko Takase, Birmingham, Mich.
Kyosuke Yoshioka, Birmingham, Mich.

Chih-Chen Jen, Glendale, Mo.

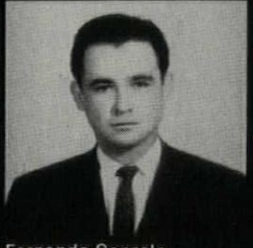
Paffard Keatinge Clay, Highland Park, Ill.

STUDENT DIVISION

FIRST PRIZE
$2,500



George Ohanian
Pratt Institute



Fernando Gonzalo
Pratt Institute

SECOND PRIZE
$1,500

Ernest G. Schweibert, Jr.
Princeton University

THIRD PRIZE
$1,000

G. Mary Bulota
University of Illinois

William L. Miller
University of Illinois

MERIT AWARDS
$250 each

Bill Batson, University of Illinois
David Lawson, University of Illinois

Charles A. Platt, Harvard School of Design
David I. Smotrich, Harvard School of Design
Charles P. Parker, Harvard School of Design

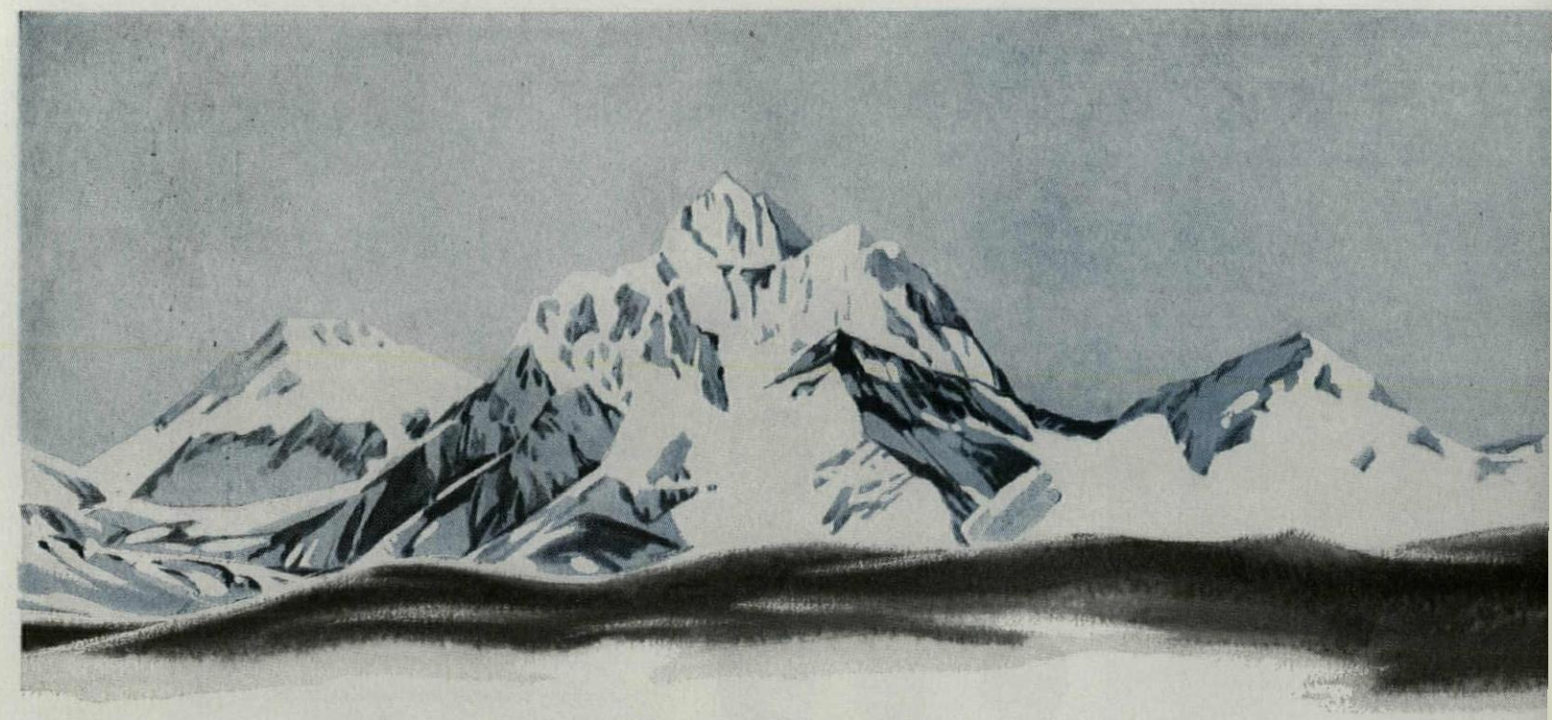
Philip Gold, University of Illinois
J. Stroud Watson, University of Illinois
(Special Commendation)

William J. Lindsey, University of Illinois
William H. Fosse, University of Illinois

CERTIFICATES OF ACHIEVEMENT

GENERAL: Michael F. Gebhart, Herbert A. Magoon, Calvin N. Lundquist; Thomas N. Larsen, Peter Woytuk; Thomas E. Tomsik, Robert Blatchford; Alan Hamilton Rider; Thomas H. Hodne, Dennis W. Grebner; Malcolm M. Davis, William Lindemulder.

STUDENT: J. Michael DeLapp, Ben W. Carr; Philip M. LeBoy, Ernest B. Phillippson; Ronald E. Ginn, Richard J. Paulin; William Holzbauer; Malcom M. Davis, William Lindemulder (also in General Competition).



"Because it's there" . . .

. . . the challenge that spurs men to scale the mightiest peaks.

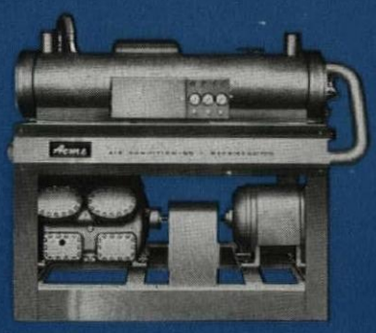
Challenge . . . that's what lead Acme to seek new heights to conquer. For Acme had achieved its summit as manufacturers of refrigeration and air conditioning components . . . evidenced by the fact that all the leading names in air conditioning have used Acme components for years.

Thus, "because it's there," Acme launched its "assault" on the air conditioning *systems* market, in 1958. Today, one year later, we can report that the space-saving compactness, high capacity efficiency, operational and service accessibility, smooth performance reliability of complete Acme systems have been enthusiastically received by architects, engineers, contractors and building owners alike. Today, Acme's field sales are up 47% . . . tomorrow the summit!

Acme INDUSTRIES, INC.

JACKSON, MICHIGAN

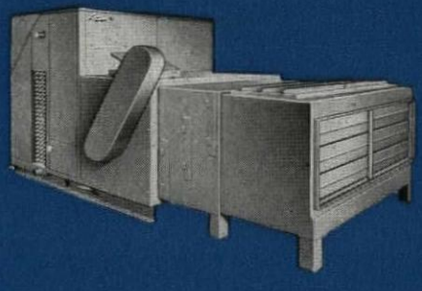
MANUFACTURERS OF QUALITY AIR CONDITIONING AND REFRIGERATION EQUIPMENT SINCE 1919



Acme CHILLED WATER SYSTEMS

PACKAGED CHILLERS—50% smaller, 35% lighter, lower-in-cost. Complete line, 23 models. Full range of sizes, 3 thru 125 tons.

WATER SAVERS—Matching compact cooling towers and evaporative condensers . . . save 97% of condensing water. Capacities—3 thru 200 tons.

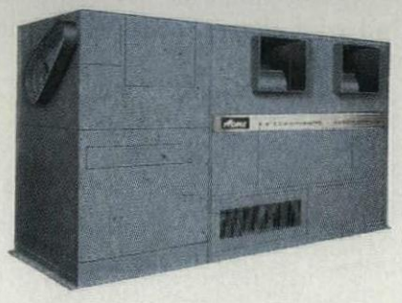


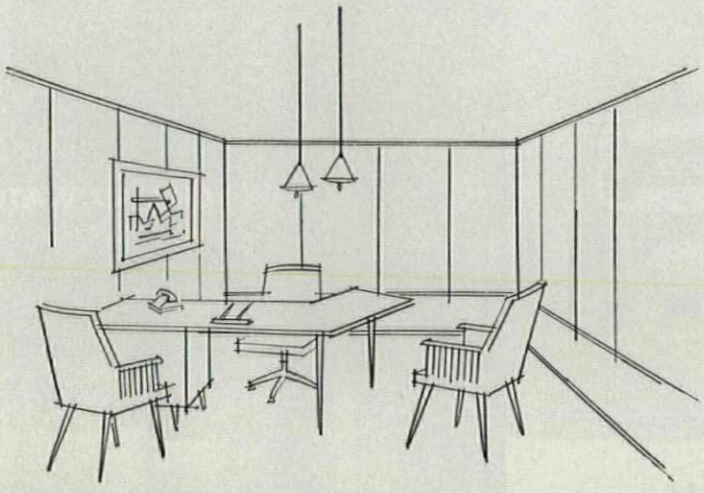
AIR HANDLERS—Central air handling units, including multi-zone and remote room units. Wide choice of types and models from 200 to 36,000 c.f.m.

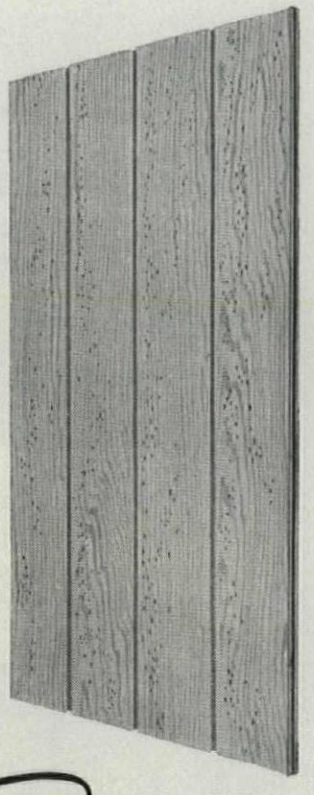
the **practical** approach to air conditioning

Acme SELF-CONTAINED SYSTEMS

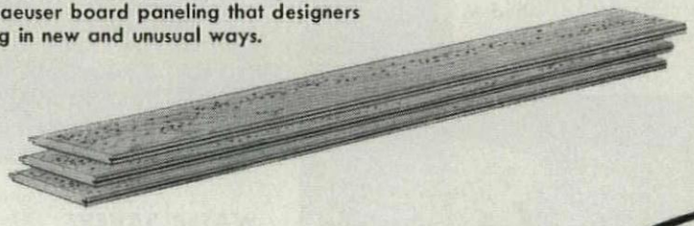
Complete, easily installed system in one compact packaged unit. 29 models, 3 to 60 tons, air or water cooled.







DRIFTWOOD PANELING, a richly distinctive Weyerhaeuser board paneling that designers are using in new and unusual ways.



For interiors with the Beauty

Weyerhaeuser 4-Square Wood Panelings offer unlimited design opportunities for a variety of interesting effects

Office, restaurant, church or classroom—wherever you want to provide the warm look of wood, make Weyerhaeuser 4-Square paneling your choice.

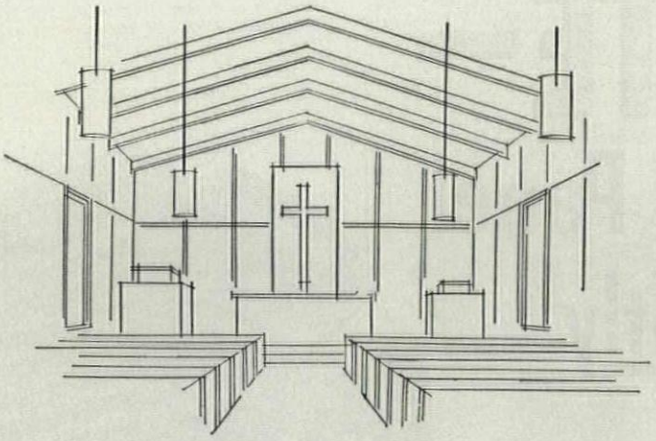
In the Weyerhaeuser line you'll find a broad selection of patterns, stylings and species in both board and plywood panelings. Board paneling is available in specified lengths, with precision-milled edge treatment that assures easy application and snug, tight joints. Plywood paneling, with the finest grains of quality veneers, is offered in smooth or grooved patterns suitable to almost any architectural styling. Other specialty plywood panelings, such as Loc-Wall shown at the right, are designed to effect big savings in installation.

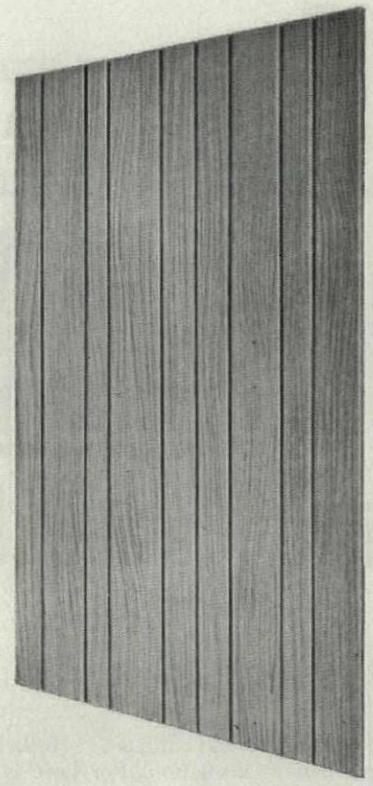
Weyerhaeuser panelings are skillfully milled to bring out the finest qualities of wood grain, texture and coloring. When you specify Weyerhaeuser paneling, you add striking, original beauty to your interiors.

Call your Weyerhaeuser 4-Square Lumber Dealer for detailed information, or write us.

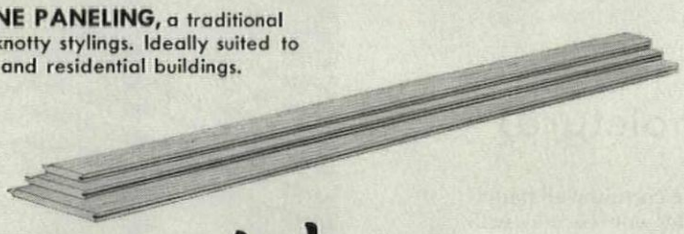
Weyerhaeuser Sales Company

First National Bank Building / St. Paul 1, Minnesota

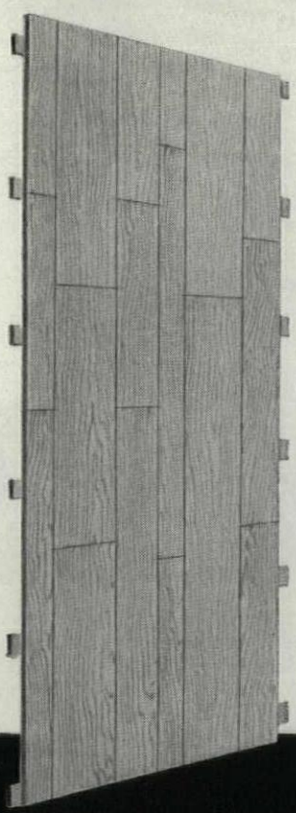


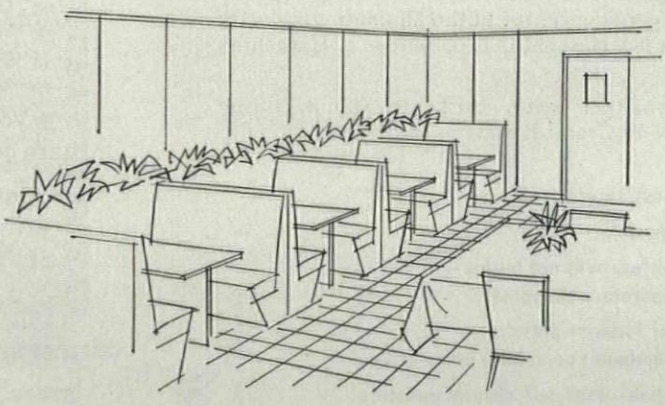


IDAHO WHITE PINE PANELING, a traditional favorite in clear or knotty stylings. Ideally suited to churches, commercial and residential buildings.



...that only *Wood* can give





LOC-WALL PANELING, simple and easy to install with furring strips already attached. Room-height panel units go up quickly.

Weyerhaeuser 4-SQUARE®

LUMBER AND BUILDING PRODUCTS

HASKELITE—

the Curtain Wall Panel that's permanently insulated !

(It never absorbs moisture)

Warm climate . . . cold climate . . . Haskelite curtain wall panels mean permanent insulation! For here is the one curtain wall panel that is unaffected by moisture.

And here's why: Haskelite cores will not *absorb* or *transmit* moisture. Each Haskelite panel is constructed with the facing of your choice bonded to an interband, when required, and then to a foam core. Result: insulating value that lasts for the life of the panel.

To meet your specific requirements, Haskelite laminated panels are available in a wide range of stock sizes, thickness and facings . . . or in special sizes to your order. And you can specify Haskelite panels with confidence, for in the laminating industry no other manufacturer has Haskelite's experience . . . Haskelite's know-how.

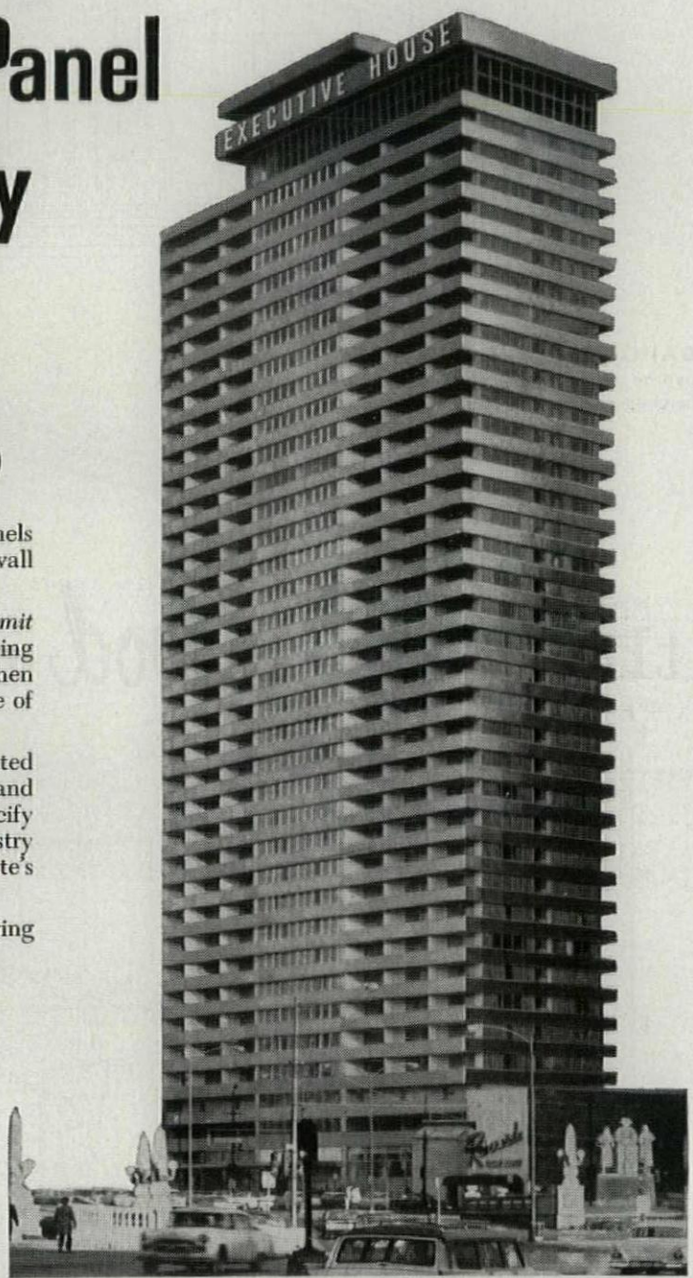
For complete information write: Haskelite Manufacturing Corporation, Dept. BN-10, Grand Rapids 2, Michigan.

- **Lightweight . . . easy to erect!**
- **High impact resistance!**
- **Flat, wave-free surface will not buckle—unaffected by temperature changes!**
- **Unlimited choice of facings—plastic; stainless steel; aluminum; porcelain; many others!**
- **Permanent insulation—does not absorb moisture!**

SEE HASKELITE CATALOG IN SWEETS ARCHITECTURAL FILE 3E/HA

Haskelite Institutional Doors

• Institutional doors have been added to the line of quality doors built by Haskelite. Newly introduced hollow core doors, now available to specification, are specially built for use in institutional or commercial buildings. Complete range of standard sizes—or may be ordered in special lengths in a wide variety of facings.

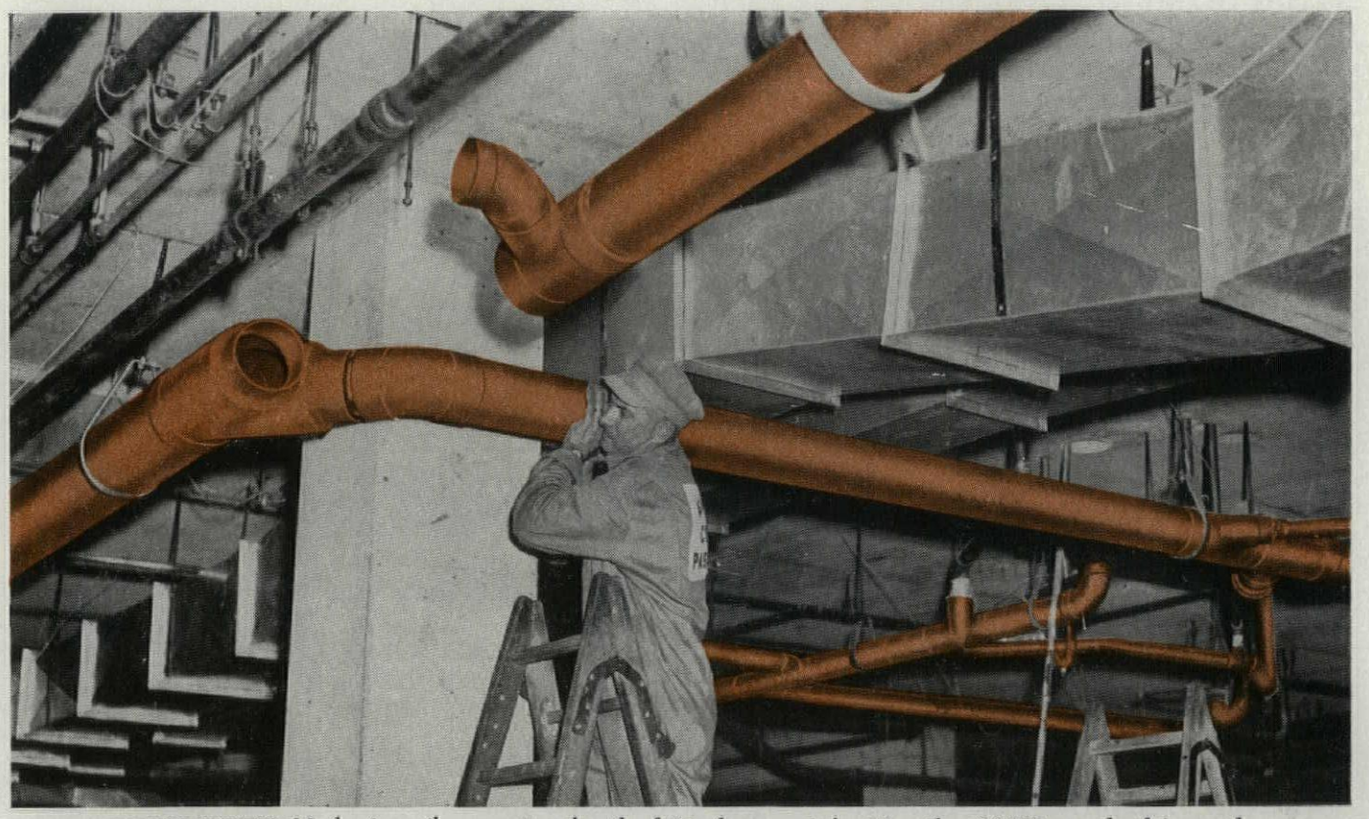


EXECUTIVE HOUSE . . . designed for lasting beauty, the new 40-story Executive House in Chicago features Haskelite stainless-steel-faced, glass-foam-core curtain wall panels. Architect, Milton M. Schwartz & Associates, Inc., Chicago; Contractor, Wacker Construction Co., Chicago.

HASKELITE®

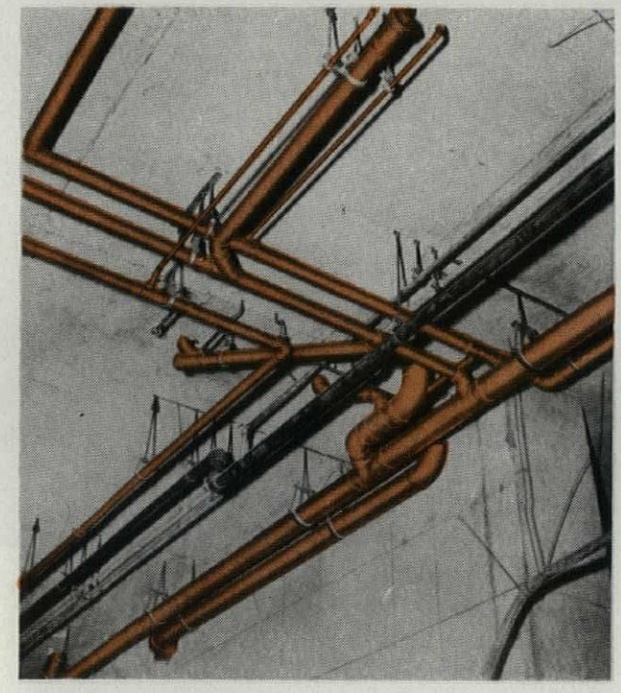
HASKELITE MANUFACTURING CORPORATION
Grand Rapids 2, Michigan

A subsidiary of Evans Products Company, Plymouth, Michigan



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

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



CLOSE WORK LIKE THIS is possible only with copper tube. Water and drainage lines hug the ceiling, giving ample basement headroom. Even in tight quarters, connections are easy to make. Sizes in this photo range from ¾" water lines to 4" for drain and vent lines.

Copper tube sanitary drainage lines in the hospital building and administration wing of the new Fairview State Hospital at Costa Mesa, California, eliminated wasted space in furred areas and allowed ample headroom in the basement. Equally important to the project owners, however, was the fact that copper tube drainage systems are easier to install, are long lasting, require less maintenance than other materials.

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

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

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

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ANACONDA® **COPPER TUBE AND FITTINGS**

PRODUCTS OF THE AMERICAN BRASS COMPANY

Available through plumbing wholesalers

When it comes to doors

TUBELITE® DOORS

This inviting entrance to *David's Shoes* in Macon, Georgia, culminates in the simplicity of double TUBELITE Doors. Concealed channel-type anchors hold all frame seams to a hair line joint so that there is no structural blemish to mar the smoothness of the superb aluminum finish. The TUBELITE Door frames have an exclusive interlocking feature which gives them utmost rigidity, and assures that their shape will remain true through long and continued use. Standard or specially designed handles can be applied directly to the glass for complete open vision. *General Contractor: W. E. Dixon, Macon, Georgia.*

WEST TENSION DOORS

Narrow stiles characterize WEST TENSION Doors but there is no sacrifice of rugged strength. ½" thick glass held under compression in the metal frame makes a solid unit which can never sag, rack or get out of alignment. Its simplicity makes it compatible with a wide variety of architectural designs. It can be operated with any type of automatic opening device. WEST TENSION Doors are moderately priced and completely dependable in operation. *Cumberland Savings and Loan Association, Portland, Maine; Architects: Wadsworth & Boston, Portland, Maine. General Contractor: Paul B. McLellan Co., Portland, Maine. Glazing by Soule Glass & Paint Co., Portland, Maine.*

come to PITTSBURGH

In the *Pittsburgh* line of quality doors, there are three distinct types . . . HERCULITE, WEST and TUBELITE. In the various sizes and styles of these three types of doors, you can find a model that will fit perfectly into any architectural setting. All three types of Pittsburgh Doors are handsome in appearance and completely dependable in operation.

For complete and detailed information on Pittsburgh Doors, see Sweet's Architectural File, sections 16a and 16b. Information may also be obtained by writing directly to Pittsburgh Plate Glass Company, Room 9213, 632 Fort Duquesne Blvd., Pittsburgh 22, Pennsylvania.

PITTCOMATIC®. . . is the nation's finest automatic door opener and may be installed with any type of Pittsburgh Door. A simple, hydraulic, motor-driven unit, activated by either *handle* or *mat* control, is easy to install and maintain, and it is always completely concealed.

HERCULITE® DOORS

In this entrance to the *Thorofare Market* in Mt. Lebanon, Pennsylvania, HERCULITE Tempered Plate Glass Doors are installed with TUBELITE frames. The wide doorways provide easy access and at the same time framing members blend with the architectural pattern established by the adjacent metal window-settings. For the convenience of heavy-laden shoppers and pushcart traffic, PITTCOMATIC mat-controlled automatic door openers operate efficiently and dependably, and eliminate confusion in this heavily traveled area. *Architect: Charles Roberts, A.I.A., Pittsburgh, Pa. General Contractor: White & Cunningham, Pittsburgh, Pa.*

PITTSBURGH DOORS . . . for entrances of enduring distinction

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

New York chooses concrete for 398-family housing project!

Nine contractors competed and every one bid lower in concrete than in steel (actually 7 of the 9 bid concrete lower than anyone offered steel!)

The New York City Housing Authority reports a saving of $313,180 by using concrete frame and floor construction for the three 20-story buildings of the new Woodrow Wilson Housing Project. But such savings were not unexpected!

Concrete has been the Authority's preference for all of its buildings during the last twelve years.

For example, back in 1947 the NYCHA took bids for the Lillian Wald 16-building project. $880,000 in savings with concrete resulted. So a policy decision was made to stay with concrete for future projects.

In the intervening years, no fewer than 84 concrete frame projects were completed or in partial operation. They provided housing for 95,454 families. And thanks to concrete, it is estimated the Housing Authority saved no less than $66,000,000!

More and more builders of all sizes are today demonstrating that when America builds for economy . . . it builds with concrete!

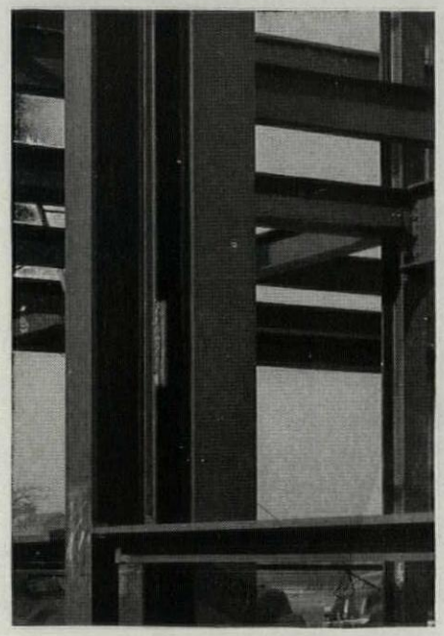
New York's Woodrow Wilson Houses. Architect: Pomerance & Breines, New York, N.Y. Structural Engineer: James Ruderman, New York, N.Y. Contractor: Leon D. DeMatteis Construction Company, Elmont, Long Island, N.Y.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

FOR STRUCTURES... MODERN **concrete**

There can be no compromise here!



The prime coat is the basic foundation that determines the long-lasting performance of coatings

There can be no compromise with the prime coat – it is the *basic* foundation, it must take hold and adhere tightly, it must provide a sound, compatible base for the finish coating. It is here that Rust-Oleum's experience as corrosion-resistant specialists can help you. Whether it's a shop coat by the fabricator, or job site application over structural steel, Rust-Oleum has the right primer for the specific job – from quick-drying primers for shop coating, unique primers to apply directly over rust, or bare metal primers. For the fullest measure of protection – specify the Rust-Oleum *System* of primer and finish coat. Your nearby Rust-Oleum Industrial Distributor and your Rust-Oleum Factory Specialist will be happy to work hand-in-hand with you.

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There is only one Rust-Oleum. Distinctive as your own fingerprint. A matter of excellence.

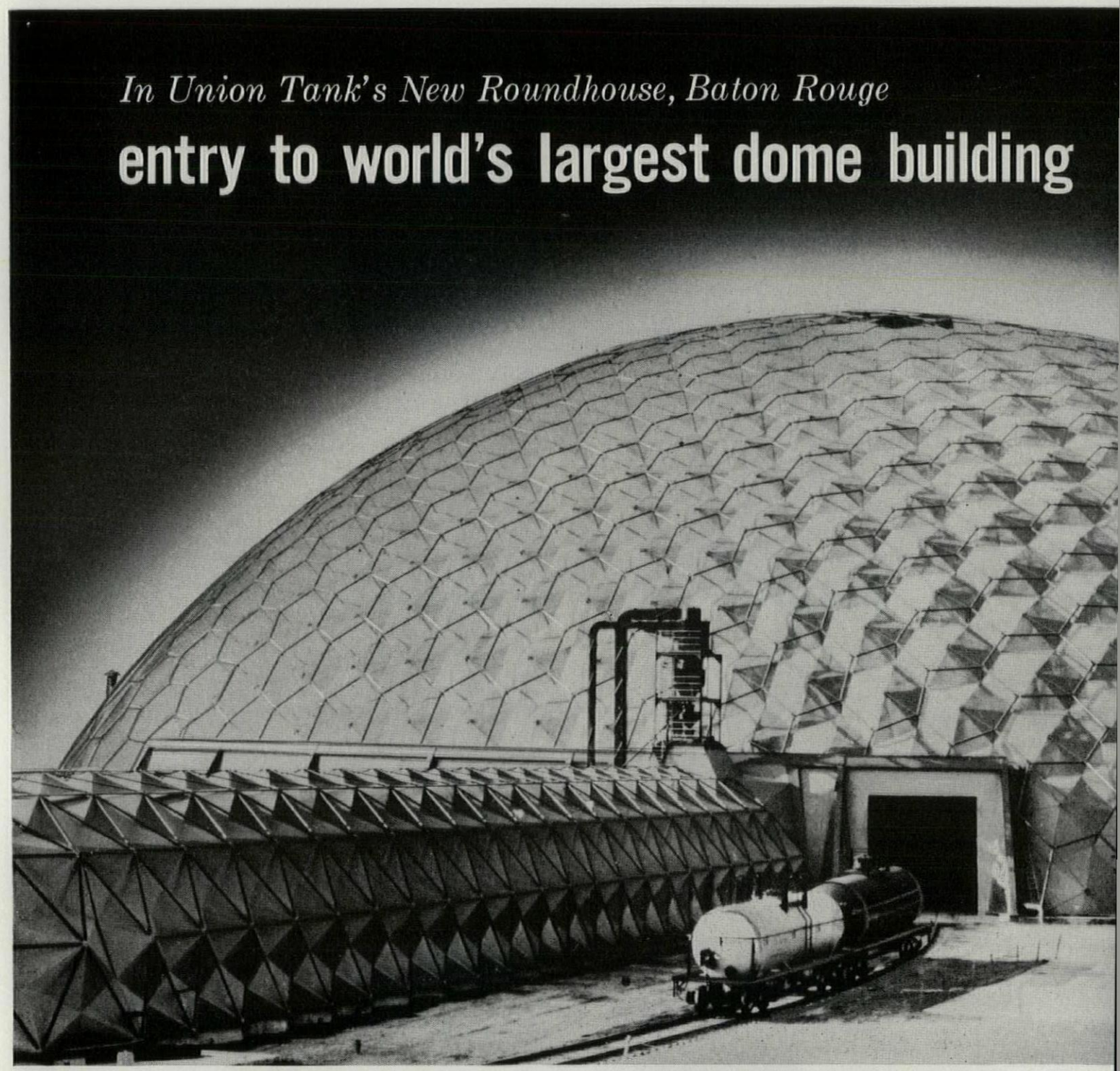
STOPS RUST!®

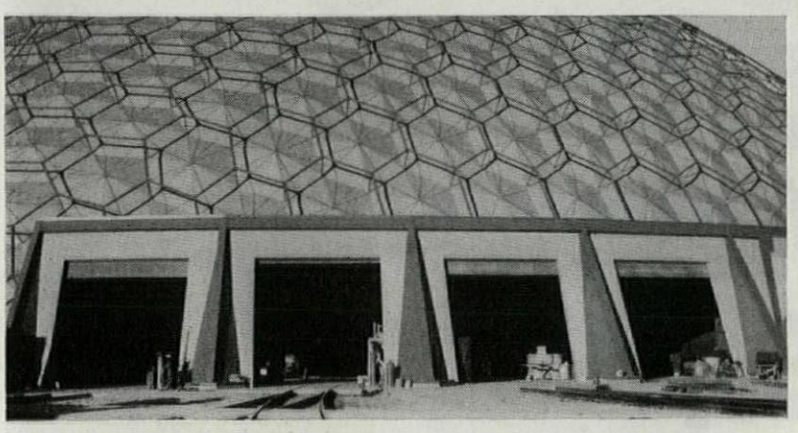
RUST-OLEUM CORPORATION
2538 Oakton Street
Evanston, Illinois

Just released! New factual report entitled, "Coating Specifications On Structural Steel and Other Steel Components." Clip coupon to your letterhead for your free copy.

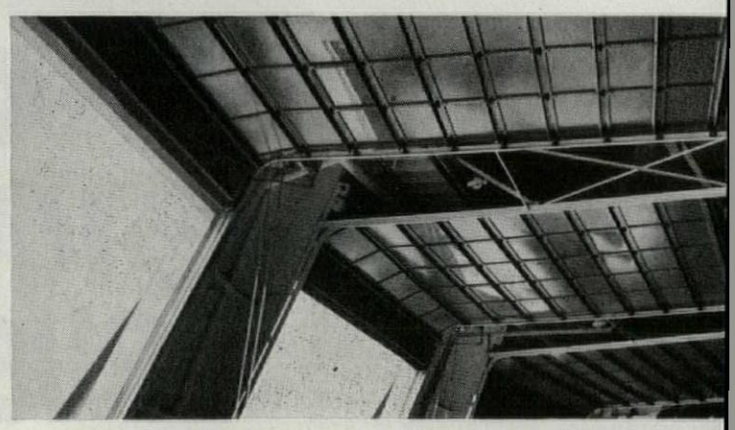
In Union Tank's New Roundhouse, Baton Rouge

entry to world's largest dome building





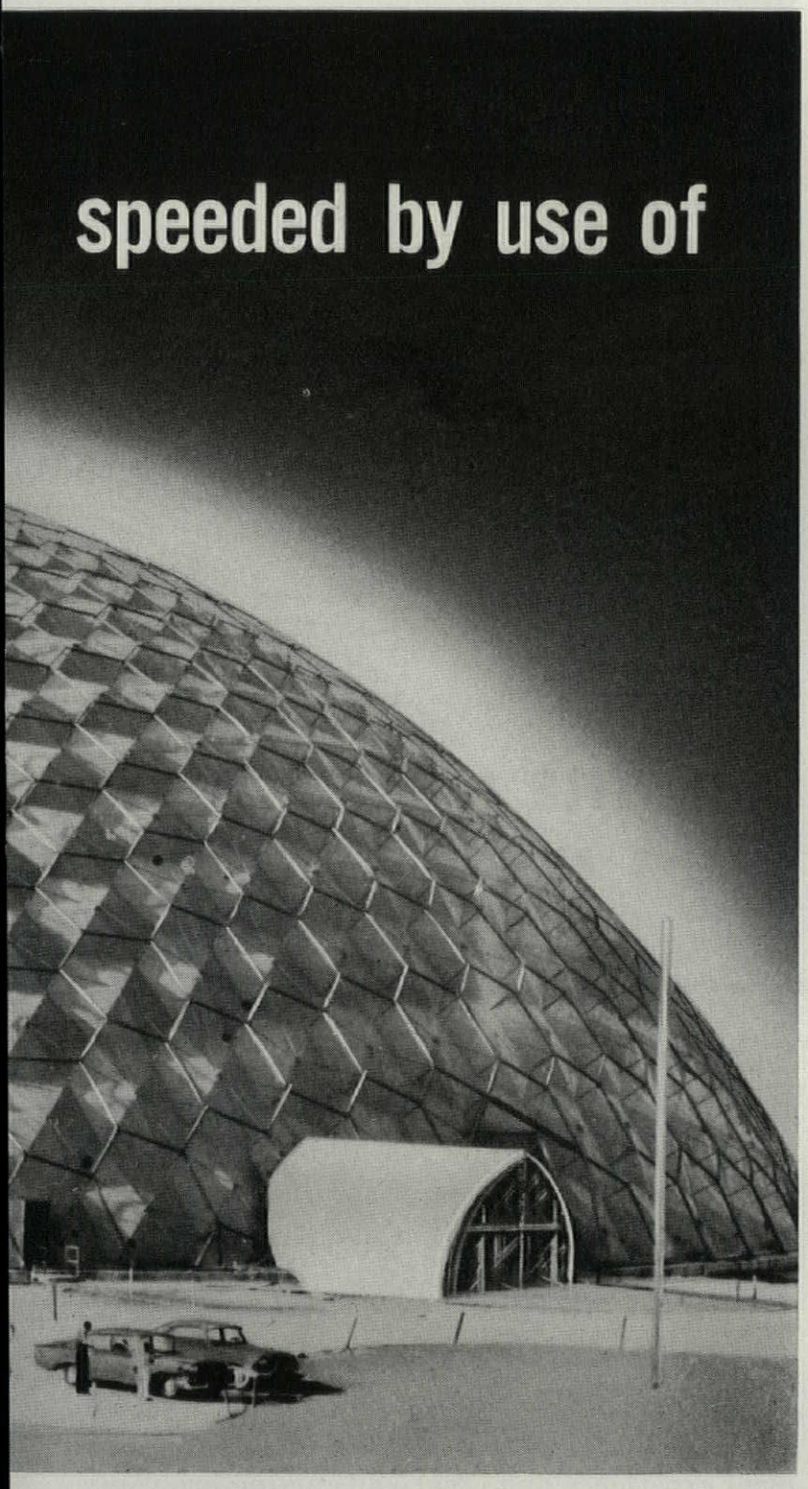
Track entrances leading into the Union Tank Company repair roundhouse. A feature of the specially planned building is the speed with which cars can be moved in and out of repair areas.



Doors in upward position at shop entrances. Doors used in this installation are fully automatic. However, The "OVERHEAD DOOR" is available to architects custom designed for any requirement; variety of materials, weights.

speeded by use of

THE "OVERHEAD DOOR"



Last year, in Baton Rouge, Union Tank Car Company put into operation as a tank car repair roundhouse the first major industrial application of the geodesic principle of design. Despite the impressiveness of its size—it encompasses 110,000 square feet of unimpeded floor area—it has been termed the "world's biggest building bargain," for the huge steel shell was erected at a cost of less than $1,000,000.

We are proud that The Original "OVERHEAD DOOR" was selected for this remarkable structure—materials for which were chosen on the basis of their being able to offer the combination of light weight and superior structural strength.

Consultant Service for Architects

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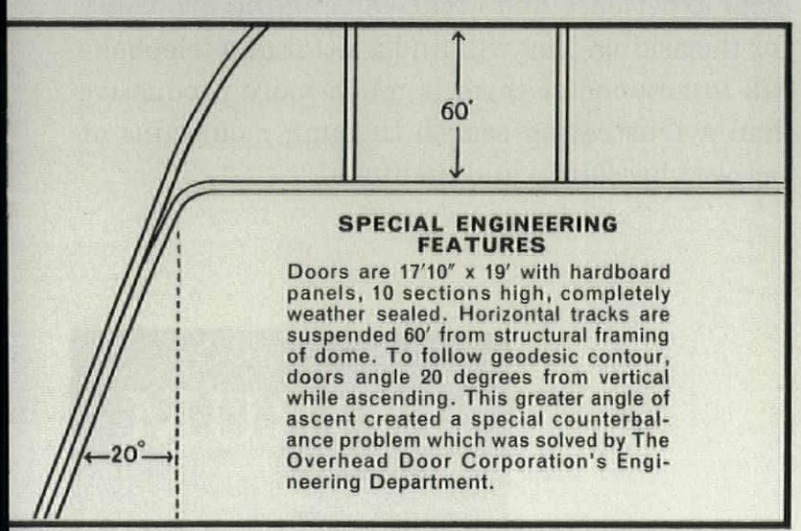

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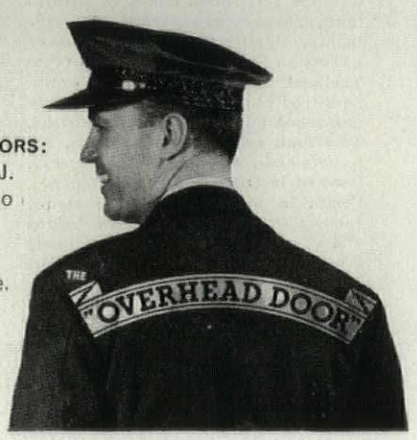

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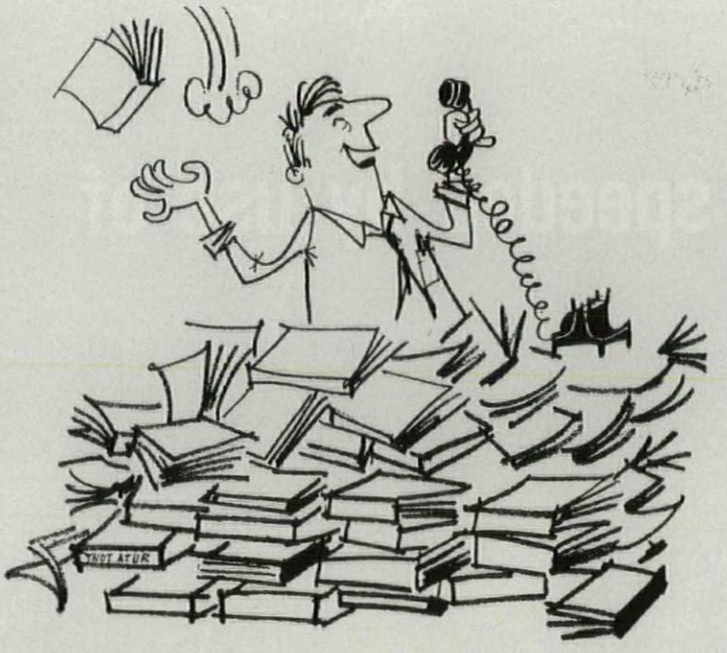

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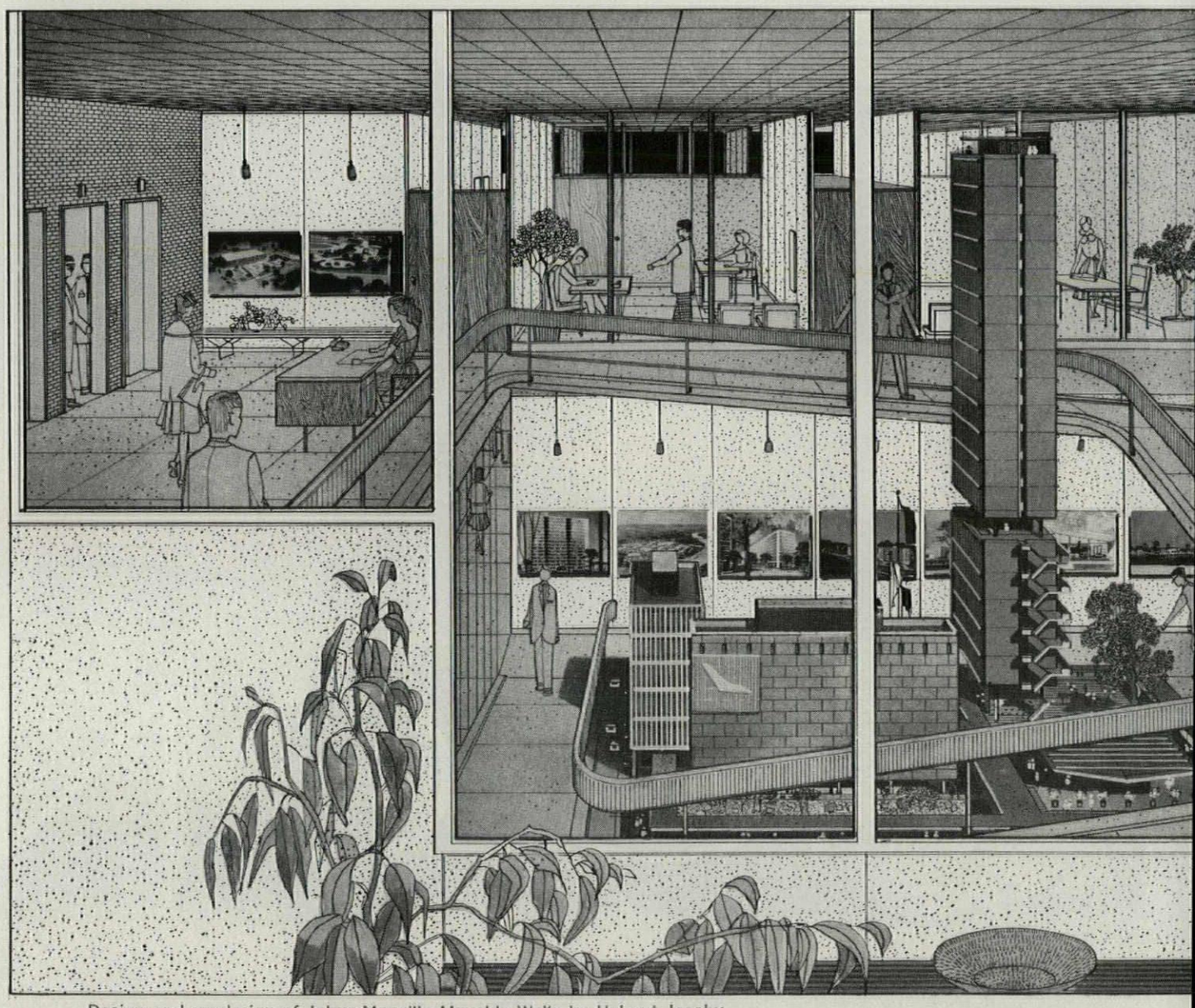
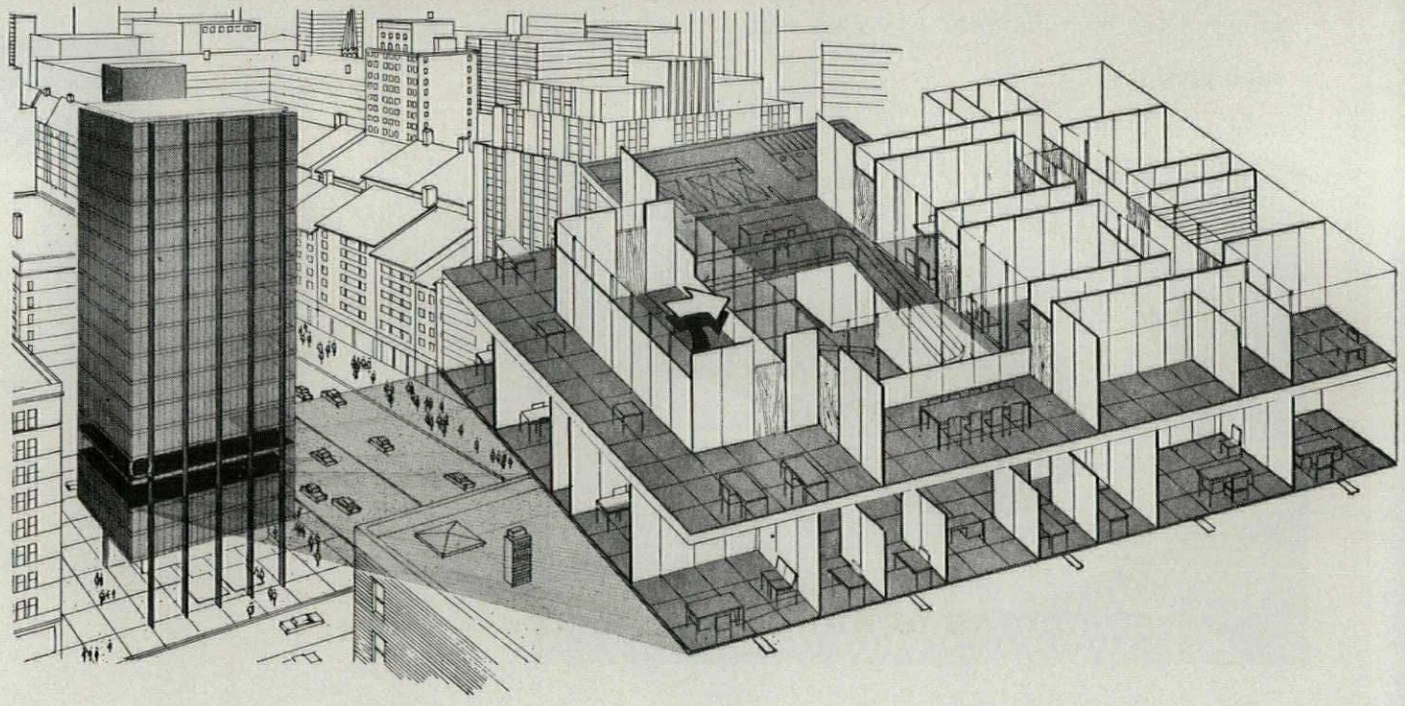
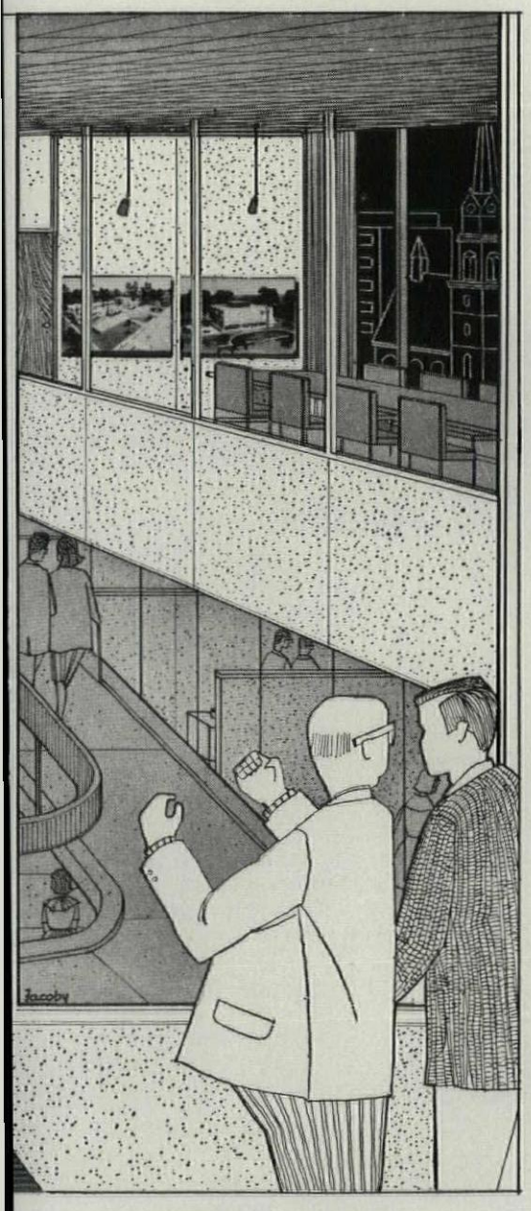


Design and rendering of Johns-Manville Movable Walls by Helmut Jacoby





In this office two types of J-M Movable Walls are used—Imperial and Class A

J-M Imperial Movable Walls—asbestos panels attached to slotted steel studs provide great versatility. These walls can be carried to heights of 20′ and higher. Thickness can vary from 3⅞" upward to suit unusual designs or out-of-the-ordinary service lines.

J-M Class A Movable Walls—prefabricated panels with a non-combustible core, asbestos-faced on both sides. Panels are erected independently and are completely interchangeable with panels of the same dimension. The walls are 1¾" thick and provide concealed wireways.

J-M Sanacoustic® units make up the acoustical ceilings, and J-M Terraflex® Vinyl Tile covers the floors.

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This project shows a real estate office requiring specialized space divisions and provision for the future.

The happy answer:

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A large real estate firm has rented two floors in a new contemporary office building. There are to be executive offices, for president and vice presidents—also different-size conference rooms and interviewing rooms for representatives. An interesting "must" is provision for attractive display of large architectural models, photographs and renderings.

Walls are to be movable to provide for growth and expansion. They are to have glass areas to provide good visibility for the models and renderings.

To meet these varied requirements, the designer planned the offices around an open two-floor vertical space surrounded by a ramp. As for space division, he turned to a natural solution—J-M Movable Walls.

These walls come in modular units and are offered in several types. All can be used together, are erected easily, and can be readily relocated as needs change. Units are furnished with a stippled finish or they can be veneered in many ways. Also, they can be redecorated easily whenever a new look is desired.

J-M Movable Walls are supplied and installed complete with all items such as doors, hardware, trim and glass by trained J-M construction crews.

For illustrated brochure, write to Johns-Manville, Box 158, New York 17, N.Y. In Canada, Port Credit, Ontario.

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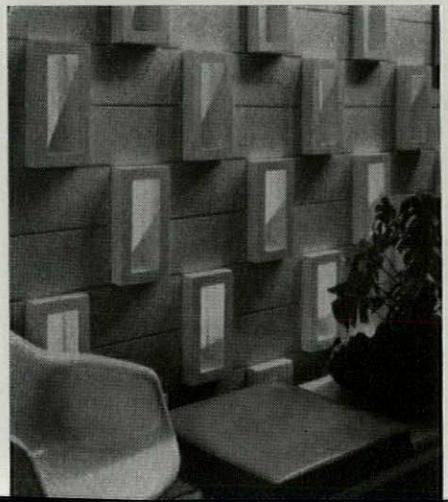
The fabulous Pavilion—a collection of the most imaginative uses of sculptured block ever seen anywhere. Coordinating architects and Pavilion design—Robert A. Little & George F. Dalton & Associates, Cleveland. Pictured left foreground is a wall of sculptured block by Alfred B. Parker, Miami. The screen to the left by Victor Lundy of Sarasota. The lace-like right screen by Charles Walton of Jones & Emmons, Los Angeles.

The wonderful new world of Block!



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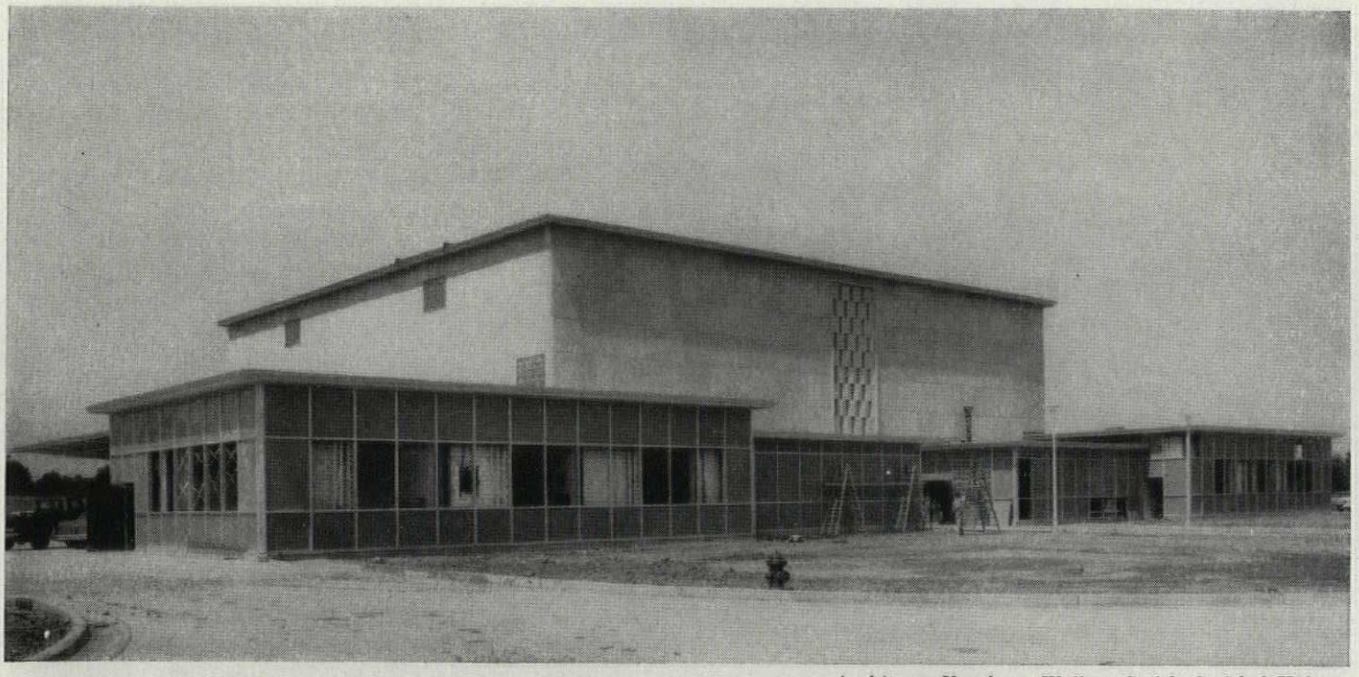

Architect: Voorhees, Walker, Smith, Smith & Haines
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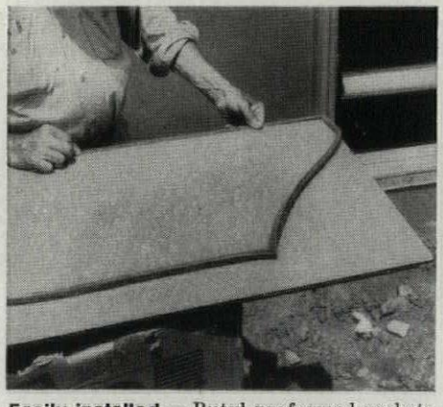
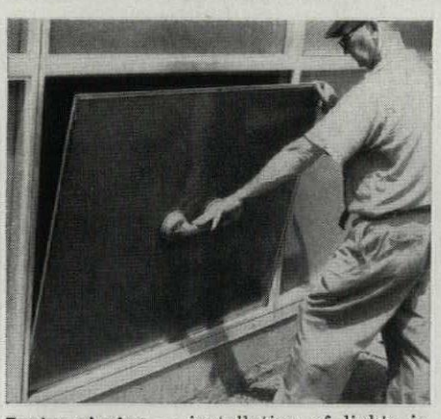
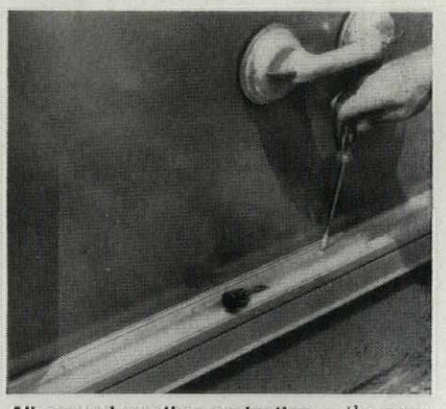


Easily installed — Butyl preformed gaskets can be installed on-site or in the shop. They protect panel edges during handling.



Faster glazing — installation of lights is done quickly and more efficiently when edges are protected by Butyl preformed gaskets.



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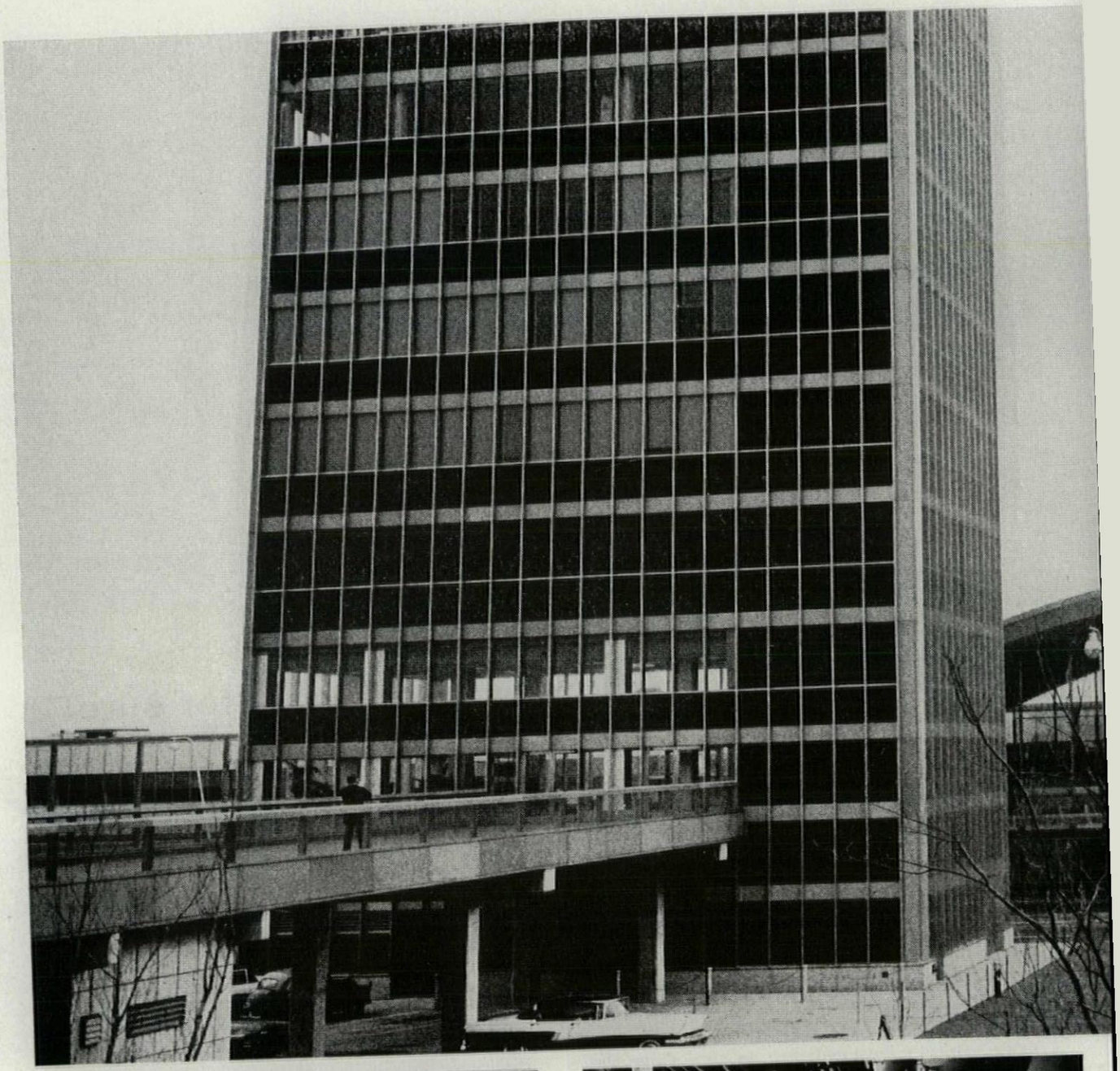

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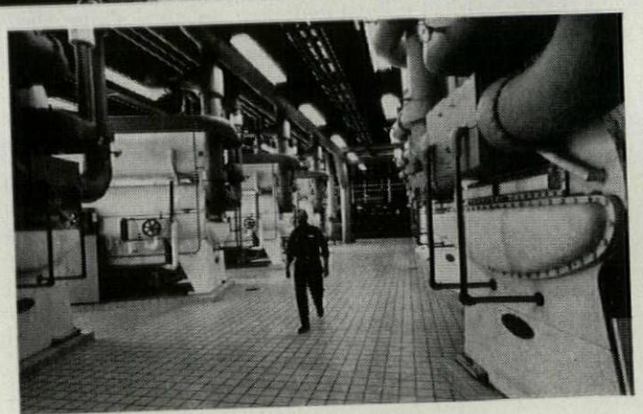
This one central system – nine Carrier Automatic Absorption Refrigerating machines with a total cooling capacity of 6,300 tons – will air-condition all planned buildings in the Terminal City at New York International Airport.



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These Carrier Automatic Absorption machines, largest units of their type, use heat energy to obtain chilling . . . operate from the same gas-fired boilers which heat the airport in winter.

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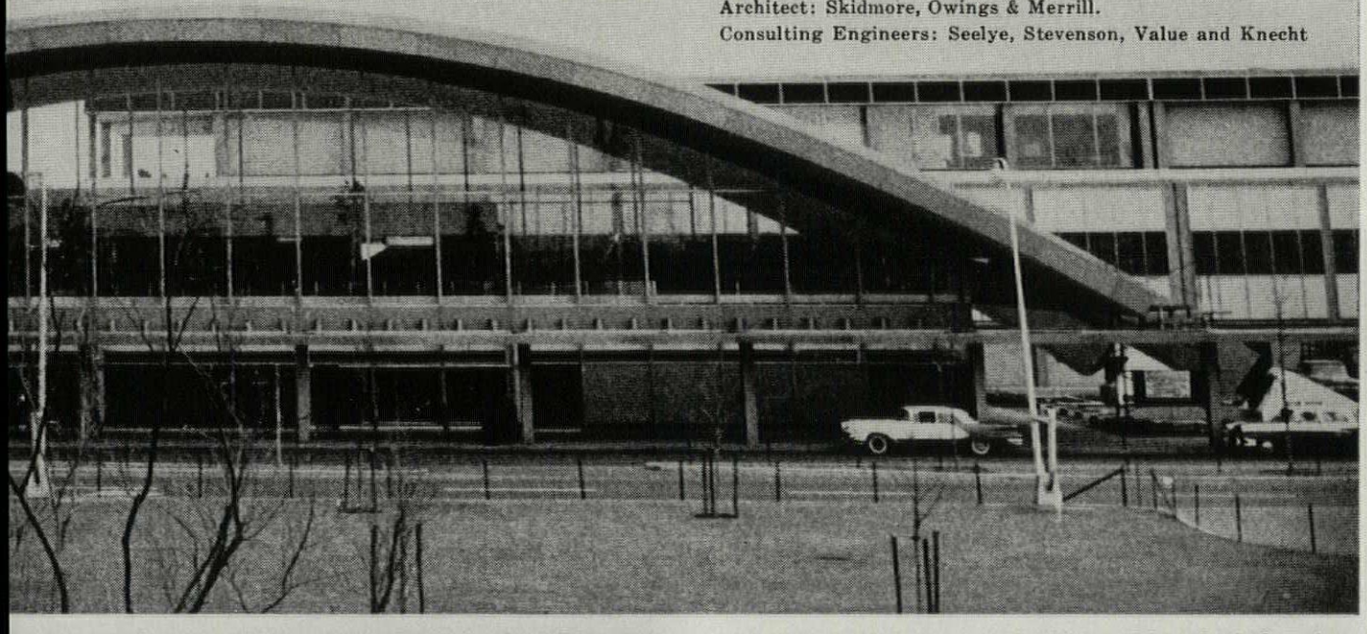

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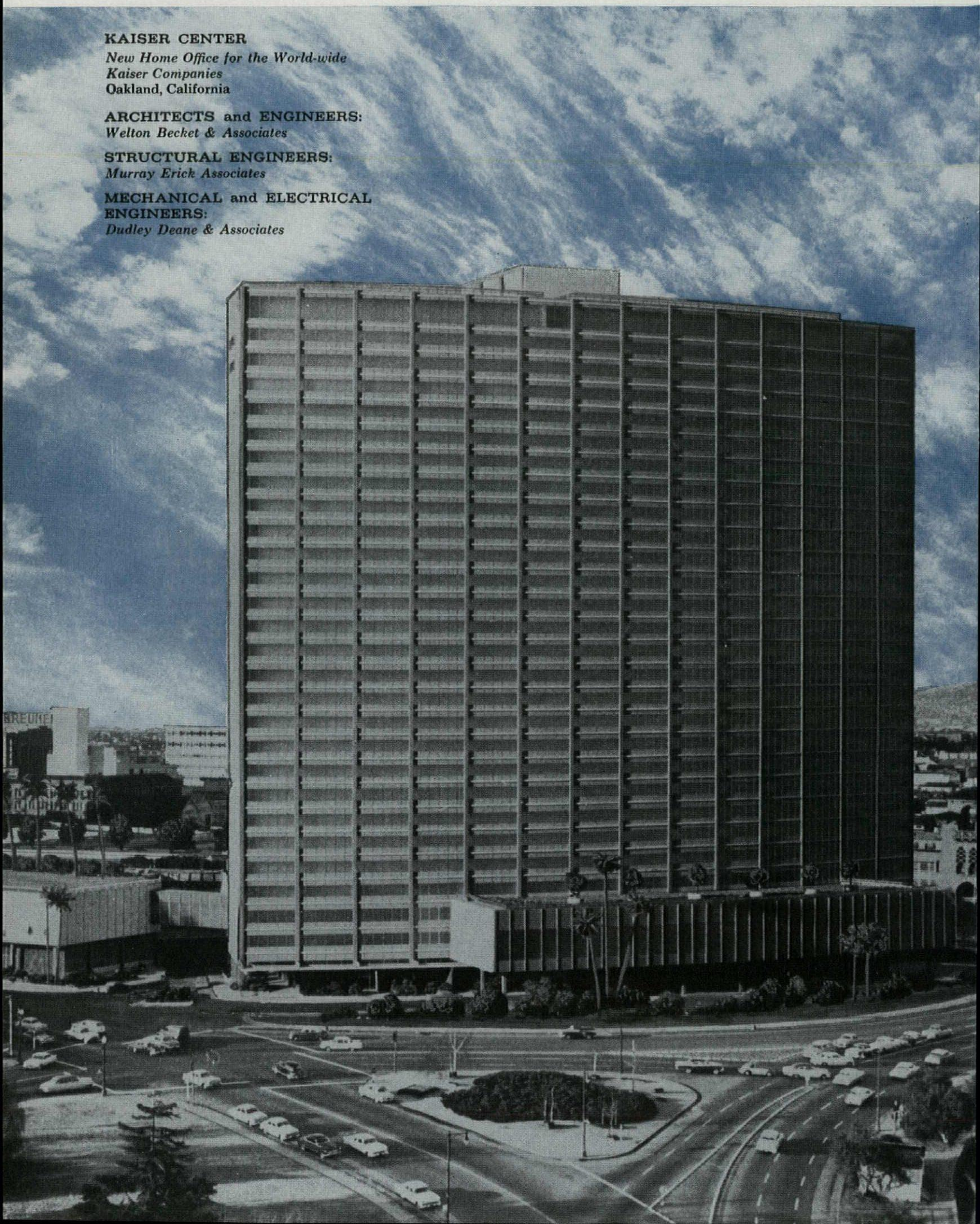
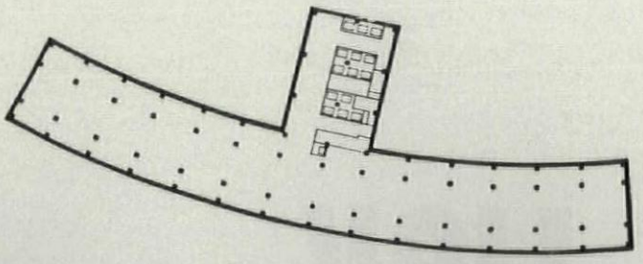


Floor areas electrified in the West's largest office building

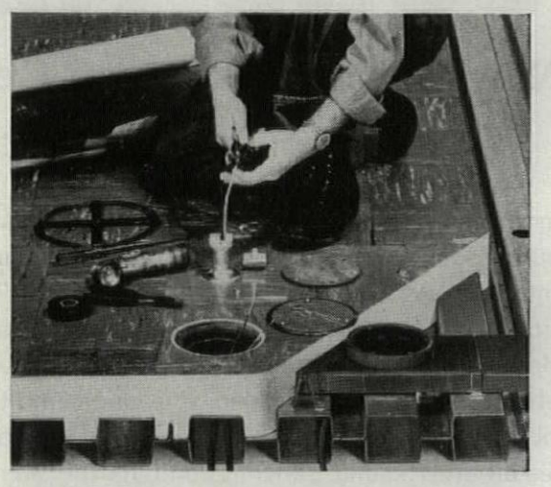


Milcor Celluflor anticipates tomorrow's electrical load in new Kaiser Center

Here, to provide unlimited electrification at low cost — and meet the challenging construction requirements of a fan-shaped floor layout — the architect has combined four types of Milcor Celluflor panels.

In addition to being the structural floor, the underfloor cells serve as raceways to handle the complex cable systems required by illumination, communications, and hundreds of pieces of electronic office equipment in this new 28-story building. And — there's electrical capacity to spare! Service outlets can be installed practically anywhere on the floor. They can be relocated or new ones added — or circuits can be changed — without costly alterations.

There are other advantages of Celluflor — savings of steel, footings, and construction time. For details, see Sweet's Architectural File, section 2a/In — or write for catalog 270.



Electrical header duct carries electrical feeder circuits from the distribution panel transversely across Celluflor cells. Definite patterns of service repetition are established so that proper raceways are easily located, when electric power, telephone, signal, or other service outlets are required in any floor area.

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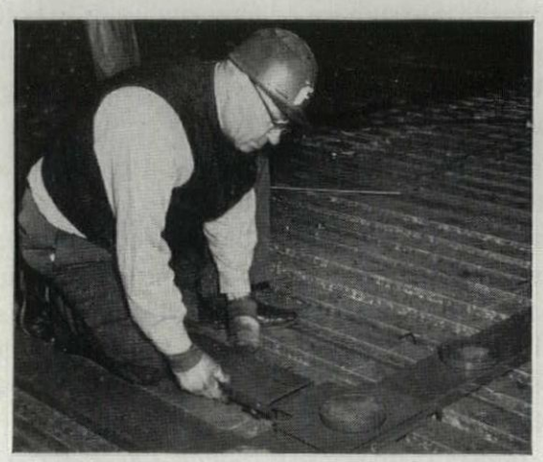

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Formerly, data were obtained by the "Reverberation Room Test Method." That method, satisfactory for some materials and construction, proved insufficiently accurate for modern acoustical calculations. The new AMA 2-Room Tests are made under realistic simulated working conditions. Results are expressed in specific frequencies instead of in averages. They make possible accurate evaluation of acoustical product performance.

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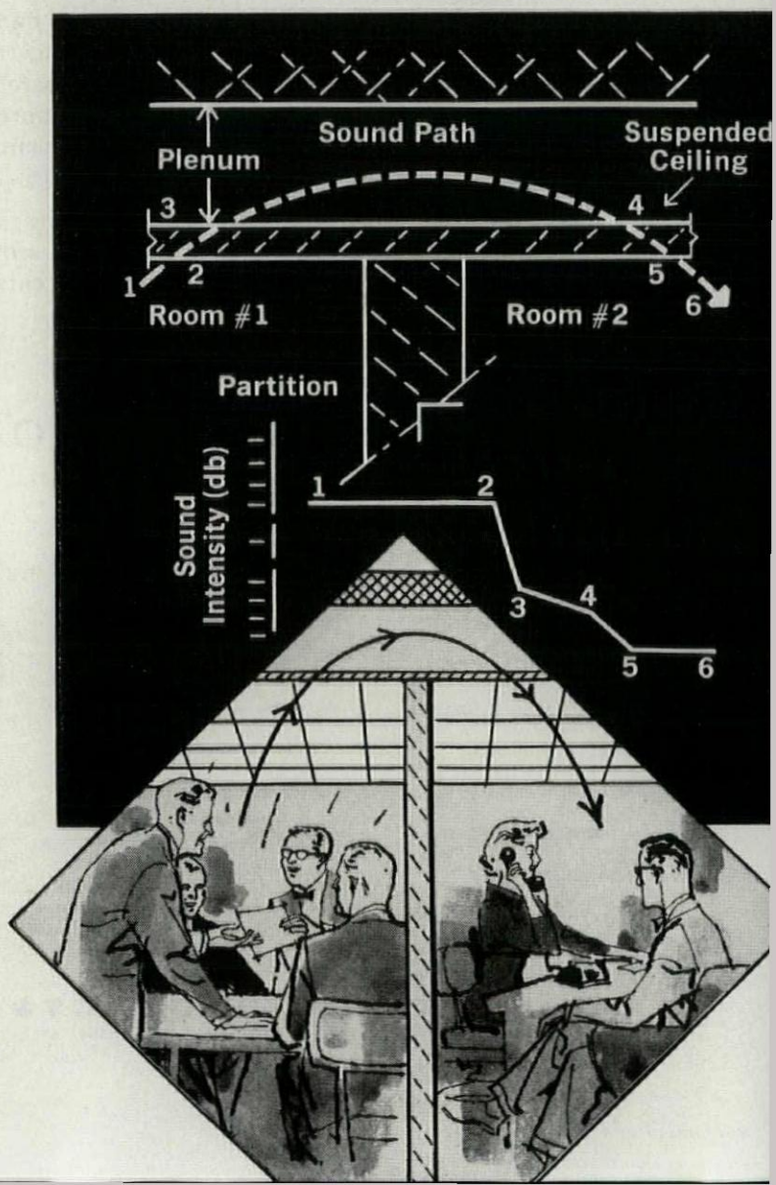

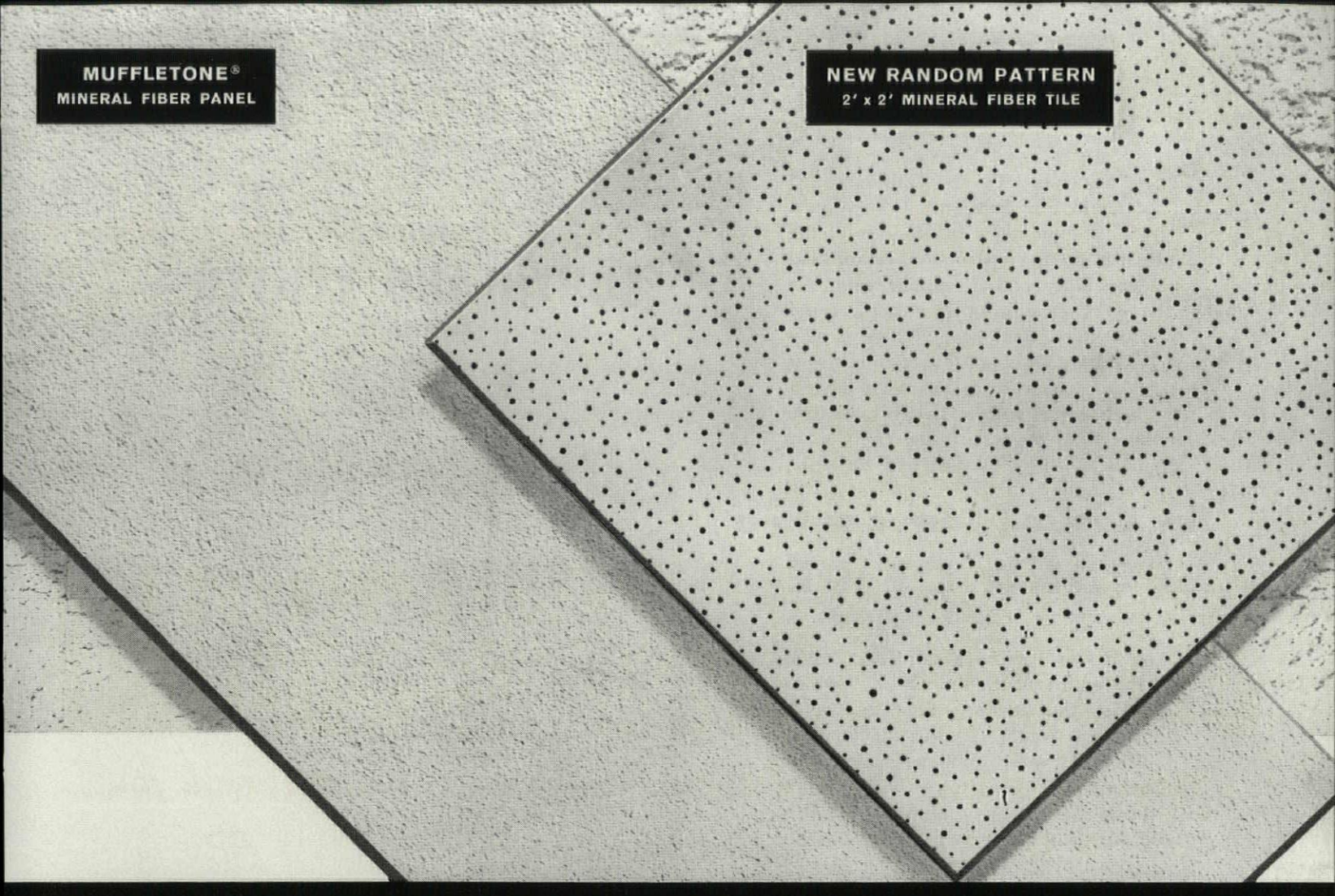

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Coefficient (db)	25	27	24	24	27	28	30	35	38	45	49

2′ x 2′ NEW RANDOM PATTERN* **⅝"** perforated mineral fiber tile with high decibel ratings across full frequency range. New large-size units enhance modern "open" interiors, speed installation. Incombustible. Exceptional strength, rigidity. New edge-to-edge pattern minimizes joint lines, creates monolithic effect. *PAT. NO. D-168,763

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Editorial

What's a world fair for?

Of course it's for fun. At a time when everybody is worrying for dear life, no wonder the idea, "Let's have a fair," is building up in no fewer than five cities on the North American continent. Seattle plans a "Century 21" for 1961; Philadelphia is starting to think about a possible "Philadelphia 1963"; Los Angeles wants a World's Fair the same year; Washington, D.C. and New York are competing with the same idea for the year after that; and Montreal, too, wants a "Grand International Exposition" for 1967.

Not all these fairs will come through, and under the rules of the International Bureau of Expositions in Paris, to which the U.S. subscribes though not a member, only one will be a "world's fair."

Never mind. Wherever the desired fair or fairs may develop, money will probably be made in buckets because crowds will pay to forget their cares, join with other people, see things, learn things, buy. Out of its proposed fair, Los Angeles hopes for $4 to $6 billion.

In such expositions architecture too steps out, casts off inhibitions, puts on cap and bells—and comes back often with a profit. Just for fun, London's exposition of 1851 allowed a gardener named Paxton to put up an incredible super-greenhouse called the Crystal Palace, and the whole age of glass-and-metal architecture was popularly established. For the Paris exposition of 1889 a "crazy" engineer named Eiffel was allowed to put up a tower, and the skyscraper idea (already born) was finally anchored. The tower stayed. Chicago's 1893 Fair vision of a plaster Paris, which plastered America for nearly half a century with classical grandiosities of building, nevertheless lifted its cities out of the mud with the ideal of becoming beautiful. And for better or worse New York in 1939 showed that whole buildings could be cast up and tossed onto the landscape like children's toys: the googie gestation.

Also, it was the General Motors motorama of the 1939 fair that set off today's craze for building great festoons of superhighways.

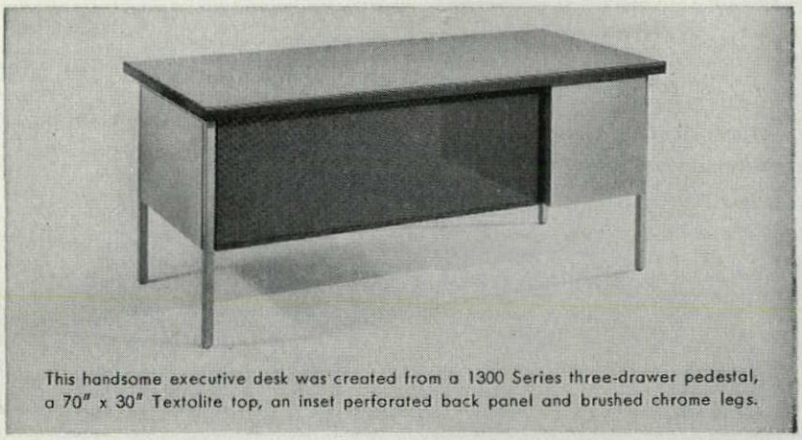
Not many logical limitations can be put on a fair or it ceases to bring forth wonders, but as a game it must have a limitation or two: for example, as a game it must be a game. Though spontaneity is fun, formless riots are not, and civilizations like children outgrow what once amused them.

Right now it would seem as if nothing in the forthcoming fairs could be more important than new invention to help today's fast-gathering crowds to get around nicely in them. Thus far, in this part of the game, New York has come up with the "same old new stuff"—still more superhighways likely to make snarls bigger. Los Angeles and Seattle seem to be thinking faster. For example, they think of their fairs as a place in which to try out the swift new monorails just for fun—and who knows, maybe this, like G.M.'s earlier superhighway dream, will be an idea that the city can keep and

continued on page 119

VARIATIONS

on a theme by STEELCASE

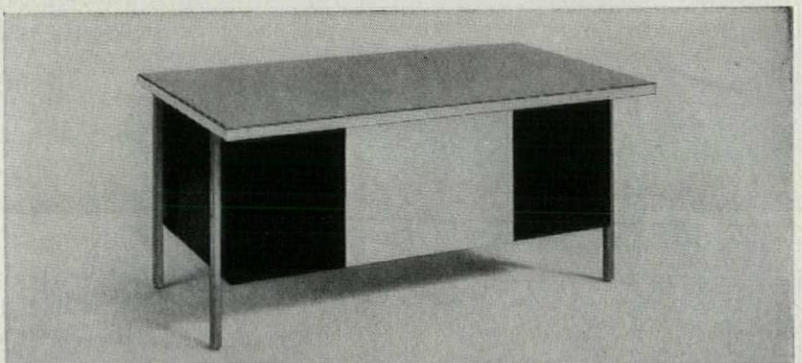


This handsome executive desk was created from a 1300 Series three-drawer pedestal, a 70" x 30" Textolite top, an inset perforated back panel and brushed chrome legs.

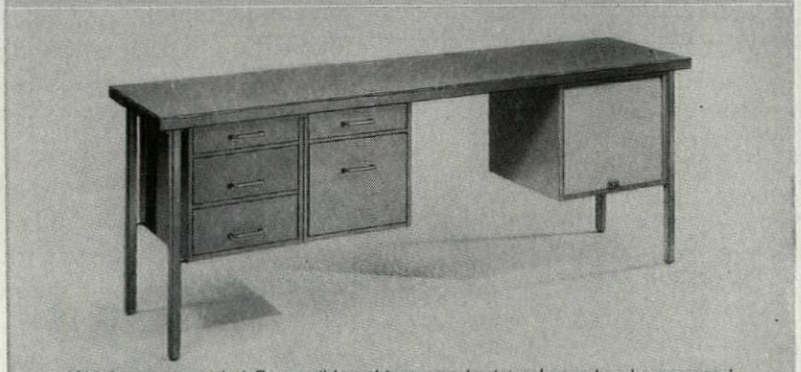
Just as a fine musician can improvise on a basic theme to create new sounds, Steelcase can adapt the basic design of its imaginative new 1300 Series to meet your requirements for distinctively different office furniture.

Illustrated here are just a few variations that can be achieved from component parts. With this exciting new furniture, you can design each working area individually and still maintain a uniformly attractive appearance throughout the office.

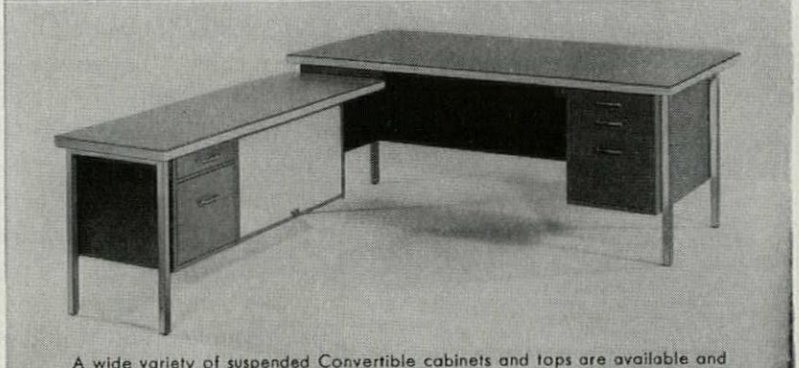
We will be pleased to work with you, as we have with many distinguished architects, to translate your ideas with skill, imagination and economy into office furniture that will complement your total design. Steelcase Inc., Grand Rapids, Michigan. In Canada: Canadian Steelcase Co., Ltd., Don Mills, Ontario.



Still another variation was achieved with two 1300 Series pedestals, a 60" x 36" Textolite top and plain back panel in contrasting color. Legs are brushed chrome.



1300 Series suspended Convertible cabinets can be interchanged and rearranged easily to meet changing storage requirements and provide maximum efficiency.



A wide variety of suspended Convertible cabinets and tops are available and can be used in many combinations to create smart new executive groupings.

FOR YOU: *On request, a set of full-color prints showing many variations using 1300 Series components. Just address Department A.*

STEELCASE INC

the crowds can take home with them. These are fairs for the sixties.

The plan of a good modern fair might be the first urban plan that really sorts out the people on foot from those in scooter trains, people in air-hung gondolas from those in cars or boats or helicopters or jet floaters. These groups may be put on separate paths, with planned interchanges, so people can go where they want with minimal irritation. It's fun to bump around in crowds but no fun to do nothing except bumping, whether in a fair or in a city. And cities learn from fairs.

Criticism, constructive

Criticism of the New Senate Office Building in Washington on architectural grounds has drawn spirited replies though it has brought no spirited defenses of the architecture (page 261). Replies from officials and architects of the building declared that the criticisms were too late, or were made by the wrong people with the wrong interests, or in the wrong manner, and that therefore nobody need bother to answer their content.

An interesting assumption lies behind all this, and especially behind the remark that criticism came "too late." By the demand for an earlier criticism the critic is held co-responsible with the architect for the success of the public building.

In other arts criticism has no such privilege. The criticism comes after the event, and if it hopes to improve anything at all, it can affect the *next* work or the next performance only. The architectural critic must have the same freedom.

Yet in architecture an early "crit" may indeed help an architect seeking to improve his plans ahead of construction. For example, the three-year critical battle of the AIA against the extension of the Capitol east front, though it did not achieve its objectives, did bring some important mitigations. By now nobody but historians cares just what these were, but they were extensive.

In view of this responsible position of the architectural critic, it is too bad that plans for the latest House Office Building have ever been and still are being carefully secreted against press and critics. The building is still not much more than a huge hole in the ground. Open criticism in the free American tradition might be helpful. Secrecy cannot be. The plans should be made public now.

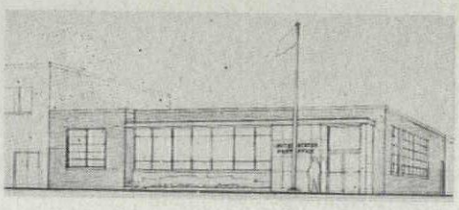
Unstamping the post office

A small but happy victory in the battle to improve government architecture was won recently in the Westchester district of Los Angeles, where a little band of bureaucrats, builders, and architects combined to cut some red tape and produce a branch post office worthy of public pride.

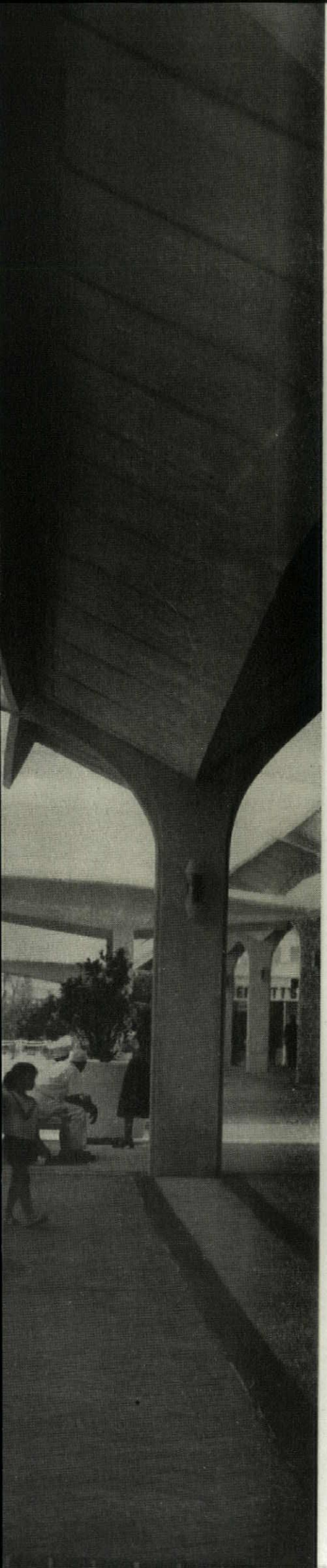
In having local facilities built by others and leased back for its use, the Post Office Department in Los Angeles and elsewhere asks publicly for bids, drawings, and lease figures based on a set of minimum standard specifications and "suggested" façade designs. (One of the five nearly identical façades prescribed for the Los Angeles region is shown in the sketch below, left.) To get the low bid, and the job, experienced builders have found it wise to stick closely to the book.

Developers Fred Marlow and Fritz Burns, however, considered the products of this spiritless system somewhat below their own standards, and they asked Architect Craig Ellwood and his associates to try for something better. Approaching the department's regional headquarters, Ellwood and his clients found unexpected allies in Real Estate Officer E. L. Mayfield and assistant Charles Suyeishi, two gentlemen who were willing to listen to new ideas for exterior design and materials, interior arrangements, and color accents inside and out.

The result of their sensible collaboration is a structure which can handle mail and people with efficiency and dignity, and look the part to boot, without trying for standard monumental "effects." At the same time, it is a building inviting to the public it serves. Its gray-blue block are crisply framed in white-painted steel and set off by a bright off-orange entrance and clear, handsome lettering. The total cost of this breath of fresh air, including 6 per cent architect's fee, came to no more than the equivalent stock design which, in slight variations, sadly, continues to be perpetrated on communities all over the U.S.



MARVIN RAND



The fastest growing city in the south grows into its first big regional shopping center

BY WALTER McQUADE

Atlanta's Arabian market place

About all that is left of the fragrance of Peachtree Street in central Atlanta is the sound of its name; the reality is the usual snarled city traffic. But out Peachtree 7 miles, smack in the middle of the richest suburban market of the Southeast, is the newest and one of the most successful of the country's huge new regional shopping centers, Lenox Square. Here are 58 bright new shops—most of them branches of Peachtree Street's oldest institutions—including not one but both the city's big department stores, Rich's and Davison-Paxon. In the first month of the new center's operation, the retail gross of downtown Atlanta was off 15 per cent, but the gross retail sales of greater Atlanta were up 3 per cent. The difference clearly was the design, both architectural and mercantile, of Lenox Square. It is an ebullient place to shop—for almost anything.

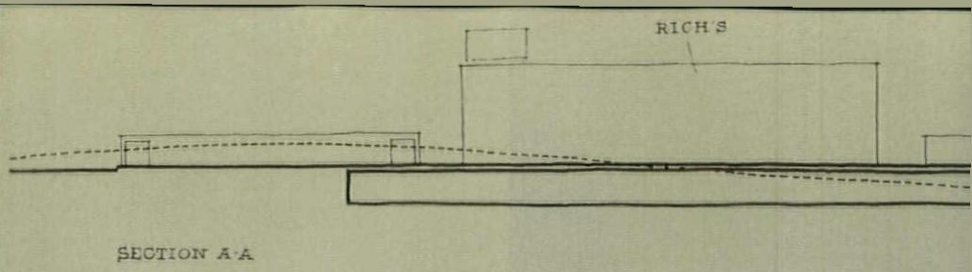
For pedestrians only

The key to Architects Toombs, Amisano & Wells' design* is the 1014 ft. long central mall of the big center (photo, left), a shoppers' walkway insulated from automobiles. In spirit this plaza, reached by outdoor escalator up from a lower pedestrian square, is out of sunny Tunisia by way of structural Italy, folded into place by the skilled hand of New York–born Joseph Amisano, a partner in one of Atlanta's older firms. The effect is vivid and rich. Underfoot, the decorative paving of this pedestrian mall lies like a series of permanent oriental rugs—two colors of brick, concrete, and pebbles. Overhead, spanning the 55 ft. between stores on either side, are canopies and arches of white concrete, folded and arched in shapes that are actually more sculptural than structural, although they obey up-to-date engineering dicta. Planted in symmetrically placed pots

Under sheltering wings of concrete, the central shopping mall is a place for rest as well as circulation. All horizontal surfaces, such as the edge shelves of the planting boxes, are a standard 15 in. high, to encourage sitting.

*The architects' project staff included Fred Bainbridge, J. Starke Hamilton, and Wiley Parker.

PHOTO (LEFT): GABRIEL BENZUR



SECTION A-A

and planting boxes are enough bushes and trees to mask the long perspective; all a shopper can distinguish at one time is four or five store fronts, not the usual infinity of display.

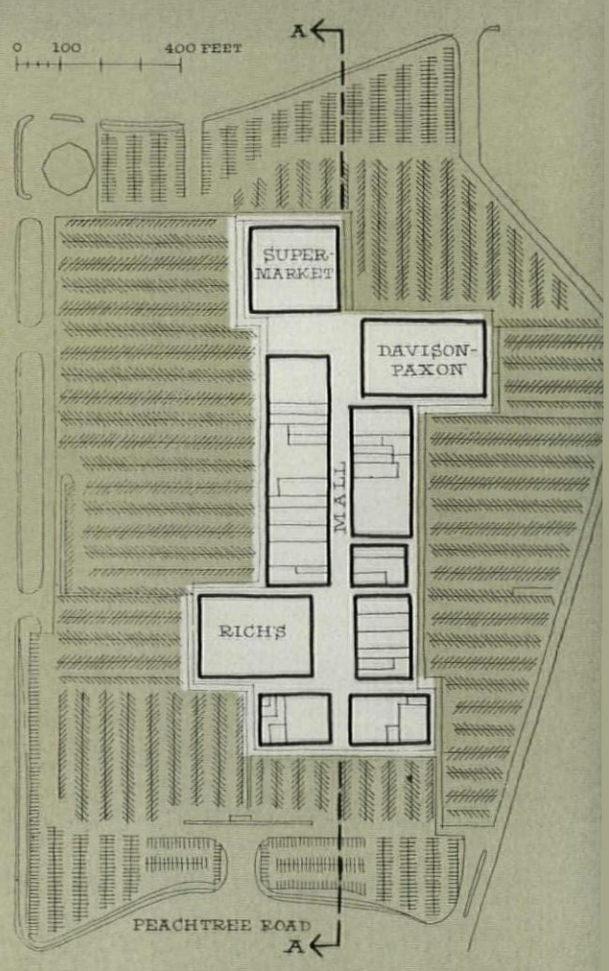
Changing a habit

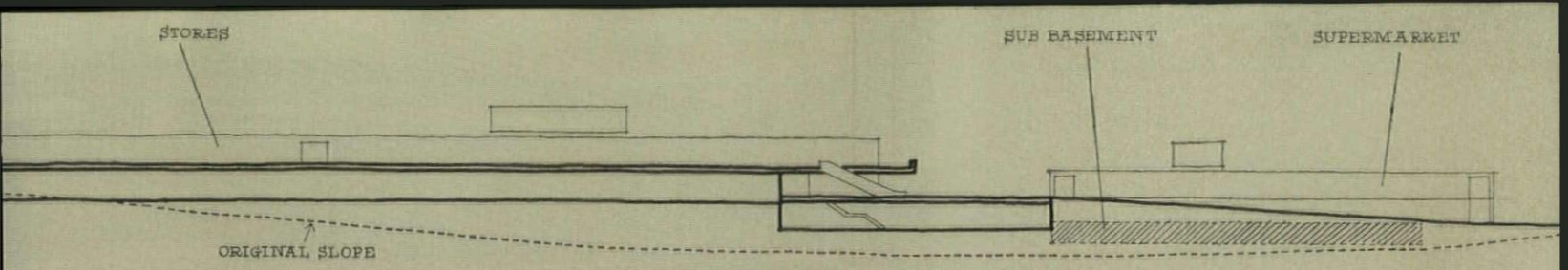
This vivid design has already affected shopping protocol in Atlanta. Housewives put on their shorts to shop here (not in downtown Atlanta), bring their children in droves, and mosey around, exposing the whole family to mercantile temptation. The dished curves of the parking lots around the center also are pleasantly informal. (The 72-acre site had a 100 ft. drop from one end to the other, and had to be carved into shape.) The design never is allowed to get out of hand, however; it is restrained by two controls—a basically stern, rather classical pattern, which is severe about maintaining axes and the balance of elements (see plan)—and by the hard hand of economizing. The center seems lavish, but the owner says it came in 20 to 25 per cent below any comparable regional center. He will not quote dollars, but a fair guess would be near $20 per sq. ft. A close look does reveal paring—along with a few deep cuts in concrete work and coordination of mechanical services. Most of the economizing, however, was accomplished in the close structural scheduling, which reduced the time wasted on the job to a minimum.

This owner is new to shopping center activity, an oil-rich Oklahoma family foundation which supports cancer and agricultural research. Edward E. Noble, of the founding family, an unassuming, scholarly 31-year-old who is president of Lenox Square, became interested in Atlanta as a shopping site when he compared it with another fast-growing city he knew much better, Tulsa. With a 1955 population of 250,000, Tulsa already had three times the shopping area in the suburbs than it had

PHOTOS: (LEFT) WHAT STUDIO; (OPP.) WALLACE LITWIN

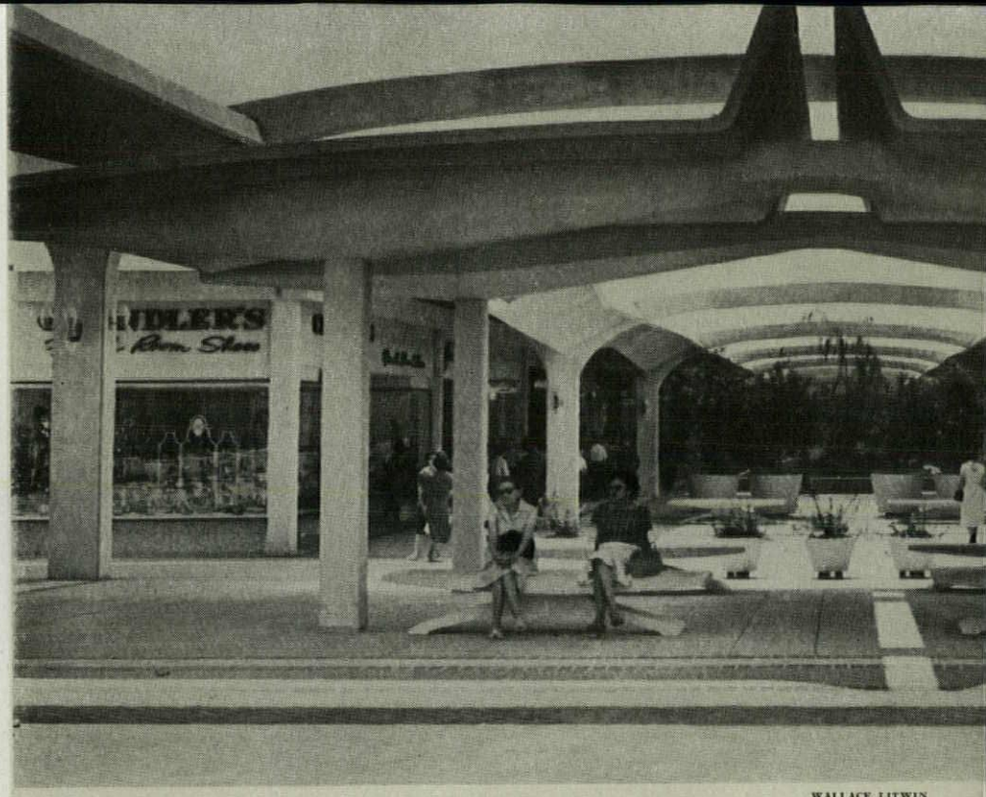
A long island in a sea of 6,000 parking spaces, Lenox Square is split down the middle by a landscaped pedestrian mall and is almost completely edged by wide arcades. All truck traffic uses a service tunnel entered from the far end. Rich's and Davison-Paxson, the dominant Atlanta department stores, also dominate the cluster of 58 stores.





Sloping site complicated the development, but made it easy to provide a subbasement for future parking (shaded area).

At night Rich's big store is lighted to become a beacon for the center.



WALLACE LITWIN

Concrete dresses up the roof line of the entire group; this is important because most motorists' first look at the buildings is from roads above the site. The view down the central mall (above) shows one of the freestanding concrete shelters which were sprayed in place.

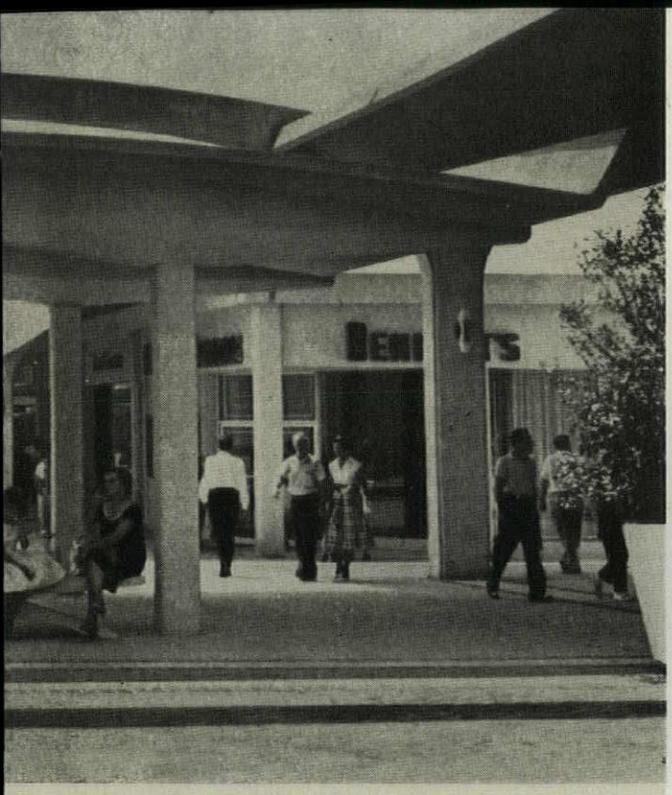
Arcade around the periphery of the shopping center is made of 98 concrete vaults, each weighing up to 10.7 tons, precast on the site and lifted into place by crane. In the background is one of the two department stores.

downtown. But although Atlanta was approaching a 900,000 population by 1955, only a ninth of its shopping area had yet disentangled itself from downtown. (This month Atlanta will officially cross the million mark and a committee is looking for something sturdy enough to break a Coca-Cola bottle over, in celebration.) And neither of the city's big department stores had been tempted out of midtown.

Noble decided to try some tempting himself, in 1956, and bought the heavily wooded site on which the center now stands, then an estate. Before succeeding in getting it rezoned for commercial use, he had to fight up through the courts to the State Supreme Court not once but twice. While doing this, he also had to keep the R. H. Macy chain, which owns Davison-Paxon, from being lured into another center projected not far away. But finally, with local and national businessmen convinced that the center would be something special, he won, then formed his own construction company to put it up, and completed the huge job (800,000 sq. ft. of stores, parking for 6,000 cars) in less than 13 months.

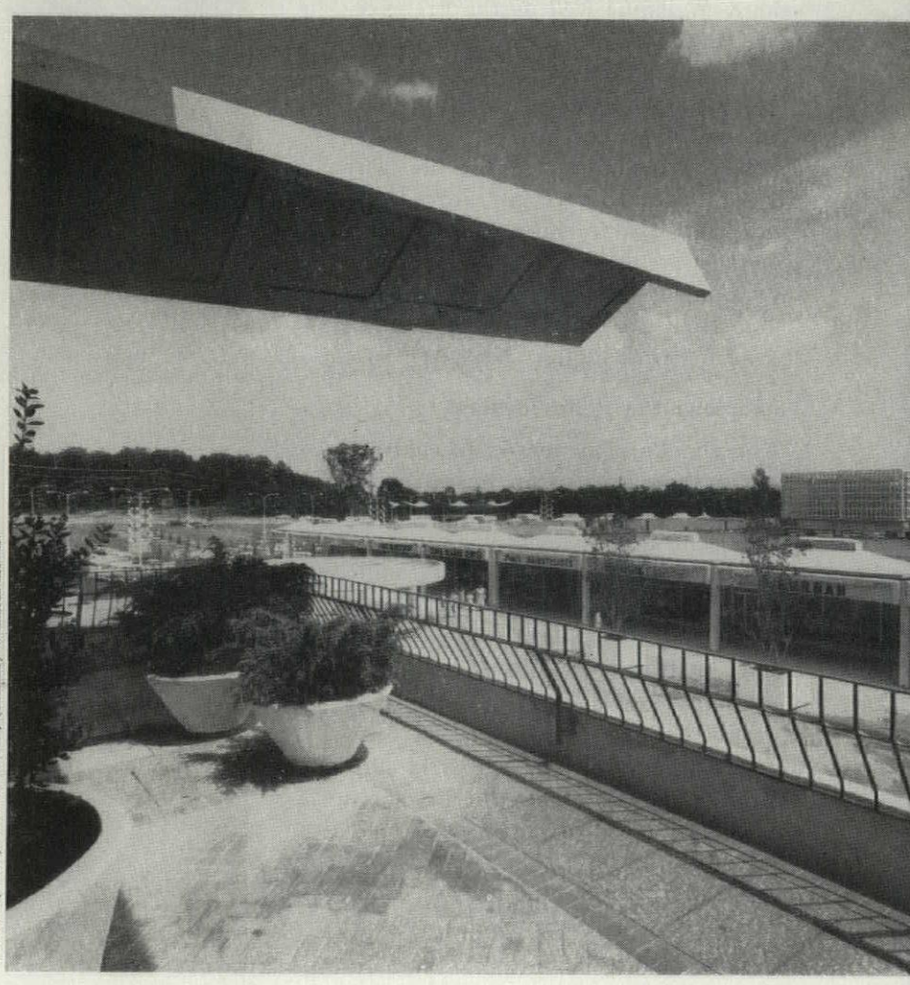
Novices at work

The developer and designers of Lenox Square gravely credit inexperience with much of their success. Some of the decisions were nervous ones, Noble admits. One was the leasing of six stores to men's-wear merchandisers, an unheard of concentration in one line for such a center. Instead of cutting each other's throats, however, the six men's stores seem to have lured a great many more men. Typical of the difficult decisions was one to invest in the expensive heavy equipment necessary to set up job-site concrete facilities instead of depending on transit mix. This expensive decision is credited now with having made immense economies; two crews were put on the job,



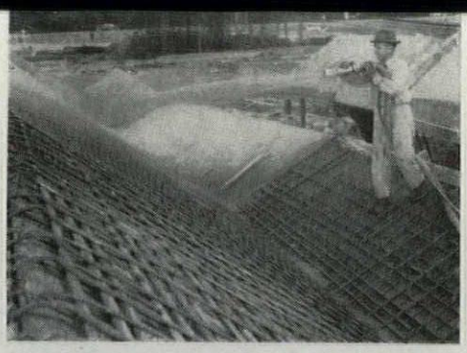
Angular concrete planes, sheltering the mall at its two-story end, add visual excitement to the chore of shopping. Escalators in the shadows lead up to the mall from the plaza at the south end of the center.

From the raised south end of the mall the shopper looks out over the vaulted roof of the lower level shops. In the distance is the scalloped roof of the service station (close-up below).



Thin concrete shell over the service station was sprayed on a web of steel reinforcement draped from the structural girders.

PHOTOS: (RIGHT) GABRIEL BENZUR; (OTHERS) WALLACE LITWIN



Concrete being gunned on canopy.

LENOX SQUARE REGIONAL SHOPPING CENTER, Atlanta, Ga.
ARCHITECT: Toombs, Amisano & Wells
LANDSCAPE ARCHITECT: Hideo Sasaki
STRUCTURAL ENGINEERS: Mullen & Powell
CONSULTING ENGINEERS: Guerrero & Ratliff
GENERAL CONTRACTOR: Lenox Contracting & Engineering Co.

PHOTO (ABOVE LEFT): TRACY O'NEAL. OTHERS: GABRIEL BENZUR

making concrete available constantly without overtime pay penalties. Enough concrete went into the job to build a 24 ft. highway 27½ miles long.

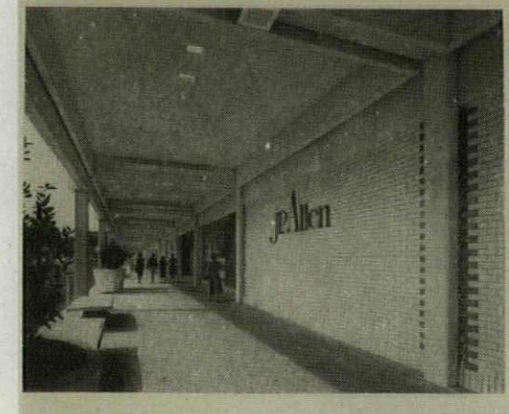
The discovery of a new gun to spray much of this concrete was another economy, permitting minimal use of scaffolding and formwork. Half-forms for the arches and roofs over the central walkway were suspended from bar joists as targets for the gun, the True-Gun developed by Max True of Tulsa, which delivers its slugs of concrete with great control and very little bounce-back. The builders figure it cut the cost of the arches and canopies over the pedestrian mall in half.

This was the first shopping center commission to come to Toombs, Amisano & Wells, as well as the first venture into the field by the Noble Foundation. In researching the job they used the four Noble airplanes to commute from one shopping center to another across the U.S. But backing up their shrewd innocence were experienced personnel gathered to carry out the ideas seen from the plane. Architect Amisano, for example, had been chief designer in the New York firm, Ketchum, Gina & Sharp before going south.

Tomorrow: the neighborhood

The client's plan now is to continue both in the construction business and shopping-center investment field—but in the latter only in small neighborhood centers and large regional ones, skipping the intermediate size as a bad business bet at present. There are few doubts that Atlanta's fascination with the group's first product, its new shopping toy, Lenox Square, will last. Says one old Atlantan: "This thing is startling, and amusing, too—all those shops you've been used to seeing scattered all over downtown suddenly gathered up together out there now, looking different. Why, it's like running into your wife out with another man."

Canopies over the mall provide shade for shoppers, but breaks in their planes keep the shade from becoming dense. (For a close-up of a slot between the canopies, see cover.)

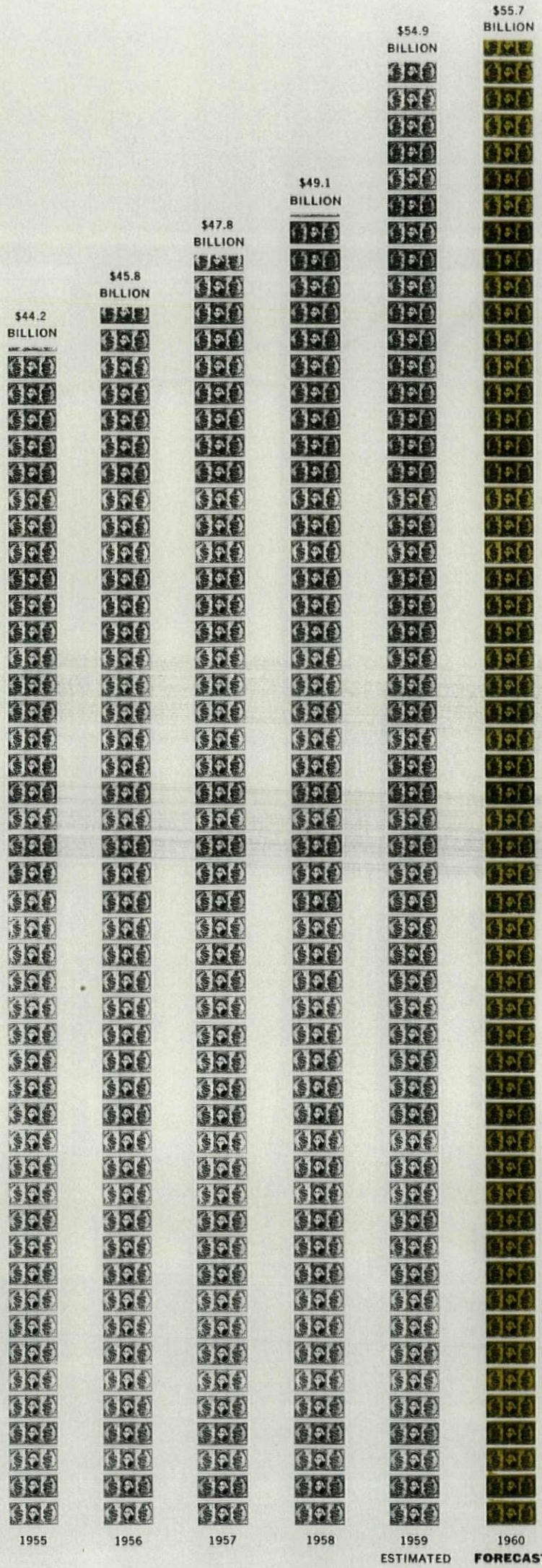


Bricks, glazed and laid in patterns, wall the stores under the snug exterior arcade (left) and the multistory department stores out in the open (right). Garlands of plastic globes, hung from the lampposts of the parking space, add general gaiety and key the parking locations by color.

1960: another big year for building

Although anti-recession measures have pushed 1959 activity to a level hard to beat, building in 1960 will probably again set a new record—more than $55 billion. A FORUM forecast

BY MILES L. COLEAN



Construction activity in 1960, expanding for the 16th year in a row, will exceed $55 billion. Although this may be only about 1.5 per cent above 1959, it is more impressive than it looks, for 1959 will be an exceptionally big year for building. Construction expenditures for 1959 will likely reach $54.9 billion, a dramatic jump of 11.8 per cent above 1958—three and a half times the average increase of the past few years, and more than twice the most optimistic predictions.

This year's spectacular performance is plainly an aberration in the long-term trend, caused by the government's use of construction as an anti-recession tool in 1957 and 1958. (Stepped up were spending for military and highway construction and for private housing through authorization of an extra $1 billion in Federal National Mortgage Assn. home mortgages.) As usual in such economic rescue efforts, their impact did not come until recovery was well advanced, in this instance in the first half of 1959, when business already had fully regained its lost momentum.

Therefore, in appraising the trend of construction activity, the years 1959 and 1960 should be considered together. When this is done, the average annual gains over the two years appear to be well in line with the long-term trend (chart, left; table, page 130).

The leveling off of total construction activity in 1960 will result mainly from the same factors which swelled the 1959 volume—but in reverse. A decline in house building during 1960 seems inevitable, and highway construction will do well to hold its own. At the same time there will be offsetting gains in the construction of nonresidential buildings of all kinds—notably industrial, commercial, and institutional.

Private construction is expected to gain more in 1960 than publicly financed construction, reversing at least temporarily the recent trend (graph, left below). It is expected to total $39.3 billion in 1960, up almost 2 per cent: public construction at $16.4 billion will be up only ½ per cent.

The upward trend of nonresidential building activity is based on a combination of several favorable factors—not the least of which is costs. Next year building costs should increase only modestly. The growing stability in material prices and the industry's slower rate of expansion should hold the average increase in the government's composite construction cost index to two points in 1960, compared with three points in 1959. (Residential building costs, due to the expected drop in volume and the sensitivity of lumber prices to such volume changes, should rise even less.)

Because the FORUM forecast is based on current prices, this small anticipated cost inflation will account for some of the 1.5 per cent increase in the total *dollar volume* of construction forecast for 1960. Translated into constant (1947-49) prices to discount the effect of cost inflation, the same forecast indicates a scant 0.5 per cent increase next year in the total *physical volume* of construction (graph, left below).

By major categories of construction grouped as to type, this is the outlook:

Nonresidential buildings

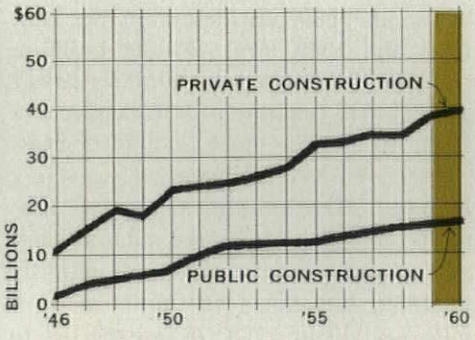
Commercial. Privately financed office buildings, warehouses, stores, restaurants, and garages, comprising the biggest category of nonresidential building, will increase 7.6 per cent in 1960 to about $4.3 billion. A small amount of public building of this kind will raise the total to $4.6 billion. (The chart above, like those that follow, includes both private and public building which are shown separately in the tabulation on page 130.)

COMMERCIAL BUILDING

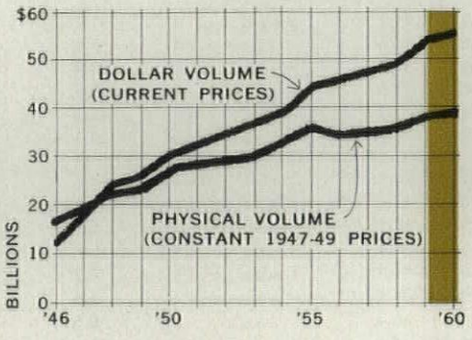
Privately financed office and warehouse building, roughly half the total, has been in a mild slump this year (down about 3 per cent), but recovery now seems to be well under way. It should advance about 3 per cent through 1960—and on a broader geographic base than characterized the preceding office building boom which was heavily concentrated in New York.

Mercantile building (stores, restaurants, and garages) is currently enjoying an unusually good year. It will reach $2 billion by the end of 1959, an all-time high, 27 per cent over 1958. Shopping-center construction, which has rebounded from its 1958 setback, will lead total mercantile building up more than 12 per cent in 1960.

Public building of the commercial kind (state and municipal retail stores and dispensaries, warehouses, garages, restaurants, etc.) is usually lumped



Public spending's growing role *in construction during the past 15 years is highlighted above. It has increased eightfold from 1946 to a projected $16.4 billion in 1960. Meanwhile private building has increased only fourfold to $39.3 billion. In 1946 public building accounted for 18 per cent of the total; next year, according to the forecast, it will account for 29 per cent.*



High price of inflation *is reflected in the two curves above: one tracing the 15-year growth in physical volume of building (measured in constant 1947-49 prices), the other, the dollar volume of building (measured in current prices). Although physical volume will have increased only 140 per cent between 1946 and 1960, inflation will balloon the increase in dollar volume to 340 per cent.*

under "other nonresidential," as in the tabulation below. It accounts for only $330 million of the 1959 total and $325 million of the projected 1960 total.

Educational. School building in 1960 will increase about 3 per cent to more than $3.2 billion. Public school construction, which accounts for most of the total, suffered a severe relapse in 1959, and the outlook for 1960 is for only a small recovery (an increase of about 4 per cent). This disappointing trend flies in the face of the urgent need for new classrooms and can only be explained by the wait-and-see attitude of communities tusseling with the desegregation issue, by the rising cost of tax-exempt school bond financing, and by the growing public reluctance to pay higher taxes for schools.

EDUCATIONAL BUILDING

Private school building is also in a stagnant phase, which is likely to continue through next year. It will amount to about $550 million per year.

Industrial. The two-year decline in factory building is over. The 1959 total—private and public—will be only about $2.3 billion (15 per cent less than last year), but a strong upturn is already under way as part of the current revival of industrial capital investment. Next year it should top $2.7 billion, a thumping increase of 17 per cent, higher than that forecast for any other important category of construction. Most of this building will be done on outlying sites in metropolitan areas and, to an increasing extent, along highways.

The bulk of industrial construction is privately financed. It will total $2.4 billion in 1960, up almost 19 per cent from the 1959 level. Public building in this field (mainly atomic power plants) will amount to $375 million in 1960, up a shade more than 7 per cent.

INDUSTRIAL BUILDING

Hospital. The building of private hospitals, convalescent homes, laboratories, and clinical structures fell off slightly in 1959, but holds the promise of a mild revival in 1960. It is expected to

HOSPITAL & INSTITUTIONAL BUILDING

1960 forecast summarized

	1958 Actual	1959 Est.	1958-59 Change	1960 Forecast	1959-60 Change	1958-60 Average annual change
TOTAL NEW CONSTRUCTION[1] *(millions of current dollars)*	$49,109	$54,900	11.8%	$55,700	1.5%	6.7%
PRIVATE TOTAL	33,833	38,550	13.9	39,275	1.9	7.9
Nonresidential	8,675	8,850	2.0	9,625	8.8	5.4
Industrial	2,382	2,020	—15.2	2,400	18.8	1.8
Commercial	3,589	3,950	10.1	4,250	7.6	8.9
Office buildings, warehouses	2,013	1,950	—3.1	2,000	2.6	—0.3
Stores, restaurants, garages	1,576	2,000	26.9	2,250	12.5	19.7
Other nonresidential	2,704	2,880	6.5	2,975	3.3	4.9
Religious	863	980	13.6	1,000	2.0	7.8
Educational	574	550	—4.2	550	0	—2.1
Hospital and institutional	600	570	—5.0	600	5.3	0.2
Social and recreational	424	550	29.7	575	4.5	17.1
Miscellaneous	243	230	—5.3	250	8.7	1.7
Residential (nonfarm)	18,047	22,250	23.3	21,925	—1.5	10.9
New dwelling units	13,552	17,000	25.4	16,500	—2.9	11.3
Additions and alterations	3,862	4,500	16.5	4,600	2.2	9.4
Nonhousekeeping[2]	633	750	18.5	825	10.0	14.3
Farm	1,567	1,750	11.7	1,650	—5.7	3.0
Public utility[3]	5,355	5,500	2.7	5,800	8.3	5.5
All other private	189	200	5.8	275	37.5	21.7
PUBLIC TOTAL	15,276	16,350	7.0	16,425	0.5	3.8
Nonresidential	846	1,025	21.2	4,500	1.1	—1.7
Industrial	1,402	1,550	10.6	375	7.1	—3.6
Educational	5,364	5,900	10.0	2,700	3.8	—2.9
Hospital and institutional	1,387	1,450	4.5	475	5.6	10.5
Administrative and service	836	900	7.7	500	—13.0	—2.5
Other nonresidential	551	550	—0.2	450	—5.3	0.4
Residential	451	550	22.0	750	—26.8	—2.8
Military facilities[4]	1,019	1,200	17.8	1,650	6.5	8.6
Highways	154	225	46.1	5,900	0	5.0
Sewer and water[5]	4,653	4,450	—4.4	1,550	6.9	5.7
Sewer	408	350	—14.2	950	5.6	6.7
Water	2,875	2,600	—9.6	600	9.1	4.5
Public service	390	450	15.4	500	—9.1	6.5
Conservation and development	532	575	8.1	1,300	8.3	13.1
All other public	448	475	6.0	275	22.2	34.2

1 Includes major alterations and additions.
2 Includes hotels, motels, and dormitories.
3 Includes power plants, telephone exchanges, stations, maintenance shops, warehouses, etc., as well as power, telephone, and telegraph lines and other nonbuilding construction.
4 Includes mainly warehouses, barracks, theaters, hangars, schools, etc., as well as airport, and other nonbuilding construction.
5 Includes sewage plants, pump stations, etc., as well as nonbuilding construction.

Sources: 1958, U.S. Departments of Commerce and Labor; 1959 and 1960 estimated by Miles Colean.

increase 5 per cent to $600 million, which was precisely the level in 1958. On the other hand, publicly financed building of this kind has been expanding impressively. It will increase 15 per cent this year, and a further 6 per cent increase—to $475 million—is forecast for next. Together, private and public building in this category will total almost $1.1 billion in 1960, about 5 per cent more than this year's total.

Religious. Benefiting from the greater generosity of communicants from their larger incomes, the building of churches, temples, and related facilities

RELIGIOUS BUILDING

has risen strongly from the recession doldrums and is headed for further expansion. It increased almost 14 per cent this year and is expected to climb another 2 per cent next year. This will put religious building—all privately financed, of course—at $1 billion for the first time on record.

Social and recreational. The bowling-alley boom, which will run to perhaps $250 million in 1959, appears to be mainly responsible for this year's sweeping 30 per cent advance in private social and recreational building. Other building types prominent in this category are drive-in theaters and community cultural centers of many kinds. A

SOCIAL & RECREATIONAL BUILDING

more moderate advance—4 or 5 per cent—to $575 million is in store for 1960.

About a third of the public building usually classified as "other nonresidential" (table, left) is actually for social and recreational purposes, and is therefore included in the chart above. It will amount to about $175 million this year and should be about $165 million next, raising total social and recreational building to $740 million in 1960.

Public administration and service. Post offices, municipal, state, and federal office buildings, courthouses, prisons, and other such public structures have

PUBLIC ADMINISTRATION & SERVICE BUILDING

been built in profusion during the current year, but belt-tightening by the federal government and by many local governments indicates that next year will see a substantial 13 per cent drop. The 1960 total will be $250 million, excluding public "commercial" building.

Other nonresidential. In this catch-all classification are such privately financed projects as post office buildings, comfort and fire stations, zoo buildings, veterinary hospitals, animal havens and pounds, boathouses, greenhouses, transportation terminals, and such publicly financed projects as transportation terminals, boiler and central heating plants, greenhouses, crematoriums, and

OTHER NONRESIDENTIAL BUILDING

grain elevators. The private portion of this category is expected to increase about 9 per cent to around $250 million next year, but the public sector will decline about 5 per cent to $210 million. Together, the private and public totals will come to $460 million in 1960, a shade above 1959.

Residential buildings

Apartments. Though it is lumped with house building in the table, left, private apartment building is a big and growing segment of construction. Embracing buildings which accommodate three or more dwelling units each, it will account for at least 240,000 units in 1959 and about 250,000 in 1960.

Expenditures for private apartment construction alone will be $3.5 billion next year, up about 23 per cent. Because the number of childless households (both new families and mature ones) is growing disproportionately, private apartment building may be expected to expand for several years to come. As in the past, most of it will serve the moderate-to-high rental market, and most will be financed with conventional (not FHA) mortgages.

Public housing will account for 25,000 apartment units this year but is expected to drop to 22,000 units in 1960, involving an expenditure of about $450

APARTMENT BUILDING

million. The outlook for public housing apartments will not be seriously affected by the housing legislation which was passed by congress in mid-September. Local authorities already have 100,000 units under federal subsidy contract on which work has not yet been started, largely because of difficulty in obtaining sites. While hypothetically all of these might be started in 1960, it is probable that not more than a quarter of them will.

Together, private and public apartment building will rise 16 per cent to almost $4 billion in 1960.

Hotels, motels, and dormitories, listed as private "nonhousekeeping" residential building in the table, also constitute a big segment of private building. It will amount to $750 million in 1959 and is slated to increase 10 per cent next year—to $825 million. This rise will re-

HOTEL & DORMITORY BUILDING

sult mainly from the release of federal funds for college dormitory building which were incorporated in the omnibus housing legislation, and from this

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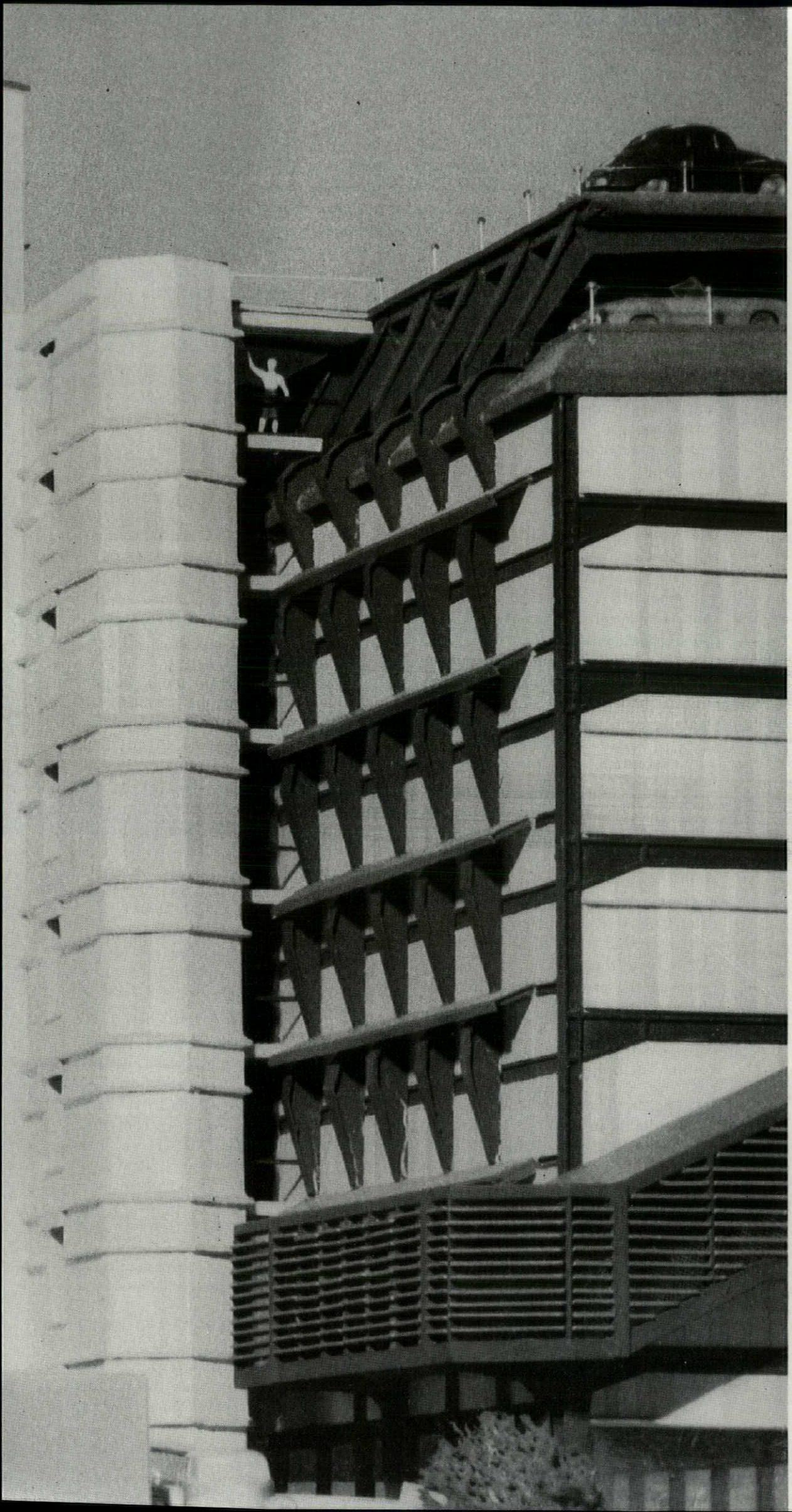


The idea that modern architecture is losing its early grip was discussed by Australian Critic Robin Boyd in FORUM *for July. He deplored the glib and slick, or flashy and shallow, building conceptions of today's boom and called for repentance and return to the early faith. Now Gerald Kallmann of Columbia University turns the theme around. He finds a younger generation sharing Boyd's unhappiness with easy answers to cover up a state of confusion, but looking forward. Like their young friends in the other arts, the young architects shock their elders with fierce, direct, and brutal action in design. Yet they seek no easy beatnik way out. What Kallmann reports is the beginning of a new, serious* avant-garde.

1. *Vivid impression of bodily strength and concreteness is produced by enlargement of structural details in an abstract pattern based on the methods of "the build." Model of a department store, Rome, by Franco Albini and Franca Helg.*

The "action" architecture of a new generation

BY G. M. KALLMANN

Now that the heroic age of modern architecture is over and its pioneers are accepted as masters, what is there for a new generation to accomplish? To follow in the wake of giants, yet to act with confidence in its own powers, is the unenviable task of a generation harshly described by the Italian Critic Bruno Zevi as "too immodest to follow Wright and Le Corbusier, but too tormented to be as great as they are."

Nothing would be easier than to settle down and develop, in elegant variations, the many inventions in technology and form proliferated by the modern movement in its first unprecedented burst of creativity. This, in fact, is what has been done by the architects who have made the new esthetics generally acceptable. For advanced spirits, however, it is essential to move out of the shadow that falls on epigoni. This revolt is partly the parricidal wish of youth to end dependence on the patriarchal figures still dominating the scene, partly the facing up to new realities of a harsher present. And it is directed not so much against the fundamentals of the modern movement—the integrity of which is envied as a paradise lost—as against more recent shallowness and abuses.

The climate of thought today is radically different from that of the early days of functionalism, with its manifestoes, its nuclei of advanced opinion focused in such international groups as *L'Esprit Nouveau, de Stijl,* and the *Bauhaus.* Objectives are more diffuse, vision is more clouded, methods are less clear, confidence is not so high, and pragmatic attitudes replace idealism and dogma. The nourishing source of Wright's organic functionalism and the humanist ideas that gave form to Le Corbusier's world no longer sustain architects dealing in a new era with vast programs of a general rather than specific nature, serving clients who are faceless and corporate and often engaged in enterprises of seemingly dubious architectural value.

Thus, the creative energies of younger architects, increasingly alienated from program content, become focused largely on action rather than objectives. Emphasis decidedly shifts from what is to be done to the manner of doing. Instead of exploring distant social aims in idealized concepts, the young men seek answers to immediate and limited situations. And as if in reaction from the glut of invention in a novelty-seeking phase of modernism, they search for a new and appropriate discipline, a harsher esthetics than that of the present modish eclecticism **(1)**. The direction of their ideas and efforts is too diffuse as yet to have the status of a representative *avant-garde.* Yet their influence is being increasingly felt as vital impulses challenging architectural routine.

The weakening of functional tradition

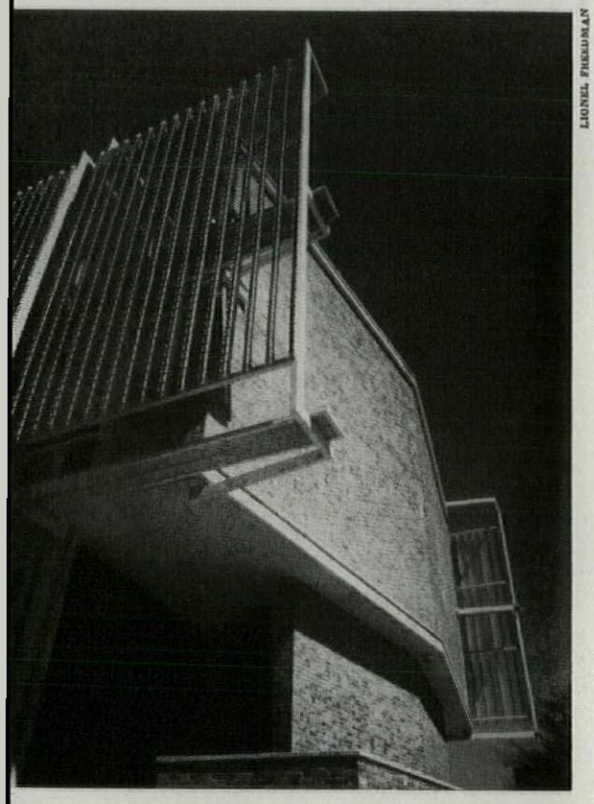
These new impulses must be understood against a background in which certain key tenets of early modernist dogma had imperceptibly changed or weakened as they came to be applied to the current scene.

The first significant change was a general trend toward universal types of space, structure, and envelope, tending to wipe out differences and reduce all building types to more and more abstract "packages" or indistinguishable boxes. A second important change was a loss in visual scale. Great group compositions and many large individual buildings no longer can be "read" as to scale or proportion, while such new forms as large clear-span shell structures and even curtain walls have no features that give a clue to scale. In this situation, a neoclassic movement attempted to regain some order and articulateness, but its works generally are not too successful or convincing because the classic order no longer fits the modern dimensions of buildings and the classic has lost its ancient authority, resting on a universal Neoplatonic order outside itself.

Beyond the individual form

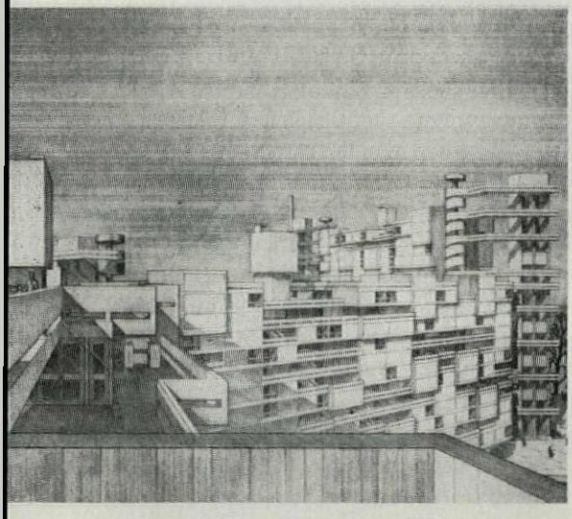
How far the modern position has moved from the classical may be seen by noting that the key principle of classicism was the absolute dominion of the individual whole form, self-enclosed and raised to universal signficance. The growth of modernist theory is in the opposite direction, transcending the single finite form. "The cult of the individual form is at an end," said Mondrian toward the close of his life, "and that of continuous relatedness is about to begin." And this tendency may now be seen in architecture.

Many new buildings are closely interrelated in a complex scene. Even when they stand alone, there is a readiness to let them appear as mere passages in the unending game of space around them. Modern architecture always has had as a basic theme the opening up of the building to outer space, but now the effort is more decisive and has entered a new phase. This is most evident in the treatment of the boundary that delineates recent



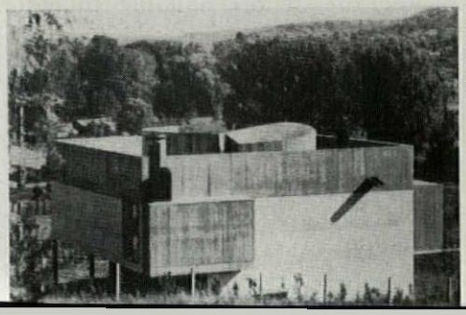
LIONEL FREEDMAN

2. *Sky lines pierced and corners passed.*



3. *Hurtling horizontals, verticals rocketing.*

4. *Masses tossed in air.*



GERARD IFERT

buildings against the sky and the ground. In the disruptive sky line, the multilayered and multifaceted façades, mullions pushing beyond the structural cage, lines of structure sliding past supported volumes, lie a thousand hints of spatial continuities transcending the figuration of the building. At Wellesley, Rudolph's piercing of the sky line and pushing of sun screens past the corner limits are something more than a bow to Neo-Gothic **(2)**. Recklessly daring, yet consistent, is an English student group's housing project, which tears into the space that surrounds it, using violent horizontals and rocketlike excrescencies in a searing vision of ruthless energy unleashed **(3)**.

The same suggestion of continuity beyond the building line is paradoxically achieved in recent work not by the transparency of all-glass volume as in earlier modern architecture but by a new solidity. This solidity is not the gravity-centered massiveness of the classical, nor the brittle eggshell opaqueness of the typical cubist volume, but a levitation of masses in which there are now only degrees of density, ranging from apparent solidity through hollowness or openness to complete attenuation of the void. An example is André Wogensky's villa at Saint-Remy-les-Chevreuses **(4)**. As in Wright's work, there is a space-matter continuum, an osmosis of building elements with the sky and the earth, volumes of matter suspended in a flux of energy.

Breaking out of classical containment and tending toward the dissolution of outline, design reaches toward unities beyond the individual volume. The obvious interest of younger architects in such plastic forms as hyperbolic paraboloids, shells, folded and warped surfaces, expresses a desire not merely for exciting novel forms but for more plastic ways of shaping and stating space than was hitherto possible.

The new fluid images

The newest architecture is again involved with fluid images. The aspirations of the early expressionists and futurists are now reinforced by the acquisition of mathematical and topological mastery. Le Corbusier proudly declared that his fluid space in his famous church at Ronchamp was a demonstration of "implacable mathematics." Peter Smithson, the vocal exponent of an English group of architects, calls for an "esthetics of change," for "flow patterns," for energy concentration in "clusters" as images to reflect contemporary conditions of mobility and change.

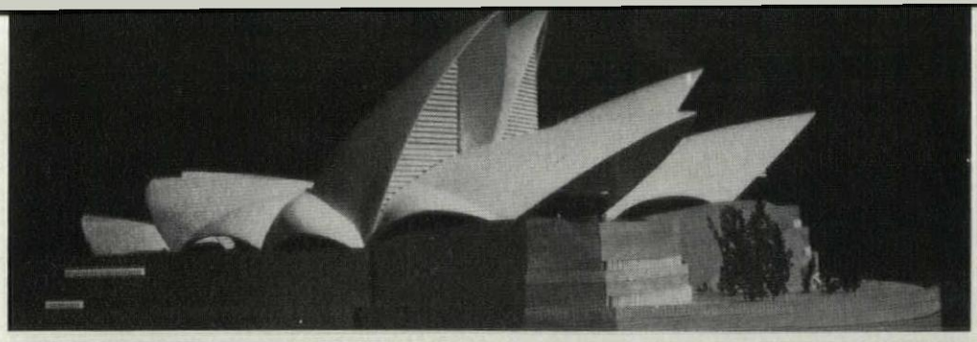
Perhaps the most brilliant concept of this kind is Joern Utzon's design for the Sidney Opera House, a cluster of similar shells fluttering as if in a slip stream over a massive base **(5)**. Alain Bourbonnais' basilica project for Syracuse shows a similar preoccupation with a *multiple build*, revealing the manner of its genesis in a vertical piling up of flamelike elements, caught in a vortex of upward movement **(6)**. Its deliberately fragmentary outline etches an insistently pulsating image on the retina.

What distinguishes these projects from past expressionism is the manner of their figuration. They are not carved or molded into some fantastic shape which the creator had in mind from the start, but rather shape is allowed to grow out of the manner of structuring, usually complex and composite.

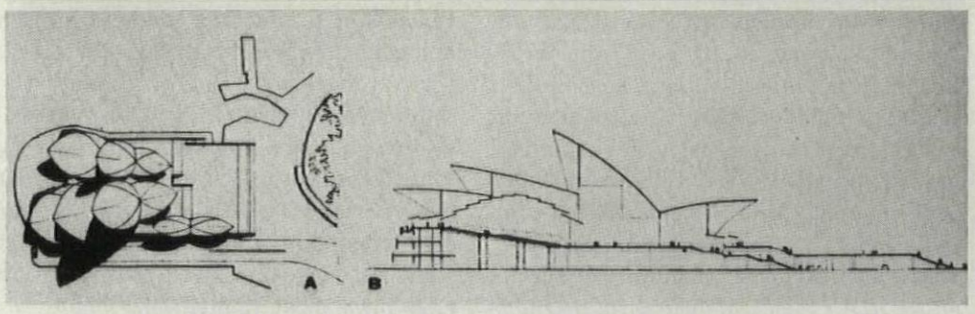
Action and the new brutalism

Out of all this is evolving a radical new architecture in which, in all its branches and persuasions, the manner of doing is clearly revealed. The genesis of "the build of space" is declared, sharply suggestive of time exposures caught by a stroboscopic camera. The gesture of construction and assembly is celebrated in emphatic statements, which are permitted to develop maximum impact without the censoring limitations of a predetermined form. An image is "spontaneously" produced out of action processes close to the stimulus of each situation.

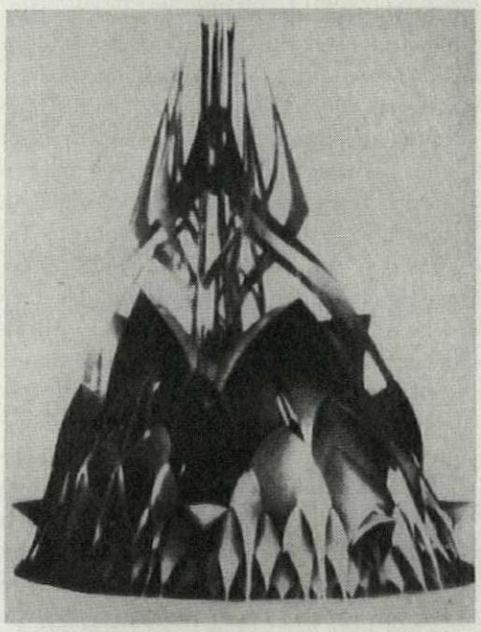
Going beyond the still controlled and somewhat abstract expressionism of Utzon's opera house and Bourbonnais' basilica in search of powerful new images are a number of widely dispersed radical architects. Perhaps closest to the ideals of spontaneity and the "unpremeditated image" is the work of a group of European architects. For this the English Critic Raynor



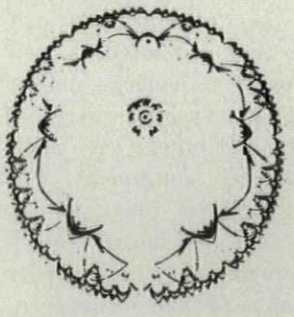
MUSEUM OF MODERN ART



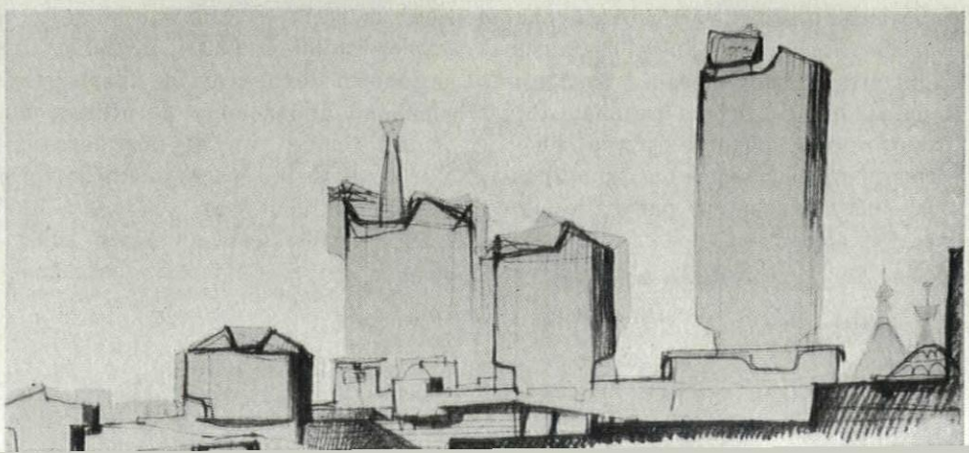
5. *Sails fluttering in slip stream.*



6. *Flames stroboscoped.*



7. *Towers balancing, reaching.*

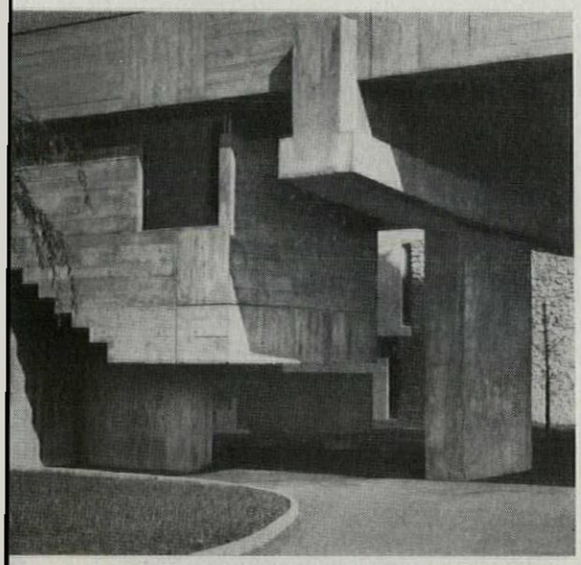


Banham has coined the vivid if somehow limited term, the new brutalism. This refers to a preference for using brute concrete in the manner of the later work of Le Corbusier. Yet Le Corbusier's "*Avec des matières brutes établir des rapports émouvants*"—with brutal materials to establish moving relationships—referred to lyrical images of contrast, the roughness of a tree's bark versus its blossoms. Brutalist intention has been more radical and determined—and more important—invigorating design with a new, violently physical immediacy of image.

Violence, anti-rationality, and non-direction systematically pursued are the hallmarks of this new movement. Scorning the rational systems of early modernism, the young Europeans forming this group focus their attention on the immediate situation: design is developed, without other references, out of the "actuality" of the job, the situation "as found," out of "moments of decision." Socioplastic images emerge, embodying a specific social situation in the structural means directly available to meet it, from which sudden lunges may be made into the unpredictable. Ralph Erskine, adapting freshly to subarctic conditions in the north of Sweden, emerges with fluid forms, non-geometrical and energetic **(7)**.

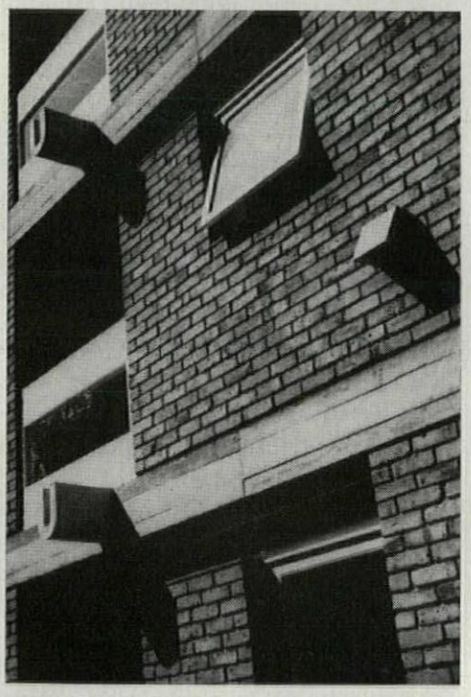
Bakema in Holland, Candilis and his group in France, disciples of Le Corbusier, construct out of such "moments of decision." They build compelling fragments rooted simultaneously in time and place, social situation and building process. The coexisting phenomena that mysteriously congeal in the crucibles of Le Corbusier's genius, in his Maisons Jaouls or his monastery at Tourette, take ascendancy in his young disciples' work in brutal images.

Avoiding the static position of a formed "style" and the play on esthetic sensibilities exhausted in the earlier modernism, brutalists reject all pre-established conceptions imposed on materials and construction. These are taken "as found" in nature, in the catalogues, or in engineering formulae. A freewheeling sharpness and impact of vision is cultivated. Component parts are permitted to develop freely and even to enlarge in unprecedented autonomy,

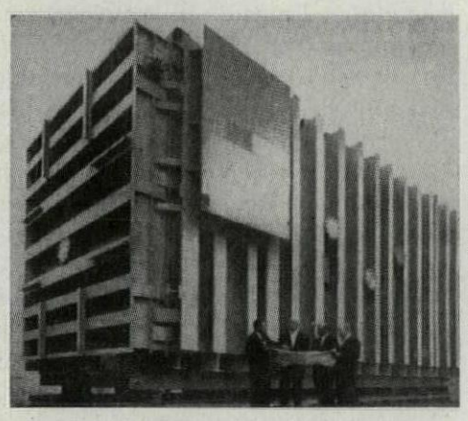


PETER BLAKE

8. *Brutal structure.*



9. *Full-bodied details.*



COURTESY, TENNEY ENGINEERING, INC.

10. *Powerful images.*

as if each part were on its own. Structure is not idealized as in Miesian architecture but frankly exposed and allowed to develop with disregard of human content, as in Le Corbusier's Brazilian pavilion for the Cité Universitaire in Paris **(8)**. Environmental controls and equipment, with equal disregard, are allowed to effloresce in their own inherent forms; color is used as an independent stimulus, brutal and vivid. Each element thus achieves a shock effect, the essence of brutalism.

The enlargement of parts or details heretofore subordinated, the intensified visual emphasis on technical process, represent a deliberate attempt to produce an immediate physical embodiment, uninhibited by intellectual systems. Materials, their "build" and joining, are not used for their regional association or decorative textural effect, but to convey a more active, actual, "brutal" sense of physical existence. Among numerous examples are flats in England by Stirling & Gowan **(9)**. This composition out of direct experience, the moment, and process, toward no ideal envisaged whole, with unflinching acceptance of incongruities, has suggestive parallels in the new "action" painting, in *musique concrète*, in existentialist thought, and in Zen.

The quality of brutalist work varies greatly. Powerful technique and imaginative process are needed to stay in control. In less than masterful hands, brutalist work has not been of a higher order than some significantly similar "undesigned" industrial structures, e.g., a giant improvised test chamber **(10)**. These accretions litter the purlieus of cities, and in the uninhibited, uncoordinated development of their parts raise powerful images very close to brutalist forms.

Compositional rigorists

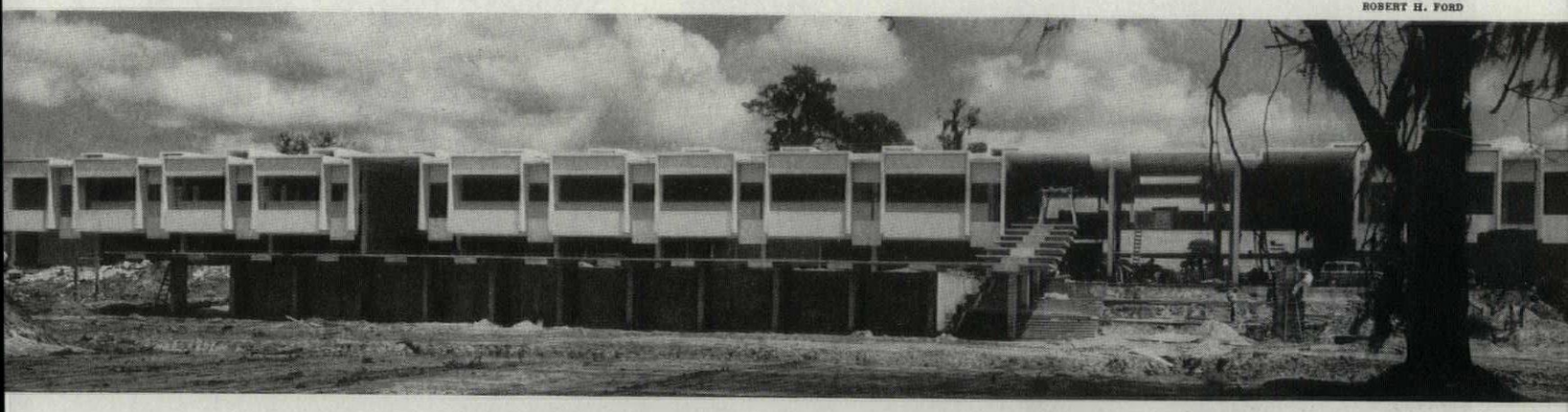
Another distinct trend in the new radical architecture, with interests that overlap those of the new brutalism, might provisionally be called "compositional rigorist." Like the brutalists, this group rejects all preconceived whole forms and concentrates on the autonomous development of parts through process, attempting to create space forms more insistently physical in make-up and impact. But its works show an important difference. Whereas brutalist work is eccentric and nondirectional and produces a deliberate clash and collison of parts, this group strives for a coherent "build of space." The difference is something like that between *musique concrète* and twelve-tone composition. For the younger men working in this way, the earlier experiments of the Finnish Architect Aalto and the German Hans Scharoun have been most influential.

The attempts at rigorous thematic space-structuring vary from ice-cold, functionally detached, speculative compositions to the profound space creations of Louis Kahn's didactic architecture. They range from such simple compositional devices as the variation and inversion of six concrete precast forms from which Yamaski builds his concrete institute in Michigan to the complex manipulation of concrete elements that constitutes Rudolph's new school in Sarasota, Fla. **(11)**. In its more disciplined compositional aspect and its regard for new elements of construction and equipment, this movement has developed with special force under dynamic American pragmatism.

The most influential representative is the Philadelphian Louis Kahn. In his work, space is neither archaized by classical rules nor pressed into the rhythmic repetitive forms of frame structure, as in early modern; rather space is "phenomenologically" determined and evaluated. A new topology is allowed to emerge out of "servant space" and "served space," the former housing together the new elements in building equipment. Proliferating ducts, conduits, pipes, and storage elements are no longer concealed by a superimposed esthetic order denying the facts of life of modern building; on the contrary, they are allowed to develop their own significant expression, as seen in Kahn's design for a science building **(12)**. Brutalist ties are shown in the way the "parts" take command and achieve a ruthless, unbridled image, yet they are keyed integrally with the spaces in a disciplined and nonbrutalist way.

On a smaller scale, an elegant experiment in a similar compositional manner

ROBERT H. FORD



11. *The process generates the composition—bold but disciplined.*

is Philip Johnson's Boissonnas House, in which blocks of space as the basic entities are articulated in a classical neo-Palladian manner but are joined in a nonclassical space sequence. Closed and open volumes are outlined in big square blocks with the help of brick piers of enlarged dimensions, creating an aggregate of shapes and spaces that produces a memory-linked image rather than an instantaneous, all-inclusive one.

Kahn's building out of linked spatial sequences and structural elements leads to an almost automatic method of composition. This is vividly demonstrated in his project for a city hall **(13)**. Here the nature of the building elements and the method of their joining —tetrahedral space frames with equipment nuclei—creates of itself the "build" of an image that attains convincing character at almost every stage of execution. Each extension is "more of the same," the "same" being the vivid way of putting together, which, as the building grows, generates additional possibilities of manipulation. The experimental play of such possibilities has a contemporary fascination. Keeping the imagination within the framework of a built-in principle of composition and topology, it yet permits the spatial phrasing to be freely dynamic.

This serious play, undirected as to outcome but controlled in keyed sequences of manipulation, is a technique used in the experimental sciences and in the major arts. The Miesian dictum, "God is in the details," is followed to its proper conclusion. The detail and its topological potential becomes the gener-

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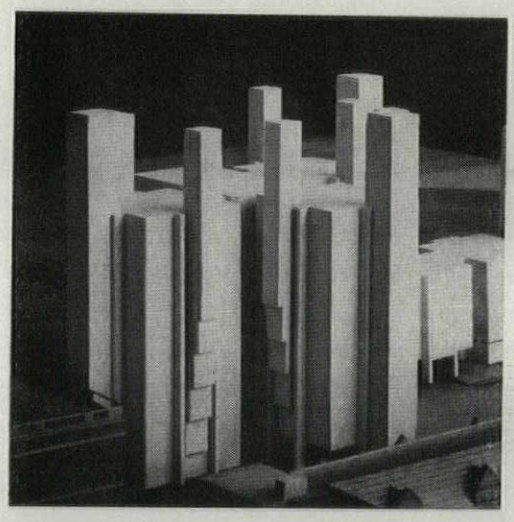
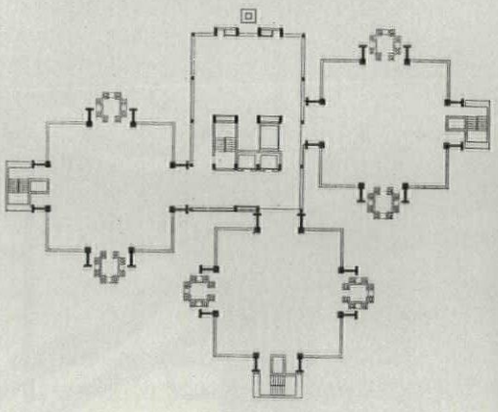
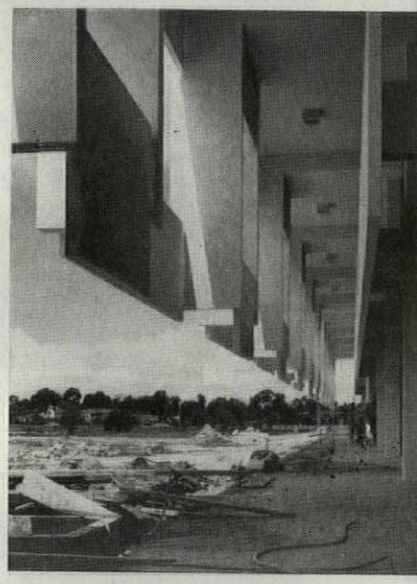


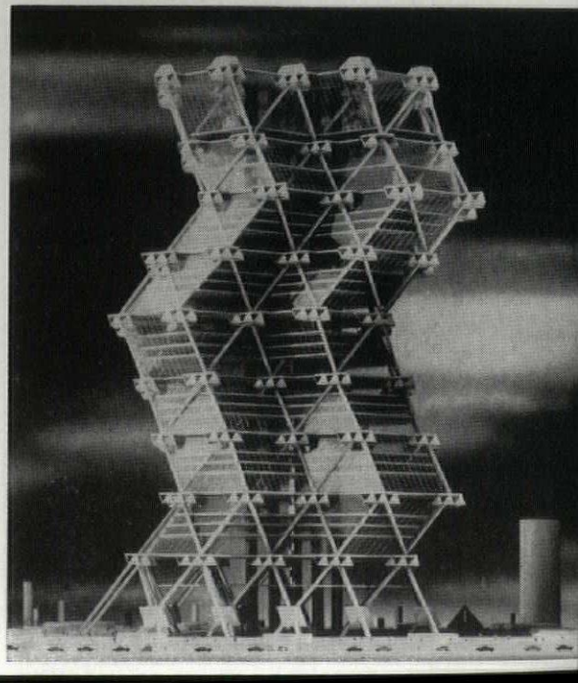
JOHN EBSTEL

12. *A new topology. Utilities are bracketed in giant "hollow columns" acting as "servant spaces" adjacent to master spaces.*





Uniform method of joining lets structure be played as a game.



Precast concrete columns branch out into paired capitals firmly supporting the roof.

Curtain wall of precast concrete panels and steel-framed glass is set inside the column line.

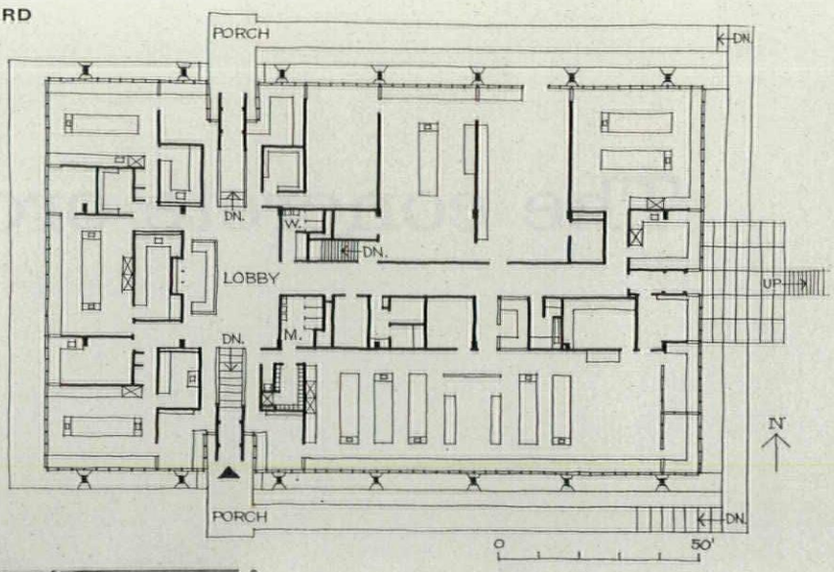
The concrete orchard

PHOTOS: RONALD C. BINKS

Yale's architectural renaissance is furthered by a laboratory for forestry research by Paul Rudolph

Last month, returning architecture students at Yale trooped out Prospect Avenue to view a campus example of the practice Paul Rudolph preaches. There, a half-mile beyond Saarinen's swooping hockey rink, on a platform nudged into a steep grass slope, they saw the new Greeley Memorial Laboratory for the School of Forestry, the first Yale job for Rudolph, head of Yale's architecture department.

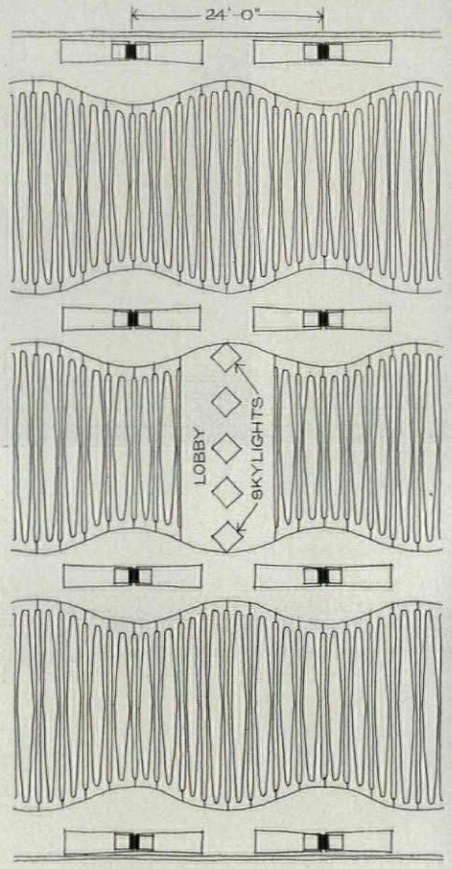
The structure, with its flat roof balanced on four rows of seven Y-shaped columns, is an essay in the structural joinery and architectural glorification of precast concrete. The roof is composed of sculpturesque precast sections a standard 3 ft. wide but varying in length. These sections are tied together over the columns by means of poured-in-place concrete beams. The undulating contours of the beams, which are varied to fit the stresses involved, are marked clearly on the interior ceiling and recalled on the roof surface using gray and white marble chips. Under the beams the massive precast columns branch out in curves reminiscent of Art Nouveau, reducing the clear span



Four rows of seven columns each are tied to precast roof panels 3 ft. wide by means of poured-in-place beams. The beams, which are in the same plane as the precast panels, are of uniform depth but vary in width according to the stresses involved (photo right, below). The undulating shape of the beams is marked by an expansion joint on the ceiling.

ELIOT W. TODD

Columns are anchored on steel base plates.



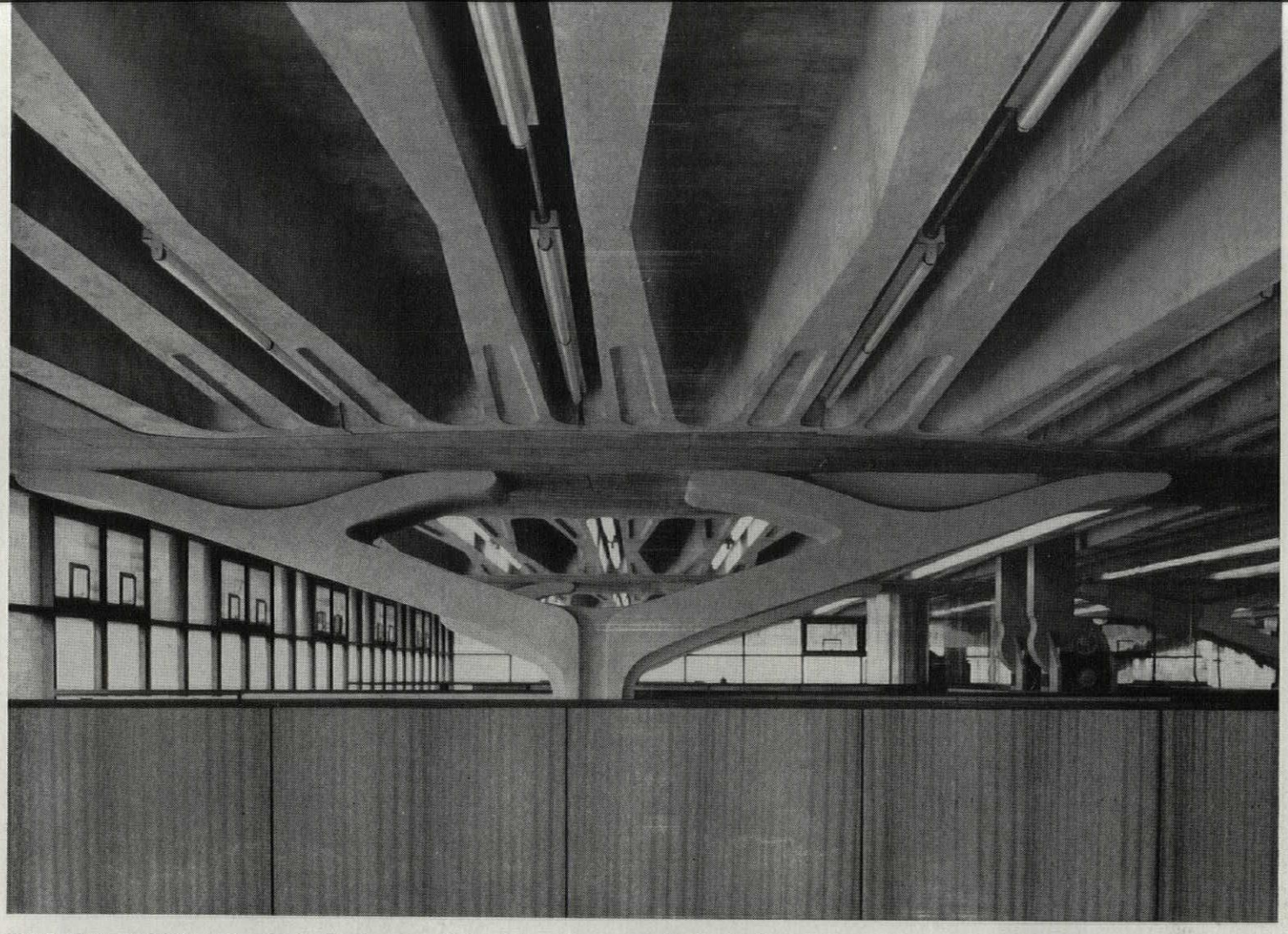
Reflected ceiling plan.

and making the supporting function of the column clearly apparent (as does the capital of a classic column).

The interior, which is broken into offices and laboratories by prefabricated wood partitions stopped short of the column capitals, is visually dominated by the strong pattern of branched capitals and coffered roof panels. This pattern, which would have strikingly enhanced an open interior, seems somewhat overemphatic in the smaller rooms. Unfortunately, the glass panels, which are fitted around the capitals between the partition tops and the ceiling, do not offer enough visual "breathing room" to relieve the oppression. Moreover, the glass panels, in effect, put on display the inevitable clutter of ducts and fan housings in the laboratory rooms.

A lantern perforated with three skylights makes a feature of the meeting of entrance lobby and central corridor, while the corridor itself is marked by three more skylights. These features are easily visible from the street, which lies above the building. An elaborate series of hoods, originally contemplated for the skylights and inevitable vents, lost out to the budget. Columns and roof beams are left as natural concrete; podium and spandrels are precast panels with the white quartz aggregate exposed on the surface.

GREELEY MEMORIAL LABORATORY, SCHOOL OF FORESTRY, YALE UNIVERSITY, NEW HAVEN, CONN.
ARCHITECT: Paul Rudolph.
STRUCTURAL ENGINEER:
Henry A. Pfisterer.
MECHANICAL ENGINEERS:
Hubbard, Lawless & Blakeley.
GENERAL CONTRACTORS:
Dwight Building Co.



Wood panel partitions stop short of column capitals; intervening space is filled with glass.

Fluorescent tube lighting is set in coffers of the precast ceiling.

PHOTOS: RONALD C. BINKS

The monotonous curtain wall

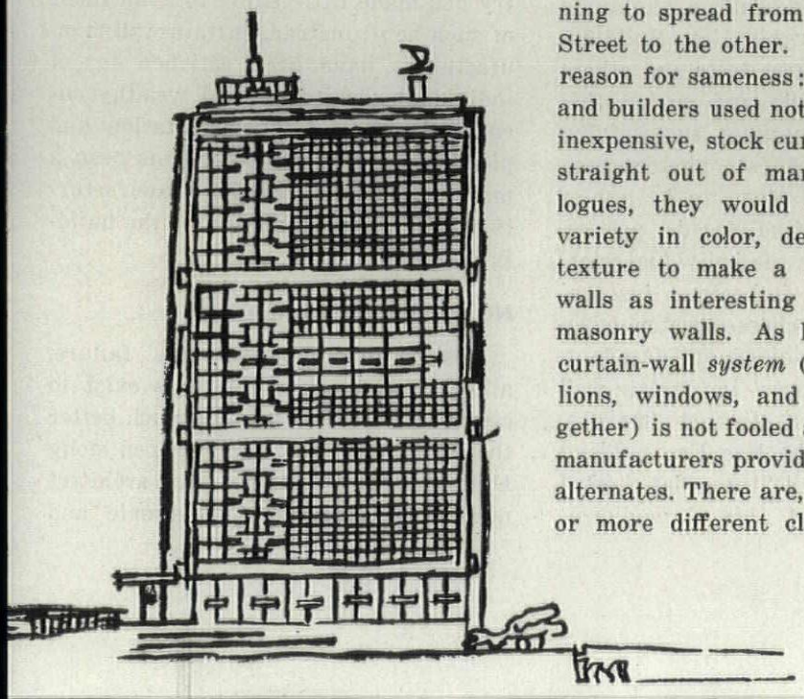
Applied like exterior wall paper, the promising prefab panel is being misused as a substitute for architecture. Needed: creative design in the factory and on the job

"We will see a vast panorama of bungled mediocrity," a critic wrote, "unless the curtain wall is treated with professional respect."

Tomorrow's U.S. towns and cities are likely to be just such a bungled panorama if today's run-of-the-mill wallpaper architecture persists. The standard curtain wall—perhaps America's single, most important building innovation in the past decade or so—is fast becoming, in the hands of less-than-senstitive architects and manufacturers, one of the most irritating eyesores on the U.S. scene.

All this might be shrugged off as just another passing annoyance if it were not that, technologically, the curtain wall makes excellent sense and is, in fact, making better sense with every passing day. Indeed, curtain-wall building is well on the way to becoming the new American vernacular: last year an estimated 35 million sq. ft. of *metal* curtain-wall panels were put in place on American buildings (other than factories). And the glass-and-metal curtain wall is sweeping other countries as well. Unfortunately, most of it looks absolutely terrible.

Project for a skyscraper for Algiers, done by Le Corbusier in 1939, shows a concrete curtain wall based upon a single proportionate module, but sufficiently varied and interrupted to avoid monotony. Horizontal bands represent floors for mechanical equipment.



Is this monotony necessary?

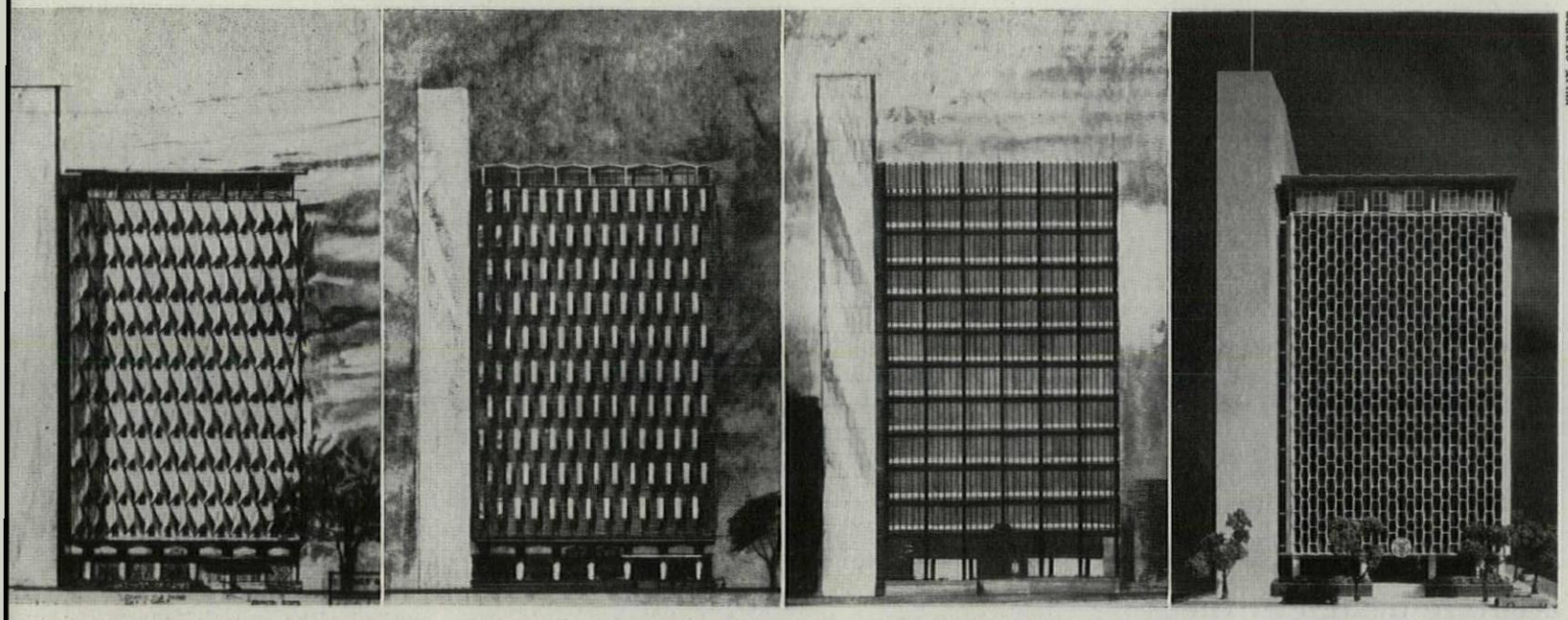
The chief trouble is the kind of graph-paper monotony that is beginning to spread from one end of Main Street to the other. Yet there is little reason for sameness: even if architects and builders used nothing but the most inexpensive, stock curtain-wall patterns straight out of manufacturers' catalogues, they would still find enough variety in color, detail, and over-all texture to make a street of curtain walls as interesting as any street of masonry walls. As long as the basic curtain-wall *system* (i.e., the way mullions, windows, and spandrels go together) is not fooled around with, most manufacturers provide a wide choice of alternates. There are, generally, a dozen or more different clip-on profiles for mullions and muntin bars, and as many different colors (and, sometimes, textures) for the spandrels. Hence, whatever monotony may exist on modern Main Street is plainly failure of creative design.

This failure is not limited to the selection of standard units alone; it also includes the way in which standard units are applied, like graph paper pasted over acres of building fronts. Le Corbusier, who is often mistakenly blamed for some of the "regimentation" produced by modular design, has shown how effective a modular façade can be when the module is dramatically interrupted here and there (see drawing). Yet, most U.S. designers seem to be incapable of such dramatic effects: once they have started on a curtain wall, they seem unable to stop until the whole building has been uniformly covered with a checkerboard.

Should color be colorful?

Monotonous application of curtain-wall patterns is only one design failure; another is the poor use of color. Because curtain walls suddenly opened up the entire field of exterior color in a way almost unknown since the days of Byzantine architecture, many designers immediately seized upon the brightest and most garish colors available in glass, porcelain enamel, anodized aluminum, or what have you. The resulting honky-tonk atmosphere has tended to give the curtain wall a connotation of cheapness once reserved for porcelain-enameled gas stations and stainless steel diners.

Yet good, subdued colors always have been available, and so have ways of using such colors imaginatively. One of the most interesting recent examples is Designer Eszter Haraszty's color scheme for an IBM office building by Architects Pedersen & Tilney (see rendering, page 145). Miss Haraszty uses gradations of blue glass in the spandrels —a delicate shading, from dark blue



FELIX GILBERT

New building for U.S. delegation to the U.N., designed by Kelly & Gruzen, went through dozens of curtain-wall studies. Shown (from left to right) are a proposal for a very sculptural concrete wall with individual hoods for each window; another proposal for a masonry curtain wall with projected sun shields; a glass-and-bronze façade similar to that of the Seagram Building; and the final concrete grille over a glass skin.

at the bottom to very light blue at the roof line—in order to emphasize the verticality of the building. Others have experimented with curtain-wall patterns using quite a number of different colors—perhaps a few bright color accents scattered at random over an otherwise neutral façade. But most of the possibilities of color in curtain walls still remain to be explored by designers—especially by designers blessed with good taste.

How flat is a wall?

A third major design failure—after monotony and poor color use—is the absence of rich textures and patterns in curtain walls. Most spandrels today are flat; most mullions and muntin bars are near-flat. As a result, many curtain walls tend to look insubstantial and tinny; moreover, the use of flat spandrels and profiles leads to strange visual distortions when the wall is seen at an angle.

Although some three-dimensional spandrel patterns are now stock items (one big manufacturer offers more than two dozen different patterns), most 3-D spandrels must be custom-designed and custom-made. This need not cost nearly so much as many architects seem to think: quite a few patterns in metal can be produced on a simple sheet-metal former at practically the same cost as flat panels; others can be made on soft dies costing no more than $750 to $900—a method suitable for a limited number of panels for small- to medium-sized buildings. Finally, on very large structures, the cost of hard dies (from $8,000 to $15,000) is easily absorbed.

One of the first 3-D curtain walls ever produced was Harrison & Abramovitz' reverse-diamond-shaped, aluminum pattern for Pittsburgh's Alcoa Building. Since then, these architects and others have tried to refine and enrich this basic pattern—sometimes successfully, at other times, not (see photos, page 146). The trouble seems to be one of creating an effective façade pattern over all; for, while the individual panel may be handsome, it becomes just another tooth in a cheese grater when repeated 1,000 times on one façade.

Still, 3-D patterns in curtain-wall design represent a distinct improvement over what the late Frank Lloyd Wright used to call "those flat-chested façades." Some of this three-dimensionality has come (and will continue to come) into curtain-wall design because of the growing need for sun-control devices. Other 3-D patterns will be primarily decorative (although they will also help to stiffen a thin-gauge metal skin and prevent the "oil-canning" that occurs on large flat surfaces). Regardless of reason or purpose, stock curtain-wall patterns will have to be really designed; and to be designed well, they will require the hand of top-flight architects. So far, unfortunately, the curtain-wall industry has made little effort to avail itself of such help; instead, curtain-wall manufacturers have been satisfied to let individual architects (and wealthy clients) do all the experimentation and pioneering. In short, there has been a major failure of creative manufacturing in this important part of the building industry.

No reason for ugliness

Despite this manufacturers' failure, a few good stock components exist to create curtain-wall façades much better than most of those being draped along U.S. Main Street today. An architect need only follow certain simple and

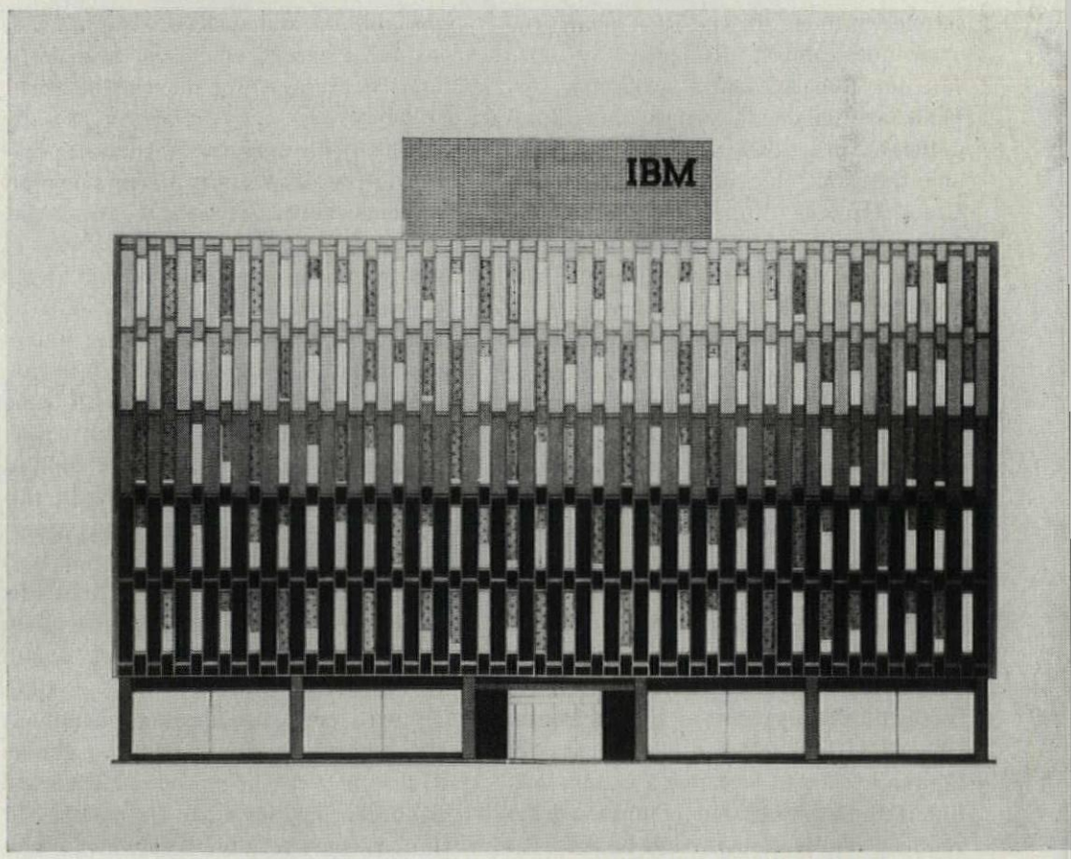
U. S. STEEL CORP.

Curtain wall for RCA's Lancaster Plant (by Architect Vincent Kling) shows elegant, dark brown mullions, corrugated, porcelain enamel (on steel) spandrels of buff color. Mullions are painted carbon steel.

well-known principles of design to restore good taste to the streetscape.

First—the grid. Most mullions and muntins produced today are light in color—natural aluminum or stainless steel. As everyone knows, any light-colored object looks fatter than any dark-colored object of identical size; hence, most mullions and muntins look too fat for elegance. A beautiful exception is the RCA plant in Lancaster, Pa. (see photo), whose dark brown steel mullions make the façades look as delicate as a lacquered Japanese shoji screen. Today, dark clip-on profiles are available in several materials (anodized aluminum, porcelain enamel, etc.) at very little—if any—extra cost.

Second—the grid again. Sooner or later, every architect using a curtain wall must decide whether to accent (i.e., project) the verticals or the horizontals. Generally, it is better to let the vertical mullions stick out since they are easier to keep weather-tight than deeply projecting sills or muntin bars. However, regardless of the plane emphasized, the architect might as well go the whole hog and play up the dominant lines (through color or deeper projection) to the virtual exclusion of



Elevation study of IBM Building by Architects Pedersen & Tilney shows intriguing color scheme by Consultant Eszter Haraszty: porcelain enamel curtain wall is graded from dark blue at bottom to light blue at roof line to give building added vertical emphasis. Grid is of aluminum. Blinds are white with a broad blue stripe down the center.

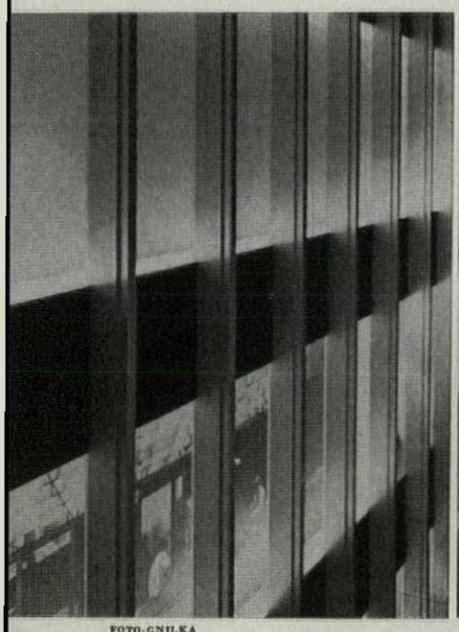
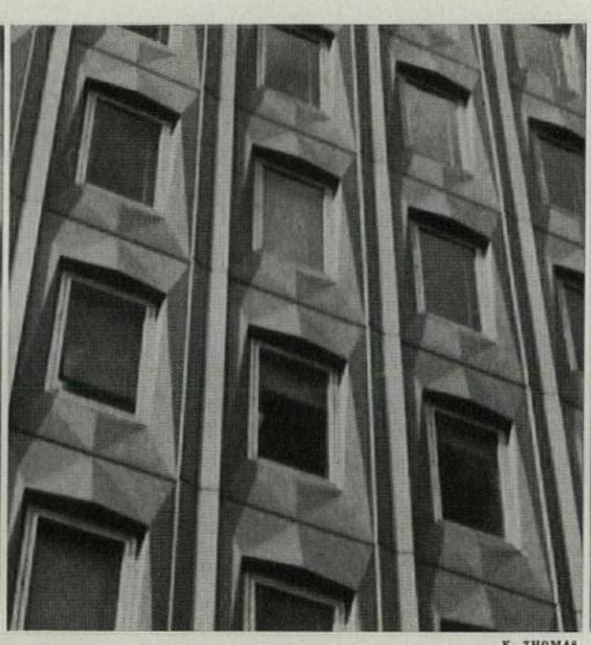
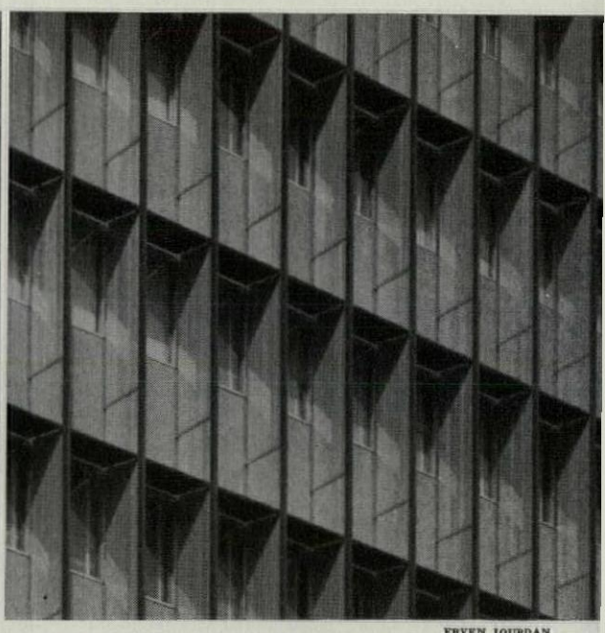


FOTO-CNILKA



K. THOMAS



ERVEN JOURDAN

Three curtain walls in 3-D: the new stainless steel wall for New York's Union Carbide Building (by Skidmore, Owings & Merrill) will have deep mullions, black stainless spandrels. Patterned aluminum curtain wall of Baltimore's Commercial Credit Building is a variation on a theme pioneered by Architects Harrison & Abramovitz. Egg-crate, sun-control curtain for IBM, Los Angeles, by Pereira & Luckman, has mosaic spandrels.

secondary lines. In the RCA plant, the horizontals almost disappear; in Mies van der Rohe's curtain walls the verticals are so deep that the horizontal divisions practically become invisible; and the same is true of S.O.M.'s new Union Carbide Building in Manhattan (photo, above). A façade in which horizontals and verticals clash is just another monument to indecision.

This brings up a secondary problem of emphasis: however well it may be disguised, the fact remains that most office buildings put up today have horizontal ribbon windows. Particularly at a distance, and at the corners of free-standing buildings, this fact is very evident, and produces another conflict between verticality and horizontality. If the architect has emphasized the horizontal muntins, the conflict is minimized—but, unfortunately, a definitely vertical building crossed by horizontal ribbons is in itself a visual contradiction and tends to look like a candystick. But if the architect has emphasized his vertical mullions, he may be in real trouble. One solution: to make the mullions so deep that they dominate the façade pattern from all angles except head-on. Another: to blend colors of glass, blinds, and spandrels so that they look alike except when the interior is lit up at night. (For more about color, see below.)

Third—the module. If curtain walls continue to adhere strictly to a module of somewhere between 4 ft., 6 in. and 5 ft., there is almost no way of avoiding monotony. But is such rigid adherence to module really necessary? True, a regular mullion system makes interior subdivisions a great deal simpler, but what about a module system based on half-units (e.g., 2 ft., 6 in.) which could be used singly, or doubled up, or tripled? One New York architectural firm is currently experimenting with a more irregular curtain wall of this sort and has found that the results, though more expensive than the graph-paper patterns, are worth the extra cost and effort.

Fourth—color. In chosing a dominant color for a curtain wall, three things should be kept in mind: First, will spandrels contrast with (or match) the windows successfully? And when a window is seen from the outside, what, exactly, is its color? What about the effect of tinted glass, sky reflections, reflections from across the street, color of Venetian blinds? Second, how do certain colors stand up to weather, dust, soot? And, third, how are bright colors used most effectively—and where?

Any architect wanting to match windows and spandrels in color is almost bound to pick a spandrel color in the blue-gray range, since sky reflections (especially on tinted, heat-resistant glass) tend to be in that range. Such colors generally weather quite well.

If an architect wants to contrast windows and spandrels, he will create a ribbon-window effect, and this may or may not be his intention. In any event, contrasting colors need not be garish or even bright: one of the differences between billboards and architecture is that the former are geared to a one-time impact, while the latter is intended to last. A garish color scheme may catch the eye once—but will rapidly lose charm thereafter. Isolated bright color accents are another matter; they are most effective when used sparingly, and against a neutral background.

Finally—breaking it up. There is nothing sacred about a graph-paper curtain-wall pattern. In fact, a dra-

New precast concrete wall by Architect I.M. Pei forms façade of Hilton Hotel in Denver, now nearing completion. To avoid monotony of graph-paper grid, Pei introduced variations into the pattern of his concrete grilles.

matic break here or there might add to its effectiveness rather than detract from it. The only problem is what sort of break, and where?

The most obvious kind of break would be a change in materials, or a change in plane (a projection or a void in the façade). This kind of design can be justified in many places: a mechanical equipment floor can be recessed (as suggested by Le Corbusier); a vertical stack of service rooms, or a stair or shaft, can be faced with a different material and a different fenestration; reception rooms, lounges, board rooms, etc., can justify a different façade expression. Again, there will be added costs and added difficulties of detailing. But who ever claimed that architecture was simple, anyway?

Curtain-wall architecture only looks simple—and, in many instances, simple-minded. In reality, it calls for as much subtlety and refinement as the most elegant façades of the Renaissance. Only if manufacturers give some thought to design, and only if designers realize that the curtain wall is no substitute for architecture, only then will tomorrow's Main Street be more than a "vast panorama of bungled mediocrity."

ARNOLD GASSAN

The industry's key customers buy 20 per cent of all business building

The 100 biggest clients

Although they are only a tiny fraction of all U.S. business firms, the 100 listed on the following pages own 20 per cent of all the factories, offices, laboratories, stores, warehouses, and other commercial, industrial, and utility buildings erected in the U.S. last year. They are the 100 corporate clients of the building industry which reported 1958 building expenditures of $4.4 million or more in FORUM's second annual survey of business and industry. Together, they controlled $1.3 billion of the total of $6.5 billion spent on industrial, commercial, and public utility buildings last year (see note, opposite page).

Important as their participation was in this kind of construction, the 100 biggest actually did about one fourth less building in 1958 than in the year before. (In 1957 they spent $1.8 billion on buildings.) The difference in their volume of construction reflects the 15 per cent drop in total construction of commercial, industrial, and utility buildings last year which resulted from the general business recession.

As it did a year ago, American Telephone & Telegraph again heads the list. Its $165 million outlay for buildings was more than twice that of the runner-up, Western Electric (an AT&T subsidiary), about three times that of third-place General Motors — and forty times that of last-place Upjohn.

Although the position of the top three companies changed very little during the year, the same cannot be said for the list in general. In fact, 39 firms are new to the list. Biggest among them are Chrysler and General Dynamics, whose $28 million each put them in fifth and sixth place. Other newcomers among the top ten are Rock-Time and Southland Life, each with about $25 million.

Such wide changes in ranking from year to year are not surprising, for the construction of a single large structure sometimes accounts for most or all of a firm's total building outlay. For example, Rock-Time, which did not even exist three years ago, is today one of building's top clients—and two years hence it will not even come close to making the list. Rock-Time is a joint venture in Rockefeller Center and Time Inc. for the purpose of erecting a single office tower—the Time & Life Building now nearing completion in Manhattan. Among the other companies which are high on the list by virtue of a single big office building are Southland Life, Chase Manhattan, and National Bank of Detroit. The frequent occurrence and the importance of such one-shot customers must be noted in making broad year-to-year comparisons between the lists.

The list does, nevertheless, include many firms which are continually expanding and which are therefore in the building market year after year. This fact is borne out by the wide variety of building types erected for many of the firms. Forty-two out of the 77 firms that broke down their expenditures had at least three different types of buildings under way last year, and 17 more were erecting two types.

Factory building was by far the most active building type. It accounted for $451 million, or 42 per cent, of the expenditures of the same 77 firms. Office and administrative facilities also bulked large, accounting for 22 per cent. Research buildings took 8 per cent; stores and warehouses, 9 per cent; all other types, the remaining 19 per cent.

Other insights into the spending pattern of building's biggest clients:

▸ Twenty firms spent $15 million or more on buildings last year; 22 spent between $10 and $15 million. The 58 others ranged down to $4.4 million.

▸ Most of building's important corporate clients are industrial corporations: 63 are on the list of the 100 biggest. Public utilities rank second with 18, followed by merchandisers (7), commercial banks (5), transportation companies (4), and insurance firms (3).

▸ Among those which broke down their building activity, the biggest spenders for factory building were Western Electric ($53 million) and Reynolds Metals ($25 million). Union Carbide's $33 million topped the office building category (thanks mainly to its half-finished New York City skyscraper). Avco's $12 million was the largest expenditure for research facilities; Montgomery Ward's $16 million, the largest for stores and warehouses. AT&T dominated the miscellaneous category with an outlay of $165 million for buildings housing switching, transmission, and other telephone facilities.

▸ On the basis of information supplied by 67 companies, it appears that 89 per cent of the industrial-commercial building dollar is spent on new construction, the balance on improving existing buildings.

▸ Of the 77 companies which volunteered estimates of the current building activity, 52 expect to do less in 1959 than last year; only 25 expect to do more. Together, their estimates point to a 9 per cent decrease for the year. (FORUM's estimate of total industrial and commercial building during 1959—see page 128—is not so bearish. It was made two months after that of the 100-biggest survey—after industrial building had turned upward.)

Based on their sizable estimates of 1959 work, it seems assured that such continually expanding giants as AT&T, Western Electric, Union Carbide, and General Motors will again appear on next year's list of building's biggest clients—along with a larger-than-usual number of small newcomers whose expansion programs are triggered by upswings in the general economy like the one now in progress.

Reprints of this directory combined with those of the 100 biggest architects and 100 biggest contractors may be had for 25 cents each, prepaid.

Rank '58	Rank '57	Firm (home office)	Building outlays 1958 ($000)	Building outlays 1959 (est.) ($000)	Type of building as a per cent of 1958 volume: Production	Office	Research	Distribution	Other
1	1	American Tel. & Tel. (New York)	165,000	175,000	—	—	—	—	100
2	3	Western Electric (New York)	70,000	50,000	76	3	1	20	—
3	5	General Motors (Detroit)	57,000	40,000	N.A.	N.A.	N.A.	N.A.	N.A.
4	15	Union Carbide (New York)	45,473	53,352	13	72	14	1	—
5	—	Chrysler (Detroit)	28,800	21,000	66	34	—	—	—
6	—	General Dynamics (New York)[1]	28,200	12,000	60	1	37	1	1
7	18	Du Pont (E.I.) de Nemours (Wilmington, Del.)	27,049	27,500	85	2	10	2	1
8	10	Anaconda (New York)	26,479	12,743	N.A.	N.A.	N.A.	N.A.	N.A.
9	—	Rock-Time (New York)	26,421	22,000	—	100	—	—	—
10	—	Southland Life (Dallas)	25,000	10,000	—	100	—	—	—
11	22	Reynolds Metals (Richmond)	24,511	30,000	100	—	—	—	—
12	8	Kaiser Steel (Oakland)	24,300	7,600	85	—	—	15	—
13	7	Aluminum Co. of America (Pittsburgh)	24,000	14,000	96	4	—	—	—
14	6	International Business Machines (New York)	22,059	15,000	28	30	27	—	15
15	13	Caterpillar Tractor (East Peoria, Ill.)	21,997	9,000	93	—	2	5	—
16	26	General Electric (New York)[2]	19,973	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
17	38	Eastman Kodak (Rochester, N.Y.)[2]	18,472	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
18	—	Pittston (New York)	16,340	4,900	96	1	2	1	—
19	—	Montgomery Ward (Chicago)	15,800	N.A.	1	—	—	99	—
20	17	United Aircraft (East Hartford, Conn.)	15,000	10,000	5	25	70	—	—
21	49	General Telephone & Electronics (New York)	14,593	4,122	—	100	—	—	—
22	40	Chase Manhattan Bank (New York)	14,400	61,500	—	100	—	—	—
23	27	Armco Steel (Middletown, Ohio)	14,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
24	24	Westinghouse Electric (Pittsburgh)	13,769	13,000	N.A.	N.A.	N.A.	N.A.	N.A.
25	—	National Bank of Detroit (Detroit)	13,310	4,750	—	100	—	—	—
26	—	Avco (New York)	13,000	500	2	2	96	—	—
27	4	Kaiser Aluminum & Chemical (Oakland)	13,000	5,000	100	—	—	—	—
28	85	United Air Lines (Chicago)	13,000	12,000	85	15	—	—	—
29	—	Corning Glass Works (Corning, N.Y.)	12,878	N.A.	20	78	1	1	—
30	—	Tidewater Oil (Los Angeles)	12,700	7,700	—	46	—	2	52
31	67	Bank of America (San Francisco)	12,000	24,000	—	100	—	—	—
32	44	Public Service Electric & Gas (Newark)	12,000	8,500	65	17	—	5	13
33	21	Olin Mathieson Chemical (New York)	11,900	9,000	85	5	8	2	—
34	59	Reynolds (R. J.) Tobacco (Winston-Salem, N.C.)	11,785	13,938	43	2	—	55	—
35	57	Goodyear Tire & Rubber (Akron)	11,642	5,000	77	8	—	15	—
36	29	Pittsburgh Plate Glass (Pittsburgh)	11,500	3,500	60	5	5	30	—
37	36	Philadelphia Electric (Philadelphia)	11,160	5,850	93	1	—	6	—
38	9	American Can (New York)	10,500	3,500	N.A.	N.A.	N.A.	N.A.	N.A.
39	35	National Dairy Products (New York)	10,138	N.A.	100	—	—	—	—
40	50	Ohio Edison (Akron)	10,100	7,430	76	3	—	20	1
41	23	Procter & Gamble (Cincinnati)[2]	10,005	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
42	—	Southern Co. (Atlanta)[2]	10,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
43	65	Detroit Edison (Detroit)	9,772	7,500	63	2	1	1	33
44	25	Douglas Aircraft (Santa Monica, Calif.)	9,421	7,500	25	14	61	—	—
45	39	Consumers Power (Jackson, Mich.)	9,321	3,155	43	57	—	—	—
46	41	Food Fair Stores (Philadelphia)	9,279	7,225	8	—	—	92	—
47	—	Georgia-Pacific (Portland, Ore.)	9,181	12,000	98	1	—	1	—
48	—	Pacific Gas and Electric (San Francisco)	9,125	7,392	N.A.	N.A.	N.A.	N.A.	N.A.
49	81	General Foods (White Plains, N.Y.)	9,090	9,200	N.A.	N.A.	N.A.	N.A.	N.A.
50	69	General Mills (Minneapolis)[1]	9,000	19,000	65	5	15	15	—

N.A. Data not available.

1. Estimate by company. 2. Estimate by FORUM based on available statistics. NOTE: the 1958 survey covers only outlays for buildings constructed in the continental U.S.; it does not include such nonbuilding construction as power and oil lines, railroad beds, and refining equipment. (Therefore, the figures are not strictly comparable with those of the 1957 survey, which in some cases included outlays for overseas construction and some equipment.) Five steel companies and 21 oil companies were unable to isolate their outlays for building construction because of accounting methods. Judging from the extent of their total capital expenditures, 16 of them probably would rank among the top 100 building clients: U.S., Inland, Bethlehem, and Republic steel companies and Standard (N.J.), Texas, Gulf, Standard (Calif.), Socony Mobil, Standard (Ind.), Shell, Cities Service, Phillips, Sinclair, Sun, and Union oil companies (listed in order of size of capital expenditure in each group). Other companies which failed to report but are known to have very substantial building programs: Campbell Soup, International Paper, Prudential, and Sears, Roebuck.

Rank '58	Rank '57	Firm (home office)	Building outlays 1958 ($000)	Building outlays 1959 (est.) ($000)	Type of building as a per cent of 1958 volume: Production	Office	Research	Distribution	Other
51	20	Commonwealth Edison (Chicago)	8,500	4,250	90	10	—	—	—
52	—	West Penn Electric (New York)[1]	8,500	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
53	45	American Cyanamid (New York)	8,269	N.A.	79	7	14	—	—
54	—	American Electric Power (New York)[1]	8,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
55	32	Continental Can (New York)[1]	8,000	18,000	N.A.	N.A.	N.A.	N.A.	N.A.
56	66	North American Aviation (Los Angeles)	7,535	11,000	10	10	80	—	—
57	—	International Harvester (Chicago)	7,500	2,000	13	—	61	26	—
58	78	Pan American World Airways (New York)	7,500	7,000	—	—	—	—	100
59	28	Minnesota Mining & Mfg. (St. Paul)	7,428	10,500	70	13	13	4	—
60	—	Bullock's (Los Angeles)	7,378	0	—	—	—	100	—
61	37	El Paso Natural Gas (El Paso)	7,244	2,617	59	1	4	—	36
62	—	Ohio Oil (Findlay, Ohio)	7,090	9,258	—	62	14	23	1
63	61	Lehigh Portland Cement (Allentown, Pa.)	7,000	4,000	100	—	—	—	—
64	—	Potomac Electric Power (Washington, D.C.)	6,864	3,233	85	—	—	3	12
65	—	First National Stores (Somerville, Mass.)	6,765	5,000	—	4	—	96	—
66	84	Diamond Gardner (New York)	6,673	N.A.	96	—	—	4	—
67	58	Swift (Chicago)[2]	6,425	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
68	—	Travelers Insurance (Hartford)	6,388	4,815	—	95	—	—	5
69	51	Allied Chemical (New York)[2]	6,351	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
70	14	Boeing Airplane (Seattle)	6,085	9,500	N.A.	N.A.	N.A.	N.A.	N.A.
71	—	Borden (New York)[2]	6,004	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
72	62	Macy (R. H.) (New York)	6,000	8,000	—	—	—	100	—
73	—	Florida Power & Light (Miami)	5,600	5,500	36	—	—	64	—
74	—	General Tire & Rubber (Akron)	5,567	N.A.	90	—	—	—	10
75	—	Dresser Industries (Dallas)	5,491	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
76	—	Equitable Life Assurance (New York)	5,450	42,160	2	73	—	—	25
77	—	West Virginia Pulp & Paper (New York)	5,323	5,000	N.A.	N.A.	N.A.	N.A.	N.A.
78	—	Tennessee Gas Transmission (Houston)	5,204	7,298	1	34	—	3	62
79	—	First National City Bank (New York)	5,200	25,700	—	100	—	—	—
80	74	Ideal Cement (Denver)	5,200	4,000	72	6	—	22	—
81	86	Radio Corp. of America (New York)	5,200	N.A.	55	10	10	25	—
82	19	Seagram (Joseph E.) & Sons (New York)	5,183	5,000	25	75	—	—	—
83	43	Jones & Laughlin Steel (Pittsburgh)	5,026	6,500	93	2	—	5	—
84	54	Lilly (Eli) (Indianapolis)	5,026	6,000	4	7	57	32	—
85	90	American Stores (Philadelphia)[1]	5,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
86	2	Ford Motor (Dearborn)	5,000	7,000	80	—	20	—	—
87	—	Kroehler Manufacturing (Naperville, Ill.)	4,958	0	100	—	—	—	—
88	68	Boston Edison (Boston)	4,950	2,000	94	4	—	—	2
89	—	Wisconsin Electric Power (Milwaukee)	4,900	1,700	88	5	—	7	—
90	—	Pfizer (Chas.) (Brooklyn)	4,800	N.A.	40	—	60	—	—
91	47	Johns-Manville (New York)[2]	4,712	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
92	—	Merck (Rahway, N.J.)	4,700	4,500	65	30	5	—	—
93	—	Bendix Aviation (Detroit)	4,667	2,500	50	—	50	—	—
94	—	National Life & Accident (Nashville)	4,659	750	—	100	—	—	—
95	—	Norfolk & Western Ry. (Roanoke, Va.)	4,616	N.A.	56	5	—	16	23
96	—	Morgan Guaranty Trust (New York)	4,600	5,000	—	100	—	—	—
97	—	Deere (Moline, Ill.)	4,500	5,500	82	7	—	11	—
98	79	Owens-Illinois Glass (Toledo)	4,500	6,000	76	3	1	20	—
99	80	Standard Oil of Ohio (Cleveland)	4,500	4,100	5	12	14	69	—
100	—	Upjohn (Kalamazoo)[2]	4,439	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

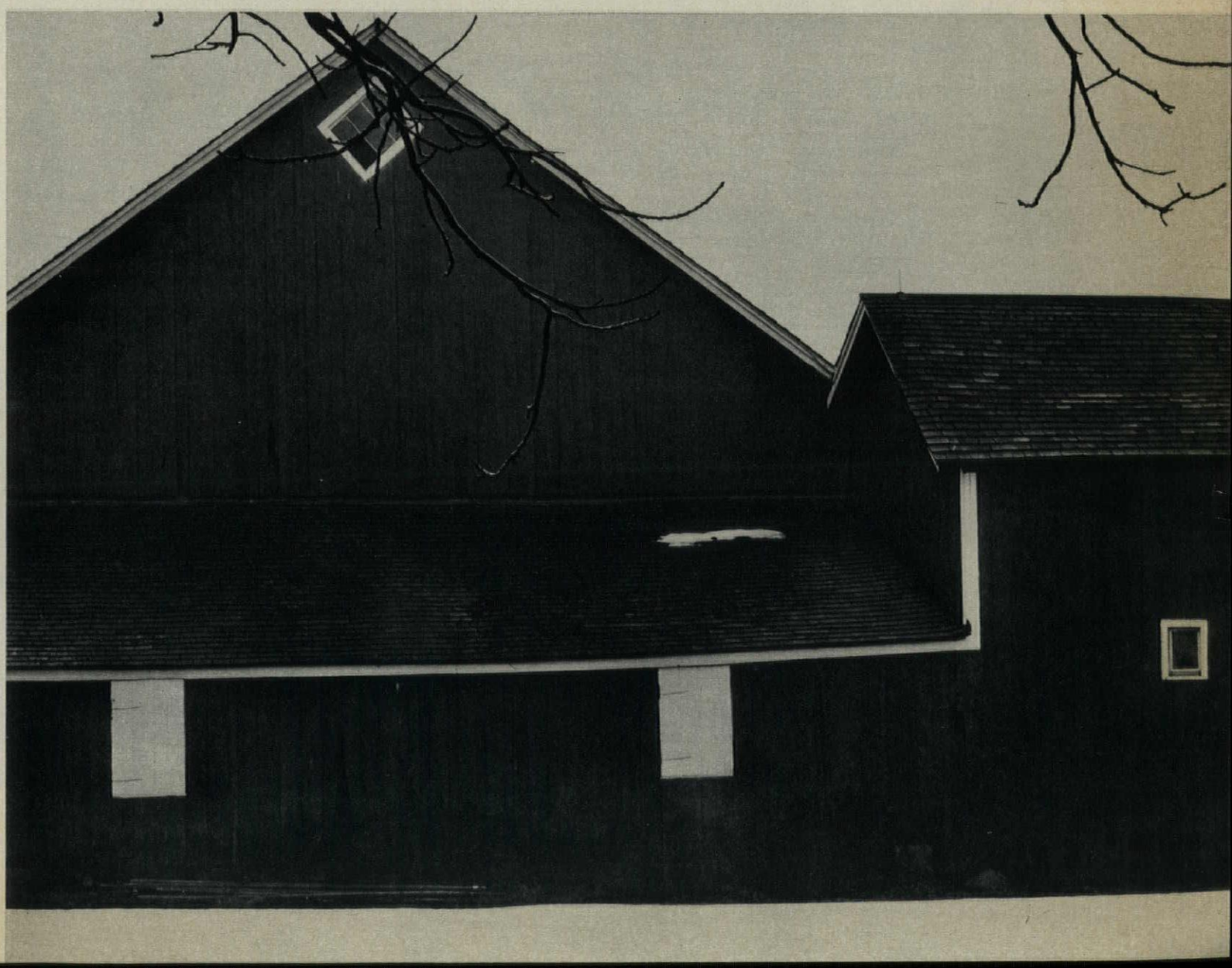
N.A. Data not available.
1. Estimate by company.
2. Estimate by FORUM based on available statistics.

Barns for a harvest past

This fall, with Midwest contractors hammering desperately to finish agricultural storage space for the U.S.'s biggest stock of surplus wheat ever, the noble, roomy barns of western New York State and northern Pennsylvania stand as melancholy reminders of times past. For this fertile, loamy land was once the breadbasket of the U.S.; in the years 1825 to 1850, Rochester, New York, was the nation's biggest flour-milling city—not Minneapolis, Duluth, or Buffalo. It was in this time that the heritage of the great barns shown on these pages seemed permanently established.

Their history actually goes back to the American Revolution, when Yankee soldiers were impressed by the easy harvests of wheat, corn, and fruit that the Indians of the Five Nations drew from their garden patches. After the war was over, many of the patriots migrated from New England, and down came the lofty, dim forest home of Natty Bumppo the Deerslayer. Wheat became a staple crop, planted around the stumps, producing as much as 40 bushels to the acre—although it was hard enough at first to find a buyer for it. But even if you could not sell it, you could always feed it to

PHOTOGRAPHS BY MINOR WHITE



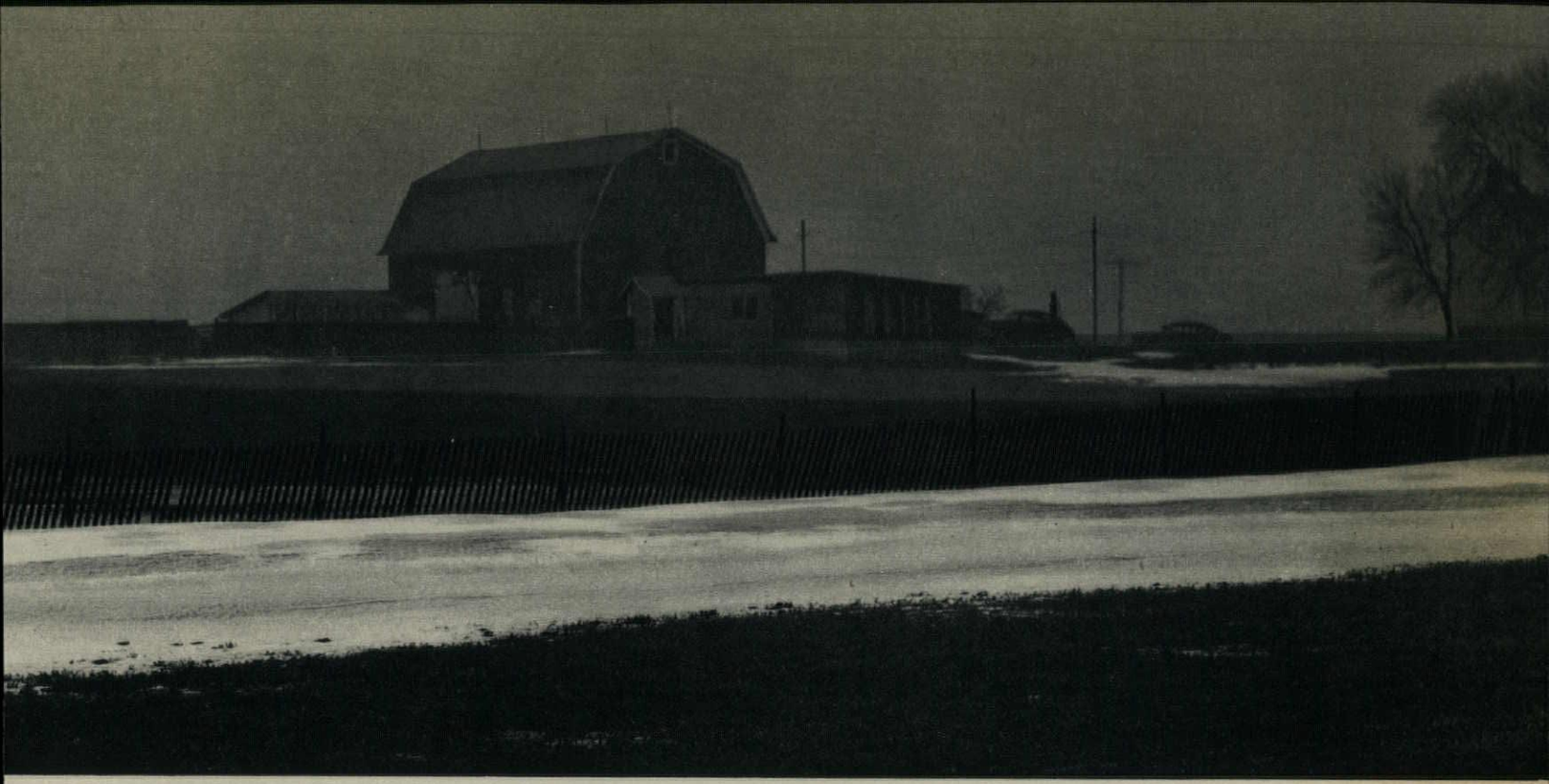
Northern Pennsylvania, where the Genesee River rises.

Near Naples, New York.

the hogs, or make whisky from it, or store it in the barn. In 1827 the Erie Canal was opened, and the problem of cartage to markets was solved, but then, after a generation of great harvests, the wheat midge arrived from the Mohawk and Hudson Valleys and began pillaging the crop. There were no county agents to advise, no government subsidies to cushion the blow. Like the Iroquois, wheat moved west.

Today, although some of the old barns shown in the photographs need paint and shingling, the region certainly is not poor. The rich, rolling land is used now for general and dairy farming—hay for pasture, corn for silage, apples. One big-city crop does remain strong —grapes for upstate champagne. The warriors of four of the Five Nations—Seneca, Onondaga, Cayuga, and Oneida—are names of tame counties now.

But the barns live on, to pose the question: Why are they so beloved by Americans? Simply for their venerable age and optimism, perhaps, but also because they are reminders of an innocent, earthy past. For architects they have the added charm of examples of functionalism before function became a self-conscious



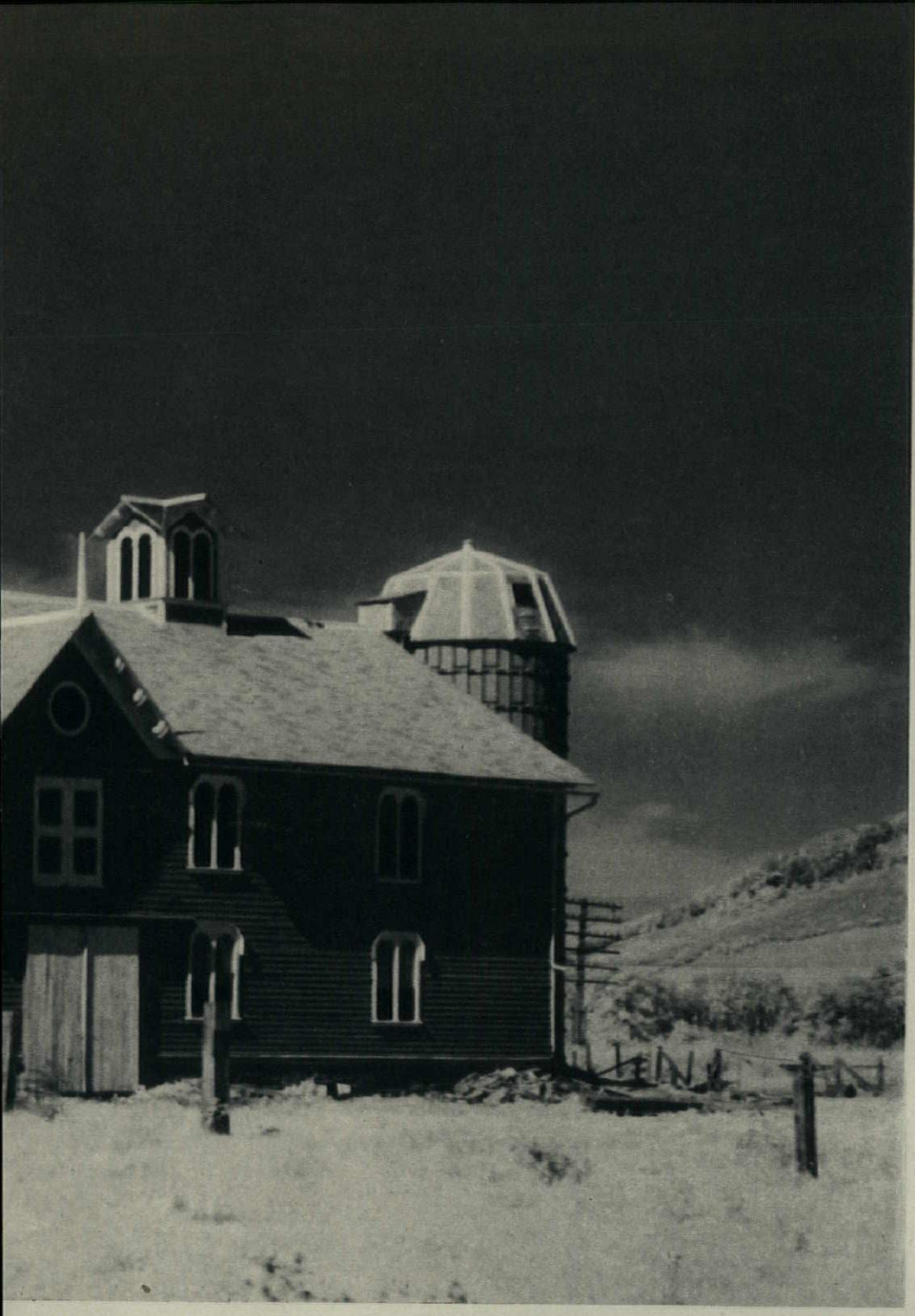
Rochester vicinity.

Dansville, New York.

Near Cohocton, New York.

esthete; and, tangibly, they also stir wistfulness for the mighty kind of lumber long since logged from this continent, unavailable today. For even when these barns are decorated in one or another building *mode*, it is their strength and structural simplicity that shows through; fancied up, they seem like old farmers with fresh haircuts, combed wet.

Finally, these buildings are probably the most nearly genuine monumental native architecture America has yet produced—spacious, generous, honorable, and evocative of a happy time in history. Their setting is perfect for such monumentality, for this moody countryside seems to be a place apart, brooding on times past, listening for the return of something. Carl Carmer, a native son of the Genesee Valley, wrote of it: ". . . the most lasting impression is one of divorce from the rest of living. In a deep, quick-cut valley one feels that there are hills and lowlands next door. But the very slowness and gentleness of the long upward arc from the wandering waters toward the horizon would seem to identify that far line against the sky as the last rim of the world."



Family graveyard behind a barn in the Rochester area.

Near Naples, New York.

Cities with expressways in the offing should look at Boston's Central Artery for a lesson in how not to build them

Expressway blight

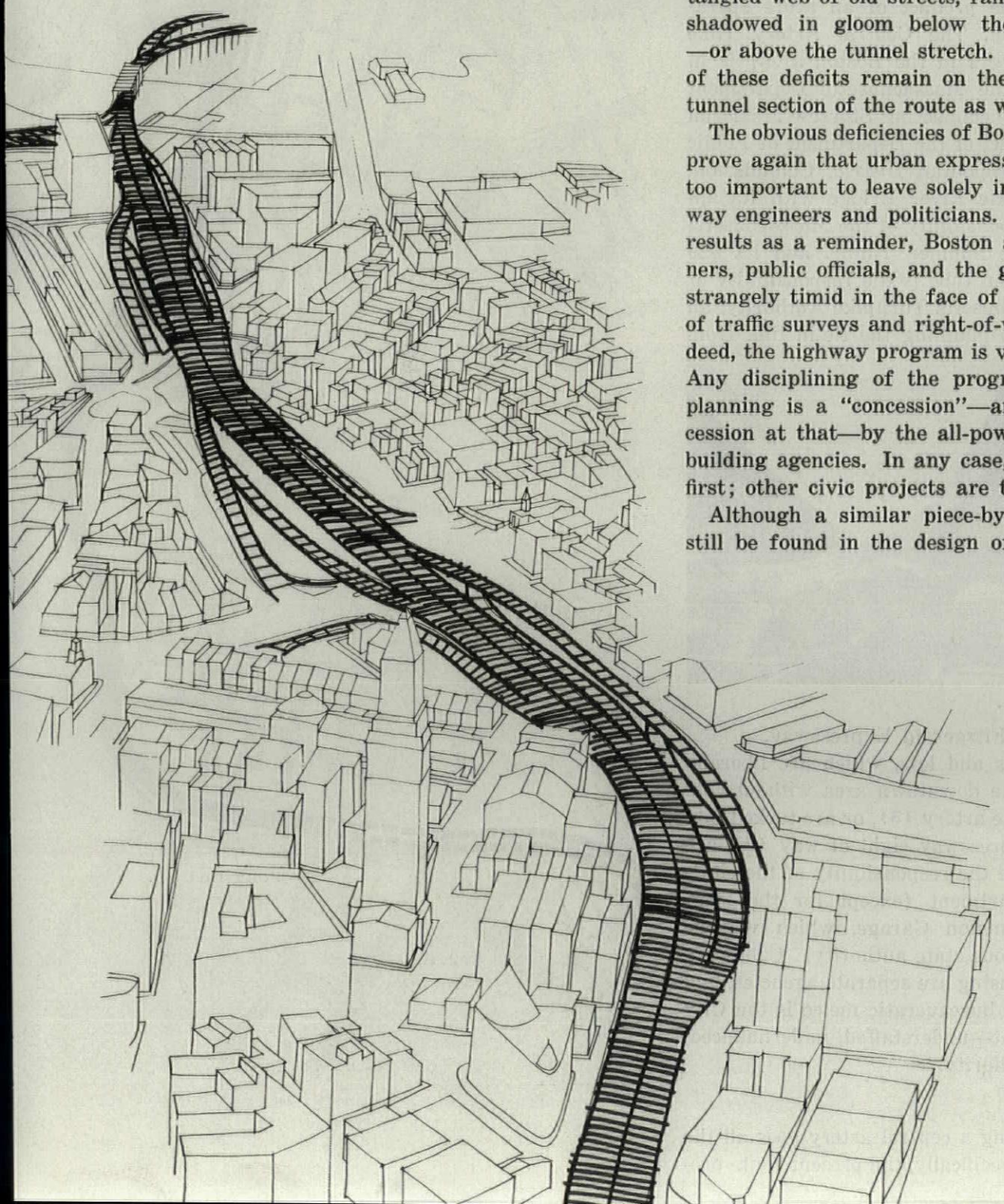
BY RICHARD A. MILLER

Until the John F. Fitzgerald Expressway cut a rude gash through its middle, downtown Boston carried its twentieth-century decay with the immense dignity of an old dowager in reduced straits. But her composure, unshaken by traffic-choked streets, grim elevated railway structures, honky-tonk shopping districts, and skid-row squares, has been decisively shaken by the construction of a $110 million, 3½ mile expressway—the most expensive urban expressway yet completed in the U. S. **(1)**.

Actually the dollar cost is the least of it. A much greater cost is measured in muffed opportunities for redevelopment and renewal, in useless slivers of real estate along the edges of the route, and in the tangled web of old streets, ramps, and parking lots shadowed in gloom below the elevated structure —or above the tunnel stretch. For curiously, many of these deficits remain on the ground in the new tunnel section of the route as well.

The obvious deficiencies of Boston's Central Artery prove again that urban expressway planning is far too important to leave solely in the hands of highway engineers and politicians. But even with these results as a reminder, Boston architects, city planners, public officials, and the general citizenry are strangely timid in the face of the occult mysteries of traffic surveys and right-of-way engineering. Indeed, the highway program is virtually untouchable. Any disciplining of the program to over-all city planning is a "concession"—and a voluntary concession at that—by the all-powerful state highway building agencies. In any case, the highway comes first; other civic projects are tucked in later.

Although a similar piece-by-piece approach can still be found in the design of some buildings, at

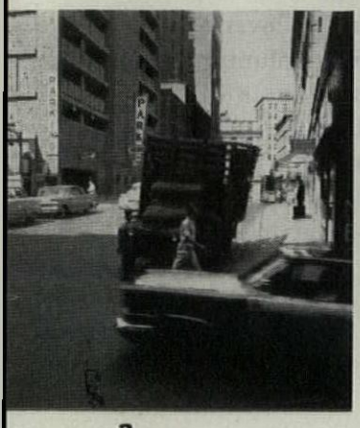


1.

least the rooms are laid out ahead of the electrical and plumbing circulation systems.

As in the best architecture, however, the entire city planning operation ought to proceed as one integrated and total solution. The absurdity of building a highway first and *then* redeveloping adjacent areas is evident in Boston, where no fewer than three redevelopment projects are in process along the route snaked through the ancient and soon-to-be-displaced urban pattern **(2)**. One result is that the nearly complete plan for a new government center gained no advantage from its expressway proximity. Indeed, the planners were forced to conceal the ugliness and confusion of the elevated highway by a belt of trees along its border. Proof of the inefficiency of separate highway planning is evidenced by the fact that the access ramps to the expressway will have to be relocated at this point before the government center plan can be executed.

As in virtually every major U.S. city, the visual disorganization is the product of an acute operational disorganization. The Central Artery (like most other expressways in the Boston area) is in the jurisdiction of the Massachusetts Department of Public Works. The connecting Storrow Memorial Drive is a joint project of the Department of Public Works and the Metropolitan District Commission. The connecting Mystic River Bridge with its approaches are the responsibility of the Massachusetts Port Authority. The Sumner Tunnel and its $29 million new companion tube is the responsibility of the powerful Massachusetts Turnpike Authority, an agency which is also planning the tie-in link from



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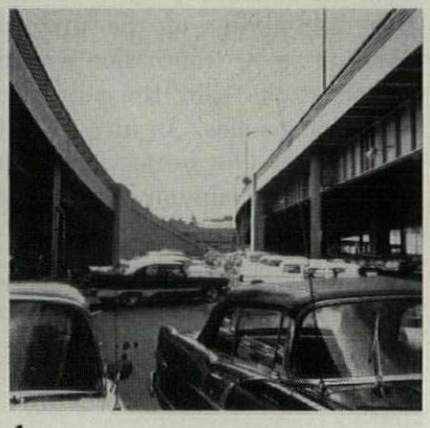

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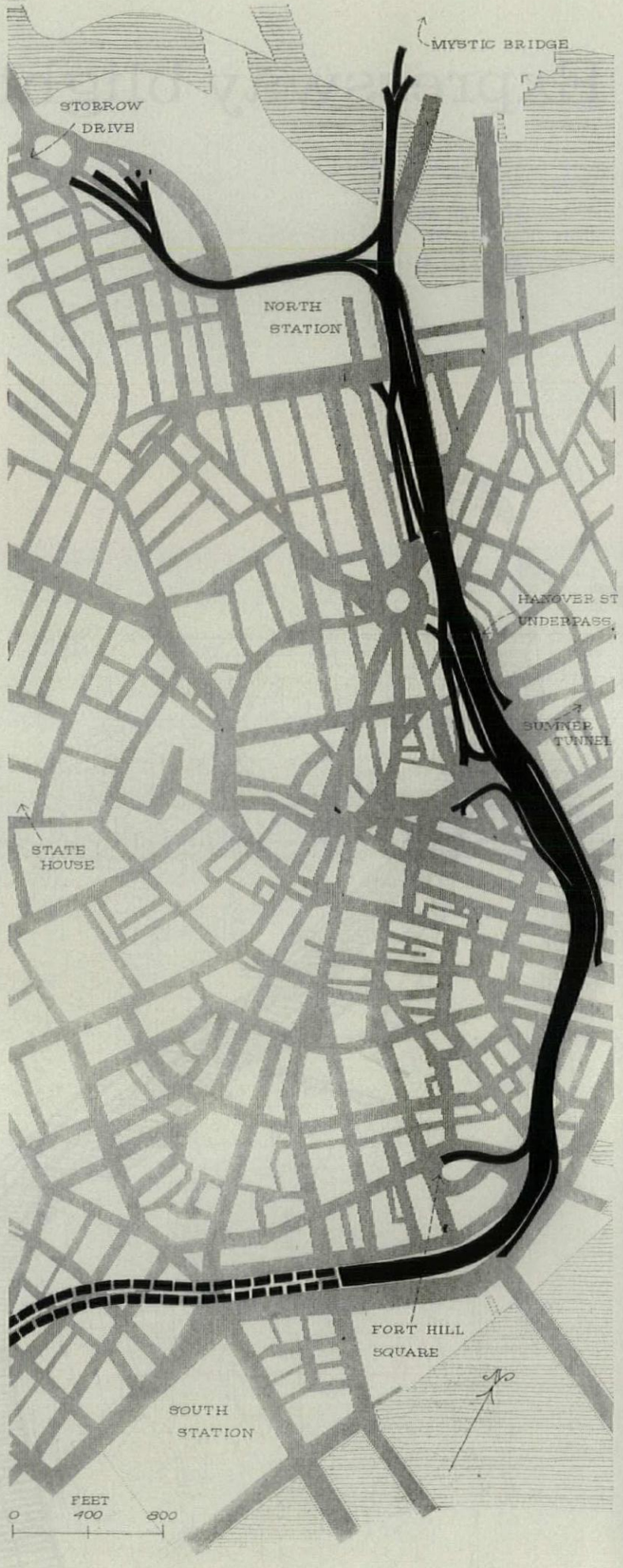
the turnpike to the Fitzgerald Expressway.

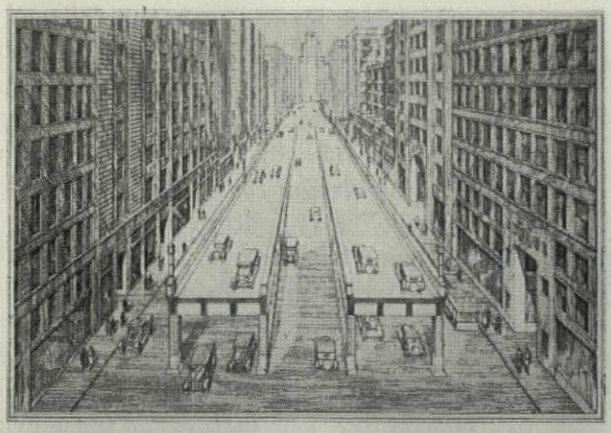
Parking structures and lots, which are liberally scattered through the downtown area without considered relation to the artery **(3)**, or are tucked into leftover slices of expressway right of way **(4)**, are privately built or are the responsibility of the city's Real Property Department (except for the long-pending Boston Common Garage, which will be built by an autonomous state authority). Urban renewal and public housing are separate agencies, and surveying the entire bureaucratic melee is the City Planning Department—understaffed, underfinanced, and without real authority.

2.



The master plan

The idea of building a central artery goes all the way back to 1923. Specifically, the present route pro-

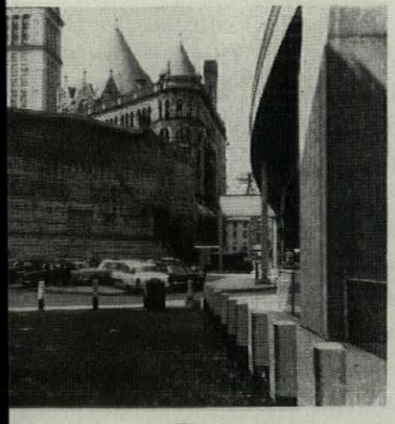


5. FROM "REPORT ON A THOROUGHFARE PLAN FOR BOSTON"

6. PHOTOS: RICHARD A. MILLER

posal dates back to a 1930 city thoroughfare plan which was carried over into the 1948 metropolitan highway plan. Without doubt, the plan was prescient and valid—at least through World War II. But by the middle fifties the entire scale of the urban traffic problem had changed, as is clearly apparent in a comparison of the 1930 proposal **(5)** with the 1955 result **(6)**. The concept of the 1930 proposal was that an elevated road would be matched to a new surface street to serve local traffic. And—never underestimate the power of an imaginative rendering—the entire route was envisioned as neatly lined with impressive new buildings. The reality, however, is a street bordered by raw and askew sides of old buildings and by odd slivers of useless land paved with asphalt, fenced with wire, and strewn with paper and junk **(7, 8)**.

The concept and the reality differ in a still more important respect. Owing to the development of traffic engineering (and long, fast cars) the constructed artery, instead of being an undivided four-lane route, is a six-lane divided highway; and ramps, instead of being shared by on-and-off traffic and tucked neatly into the *center* of the highway, are separately carried on the *outside* of the structure (for safety reasons, cars now must "peel off" to the right). The result is a much bulkier structure than was initially contemplated. Moreover, where the structure was built over an existing and unmatching street system, the complexity becomes well-nigh intolerable. As might have been anticipated, these changes result in a nearly useless and lightly trafficked surface street—yet the surface street was an important part of the rationale of the elevated structure in the first place.



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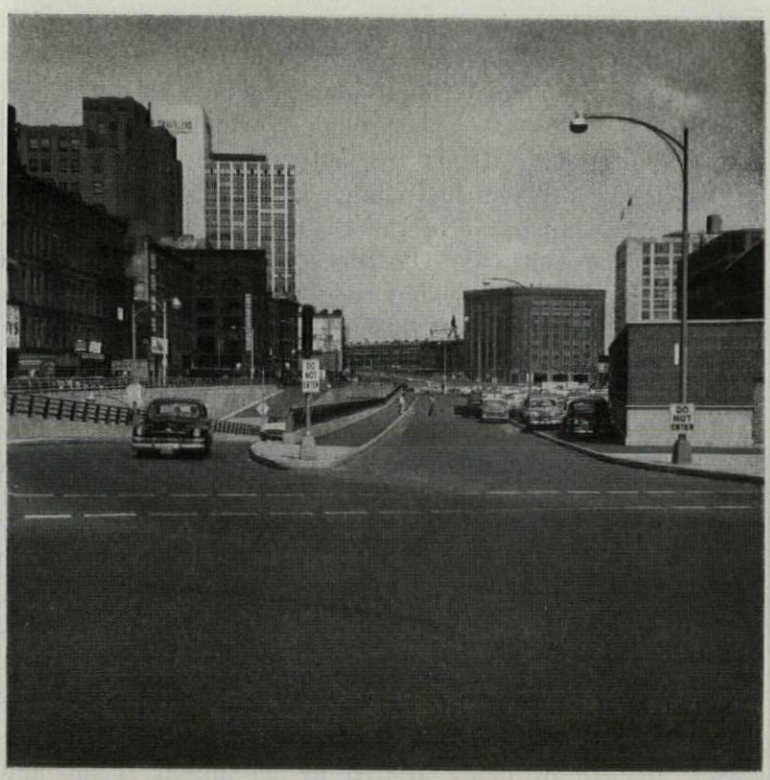
The tunnel stretch

Logically, a depressed highway—especially a depressed highway covered over like a subway—ought to alleviate many of the deficiencies. But in Boston, as in many other cities, the tunnel gained precious little for the city on the surface **(9)**. After the opening of the elevated portion of the expressway to the once-handsome Fort Hill Square (which was largely absorbed for access ramps), plans for the final section through the South Station area to a link with the Southeast Expressway were changed. Instead of continuing on an elevated structure, the expressway was dropped into a tunnel section nearly one-half mile long and costing $17 million for construction alone. But the tunnel section, with the surface street above, traced the path of the 1930 elevated proposal so that the district was cut up anyway. The highway disclocated 400 business establishments, removed nearly 1.6 million sq. ft. of building floor space, and uprooted 150 families in the hitherto insular textile and leather districts and in the adjacent Chinese neighborhood.

9.

Of course, if there had been no feasible alternative route, such dislocations would not have been unreasonable. But in this case, two substitute routes were feasible. One would have used a land-filled Fort Point Channel behind the railroad station. The routing, although raising some problems in building



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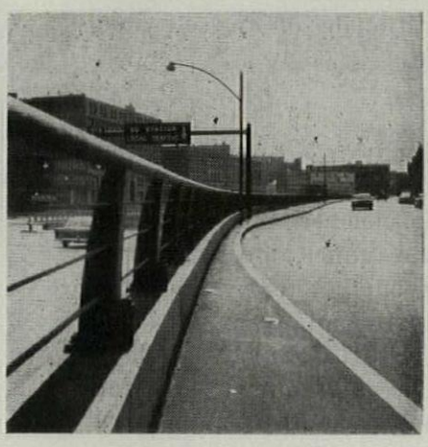

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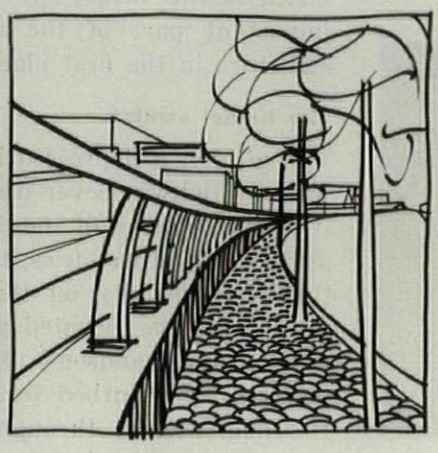


12.

proper access streets over the railroad track to the adjacent central business district, would have created additional land for development. Land fill is an old Boston habit. The bulk of the nearly 500-acre central business district was so formed. Plans are now being drawn to fill the channel, but it will be developed for recreation or industry.

A second alternative, which would have put the expressway on an elevated structure alongside a reconstructed South Station instead of slicing through the adjacent districts, was proposed and carefully studied by the city.

One of the key factors in the elevated proposal was that it would have enabled a better passage for the many thousands of pedestrians who must daily cross the no man's land of Dewey Square **(9)** on their way to and from commuting trains or subways and downtown offices. The tunnel development, instead of improving pedestrian conditions here, made them worse because of the arrangement of access ramps and streets which bottleneck at the Square.

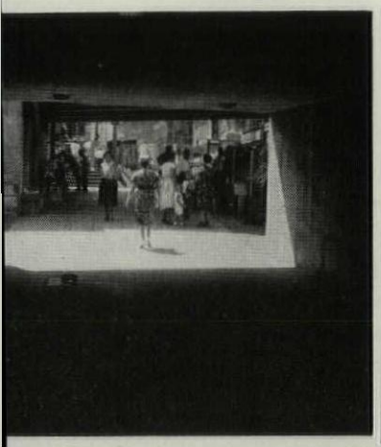
Although there is some dispute as to whether or not the tunnel has too many ramps too close together, there is no dispute to the assertion that the circulation pattern above the tunnel is overly complex. Indeed, the Department of Public Works issued a "helpful" guide to the web of traffic in the South Station section when the tunnel opened. Again, the ubiquitous surface street, this time bracketed by tall ventilating shafts, cut the area into triangles, polygons, and strips of useless land.

An urban expressway program offers a fine chance to reshape antiquated urban patterns. Unfortunately, few cities that build expressways—like Boston—have yet to offer them to an ideal similar to the Gruen plan for Fort Worth. For the "practical" man, such a plan is merely visionary. But any city—Boston included—could go a long way to turn vision to reality for the equivalent cost of the Fitzgerald Expressway.

From Dewey Square, one of the really muffed opportunities becomes evident. Looking north toward the newly completed Travelers Insurance Building **(10)**, it is easy to visualize the possibilities of a pedestrian plaza above the expressway. Among such proposals, made when the tunnel plan was first announced, was one by Developer William Zeckendorf. Although still feasible if alterations in the street pattern were carried out, it would be more expensive and less successful than a plaza initially integrated with the basic expressway plan.

The neglected details

Almost as sad as the neglected opportunities of redevelopment along the route are the neglected details of construction in the completed expressway. A typical example of this casual attention by engineers without architects when dealing with little things is the unnecessary opposition of the curb and railing curves in front of the new Travelers Building **(11)**. Indeed, as the wide-swinging car in the picture proves, it is a totally useless "bump," a hazard for the hapless pedestrian who must step into the street in order to get from one wide stretch



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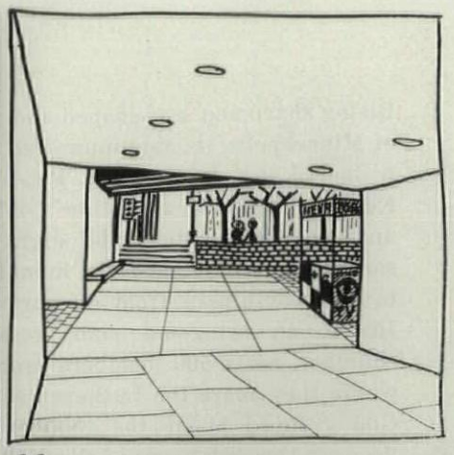

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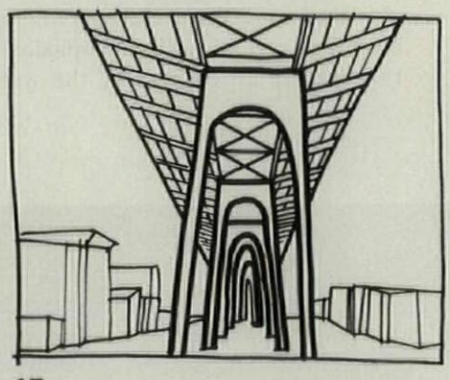

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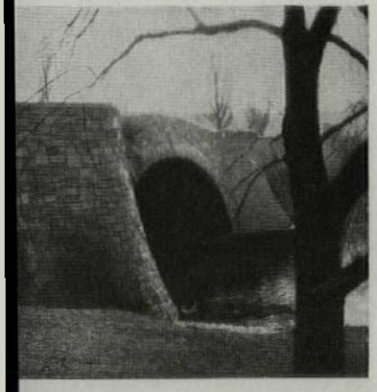
PHOTOS: (BELOW) BERNICE ABBOTT; (OTHERS) R. A. MILLER



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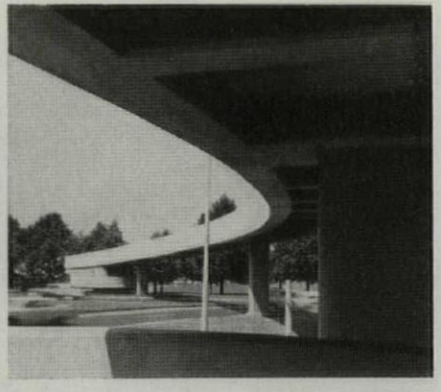


17.

18.

of sidewalk to another. The cumbersome, scaleless quality of the rail and the uncoordinated system of lightposts are other examples of careless detailing in this one spot. It would have been better if this side of the access street had not been considered a sidewalk. As one alternative, a rough stone-paved tree strip might have been installed **(12)**.

A far more serious deficiency in design, growing out of habitual neglect for the pedestrian by traffic designers, is apparent in the gloomy pedestrian underpass which replaced Hanover Street **(13)**. One of the few streets which were eliminated, it was probably the last one that should have been cut off. As the "Main Street" of the North End, it is heavily used as a major route to the adjacent business district. Even if the street had to be eliminated, the underpass solution shows a peculiar neglect of the interests of North End pedestrians, who must feel as if they are being herded through a stockyard ramp. An attractive passage at this point could have been formed by opening a small paved and planted court to the street **(14)**.

The box-girdered hell

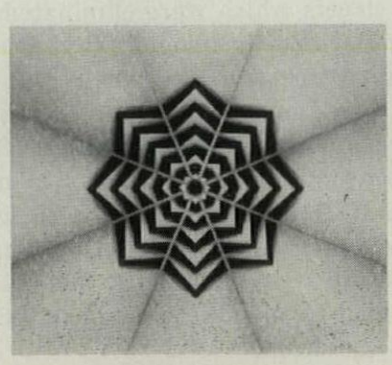
In general, it is a wonder that this most expensive of urban expressways could have possibly been made so ugly. There are many more successful designs of elevated structures which have been used successfully and economically elsewhere. Advanced design using continuous and rigid frame systems could have lightened the structure and lengthened the spans. The roadway itself could have been combined with the beams to achieve an economical composite structure. Edge stiffeners could have been raised above the roadway level as a base for guardrails.

The two roadways could have been supported at third points to eliminate the imposition of columns on adjacent sidewalks and street corners **(15)**.

But regardless of the ugliness of the structural system, the primary fault is that the entire structure is built without a coherent design system. As in many works of engineering, the solution appears determined by isolated "problem solving" instead of a development of the related parts as elements of a single concept of design. In the main, this bits-and-pieces approach was a consequence of the tortuous right of way, but there is still not much evidence to indicate that if the right of way had been cleaner the design would have been any better.

Although a depressed route is almost *ipso facto* less disruptive than an elevated passage, there is no reason that the elevated structure, if necessary, need totally lack civic quality. The old Richardson-designed bridges in the Fens **(16)** and the elegant pedestrian bridge across Storrow Memorial Drive **(17)** are home-town examples of what a design approach, as opposed to an engineering approach **(18)**, can accomplish. And, if an integrated planning approach had been added Boston might have obtained a handsome expressway symbolizing a rejuvenated and progressive city. As one of the first cities to attempt a bold solution to downtown traffic woes, Boston certainly deserved as much.

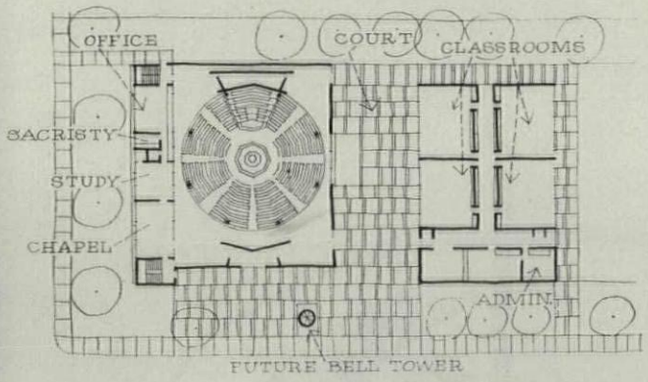
Bright star for worship

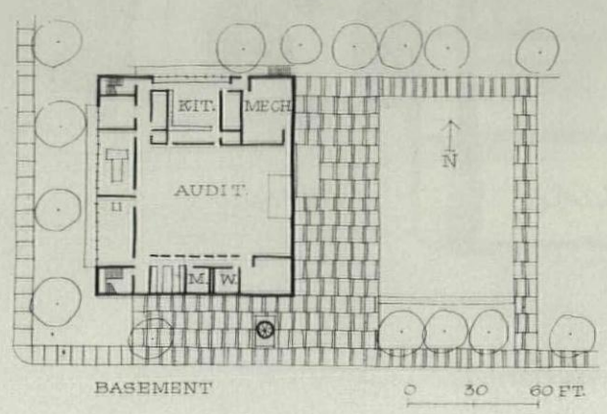


Rising sharp and star-shaped above the rambling suburbs of Minneapolis, its aluminum-clad gables glittering freshly in the sun, the new St. Peter's Lutheran Church in Edina presents an arresting symbol of both its mission and its use. Outside, the eight tall triangles of the sanctuary face out above a humbler, one-story structure to call worshipers from all corners of the community. Inside, an octagonal plan, recalling early Christian churches, seats 500 members around an octagonal altar, where they share the Lutheran service as the "family of God grouped about the table of the Lord." Sunlight floods in through panes of clear, frosted, and colored glass to play in subtle patterns on the tapering forms of the gables, which are built of stressed-skin plywood panels painted a sand-textured white (photo, below). Overhead, an air vent beneath the cupola gives an unexpectedly beautiful starburst to the meeting of the roofs (photo, left). As the interior space vaults upward in aspiration, it also moves outward through the eight high windows, in a reminder of Christ's commission "to go forth and bring the light to all corners of the world."

Above the offices, louvered against traffic and western sun, the church rises in a beckoning star shape of aluminum and glass.

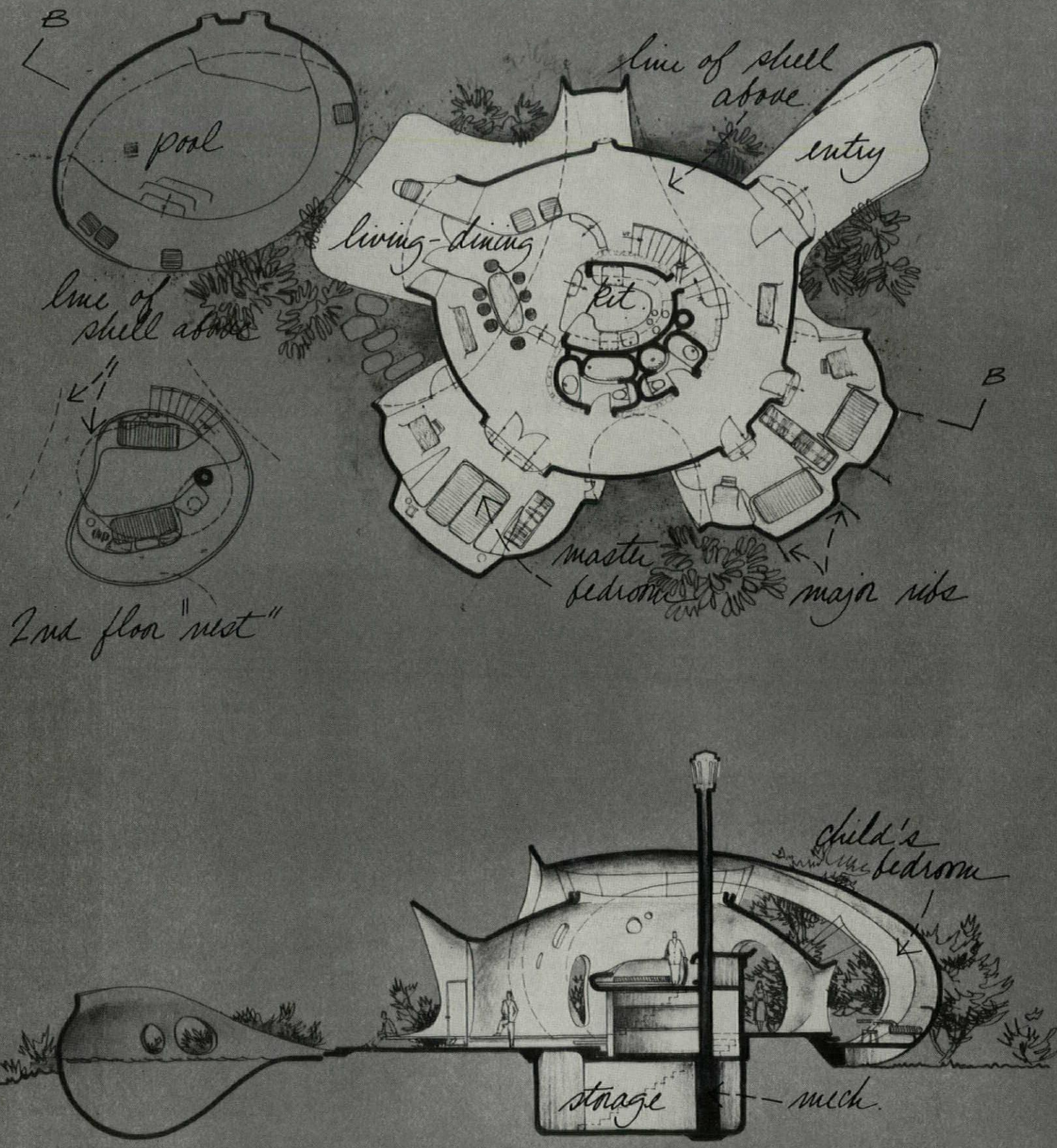
ARCHITECT: *Ralph Rapson; Douglas Baird, associate.*
CHURCH CONSULTANT: *Dr. Adalbert R. Kretzmann.*
ENGINEERS: *Myer & Borgman (structural), Lewis D. Freedland (mechanical, electrical).*
CONTRACTOR: *The church, supervision by J. L. Crouse.*
COST: *$312,000 excluding landscaping, furnishings.*





PETER MARCUS

Inside, worshipers gather around an octagonal altar (shown in detail below). Pulpit and choir form a backdrop to one side.


B
pool
line of shell above
entry
living-dining
pit
line of shell above
B
2nd floor "nest"
master bedroom
major axis
child's bedroom
storage
mech.

Section B-B

Sculpting with sprayed concrete

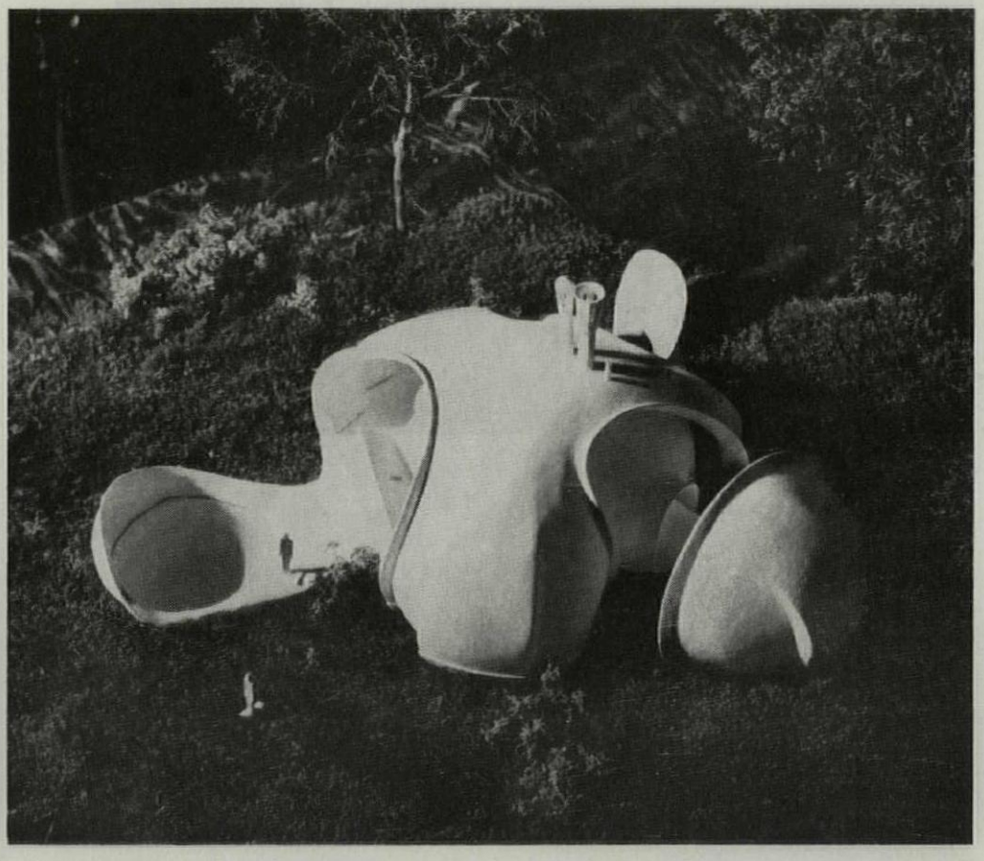
The shell-like structures of John Johansen indicate the dramatic possibilities for concrete gunned directly on a steel armature

Ever since man wove his first hut of saplings and daubed it weathertight with mud, builders have been intrigued by plastic materials internally reinforced. But even in today's dramatic concrete shells, imaginative designers have been limited by the shapes and costs of formwork. Right through the development of shell technology architects have yearned to leave out forms and, like a sculptor, model the concrete on the reinforcing alone.

As shown in this striking demonstration house, which Architect John Johansen plans to build for himself in New Canaan, Conn., such a move could open up a whole new range of possibilities in "shelter sculpture," closely expressive of interior functions and strongly reminiscent of the caves, shells, and bony structures of nature itself.

In essence, Johansen's proposal is a return to the ancient wattle-and-daub technique—with new equipment and highly sophisticated overtones. First, steel rods are bent into the desired shapes and bundled into major ribs, which are raised, guyed up, and fastened together at a central point. Next, smaller rods are fixed across the gaps, holding the ribs together. A skin of paper-backed steel mesh is unrolled under this cage to prevent the "mud" from passing through. Then a special cohesive, high-strength concrete—not unlike that sprayed to form modern swimming pools—is hosed directly onto this armature, making a rigid shell 3 in. thick out of floor, walls, and roof.

On the exterior, the shell is waterproofed with sprayed plastic; inside, it is hard-finished, textured, painted or coated with sprayed insulation, depending on use. Radiant heating coils are imbedded not only in the floor, but up into the curving walls and ceiling as well. Furniture, steps, and shelves, even bathroom equipment are formed as part of the structure itself. Openings of various shapes and sizes are left in and between shells, and sealed against weather by clear plastic sections cut to fit curves and set in transparent plastic frames. Johansen estimates cost at about $4 per sq. ft. of finished shell surface, or $17 to $18 per sq. ft. of floor area for a house. Engineers: Ammann & Whitney (structural), Fred S. Dubin Associates (mechanical).



"Spray-form" house consists of a rounded inner shell with openings at top and sides, covered by a higher, three-cornered shell sweeping up from peripheral bedrooms. Out of a central basement and kitchen-bathroom core rises a turretlike "nest" designed as a raised sitting area and extra bedroom. Shells are crimped and flared to accommodate interior functions and to lend structural strength and sculptural effects. An early study model (above) strongly suggests the shell, cave, and bone forms found in nature.

Other spray structures: lively exhibit pavilions and a church; a cellular restaurant and motel

Johansen, whose interest in structure as sculpture extends also to precast forms (see his projected U. S. Embassy for Dublin, FORUM, Nov. '58), has had one sprayed-concrete design built so far: a pavilion for the 1956 Trade Fair in Yugoslavia (1). Another symmetrical pavilion study suggests a variety of uses—exhibit hall, park shelter, roadside restaurant (2). A scheme for a church in Connecticut shows the technique applied to soaring, hooded forms (3), though tall or multistoried buildings obviously present added problems. Johansen is now working on three more projects adapting sprayed concrete to cellular, repetitive plans. One, for a developer in Mt. Kisco, N.Y., is an elegantly vaulted restaurant with nearby motel clusters (4, 5), based on hutlike units carried outside in partial form as window embrasures, porches, terrace patterns, and pools (the latter are the same units simply inverted in the ground). These projects, and studies for cellular houses, suggest further savings in standardizing and prefabricating sections of steel armature, even prespraying units and lifting them into place.

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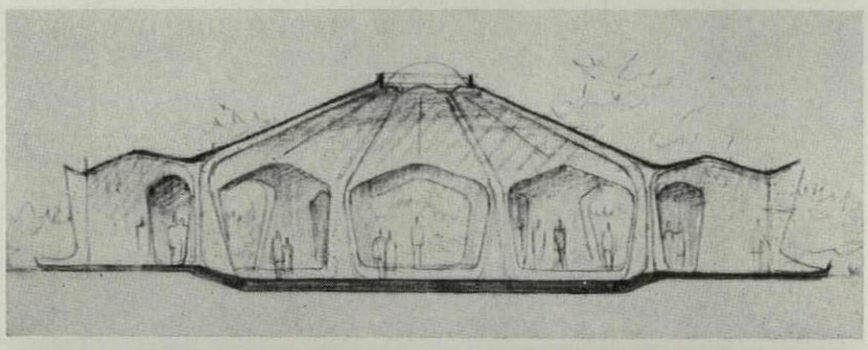

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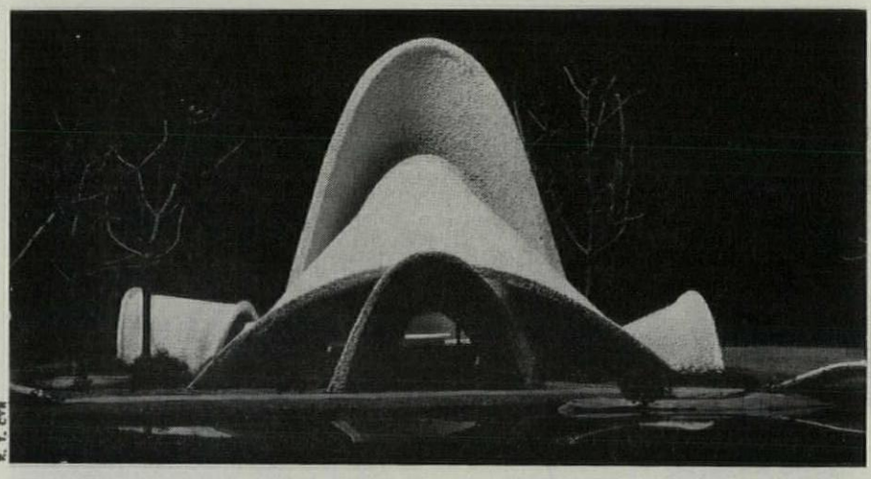

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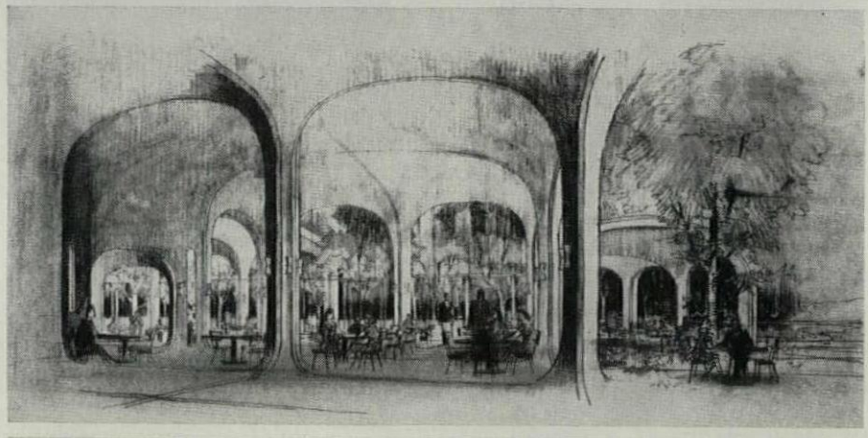

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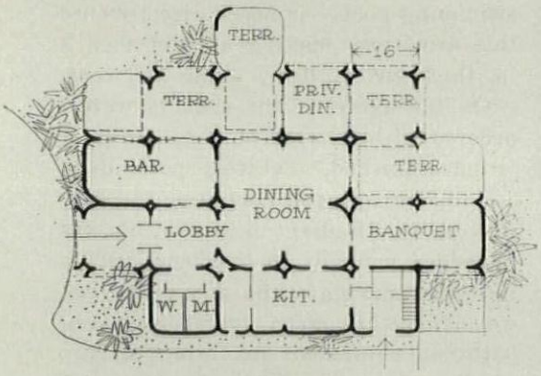

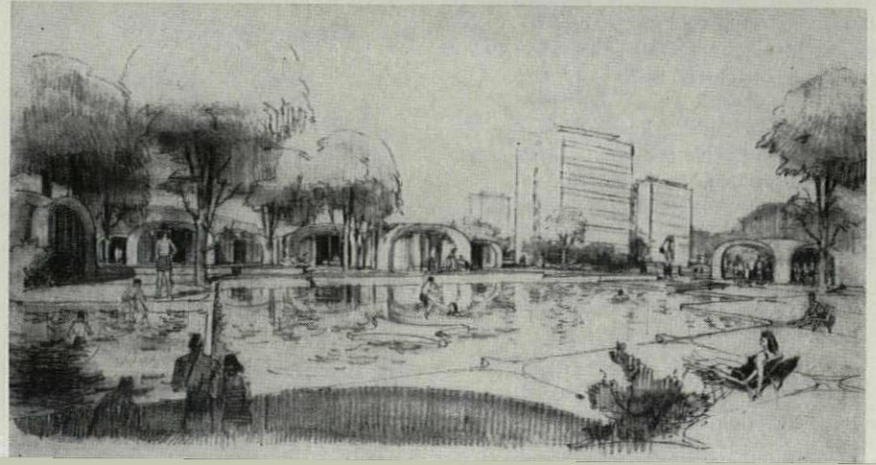

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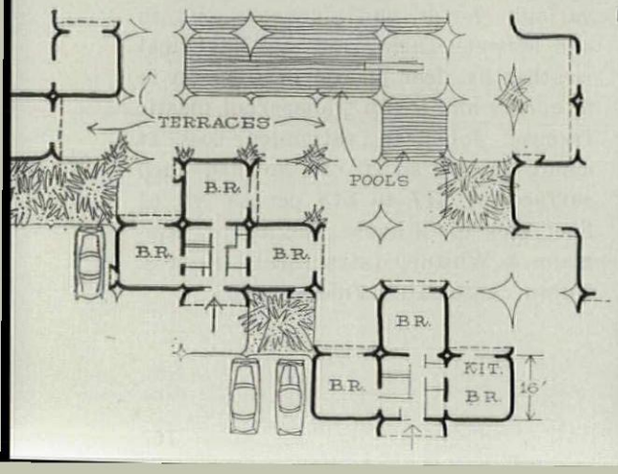
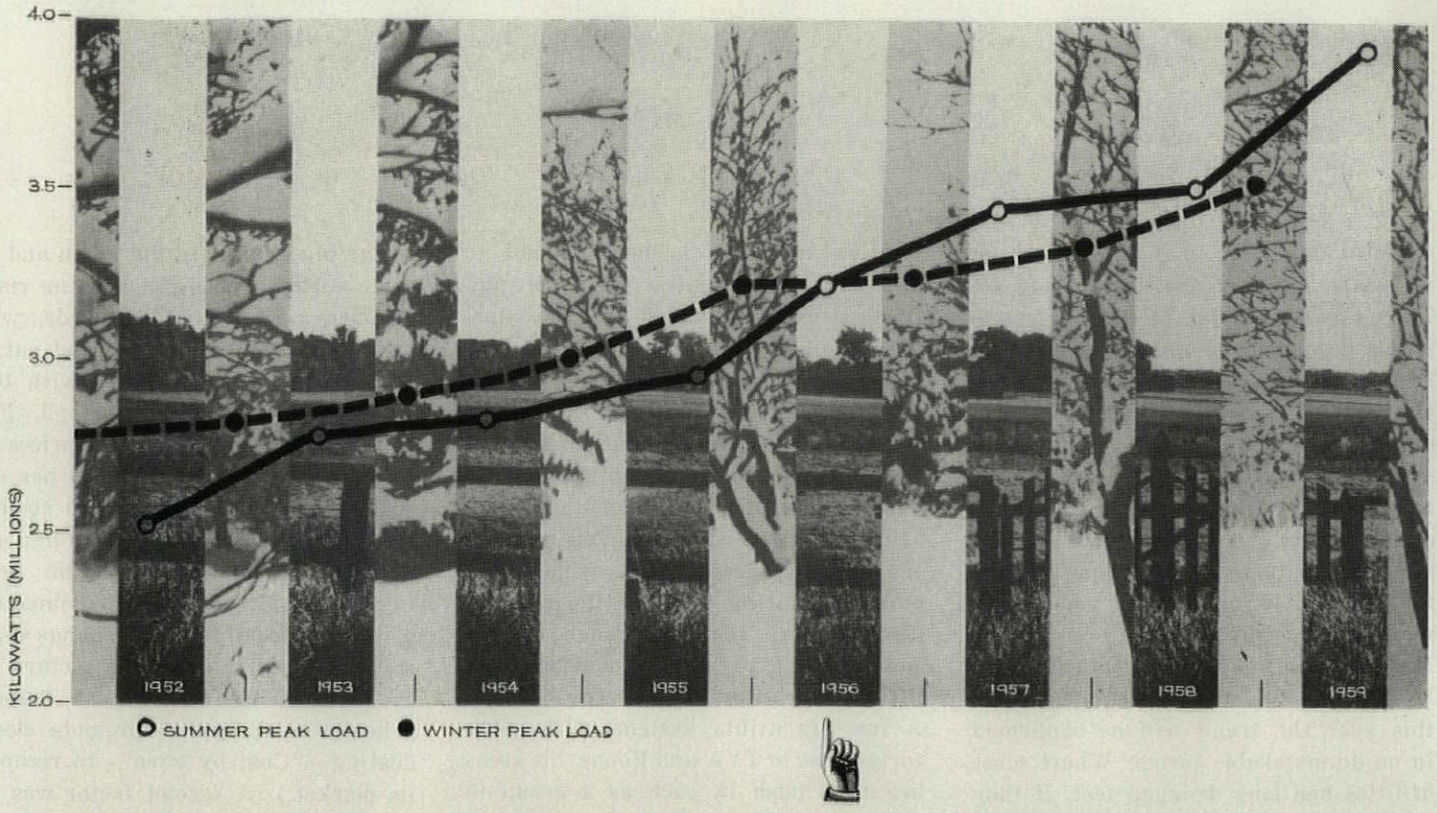




Electric heating puts on the heat

The heating of the future is moving in today on the big excess capacities of electric power built up by summer air conditioning

BY LAWRENCE LESSING

The zigzag chart above represents one of the quieter, more far-reaching revolutions of the times, and a peculiarly American one. For the first time anywhere, electric power consumption in U.S. cities and communities is shifting from the traditional winter peak loads, experienced by utilities ever since power generation began, to summer peaks, sharply rising on the enormous power demands of air conditioning. Some 40 per cent of electrical utilities had summer peaks last year, and on the humid wave of the summer just past that figure is going still higher. An apogee of a kind was reached in New York City on September 9, when an all-time record peak was hit of 4,025,000 kilowatts. On a previous peak in August, seven huge feeder cables burned out, plunging five square miles of midtown into airless darkness.

The consequences of this power shift are momentous. For utilities must strive to balance out peak loads, otherwise more and more expensive generating equipment lies idle for periods, drawing no income. And the only appliance to match the power-hungry appetite of air-conditioning equipment is electric heating. Hence, close to 90 per cent of all U.S. utilities are now either actively promoting electrical heating or preparing to do so. Where summer peaks have not yet exceeded winter loads, the handwriting is on the wall. And even where it is not, the electric heating so far installed has proved so profitable that few utilities can afford not to weigh seriously its promotion. About the only utilities not talking about electric heating with any enthusiasm are the so-called combination companies, such as New York's Consolidated Edison, selling both electricity and gas, and even for these companies, summer electric peaks are growing so

The crossover *to summer peak loads in electric power consumption from traditional winter peaks is graphically shown in the chart above of summer and winter peaks since 1950 in the Consolidated Edison Co. of New York's system. Last year 41 per cent of U.S. utilities had summer peaks. This included 17 per cent of northern utilities, and in 1959 the percentage will be higher.*

mountainous that they will soon be in trouble, if they are not already so. Thus the next great phase in electric power development, and one marking a really revolutionary advance in domestic ways of keeping warm, is clearly electric heating.

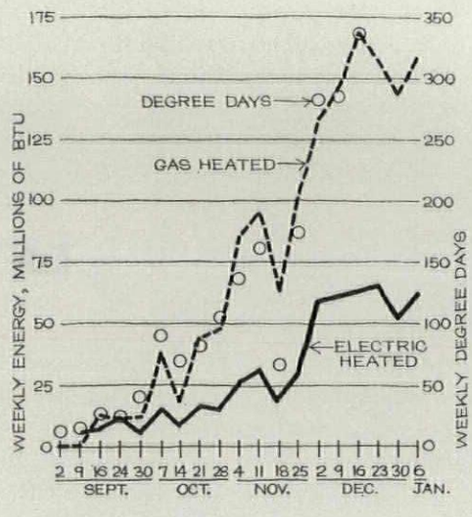
Few builders and architects are yet aware of how recently and rapidly the situation has changed in electric heating. The big turning point came in 1956 to 1957, when for the first time summer peak loads poked up north of the Mason-Dixon line in a substantial way. Recession 1958 saw some slippage, but this year the trend will be confirmed in no unmistakable terms. Where most utilities had long dragged feet, if they had not actively discouraged electrical heating, fearing its quick growth to loads that could not be handled economically—utilities had almost as many erroneous ideas about electric heat as laymen, builders, and architects—suddenly national power industry meetings began to crackle with symposia, papers, and promotional plans on the new load builder. In three years the number of manufacturers of electric heating systems rose from about 20 to over 70, while sales leaped over 40 per cent a year to some $20 million, and the ground was laid for still greater growth.

But isn't it too expensive?

There is nothing essentially new about electric heat. In the two major forms in which it is known—direct resistance heating through coils, cables, or printed circuits, and indirect heating through the device known as the heat pump—it is at least half a century old. Only since World War II, however, has the heat pump had serious development, and most of the resistance heating of entire structures, now constituting about 90 per cent of all electric heating systems sold, dates from the same time. Resistance heating had its first impetus late in the thirties in the Tennessee Valley and Pacific Northwest, where cheap hydroelectric power at block rates as low as 7.5 mills a kilowatt-hour made such heating immediately feasible.

Elsewhere, electric heating had to overcome much rate resistance and sheer inertia. To come within competitive range of gas, oil, or coal, electricity for heating must sell under 2 cents a kilowatt-hour, preferably 1½ cents or less. When Westinghouse Electric Corp. surveyed the potentials of the market in 1945, it found that most of the utilities had block end rates of 1½ cents or less, which made a big potential, but most residential rates in large centers remained much higher, some with high demand charges, and little utility interest in electric heating. A few big utility systems with territories close to TVA and Bonneville areas began to push it, such as a group in the Pacific Northwest (which now has an electrical heating load equal to TVA) and American Electric Power (which has built up some 15,000 electrically heated homes on its system). But for the most part the early laboratory and proving grounds were the hated public power areas—Chattanooga, Tenn. alone has 90 per cent of new homes built in the last ten years totally heated by electricity. This led to the two most persistent misapprehensions about electric heat: that it is too expensive outside public power areas, and that it is not suitable for any but milder climates.

The big change to the north and east came not only with the looming rise in summer air-conditioning loads, which meant that utilities had to get out and sell more winter load, but with three other important factors as well. From 1950 on, gas, oil, and coal prices had steadily risen—gas about 20 per cent, coal 30 per cent, and fuel oil about 50 per cent—while electric rates had actually declined about 5.8 per cent, bringing them into much closer competitive grips with fossil fuels. (Coal has slipped so far out of the heating picture that the United Mine Workers have launched a heavy campaign to promote electric heating—"Coal by wire"—to recapture its market.) A second factor was that utilities found that their promotion of electrical appliances — ranges, water heaters, washers and dryers — had reached a point of saturation where no great gains could be made without a big boost such as electric heat. And limited experiences with electric heat had shown that even a small amount of it on utility lines could have electrifying effects on loads and income, for electric heating raised an average household's use from something below 3,000 kilowatt-hours a year up to about 20,000 kilowatt-hours, at anywhere from $150 to $550 in additional yearly revenue.



Use efficiency *of electric resistance heating is shown in chart at right, in which the heat-energy consumption of two similar 26-classroom schools in western Pennsylvania, one electrically heated, the other gas heated, was measured through the same winter days in 1958. Both systems remained relatively level in input at fairly warm low degree-days, but as weather grew colder the electrical heat input was relatively less than that for the gas-fired school, owing to electric heating's better insulated structure, closer control, and ability to use supplemental heat from lighting, room occupancy, and sunlight.*

To exploit this new market, northern and Midwestern utilities have been carefully slashing electric rates for domestic heating, and promoting generally more favorable commercial rates. In only the last year or so, Detroit, Chicago, Cleveland, Cincinnati, the Connecticut Valley, and others have had rate cuts to 1¾ or 1½ cents, while demand charges are beginning to disappear. Cincinnati Gas & Electric believes its summer peaks will grow about 10,000 kilowatts faster per year than its winter peaks, hence it has been galvanized into promoting electric space heating. Equally compelling has been the rise of equipment manufacturers, with a wide range of sharply competitive systems, stirring consumer demand. Nearly all the early business was pioneered by smaller manufacturers, such as Pittsburgh's Edwin L. Weigand Co., over 40 years in electrical heating, mainly industrial. But now the giants are in. Westinghouse, for instance, moved its resistance heating department, forehandedly started on the West Coast in 1945, to the East last year to tap the national market, and General Electric is stepping up its efforts in the field.

A fanfare of promotion is blowing up such as the heating field has rarely heard—Westinghouse has a $3 million Total Electric Home campaign employing a dozen leading architects, and others have equally ambitious programs among home builders—with heavy support now from major utilities. Altogether, there are to date some 300,000 U.S homes all-electrically heated (including heat pumps), and probably an equal capacity or more in commercial installations, all of which is still only a drop in the immense building market. About two thirds of this is still in public power areas. The goal now is 1.5 to 3 million electric-heated homes by 1965, which at the present rate of growth may be easily attained, and an equally big push in the commercial sector—for every unit of load going into big downtown air-conditioning installations makes available two to three times that load for winter heating.

To reach such goals, electric heating must be economic. And it is rapidly moving into economic feasibility in many sections, but the economics are complex and still in flux. Some utilities are promoting electric heat with more enthusiasm than others, and some have yet to begin, so that a careful check on local rates and services is the first order of business. Then the building must be designed for electric heat, particularly with adequate insulation and ventilation, otherwise most of the benefits are lost. Then equipment must be carefully selected, for systems vary in purpose and efficiency, and irresponsibly applied they become uneconomic, which means hiring a reputable contractor with training in electric heat. (Given all this, electricity will yield superior heating in even the coldest climates, as proven now in many northern installations.) Finally, however, even at 1½ cents a kilowatt-hour—as the competition quickly points out—electric heating on a strictly heat-unit basis is still higher in cost per B.t.u. (British thermal unit) than either oil or gas, from 10 per cent higher to as much as double conventional fuels in some areas. But this is where electric heat's peculiarities and complexities move in to allow it to compete.

How the scales are tipped

Electricity makes a heating system entirely different from the age-old fuel-and-flame combinations. Basically, it confines combustion to the central power plant, where engineering is steadily wringing more energy from a pound of coal, and sends the resulting energy by wire to the place of consumption where, through simple resistance elements, it is converted to heat. Hence, much less heating equipment is needed at point of consumption, and electric heating generally runs about half the initial cost of installing most conventional heating systems, a saving that may absorb as much as five to ten years of any additional operating costs. Technologically, aside from considerations of cost, electricity is an ideal heating source, clean, constant, efficient, bulkless, highly controlled, low in hazards, and conserving of resources. Three characteristics in particular weight the economic balances:

100 per cent efficiency. Electricity is converted to heat at the resistance elements at 100 per cent efficiency; that is, all the current paid for is turned to useful heat. Moreover, even when the heat is controlled down, the efficiency remains close to 100 per cent, and there are never any standby losses. No raw fuel system ever reaches such efficiency. In actual operation, faulty combustion, poor control, soot accumulation, and other factors drag efficiency down in the best of oil or gas furnaces to somewhere around 30 to 40 per cent. And further losses are sustained in getting the heat from the central furnace to point of consumption. Thus, while the fuel may be fairly cheap, most of it is wasted.

Zone heating. In electric resistance heating, the heating elements—thin panels, cables, or baseboard units—are installed directly in rooms or zones at point of consumption, eliminating all transmission losses. Each room or zone is thermostatically controlled, so that each may be regulated to individual desired temperatures, cut back, or shut off when not in use. Moreover, a variety of equipment may be used—radiant or convection types or humidity-control units, wherever required—and additions may be made simply by wiring in new units. No conventional central heating system has such economic flexibility. While radiators may be turned down or shut off, there is little saving in fuel. In central systems the heat is either on or off, with only moderate flexibility between, and any addition to the system is a major job.

Use efficiency. As a consequence of all this, engineers early found that traditional combustion-heating methods for calculating the heat requirements of a structure were way off when applied to electric heat. Through actual experience, one after another electrical system designed to traditional heating specifications was shown to use from one third to one half less

continued on page 248

Mortgage substitute . . . escape hatches . . . sitting and parking aids

? *How to save space and expense in storing bulky architectural drawings that must be consulted or used again and again.*

! *Make master prints on microfilm that will not deteriorate and will require only a fraction of the storage space needed for original drawings.*

Many business organizations have found that they can save storage space by microfilming records and large documents. Recently the Navy's Bureau of Yards and Docks started a microfilm file of all its old and new construction and engineering drawings on 105 mm. film. The efficiency and economy of this system of keeping architectural records were demonstrated at the Naval Academy, in Annapolis, in the reproduction of all the master drawings for historic Dahlgren Hall. A half century of age and repeated handling had made the original drawings for this building almost undecipherable. Every contemplated renovation or remodeling of the building required a survey and new drawings to show the original construction. To avoid repeating such expensive work in the future, faded lines and missing portions of original drawings were redrawn on large microfilm prints and rephotographed for a master record, from which unlimited prints can be made at nominal expense whenever the need arises.

? *How to provide unobtrusive, inexpensive emergency exits from a research laboratory.*

! *Install a series of interior-exterior curtain-wall panels in special kick-out frames.*

In designing the new research building for Texas Instruments Co. in Dallas, Architects O'Neil Ford and Richard Colley realized that they should provide emergency exits, because of fire, explosion, and gas hazards. They asked for recommendations from the curtain-wall supplier. Recalling how it solved a similar problem a few years ago in an atomic research laboratory at the University of California, Berkeley, the supplier suggested that a series of the building's standard porcelain enamel wall panels be set in snap-in aluminum frames held in the regular aluminum window-wall framing system by stainless steel spring clips. From the exterior, 60 of these 3 ft. by 4 ft. weatherproof kick-out panels, installed at intervals around the building, cannot be distinguished from regular panels. On the interior, however, the special panels are prominently identified as escape hatches. They can be dislodged with a kick by a 100-pound woman and, since the building is only one story high, they fall harmlessly to the ground. (In the upper floors of the Berkeley laboratory escape panels are hinged so that they cannot fall onto anyone below.)

The supplier, Soule Steel Co., of San Francisco, made no extra charge for the Dallas kick-out installation.

? *How to make outdoor "furniture" for the shopping center and college campus more useful and neater.*

! *Design exterior facilities for the shopping center with seat-height ledges; use unobtrusive, sunken bicycle holders and earthen screening rims around college bicycle parking lots.*

Considering how much people at a shopping center would love a chance to sit down—but seldom get it—Architect Joseph Amisano, of Atlanta, put in a master stroke of helpful practicality when he designed the Lenox Hill Shopping Center's fountains, flower

WALLACE LITWIN

beds, and other similar low-lying exterior features with their concrete frames uniformly 15 in. high, so people can sit on them (photo above).

Across the continent, at California's State Agricultural School at Davis, near Sacramento, Landscape Architect Lawrence Halprin and Architects Kitchen & Hunt, all of San Francisco, came up with a similarly neat and simple way of parking more than 3,000 student bicycles. After studying several European and U.S. "bicycle campus" institutions, Halprin designed

LAWRENCE HALPRIN

precast concrete blocks (29 in. by 9 in. by 7 in.) that are set into the ground and will hold a bicycle upright when a wheel is set into a long slot in the block. The cost of these blocks was $15 each, $25 installed. (Each block is set in a gravel bed, so the slot in it will not become filled with rain water.) Then, for still greater neatness, Kitchen & Hunt devised a way to "hide" four 200-unit bicycle parking lots: each will be enclosed with earth mounds 3 ft. high, 20 ft. wide, and 60 ft. long, and planted with a ground cover.

? *How to obtain extra financing for a cooperative apartment without resorting to the usual second mortgage.*

! *Make separate loans to individual buyers who want assistance in acquiring their co-op stock, which they can pledge as collateral.*

Buyers of apartments in the Salisbury Manor co-op nearing completion in South Nyack, N.Y. were able to purchase units for nominal down payments, even though the project was financed with only a conventional first mortgage.

Ordinarily, the cash down payments of all the purchasers plus the first-mortgage loan pay the entire cost of a new cooperative. At Salisbury Manor, however, the builder-sponsors made what amounted to second-mortgage loans to buyers who did not have sufficient cash or did not wish to make the entire cash down payment. To these buyers the sponsors loaned up to two thirds of the regular down payment at 6 per cent interest, amortized over any period up to 20 years. In return, each buyer deposited his co-op stock certificates with the sponsors as collateral, but retained his occupancy and voting privileges in the project management. For a typical apartment requiring a down payment of $6,000 and monthly charges of $85, a buyer could borrow up to $4,000 from the sponsors and, on a 20-year amortization plan, repay the loan in additional monthly charges of $28.26. For income-tax purposes the buyer can deduct the interest portion of this extra charge, as well as his proportionate share of real estate taxes and interest on the project's first mortgage.

Joseph S. Riggio was architect for Salisbury Manor's four six-story buildings, and Alexander Wolf Jr., of Herbert Charles & Co., New York City sales agents, arranged the special financing.

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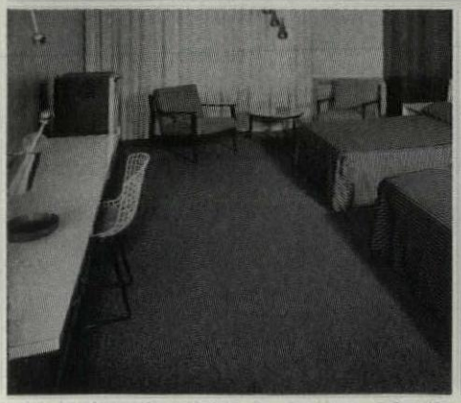

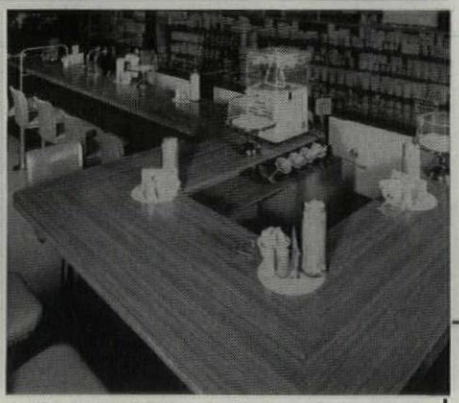

Interior decorations, Motorlodge, by Maxwell Co., Miami • Furniture and fixtures by Leathercraft, Inc., Miami

81

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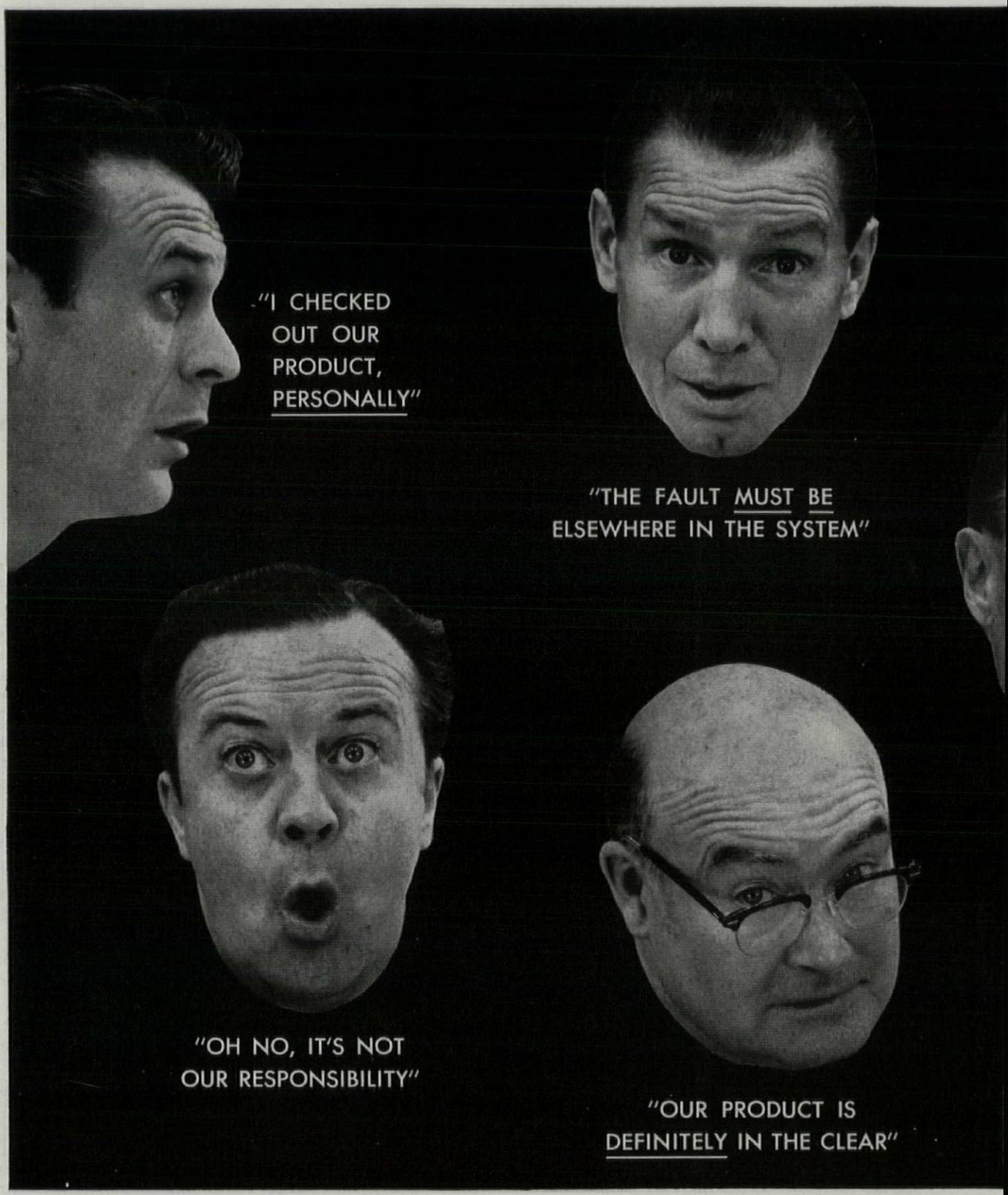

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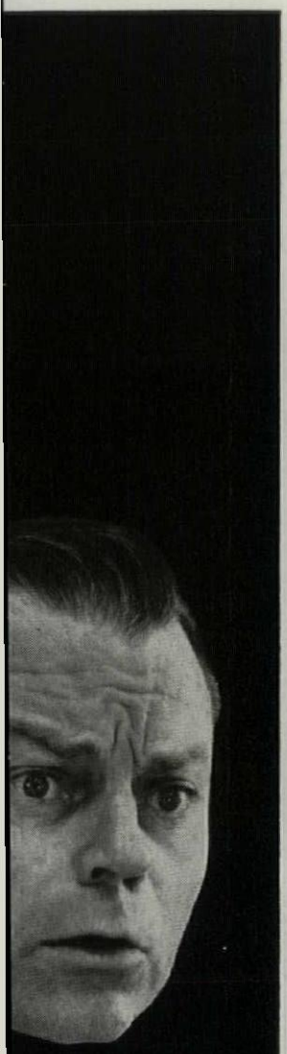

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Yet, by the same token, what happens when you split responsibility for the elements in a building or plant air-conditioning, heating, and ventilating system? The components are built by separate manufacturers who are answerable only for what they make.

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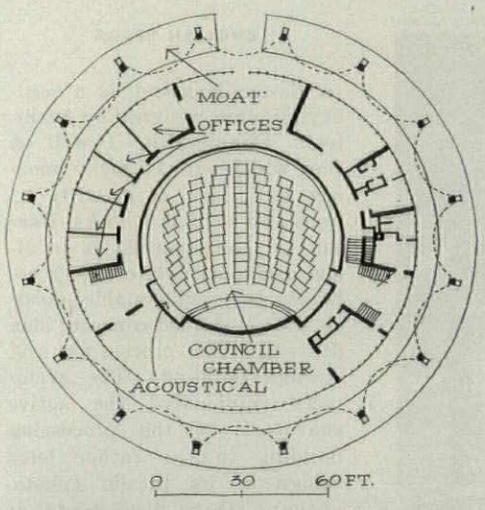
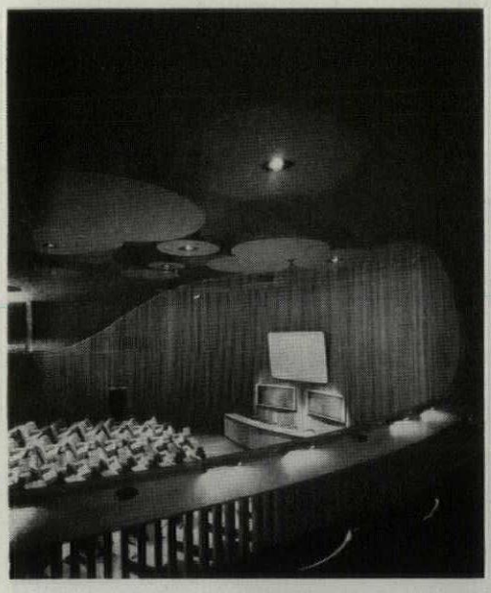
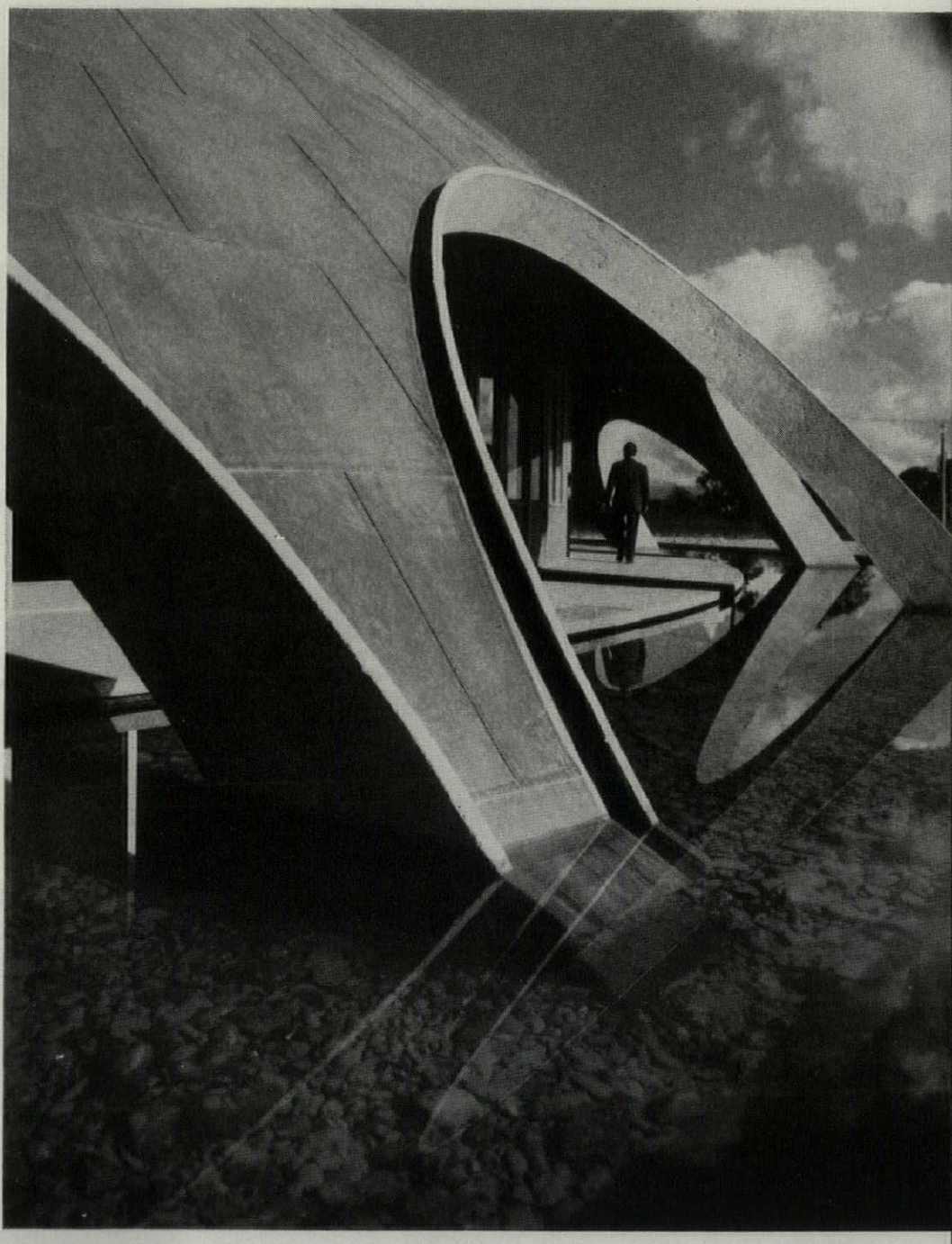




PHOTOS: (RIGHT) KENNETH ROSS STUDIO; (OTHERS) MAX DUPAIN STUDIO

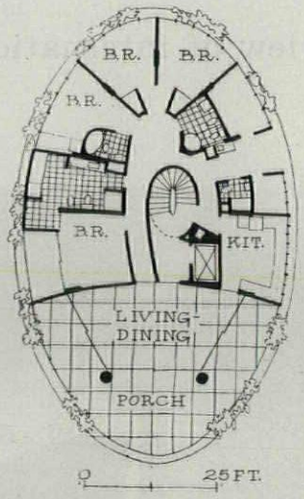


AUSTRALIAN KNOLL

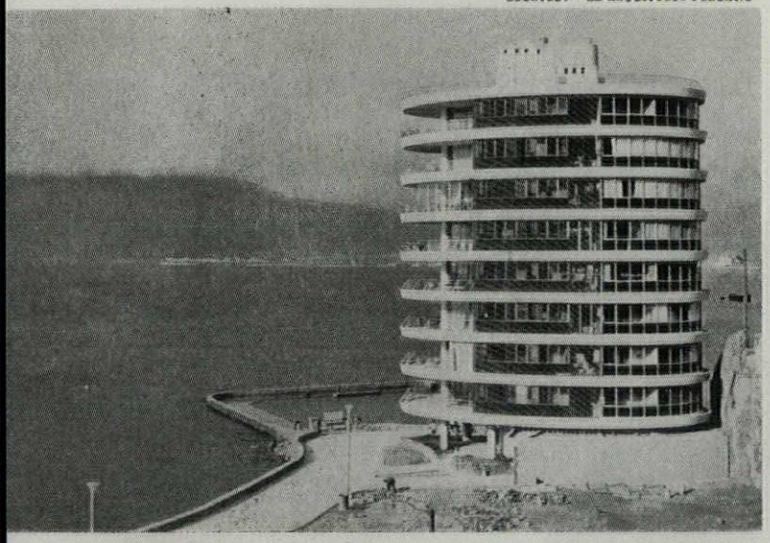
Set among the knolls outside Melbourne is the copper-shingled dome of the Australian Academy of Science Building. Designed by Melbourne Architects Grounds, Romberg & Boyd, the dome was built with two urgent specifications in mind: that 1) the scorching Melbourne sun be toned down (hence the overhanging arches), and 2) the conference chamber be sound-insulated from other areas of the building (hence the deep acoustical dead space—see plan). The over-all diameter of the dome's reinforced concrete shell structure is 166 ft., counting the strangely medieval cloister and moat.

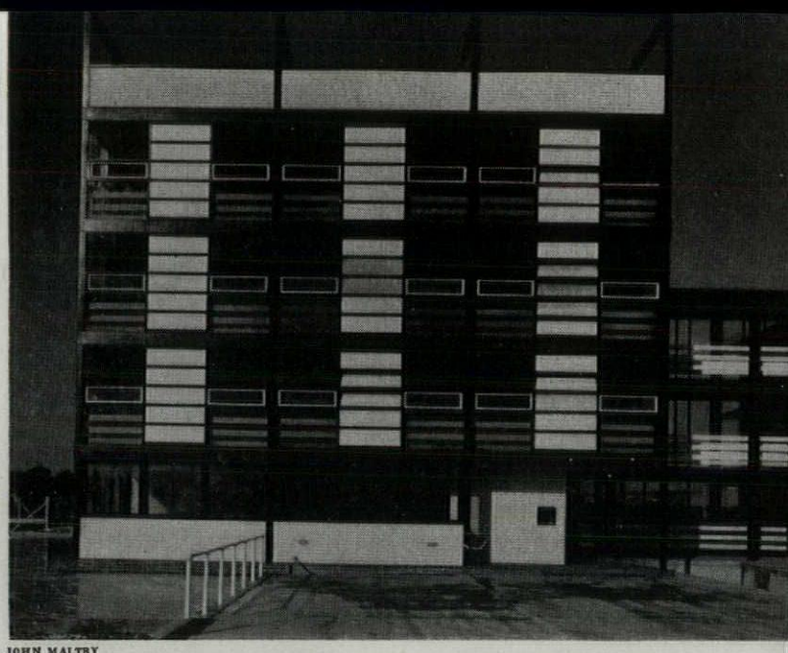
PERUVIAN LIGHTHOUSE

At Ancon on the coast north of Lima, a new luxury apartment house has been built that combines all of the delights of living in a lighthouse with some of the principles of modern architecture. The major delight is the 360-degree view of the Pacific. And at the center of the elliptical building is a spiral "lighthouse" staircase that unites the eight apartment floors (see plan). Set back beneath the floors are walls of heat-resistant glass. The windows on the west face are shielded by concrete louvers (not shown), not for signaling ships but for keeping out the fierce afternoon sun. Architect: Alberto Menacho.



COURTESY "EL ARQUITECTO PERUANO"





JOHN MALTBY

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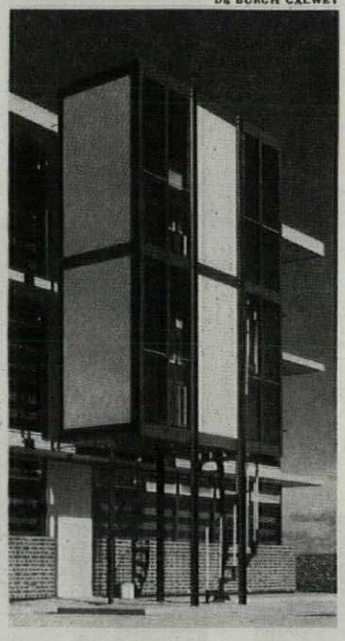
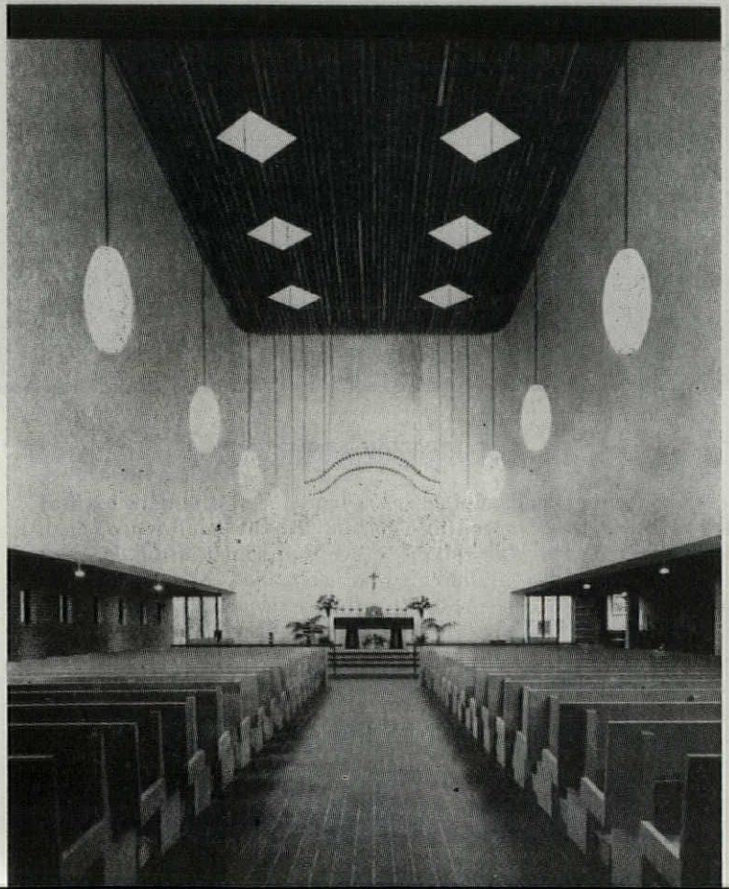
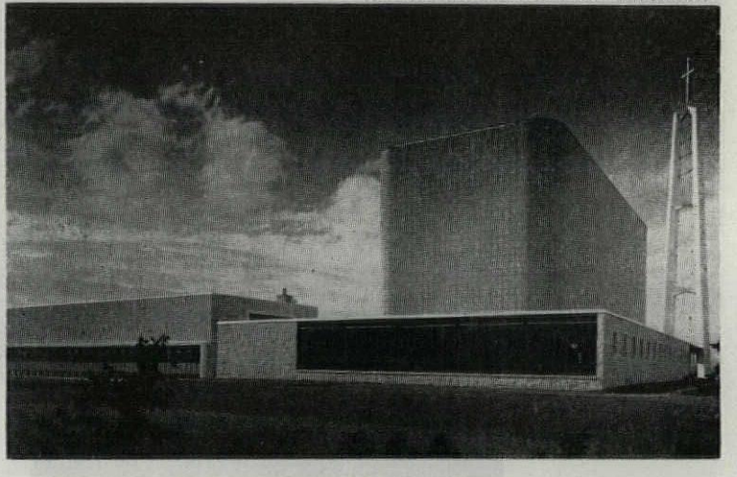


ENGLISH SEEDS

In Essex, England, is a seed-drying plant designed by Architects Chamberlin, Powell & Bon which, unlike many modern buildings, is actually as open and airy as it looks. Reason for the openness is to allow air to circulate freely between the inflammable goods on the reinforced concrete slab floors of the processing and storage buildings. The architects emphasized the active character of the processing building in the rather busy design of its façade (photo, above); they also made it clear that there are no interior stairs by providing a carefully articulated exterior staircase at the end of the storage building (photo, left).

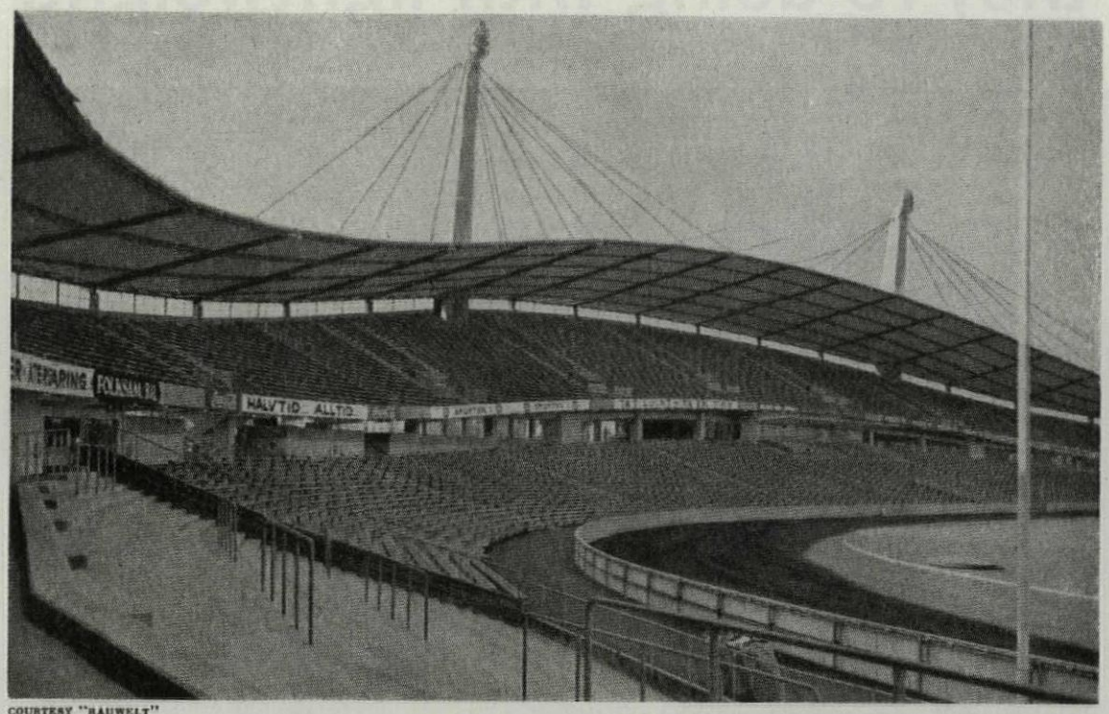
PHOTOS: HENRY KALEN. COURTESY "RAIC JOURNAL"





CANADIAN BOXES

The upper walls of this chapel consist of two 3 in. skins of reinforced concrete sprayed over cardboard boxes to form 12 in. cavities and ribs. Truss-like in structure, the walls span 74 ft. at their bases unencumbered by conventional view-blocking columns. The high-rising chapel, finished outside with mosaic tile, dominates St. Paul's College at the University of Manitoba's Winnipeg campus. Architects: Gardiner, Thornton, Gathe & Associates of Vancouver.



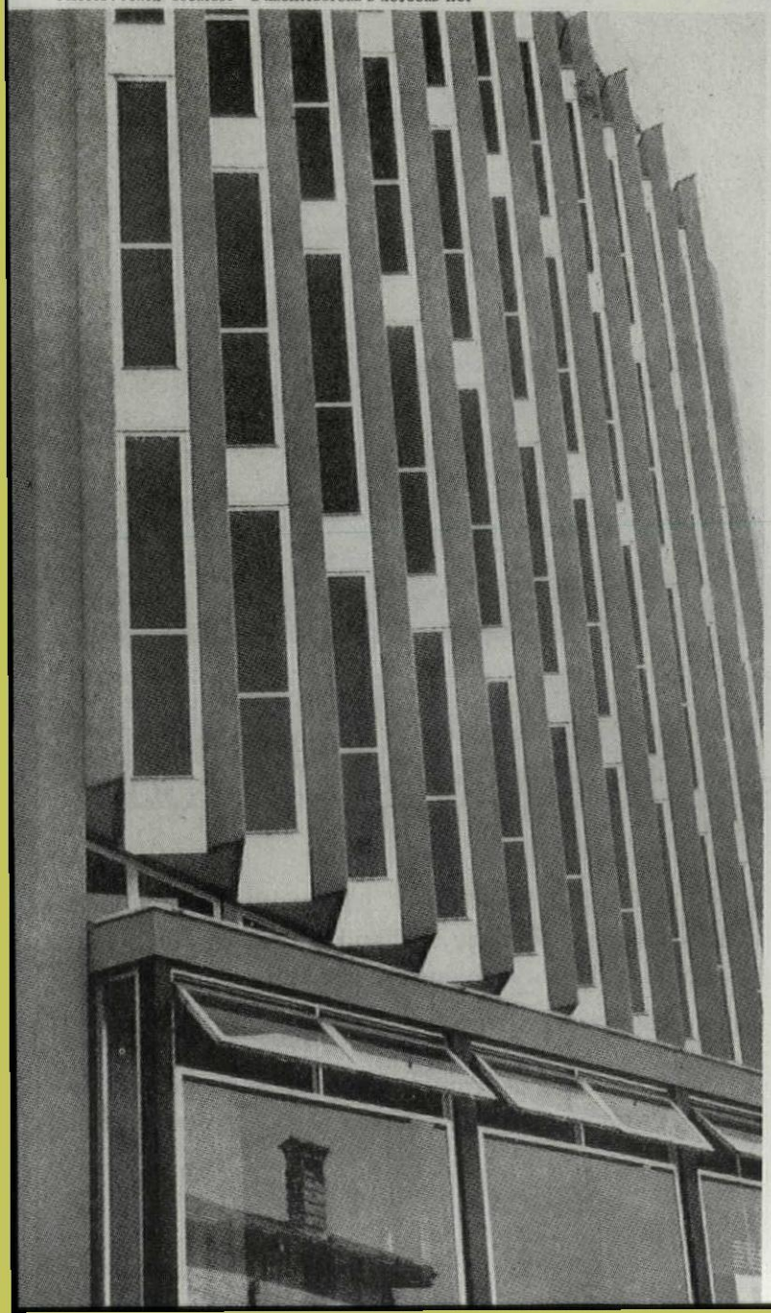
COURTESY "BAUWELT"

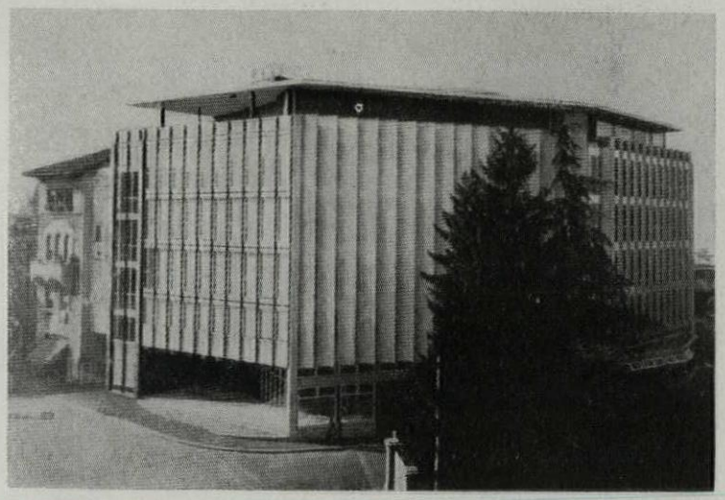
SWEDISH ROLLER COASTER

Last year Sweden's underdog soccer team scored a surprising win over the Germans at Göteborg's Nya Ullevi stadium (left) because (so the story goes) Swedish cheers thundering from beneath the stadium's undulating roof unnerved the visitors. The stadium has other, less questionable advantages: chief among them is the accommodation of 54,000 spectators on this relatively small, downtown site, 13,000 of them under cover.

To accommodate an enlarged block of midfield seats, the roof, composed of concrete slabs overlying a light steel framework, is held up by means of cables suspended from two giant pylons. Architects Fritz Taenecke and Sten Samuelson are responsible for the design.

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

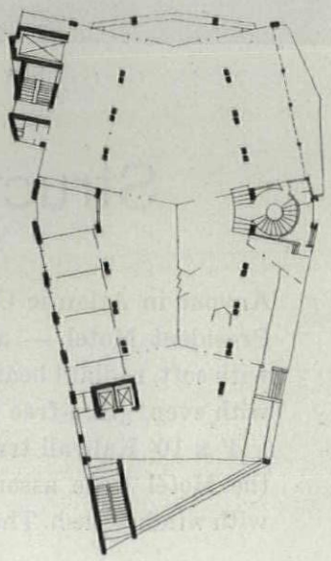




ITALIAN IRREGULARITY

Cantu, near Como in northern Italy, is a furniture and textile design town, but has long lacked a display center worthy of its wares. Architect Renato Radici, in proposing an exhibition hall to fill the need, ran into two difficulties: 1) the only lot available was so cramped that it seemed inadequate for a building of sufficient size, and 2) the local monuments council decreed that the building could not exceed the height of its venerable neighbors. Radici's solution was to fill every cranny of the site with his irregular design (see plan), to give his building visual unity by its vertically stripped façades, and to beat the height regulation by setting back the penthouse restaurant.

END



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Structural Kalwall used to enclose 125-room,

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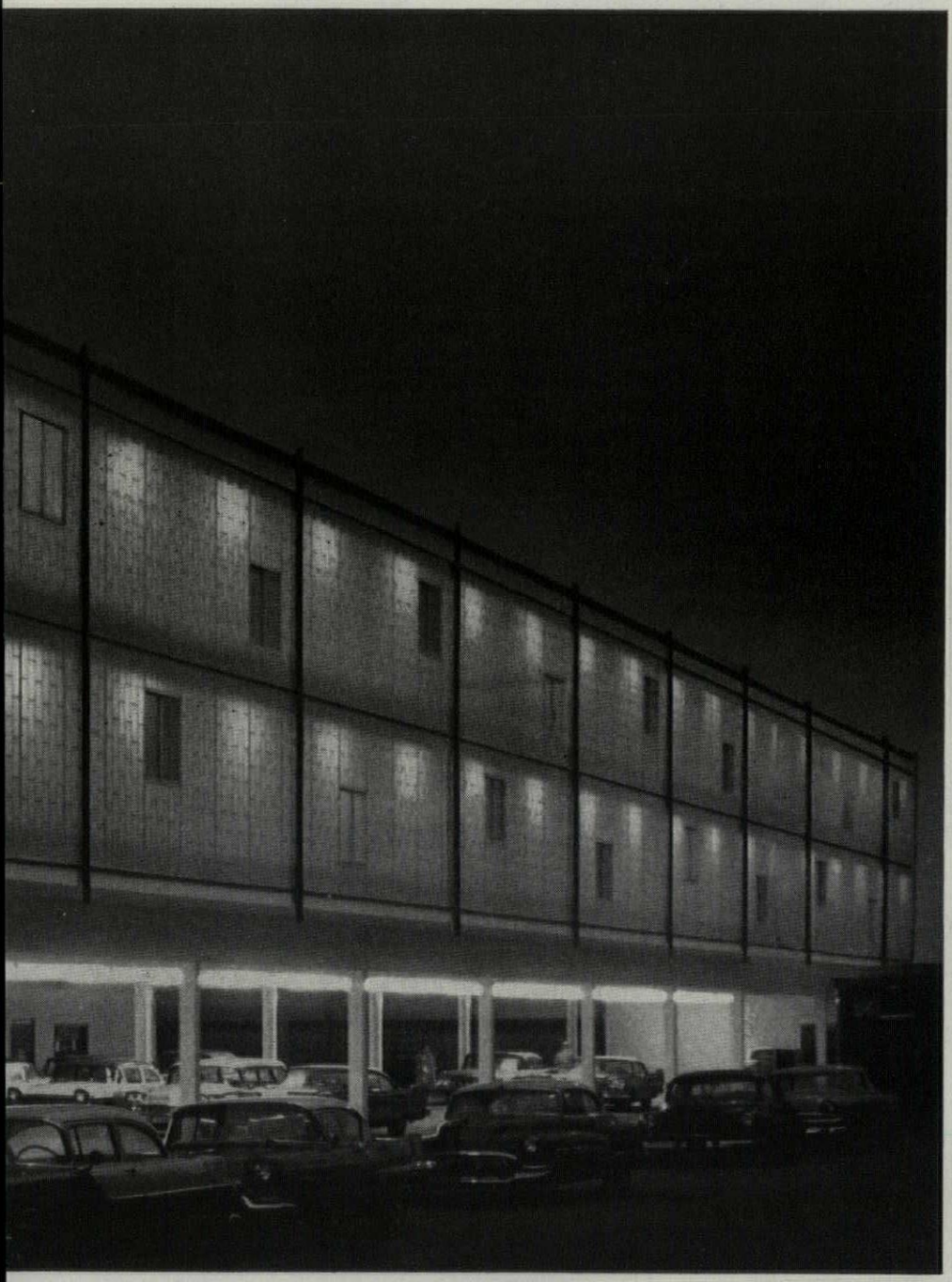
Through prefabrication, simplified installation, and elimination of structural framework, Kalwall Panel Units make dramatic building savings possible. What's more, they're perfect for controlling light.

translucent Kalwall Panel Unit Walls...



Kalwall installation by Winner-Whelan, Trenton, N. J.

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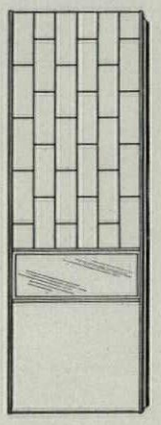

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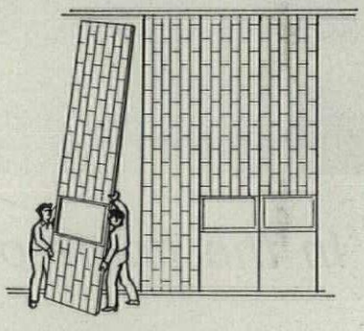
Translucent Panels, Opaque Panels, windows and louvers — all are preassembled to your arrangement at the Kalwall plant. Completed modular units require only perimeter sealing at the site. Units are available in sizes up to 4′ x 20′, in a variety of colors and light transmission factors–there's nothing for workmen to assemble.



Simplified installation

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3-story motel – no supporting framework required

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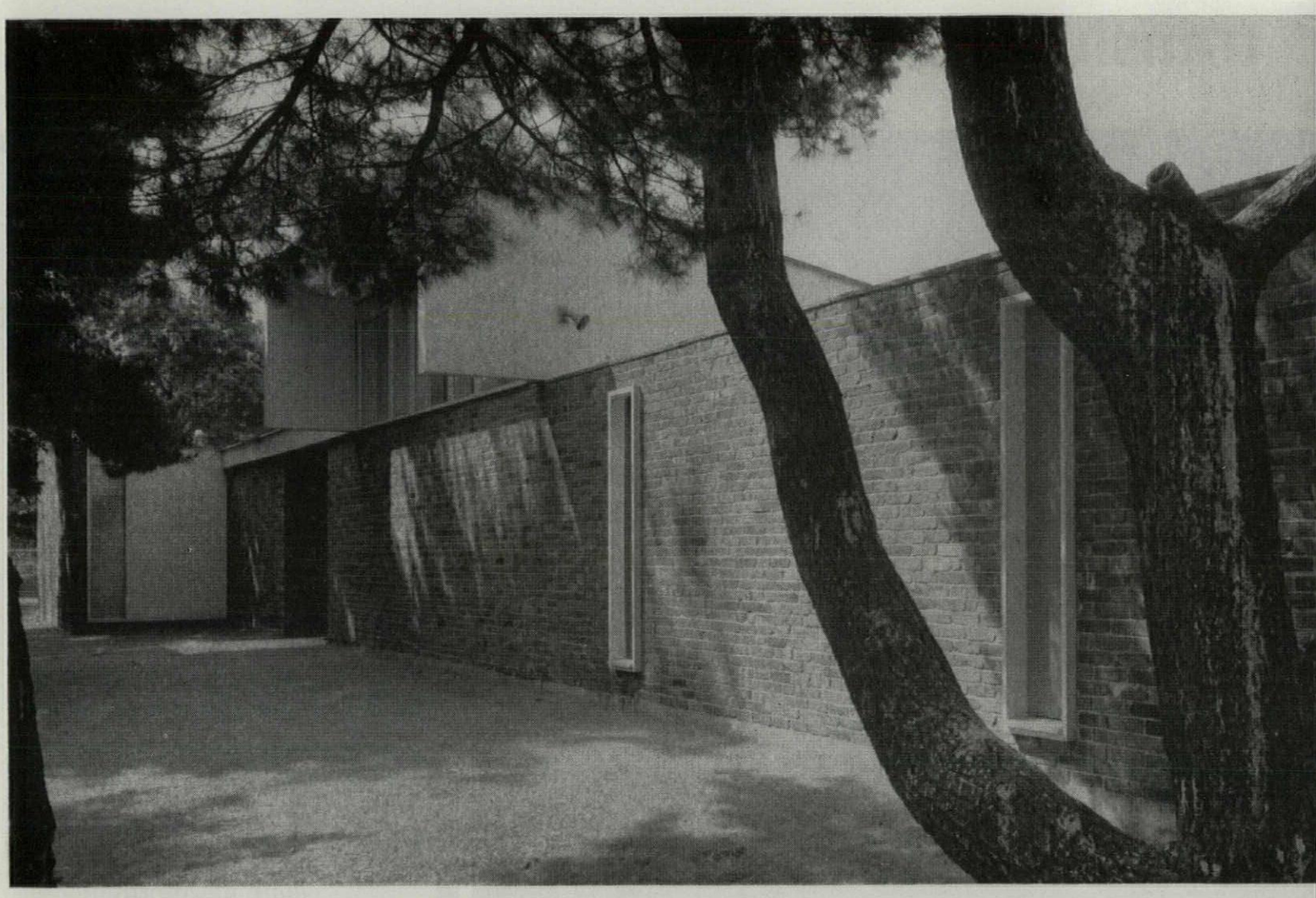
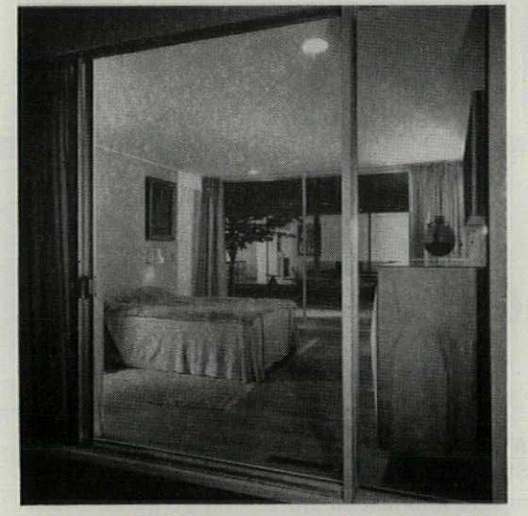


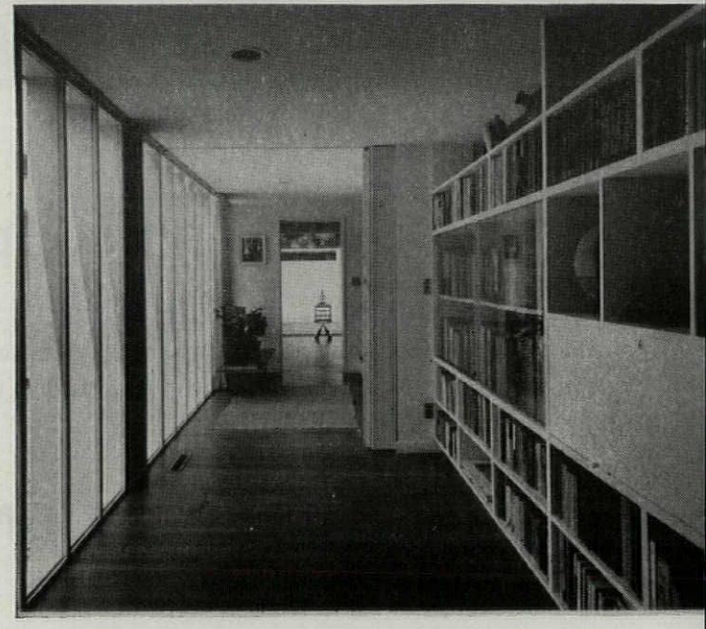
In the home of José Luis Sert

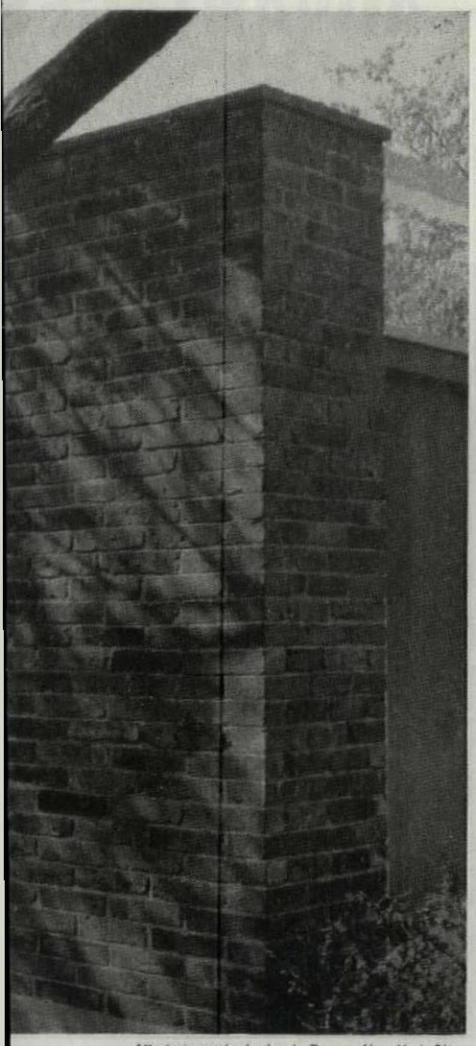
Lennox

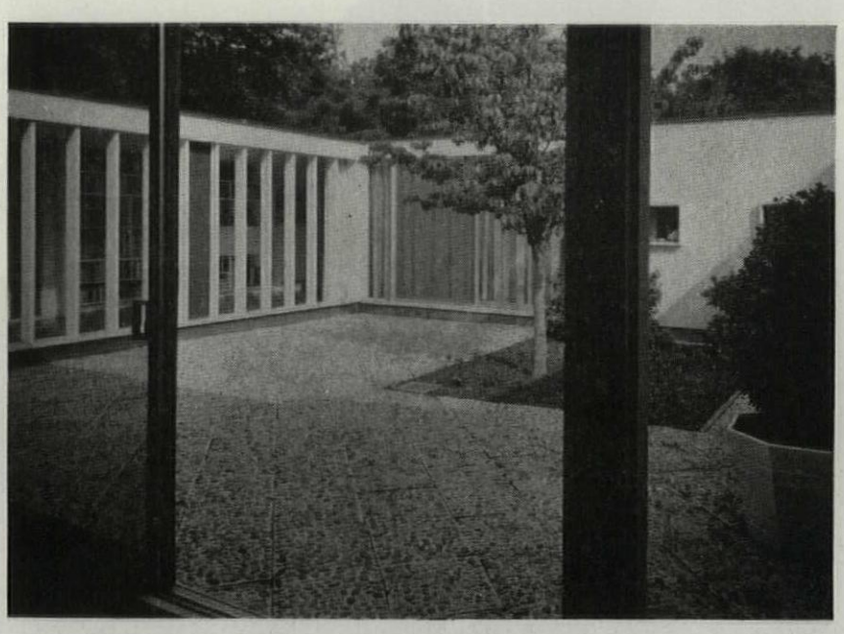


In this Sert bedroom, as in other rooms, return air for the Lennox heating-air conditioning system is taken high in the room, with 80% of grille work concealed behind a cove moulding.

One of the floor diffusers used in the perimeter-type Lennox system is visible in this view of a hallway in the Sert House.







The liberal use of glass and sliding glass panels in the Sert House is well illustrated in this view of the interior courtyard. It posed a heating-air conditioning problem, but expert planning by the contractor and Lennox equipment were able to solve it satisfactorily.

All photographs by Louis Reens, New York City

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of finest heating and cooling in every room... under all conditions!

... Lennox equipment plus expert installation techniques of Lennox Comfort Craftsman doubly assured the solution of special comfort problems

The unique construction, design and floor plan of the José Luis Sert home demanded expert knowledge and training in designing a year-round comfort system that would provide *perfect* heating and air conditioning in *every* room under *all* conditions.

The contractor selected was the Duval Sheet Metal Work, Inc., Lennox dealer of Lexington, Mass. The heating equipment chosen was a Lennox GH5-135,000 Btuh and a GH5-150,000 Btuh unit hooked up in tandem. Sandwiched between these units was a Lennox LSB1-5-ton self-contained cooling coil. These three units, joined into a single assembly, operate through automatic dampers, and utilize a common plenum. The air conditioning condensing unit, a Lennox HSA3-5-ton unit, was concealed by landscaping outside the home.

On the heating cycle, when demand warrants, and on the cooling cycle, both furnace blowers operate in unison. Despite this, however, the distribution system is broken down into two zones, and each zone is controlled by its own thermostat.

Efficient humidity control and the king-size Blue Shield Filters of the Lennox units provide added protection to furniture—and to the Sert Spanish art collection. For information on Lennox heating and air conditioning equipment, and for expert assistance on all your heating and air conditioning problems, call your local Lennox Comfort Craftsman—or write Lennox Industries, 200 S. 12th Ave., Marshalltown, Iowa.

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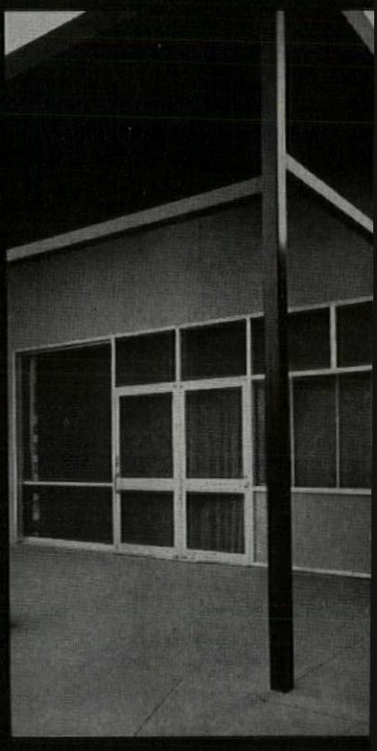
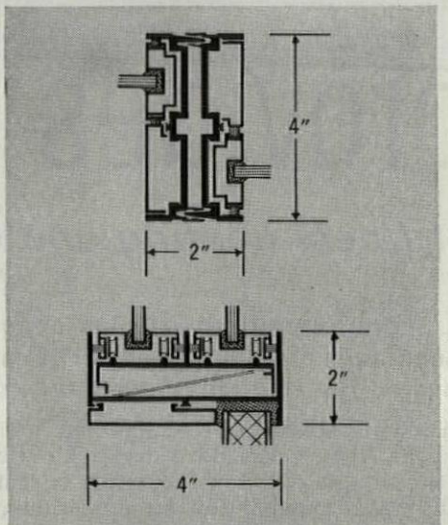
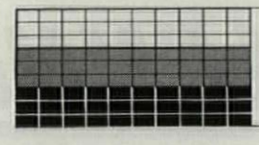


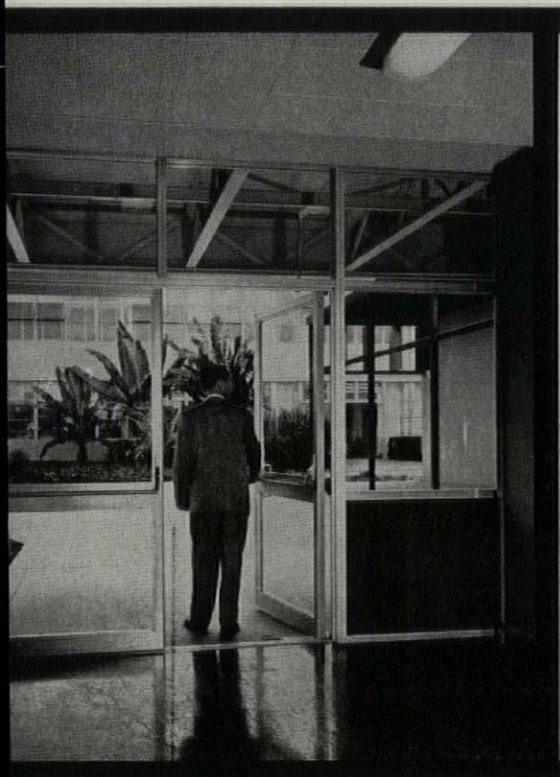


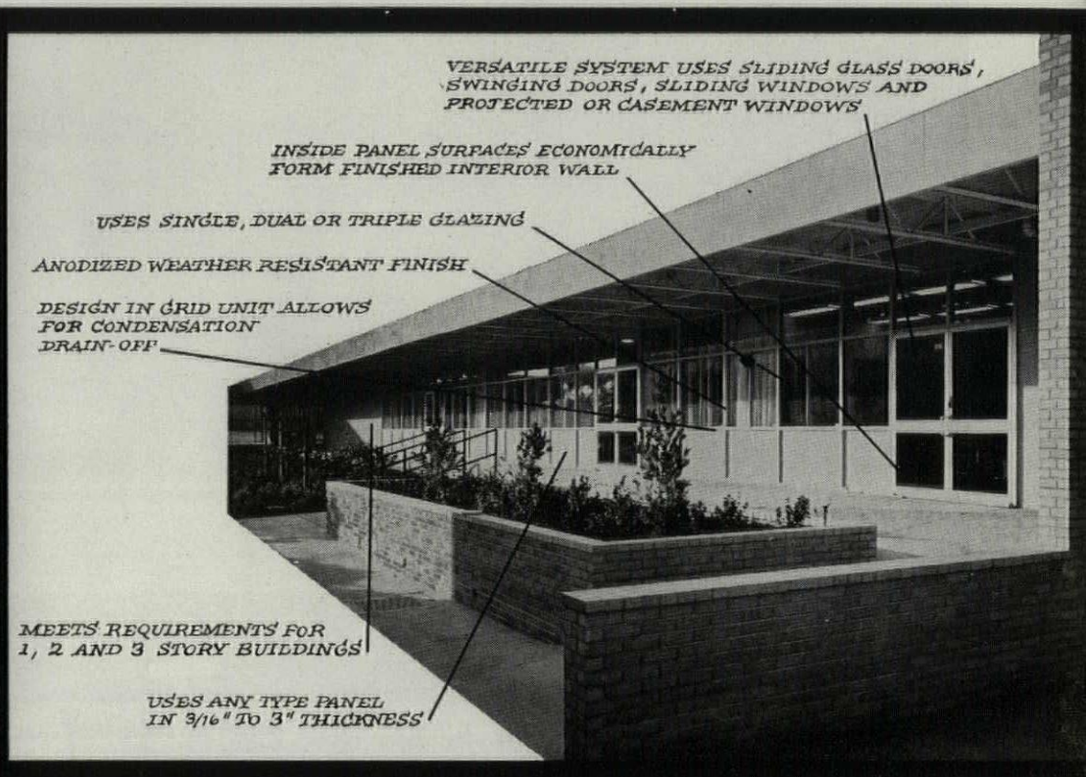
Basic 2″ x 4″ mullion system used throughout, with available add-on mullion to obtain greater architectural definition and depth.



ADOR-WALL

OF CURTAIN WALL FOR SMALLER BUILDINGS





ADOR-WALL is first competitively-priced structural system to meet individual design needs of smaller buildings

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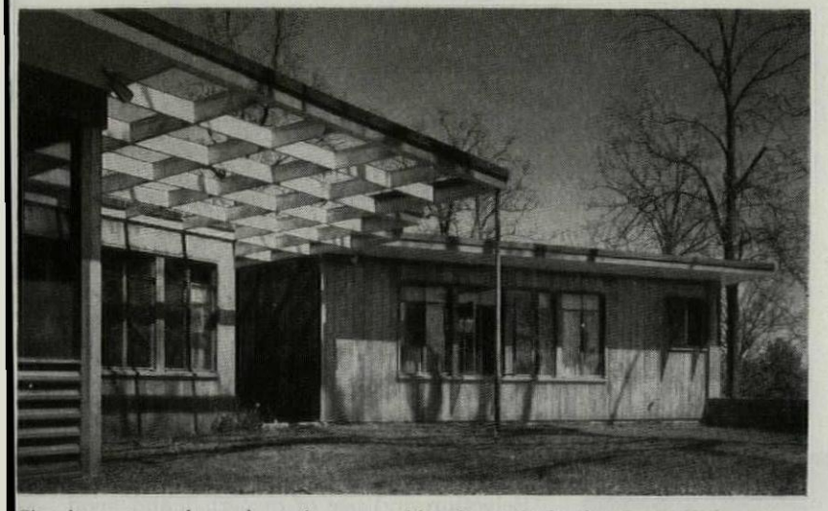
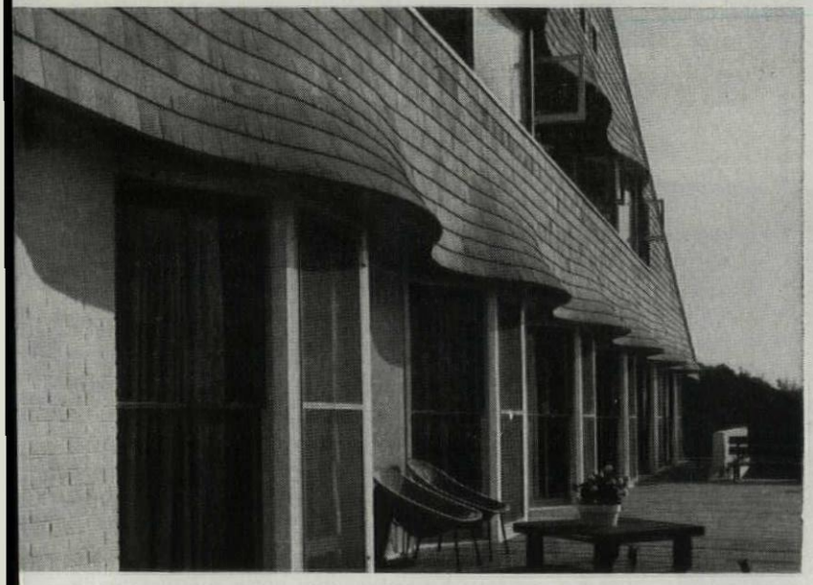
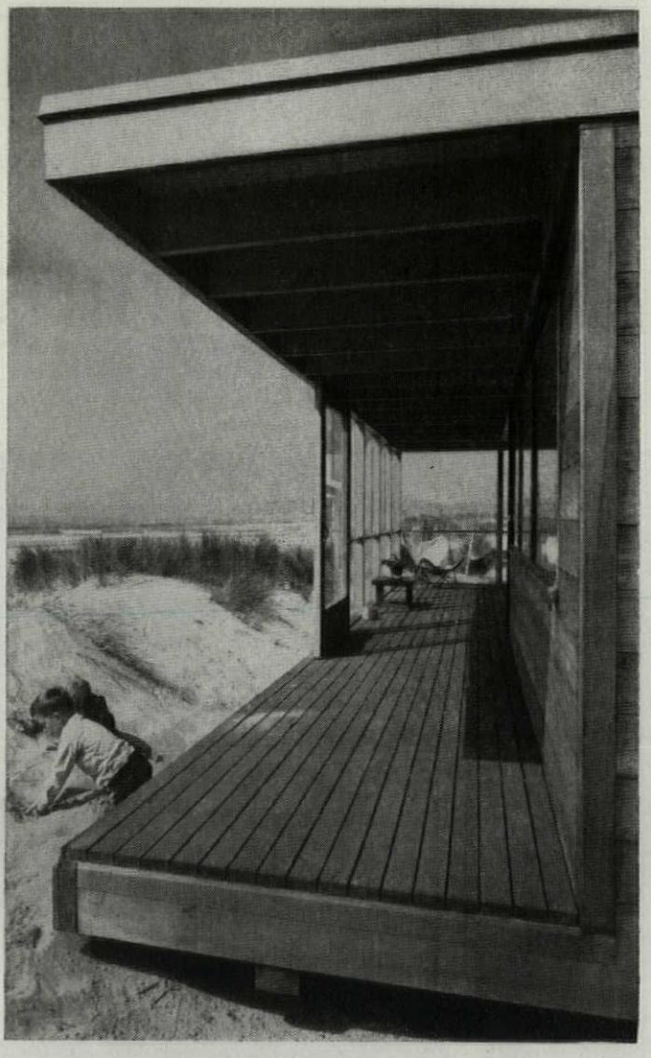


Simple, patterned wood overhang provides dramatic focal point at little cost — because it's of wood. Changing shadow pattern adds interest to patio, filters sun's intensity without cutting light in adjacent dining area. James T. Canizaro, architect.



Architects George Nelson and Gordon Chadwick answer a tough design problem — give interesting weather protection to beach home where *all* rooms have windows facing seaward. Answer: a fresh design motif suggestive of rolling surf — undulating "eyebrows" of weathered silver-gray wood shingles. Ezra Stoller, photographer.



How to have your beach house *on* the sand, but not *in* it— set the house on wood piles several feet above the dunes, provide generous walkways of separated wood strips to filter out tracked-in sand. Note generous frame overhang, vital for sun protection. Francis J. McCarthy, architect.

Gompers Jr. High School, Joliet, Ill. Architects: Skidmore, Owings & Merrill, and Levon Seron, Associate Architects, Chicago. TOP AWARD

Award-winning schools feature

Gordon Road Elementary School, St. Clair Shores, Mich. Architects: Wakely-Kushner Associates, St. Clair Shores.

"HOMELIKE ATMOSPHERE"

"Selection and use of materials and good relationships contribute to the pleasing total effect. A friendly, homelike atmosphere," said the jury.

Fenestra Acoustical Building Panels were used in this school. These lightweight, high-strength steel panels combine structural roof and finished interior ceiling *built-in acoustical* treatment. They replace *five* different materials with *one* metal building unit, erected in *one* operation, by *one* trade.

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SHOWCASE FOR NATURE

Top award was given to Skidmore, Owings & Merrill, and Levon Seron, Associate Architects, for the school at left, with this jury's comment: "Well executed, orderly and logical space arrangement. Nice respect for the natural amenities which contribute greatly to the complement of a crisp building. Scale and placement of courts give effective relief to internal spaces."

Fenestra Steel Windows played a big role in creating these comments. They also contributed to keeping original costs down—and will save further through lower operative maintenance, as nothing stands up like steel in hard service.

Four of 1958's eight **Top Award** winning schools*, one **Honorable Mention** and one **Special Features** school used **Fenestra** building products. *Awarded by **School Executive** magazine.

Sweetbriar Elementary School, Smithtown, N.Y.
Architects: Ketchum and Sharp, New York City. SPECIAL FEATURES

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Four Fenestra products went into this school: Fenlite Steel Windows because they resist salt-air corrosion and do not require painting; Porcelain Curtain Wall Spandrels (above and below glass "vision strips" in classrooms) to eliminate glare and expensive overhangs; "D" Acoustical Panels which combine structural units, acoustical treatment and finished ceiling, all in one; and a special 10-ft. lightweight cantilever side-entrance canopy. For the gymnasium roof especially, Fenestra's large 60 sq. ft. "D" Panels speeded erection, saved labor costs.

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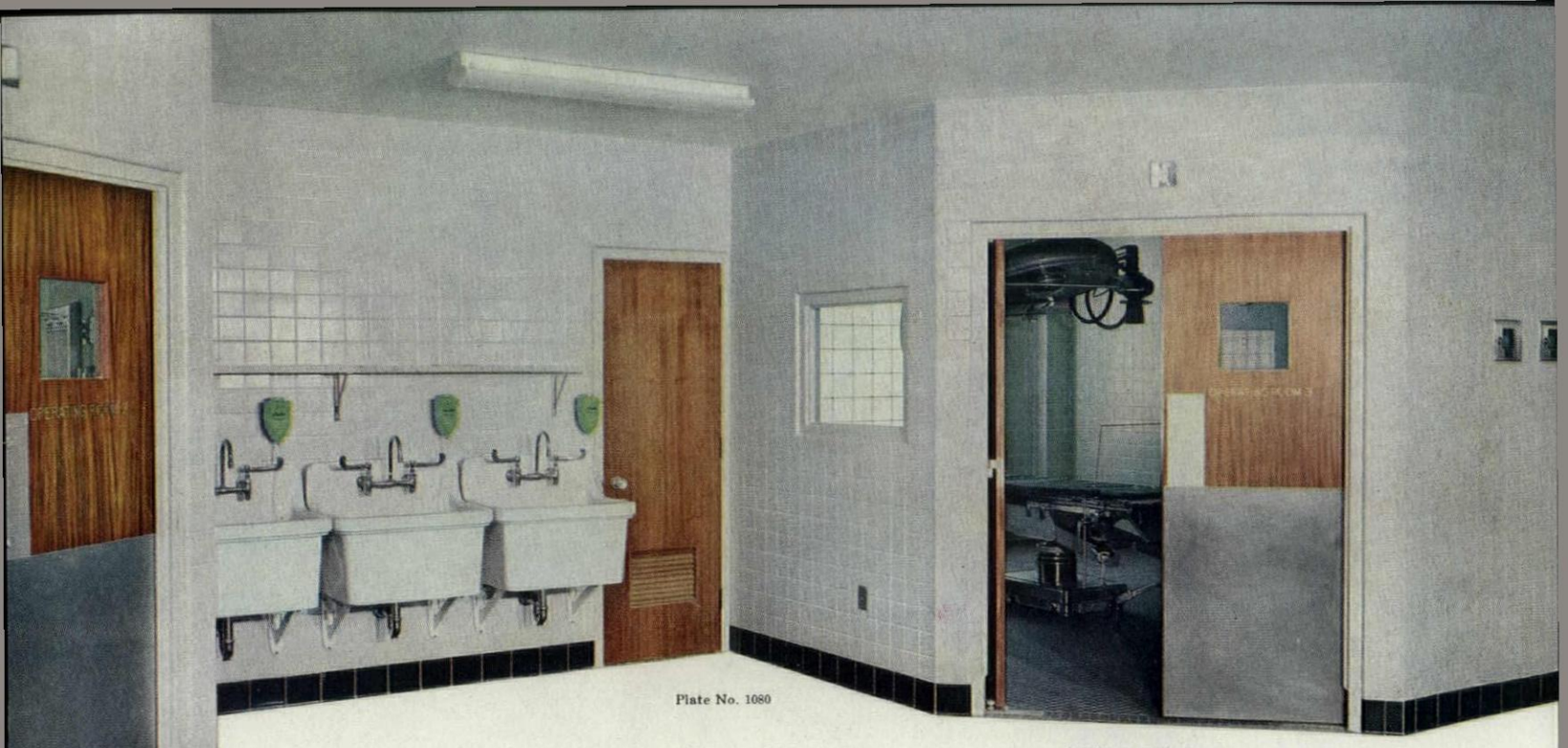

Plate No. 1080

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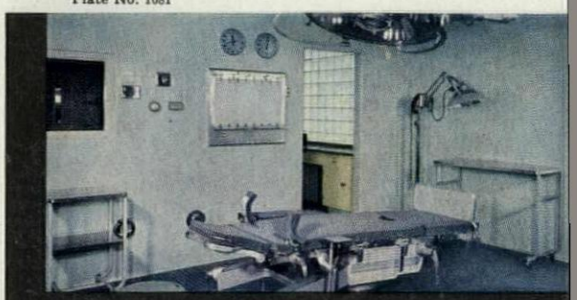

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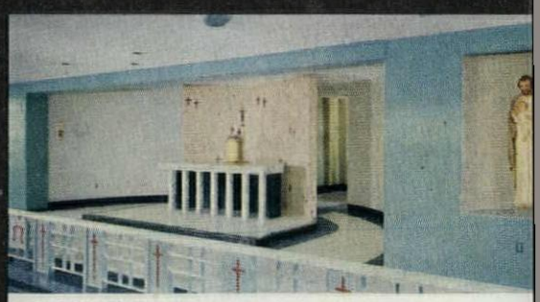

Plate No. 1082

Plate No. 1083

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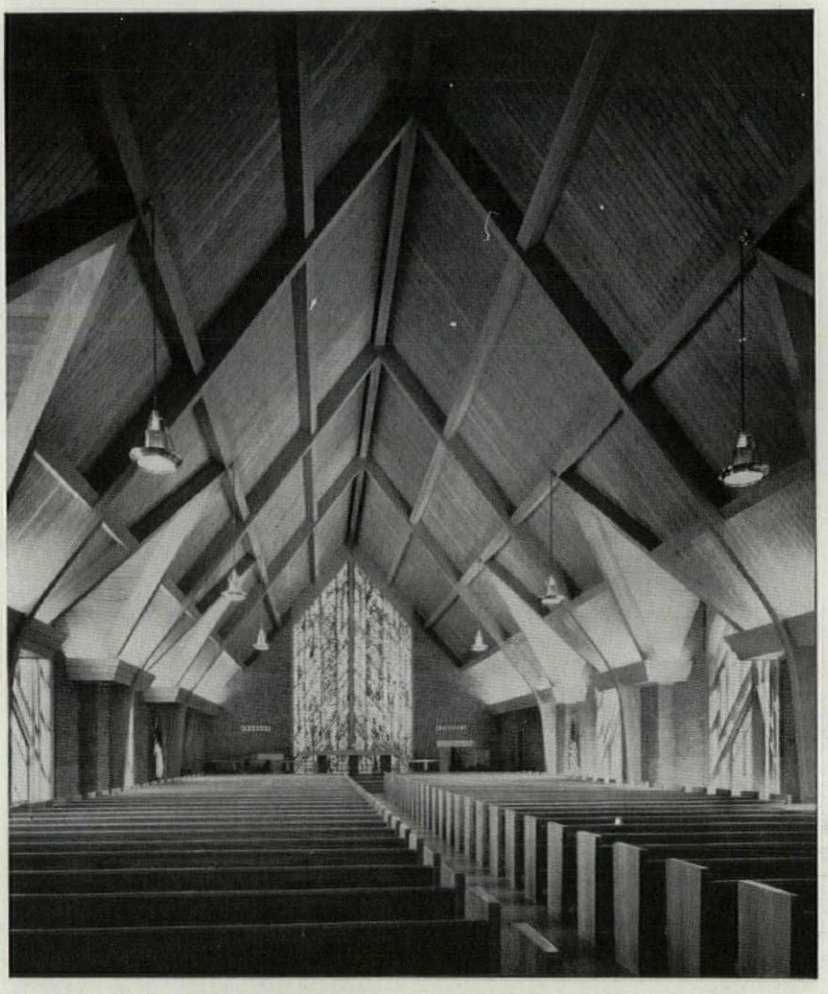

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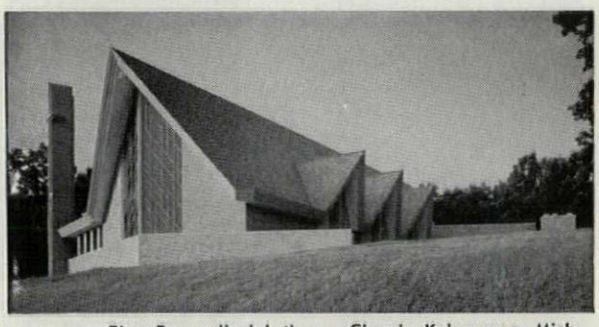

Zion Evangelical Lutheran Church, Kalamazoo, Mich.
Architect: Charles Edward Stade, Park Ridge, Illinois
Contractor: Miller-Davis Company, Kalamazoo, Mich.
Photos: Hedrich-Blessing

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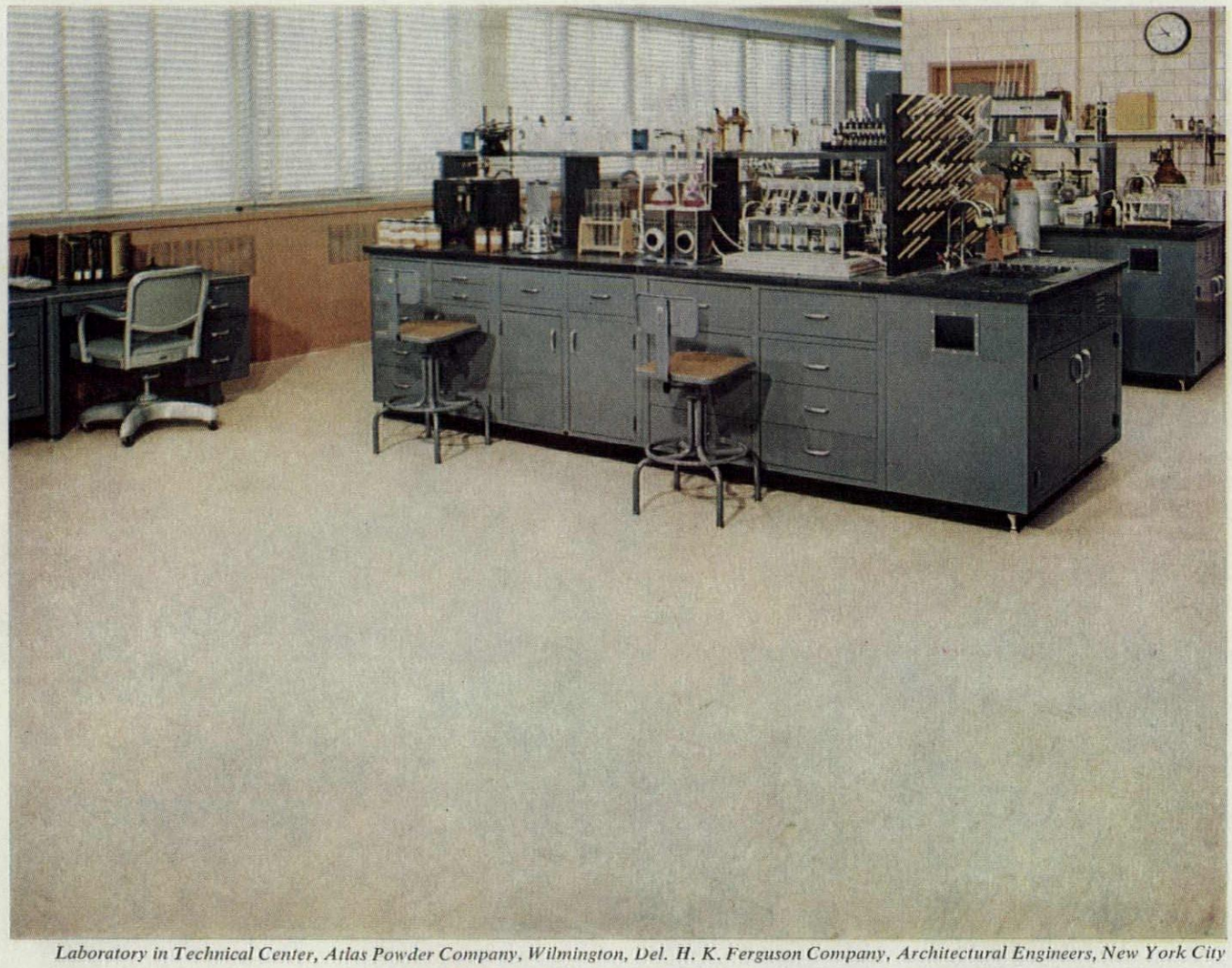

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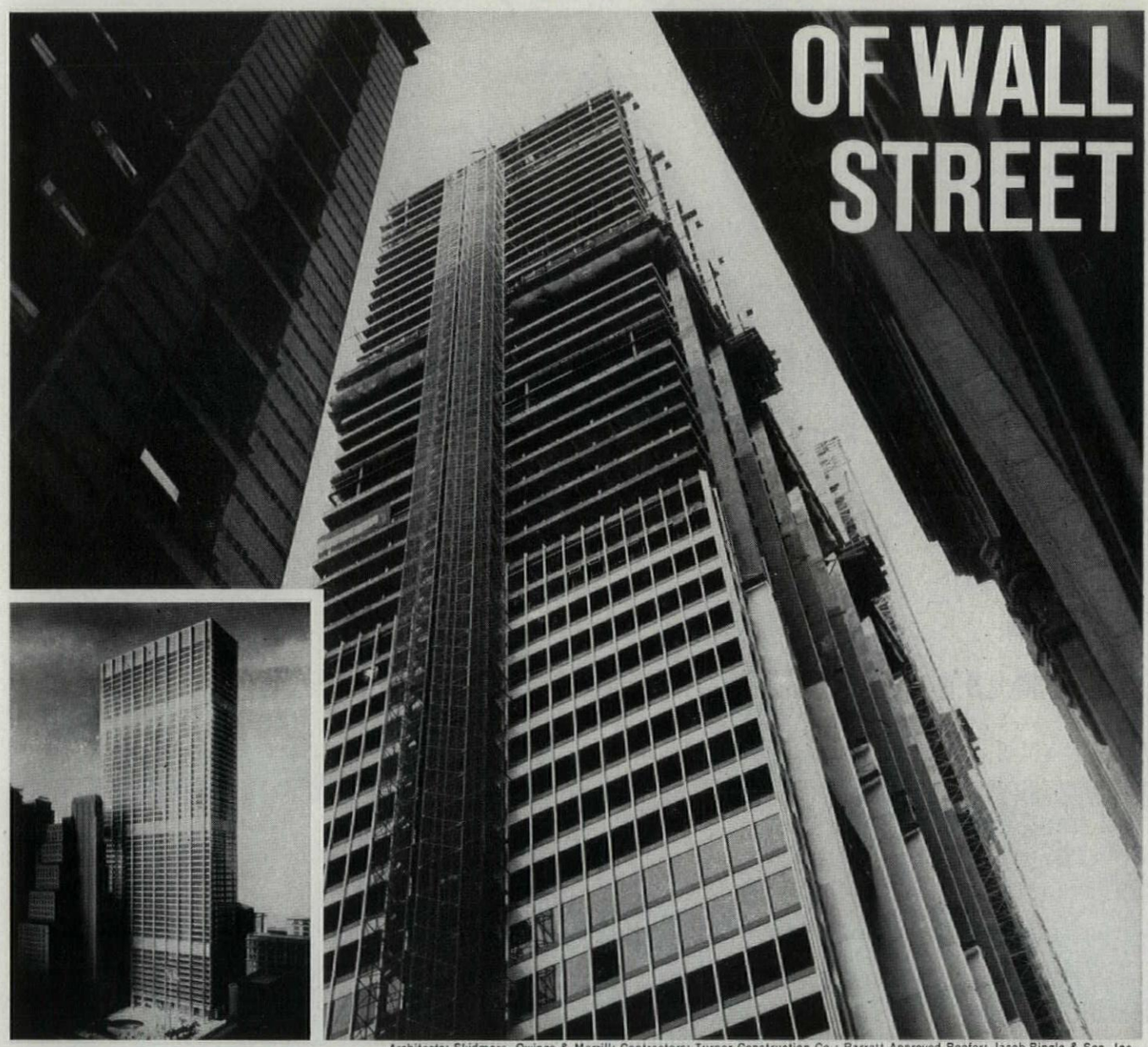

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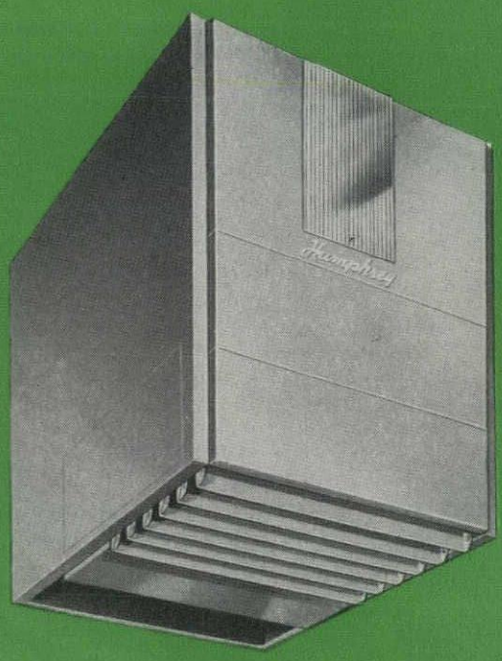

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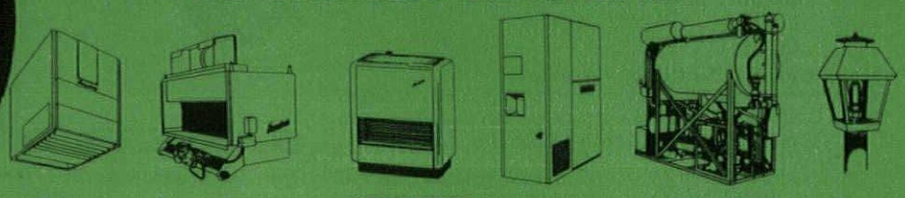

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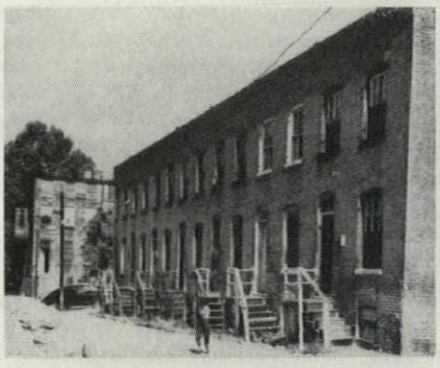

Snows Court, Washington, D.C., before

. . . and after rehabilitation.

RESIDENTIAL REHABILITATION. By William W. Nash. ACTION series in Housing and Community Development. Published by McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N.Y. 5½" x 8¼". $8.

Like previously published volumes in the ACTION series, the latest is a solid, carefully documented account of a key element in community development—in this case, residential rehabilitation. Starting with the premise that "In a market economy, the test of feasibility is profitability," Nash cites case studies of center-city residential rebuilding. His examples of rehabilitation from Philadelphia to Los Angeles emphasize why this activity has so far played such small part in over-all urban redevelopment. For instance, even in the remodeling of so-called "prestige" areas, such as Washington's Foggy Bottom (photos, left) near Georgetown, speculators had financing trouble. (The fact that they made over 20 per cent profits on their initial investment may make the path for future remodelers easier.)

Speculators in middle-income rehabilitation have not only had financing problems, but also frequently run the risk of having their properties swallowed up in surrounding blighted areas, even as they are rehabilitated. Only where there is a gap between existing rents or sale prices and potential rents or prices, and where sale prices can support investments of from $3,500 to $5,000 per unit, has middle-income rehabilitation really worked. Low-rent housing can usually be rehabilitated only through spirited public action, backed by strong citizen support. Isolated instances of private efforts at rehabilitating low-rent urban housing have been unsuccessful.

The success of rehabilitation depends largely on public authority providing private enterprise with the proper investment "environment," Nash believes, and he cites examples where this has worked well. But governments are not much different from builders, realtors, or lenders—it is difficult, Nash observes, "to persuade municipal governments and voters that civic housekeeping is a profitable enterprise."

THE SYNTHETIC VISION OF WALTER GROPIUS. By Gilbert Herbert. Published by the Witwatersrand University Press, Johannesburg, South Africa. 48 pp. 10" x 6". Illus. About $3.

Professor Herbert's widely quoted article in the *South African Architectural Record*, which is remembered for its examination of Gropius' dedication to "wholeness," has now been put into book form. It has not been extended, except for the inclusion of more illustrations. Nor, unfortunately, has it acquired any more independence of judgment.

It is regrettable that, with all this material at hand, Author Herbert did not venture to make a truly critical appraisal of the work of one of modern architecture's recognized leaders. He contents himself merely with this conclusion: "In analyzing the scope and content of Gropius' contribution to the concept of Unit, this study pays tribute to a pioneer who has been called Architecture's only modest genius."

PUBLIC LIBRARY BUILDING. By Werner Mevissen. Published by Verlag Ernst Heyer, Hollestrasse 1, Essen, Germany. 260 pp. 8½" x 10¾". Illus. $10.80.

A roundup of some of the best libraries recently built in Europe and America, including photographs, plans, and text in both German and English. Also included are analytical chapters on general organization and design, chapters on the problems of small libraries, children's libraries, school and larger public libraries, and a chapter on various kinds of specialized library furniture.

FIELD INSPECTION OF BUILDING CONSTRUCTION. By Thomas H. McKaig. Published by F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 337 pp. 6" x 9". Illus. $9.35.

Like swimming, the inspection of a building under construction is a difficult skill to learn from a book. But this book gives a wonderfully realistic background to the new graduate sent out to cope with those old masons and steelworkers. There also are plenty of worthy tips for old graduates wrestling with the increasingly difficult task of getting a design built decently today.

CIVIL ENGINEERING HANDBOOK. Fourth Edition. Edited by Leonard C. Urquhart. Published by McGraw-Hill Book Co., 330 W. 42nd St., New York. 184 pp. 9¼" x 6½". Illus. $17.50.

This latest edition of the *Civil Engineering Handbook*, last revised in 1950, contains new material on such topics as photogrammetric surveying, soil classification, stresses in continuous beams and frames, and welded steel construction. By presenting the fundamentals of the various subdivision of civil engineering, it aids the practicing engineer who is confronted with problems outside his specialized field.

continued on page 204

COLOR PLANNING FOR BUSINESS AND INDUSTRY. By Howard Ketcham. Published by Harper & Brothers, 49 E. 33rd St., New York, N.Y. 274 pp. 9½" x 6¼". Illus. $5.95.

Howard Ketcham, an industrial consultant and a recognized authority on the use of color for some 30 years, has written a wide-ranging "how-to" book. Witness these chapter titles: "What you can learn about color from supermarkets," "Advertising color brings 'em in," "Color advice for home builders." Only three chapters deal with color in building ("Color and Light in the Modern Office, Color Sells Today's Homes, Color for Interior Decoration"), and even these chapters emphasize how color can sell something, rather than how it can be used for artful effect. Nonetheless, it is a highly readable book, with a little something for nearly anybody who wishes for a passing knowledge of color "strategy."

TIMBER ENGINEERING DESIGN HANDBOOK. By R. G. Pearson. Published by Melbourne University Press and the Cambridge University Press, 32 E. 57th St., New York 22, N.Y. 248 pp. 10" x 7¼". Illus. $6.

This handbook has been compiled by officers of the Timber Mechanics Laboratory, Division of Forest Products, of the Commonwealth Scientific and Industrial Research Organization in Australia. It was written for Australian engineers and architects who are concerned with the design, fabrication, and erection of timber structures, but will also be of interest to engineers and architects throughout the world who use timber.

LEGAL ASPECTS OF CONSTRUCTION. By Walter C. Sadler. Published by McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N.Y. 388 pp. 6¼" x 9¼". Illus. $8.50.

There are now 50 states and 50 sets of laws covering construction—plus federal statutes. As the author notes, this book is not intended to take the place of competent legal counsel but to serve as "preventive law"—to keep people out of legal trouble just as "preventive medicine" is meant to keep people from getting sick. Covering primarily the legal aspects of contracting, this volume includes a section that also outlines the legal responsibilities of the architect, the engineer, and the owner in various building operations. Another section covers legal problems often associated with boundaries and foundations and discusses the damages that may occur on adjacent properties as a result of construction activity.

ROOFING, ESTIMATING, APPLYING, REPAIRING. By James McCawley. Published by Shelter Publications, 180 N. Wacker Dr., Chicago 6, Ill. 426 pp. 5½" x 9". Illus. $10. Of major interest to contractors, this encyclopedia will also be helpful to architects. END

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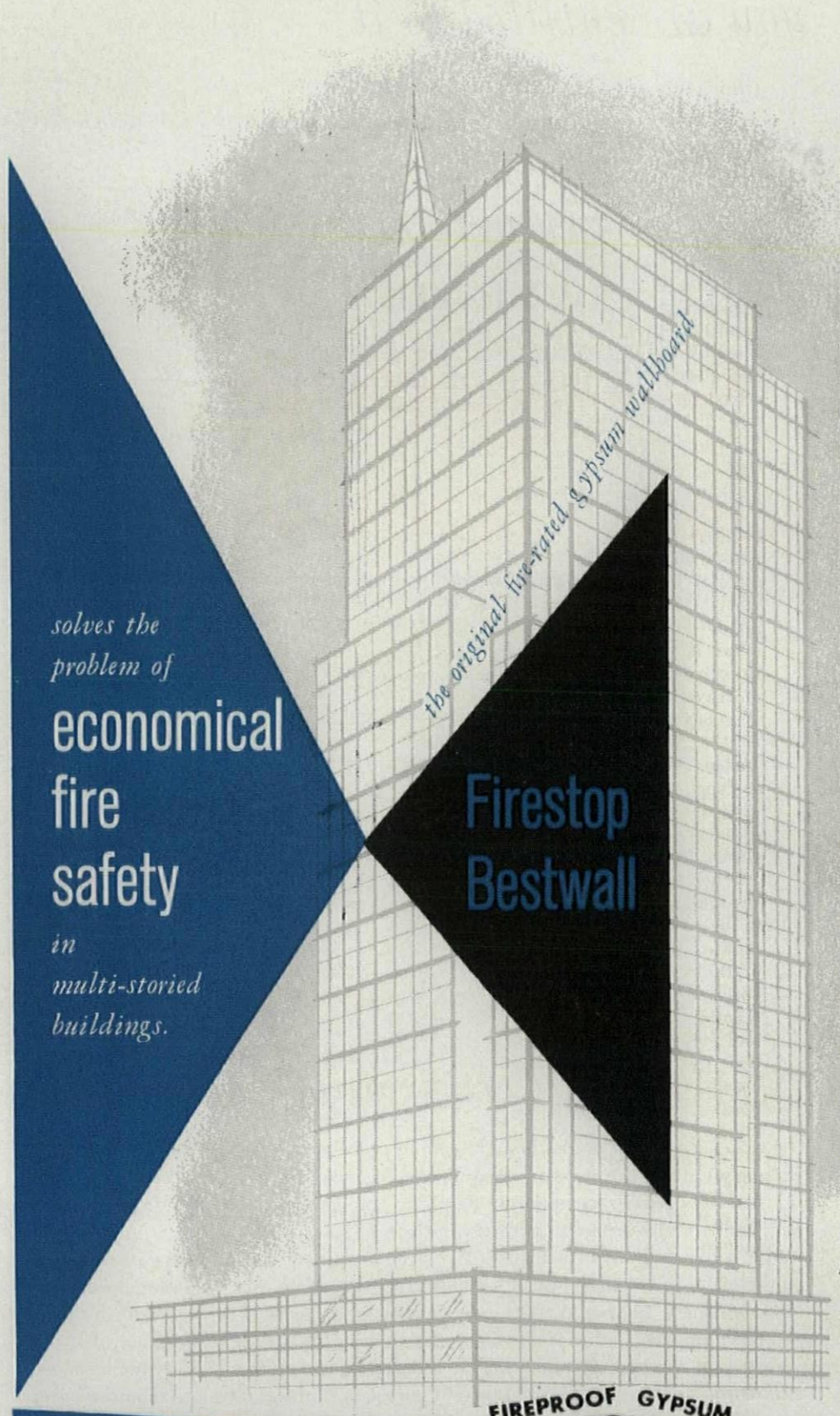

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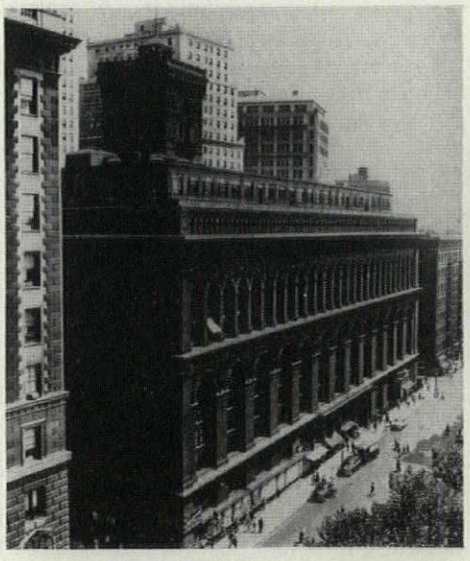


OBITUARY FOR A BUILDING

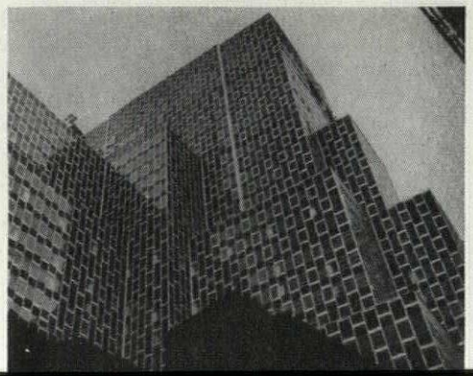
Only a beer can opener will be needed to demolish No. 2 Broadway, the building that replaced New York's elegant Produce Exchange. The opinion was ventured by Leslie Katz, writing in The Nation.

The Old Produce Exchange Building, at the foot of Broadway opposite Bowling Green, was a work of art (photo above, see also FORUM, June '57). It had the quality of its contemporary, the Brooklyn Bridge, a structure that personified the grandeur of its use: an immense, solid edifice of offices built of red brick and terra cotta. The over-all color was a rich, deep-hued, intrinsic red, that became more beautiful with the years.

It was recently torn down.

Now to lament the demise of this building could be like mourning the passing of the clipper ship, and its displacement by the trans-Atlantic liner. To praise the past, one need not berate the present. This obituary has awaited the completion on the same site of a new building (photo below, see also FORUM, Feb. '59), known as "2 Broadway," a structure that one could hope would be a modern phoenix, a fresh magnificence supplanting an earlier glory, aluminum and glass taking the place of brick and terra cotta.

FORUM STAFF



"Two Broadway" can hardly be called a building. Viewed from Bowling Green, it is more an installation, a package, a broad box encased in shiny wrapping, sheer, sharp, and gleaming. This striking edifice, though it has a name (a number), presents an essentially anonymous and faceless personality. Its over-all effect is one of unmitigated self-assertion negating everything in sight but itself—a glittering nonentity. It appears to have been conceived not at all in terms of its location, and makes no concession whatsoever to the character of its surroundings. Designed "purely," in terms of economic function, it seems to contain the maximum number of floors and space feasible within existing building-code requirements. Inside such a building (as in many commercial structures) it barely matters where you are or where you're going; up or down, above ground or below, the effect is sameness. (As, while riding the smooth elevators, you know your direction of travel only by the indicator numbers.)

A beautiful modern building, as large as the new one, could have been built. Instead we have a greedy hulk disguised as functional modernity, rank conservatism masquerading in *avant-garde* dress, a menacing presence hovering over Bowling Green.

When after 75 years the Produce Exchange was leveled, its fortress walls had to be chewed down by pneumatic drills. It was built to last, with a consciousness of the past and a respect for the future. obsolescence, and quick turnover. The dismantle "2 Broadway" perhaps the only tool needed will be a beer can opener. We live in an age tyrannized by growth, obsolescence and quick turnover. The disposable building, like the disposable handkerchief, will have its day. But later, civic pride and civic concern may become resurgent, civic self-respect may intervene, and then "2 Broadway" may itself be replaced by a structure worthy to occupy the site of the old Produce Exchange.

WHY BEAUTY?

Architect Vincent Kling faced up to the demand commonly made by school building committees in a talk recapitulated by the August issue of School Executive.

Why should we build esthetically gratifying schools? There are many reasons, but I shall speak of only two. One is the same justification that is given for art studios, sewing rooms, chemistry labs, and band instruments. These are curricular tools; so is beauty. The differences lie in

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the ends they serve: on one hand, particular skills; on the other, a general attitude and sensitivity. Even more than ourselves, the children we are now educating in schools will become the custodians of the common landscape. Today, almost a half of our building volume is for public purposes, underwritten by public funds. Vast areas that once owed their visual character to the tastes of private landholders are now being transformed by such public enterprises as highway systems and urban redevelopment programs. Private development itself is subject to broader and broader public controls with respect to land use, building standards, and even esthetics. In short, the power to create, preserve, and destroy beauty in our environment is more and more in the public domain. We cannot educate our children to exercise that power wisely, if we deny them, in their formative years, a first-hand acquaintance with that quality.

The other big reason for urging beautiful schools has to do with the here and now, and with our own generation. Specifically, it has to do with an aspect of a building that is seldom talked about seriously outside the commercial world—its function as a "symbol."

It is not only fair, but unavoidable, to judge a community's respect for education (indeed, its self-respect) by the beauty of its schools. I'm not advocating "showing off" with the school building, but I do advocate *showing* that one cares, not only for education, for one's children, but also for one's community as a whole. Especially in our new neighborhoods, where houses sit on the landscape like stenciled patterns on a bolt of cloth, do we need the relief, refreshment, and focus that a beautiful public building can give. Why shouldn't it be a school?

NEEDED: URBAN EXECUTIVES

In studying the problems of city building, the Committee on Economic Development has found a great need for a new type of creative organizer. Robert Ryan, director of the CED's area development program, gave the job specifications to a recent ACTION seminar in Detroit.

The measures of coordination required to relate highway programs to slum clearance programs, to integrate long-range capital budgeting techniques with planned urban programs at all levels, are so unlike the process through which our urban decision-making presently finds its way, that these techniques would be unrecognizable in today's vernacular.

As we pursue this new field of interest—the economic vitality of American urban concentrations—we might come upon a need for organizational restructuring not since the days of our founding fathers.

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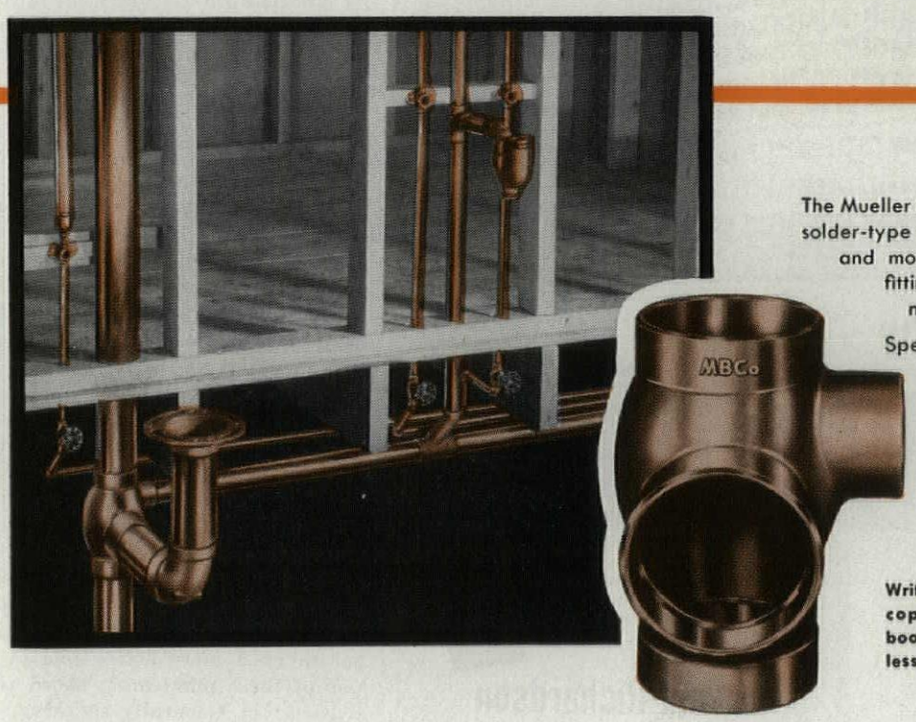

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PROMOTING ARCHITECTURE

According to Architect Harris Armstrong of St. Louis, one way the small architectural office can promote itself is to promote the human spirit. This was the theme of a talk he made recently before the Houston Chapter of the AIA.

As architects, we owe our communities the benefit of our specialized knowledge. Serving on architectural committees is part of it. Another part is making talks before groups, where we have the opportunity of stimulating thinking and sometimes action which will benefit the communities in which we live.

As architects, we have a responsibility to speak up for the role of the human spirit in modern living.

This is the age of assembly line, the digital computer, mass production of goods and ideas. The very technological improvements which have given us greater freedom of architectural expression too often lead to mediocrity compounded many times. Conceivably, someone might invent a kind of Univac in which punch-card coded requirements would be fed in, and blueprints for a building would run out of the other end. The depressing sameness which is the unfortunate by-product of mass production will overwhelm us unless we, as architects, speak out for the human spirit, for the individual man who is still produced, one by one, in the old-fashioned way.

URBAN RENEWAL AND INDUSTRY

At a recent Dartmouth College conference Melvin H. Baker took corporate leaders to task for their disinterest in urban renewal. He is Chairman of the Board of the National Gypsum Co.

Urban growth poses the greatest single domestic problem the American people will have to face in the coming two or three decades. To solve this tremendous problem, men like Economist John Galbraith would expand the public sector of the economy at the expense of the private. He says we should do this by taxing and spending, particularly by sales taxes at the state and local level.

Some city planners are eager to pass almost complete responsibility for the solution of their problems on to Washington. Many of them say that the soaring populating growth in our urban centers creates problems of such magnitude that local action is impossible. Many of our legislators appear to share these views.

Why is it that corporate leaders have not taken a more active role in the solution of these problems? There are several reasons: 1) Generally speaking, the influential businessmen live in the suburbs. 2) They have a strong disinclination to associate with the "tainted" city politicians. Most of the northern business lead-

continued on page 212

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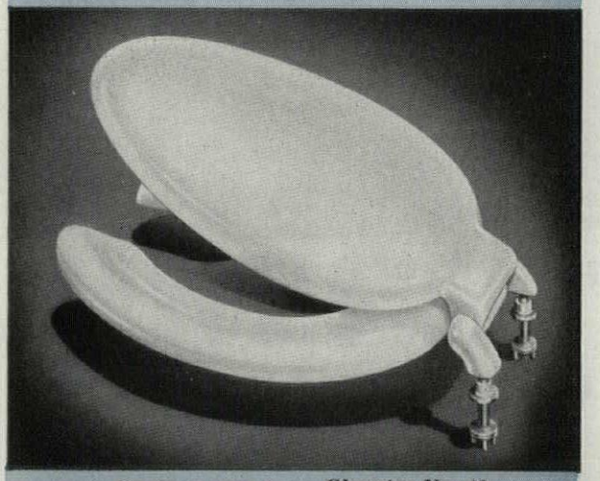

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ers are Republican, and the city political leaders are generally Democratic. 3) There is a feeling among the businessmen that solutions to these problems smack of socialism. What they have failed to see, perhaps, is a significant shift in our whole economy. Since the early part of this century, we have been developing a new form of public-private society. Some call it "welfare-capitalism," a "mixed economy," "progressive capitalism." Call it what you will, the fact remains that this kind of government is here to stay, and those who would accomplish almost anything of public interest must work with the government.

What I am urging is a joint attack by public officials and citizen leaders on the problems of urban growth. While it is fairly easy to interest downtown commercial leaders in urban renewal, it is not quite so easy to interest the industrials. The industrialist cannot quite see so clearly his stake in this vast problem. He has to be shown that he has an obvious stake in the community in that he wants his workers to live in clean, decent neighborhoods; in that he wants good schools for his employees' children.

Unless his plant is located in an attractive, clean, livable community where transportation is not a chore and where there are cultural advantages, he will be unable to compete for the kind of people his business will need to grow and prosper.

The industrialist also has a very direct economic stake in urban renewal from the point of view that, if property values are falling all around him, the value of his own property will fall. Where urban problems are most acute, taxes—both state, local, and municipal—keep rising. He pays these taxes.

DEATH TO THE BUILDER

More than 4,000 years ago, the Babylonian King Hammurabi ruled that builders are liable. This part of his famous Code was noted in more recent times by the publication of New York Chapter of the Construction Specifications Institute.

If a builder build a house for a man and do not make its construction firm and the house which he has built collapse and cause the death of the owner of the house —that builder shall be put to death.

If it cause the death of the son of the owner of the house—they shall put to death a son of that builder.

If it cause the death of a slave of the owner of the house—he shall give to the owner of the house a slave of equal value.

If it destroy property, he shall restore whatever it destroyed, and because he did not make the house which he built firm and it collapsed, he shall rebuild the house which collapsed at his own expense. END

Great new things are shaping up in concrete block

Architect Marcel Breuer, New York, alternated hollow-core units and standard 4" x 8" x 16" concrete blocks to create this striking masonry wall. PHOTO COURTESY NATIONAL CONCRETE MASONRY ASSOCIATION.

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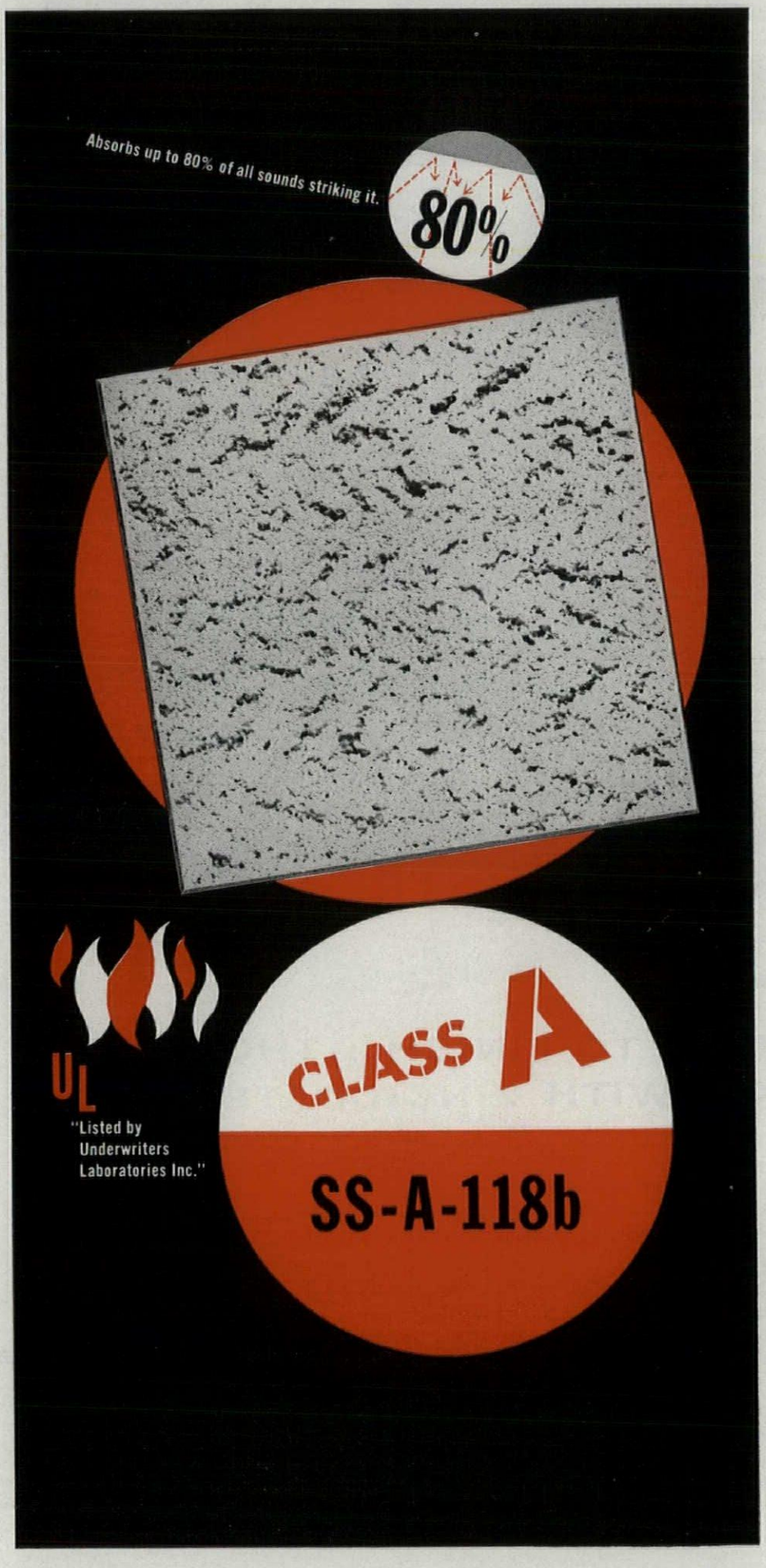

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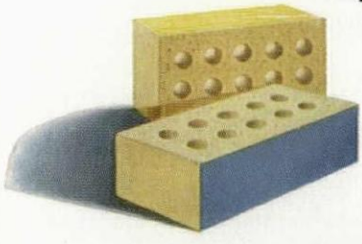

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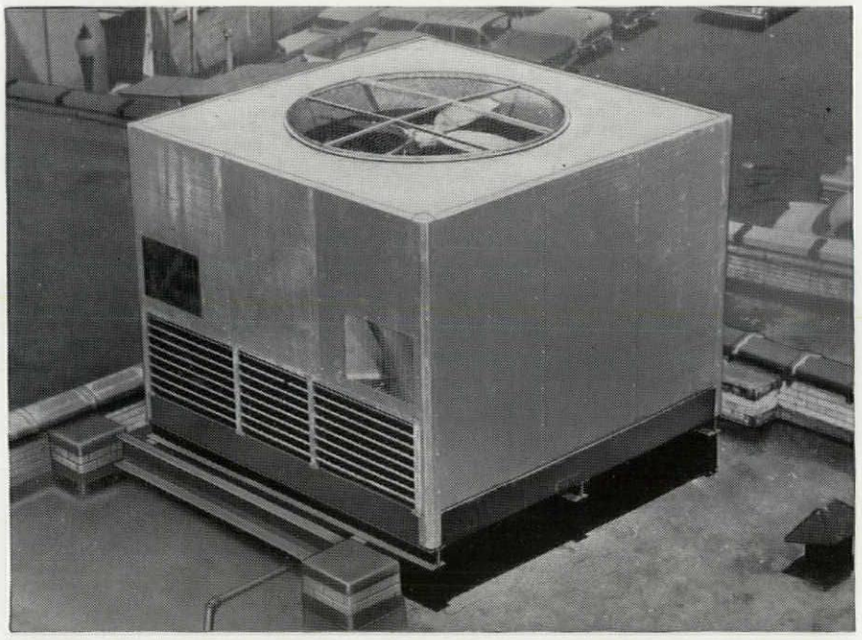

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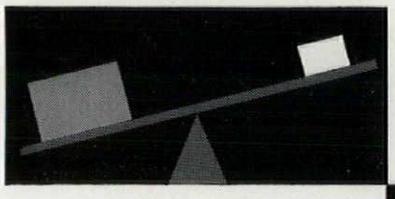
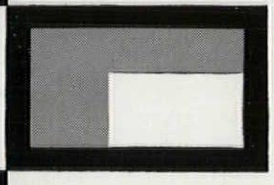
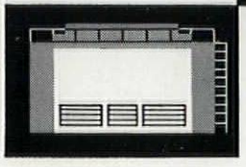
Carrier announces a new cooling tower







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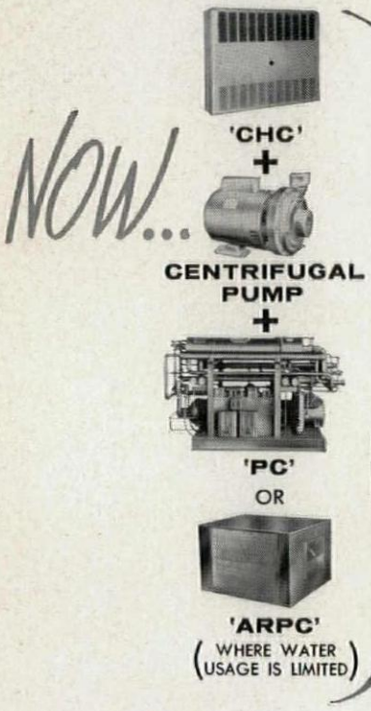

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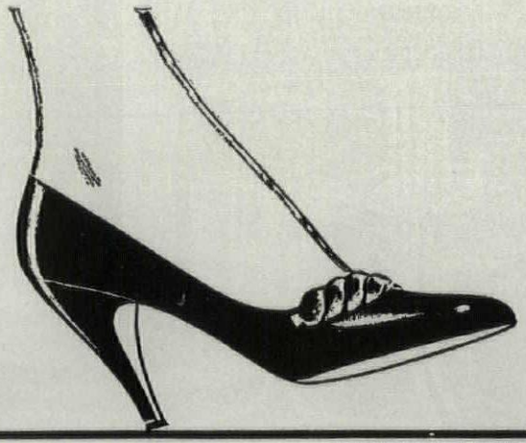

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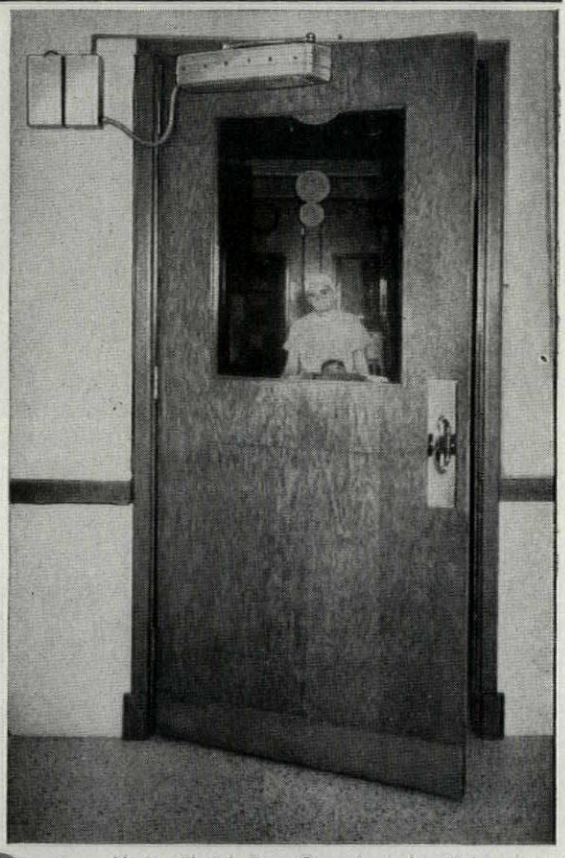

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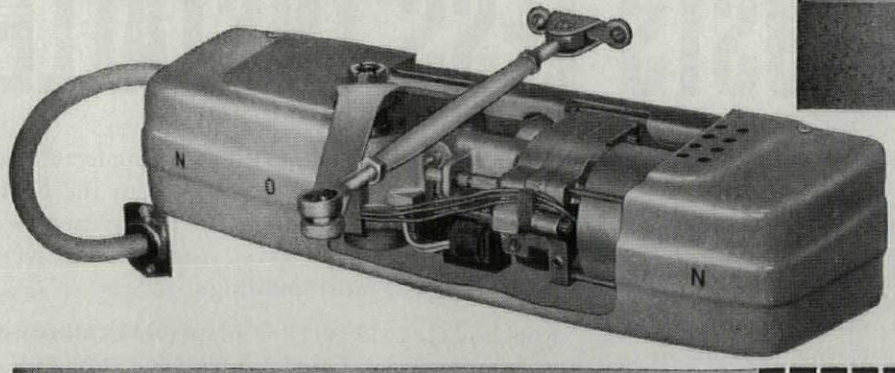

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Firm Name.....
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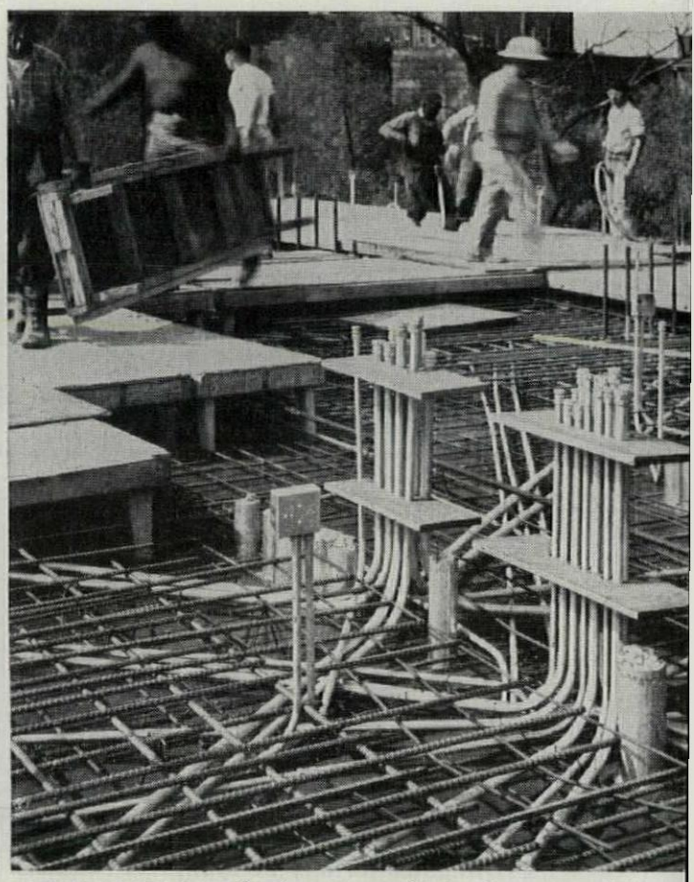
City & Zone.....State.....
Interested for ☐ immediate use ☐ for future use

GOOD INSTALLATION PRACTICES call for tying Republic ELECTRUNITE E.M.T. to steel rebars. With steel conduit there is no danger of galvanic action.



ELECTRUNITE "INCH-MARKS"® and **"GUIDE-LINES"®** help make compact stub groupings. The strength of steel provides protection against damage.

...it pays to specify

Republic ELECTRUNITE ELECTRICAL METALLIC TUBING on every job...

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With Republic ELECTRUNITE E.M.T. you get electrical raceways today to meet power demands tomorrow. By specifying the next larger size, you provide for tomorrow's greater load-building demands—at little or no additional installation cost. Economy is built-in —ready for tomorrow's service.

Steel is basic—steel is strong. Republic ELECTRUNITE is produced of highest quality open-hearth steel. Every step of manufacturing is carefully controlled from ore, through mill, to finished product.

Republic ELECTRUNITE E.M.T. is completely compatible with all building products. It is corrosion-resistant—no anodic corrosion or galvanic action even in concrete. ELECTRUNITE is applicable to all locations as outlined in Article 348 of the National Electrical Code—easy-to-bend for greater workability in cramped quarters. And ELECTRUNITE is durable—outlasts most buildings.

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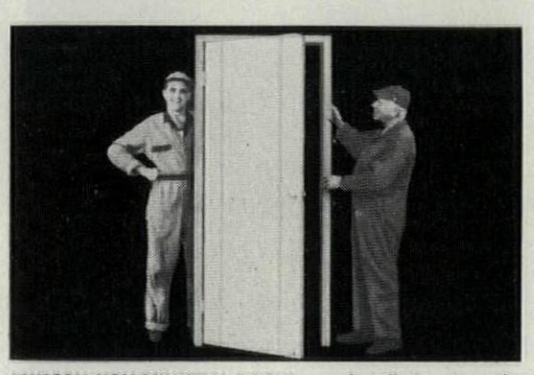
Republic ELECTRUNITE E.M.T. is produced to meet local, state, and national codes, and carries the Underwriters' Laboratories Seal of Inspection. To learn more about Republic ELECTRUNITE E.M.T., call your Republic representative. Or, write direct.

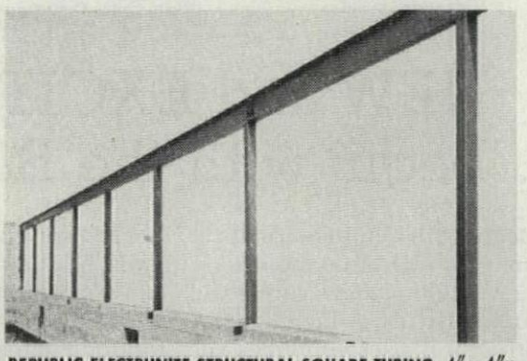
ELECTRUNITE'S tightly adhering galvanized coating protects against corrosion, won't peel, chip, or flake off during bending. Millions of feet have been successfully used in slab concrete installations over the past twenty-five years.

REPUBLIC RIGID STEEL CONDUIT offers highest degree of uniformity and ductility. Threads are clean, sharp, free-running. Welds are smooth, strong. Surface is fully protected by a hot-dip galvanized coating which will not peel, flake, or chip-off under normal bending To learn more about Republic Rigid Conduit, send coupon.

STAINLESS STEEL REVERSIBLE WINDOWS, here being installed at the Morton Salt Company Office Building, Chicago, Illinois, were fabricated by Republic's Truscon Division. Architects: Graham, Anderson, Probst & White, Inc. Contractor: Sherman Olson, Inc.



TRUSCON HOLLOW METAL DOORS save installation time. No cutting, no sanding, no planing, no fitting. Frame is finished trim and serves as plaster return. Bonderized and primed. One-coat painting does the job. Ideal for residential, institutional, commercial construction.



REPUBLIC ELECTRUNITE STRUCTURAL SQUARE TUBING, 4″ x 4″ x .187″ wall, was used in the design and construction of the Lincoln Elementary School, Euclid, Ohio. Architects: Fulton, Dela Motte, Larson, Nassau & Associates. Contractor: Robert Lee, Cleveland, Ohio.

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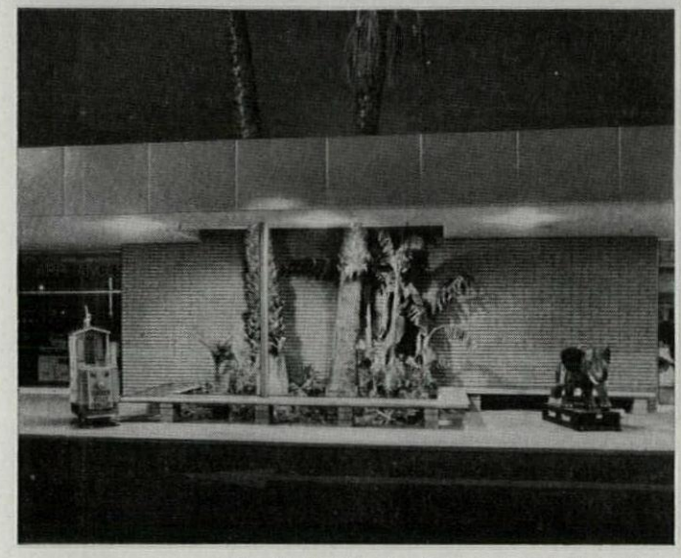

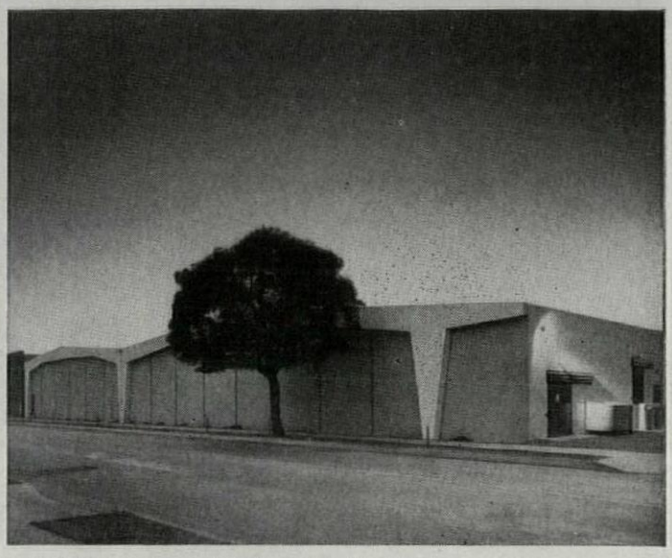

Crawford's Shopping Center—Montebello, California—Architect: Ragnar C. Qvale, A.I.A., Los Angeles

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For example, Crawford's Shopping Center, Montebello, California, designed by Ragnar C. Qvale, A.I.A., provides space flexible enough to house a giant supermarket, yet has room for other businesses.

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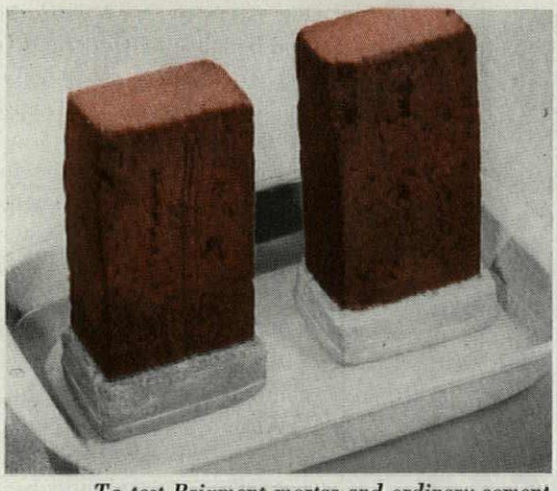
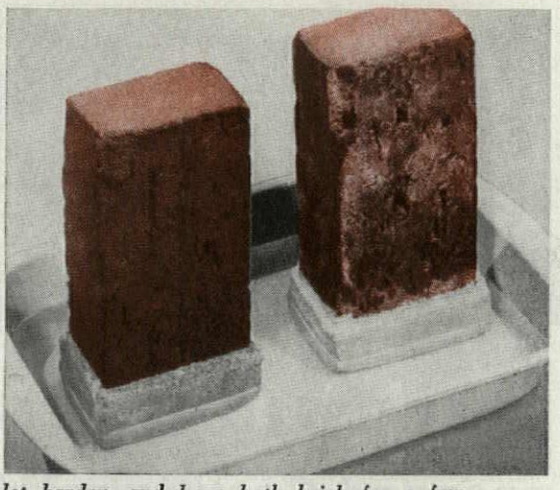
BRIXMENT MORTAR

Helps Prevent Efflorescence



To test Brixment mortar and ordinary cement-and-lime mortar for resistance to efflorescence, "cap" two brick heavily with the mortars—



let harden, and keep both brick for a few weeks in a shallow pan of water, as shown. See the difference with Brixment mortar!

HERE'S WHAT CAUSES EFFLORESCENCE—AND WHY BRIXMENT MORTAR HELPS CONTROL IT

Efflorescence is an outcropping of small white crystals on brickwork. It is caused by the soluble salts which almost all masonry materials contain. When reached by water, these salts dissolve. They may then be drawn by evaporation to the surface of the wall.

Brixment helps prevent efflorescence. The air-entraining, water-repelling agent in Brixment helps to prevent water from saturating the mortar and dissolving the small amounts of salts it may contain. Brixment mortar also helps prevent water from seeping down through the wall, dissolving the salts in the brick, and carrying them to the surface.

Contractors who have used all sorts of mortars say they have far less efflorescence with Brixment.

This is only one of many advantages which have helped make Brixment the most widely-used masonry cement on the market. It will be worth your while to hear *all* the advantages of Brixment the next time a Brixment salesman calls on you. Or write direct for full details.

LOUISVILLE CEMENT COMPANY, LOUISVILLE 2, KENTUCKY

Cement Manufacturers Since 1830

1960 FORECAST

continued from page 131

year's vigorous upturn in motel building which is expected to continue through next year.

Houses. Although one- and two-family house building is not one of FORUM's primary concerns, this big branch of the building industry is of great importance to the economy in general. The outlook is bearish but by no means bleak. The number of privately financed one- and two-family starts will probably drop 11 per cent from 1,112,000 in 1959 to 990,000 in 1960. Expenditures in 1960 ($13.5 billion) will fall off somewhat less (about 6 per cent) because of the big carry-over of work begun in 1959 and because of the trend toward larger, higher quality, more expensive houses in keeping with the expected increase in family income.

Publicly financed housing of the one- and two-family size—most of it built on military posts—dropped sharply in 1959 to 10,000 units from 42,600 in 1958. It will probably drop to about 8,000 next year accounting for roughly $125 million of construction, including some carry-over from the current year.

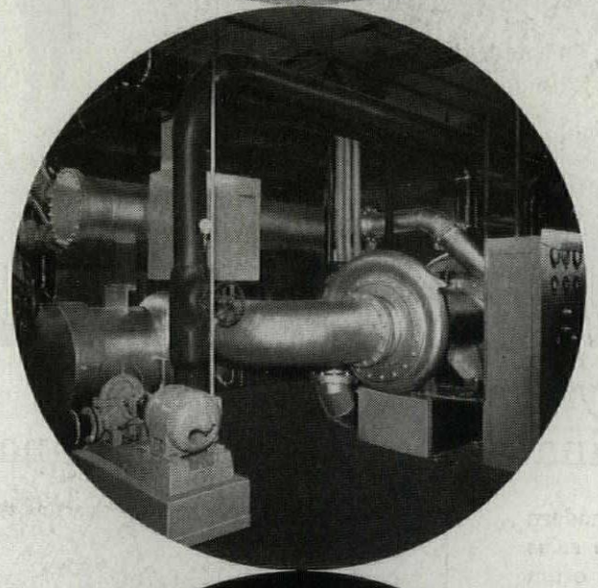
Altogether, private and public expenditures for new one- and two-family homes in 1960 should be in the neighborhood of $13.5 billion, down 7 per cent from 1959.*

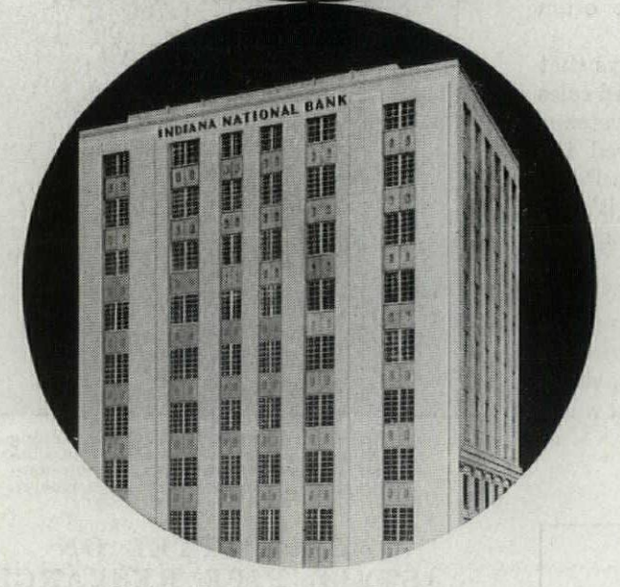
Other construction

Public utility construction is another big segment of private construction, but comprising mainly power, telephone, and telegraph lines. Only 5 to 10 per cent of it involves actual buildings such as power plants, telephone exchanges, substations, laboratories, maintenance shops, etc. Public utility construction this year expanded about 3 per cent. Next year an 8 per cent increase is forecast raising the total to $5.8 billion.

continued on page 236

*When this forecast was prepared important legislation, affecting particularly housing and highway building, was still pending in Congress, and the credit outlook contained many elements of uncertainty. However, it is possible that the resolution of these uncertainties will strengthen, rather than weaken, the prospects for building as they may now be seen. FORUM will take another look at the figures and publish such forecast revisions as may be indicated soon after the beginning of the year.





New annex to Indiana National Bank, Indianapolis (Top Illustration) *Architect:* D. A. Bohlen & Son. *Consulting Engineer:* Bevington, Taggert and Fowler. *Mechanical Contractor:* R. M. Cotton Company.

Climate by Chrysler

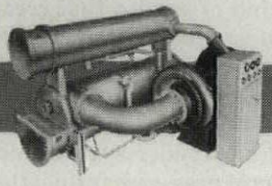
. . . cuts the cost of cooling two buildings for Indiana National Bank

The new 9-story addition to Indiana National Bank in Indianapolis is adjacent to an older 9-story bank annex which was already air conditioned. When the consulting engineers planned the cooling system for the new building, they came up with a unique way to cool *both* buildings with a Chrysler Centrifugal Liquid Chiller in the new addition as the basic unit . . . and bring the bank considerable savings in operating costs.

The new 218-ton Chrysler Chiller was also connected to the air handling equipment in the old annex. Thus, the new, extra-efficient unit operates under most economical conditions whenever air conditioning is needed in either building. The two units in the old annex are used only when additional capacity is simultaneously needed for both buildings.

What gives the Chrysler Centrifugal Chiller its extra efficiency? The exclusive true volute casing design is the answer. It delivers more tons of air conditioning per motor horsepower. (Or, if you wish, you can get a given tonnage with a smaller, less expensive motor—and save money on initial cost and operating expense.)

No matter how large or complicated the air conditioning job, Climate by Chrysler can be custom-engineered to your exact requirements. For complete information, or technical assistance, contact your local Chrysler Applied Machinery and Systems sales office.



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Airtemp Division, Chrysler Corporation, Dept. W-109, Dayton 1, Ohio
In Canada: Therm-O-Rite Products, Ltd., Toronto, Ontario

steel pipe snow melting systems pull customers in, provide walking safety, eliminate sidewalk maintenance

Today's store traffic competition is keen. That's why modern retailers are so aware of their "exterior image." The sales impressions their fronts and window displays create often mean the difference between profit and loss.

One of the most dramatic, effective and low-cost ways that you can provide the organizations you serve with "added sales extra" is to recommend *steel pipe* snow melting systems. Thousands of business places have tested and proved the magnetic attraction that automatic snow melting gives. Pavements clear of snow and ice draw customers in . . . and it's the kind of service that creates the very best image to customers, prospects and the community alike.

Sturdy, durable *steel pipe is first choice* for automatic snow melting, with reason. It is economical, easy to work, simple to install. The same advantages make *steel pipe first choice* for fire sprinkler systems, conduit, vent and drainage lines, structural uses, radiant heating, refrigeration and gas, air and water transmission. Next time, make it *steel pipe*.

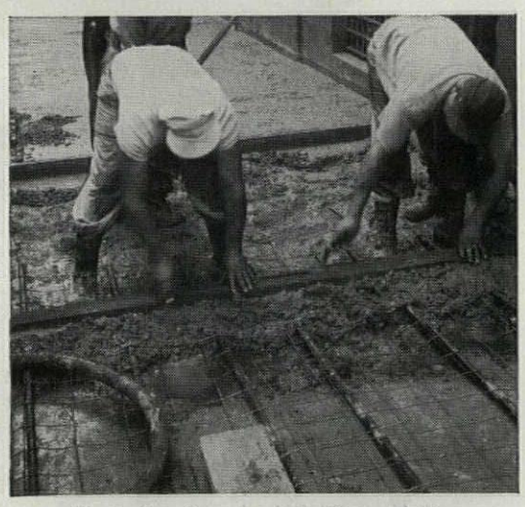

Illustration from booklet "Snow Melting and Ice Removal" shows steps in a sidewalk installation. For details on snow melting systems, write for this 32-page booklet.

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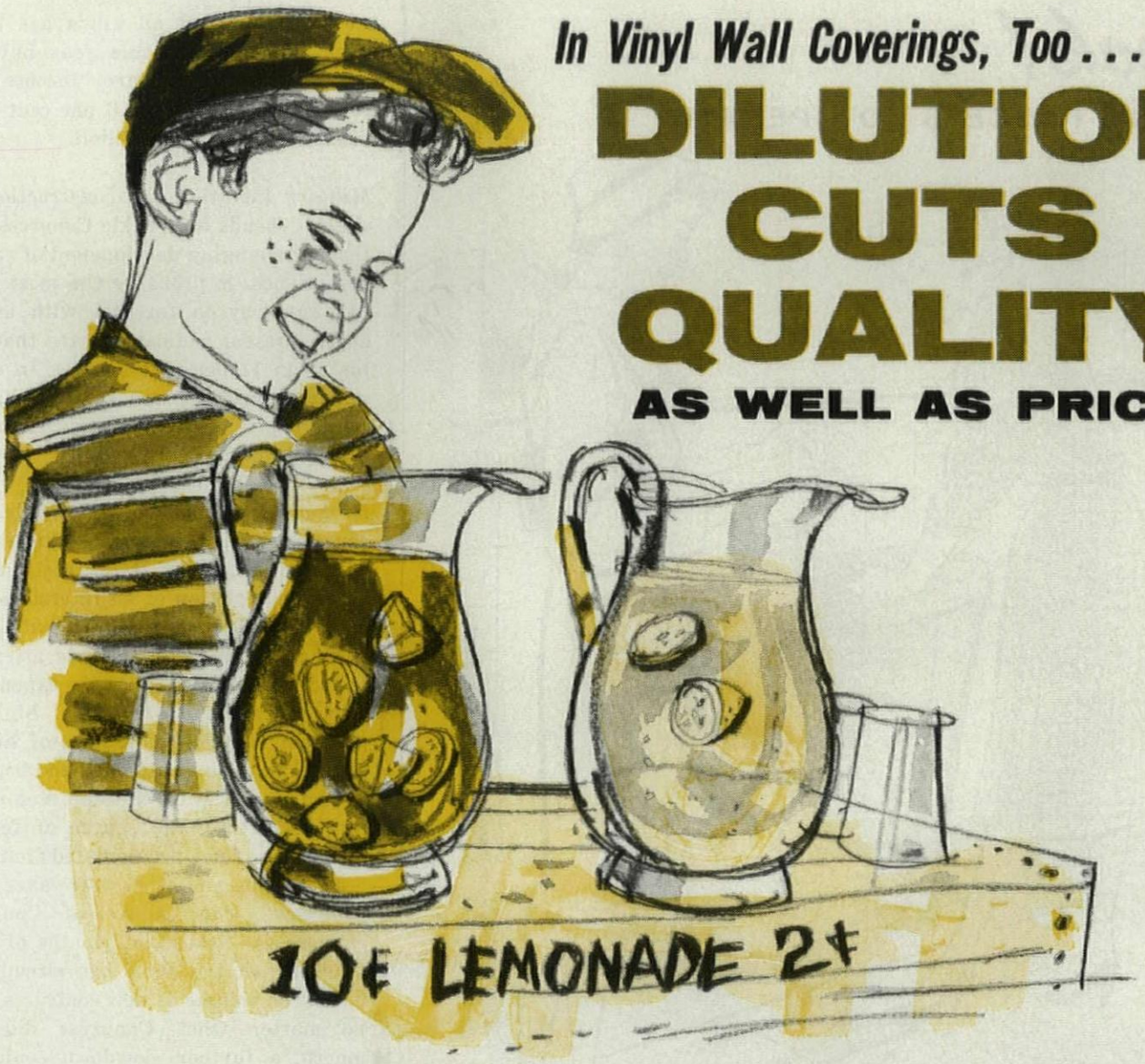
DILUTION CUTS QUALITY

AS WELL AS PRICE



Abrasive Test Proves New Virgin Vinyl Medium-Gauge PERMON® for "Heavy Duty" Outperforms Thicker Diluted Vinyl Coverings!

For wall protection, thickness alone is no criterion! Only pure *virgin vinyl* provides long-lasting damage resistance. Additives and extenders *soften* vinyl — cause it to succumb quickly to wear. New Medium-Gauge PERMON is made of virgin vinyl film plastifused to a closely woven cotton base. Specifically designed for floor-to-ceiling decoration, it provides *heavy duty* protection. Like FABRON® and PERMON® it provides maximum abrasion resistance* — unexcelled in the industry! At a price competitive or better! Decorator designed for the ultimate in beauty, new Medium-Gauge PERMON offers a wide selection of handsome colors, textures and prints. Its advantages are identical to those of FABRON and PERMON . . . maximum color fastness, dimensional stability, highest fire safety performance, non-toxicity, glass-like washability and ease of hanging. For long term beauty, there is no better buy!

***PROVEN BEST**
Taber Abrasion Test loss for all 3 products does not exceed 14 mg per 1000 cycles (CS-17 wheels and 1000 gm weights on each wheel). Laboratory tests available.

A VINYL WALL COVERING FOR EVERY PURPOSE

Use new Medium-Gauge virgin vinyl PERMON for heavy duty floor-to-ceiling protection . . . 3-ply virgin vinyl FABRON (a Toscony process) for surfaces which are traditionally painted . . . Heavy-Gauge virgin vinyl PERMON for *extra* heavy duty protection as a wainscot. Calendered vinyl films guarantee maximum abrasion resistance.

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1960 FORECAST

continued from page 232

Farm building of all kinds has risen about 12 per cent this year but the current decline in farm income will cause it to drop about 6 per cent next year to around $1.7 billion.

Military facilities, the construction of which depends on a fickle Congress and the fast-changing development of space-age science, is probably the most difficult category to forecast with assurance. Present indications are that, on top of an 11 per cent increase in 1959, military construction next year will rise 6 or 7 per cent—to somewhat more than $1.6 billion.

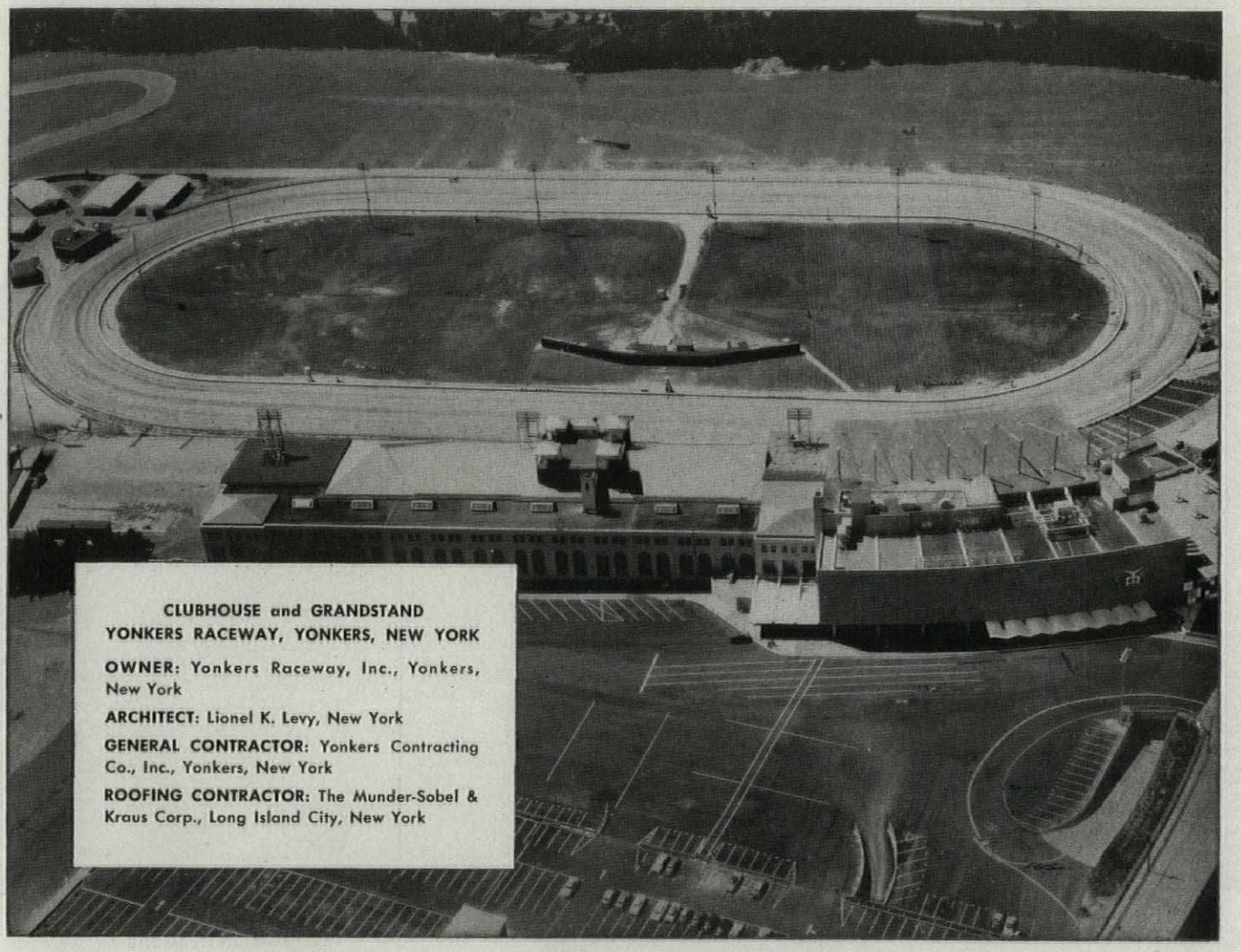
Highway construction is in trouble. Because of generous federal payments (up to 90 per cent of total cost) made toward completion of an interstate system, state highway departments have been giving disproportionate attention to federal-aid projects at the expense of other elements of the total highway program. And now, because of higher costs than were anticipated and because of last year's anti-recession step-up in contract-letting, the source of federal aid (a trust fund, accumulated from federal gasoline and other user taxes) has run dry. The failure of Congress through the first eight months of 1959 to replenish the fund has already reduced the volume of new contracts, and, no matter what Congress did last month, a further slowdown could not be prevented. The best that may be expected in 1960 is a volume of expenditures equal to the $5.9 billion of 1959.

Sewer and water. While construction of new sewerage and treatment plants has been steadily increasing (up nearly 8 per cent in 1959), water installations have barely kept pace with 1958's rate. In 1960, sewer work should advance between 5 and 6 per cent. Waterwork, which is clearly behind the need, should also increase in 1960—perhaps by as much as 10 per cent. Together, these two closely related types of construction will amount to $1.5 billion next year.

Other new construction, consisting of public service enterprises (mainly electric light and power plants and associated dams and reservoirs, etc.), conservation and development projects (re-

continued on page 240

RUBEROID BUILT-UP ROOFING PROTECTS FANS AT AMERICA'S DREAM TRACK!



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GENERAL CONTRACTOR: Yonkers Contracting Co., Inc., Yonkers, New York

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Ruberoid Built-Up Roofing on Club House and Grandstand Extension contribute a significant share to the weather-protective features of both structures. 668 squares of Special Roofing Bitumen Spec. 203-A over Insulation Board, and Special Roofing Bitumen Spec. 202-A over nailable concrete contribute, economically, to this dream track's full-time protection.

Whatever you design or build, you'll find Ruberoid Built-Up Roofing *engineered* to the job!—and to your needs! To insure client satisfaction with maximum economy, we suggest that you get details of Ruberoid Built-Up Roofing Specifications, by writing: The RUBEROID Co., 500 Fifth Avenue, New York 36, N. Y.

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1960 FORECAST

continued from page 236

clamation, river, harbor, flood control, etc.), and miscellaneous other kinds of public and private nonbuilding construction, is summarized in the tabulation. In the latter classification, the ubiquitous swimming pool figures prominently.

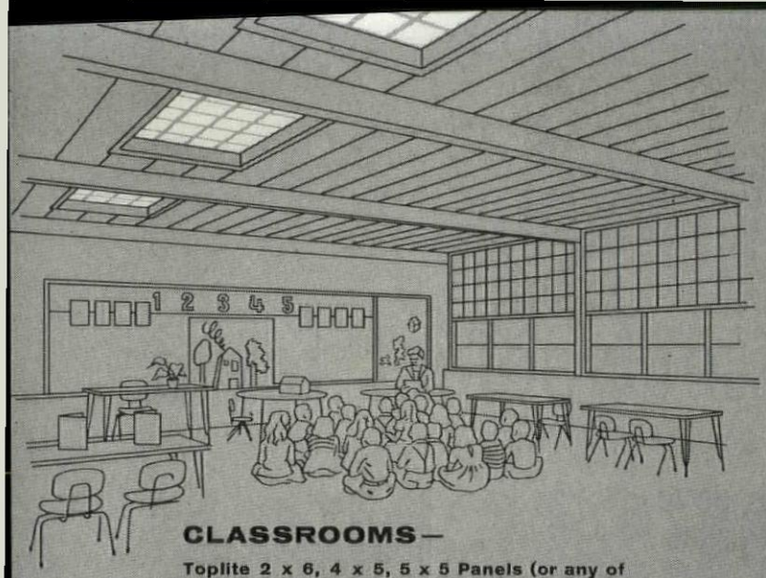
Maintenance and repair

Because data on expenditures for building maintenance and repair are skimpy, only a broad estimate of trends is possible. A conservative estimate of 1959 expenditures is $20 billion, roughly distributed as follows: 20 per cent for nonresidential building, 40 per cent for nonfarm residential building, 13 per cent for utilities, 12 per cent for highways, and the remaining 15 per cent for all other construction. In 1960, outlays will run somewhat above $21 billion, and the distribution will be about the same. (These figures are in addition to the $4.6 billion for residential additions and alterations and the $6 billion to $7 billion for major improvements in all other categories which are of sufficient scope to be included in the foregoing discussion of new construction.)

* * *

All in all, construction has an excellent prospect for 1960. In 1959, with general recovery strongly under way, construction suffered a distortion resulting from the previous year's anti-recession measures. And suffer it did. Costs again were pushed upward. Excessive pressures were put on federal financing, which are now having uncomfortable repercussions in the private mortgage structure. Builder and contractor organizations, especially in the housing and highway fields, were expanded beyond rates of growth sustainable during today's "interim period" in family formation. Thus, while the industry counts its expanded income at the end of 1959, it will also do well to ponder critically the advisability of using construction measures to counter short-term recessions.

In a major recession, federal pump-priming with construction dollars may benefit the economy and the industry alike, but in a minor recession like that of 1957-58 it may do both more economic harm than good. END



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Individually or in strips, Toplite 3 x 3, 4 x 4 and 3 x 6 panels bring cheerful daylight in through the roof.

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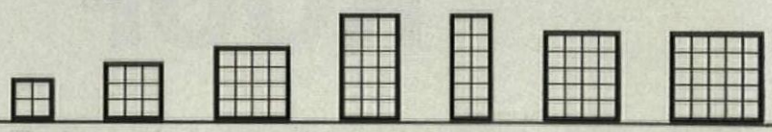
Toplite Roof Panels provide plenty of cheerful daylight for large interior areas; keep lighting bills low.

Only prefabricated Toplite Roof Panels reject the hot sun . . .

yet admit cool, controlled daylight



7 sizes give complete freedom of space design

INTERIOR space arrangement need no longer be restricted by sidewall daylighting sources. Toplite Roof Panels permit daylighting of *all* building areas regardless of location or distance from exterior walls.

Tiny, mirrorlike optical prisms in O-I Toplite Panels freely transmit cool North light and soft low-angle rays. Harsh, hot summer sun is *rejected* . . . glare and heat of old-fashioned skylights are eliminated.

Produced in 7 sizes, Toplite Roof Panels may be installed in continuous strip, pattern, or in individual panels—just as you would use a lighting fixture.

Prefabricated Toplites are easy to install. They are available in the conventional curb-type or the flange-type which sits flat on the roof.

Architectural Manual Available

Architectural catalog contains suggestions on how to add Toplite Roof Panels to your designs for offices, homes, shopping centers, schools, factories. Complete technical data and installation details are outlined. For your free copy, write Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-10, Toledo 1. Ohio.

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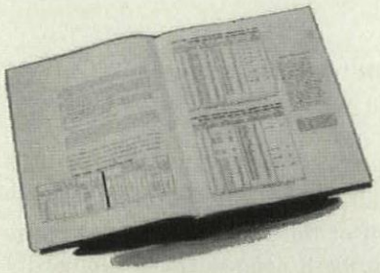

This New Brochure Gives You the Answer

Write for your copy of "The Economics of Thermal Roof Design" — an authentic study prepared by a practicing consulting engineer for use by architects. The study shows, for various temperature zones, and for various building types, the effects of different conductance (U) values in terms of heating and cooling costs — equipment, maintenance, and fuel or energy.

HOW IMPORTANT IS GOOD THERMAL DESIGN?

If you commonly specify a one-inch (at a conductance of .34) thickness for roof insulation you are passing up an important design contribution. Studies show, for example, that reducing conductances from a common U of .24 to a U of .12 can provide a return on investment of 18% per year for 15 years. Example: Department store type construction in St. Louis climate. In industrial type construction the same reduction in conductance can have this result: A reduction in original cost of heating-cooling equipment equal to 66% of the cost of the increased insulation. Regardless of the type, size or location of your building, enlightened thermal design can save your client important money.

HOW IMPORTANT IS QUALITY IN INSULATION?

The more insulation you use the more important its quality becomes. If insulating efficiency drops because of moisture absorption, or deterioration, the effect is doubly bad. First, the extra investment in insulation is not recovered. And second, your heating-cooling system will be overloaded because of unplanned-for heat gains and losses. This is why architects who are designing for optimum conductances are specifying Fesco Board. It is the permanent insulation — formed of all-mineral perlite, extremely moisture resistant, fully incombustible, and immune to rot, mildew or fungus. Specify the right quantity of insulation always . . . and always be sure to specify the right quality — Fesco Board.

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continued from page 137

ator and no longer only the qualifier of over-all figuration. Significantly characteristic of the new architectural physiognomy, both compositional and brutalist, is the overarticulateness of detail, the dramatization of identity and joining. Its maniac esthetic quality has evoked unfavorable comments, such as "structural apoplexy," from unsympathetic critics.

A difficult architecture

These new impulses, which have had the effect of shock therapy in galvanizing architecture out of its lethargy, do not immediately appeal to the senses. They constitute a "difficult" architecture, an architecture which on the one hand refuses to be interpretative of humanist content—and therefore nonpsychological—and on the other refuses to be a symbol in the classical sense. It is an architecture true only to its own manner of making and doing. In its physical concreteness and firmness of build, it strives for a confirmation of identity and existence to counter the modern fear of nothingness.

In the end, however, it is not the intent but the architecture engendered that counts. Let us consider, as an example of aspiration as well as considerable skill in this advanced architecture, the Finnish Architect Reima Pietilae's design for his country's pavilion at last year's Brussels World Fair **(14)**. This is not an easy work to comprehend. It builds its musical thematics out of lumber forms. In swelling and ebbing rhythms, it evolves stepped pyramidal volumes, generated out of the directional turns of its serial elements. It is both abstract and physical, intellectual, and naïve. It contains all the seriousness and problematics of the radical young works. END

14. *A difficult architecture in full song.*

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Location, Indianapolis, Indiana—not Europe! Spire: Third in a series of imposing Gothic spires by Overly in recent years. With each piece handcrafted and assembled into large, prefabricated panels for economical erection, Overly's spire building techniques produce the ultimate in grandeur. • Towering 170 ft. above grade, this 87-ft. lead-coated copper spire is of French Gothic design based on Sainte Chapelle in Paris. Prefabricated and erected by Overly. • We craft weather-resisting sheet metal spires of all types and sizes—from the largest to the smallest—to meet any design and to suit any church's budget. Write us today for our 28-page brochure on spire history.

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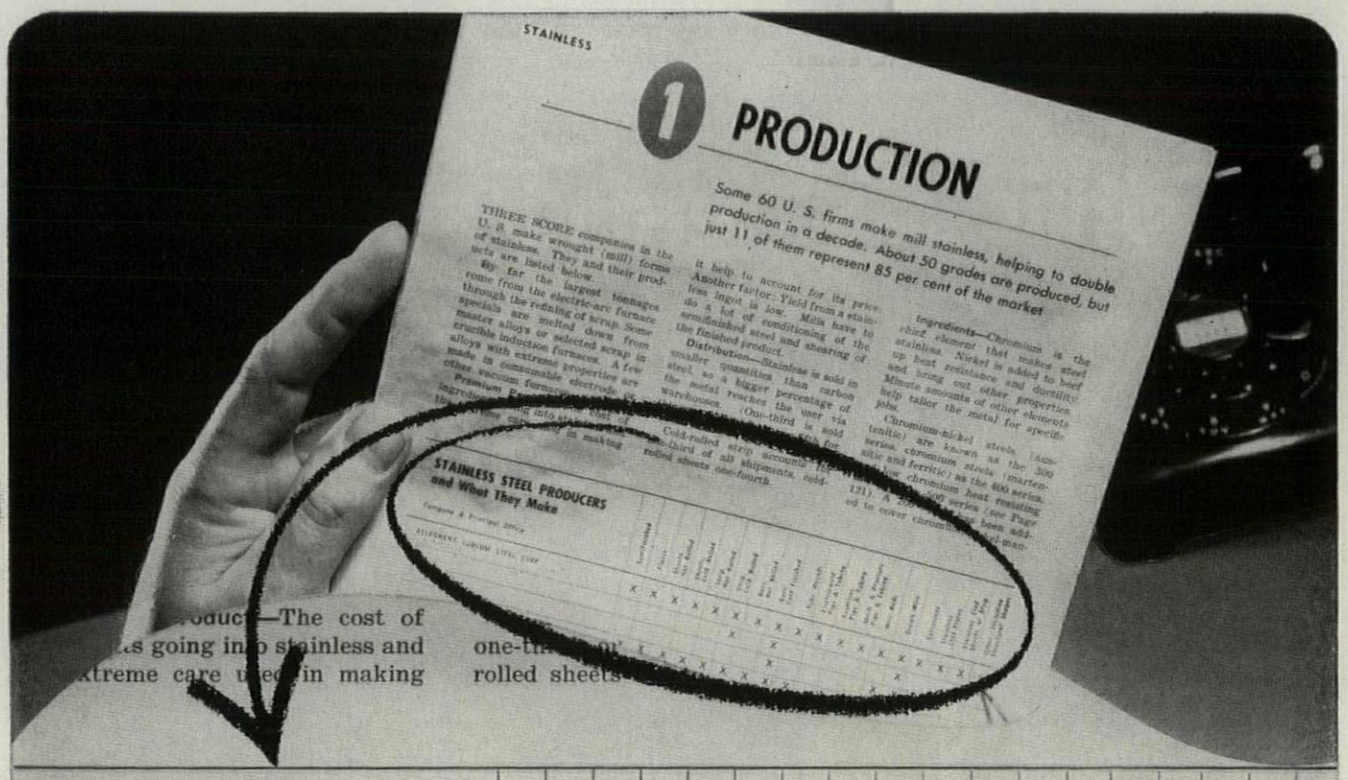

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heat units than theory indicated. (The American Society of Heating and Air-conditioning Engineers has now worked out special elaborate formulae for electric heating, which have been modified and simplified by such manufacturers as Westinghouse, G.E., and others to handy charts.) The reason for this is that electric heat's efficiency and automatic, flexible zone controls are very sensitive to such factors as room lighting, body heat from room occupancy, and sun streaming in windows. These factors actually become part of the heating system; as they move in current is reduced, flexibly, from one part of a building to another. This is one of electric heating's strongest economic points, for it allows equipment and heating to be scaled to a minimum.

Conventional heating men justly point out that if buildings with combustion heating systems are as well insulated as electric heating demands—recommended value in mineral wool or equivalent is 2 in. for floors, 4 in. for walls, 6 in. for roofs, plus storm doors and windows in colder areas—they too can show dramatic fuel savings of one third or better. But, as electric-heating men riposte, combustion-heated structures cannot be so tightly insulated as electric-heated ones, for health and functioning reasons, and the costs of insulation are quickly paid by operating savings, whatever the system, while insulation does not lower the inherent inefficiencies of combustion systems. Fossil fuels still have the price edge, however, and competition may be expected to be fierce.

Electric-heating manufacturers already are in lusty competition among themselves. The first big public splash was made by radiant heating panels, glass or metal, and by radiant ceilings of embedded cable, still popular in the Midwest. But makers of the older electric convection heaters have charged in to prove that, due to lag and the small per cent of radiant heat put out, radiant systems fall below convection systems in use efficiency. A dominant new trend is toward baseboard systems of both types, compact, easy to install, uncluttered, with integral thermostatic controls and wiring systems. And the proof of electric heating's competitive drive is the wide variety of building types it is now invading.

Electric heat to market

The first building type, other than residential, that electric heat entered in a large way was schools. Though school electric heating was known on the West Coast for several years, in 1954 the northern ice was broken with the completion of the all-electric Parkside School in Hartford City, Ind. Since then some 200 electrically heated schools either have been built or are in construction. The pioneer American Electric Power Co. alone has 37 completed electric schools and 22 more under construction on its lines, extending through Indiana, Michigan, Ohio, West Virginia, Virginia, Kentucky, and Tennessee.

Schools made an ideal starting point because their occupancy is intermittent (used 30 per cent or less of the time) and their heating pattern is such that major heating comes at night, when utility loads are at lowest ebb. Moreover, with the installation of electric heating systems costing half that of conventional systems (savings that could be applied against budgets, bonds, and interest charges) and requiring no furnace rooms, pipes, ducting, storage tanks, or full-time maintenance (space that could be saved or applied to an extra classroom at no extra cost), a strong initial case could be made to school boards. All that remained to be shown was that operating costs could be as economical as, if not less than, those of conventional heating systems. Many studies have now shown that if the capital and service costs savings of electrical systems are lumped with yearly heating bills for a realistic long-term appraisal, electrical heating saves many schools $500 a year or more against comparable combustion systems. The more enthusiastic proponents predict that conventionally heated schools will be totally obsolete in eight to ten years.

Electric school heating has had its problems and setbacks, not the least being the school-board member who is also a fuel oil dealer. One of the technical problems was ventilation—a common one to electric heating with its insistence on closely "buttoned-up" buildings—now neatly solved by adding simple heating coils to the ubiquitous unit ventilator, as pioneered by Herman Nel-

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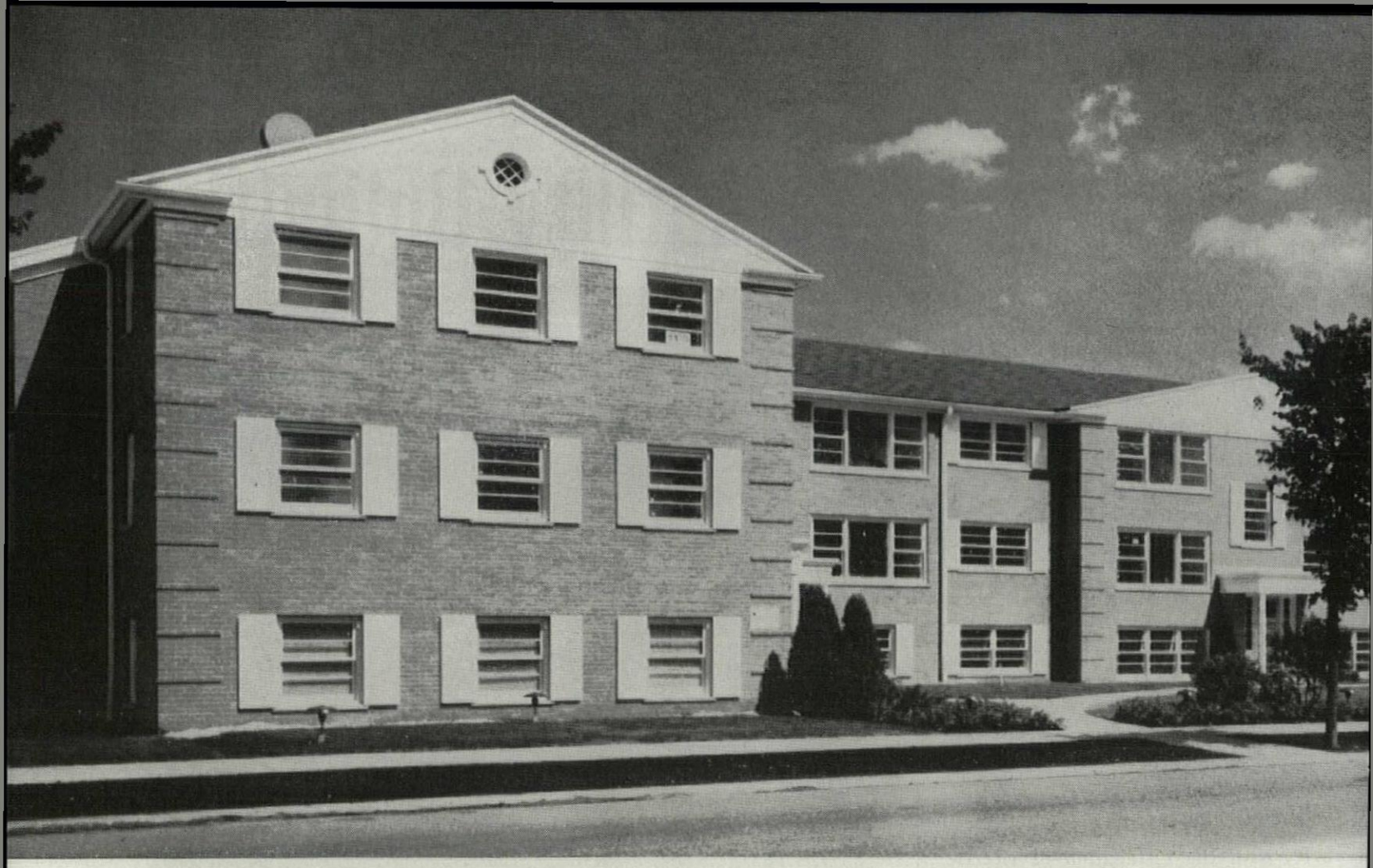
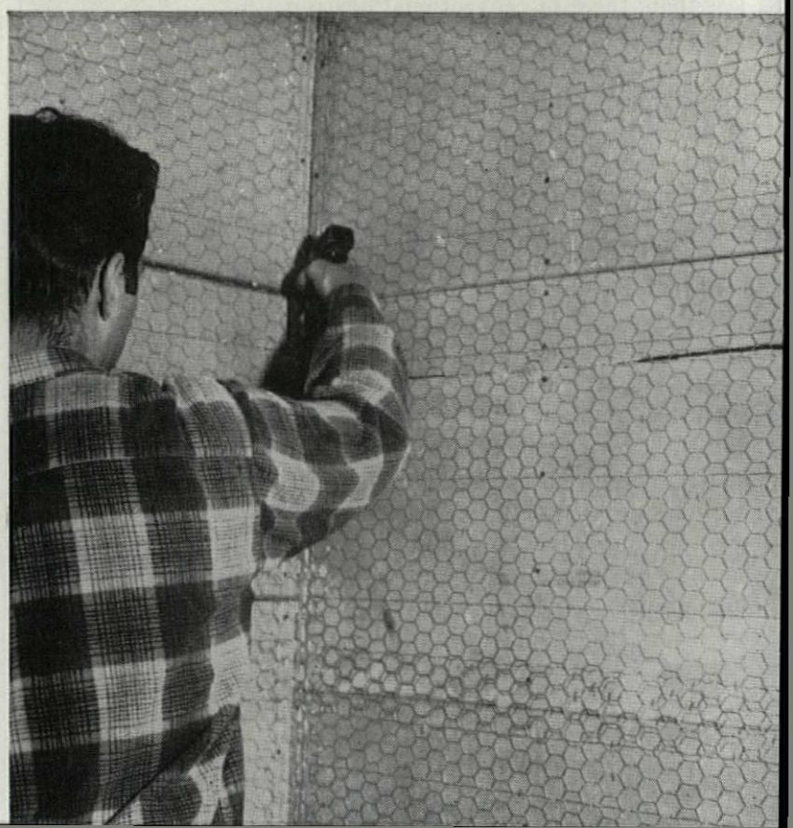


Chicago builders get greater crack resistance at no extra cost with the

KEYMESH® · KEYCORNER ·

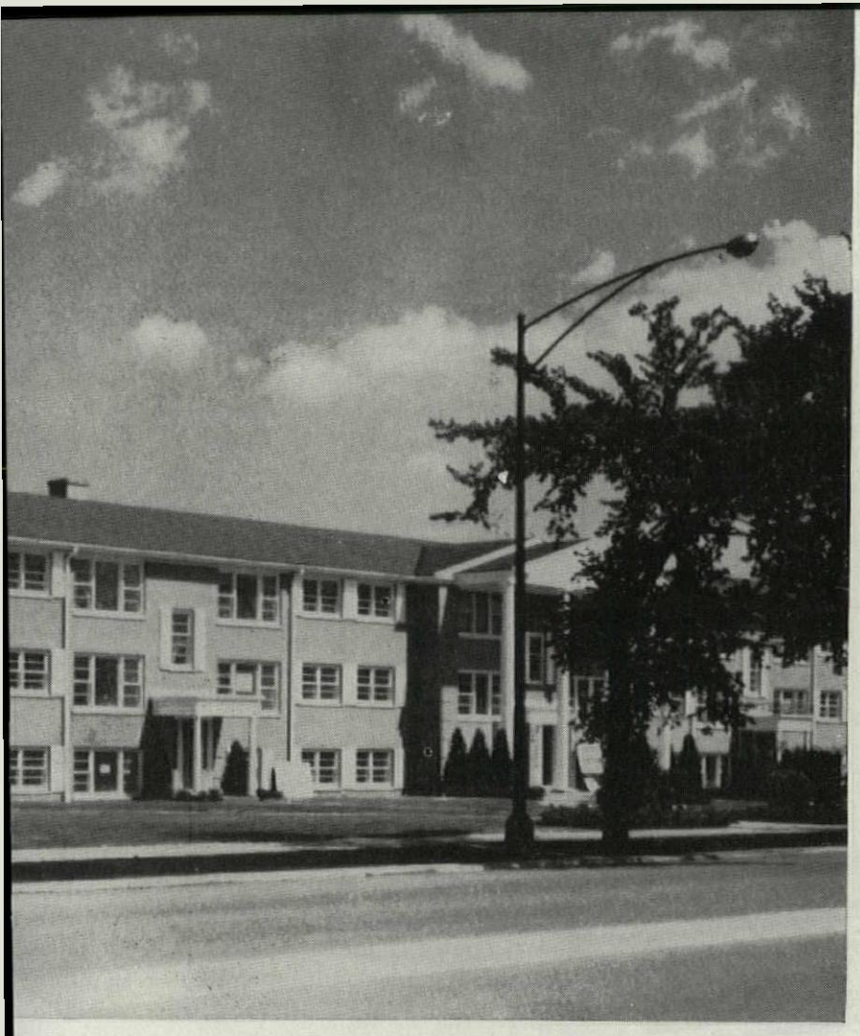
Lasting beauty and low maintenance are built into the new Williamsburg Apartments located in Chicago, Illinois. That's because greater plaster-crack resistance is assured by reinforcing the lath and plaster walls.

Valenti Builders, Inc., Chicago, found it cost no more to get this extra reinforcing quality. By specifying Keymesh, Keycorner and Keystrip galvanized reinforcing lath, the builders got top quality reinforcement with greater resistance to cracks and fire.

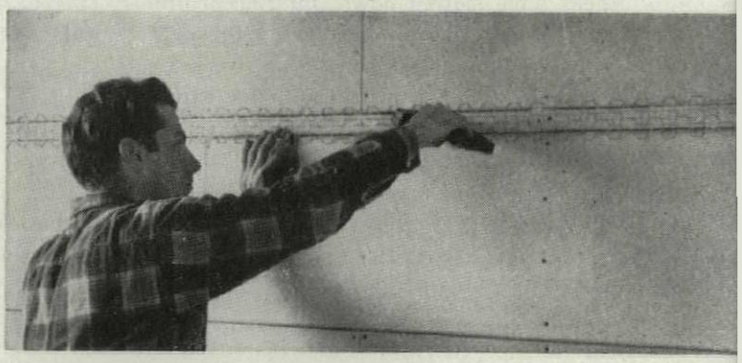


Tiled bathrooms in the Chicago project have lasting beauty with KEYMESH reinforcement. The portland cement plaster reinforced with Keymesh provides a strong, maintenance-free base for the tile. You'll find Keymesh makes any gypsum lath and plaster wall stronger and more crack resistant.

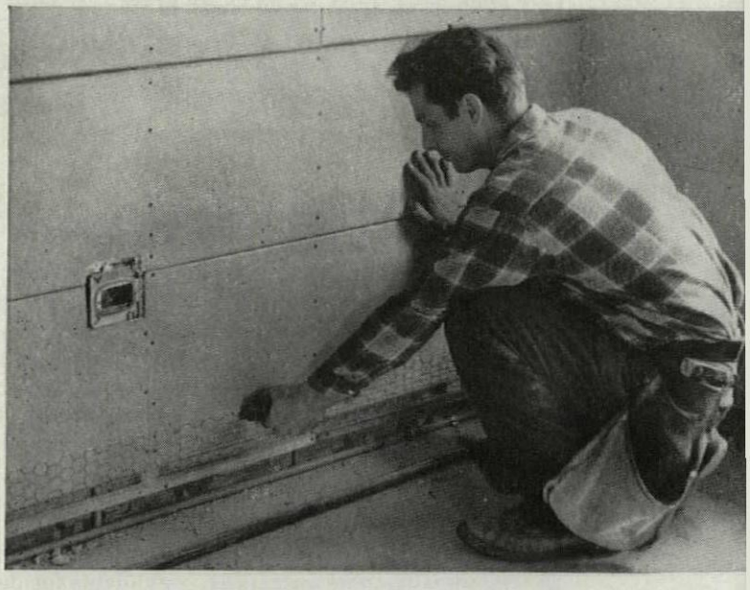
Keymesh rolls out flat and laps without bulging . . . forms easily and cuts quickly. The open mesh permits rapid troweling and assures a full, even thickness of plaster. Keymesh, Keycorner and Keystrip are galvanized against rust.



KEYSTRIP is a new addition to the Keystone line of plaster reinforcement. Here, this flat strip reinforcement is stapled over joints where narrow strips of gypsum lath are used. This use of Keystrip adds strength where needed.



KEYSTRIP can be used as a reinforcement for plaster in a space too narrow for strips of gypsum lath. A full bond of Keystrip to the plaster is assured. Keystrip also adds strength to points of stress above doors and windows.

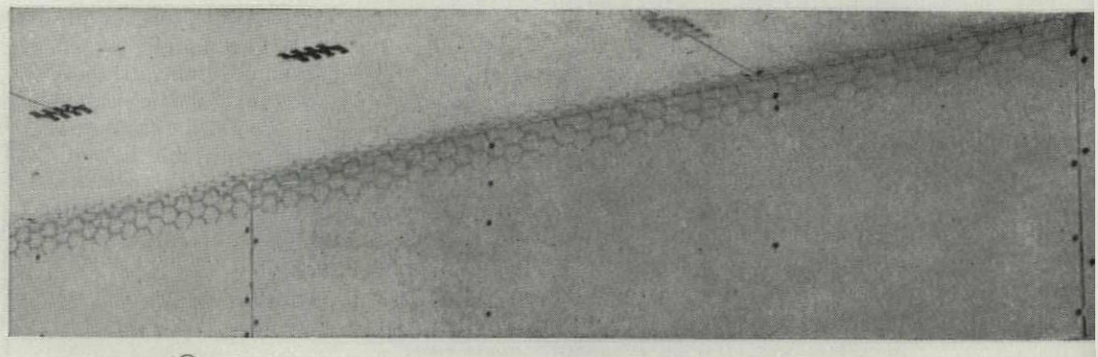


three keys to stronger plaster

KEYSTRIP GALVANIZED REINFORCING LATH

Inside plaster corners reinforced with KEYCORNER lath have almost twice as much resistance to cracking as corners reinforced with other materials. Recent tests and actual use confirm this feature.

The men working on the Williamsburg Apartments, as on other jobs, found the preformed, 4-foot lengths of Keycorner easy to handle. Keycorner goes into place quickly and can be nailed or stapled. The open mesh design makes it easy to plaster over and assures a complete bond.



Get quality wall construction with lath and plaster at low cost by specifying the three keys Keymesh, Keycorner and Keystrip. Send for more complete information and results of recent tests conducted by leading laboratories. Write Keystone Steel & Wire Company, Peoria 7, Illinois.

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son, Inc. and other manufacturers. More recently school installations of electric heat have slowed down, due, according to one manufacturer, not only to lower construction levels but also to some architects' resistance. On a job where a conventional heating system might come to $300,000, but an electrical system could be installed for $150,000, the architect would lose on the latter some $12,000 from his over-all fee, figured at 8 per cent of total building cost. But to reject electric heating on this basis is as shortsighted as labor union featherbedding, for by building simpler, more economical schools, which electric heating allows, architects can greatly increase their design volume and net.

The high efficiency of electric heating in buildings of intermittent occupancy applies with even more force to churches (occupied only 5 per cent of the time, and then mainly on week ends when electric loads are low), motels (some 55,000 rooms are now electrically heated, mainly south), and hotels (particularly in renovations, where electric heat affects large economies). Electric heating's latest move, and one of large potential, is into apartment buildings, first in Chicago, where since July 1958, 17 garden apartment buildings of 178 units have been built with electric heating, then in Cleveland, where in the same year 27 per cent of all new apartments had electric heat installed, including the first high-rise applications. To the apartment owner this means lower installation cost, more rentable space, reduced service and maintenance expenses; to the tenants, the ability to regulate their own heating comfort, fewer complaints, lower cleaning and decorating expenses. Still relatively untouched, though inevitable as big air-conditioning loads keep piling in, are office buildings, where electric heat may bring a new measure of individual room comfort.

The case of the heat pump

The office building, however, is more likely to go to the heat pump, with supplemental resistance heating. This has had an equally spectacular growth in the last few years, though less in volume than straight resistance heating. The heat pump, as nearly everyone now knows, is a reversible mechanism which in summer can pump heat out of a building to cool it, and in winter pump heat into a building from latent heat in the outside air, water, or ground, through a system of coils and compressors operating much like an electric refrigerator. The heat pump uses much less current than resistance heating, but, having a double function, costs much more, as much as five times more, in original installation, which accounts for its lower sales volume.

For years the heat pump has labored under this high first cost and a certain confusion due to its name, which for merchandising purposes is a misnomer. Mainly, the heat pump is a reversible air-conditioning system, economic only where the cooling phase is the paramount function. Where wide differentials in climatic temperature exist, it is not too efficient a heater, particularly in

continued on page 256

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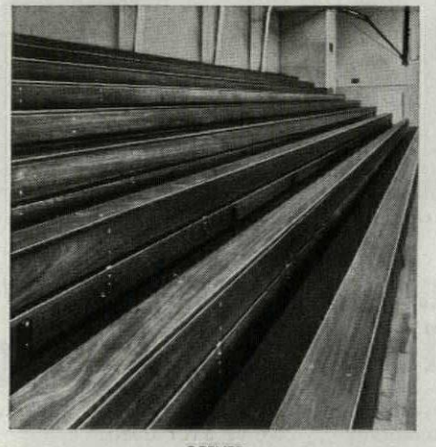

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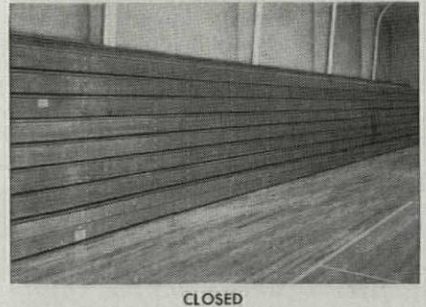

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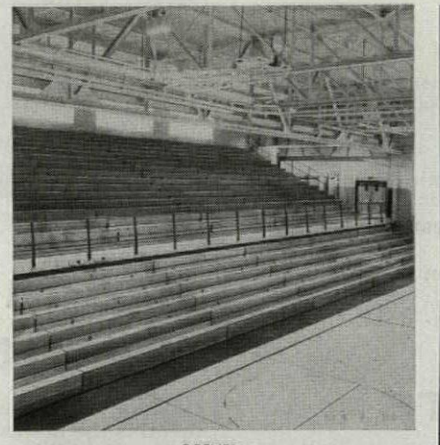

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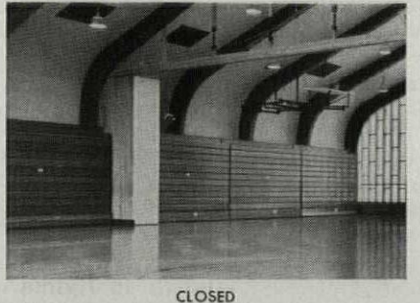

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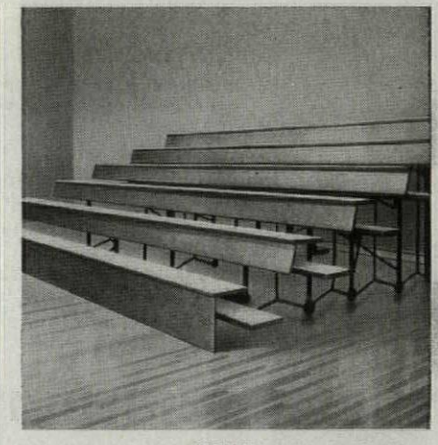

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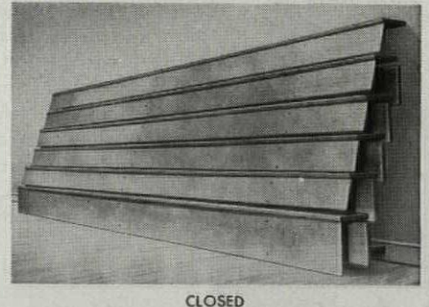

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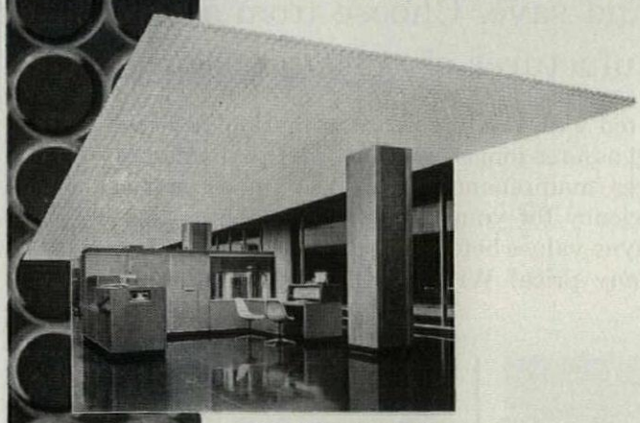

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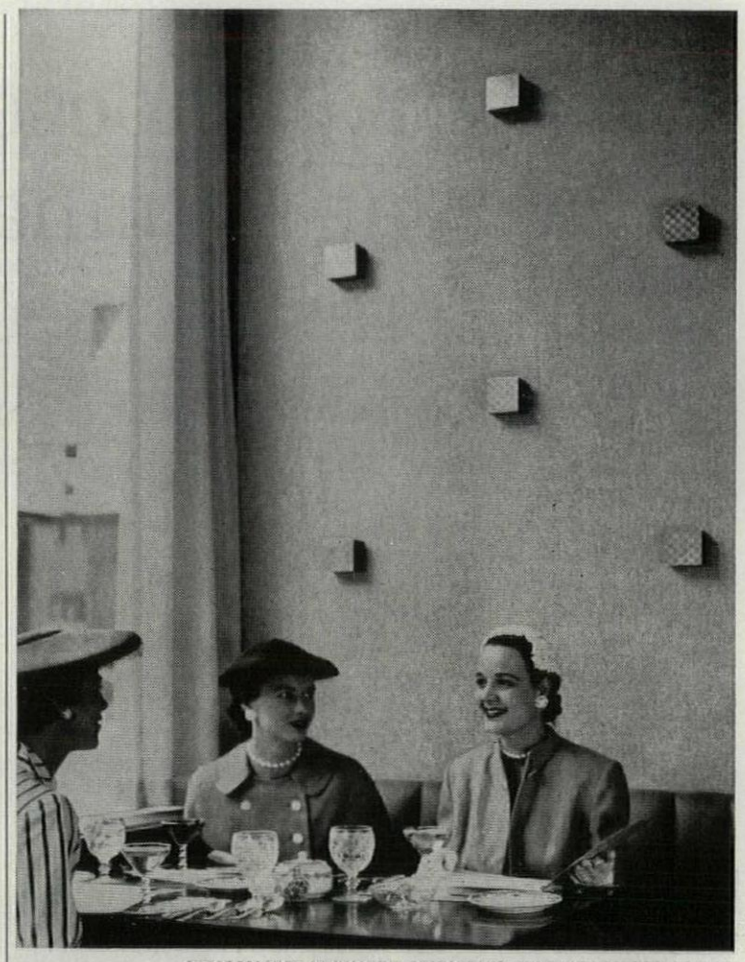

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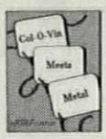

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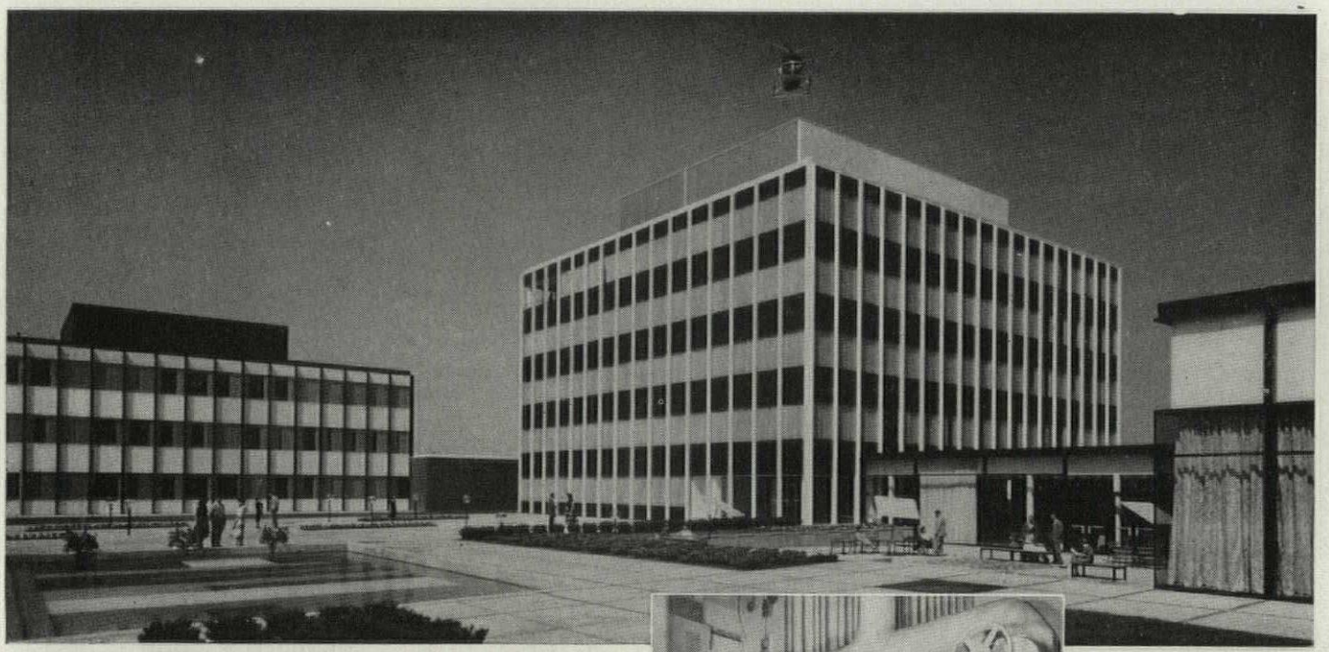

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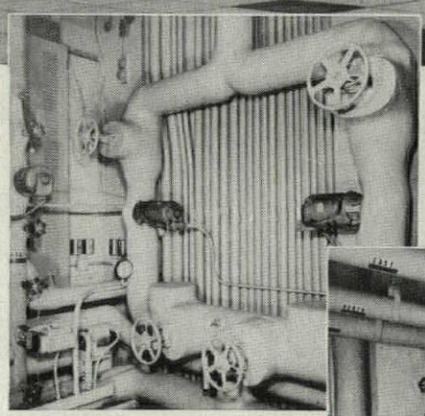

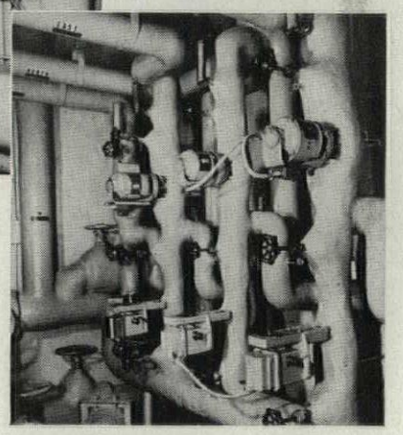

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Canadian Licensee: S.A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

International Minerals and Chemical's new administration and research center, Skokie, Illinois, has been described as "engineered for thinking." In keeping with that objective, twenty-two *quiet* B&G Boosters were selected as the pumps for the heating circuits of the four buildings and the snow melting panels.

B&G Boosters and larger Universal Pumps are designed and built specifically for circulated water heating and cooling systems, in which they satisfy the all-important requirement of *silent, vibrationless* operation. Over 3,000,000 are today installed in such systems.

Among the features of B&G circulating pumps are specially built, more costly motors, tested for quiet running...oversized shafts of hardened alloy steel... long sleeve bearings...noise dampening spring couplers...oil lubrication and leak-proof mechanical seals. They can be serviced without removing from the line.

the air-to-air type that most manufacturers have concentrated on because the water and ground types are much more expensive to design and install, costly and troublesome to service. North of Florida, the air type must have supplemental resistance heating coils to function as a heater. Hence most of the installations thus far have been big ones in the South and Southwest, though the heat pump is now moving strongly into quality residential use, and is just beginning to move to the North.

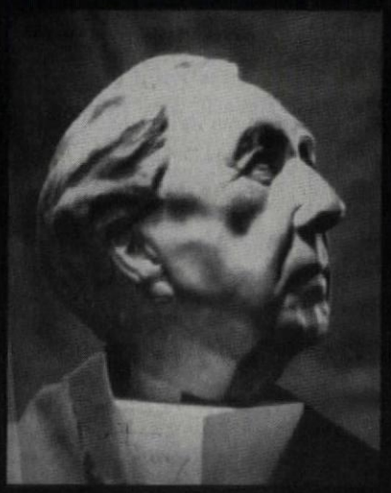
Nearly all the recent heavy growth in heat pumps has been due to the development of packaged units—the latest development being split systems in which the noisy compressor sections are housed out-of-doors or on the roof, advanced mainly by G.E. and Westinghouse—which have brought prices down 40 per cent. Prices may be expected to go lower as nearly all the major air-conditioning companies are now moving in. Some spectacularly large residential installations and advances have been made, notably in harshly competitive government housing. Westinghouse, for instance, has an 806-unit installation in 800 homes at the Air Force Base in Myrtle Beach, S.C., won on a purely competitive economic basis. The heat pump is regarded now by many as the air-conditioning system of the not-too-distant future, a system which, with supplemental resistance heating to the north, will bring all-electrical year-around air conditioning.

The electrical future

Electrical heating is moving, therefore, into a future seething with a variety of possible combinations, permutations, and developments. One of the possibilities is to combine it with solar heating for a truly economical system. At present it is still quality heating at a premium, but in the current advanced stage of electric power growth, this premium will move relatively lower as the prices of other fuels almost inevitably advance. And in the laboratories are developments that fit snugly into the electrical future. Most notably, there is the work progressing on weird thermoelectric compositions, in which, still experimentally at low efficiencies, an electrical current is passed through thin panels of dissimilar metal units to reversibly heat or cool a room. As a stunt, but prophetic of the future, Westinghouse has demonstrated such a panel combined with electroluminescence—the new wafer-thin light source—to provide a wall panel that may simultaneously light, heat, or cool a room.

The major significance of these things for architecture, even with electric heating in its present and foreseeable forms, is a new freedom and flexibility in design. Gone will be the boiler rooms, writhing ducts, pipes, and overpowering, mechanical equipment, now threatening to crush architectural forms. Heating and even air-conditioning units may be simply wall panels, baseboards, or thin zone cabinets, room by room, connected only by thin electrical wire and cable. Architects, therefore, would do well to weigh electrical heating in all future plans. END

Imaginative new conceptions in architecture can frequently trace their origin to a basically simple idea. One of the oldest types of roofing, terne metal, thus lends itself to many dramatic new applications in the contemporary idiom. Because of its inherent adaptability in both form and color, Follansbee Terne permits the visible roof area to become a significant part of structural design. Thus by re-discovering and re-interpreting a time-tested material, we make out of the very old the very new. I have furthermore found terne superior to other roofing metals in economy, color-adherence, heat-reflection, permanence, workability, and low coefficient of expansion.



FRANK LLOYD WRIGHT
Sculpture by Eloise Fichter

FOLLANSBEE STEEL CORPORATION FOLLANSBEE, WEST VIRGINIA

Ad Index

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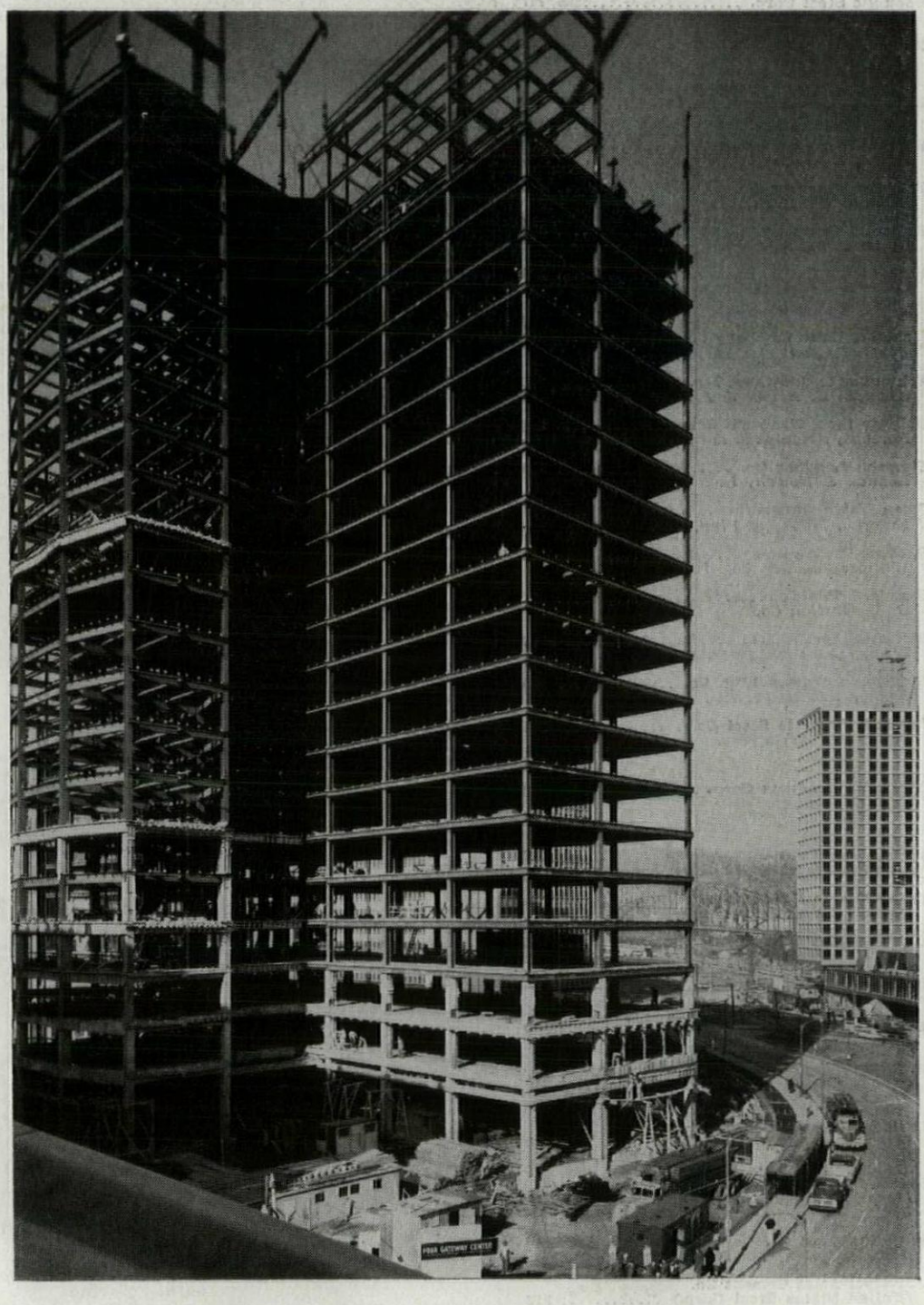

On this one, everything moved fast – including other trades!

The 6,400-ton steel framework of Four Gateway Center, Pittsburgh's newest downtown skyscraper, was topped out on April 29, just 3 months and 17 days after the first steel member was placed. Other trades followed closely on the heels of the American Bridge erecting crew as each floor of the 24-story office building was erected.

An important feature of steel construction occasionally overlooked—*immediate full strength*, is the key to safe, fast and economical construction. When a structure is built around steel, everything about the job moves fast. Not only does the framework go up faster, but other trades can move in and start work almost as soon as members are in place—rather than waiting weeks for safe conditions.

In addition to speed and strength, steel lends itself readily to all kinds of fabrication and all types of connections. (All field connections on Four Gateway Center were made with High Strength Bolts.) Steel can take rough handling, it can be shipped and stored economically, and it can be safely erected in any season. And steel construction can be readily altered and accurately inspected during and after construction.

The important fundamentals show that steel serves you best. And for the best service in steel construction, get in touch with American Bridge.

Four Gateway Center Building, Pittsburgh, Pa.

Owned by The Equitable Life Assurance Society of the United States

Designed by Harrison & Abramovitz, Architects

General Contractor: George A. Fuller Company

Structural Steel fabricated and erected by American Bridge Division of United States Steel

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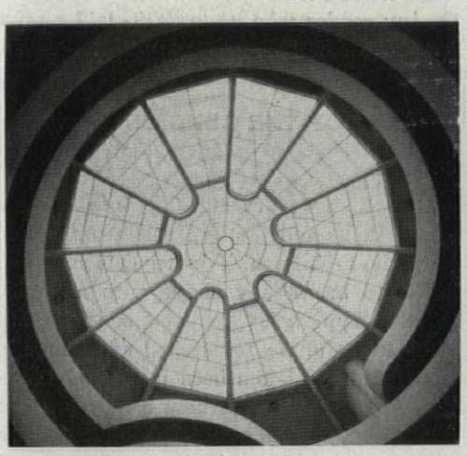
General Offices: 525 William Penn Place, Pittsburgh, Pa.

Contracting Offices in: Ambridge, Atlanta, Baltimore, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Elmira, Gary, Harrisburg, Pa., Houston, Los Angeles, Memphis, Minneapolis, New York, Orange, Tex., Philadelphia, Pittsburgh, Portland, Ore., Roanoke, St. Louis, San Francisco, Trenton, United States Steel Export Company, New York

Drumhead dome . . . mum building . . . cheated cities



GEORGE CSERNA

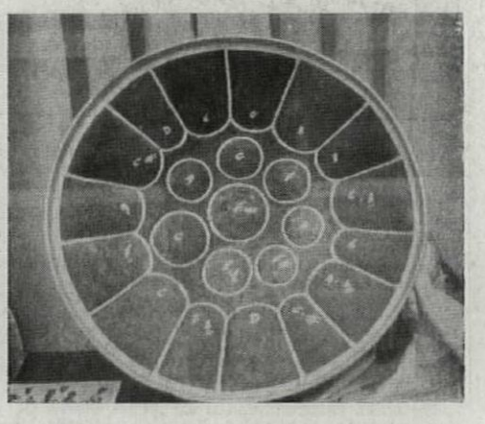
DRUMHEAD DOME

Forum:

The photograph in your June issue looking up through the skylight dome of Frank Lloyd Wright's new Guggenheim Museum in New York City (above) bears a striking resemblance to a snapshot of the head of a Trinidad steel drum (below).

Did the old master, consciously or not, relate the stresses in his dome ribs to the vibration frequencies in different parts of a drumhead? Is architecture frozen music? Or, as has also been suggested, is music melted architecture?

HARMON H. GOLDSTONE, *architect*
Goldstone & Dearborn
New York City



SAYING NOTHING

Forum:

Hooray! for the piece on the new Senate Office Building (FORUM, Sept. '59). This is important. It deserves to be spread on the "Record" or sent to the 98 senators, although, as lawyers, they are specifically insulated against ideas of space and form and even function.

JOHN RANNELLS
Urban Traffic and Transportation Board
Philadelphia

Forum:

Your article on the Senate Office Building was entirely sound and beautifully and rightfully devastating. You are a likely candidate for the honorary presidency of an organization we tried to promote during a tour of duty in Washington in the early days of World War II. The avowed purpose was the elimination of every fifth column in Washington. Seriously, your article should be required reading for every Congressman.

A. B. SWANK, *architect*
Dallas

Forum:

. . . one of the most perceptive essays I have ever read. I took the liberty of having it printed in the *Congressional Record.*

PAUL H. DOUGLAS, *U.S. Senator*

Forum:

. . . very good reading. I appreciate your outspoken criticism in the field of architectural design. We need it. And the general public needs it, too.

It might be very interesting to delve deeper into the sequence of events that finally resulted in the "say nothing" Senate Office Building. Were other solutions proposed by the architects? Who prepared the program? How tightly restrictive was the program? Is the Architect of the Capitol (the AIA should have this title changed) establishing the character of the design for the consulting architects? Would the architects care to present a rebuttal to your devastating criticism?

HOWARD B. CAIN, *architect*
Cleveland

● *In a Washington newspaper, the architects replied that* FORUM *is for modern architecture and implied that it could be discounted when finding fault with a classical job. Also, they declared the article "vituperative."*—ED.

Forum:

To see you come out and lambaste in plain unvarnished terms is refreshing, and I hope is an indication of future policy.

WILLIAM M. GILLIS, *architect*
Gillis & Forell
San Francisco

CHEATING THE CITIES

Forum:

Your editorial "Cheating the cities" (FORUM, Sept. '59) was trenchant and challenging.

The cold statistics show that our cities are going into debt far faster than the federal government. Most have exploited their tax bases to the limit. Yet they are being asked, in effect, to help balance the federal budget.

EDMUND G. BROWN, *governor*
State of California
Sacramento

Forum:

The federal government must recognize that urban renewal is perhaps the nation's greatest domestic problem, and it must begin to take action accordingly. A sustained and massive national effort is required. Your editorial will be helpful

JAMES FELT, *chairman*
City Planning Commission
New York City

Forum:

A most constructive dissertation. On behalf of the building industry, I extend my congratulations and sincere thanks.

WILLIAM ZECKENDORF, *president*
Webb & Knapp, Inc.
New York City

Forum:

Your thought-provoking editorial accurately states the real and pressing needs for the Congress and the Administration to give greater consideration to the problems of urban areas.

HUBERT H. HUMPHREY, *U.S. Senator*
Washington, D.C.

Forum:

The question is how to get this job done. The easy answer is to turn to the federal government.

My suggestions are not likely to appeal to the impatient. They are: work for peace, so that the burden of armament may be safely diminished; cut farm subsidies and other subsidies; let the results show in re-

continued on page 262

duced federal taxation, which in turn will give the states and cities greater strength to cope with their own problems; avoid unnecessary complications of urban problems, such as you cite, through highway and defense production planning; maintain the stability of the dollar so that investors will have the needed confidence in long-term mortgage investments. Until these are done we may have to accept a lower rate of progress with urban renewal than we should like to see. Unless they are done, we may have no progress at all.

WALTER C. NELSON, *president*
Mortgage Bankers Association of America
Chicago

Forum:

A succinct, restrained, and persuasive statement.

The only hope I see is through the ballot. Candidates for the offices of President and Vice President, and for the Senate and House of Representatives, should be forced to make their positions clear on measures to change the federal policies and programs which create new urban problems, and to appropriate the necessary funds to meet the problems caused by the unprecedented expansion of urban populations.

IRA S. ROBBINS, *vice chairman*
New York City Housing Authority

Forum:

The changing character of our cities is but one aspect of what amounts to a changing civilization. To whittle down the range and scope of this change so that it can be conveniently laid at the doorstep of the federal government is as erroneous as to claim that *the* way to settle the whole city problem is to spend federal dollars, or as erroneous as the view many of us once held that a solution could be achieved just by bulldozing away slums on a big scale.

Much more is needed than spending federal dollars—and when I say this I echo the findings of President Eisenhower's Advisory Committee in 1953, incorporated into law in the Housing Act of 1954. Here we had the first legislative recognition of the totality of the problem—that because so many variables are involved, many tools must be utilized.

However, in the long run no tools can be adequate unless at the local level there is initiative, ingenuity, willingness to experiment, in short, a dynamic approach to a community problem.

PRESCOTT BUSH, *U.S. Senator*
Washington, D.C.

Forum:

In the decade ahead we must have substantially greater federal revenues available for many purposes, one of the most important of which is the rehabilitation of our cities. It means balancing the budget, but at a level considerably higher than the present sacrosanct figure of $77 billion.

It can be proved, I believe, that for every dollar spent by the federal government for urban renewal, two dollars are returned to the treasury in federal revenues arising directly from the private investment made possible by urban renewal.

JOSEPH S. CLARK, *U.S. Senator*
Washington, D.C.

Forum:

It is natural for the cities to look to the federal government for leadership and help. However, the amount of help in terms of money and nature of the changes sought should avoid the danger of too much dependence upon Washington. In administering their affairs local communities have a serious responsibility to see that they do not contribute, by omission or commission, to conditions that have developed.

I believe the administration recognizes that the federal government has responsibilities in seeking to correct the plight of our cities. At the same time the President recognizes, and so must all of us if our system is to survive as a free society, that our economy cannot undertake more government activities than the citizens are willing to pay for through tax payments from the total productive capacity.

FRAZAR B. WILDE, *president*
Connecticut General Life Insurance Co.
Hartford

Forum:

Your editorial admirably details the painful lack of public understanding and concern for the plight of our cities and the 85 per cent of our people who live in them. Your analysis of the problems of the cities in their desperate attempts at urban renewal is most profound, and you have done the nation a great service in bringing the matter into clear focus.

As you point out, we have far to go to meet the needs of our cities. One of the first steps that should be taken is the creation in the federal government of a Department of Urban Affairs with Cabinet status. This will provide a focal point that does not now exist for those interested in mounting a comprehensive attack on urban problems.

With such a focal point, the important work that you and others are doing will be more effective and we may then see the revival of cities which inertia has destroyed.

ROBERT B. MEYNER, *governor*
State of New Jersey

WANTED: AN INDEX

Forum:

Though not an architect, I enjoy the contents of your magazine, and its lively, interesting review of the contemporary American scene.

However, one criticism: I constantly miss an index to past issues. If I want to read about any building you have described in past issues, I have to leaf laboriously through dozens of copies.

A. FRANK SCHWARZ, *industrial engineer*
Holland, Mich.

● *Any reader who requests it, will receive regularly* FORUM'S *semiannual index.*—ED.

BEWARE OF THE CONOIDS

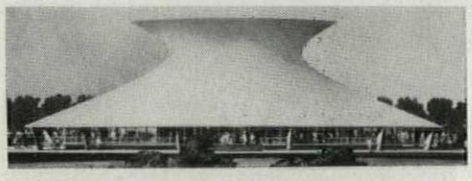
Forum:

Now that we are entering into the age of the shells and the hyperbolic paraboloid is vogue, architectural journalism has been prone to brand any shape with a double twist a hyperbolic paraboloid. Thus has the latest *tour de force* shell of Hellmuth, Obata & Kassabaum been misnamed (FORUM, Aug. '59). The structure they propose for St. Louis stargazers is in reality a hyperboloid of one sheet.

You would do well to draw from your reference shelf a text on analytic geometry, review three dimensional configurations, and learn the appropriate vocabulary for the various shapes of synclastic and anticlastic shells. For beware, the conoids are coming.

DENIS C. SCHMIEDEKE, *architect*
Hawthorne & Schmiedeke
Detroit, Mich.

● *Hyperboloid, indeed! A hyperbolic paraboloid is a saddle shape formed by straight lines which this observatory is not. Our error.*—ED.



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

SUBSCRIPTION SERVICE: Address all subscriptions and correspondence concerning them to: ARCHITECTURAL FORUM Subscription Dept., 540 N. Michigan Ave., Chicago 11, Ill. Subscription rates: in U.S., U.S. Possessions and Canada, one year, $6.50; elsewhere, one year, $10. Single copies, if available, $1.

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

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

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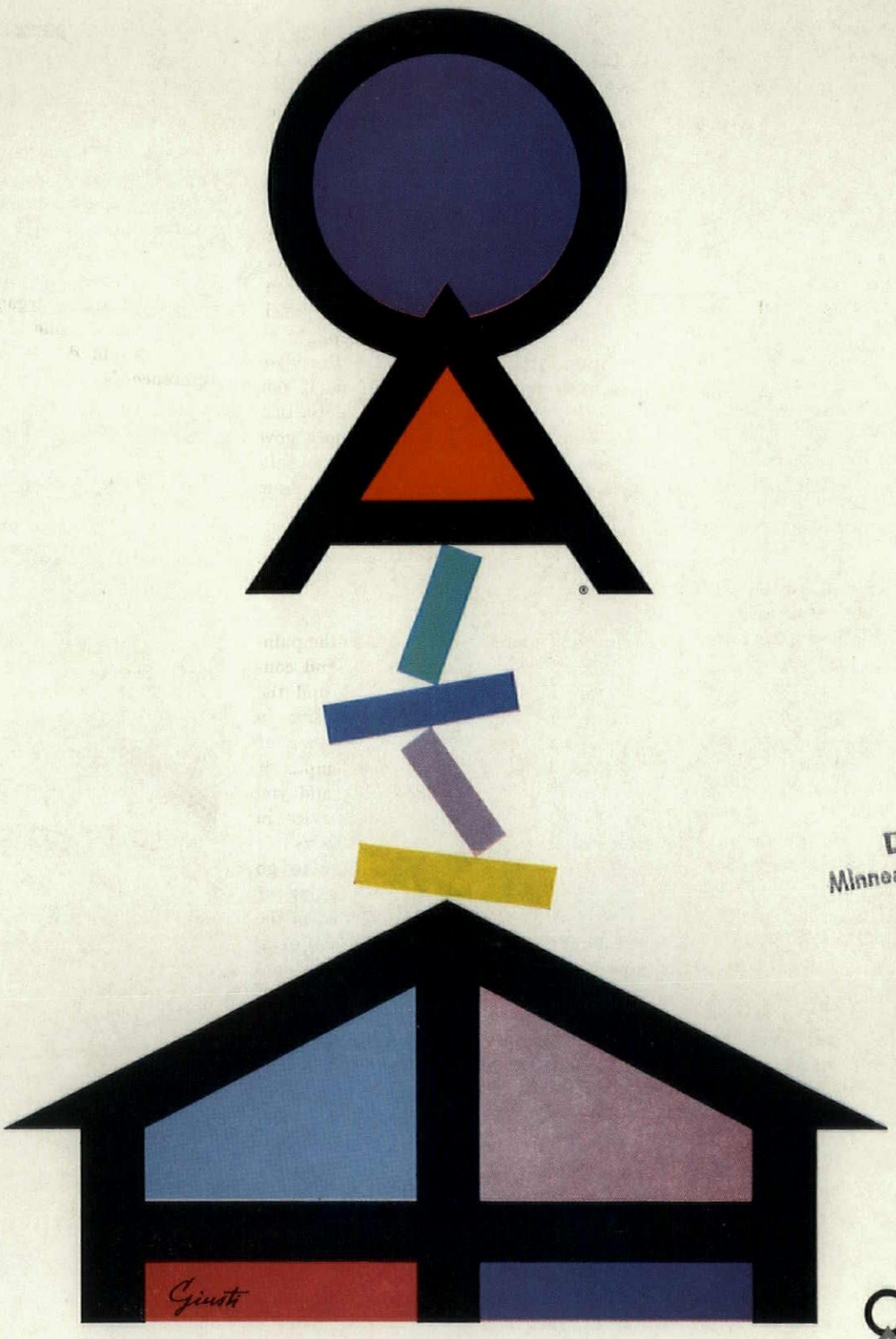

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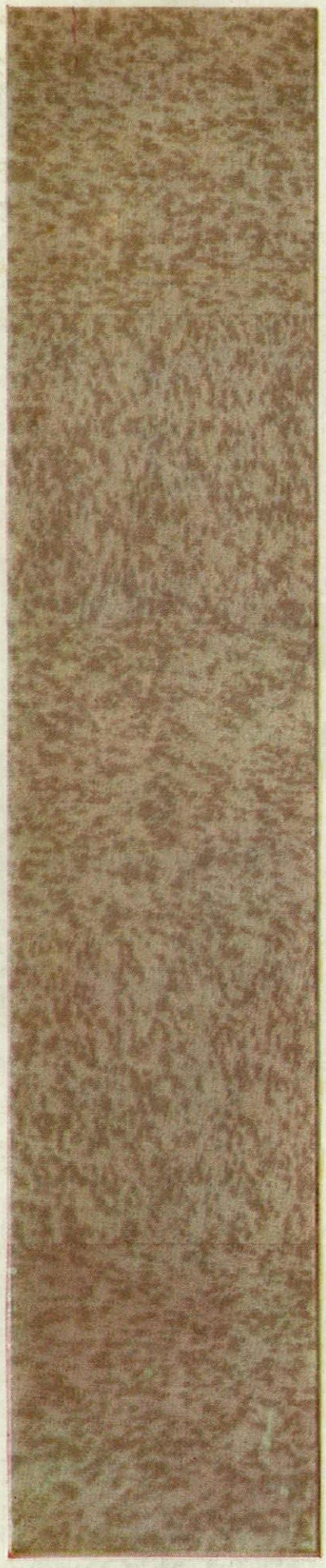

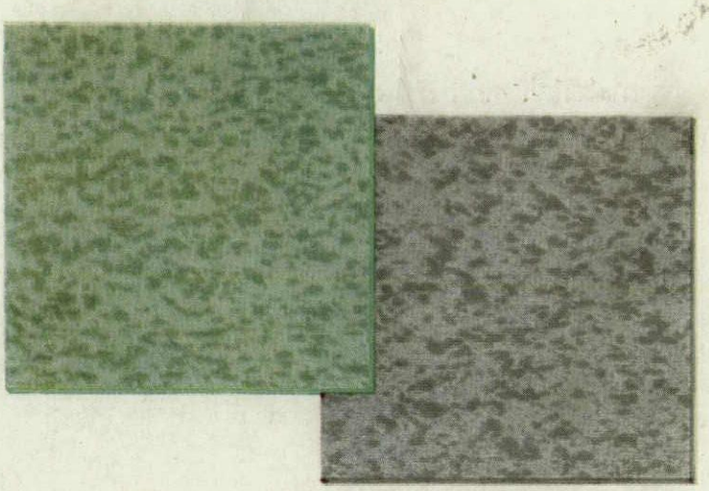

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