ARCHITECTURAL RECORD

MARCH 1965 • TWO DOLLARS PER COPY

BUILDING TYPES STUDY: SCHOOLS

"A NEW REGIONAL PLAN TO ARREST MEGALOPOLIS" BY LEWIS MUMFORD

FEDERAL ARCHITECTURE

FULL CONTENTS ON PAGES 4 & 5
Armstrong makes every kind of resilient floor. The best is the one that suits your design.

HERE, THE BEST IS TRAVERTEX EXCELON TILE.

A restful nook in the busy space-age complex of the new Westinghouse Molecular Electronics Laboratory—an AIA Award of Merit building. The richness of the exterior is captured in the interior by elegant furniture and a handsome floor, Travertex Excelon Tile. Travertex has the good looks of travertine with a smooth, very easy-to-clean surface. The graining helps hide dirt and scuff marks until the floor can be cleaned. And because it goes through the thickness of the 1/8" vinyl-asbestos tile, the graining lasts the life of the floor—never blurs or disappears in the most heavily trafficked areas. Travertex comes in 10 light and subtle colorings, styled for today's needs. 12" x 12" tile, as well as 9" x 9", is promptly available from flooring contractors in all parts of the country.

Because Armstrong makes every type of resilient floor, your Armstrong Architect-Builder Consultant can make expert and objective recommendations on floors best suited to your design. For more information on Armstrong floors, call him, or write Armstrong, 503 Rock Street, Lancaster, Pennsylvania.

Travertex and Excelon® are trademarks of Armstrong Cork Co.

ARCHITECTURAL RECORD March 1965
Oildraulic Elevator—pushed up by a hydraulic plunger

Electric Elevator—pulled up by an overhead machine

Look at cost. Specifying the right type of elevator for your projects can aid you in design as well as provide the best vertical transportation system. Dover Oildraulic Elevators, pushed up by a powerful hydraulic piston, are least expensive to install, require no penthouse, save building space and costs. They are recommended for buildings to seven stories and speeds to 200 feet per minute. For greater heights, where faster speed is required, you'll need electric traction (cable) elevators. Since Dover makes both types, we can recommend the elevator that will give your clients the best service for the least money.

TRACTION ELEVATOR OR
HYDRAULIC...which is best for your project?

Look at performance. Dover dependability has been tested and proved in more than 42,000 elevator installations, both low-rise and high-rise buildings. All the major components of Dover Elevators are manufactured in our own plants, and are electrically and mechanically mated for optimum performance, long, trouble-free life. Cabs and entrances are available to suit any decorative style you select. We deliver on time, too, to help keep your construction projects on schedule. And for the protection of your client’s investment, expert maintenance service is available wherever Dover Elevators are installed to keep them at peak operating efficiency.

Write for new Elevator Planning Guide or see Sweet’s Files.

DOVER ELEVATORS

Dover Corporation, Elevator Division
Dept. A-1, P. O. Box 2177, Memphis, Tenn.–38102

For more data, circle 2 on Inquiry Card
Architectural Engineering

THREE ECONOMICAL SOLUTIONS IN LIGHTWEIGHT STEEL FRAMING 188

Imaginative design produces cost savings in a space frame, a high-rise office building and a folded truss roof for a gymnasium

DETAILING A PRECAST PANEL FACADE 191

Demonstration of the step-by-step process in arriving at the shape, size, connections details and other technical aspects

ALUMINUM AND PLASTIC DOME FOR A PLANT ROOM 194

BUILDING COMPONENTS: A DESIGNATION SYSTEM FOR ALUMINUM FINISHES 199

PRODUCT REPORTS 201

OFFICE LITERATURE 203

READER SERVICE INQUIRY CARD 269

Architectural and Buildings

BIGGS, WEIR, NEAL & CHASTAIN. Amory Middle School, Amory, Miss. 178

BREUER, MARCEL AND NOLEN-SWINBURNE AND ASSOC. Housing and Home Finance Agency Office Building, Washington, D.C. 136

CURTIS AND DAVIS, FORDYCE & HAMBY ASSOC.: FRANK GRAD & SONS. Federal Office Building No. 5, Washington, D.C. 145

FROST, FREDERICK G. JR. & ASSOC. Pre-Primary School, New York School for the Deaf, White Plains, N.Y. 181

HELMUTH, OATA & KASSABAUM, MILLS, PITTICORD & MILLS. The National Air and Space Museum, Washington, D.C. 140

MIEN VAN DER ROHE, LUDWIG: SCHMIDT GARDEN & ERIKSON; C. F. MURPHY ASSOC. AND A. EPSTEIN & SON. United States Courthouse and Office Building, The Federal Center, Chicago, Ill. 125

MURPHY, C. F. ASSOC.; BEISWENGER, HOCH, ARNOLD AND ASSOC. The Federal Bureau of Investigation Building, Washington, D.C. 149

PEARCE & PEARCE, INC. Primary Unit, Penn Junction School, Pattersonville, Mo. 172

PERKINS & WILL PARTNERSHIP. THE. North Shore Junior High School, Glen Head, N.Y. 169

SCHIFFER, JOSEPH L. Trinity Lutheran Church, Chelmsford, Mass. 155

SHIAVER AND COMPANY. Sherwood Elementary School, Grosse, Colo. 176

SMITH, EBRELE M. ASSOC., INC. Henry Ford Community College, Dearborn, Mich. 184

SMITH, LINN, ASSOC., INC. Chapel for the University Presbyterian Church, Rochester, Mich. 160; Eastern Senior High School, Detroit, Mich. 174

TARAPATA-MACMAHON ASSOC., INC. Residence for Mr. and Mrs. William B. Buchanan Jr., Bloomfield Hills, Mich. 189

WIEDERSHEM, FREDERIC P. ASSOC. Candelwood Junior High School, Half Hollow Hills, N.Y. 189

Authors and Articles

Mumford, Lewis. "A New Regional Plan to Arrest Megalopolis" 147

Wolfe, Maurice. "Detailing a Precast Panel Facade" 191

ARCHITECTURAL RECORD March 1965
Features

MIES DESIGNS CENTER 125 Designing the new Federal Center in Chicago gave the architects a rare opportunity to plan some open space in the heart of the Loop

NEW FEDERAL ARCHITECTURE 135 Four buildings that represent some of the first tangible results of a new architectural policy

A NEW REGIONAL PLAN TO ARREST MEGALOPOLIS 147 An appraisal by Lewis Mumford of New York State's new development program

TWO CHURCHES THAT RESPECT TRADITION 155 A church by Joseph J. Schiffer and a chapel by Linn Smith Associates

WELL-ZONED HOUSE HAS BOLD SPACES 163 Separation of family, service and entertaining areas has enabled Tarapato-MacMahon Associates to create dramatic and flexible living spaces

RECORD

CONTENTS

March 1965

Building Types Study 343: Schools

INTRODUCTION 167

UNIT ADDITIONS CONVERT AN ELEMENTARY SCHOOL INTO A JUNIOR HIGH 169
North Shore Junior High School, Glen Head, New York. Architects: The Perkins & Will Partnership

COMPACT K-1 ADDITION FEATURES CARPETS AND FLEXIBLE PLAN 172
Primary Unit, Penn Junction School, Pattonville, Missouri. Architects: Pearce & Pearce, Inc.

HIGH SCHOOL CLUSTERS "LITTLE SCHOOLS" IN AN EXPANDABLE PLAN 174

DIVISIBLE CLUSTER PLAN FOR A COMPACT ELEMENTARY SCHOOL 176
Sherwood Elementary School, Greeley, Colorado. Architects: Shaver and Company

AN UP-TO-THE-MINUTE MIDDLE SCHOOL FOR VERY LOW COST 178
Amory Middle School, Amory, Mississippi. Architects: Biggs, Weir, Neal & Chastain

CIRCULAR AUDITORIUM SUBDIVIDES INTO FOUR 180

SCHOOL FOR THE DEAF ADDS FACILITIES FOR PRE-PRIMARY TRAINING 181

A COMMUNITY COLLEGE PROVIDES CAMPUS PLAN FOR TWO-YEAR PROGRAM 184
Coming in the Record

ARCHITECTURE FOR COMMUNITY
Take a difficult functional problem, imagine it must be solved on an
awkward site, suppose that the resulting building must be related to
nearby buildings (nondescript but varied), and assume that this must
be done within the confines of an unelastic budget—and the result can
be to give architectural meaning to a whole neighborhood. Or, as in
the case of Ulrich Franzen's design for the Cornell University Agra­
omy Building, a whole section of a campus. Next month's feature
will present the design concept in model photographs and special drawings.

BUILDING TYPES STUDY: APARTMENTS
The apartment buildings to be shown in the Record's survey will in­
clude a wide variety of types—high-rise, low-rise and detached units
located both in city and in country—and offer a high degree of amenity.
They are a careful selection of examples of the best current work in
the field; but an introductory essay raises the question: would deeper
study produce more meaningful solutions?

ARCHITECTURAL RECORD (combined with AMERICAN ARCHITECT and ARCHITECTURE),
title registered in U. S. Patent Office, copyright 1965 by McGraw-Hill, Inc. All rights reserved including
the right to reproduce the contents of this publication either in whole or in part. Quotations or bulk
reprints of articles available on request. Indexed in Reader's Guide to Periodical Literature, Art Index,
Applied Science & Technology Index, Engineering Index, and the Architectural Index.

ARCHITECTURAL RECORD is a McGraw-Hill-Dodge publication, published monthly, except May, when semi­
monthly by McGraw-Hill Publications, a Division of McGraw-Hill, Inc., 330 West 42nd Street, New York,

ARCHITECTURAL RECORD (combined with AMERICAN ARCHITECT and ARCHITECTURE),
title registered in U. S. Patent Office, copyright 1965 by McGraw-Hill, Inc. All rights reserved including
the right to reproduce the contents of this publication either in whole or in part. Quotations or bulk
reprints of articles available on request. Indexed in Reader's Guide to Periodical Literature, Art Index,
Applied Science & Technology Index, Engineering Index, and the Architectural Index.

ARCHITECTURAL RECORD is a McGraw-Hill-Dodge publication, published monthly, except May, when semi­
monthly by McGraw-Hill Publications, a Division of McGraw-Hill, Inc., 330 West 42nd Street, New York,
Can this be Asphalt Tile? It can—and is—remarkable new Kentile® Gravelle. Color shown: Brownstone with accenting feature strips. 4 other colors. 9" x 9" x 5/8".

New in asphalt tile ... textured Kentile Gravelle! Here's more quality, color, and styling than you've ever seen in asphalt tile. Each tile simulates random-size stones set in appealing textured relief. And its Group D price makes it perfect for commercial and residential installations where economy and long wear are musts. Samples? Call your Kentile Representative.
Concrete units... precast with speed and savings... using new Trinity White "High Early"

Architects... seeking unlimited flexibility in shape and color... are using white precast concrete units in more and more buildings. They are also using these units in larger sizes to obtain speed and economy in installation.

Casting... once something of a problem with large units... is simplified by the use of new Trinity White High Early Strength Cement. With "High Early," fewer forms are required because they can be stripped earlier.

IN INDIANA... Because of a tight production schedule, the precast white concrete panels for the Union Federal Savings and Loan Association Building in Indianapolis had to be produced on a daily basis. According to the manufacturer, "After 18 hours in the form, the panels, made of new Trinity White High Early, had sufficient strength to be handled and stored without breaking or warping." There were also fifteen white, exposed aggregate, folded plate roof members, 47' long and weighing 8 tons each, that were produced on a daily schedule. These units formed the ceiling for the directors' room on the top floor.

IN MONTANA... The principal structural and design features of the First National Bank Building in Missoula are concrete "trees" which form the column-panel section. These structural units were cast in fibre-glass forms... one per day per form... using Trinity White High Early Strength Cement and white quartz aggregate. The columns support 87' prestressed beams that clear-span the building.

For more data, circle 3 on Inquiry Card
To Break the Old Patterns

Another of the goals in President Johnson’s annual message of special interest to architects was the improvement of urban living. (The first, mentioned here last month, was more attention to beauty in the American scene.) The city improvement program is a direct challenge to the design professions, as well as a promise of substantial Federal support.

Some quotes:

“I propose that we launch a national effort to make the American city a better and more stimulating place to live.”

“An educated and healthy people require surroundings in harmony with their hopes.”

“In our urban areas the central problem today is to protect and restore man’s satisfaction in belonging to a community where he can find security and significance.”

“The first step is to break old patterns—to begin to think, to work and plan for the development of entire metropolitan areas. We will take this step with new programs of help for basic community facilities and neighborhood centers of health and recreation.”

“New and existing programs will be open to those cities which work together to develop unified long-range policies for metropolitan areas.”

“We must also make important changes in our housing programs if we are to pursue these same basic goals.”

“A department of housing and urban development will be needed to spearhead this effort in our cities.”

“Within our cities imaginative programs are needed to landscape streets and transform open areas into places of beauty and recreation.”

If this all doesn’t focus as sharply as a city planner might want, it still contains a large measure of rather tangible promise. The challenges shoot off in several directions, but architects and planners would be well advised to take a long look at these offerings of the President. And to take seriously the studies they imply.

Unfortunately it is not all as easy as a political speech seems to say. Most of our cities are charging forward with urban renewal programs, but they are encountering controversies, delays, inertia and sometimes just plain failures. It is not unusual for the best-laid of city plans to be greeted by the public with monumental indifference. The new “town houses” don’t sell, the apartment rentals seem too high, the merchants don’t rush in, racial strife is not unheard of, and the tax rolls don’t build up as expected.

Perhaps a Federal “department of housing and urban development” would help. Perhaps more Federal dictation is just exactly what we don’t need.

With no wish to be negative, this observer would offer the timid thought that so far the general level of planning has simply been inadequate. The planning, or replanning, of cities sufficiently good to appeal to an ever more prosperous people is a good stiff order, as Catherine Bauer Wurster pointed out in the December ARCHITECTURAL RECORD. One can read, almost endlessly, case histories of city rebuilding efforts. One hates to think of all of the drafting time, the colored paper and inks, the enthusiasms, the struggles, the money, the materials, which have gone into these schemes, and then sit and entertain doubts about the results.

Far be it from me to suggest that it shouldn’t be done, or that we can wait for the perfect solutions. But the fact is that our efforts are not presently being crowned with notable success either in intangible or tangible results.

Society so far has not seemed equal to the task. Maybe the Great Society can spark some hope in the deteriorating areas of our cities. Maybe then architects will have a chance to make a positive contribution.

—Emerson Goble
FOUR WINNERS ARE ANNOUNCED IN STEEL AWARDS COMPETITION

Four awards for "best design and engineering," shown on this page, were presented in the 1964 Design in Steel Awards Program sponsored by the American Iron and Steel Institute. Sixteen citations of excellence for design and/or engineering were also presented in four architectural categories. Presentations were made at a dinner in New York on February 4.

The awards jury consisted of Waldo G. Bowman, president of the American Society of Civil Engineers and publisher of Engineering News-Record; J. Roy Carroll Jr., F.A.I.A.; Robert L. Durham, Northwest regional director of the American Institute of Architects; Jon W. Hauser, president of the Industrial Designers Institute; Henry L. Kamphoefner, president of the Association of Collegiate Schools of Architecture; William C. Renwick, president of the American Society of Industrial Designers; Ronald B. Smith, past president of the American Society of Mechanical Engineers; Kurt F. Wendt, president of the American Society for Engineering Education; and Edward J. Zagorski, president of the Industrial Design Education Association.
When you ask for Dur-o-wal, you deserve to get Dur-o-wal. This is not a common masonry wall reinforcement, and there is no other brand "just as good." Dur-o-wal increases horizontal flexural strength of 8-inch block walls up to a proved 135 per cent. Does better than brick headers for the compressive strength of masonry walls. It's the universally acknowledged best in reinforcement for all kinds of masonry walls. So make sure you get the real thing: Look for the truss design which embodies the most efficient known principle for resistance to stress. And look for the Dur-o-wal end-wrap shown above. Want better walls? Want the facts? Write for Dur-o-wal Data File.

DUR-O-WAL
The Original Masonry Wall Reinforcement with the Truss Design

DUR-O-WAL MANUFACTURING PLANTS
- Cedar Rapids, Iowa, P.O. Box 150
- Baltimore, Md., 4500 E. Lombard St.
- Birmingham, Ala., P.O. Box 5446
- Syracuse, N.Y., P.O. Box 628
- Toledo, Ohio, 1678 Norwood Ave.
- Pueblo, Colo., 29th and Court St.
- Seattle, Wash., 3310 Wallingford Ave,
- Minneapolis, Minn., 2653 37th Ave. S.
- Hamilton, Ont., Canada, 789 Woodward Ave.

For more data, circle 4 on Inquiry Card
WINNER ANNOUNCED IN BOSTON COMPETITION

Cabot, Cabot & Forbes and Associated Architects Edward Larrabee Barnes and Emery Roth & Sons were selected on January 29 as the winners in a two-stage "developer's competition" for the design and construction of a 40-story office building as part of Boston's Government Center. The building will be situated on a site at 20 State Street which was designated as "Parcel 8" in the overall plan.

The other finalist in the competition was the firm of State Street Re-developers with Kelly & Gruzen, architects. Pier Luigi Nervi was design consultant for this project. A third team, consisting of State Street Tower Associates and Marcel Breuer and Samuel Glaser, associated architects for the competition, was withdrawn at the last moment for financial reasons.

Essentially, what was meant by a "developer's competition" was that financial feasibility as well as design concept would be judged.

Originally, there had been a verbal agreement between Cabot, Cabot & Forbes and the Boston Redevelopment Authority to execute the tower at 20 State Street. However, in 1963 when the B.R.A. went to the City Council in Boston to have its total program, which included the Government Center, approved, a majority of the council refused to approve the entire Gov-

continued on page 288


Left hand side of section shows tipped spandrel of red granite laminated to precast concrete. Wall elevation is superimposed over section

ARCHITECTURAL RECORD March 1965
Buildings in the News

ARCHITECTS: Kelly & Gruzen—Roland Thompson, associate in charge and Jordan L. Gruzen, associate in charge of design; DESIGN CONSULTANT: Pier Luigi Nervi; ENGINEERS: Seelye, Stevenson, Value & Knecht; LANDSCAPE ARCHITECTS: Sasaki Walker Associates; CONSTRUCTION CONSULTANTS: George A. Fuller Company; DEVELOPERS: State Street Redevelopers

Isometric section of typical floor and truss

ARCHITECTS: Kelly & Gruzen—Roland Thompson, associate in charge and Jordan L. Gruzen, associate in charge of design; DESIGN CONSULTANT: Pier Luigi Nervi; ENGINEERS: Seelye, Stevenson, Value & Knecht; LANDSCAPE ARCHITECTS: Sasaki Walker Associates; CONSTRUCTION CONSULTANTS: George A. Fuller Company; DEVELOPERS: State Street Redevelopers


South elevation

Detail elevation of wall

South elevation

ARCHITECTURAL RECORD March 1965
The American Institute of Architects has released the designs of three of the runners-up in the competition won by the Philadelphia architectural firm of Mitchell/Giurgola Associates, for the design of a headquarters building for the A.I.A. in Washington, D.C. (February, page 10). The three entries which were made public were those of Jean Labatut, F.A.I.A., and Carr Bolton Abernethy of Princeton, New Jersey; I. M. Pei & Associates of New York City; and The Perkins & Will Partnership of Chicago.

According to jury chairman Hugh Stubbins, these three entries were the ones considered by the jury to be the strongest contenders except for the winner. Other finalists in the year-long two-stage competition, which drew 221 submissions, were Donald Barthelme, F.A.I.A. of Houston; Charles B. Colbert, F.A.I.A. of New Orleans; and C. Julian Oberwarth & Associates of Frankfort, Kentucky.

In addition to Mr. Stubbins, the jury for the competition included Edward Larrabee Barnes, A.I.A.; J. Roy Carroll Jr., F.A.I.A.; O'Neil Ford, F.A.I.A.; and John Carl Warnecke, F.A.I.A. The professional adviser was A. Stanley McGaughan, A.I.A.

The A.I.A. competition called for “a building of special architectural significance, establishing a symbol of the creative genius of our time, yet complementing, protecting and preserving a cherished symbol of another time, the historic Octagon House.”

The text of the Labatut-Abernethy statement on their design concept follows. “Our objective has been to produce a headquarters building which complements the Octagon House. In scale and height the buildings are similar. In color and value, the Octagon’s brick will be matched by a dark, warm-hued aggregate and matrix in the cement panels of the new structure. Together, the buildings will assert their own familiarity within a neighborhood of higher office structures.

“The garden between the Octagon House and the new headquarters building is the link which binds them; i.e., the garden space flows uninterrupted into the exhibition and entry level of the headquarters building. The entrance bridge provides a protected entry into the mezzanine level from which a visitor can experience, but be apart from, the garden space and its activities. After office hours, tenant entry is accomplished through the escape stair at New York Avenue.

“The eastern side of the site cannot be depended upon for daylight, and there is a strong possibility that structures to the north will be replaced by ones which will block the light from the north. Therefore, a skylight, battered wall which will reflect direct south light has been placed on the eastern and northeastern limits of the headquarters building’s primary spaces. Behind this wall are

continued on page 112
Buildings in the News

47-Story Tower Rises in Montreal

The first of twin 47-story office buildings on Victoria Square, Montreal, Canada, designed by Pier Luigi Nervi and Luigi Moretti of Italy, is scheduled for completion in May. The second tower will be constructed after the close of Expo '67, the world’s fair to be held in Montreal. The buildings were designed in conjunction with Greenspoon, Freedlander & Dunne, Montreal architects, and Jacques M. Morin, architectural consultant. The bronze-toned aluminum and concrete structure will have three partially open structural and mechanical floors at the fifth, 19th and 32nd levels, and 48 other floors, each having nearly 20,000 square feet of rentable space. Associate engineers include D’Allemagne & Barbacki, structural engineers, and James P. Keith & Associates, engineering consultants. Ediltecnocl Ltd. is the project manager. General contractor for the $45 million project is the E.G.M. Cape & Co. Ltd.

Offices Surround Commercial Core

Decker Square in Bala-Cynwyd, Pennsylvania, a suburb of Philadelphia, will consist of six buildings, none higher than 100 feet, grouped around a two-block long “commercial core,” topped by a roof garden. Architects for the $55 million project are Welton Becket and Associates and Arthur Froehlich. The first stage of construction will include a seven-story curvilinear building, a nine-story square building and an eight-floor oblong building plus the covered mall in the center. All of the buildings will be interconnected through this core. The total complex will contain more than 1,300,000 square feet of office space. Underground parking will be provided for 500 cars with 4,800 additional spaces on the surrounding landscaped areas. General contractor is the Arthur A. Kober Company.

Complex Designed by Gropius

A three-building $7 million business center consisting of 11-story and five-story shopping and office structures and a seven-story parking garage is planned for Shaker Heights, Ohio. The buildings are designed by the Architects Collaborative, Cambridge, Massachusetts, with Walter Gropius as the partner-in-charge of the project. The center, which will be called Tower East, is financed by the Prudential Investment Company. Construction, which is expected to start this year, will be in two stages with the larger office building of 192,000 square feet and the garage in the first stage. The small office structure will have 47,000 square feet. The buildings will be faced with precast white concrete with a high content of quartz aggregate.
Think twice before you specify your next built-up roof.

New Barrett Bond Ply Roofing System gives 4-ply Class A protection... with only 2 plies.
We don't do it with mirrors. We do it by coating each side of the Bond Ply Coated Roofing Sheet with a heavy, even layer of asphalt. These factory-applied coatings assure a more uniform distribution than is possible with on-the-job moppings.

You get exactly what you specify in quality, weather protection and long life when you specify Barrett Bond Ply, the new built-up roof that's bonded for 20 years just like conventional 4-ply systems. By specifying the Bond Ply roof, you can effect greater control over installation costs. Just two layers of Bond Ply Coated Roofing Sheet to be put down instead of four layers of felt. Just two moppings instead of four. This faster, simpler application of the Bond Ply roof means that other trades can begin working sooner, too. So construction can proceed more efficiently, with important savings in time and money.

On your next built-up roof specification, be sure to indicate Barrett Bond Ply — the new kind of roof that provides maximum protection for your building ... with just 2 plies. Write for a complete fact-file "1 + 1 = 4."

Address Barrett Division, Allied Chemical Corporation, Dept. ARC-3, 40 Rector St., N.Y., N.Y. 10006.

BOND PLY is a trademark of Allied Chemical Corporation

For more data, circle 5 on Inquiry Card
In 1964, for the second year in a row, school and other educational building scored a healthy 7 per cent gain. This welcome spurt comes after a three-year period of virtually no change at all in the volume of new school construction, and offers the promise of at least as much additional growth in the year ahead.

But while the dollar value of new school construction (as measured by F. W. Dodge contract data) has advanced along with the vigorously expanding total of all nonresidential construction activity over the past two years, there's been little corresponding growth in the physical volume of new classroom space or other educational facilities being built. In fact, last year's educational building contracts provided slightly less aggregate square footage of floor area than was added back in 1957, a year that still stands as the peak for physical volume of new school building. Last year's dollar value was at an all-time high, though, at some 20 per cent above that of 1957.

Rising costs are only part of the explanation. School construction, to be sure, has been no exception to the steadily advancing trend of average construction costs. But, in addition to the escalator effect of prices, today's huge student body, because it is growing older, needs different facilities than were required a decade ago. And this shift upward to higher educational levels means, quite apart from rising building costs, a need for generally more complex and more expensive educational construction.

Another good measure of this, as well as a portent of the high level of school construction that can be expected over the next year or so, is given in the record volume of bond approvals for public educational building during 1964. In state and local elections all over the nation, voters last year gave their consent to borrow more than two and a quarter billion dollars for elementary and high school building, and nearly another half billion for public college and university construction. This tops the previous high (1963) by some 8 per cent for the grade schools (which make up the bulk of all educational building); and for higher education it marks a giant step.

Approvals for public college and university bonds last year were well more than half again as large as any previous year on record, and that only represents the smaller part of the total volume of long-term borrowing to finance construction of higher educational facilities. In recent years the combined bond sales of both public and private colleges and universities has amounted to between two and three times the volume of public bond approvals alone. And none of this includes the as yet undetermined amount of Federal grants and direct loans, or the non-Federal matching funds earmarked for college construction (which could run as high as a billion dollars a year for the next three years) now available under the Higher Educational Facilities Act of 1963.

Altogether, there's going to be an unprecedented volume of construction money available for educational building in 1965, and a bigger proportion than ever will be funneled into the area where the need is growing fastest: colleges and universities.

George A. Christie, Chief Economist
F. W. Dodge Company
A Division of McGraw-Hill, Inc.
There is virtually no limit to the design effects possible with the Armstrong Luminaire Ceiling System. Here in this commercial center the System enlivens the ceiling configuration of the bank at the left; adds functional beauty and visual unity to the high-rise tower at right.

Helmut Jacoby

For free technical data on the Armstrong Luminaire Ceiling System and a construction drawing of the ceiling variations shown here, write to Armstrong, 4203 Rock Street, Lancaster, Pennsylvania.

Ceiling Systems by Armstrong

For more data, circle 1 on Inquiry Card
Building Construction Costs

By William H. Edgerton
Manager-Editor, Dow Building Cost Calculator, an F. W. Dodge service

The information presented here permits quick approximations of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). The tables and charts can be used independently, or in combination as a system of complementary cost indicators. Information is included on past and present costs, and future cost can be projected by analysis of cost trends.

A. CURRENT BUILDING COST INDEXES—JANUARY 1965

1964 Averages for each city = 100.0

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>Cost Differential</th>
<th>Current Dow Index</th>
<th>Per Cent Change Year to Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 Cities</td>
<td>8.5</td>
<td>266.8</td>
<td>234.2</td>
</tr>
<tr>
<td>Atlanta</td>
<td>7.1</td>
<td>299.8</td>
<td>318.0</td>
</tr>
<tr>
<td>Baltimore</td>
<td>8.0</td>
<td>286.8</td>
<td>285.7</td>
</tr>
<tr>
<td>Birmingham</td>
<td>7.4</td>
<td>246.8</td>
<td>264.9</td>
</tr>
<tr>
<td>Boston</td>
<td>8.4</td>
<td>242.4</td>
<td>256.6</td>
</tr>
<tr>
<td>Chicago</td>
<td>8.8</td>
<td>295.5</td>
<td>311.6</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>8.8</td>
<td>257.4</td>
<td>276.8</td>
</tr>
<tr>
<td>Cleveland</td>
<td>8.3</td>
<td>278.9</td>
<td>284.7</td>
</tr>
<tr>
<td>Dallas</td>
<td>7.8</td>
<td>251.2</td>
<td>259.5</td>
</tr>
<tr>
<td>Denver</td>
<td>8.3</td>
<td>273.3</td>
<td>296.7</td>
</tr>
<tr>
<td>Detroit</td>
<td>8.9</td>
<td>267.7</td>
<td>283.9</td>
</tr>
<tr>
<td>Kansas City</td>
<td>8.3</td>
<td>240.8</td>
<td>257.2</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>8.4</td>
<td>270.2</td>
<td>295.6</td>
</tr>
<tr>
<td>Miami</td>
<td>8.4</td>
<td>264.5</td>
<td>278.6</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>8.9</td>
<td>269.8</td>
<td>285.8</td>
</tr>
<tr>
<td>New Orleans</td>
<td>7.9</td>
<td>239.4</td>
<td>257.9</td>
</tr>
<tr>
<td>New York</td>
<td>10.0</td>
<td>276.3</td>
<td>293.7</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>8.7</td>
<td>265.9</td>
<td>279.1</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>9.1</td>
<td>261.4</td>
<td>287.3</td>
</tr>
<tr>
<td>St. Louis</td>
<td>8.9</td>
<td>261.2</td>
<td>276.7</td>
</tr>
<tr>
<td>San Francisco</td>
<td>8.5</td>
<td>342.8</td>
<td>375.9</td>
</tr>
<tr>
<td>Seattle</td>
<td>8.5</td>
<td>245.3</td>
<td>274.2</td>
</tr>
</tbody>
</table>

B. HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES

1941 average for each city = 100

<table>
<thead>
<tr>
<th>Metropolitan Area</th>
<th>Cost Differential</th>
<th>Current Dow Index</th>
<th>Per Cent Change Year to Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 Cities</td>
<td>218.5</td>
<td>244.1</td>
<td>246.9</td>
</tr>
<tr>
<td>Atlanta</td>
<td>223.5</td>
<td>269.6</td>
<td>277.7</td>
</tr>
<tr>
<td>Baltimore</td>
<td>213.3</td>
<td>249.4</td>
<td>251.9</td>
</tr>
<tr>
<td>Birmingham</td>
<td>206.8</td>
<td>221.6</td>
<td>235.3</td>
</tr>
<tr>
<td>Boston</td>
<td>199.0</td>
<td>224.0</td>
<td>230.5</td>
</tr>
<tr>
<td>Chicago</td>
<td>211.2</td>
<td>287.8</td>
<td>273.2</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>207.7</td>
<td>245.1</td>
<td>250.0</td>
</tr>
<tr>
<td>Cleveland</td>
<td>226.7</td>
<td>256.9</td>
<td>257.9</td>
</tr>
<tr>
<td>Dallas</td>
<td>221.9</td>
<td>223.4</td>
<td>230.5</td>
</tr>
<tr>
<td>Denver</td>
<td>211.8</td>
<td>245.6</td>
<td>252.8</td>
</tr>
<tr>
<td>Detroit</td>
<td>197.8</td>
<td>237.4</td>
<td>238.8</td>
</tr>
<tr>
<td>Kansas City</td>
<td>213.3</td>
<td>236.5</td>
<td>239.0</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>210.3</td>
<td>248.4</td>
<td>253.4</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>195.4</td>
<td>254.6</td>
<td>249.3</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>213.5</td>
<td>235.6</td>
<td>249.9</td>
</tr>
<tr>
<td>New Orleans</td>
<td>207.1</td>
<td>232.8</td>
<td>235.1</td>
</tr>
</tbody>
</table>

COSTS IN AN AVERAGE COST CITY

1. BUILDING MATERIAL PRICE INDEXES

DEALER TO CONTRACTOR 1941=100 21-CITY AVER.

<table>
<thead>
<tr>
<th>Material</th>
<th>1941</th>
<th>1945</th>
<th>1946</th>
<th>1961</th>
<th>1963</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>100</td>
<td>120</td>
<td>125</td>
<td>140</td>
<td>150</td>
</tr>
<tr>
<td>Concrete</td>
<td>100</td>
<td>120</td>
<td>125</td>
<td>140</td>
<td>150</td>
</tr>
</tbody>
</table>

2. BASE WAGE RATES $/HR.

<table>
<thead>
<tr>
<th>City</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detroit</td>
<td>7.0</td>
<td>7.2</td>
<td>7.4</td>
<td>7.6</td>
</tr>
<tr>
<td>Chicago</td>
<td>7.0</td>
<td>7.2</td>
<td>7.4</td>
<td>7.6</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>7.0</td>
<td>7.2</td>
<td>7.4</td>
<td>7.6</td>
</tr>
</tbody>
</table>

3. MONEY RATE BOND YIELDS %

<table>
<thead>
<tr>
<th>Type</th>
<th>1941</th>
<th>1945</th>
<th>1946</th>
<th>1961</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA INDUSTRIALS</td>
<td>5.0</td>
<td>5.2</td>
<td>5.5</td>
<td>5.8</td>
</tr>
<tr>
<td>MUNICIPALS</td>
<td>5.0</td>
<td>5.2</td>
<td>5.5</td>
<td>5.8</td>
</tr>
</tbody>
</table>

HOW TO USE TABLES AND CHARTS: Building costs may be directly compared to costs in the 1941 base year in tables A and B; an index of 125.0 for a given city for a certain period means that costs in that city for that period are 2.5 times 1941 costs, an increase of 15.4% over 1941 costs. TABLE A. Differences in costs between two cities may be compared by dividing the cost differential figure of one city by that of a second; if the cost differential of a second (10.0) divided by that of a second (8.0) equals 125%, then costs in first city are 25% higher than costs in second. Also, costs in second city are 80% of those in first (6.0 x 10.0 = 60%) or 25% lower in the second city.

20 ARCHITECTURAL RECORD March 1965
The burglar arrived sometime after midnight, tried the usual tools, but succeeded only in tearing and twisting the Amarlock cylinder "scalp." He gave up, left without getting in, and this is what the store manager found: The calling card of a frustrated burglar!

After break-in attempt, lock still worked like new, opened for business as usual. Amarlock long-throw bolt shows deeper penetration length. Chrome-plated steel sleeve is armored reinforcement. New cylinder was installed in one minute flat, and the Amarlock stands guard—strong and reliable as the day it was new! Installed and serviced by Binswanger Glass Co., Charlotte, N.C., R. B. Williams, Manager.

The Case of the Unyielding Amarlock

Specify Amarlite . . . and an AMARLOCK stands guard at the door. It's built to take it! Built to stand up to rough treatment, even BURGLAR TOOLS . . . because the standard Amarlock cylinder is NOT screwed in; rather, it's inserted through a countersunk hole, then secured by a steel clip!

There's no extra cost for AMARLOCK protection. It's standard equipment on AMARLITE doors! Another standard protection feature—SECURITY CLIPS . . . easily installed . . . permit removal of glass stops from inside only.

Next job, specify AMARLITE aluminum entrances . . . superior in finish and design! For complete details . . . write for our catalog and specifications . . . or, look into Sweet's!

AMARLITE
DIVISION OF ANACONDA ALUMINUM COMPANY
MAIN OFFICE • P. O. BOX 1719 • ATLANTA 1, GEORGIA
Sales Offices and Warehouses: Chicago, Illinois; Cleveland, Ohio; Dallas, Texas; Paramus, New Jersey; Atlanta, Georgia; Los Angeles, California

For more data, circle 6 on Inquiry Card
Saturday's Hero!!!
(and Sunday's, Monday's, Tuesday's, Wednesday's, Thursday's and Friday's)

Everybody loves a hero. You will, too. There's something about an Amweld door. It stands above the crowd. It commands your confidence. Why? No single reason, really.

If you're an architect, you may admire the clean-line styling of the Amweld door... or you might have a healthy respect for its adaptability to an amazing variety of contract builders' hardware... or its maintenance-free durability... or its beauty. Then again, you could be one of the many who responds to Amweld's wide selection of door styles, sizes and types.

Contractors, on the other hand, seem to be attracted by the ease of installation of Amweld doors... their superb craftsmanship... their trouble-free performance... their economy. Very practical fellows, contractors. They have to be.

And, if you happen to be the lucky owner... or tenant... or customer... or visitor... or passer-by who will be using Amweld doors, you, too, can join the ranks of the hero-worshippers. It can be done. We've seen it happen. Send for our newest complete-line catalog, just off the press. Twenty-eight pages. It's yours for the asking.
PRESIDENT JOHNSON OUTLINES PROGRAMS FOR REALIZATION OF THE 'GREAT SOCIETY'

In a series of messages, letters and appropriation requests, President Johnson has started implementation of the programs for the "Great Society" outlined in his State of the Union address (February, page 23).

The Education Message, presented to Congress on January 12, was highlighted by a proposal by the President that grants be made to support extension programs by the universities in dealing with the urban problems of their communities. In this way the university can face the problems of the city "as it once faced problems of the farm."

The President outlined a six-part program for preserving natural beauty along the nation’s highways in a letter to Secretary of Commerce John T. Connor on January 21. Also on January 21, the President submitted a $392 million budget for the District of Columbia. The President asked Congress to make Washington a model area that would "exemplify the best" of the Great Society.

In the White House Message on Natural Beauty, delivered to Congress on February 8, President Johnson called for a new type of conservation, "not just the classic conservation of protection and development, but a creative conservation of restoration and innovation." Also on this date, the President called for appropriations for the construction of the Kennedy Memorial Grave.

**Education Message**

In the education message, the President pointed out that attendance in elementary and secondary schools will increase by four million within the next five years. Four hundred thousand new classrooms will be needed to meet this growth. But almost a half million of the nation’s existing classrooms are already more than 30 years old.

The babies born in the post-World War II boom in population have now reached college age, and that by 1970 the colleges must be prepared to add 50 per cent more enrollment to their presently overcrowded facilities.

"I propose that we declare a national goal of full educational opportunity," the President said. President Johnson then outlined a program for pre-school, elementary and secondary schools, and higher education.

In the field of secondary and elementary schools, the President called for aid to low-income school districts because of the imbalance of low-income families being concentrated in particular urban neighborhoods or rural areas.

A program of Federal grants for supplementary education centers and services within the community was proposed. These supplementary centers would provide such services as special courses, programs for the physically handicapped or mentally retarded, and laboratories, libraries, auditoriums and theaters.

The Federal government would also help to strengthen state educational agencies in such areas as the formulation of long-range plans.

In the field of higher education, the President called for a program of grants to support university extensions concentrating on the problems of the community.

"Today 70 per cent of our people live in urban communities. They are confronted by problems of poverty, residential blight, polluted air and water, inadequate mass transportation and health services, strained human relations and overburdened municipal services."

"Our great universities have the skills and knowledge to match these problems."

*continued on page 275*
FITS DIRECTLY INTO DUCT... SAVES SPACE... ELIMINATES ELBOWS...

COOK CENTRI-VANE®

Airfoil centrifugal wheel eliminates discharge turbulence
The all-aluminum Type CV Centri-Vane is built in 8" to 28" throat sizes. The motor is isolated from the air stream. It is cooled by outside air which enters the motor compartment through breather tubes. The exclusive airfoil impeller design maintains uniform velocity through the duct system and the blower itself. The blades are heliarc welded to a spherical hub. Centri-Vane blowers can be mounted in series for higher pressures. Universal mounting bracket is standard equipment.

Up-blast Type UCV Centri-Vane for use up to 3½" static pressure
Type UCV blasts fumes, particles or grease high above the roof. All-aluminum construction reduces maintenance. Butterfly dampers reach a full open position when the motor is energized — close automatically by gravity. The base fits a standard roof curb, or a COOK prefabricated curb. Available in 8" to 28" throat sizes, utilizing the standard Centri-Vane blower.

FOR BOTH CV AND UCV BLOWERS, ASK FOR CATALOG 65C, OR SEE SWEET’S ARCHITECTURAL FILE, SECTION 20C/co

THE LOREN COOK COMPANY
Dept. AR-3 • 640 North Rocky River Drive
Berea, Ohio

For more data, circle 8 on Inquiry Card
Today – This is Must Lighting to Protect School Grounds

If you’re planning to light outdoor areas adjacent to walls—your prime choice should be Wallpack®. This is the only luminaire engineered specifically for wall-mounting—designed to conform with modern architectural concepts.

- Out-of-the-Carton—On-to-the-Wall... All components including InBilt ballast and Prismascope® (automatic off-and-on) Control are pre-wired at the factory for time-saving installation.
- Prismatic Refractor, molded of Endural® glass, resists shock, weather and depreciation. High utilization of light over widespread areas means fewer units required. Easy relamping and low maintenance provide added economies. Wallpack takes incandescent or mercury lamps...
- Write for latest engineering bulletin.

**HOLOPHANE Company, Inc.** Lighting Authorities Since 1919 / 1120 Avenue of the Americas, New York 36, New York

New photoelectric "off and on" automatic control

Prismascope
STEPHEN FRANCIS VOORHEES IS DEAD AT 86

Stephen Francis Voorhees, a past president of the American Institute of Architects, died on January 23 at the age of 86. He was consultant to the architectural firm of Smith, Haines, Lundberg & Waehler, New York City, where he was a partner for 49 years. The firm which was formerly called Voorhees, Walker, Smith, Smith & Haines, changed its name on January 1, 1964.

Educated as a civil engineer at Princeton University, from which he graduated in 1900, he worked as a civil engineer for two years. In 1902, Mr. Voorhees joined the staff of Eidlitz & McKenzie as a civil engineer and superintendent of construction. In 1910, Cyrus L. W. Eidlitz withdrew from the partnership and Andrew C. McKenzie invited Mr. Voorhees and Paul Gmelin to become his partners. Following the death of Mr. McKenzie in 1926, Mr. Voorhees became the senior partner of the firm, holding this position until January 1959, when he became a consultant.

Mr. Voorhees was a trustee of Stevens Institute of Technology, a trustee of the Metropolitan Museum of Art, and a trustee emeritus of Princeton University. He was a director and president of Architects' Offices, Incorporated, a director of the Architects Samplers Corporation, a member and past president of the Princeton Architectural Association and the Princeton Engineering Association, a member of the American Society of Civil Engineers, the Architectural League of New York, and the American Institute of Architects.

Mr. Voorhees was one of the founders and first president of the New York Building Congress in 1921. From 1933 to 1935 he was chairman of the Construction Code Authority of the National Recovery Administration, which developed a code of ethics for the construction industry. In 1936 and 1937 Mr. Voorhees served as national president of the American Institute of Architects.

From 1936 to 1940 Mr. Voorhees was chairman of the Board of Design for the New York World's Fair. He served as supervising architect for Princeton University from 1930 to 1949.

Mr. Voorhees was elected to the College of Fellows of the American Institute of Architects in 1926 for his contribution to design, service to the profession and public service. He received the honorary degree of Doctor of Engineering from Princeton University and from Rensselaer Polytechnic Institute, and the honorary degree of Doctor of Fine Arts from New York University. Mr. Voorhees was an honorary member of the Royal Institute of British Architects, and the American Society of Landscape Architects.

GEDDES IS NAMED DEAN OF ARCHITECTURE AT PRINCETON

Robert L. Geddes has been named as dean of the School of Architecture at Princeton University, a newly created position. Mr. Geddes has been professor of architecture and civic design at the University of Pennsylvania's Graduate School of Fine Arts, where he has taught since 1952. He is a partner in the architectural firm of Geddes, Brecher, Qualls and Cunningham of Philadelphia.

Mr. Geddes did undergraduate work at Yale and received a Bachelor of Architecture degree in 1950 from the Harvard Graduate School of Design. He traveled abroad for a year on a Harvard Appleton Fellowship.

Since 1959, Mr. Geddes has served the Redevelopment Authority of the City of Philadelphia as chairman of the board of design for its center city development. He is a director of the Philadelphia Citizens Council on City Planning, and is a member of the Philadelphia Housing Association, the Committee on City Policy, and the Franklin Institute Committee on Sciences and the Arts.

Mr. Geddes received the First Honor Award of the American Institute of Architects for his design of the building for the Moore School of Electrical Engineering at the University of Pennsylvania. He has also received gold medals from the Institute's Philadelphia chapter in 1958 and 1963, and received silver medals from the Pennsylvania Society of Architects in the same years.

Mr. Geddes is a member of the American Institute of Architects, chairman of the National Committee on Design Discipline and a member of the National Committee on Urban Design. He was a consultant on urban architecture and planning to the Rockefeller Foundation in 1962.

The appointment will become effective on July 1, with the retirement of Professor Robert William McLaughlin, who has been director of the school since he joined the faculty in 1952. At that time the title will be changed from director to dean in recognition of the increasingly important role which the 45-year-old school has assumed within the university, according to President Robert F. Goheen. Mr. McLaughlin plans to engage in private practice, consulting work and writing.
The chips go all the way through!

The pattern never wears out!

Beauty is more than skin deep in Ruberoid’s new ROYAL STONEGLOW vinyl asbestos tile. The chips go all the way through, so the flowing stone pattern keeps its bright, colorful, strikingly fresh look... for the life of the floor.

ROYAL STONEGLOW is ruggedly durable, resilient, resistant to scuffs, dents, stains—it’s designed to meet the challenge of heaviest floor traffic, yet stays beautiful, through and through! In 5 rich stone colors, size 12” x 12”, 3⁄8” and 3⁄4” gauge. Call your Ruberoid representative or write:

For more data, circle 11 on Inquiry Card.

Arctic White 5551  French Green 5552  Worsted Gray 5553  Taffy Beige 5554  Smoky Beige 5555
Heating And Cooling Thru Hollow Concrete Floor Cells At New Americana

One 25-foot length of metal duct, which serves the living room and feeds into hollow Flexicore ceiling cells, will be the complete air distribution system for each of the 2000 apartment units at Americana Landmark, Baltimore. Each unit has its own heating and cooling system in an adjoining equipment closet. Return grille is in living room wall, and feeds directly into the heating-cooling unit.

Exhaust fans in kitchen and bath provide circulation to these areas.

Hi-Stress Flexicore slabs, prestressed with high-tensile 7-wire stress-relieved stands, clear span 22 feet between bearing walls and give fast erection, firesafe structure, and attractive panelled ceilings. Hollow concrete decks, plus ½” rigid insulation, wood parquet flooring and wall-to-wall carpet kill floor-to-floor sound.

Americana Luxury Apartment Communities now operate over 5000 rental units, principally near Baltimore and Washington.

Ask for Flexicore Fact 101 for complete report on this project. Write The Flexicore Co., Inc., Dayton, Ohio 45401, or look under "Flexicore" in white pages of phone book.

Sees, hears, records, reveals, checks, adjusts, alarms, remembers, analyzes, starts and stops, and pays for itself within 3 years!

Now! 1-man Building Control from Honeywell

One man with a Honeywell Automated Control Center can control any building you design.

He sits at a compact control panel. From it he can control fire protection, clocks, security, temperatures, humidity and equipment. In fact, he can handle practically everything except maintenance and repairs without leaving his chair. Constant supervision replaces periodic inspections.

Only Honeywell can design, manufacture, install, guarantee and service all the equipment your clients need to control buildings this modern way. Only Honeywell specialists can help you and your engineers coordinate the whole job. One source, one responsibility. Honeywell simplifies building control. We supply everything but the man.

Free booklet for Architects

ONE MAN BUILDING CONTROL BY HONEYWELL

Contains information on the operating economies and applications of automation in controlling all kinds of buildings. Send to Mr. W. N. Wray, Honeywell, Dept. ARS-122, Minneapolis, Minnesota 55408.

Honeywell
Select Russwin Unilocs for durability
Russwin Uniloc® Locksets offer a graceful solution to durability problems.

These husky locksets are designed to take the toughest treatment in high-traffic zones—in offices, in stores, in schools, and in hospitals.

Uniloc's one-piece extruded brass frame holds precision parts in smooth working alignment for millions of openings and closings. And installation is simple. One notch and factory assembled locks are installed as they come out of the box!

Your bonus: design beauty. Doorware designs that help you dramatize . . . accent . . . enrich. Designs that complement your doors, your interiors, your overall concept—for the life of your building.

Have your Russwin supplier show you today's Uniloc Lockset designs or write direct to Russwin, Division of Emhart Corporation, New Britain, Connecticut.

...get beauty as your bonus!
Custom Stainless Steel
by ELKAY

whatever you design, Elkay can bring off

When the need for maximum convenience goes beyond the scope of standard products, feel free to design. Elkay is well-qualified to meet the challenge of creating custom-made products of stainless alloys that exactly answer your requirements.

Elkay is the world's oldest and largest producer of standard and custom stainless steel sinks.

Write for information.

ELKAY
new concepts in stainless steel sinks

Elkay Manufacturing Co. • Broadview 10, Ill.
PermaCushion® Floor System — Floor floats on resilient pads attached to treated sleepers. Sleepers do not contact the slab, preventing moisture transmission. Air circulates under floor preventing condensation.

Robbins permaCushion Northern Maple Floor guarantees satisfaction in activity rooms

This ideal floor system for gymnasiums, auditoriums and multi-purpose rooms gives uniform resiliency, dimensional stability and long wear. The installed cost is most reasonable—approximately $1.35* per square foot.

Precision-milled, tough-fibered MFMA Northern Hard Maple Flooring, installed according to Robbins Perma-Cushion specifications, has proven successful in thousands of floors. Installation is guaranteed by a fully qualified floor contractor to assure trouble-free service. For specifications and name of the nearest franchised installer, write: Robbins Flooring Company, Dept. AR-365, White Lake, Wisconsin. See our catalog in Sweet's Files.

*National average, installed cost for 33/32" 2nd and Better Grade.
"Here are five of our reasons for recommending all-electric design for this new Mountain View School"
New Kawneer UNIT WALL 1200 System assures leak-free performance! Even with Operating Vents!

Outside, raging gale winds and rain! Inside, bone dry! Rigorous static test results assure that you can now specify an aluminum wall system with operating vents which provides weathering performance better than NAAMM standards. (See Metal Curtain Wall Manual by NAAMM, A.I.A. No. 17-A.)

Only Kawneer has the features that make this possible . . . 1) pressure equalization slot of Sealair Vents, proven by independent tests to be leak-proof even under hurricane conditions, and 2) split mullion construction of Kawneer UNIT WALL Systems takes thermal expansion stresses away from joint sealants; preventing possible damage and subsequent leakage.

Such engineering leadership, plus Kawneer's experience on thousands of installations of both windows and wall systems, results in new UNIT WALL systems that out-perform any other, regardless of cost!

Permanodic* finishes, too! Kawneer's anodic hard color finishes can enhance your design while resisting abrasion, corrosion and ravages of time and weather.

If your next job is a one or two-story building, specify Kawneer Series 1200 or 3000. If it is a multi-story, specify Series 1250. For complete information on Kawneer architectural products and Permanodic finishes see Sweet's File 3a/KAW. Write for specification file, number WS-65.

For more data, circle 37 on Inquiry Card

ARCHITECTURAL RECORD March 1965 45
A monthly roundup of reports on new books of special interest to architects and engineers

Practice Guide
For Architects


This book puts together—and adds some material to—a series of articles, first published in the Journal of the A.I.A., which can be fairly said to reflect a new era in A.I.A. history. When the Journal series began, Mr. Hunt (now the Journal’s publisher), was a senior editor of ARCHITECTURAL RECORD, which had for several years been urging, through its series “The Image of the Architect,” increased attention to the broadening scope of architectural practice and the new informational needs it implied for the practicing architect. During much of the same period, an A.I.A. Committee on the Profession had been attempting to define a new concept of “comprehensive services” to meet the new challenges of architectural practice in an age marked by awesomely complex changes in the scale, the technology and the pace of practice. The Journal articles, published during 1962, 1963 and 1964, represented a major effort by the A.I.A. to equip its membership for the responsibilities recognized in the 1960 and 1962 reports of the Committee on the Profession.

The book has been organized in six sections—The New Role of the Architect; Principles of Comprehensive Architectural Services; The Architect and His Client; Promotional Services; Project Analysis Services; Related and Supporting Services. An important addition to the material previously published is an article by Charles Luckman, “Budget Estimating and Cost Control.”

Housing and the City

The subject of this book is New York City: its Negroes, Puerto Ricans, Jews, Italians and Irish; but its commentary on “the role of ethnicity” in the life of New York, past and present, has far wider implications in an age in which many seem to consider that “integration” is the key to solution of so many urban ills. The thesis of the authors is that the melting pot did not happen—at any event not in New York nor in other cities which have had large and distinct ethnic groups. “The notion that the intense and unpremeditated mixture of ethnic and religious groups in American life was soon to blend into a homogenous end product,” they assert, “has outlived its usefulness, and also its credibility. In the meantime, the persisting facts of ethnicity demand attention, understanding and accommodation.”

The crucial fact as they see it is that “the ethnic group in American society became not a survival from the age of mass immigration but a new social form.” And in New York, the fact that ethnic groups are also interest groups they regard as perhaps the single most important fact about them.

Each of New York’s five principal ethnic groups is analyzed in turn—its history, its differing levels of achievement, the cultural and social values the authors consider it shares, its relation to the economic and political life of the city.

The authors are both native New Yorkers. Nathan Glazer, a sociologist who has taught at the University of California and Bennington and Smith Colleges, was for eight years associate editor of Commentary and has written a number of books, including “American Judaism” (1957) and “The Social Basis of American Communism” (1961). Daniel Patrick Moynihan Jr., has been active in public affairs in New York State since serving on the campaign staff of Mayor Robert Wagner in 1953. Now an Assistant Secretary of Labor, he has been in Washington since 1961.


This group of papers on cooperative housing covers five major subjects: cooperative principles and practices; the history and rationale of cooperative housing; organization and operation; structure for cooperative housing development; and cooperative housing in New York City. An appendix includes model by-laws, a model subscription agreement and typical financial documents (among them a model budget for estimated development costs and capital requirements).

Material is drawn from various sources—conferences, periodicals, reports, speeches, etc.—and includes some articles written especially for this volume. The editor, who is director of research of the Fund for Urban Improvement and of the Association for Middle Income Housing, has not ignored the problems.

continued on page 50
Most desks are designed from the outside in. This one is different.

- Different in many significant ways—because we designed our 4200 Series desks from the inside out. We began with our traditional quality in engineering and construction. Next, we designed in a whole new group of features. Full-depth reference shelf. One lock to control all drawers. Mitered drawer fronts for permanent flush alignment. Extra-strength legs. Extra-rigid pedestals. And, a remarkable new thin-line center drawer with deep-drawer capacity. Then—and only then—did we finalize the handsome and totally flush exterior design. The result is design/plus... desks with the classic design your customers want, plus the quality construction and convenience features they have a right to expect. You'll want to consider the 4200 Series for your next office project. We'll help by sending you our new full-color literature; just write Dept. G. Steelcase Inc., Grand Rapids, Michigan; Los Angeles, California; Canadian Steelcase Co., Ltd., Don Mills, Ontario.

The 4200 Series is fully coordinated in design, color, and function for use with all current Steelcase office furniture.
High Strength Sheffield Steel Joists used in unique semi-circular auto showroom

The new 140,000 square-foot Richardson Chevrolet Company building complex in Houston, Texas, includes a new-car showroom of an unusual semi-circular design. A special framing arrangement, within the circular shape of the roof, made it possible to use economical Sheffield High Strength (H-Series) Joists in seven rectangular areas.

Sheffield H-Series Joists are made from steel having a 50,000 psi minimum yield point, and are produced to the widely-accepted specifications of the Steel Joist Institute.

By taking advantage of the high-strength-to-weight-ratio of Sheffield High Strength Joists, designers can minimize dead weight. Reduction of dead load permits lighter framing, and may even permit foundations designed for less loading. In addition, the open space in all Sheffield Joists web sections accommodates ductwork, wiring and other mechanical equipment.

Sheffield Joists, including the J-, LA-, and LH-Series, are readily available through leading fabricators and constructors. For complete data on Sheffield Joists, write for our latest catalog, or see Sweet's Architectural File. Armco Steel Corporation, Steel Division, Department W-305A, 7000 Roberts St., Kansas City, Mo. 64125.

For more data, circle 40 on Inquiry Card

ARMCO STEEL
FINLANDIA:
LOOKS AS GOOD AS IT LOCKS

Sure Yale locks lock. Safe. But nobody ever looked inside and said "Hey, that's beautiful." That's why we spend so much time on the part people see. Isn't that the part you're interested in?

Available with Yale 9000 or 4000 series mortise locks
ARCHITECTS SIMPLIFY HEATING SOLUTIONS WITH REZNOR UNIT HEATERS

Why? Because REZNOR's broad line permits a better choice of fan, blower or enclosed type units that can be suspended anywhere for comfort heating. They are compact, quiet and trouble-free. High quality plus special installation and service features save time and money. REZNOR has been in the gas heating business exclusively since 1888. Now performances everywhere prove that THERMOCORE does give you MORE reliability, MORE adaptability and MORE serviceability.

See your local representative. Look for REZNOR in the Yellow Pages. For our latest THERMOCORE Catalog write today to Dept. C5-2A.

Required Reading

continued from page 46

CONDONMINIUM, HOUSING FOR TOMORROW. A Study Prepared by Graduate Students at the Harvard Graduate School of Business Administration; Walter T. Tower Jr., editor. MR Management Reports, 38 Cummington Street, Boston, Massachusetts, 02215. 44 pp., $15.00.

This is an expensive brochure, but one which should be of considerable interest to those who are involved, or may be involved, with the problem of the condominium. The report it contains was originally done by a group of second-year students at the Harvard Graduate School of Business Administration as part of a course requirement and was intended to fill a gap in the literature on condominiums, by attempting a deeper and more general analysis of experience with condominiums than had so far been done. Existing literature had focused largely on legal or financial aspects, or on experience with specific projects.

This study was not limited to published material, but relied heavily on personal interviews with people experienced with condominium, and also drew on correspondence with such people both in this country and abroad.

One conclusion of special interest to architects was that a prime factor in the success or failure of condominium is "the architect's ability to most closely provide those amenities which would normally be contained in the single house." A section on "design" does not attempt to suggest how this should be done, but it does present an interesting summary of attitudes of condominium owners based on interviews with many of them.

Books Received


continued on page 54

This terrazzo road map is for pedestrians

The world's largest map, and the most traveled, is this terrazzo flooring at the New York World's Fair. Half the size of a football field, it shows every major highway, community, river and lake in the Empire State. The intricate design was precast in 4' x 4' units and then assembled at the job site. It will never curl, lift or wear thin... never need waxing or buffing. When you plan decorative, hard-wearing terrazzo floors, wainscots, stairs, specify a matrix of ATLAS WHITE portland cement. Its uniform whiteness brings out the true color of aggregates and pigments. Ask your local terrazzo contractor. Or write Universal Atlas Cement Division, United States Steel, 100 Park Ave., New York, N.Y. 10017.

For more data, circle 43 on Inquiry Card

Architectural Record March 1965 51
Specify Frantz Filuma Garage Doors and give your clients a many-faceted bonus. First, there's the inherent esthetic beauty of their translucent fiberglass panels set in aluminum frames to give a dash of color outside while they let cheerful natural light inside. And because of better lighting inside, productivity and morale go up. Second, is Filuma's no-maintenance factor. Fiberglass panels are pressure sealed* into the aluminum frame... never pull loose... are shatterproof and weatherproof. Your client just hoses them off to keep them bright as new. Special zinc-plated hardware won't rust. Rollers have hardened ball bearings and raceways for longer life, smoother operation. And Filuma is available in tan, coral, green or white in sizes up to 24 feet wide by 20 feet high. A special "one-man" movable centerpost lets you design opening widths to infinity. Specify the beautifully functional door... FILUMA by Frantz.

*Filuma Garage Doors Are Protected Under U.S. Patent Nos. 194094, 3104699

FRANTZ MANUFACTURING COMPANY
Department 20 • Sterling, Illinois

The Nation's Foremost Manufacturer of Fiberglass/Aluminum Garage Doors

For more data, circle 44 on Inquiry Card
Skylights of acrylic sheet cast from Du Pont LUCITE® help Harris County Domed Stadium conquer the Texas climate

Even non-Texans have to agree that the new Harris County Domed Stadium, future home of the Houston Astros, is an extraordinary architectural achievement. It is a nine-level, luxuriously appointed stadium in which 66,000 spectators can watch sports events and shows of all types in air-conditioned comfort.

The most difficult problem facing the architects was the construction of the dome, 645' in diameter and rising 202' above the playing field, it is the largest clear-span steel-and-plastic dome ever built. For the 4,600 skylights in the steel Lamella frame, the architects chose acrylic sheet cast from LUCITE acrylic monomer because of its unique combination of properties.

Having excellent optical clarity, LUCITE admits the light spectrum needed to grow grass on the playing field. Strong, shatter-resistant and weatherable, the sheets of LUCITE will withstand winds of 180 mph and give many years of trouble-free service. Lightweight and easy to fabricate, LUCITE allowed the architects to design a double-layer skylight construction that aids insulation, cuts glare and eliminates harsh shadows of the structure on the playing field. Each skylight consists of a .187-inch-thick inner layer with a prismatic light-difusing surface and a crystal-clear .250-inch-thick outer layer with a 1½-inch air space between.

For information on sources of acrylic sheet cast from LUCITE, write Du Pont Co., Dept. A, Room 2507L, Wilmington, Delaware 19898.
Using Symons Steel-Ply Forms, Reid Construction Co., of Randallstown, Maryland, formed foundations for a 129-home section of the new Glen Arden community in Prince George's County for an average material cost of one cent per square foot.

Reid's Steel-Ply Forms, purchased three years ago, have more than paid for themselves. Each panel has been re-used at least 200 times without refinishing.

On the Glen Arden project, Reid averaged one complete foundation each working day. Basements, 26 feet in width, vary in length from 24 feet 8 inches to 36 feet 8 inches. Walls are 8 inches thick, with light re-bars tied horizontally at two points to control cracking.

Walers were used only at the top of the formwork, with light bracing to the adjacent bank. Basements cut into sidehill lots, with three walls poured-in-place on concrete footings 8 inches deep by 16 inches wide. The fourth wall was filled in with brick and block for architectural variety.

3,400 square feet of Symons Steel-Ply Forms were used on the project. Symons Steel-Ply Forms are available for rental, purchase, or rental with purchase option. Detailed information available upon request.

For more data, circle 46 on Inquiry Card
NOW... REDUCES THE COST OF OFF-THE-FLOOR INSTALLATIONS

WITH VERTICAL LONG BARREL FITTINGS

It is generally conceded that off-the-floor fixtures are more sanitary and far easier to maintain than the pedestal type. Now... Josam makes them even more desirable by reducing their installation costs. For example, the new Josam Vertical Long Barrel Fittings eliminate caulk joints in the slab, permit water closet, lavatory and bath to be wasted into a single fitting... saving material, time and money.

Why take less than the best—when it costs no more to have Josam?

AND OTHER MONEY SAVING FEATURES

- **POSITIONING FRAME**
  Simplifies alignment of carriers... acts as template for wall finish, open design provides accessibility.

- **COMMON VENT**
  On double fittings, it saves chase space... reduces number of connections.

- **BULLDOG FEET**
  Triangular, for extra support... short so as not to interfere with finished floor.

- **INVERTIBLE FACE PLATE**
  Permits carrier to fit all types of closets, syphon jet or blow-out.

Write for Manual F-4.

Josam Manufacturing Co.
Michigan City, Indiana

Josam products are sold through plumbing wholesalers

For more data, circle 48 on Inquiry Card
When sections are butted together for a continuous run, inter-locking tabs assure perfect alignment—result is a decorative inconspicuous slot.

Architects and interior designers agree there is practically no limit to where and how decorative functional Stripline slot-type diffusers can be utilized. Regardless of the desired placement, Stripline's slim-trim conformation can be incorporated to blend in with the general scheme without calling attention to the mechanical installation.

When desired as a straight-line decorative border, curved, arched, or shaped to accommodate a slight contour, you can depend upon the versatility of a seamless continuous unit regardless of length.

Stripline slot-type diffusers are made of aluminum extrusions, designed with a slim-trim styling... no visible attaching screws... seamless appearance regardless of length... separate plaster frames... removable core... design eliminates complicated and expensive duct connections... simplified installation... built in diffusing vanes for engineered air distribution.

To assist in selecting and sizing the type Stripline best suited to your requirements, you can depend upon the reliable data printed in catalog ES. 105. Write for your copy.
MODERNFOLD
the long division line

SOUNDMASTER

Powerfully built leader of the Modernfold line. Blocks sound with twin steel walls, sheathed in thick, tough “Cord Mesh” vinyl. So effectively controls noise that the Soundmaster 480 has earned a Sound Transmission Class of 40 at Geiger & Hamme Laboratories. (Test data available on request.) Four models. All may be electrically or manually operated. Welded double-truss hinges. Patented jamb-lock wall attachment and air release system. Single widths to 60’ 0”; heights to 27’ 0”. Complete installation versatility for school classrooms and auditoriums, churches, offices, hospitals and restaurants.

For more data, circle 67 on Inquiry Card
Maas-Rowe Carillons, Los Angeles, used 4 x 4 x 3\(\frac{3}{8}\)-in. Bethlehem Hollow Structural Sections for the legs of the "Tower of 1000 Bells" at entrance to International Plaza. Center and crossarms (from which hang heavy carillon bells and hundreds of "Bells of Sarna" from India) are 2-in. square Bethlehem hollow structural. All connections were field welded.

All 146 sizes and gages of Bethlehem Hollow Structural Sections (nation's widest variety) are cold-formed from blast-cleaned steel to give you a smooth surface you'll be proud to paint and expose. Good reason to specify Bethlehem.

Plate glass, enclosing Symphonic Carillon at base of tower, is mounted direct to structural members.

Bethlehem Hollow Structural Sections are at the fair

Visit the International Plaza and you'll see that what we've been saying about their smooth surface is true . . . it paints beautifully!

For more data, circle 68 on Inquiry Card
ACOUSTI-SEAL

Separates the noise of people from the noise of people better than a permanent wall of eight-inch concrete block. Sound Transmission Class 51! (Test data available on request.) Panels connect in pairs. Move easily into place and are tightly locked together by a manually operated lever. Store in a neat, compact stack. Factory-applied lifetime vinyl or genuine wood veneer finishes. Optional tackboards and chalkboards. Used in audio-visual, team-teaching and choral-music classrooms; motel and hotel meeting rooms and executive conference rooms.

For complete specifications, see Sweet's File 22d/Ne or consult your nearby Modernfold distributor.

New Castle Products, Inc., New Castle, Indiana

For more data, circle 69 on Inquiry Card
Take a closer look
at a new look
in central air conditioning!

It's our new Carrier Moduline Weathermaster® unit.

With clean, functional lines, it almost disappears into any type of hung ceiling—acoustical tile, exposed T-bar, concealed Z-bar or lath-and-plaster.

And integrates with lights in dozens of different ways.

But pleasing as it is to look at, there's a lot more to this new all-air ceiling terminal than meets the eye.

Moduline® has all the advantages of variable volume air distribution, with none of its disadvantages. None? None!

To be explicit: It provides automatic room-by-room temperature control with a low-cost, space-saving single duct system.

The air pattern in each room is always right—no drafts, no stratification, no waterfall at any volume, from low to maximum.

It's quiet, too, and fully self-balancing. Each terminal compensates constantly for duct pressure changes. Adjustable factory-installed controls are powered by the supply air. No external wiring or pneumatic connections. Just dial the required supply air volume—the unit does the rest.

There are other advantages—too many to mention here.

You'll find the complete story, with technical details, in the Carrier Moduline Weathermaster Unit brochure. Ask your Carrier representative for a copy. Or write us at Syracuse 1, N. Y. In Canada: Carrier Air Conditioning (Canada) Ltd., Bramalea, Ontario.

Carrier Air Conditioning Company

More people put their confidence in Carrier air conditioning than in any other make

For more data, circle 70 on Inquiry Card
COIL-WAL

A giant partition of vertical wood members. Coils away in a unique, space-saving coil box. Opens out to fill openings up to 150' x 30'. Ideal for gymnasium and auditorium subdivision. Kiln-dried wood members of select fir are joined together with pre-stressed steel cables. Built to withstand impact and rough treatment. Wide choice of other woods and plastic laminate finishes. Installations may be curved or straight. Electrical operation makes movement of these giant wood walls simple and safe. Two models: single or double (sound retarding).

For complete specifications, see Sweet's File 22d/Ne or consult your nearby Modernfold distributor.

New Castle Products, Inc., New Castle, Indiana

For more data, circle 71 on Inquiry Card
A SECRETARIAL DESK FROM OUR 400 LINE DESIGNED BY KNOLL

SHOWROOMS AND DEALERS IN ALL PRINCIPAL CITIES

ART METAL INC
JAMESTOWN, NEW YORK

For more data, circle 72 on Inquiry Card
New massive member of the Modernfold line. Provides top efficiency in sound control for a folding wall. Sound Transmission Class is rated at 44. (Test data available on request.) Its rugged steel frame is cased in hard surface, vinyl-clad steel panels. Inside, mineral fiber insulates the full length of the panels. Joined, but separate, these panels draw clean, vertical, straight lines from floor to ceiling. Vinyl cannot pucker or wrinkle. Takes high abuse. From classroom sizes to auditorium or other giant sizes. Single widths to 150'0"; heights to 30'0". Electric operation is automatic with the turn of a key.

Write direct for complete specifications and descriptive literature.

New Castle Products, Inc., New Castle, Indiana
General Foods Wanted a 20-acre fire-rated roof that wouldn't wrinkle or split

They got it—via the Fiberglas* taped joint roofing system.

It's the roof over the Jell-O/Dover plant in Delaware. Four major food-processing plants are consolidated here...the largest construction investment General Foods has made.

One requirement was a Class A Fire Rating at lowest in-place cost. That's one reason why Fiberglas was specified. Fiberglas Roof Insulation provides the best Fire Rating you can get on a steel deck using steep asphalt. It is, in fact, acceptable for lowest rate fire insurance under standards of performance established by both Underwriter Laboratories and Factory Mutual.

Fiberglas insulation board, 4' x 4', was used. Again, for good reason. As opposed to standard 2' x 4' insulation, it meant 4.7 fewer miles of joints. It cut down the areas at which failure occurs. And, the inorganic properties of Fiberglas eliminate warping and buckling, providing the best base for every built-up roof.

Fiberglas Taped Joint Roofing System was selected because it "welds" all insulation joints firmly together with glass-fiber reinforced 6-inch tape applied with steep asphalt. The "unitized" Insulation literally becomes an expansion joint between the deck and built-up roof. It absorbs shock, distributing heat leaks and ridging over joints are greatly reduced. There is no asphalt drippage between joints or absorption in the insulation to reduce the thermal performance.

So whatever your roofing problem (new roofs or old) specify the system that gives the strongest joints in roofing. That creates the best base for every built-up roof. It has proved itself on hundreds of roofs—to the satisfaction of architects, engineers and owners. Here are some of these jobs:

University of Maine—50,000 sq. ft.
American Can Co.—151,000 sq. ft.
Ripon Junior/Senior High School—150,000 sq. ft.
French Market Shopping Center—171,000 sq. ft.


For more data, circle 74 on Inquiry Card
SQUIGGLE: A light baffling puzzle by Luminous

As you can see, Squiggle ripples along like a ribbon on edge, happily ignoring geometry and never seeming to take the same turn twice. The puzzle works. You see the whole thing at once. This new luminous ceiling is unbroken by pattern, unbroken by the crosshatch of dividing strips, hanging tracks or seams. Squiggle seems endless. We have purposefully created this illusion.

Write for brochure.

LUMINOUS CEILINGS INC., 3701 N. Ravenswood, Chicago 60613
For more data, circle 79 on Inquiry Card
Examples of Past AWARD OF MERIT Winners


These PCI Active Members will be glad to give you complete details on the PCI Annual Awards Program:

ALABAMA Southern Prestressed Concrete, Inc. Montgomery

ARIZONA Arizona Steel & Rock Co. Phoenix

CALIFORNIA Ready Rock Co., Napa • Ben C. Grudet, Inc., Los Angeles • San Francisco • Delta Prestressed Concrete, Inc., Sacramento • Westview Prestressed Concrete, Los Angeles • San Diego • Prestressed Concrete, Inc., San Diego

COLORADO Prestressed Concrete of Colorado, Denver • Rody McDonald Prestressed Concrete of Colorado, Denver

CONNETICUT C. W. Baldwin & Son, New Haven

FLORIDA Capital Prestressed Co., Jacksonville • Concrete Structures, Inc., North Miami • Don Shreve, Inc., Lehigh Acres • Ohio Valley Industries, Inc., Orlando • Polo Prestressed, Inc., West Palm Beach • Modern-Barnes Prestressed, Inc., Nashville • Prestressed Concrete, Inc., San Antonio • Southern Prestressed Concrete, Pensacola • Southeastern Industries, Miami

GEORGIA Augusta Concrete Products Co., Augusta • Augusta • Prestressed Concrete Co., Inc., Macon

HAWAII Concrete Engineering, Honolulu

IDAHIO Ready-Mix Concrete Co., Idaho Falls

ILLINOIS Central Illinois Concrete, Inc., Chicago • Illinois Prestressed Concrete Co., Springfield, Rockford, Chicago • Prestressed Concrete, Inc., Champaign

INDIANA Construction Products Corp., Lafayette • Kent Concrete Co., South Bend

IOWA A. R. Bratton, Inc., Clear Lake • Cedar Rapids Black Mfg. Co., Cedar Rapids • Prestressed Concrete Co., Des Moines • Precast Products Co., Winterset

KANSAS Prestressed Concrete, Inc., Newton • Summit Bridge, Inc., Newton • Wichita • Union Pacific Co., Fort Worth

KENTUCKY Brick Industries, Lexington • Precast Prestressed Products, Inc., Henderson


MASSACHUSETTS New England Prestressed Concrete, Inc., Taunton • Great Eastern Concrete, Inc., Boston

MICHIGAN American Prestressed Concrete, Inc., Eastpointe • Prestressed Products Co., Eastpointe • Prestressed Products Co., Detroit

MINNESOTA Central Industries, St. Cloud • Central Industries, Inc., St. Cloud • Price Bros., Inc., Lindstrom • Superior Products Co., Detroit

MONTANA Montana Concrete Products Co., Great Falls • Montana Concrete Products Co., Missoula

NEVADA American Concrete Products, Inc., Las Vegas

NEW JERSEY A. E. Smith & Associates, Inc., Newark • Prestressed Products Co., Newark • Prestressed Products Co., Newark

NEW MEXICO Ready Concrete Co., Farmington


OHIO H. A. H. Products Co., Inc., Youngstown • Ready Mix Co., Jackson

OREGON American Prestressed Concrete, Inc., Portland • Prestressed Products Co., Portland

RHODE ISLAND Eastern Concrete Co., Providence

SOUTH CAROLINA Eastern Concrete Co., Sumter

TENNESSEE American Precast Products Co., Inc., Gadsden • Tennessee Coal & Iron Products Co., Chattanooga

TEXAS American Concrete Products Co., Houston • Texas Concrete Products Co., Houston • Texas Concrete Products Co., Houston

UTAH U. S. Concrete Co., Salt Lake City

VERMONT Vermont Concrete Products Co., Rutland

WASHINGTON Washington Concrete Products Co., Seattle • Pacific Prestressed Products Co., Seattle

WEST VIRGINIA Occidental Concrete Co., Charleston

WISCONSIN Ind. Concrete Products Co., Milwaukee • Ind. Concrete Products Co., Milwaukee • Ind. Concrete Products Co., Milwaukee

WYOMING Wyoming Concrete Products Co., Casper • Wyoming Concrete Products Co., Casper
This is wool. It's beautiful.

This is Acrilan. It looks like wool. But it stays beautiful longer.

For many reasons, carpeting made with Acrilan acrylic fiber in the pile is more resilient than wool. It retains its deep pile longer. Resists shedding. Colors are purer and remain that way—Acrilan resists fading; Acrilan is easier to clean than wool.

More? Acrilan is born moth-proof. Non-allergenic. Will never mildew. These are some of the reasons why architects all over the country are specifying Acrilan for important installations.

Let us tell you more.

Write Contract Carpet Merchandising, Chemstrand, 350 Fifth Avenue, New York 1, N.Y.

These are among the mills now licensed by Chemstrand for Acrilan: Barwick, Bigelow, Cabin Crafts, Callaway, Coronet, Crestline, Downs, Forrest, Hardwick and Magee, Hightstown, Karagheusian, James Lees, Loomweve, Magee, Masland, Monarch, Philadelphia Carpet, Roxbury, Wunda Weve. In Canada: Harding Carpets.
Why does LPI build so many features into their door frame assembly? To provide the extra quality you expect in their fixtures.

First, the multiple-bend 18 ga. frame provides rigidity, and mates precisely with fixture body for light-tightness. Integral corner gussets increase rigidity. Second, positive closure with the easily operated slide-action latch is ensured by a spring-steel retainer. Third, the "T" hinge permits full opening with secure hanging. These are just a few of the features indicative of the responsibility for quality and detail which LPI assumes. And, there are others which further differentiate LPI fixtures from those that are comparable in cost, but not in value. Many of these features may be important to you. To find out about them, write for details.

Lighting Products Inc., Highland Park, Illinois 60036
BRADLEY GROUP SHOWERS

We put 2, 3, 4, 5, even 6 showerheads together on one fixture! Result: Bradleys serve more students comfortably in less space than ordinary showers. This revolutionary new concept gives you unusual layout flexibility in dormitories, gyms, field houses, employee shower rooms — wherever you want to handle large groups economically.

But there's more. Bradley Group Showers serve up to 6 students with only one set of plumbing connections. So they reduce installation costs as much as 80%.

They save water and water heating costs, keep maintenance time to a minimum. And there are four other basic styles to choose from, including multi-stall units with private dressing rooms.

Planning a shower room? It will pay you to get together with Bradley!

For details, see your Bradley representative. And write for latest literature. Bradley Washfountain Co., 9107 Fountain Drive, Menomonee Falls, Wis. 53055.

Why did we put our heads together?

TO SAVE MONEY!
PINE MANOR JUNIOR COLLEGE WILL MOVE TO NEW CAMPUS

Thirteen new buildings are expected to be completed by September when Pine Manor Junior College moves to its new 79-acre campus, the former Dane estate, in Chestnut Hill, Massachusetts. The college has been located in Wellesley, Massachusetts, for the past 54 years. Ernest J. Kump, Associates, New York and San Francisco, are architects for the project, and Edward F. Knowles, Associates, New York, are associated architects. The general contractor is the Aberthaw Construction Company.

According to Mr. Knowles, the design concept for the new campus was influenced by the small residential atmosphere of the old Wellesley campus as well as by the turn-of-the-century late Victorian buildings which make up the main house and outbuildings of the Dane estate.

Two dormitory quadrangles will house the entire enrollment of 300 students and will contain five two-unit structures and a single house at the end. The single house will contain a common lounge and apartments for administrative staff. Each of the two-unit buildings will house 30 students in 10 single rooms and 10 double rooms, and each will contain a two-level lounge. Exteriors will be of brick with slate roofing to relate to surrounding structures.

In the dining center, a flexible arrangement will permit group dining within a large area accommodating the entire student body. The plans provide for expansion of facilities when Pine Manor's enrollment is increased to 450.

The first phase of construction will also include the renovation of existing buildings. The coach house will be converted into a temporary library, art building and classroom facility. The garage will become a science building, and the main house will be transformed into administrative offices, rooms for social functions, faculty apartments and an infirmary. Later, the barn will be converted into a music and speech building.

A second phase of construction is planned after the college is established on the new campus. To be built are a library and art building, an auditorium with a theater and chapel, a third student quadrangle, a gymnasium and faculty residences.

Change is the one basic the architect contends with on each new project... striving to create beauty, function, and enduring quality within the limits of site, budget, and available components.

In the eight years since Modu-Wall created a new concept in architectural curtainwall systems, our one constant has been product quality and useful design. This, too, has led to change.

Under our new trade name, NAARCO, you'll find the same design flexibility and inherent quality in a growing number of architectural products. An example is the aluminum column cover detailed below. You can examine the full range of this expanded product line in your 1965 Sweet's Catalog, file 3A.

Write for the new NAARCO file of design ideas.

FAY FOTO SERVICE, INC. photos


ARCHITECTURAL RECORD March 1965
Change, it's said, is the only constant.
You know as well as we do...

some windows and doors don’t have any weatherstripping at all
even though heat loss may average from 17% to 25%

You know as well as we do...

some windows and doors are still weatherstripped with vinyl or metal
even though Poly-Pile* is greatly superior in a dozen ways

Windows and doors don’t leak, squeak, stick, scrape or cause gripes and call-backs when they have our rotproof, bugproof, mothproof, mildewproof seal. Windows and doors never suffer from vinyl-tackiness at the seal in summer, or vinyl-brittleness in winter. Poly-Pile has a million miniature springs of polypropylene that squeeze between uneven surfaces to block wind and water, and bounce back from thousands of closings. Insist on Poly-Pile, the seal that recovers and provides absence of shrinkage or hardening or of metal’s denting and pitting from industrial fallout. Don’t settle for less!

Schlegel weatherstripping gives Added Value.

*Poly-Pile is a trademark of The Schlegel Manufacturing Company

For more data, circle 63 on Inquiry Card

92 ARCHITECTURAL RECORD  March 1965
When rubber starts cracking, something starts leaking.

That's why U. S. Rubber developed Royalene®—“The Crackless Rubber.”

Royalene is an EPDM rubber. It won't crack because it won't age. It won't age because it resists weathering, ozone, extreme heat and cold.

Royalene can be used throughout every new building. Indoors and outdoors. In window seals. Pipe gaskets. Curtain wall gaskets. Even roof sheathing. It won't crack for the life of the building.

Royalene stays flexible and easy to work with at below zero temperatures. It can be colored any color to match the color of the building.

Send for free samples of Royalene and ordinary rubber. And make your own comparison.

U. S. Rubber, Chemical Division
Dept. D3, Naugatuck, Conn.
Please send Royalene brochures and samples.

NAME
TITLE
FIRM
ADDRESS
CITY
STATE

For more data, circle 64 on Inquiry Card
These are just some of the elementary schools of the Spring Branch (Texas) Independent School District cooled by Thermal TH air conditioners. Other Thermal installations in this District’s schools have long since proved themselves in Texas weather.

Air handling equipment in the Thermal quality line includes multizone conditioners (remote and self-contained), central plant conditioners, sprayed coil units, heating and cooling coils, air-cooled condensers, air-cooled condensing units, plus heating and ventilating units. The satisfaction delivered in all types of structures throughout the country—for years—has given engineers and contractors unquestioned confidence in Thermal.

The wide range of sizes and models in each product line, plus manufacturing flexibility, allows the engineer to specify—and obtain—system components meeting exact requirements. Write for brochure or complete technical catalogs.

FROSTWOOD AND RUMMEL CREEK—Engr: Charles V. Chenault; Mechanical Contractor: Wood-leppard Air Conditioning Co.

EDGWOOD AND WESTWOOD—Engr: Charles V. Chenault; Mechanical Contractor: Marcon Engineering Inc.

SHADOW OAKS AND BENDWOOD—Engr: Arthur M. Rice; Mechanical Contractor: Gregory-Edwards, Inc.

WOODVIEW AND SPRING BRANCH—Engr: Arthur M. Rice; Mechanical Contractor: The Emde Company

Thermal Representative: McMillan Equipment Company
Once in a rare while, a building stirs up a lot of excitement.


Devoe certainly likes being involved then.

Here's a case in point: Deere & Company's new Administrative Center has without doubt attracted attention. So conceived as to be functional and handsome —without any superfluous decoration—this unique structure uses color and material and texture, as well as the best in modern design, to achieve its plan.

DEVOE's involvement? We were called upon to match, in a number of finishes, the colors selected. And we did it, getting just what the architect wanted.

Sometimes matching color, even the most extraordinary, is all we're asked to do— but responsible corporations like Deere are reassured knowing that we'll meet the demands . . . and do the job well. Of course, the Man from Devoe— our local representative—can help designers in many ways, ranging from assistance with color to assistance with the most complicated and technical aspects of paint. Why not write or phone the nearest Devoe office to reach him for your next job.
Your satisfied clients are important ... to the man from BARCOL, too!

He stays on every door job 'til it's an open and shut case

It's vitally important to us, as well as to you, that Barcol Overdoors and electric operators perform according to all architect specifications and client requirements.

That's why it's so easy and efficient to work with the man from Barcol. For he's ready to join your staging team at preliminary planning time ... helping you prevent costly door problems before they happen ... justifying initial cost of door equipment ... establishing a firm, accurate budget figure.

Beyond that, this door specialist makes sure the equipment is right, properly installed and that you and your client are furnished documented evidence of Barcol's superiority and tight-sealing efficiency. Tests made in plants across the nation prove Overdoors save money in accurate temperature control, time-saving, labor-saving materials handling and long-term dependable operation.

Backed by such product strengths as exclusive Cam-Action, perimeter gasketed sealing, 100,000 cycle springs and complete flexibility of choice, the man from Barcol is best qualified to be of service to you.

Contact him NOW.

See Barcol insert, Sweet's Architectural File

BARCOL OVERDOOR COMPANY
Sheffield, Illinois • Subsidiary Barber-Colman Company, Rockford, Ill.

For more data, circle 86 on Inquiry Card
Now you can specify glass that excludes 67% of the sun’s rays and has a “U” value of .35.

It’s called PPG Solarban™ Twindow®, the latest and most effective Glass Conditioning product. It transmits only one third as much heat as regular ¼” plate glass, cutting heat loss or heat gain 66%. And it transmits only about 20% of the sun’s visible rays, greatly reducing glare.

What gives PPG SOLARBAN TWINDOW these remarkable properties? Actually, it’s two panes of glass enclosing a dry air space. On the air space side of the indoor pane, an exclusive coating reflects 46% of the sun’s total energy.

SOLARBAN TWINDOW is the ideal environmental glass in any climate or location. It provides the ultimate in indoor comfort. And the savings in heating and air conditioning costs may more than make up the difference in price.

Chart, left, shows industry’s most complete line of environmental glasses.

PPG makes environmental glasses to control the sun’s heat and glare on any orientation, of any building, in any environment. For details on these modern glass products, contact your nearest PPG Architectural Representative, consult Sweet’s Catalog or write: Pittsburgh Plate Glass Company, One Gateway Center, Pittsburgh, Pa.

Another product for Glass Conditioning from PPG

Glass Conditioning is a service mark of the Pittsburgh Plate Glass Company.
CHURCH IS EXPANDED, REMODELED TO NEEDS OF LITURGICAL REFORM

Indoors or out, Stagecraft shells make any concert site sound better... and look better. Each shell is completely tunable, can be adjusted to match the acoustic characteristics of the hall or amphitheater. This means greater freedom for the designer, since musical balance can be modified when the shell is installed.

Stagecraft shells are portable, are easily erected and stored, can be used anywhere. They are ideal for both existing sites and new construction. If you're interested in Stagecraft’s complete service in musical acoustics, write today for our 12-page illustrated brochure.

STAGECRAFT CORPORATION
83 EAST AVENUE, NORWALK, CONNECTICUT 06852

The St. Thomas Aquinas Center, West Lafayette, Indiana, has been expanded and remodeled to conform to the liturgical reforms instituted by the Ecumenical Council. The church, which serves Catholic students at Purdue University, has been expanded from a seating capacity of 350 to a capacity of 800.

Architect for the project was E. H. Brenner. Mechanical engineers were Fennig and Weir, liturgical consultant was Frank Kacmarcik, and contractor was the Wilhelm Construction Company.

The church was reoriented to an east-west axis by piercing the east wall and constructing a new nave and sanctuary adjacent to the existing building (plan below).

On the exterior (above) the original front and tower have been removed (below) making the new sanctuary the architectural climax. The exterior of brick matches the brick on the existing structure.

This church was awarded first place in a competition recently held continued on page 104
Every Move
Bradley T. Potts Makes,
He Has You In Mind—
And Flintkote Floor Tiles

Our versatile Mr. Potts is a busy man. Calculating. Impassive. Shrewd. Our super-salesman.

This is your first meeting with Brad. We think you'll enjoy his light-hearted antics in the months to come. He never forgets that his job is to help you while selling Flintkote Floor Tiles.

That's why Bradley keeps his eye on every move made by our production people, our designers, our quality control and research people, and our promotion staff.

His job is to give you the extra service you need. Service not only on the scene but behind the scenes. You might say Brad's a knight in shining sales.

That's why with Flintkote you, good friend, are never merely a pawn. You're the king.

The University of Pittsburgh features 200,000 square feet of Classic Flexachrome vinyl asbestos floor tile in this new men's dormitory building. Designed to give modern comfort and low cost maintenance throughout, its long-wearing floors will serve beautifully for years.

For more data, circle 89 on Inquiry Card

THE FLINTKOTE COMPANY
30 Rockefeller Plaza, New York, N.Y.

Architect:
Dreicer & Ritchey, Pittsburgh, Pa.
Some people just can't wait!

Don't blame her for hurrying to try this new General Electric water cooler. It not only satisfies the thirst, but pleases the eye. Boosts employee morale. Compliments any decor. And will give years of carefree service.

When it's out of the box you'll see the stylish, exclusive trapezoid shape. Side access saves aisle space. Flush-to-wall installation hides unsightly plumbing.

Whatever your clients' tastes or needs, we can provide the right water cooler. There's a wide choice of pressure or bottle types . . . floor or wall-mounted units . . . modern and compact shapes. And don't forget the popular all-in-one executive-type refreshment center with spacious refrigerator.

Specify our water coolers for your thirsty clients. (How about your own office?) For complete details call your local dealer or nearby General Electric Supply Company. Or write Section 761-33, General Electric Company. Chicago Heights, Illinois 60411.

G-E water coolers . . . a size and style for any application.

Progress Is Our Most Important Product

GENERAL ELECTRIC

For more data, circle 90 on Inquiry Card
Click-boing and there’s your wall. New! Royalmetal Partitionette 6000

Partitionette 6000 is an incredibly versatile new system of free-standing, movable partitioning. The key to it all is Royalmetal’s unique new universal aluminum post design. It features concealed spring-loaded studs—you can attach panels left, right or straight ahead simply by snapping them into place. The whole job goes faster and easier.

Partitionette 6000 is handsome, too. There are four variations, in four price ranges: Painted steel (in 27 colors, no less!). Vinyl board, with teak, walnut, cherry or rosewood finish. Vinyl-clad steel, in teak or walnut finish. Royaloid, in nine patterns. All available in 40", 54", 68" or 86" heights.

Partitionette 6000 is styled to coordinate with Royalmetal’s new 6000 Series office furniture, but it’s a natural for any office. For complete details, see Partitionette 6000 at your Royalmetal dealer, or mail the coupon below.

ROYALMETAL CORPORATION
One Park Avenue
New York, N. Y. 10016

Gentlemen: Please send me your full-color brochure on Partitionette 6000.

Name:
Address:
City State Zip #

For more data, circle 91 on Inquiry Card
**All-weather Crete®**

**ROOF DECK INSULATION**

Solve roof deck irregularity problems with All-weather Crete and achieve a completely seamless roof deck insulation with a K-factor lower than any other poured roof deck insulation.

Its amazing working properties make it ideal for application around, under and between pipes, girders or other roof irregularities. The final result—a smooth surface contour sloped to drains—ready for final roof covering. Applied dry even in freezing weather.

Write today for FREE 12 page Brochure.
Specify—BUY THE DOORS THAT

Save the $10-$20 Refinishing Cost

This is the estimated cost of materials and labor to refinish a door every three years. FORMICA laminate clad interior doors require no refinishing—ever. They are precision made, clean of line, prepared for hardware, install in 20 minutes, and last the life of the installation.

Authorized manufacturers of FORMICA laminate clad doors are located reasonably close to every building site. They will be pleased to serve you . . . with samples, details, estimates.

California . General Veneer Mfg. Co., South Gate
Florida . Gleason Industries, Tampa
Georgia . Murphy & Orr Co., Forest Park
Iowa . . . Van-Top, Inc., Holstein
Kentucky . Anderson Woodworking Co., Louisville
Louisiana . Bernard Lumber Co., Inc., New Orleans

Michigan . . . Wiltburn Co., Grand Rapids
Minnesota . . Aaron Carlson Co., Minneapolis
New Jersey . General Laminators, Weehawken
Ohio . . . Pease Woodwork Co., Hamilton
Pennsylvania . National Wood Products Co., Cheswick

FORMICA® is our brand of laminated plastic. Insist on this identification to avoid imitations.

Formica Corporation • Cincinnati, Ohio 45232 • subsidiary of CYANAMID
Remodeled Church
continued from page 98

by the Liturgical Conference of North America. The competition was for sanctuary design in light of the reform liturgy. The jury consisted of clergymen and architects Paul Thiry, John Rauma, Robert Jones and Edward Sövik; and Donald Canty of Architectural Forum.

According to Mr. Sövik, this church responds better than any other church that the jury looked at to the new liturgical reforms. "The altar is very clearly the center of activity, without distractions of sub-altars, and the priest faces the congregation. This gives more of a sense of family or group participation rather than individual piety."

The people are directed to the Mass and to one another giving a sense of general participation in the worship. By seating 800 people in a semi-circular fashion, all within 60 feet of the altar, leads to a new sense of general participation. A large single space in which the sense of the sanctuary and worship area are combined also unifies the congregation, according to Mr. Sövik.

"Finally there is a new emphasis on the church as the 'house of God's people' rather than the 'house of God'." By the simplicity of space and straightforward use of materials, the church is emphasized as a house on earth, rather than the exotic atmosphere of the Gothic cathedral."

HICKMAN (patented*) Fascia and Water Dam System

Cracking of roofing felts at the joints of the metal edging is the main cause of roof leaks at eaves. By controlling the expansion and contracting factors, the Hickman System prevents these leaks. Hickman's pages in Sweet's give you details and proof of how tearing of the felts and tar drippings on the exposed fascia and walls cannot happen.

Engineering drawings, sample specs and area sales representatives are given in Sweet's, plus a few of the many jobs where it has been proven that "absolute control of roof water at eaves" is possible.

For more data, circle 96 on Inquiry Card

W. P. HICKMAN COMPANY, INC.
23100 DEQUINDRE • WARREN, MICHIGAN 48091 • 313-536 3512

For ABSOLUTE CONTROL of ROOF WATER AT EAVES see SWEET'S (A) 8C-Hi
Foresight

Foresight was the byword in the late Eero Saarinen’s planning of the Dulles International Airport.

Plush mobile lounges whisk passengers effortlessly to the huge silver birds perched on the runways. A veritable forest of millions of trees were strategically planted to cushion the roaring of the jets from the ears of people who will someday populate the area around Dulles but who now don’t even exist.

Foresight was used too, in the locksets chosen for this monumental terminal. Lockwood Mortise Locksets—structurally strong and mechanically perfect enough to give faithful service far into the future.

LOCKWOOD

LOCKWOOD HARDWARE MFG. CO.
FITCHBURG, MASSACHUSETTS

For more data, circle 100 on Inquiry Card
Design roof covers

24' x 60' (16' high from base to top) Barrel Vault variation for Creighton's Garden Restaurant, Winter Park, Florida. Toombs, Amisano and Wells, Architects and Engineers, Atlanta, Ga.

or skylights

75' diameter lamella Skylight for State University of New York at Albany, N.Y. Architect, Edward Durrell Stone, New York, N.Y.

or any other transparent overhead structures with the...

TOTAL RESPONSIBILITY is assured by IBG for all areas of its involvement. IBG men will work with you in whatever way possible to bring to fruition your ideas and designs. There are offices or representatives in major cities across the country and in Canada. Work is accepted for domestic and foreign projects.

PRODUCT TYPES OF IBG, SPECIFICALLY:

Geodesic Domes, supported and self-supporting
Skylights, all large shapes and sizes
Greenhouses, 6 standard styles plus custom designs
Swimming Pool Enclosures, standard or custom, for residential or commercial
Architectural Facing Panels, sculptured (formed) Plexiglas

SERVICES RENDERED BY IBG, SPECIFICALLY

Design and Engineering—your basic ideas and concepts will be analyzed and developed by IBG. Preliminary plans be submitted for your approval.

Crafting Skill—IBG manufactures and installs its own structures under the close supervision only this type of arrangement can allow. These sophisticated structures require the hand of true artisans. Most IBG men are time employees having a degree of craftsmanship unequalled in this field. Their work consistently demonstrates this fact.

Responsible follow-through—because we install that which design and manufacture, you will find IBG men responsible to the last detail.
or conservatories

34' diameter Conservatory dome, Ithaca College, Ithaca, N. Y.

or enclosures

56' diameter dome Pool Enclosure at
Park Place Motor Inn, Traverse City, Michigan.
Architect, Paul Hazleton, Traverse City, Michigan.

DomeSystem

This name identifies the versatile, designer-oriented system which can be used to produce such structures as those pictured above as well as a multitude of other transparent enclosures and coverings.

It also identifies the single source for design and engineering services, manufacture and installation of such applications, namely, Ickes-Braun Glasshouses, Inc. of Chicago. The IBG people have been specialists in this field for over fifty years.

You may request the number of descriptive IBG DomeSystem brochures and Sweet's Catalog reprints needed for your designers and library. Save time, use the coupon.

Yes, we are interested in the IBG DomeSystem's possibilities. Our request for descriptive brochures is as follows:

PLEASE SEND IBG DOMESYSTEM BROCHURES
PLEASE SEND IBG/SWEETS CATALOG REPRINTS

DATE PHONE

NAME

FIRM

ADDRESS

CITY, STATE, ZIP

For more data, circle 101 on Inquiry Card

ARCHITECTURAL RECORD March 1965 111
service spaces bounded by vertical mechanical distribution stacks."

Members of the design team for I. M. Pei & Associates were Ieoh Ming Pei, F.A.I.A.; Henry N. Cobb, A.I.A.; Araldo A. Cossutta, A.I.A.; James I. Freed, A.I.A.; and Theodore Musho. The Pei statement of the design concept reads: "All existing walls and structures except the Octagon itself are to be removed. New brick for garden walls and paving will be selected to harmonize with the Octagon. Exterior walls of the new building will be poured-in-place concrete, lightly sandblasted. Through careful selection of aggregate, sand and cement, a buff limestone color will be achieved.

"The garden will be regraded and replanted, with two specimen trees as the major landscape elements. A major work of sculpture is proposed as the central feature of the entrance court. Oxidized-steel gates will be installed at the New York Avenue and 18th Street entrances. An ornamental screen of the same material will separate the entrance court from the public sidewalk."

"Vertical structural members on the garden face of the building are shaped and oriented so as to respond to the major axes of the Octagon House and site, while at the same time providing protection against the summer sun."

The Perkins & Will design team was composed of Saul Klibanow, Moshan Khadem, Phillip A. Kupritz and John Holton. The text of their design concept statement reads: "The Octagon should participate in the visual design of the new complex. Thus, an historic landmark may become a meaningful part of the urban composition and assume a new vitality. Since the architectural character of the Octagon House is different from the street than from the interior court, the new building should acknowledge such a difference. From the streetscape the composition should be a unified whole and the new building must enhance the historic residence. From the court the new building should have a more significant visual impression, while the intimate character of the existing garden should be preserved.

"The proposed solution is composed of three fundamental parts: (1) the lower portion of the base; (2) the upper portion of the base; (3) the office block. The lower portion of the base consists of brick piers interrupted by a horizontal band designed to maximize the dimensions of the interior court and permit the free flow of space to the lobby and exhibit areas. On this level the building assumes an active role and participates with the design treatment of the court in producing a court that is scaled to pedestrian observation.

"The upper portion of the base consists of a curved horizontal band matching the eave line of the Octagon and clad in similar material. This acts as the unifying element in the composition and focuses the new building to the Octagon.

"The office block consists of a neutral mass clad in roof metal and withdrawn to the extreme northern edge of the site. Without overwhelming the space, this provides a closure and prevents visual encroachment upon the court by any future construction adjacent to the site."

Submissions of the winner and three runners-up are being exhibited through March 31 in the Octagon House.
Modern Door Control by

**LCN**

**SMOOTHEE® Door Closers**

University Center Building
Northern Illinois University
De Kalb, Illinois

Gilbert A. Johnson, Kile, Seehausen & Associates, Architects

LCN CLOSERS, PRINCETON, ILLINOIS
Application Details on Opposite Page
Architects and Food Consultants insist on Bally for job after job. It is because Bally, America's largest producer of sectional Walk-In Coolers and Freezers, has introduced a new standard for Walk-In refrigeration that includes advantages never available in "built-ins".

Today, no other Walk-In has all of these important construction techniques and unusual features that eliminate the "or equal" problem in specifications.

**Urethane insulation** 4" thick is foamed in place (not frothed). Has efficiency of 8 1/2" fiberglass. Suitable for minus 40°F. temperature.

**Assemble any size or shape** from standard modular sections. Urethane has 97% closed cells and is ideal for outdoor use.

**Superior section strength** resulting from urethane foamed against metal skins eliminates need of wood structure. 100% of every section is hospital-clean insulation (no vermin or rodents).

**Bally Speed-Lok fasteners** join sections quickly and accurately. Unlock easily for enlargement or re-location.

**Foamed lightweight door** has self-closing hinges, modern hand lock (inside safety release) and convenient foot treadle. Opens and closes with feather touch. Magnetic gasket provides tight seal.
Bally walk-in refrigerators carry this hallmark of quality

It is our registered guarantee that specifications have been fulfilled with the highest quality workmanship and materials.

Metal interior and exterior provides maximum sanitation. Your choice of hammered aluminum, galvanized steel or stainless steel.


Mass-produced and are lower in cost than "built-ins" instructed by building trades. Cubic-foot cost is less than half that of "reach-ins".

When you specify a Bally there is never a need to accept a "or equal" or a substitute. Bally Walk-Ins are available to all dealers everywhere at uniform prices.

---

Bally Case and Cooler, Inc., Bally, Pa.

For more data, circle 102 on Inquiry Card

See Sweet's Architect File No. 25a/Ba
Write for Fact File including 12-page brochure, Specification Guide and Urethane sample. Learn about our on-the-spot engineering program that provides assistance in layout and specifying.
E-Z Glide tracks and guides offer many advantages to builders, cabinet makers and furniture manufacturers. Neat appearance, smooth and silent operation, nothing to wear, corrode or rust. They mount easily in several ways. Doors lift up and out.

Free 38-page catalog on all EPCO sliding door hardware, magnetic catches, knobs and pulls available on request.

See Sweet's Catalog under Arch. file 19g-En and Light Const. file 7b-En.

THE ENGINEERED PRODUCTS CO.
P.O. BOX 108 FLINT, MICHIGAN 48501
No squeeze.

No butterflies.

No delays.

Westinghouse Mark IV Elevators treat people with tender loving care

They whisk your tenants swiftly up and down with service up to 30.6% faster than any previous system. How? Mark IV’s respond to calls, not predetermined patterns. They wait for people, not vice versa. Mark IV’s alight with cushioned, level landings. And their doors stay open till the last person enters or leaves. Then they close politely—and at once. Owners of over 186 buildings have already chosen Westinghouse Mark IV’s. Consider them for your building, too. Skilled Westinghouse maintenance can keep Mark IV’s as efficient as the day they’re installed. Westinghouse Elevator Division, 150 Pacific Ave., Jersey City 4, N.J.

You can be sure if it’s Westinghouse
New Du Pont TEDLAR® keeps this cabana roof

A single ply of roofing gives long-lasting whiteness to the prominent, folded-plate roof of this hotel cabana. The surface of Du Pont TEDLAR® PVF film will remain a brilliant white, even after years of exposure. The roofing is Ruberoid T/NA 200 with TEDLAR. T/NA 200 is easily installed with conventional roofing techniques. It weighs less than conventional built-up roofing, and it can fit roofs of unusual contour and of any slope.

The whiteness of the surface of TEDLAR gives high reflectivity (it has less than
brilliantly and lastingly white—without maintenance

half the solar absorptance of crushed stone or marble), which lowers underroof temperatures and air-conditioning loads.

The whiteness stays white because TEDLAR is a tough, inert, flexible film that's too smooth to trap dirt. There is no loss of color with TEDLAR because the surface cannot erode as it can from liquid topcoats applied in the field. Re-coating maintenance is eliminated. The roofing stays tough and flexible from minus 50°F. to over 250°F.

More and more architects are specifying TEDLAR as the finish on roofing and siding for their new designs. For a detailed case history and a sample, write Du Pont Film Dept., Box 2372, Wilmington, Delaware 19898; or, for more information, see Sweet's Catalog.

Kenilworth Hotel Cabana, Miami Beach, Florida
Architect: Stefan Zachar, A.I.A., Miami Beach, Florida
Contractor: John C. Woodruff Co., Miami Beach, Florida

*Du Pont registered trademark
†Rubberoid's registered trademark

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY
CITY COLLEGE HAS NEW MASTER PLAN; PLAZA WILL REPLACE LEWISOHN STADIUM

The City College of the City University of New York has announced a campus master plan for the college's uptown center. Prepared by the architectural firm of Skidmore, Owings and Merrill, the master plan will be developed over the next five years at a cost of $40 million.

The key to the campus development plan is the replacement of Lewisohn Stadium to make possible the construction of a huge plaza, covering a five-block area. Adjacent to the plaza will be an 11-story science building (below) to house the natural science departments—biology, chemistry and physics. A science library will be housed under plaza level. Also to be built are a social science and humanities building with a special component for faculty offices; a college "commons" containing cafeteria, dining room and meeting facilities as well as a fully equipped teaching theater with a seating capacity for 400; and, underneath the plaza, a physical education building, 10 large lecture rooms, a 600-car parking area, and a number of the college's service and storage facilities.

Under the master plan, available outdoor activity space obtained will be equal to that now provided by Lewisohn Stadium and the college's Jasper Oval athletic field combined. An outdoor concert stage will be constructed on the plaza for outdoor concerts and convocations. Bleachers will be provided for athletic events.

(1) The science building. (2) The commons building. (3) The humanities building. (4) The plaza
THIS STEEL CONSTRUCTION “PACKAGE” SIMPLIFIES DESIGN AND SAVES YOUR CLIENT MONEY

STRUCTURAL STEEL—Shop-fabricated structural steel goes up fast in any weather. No falsework required. No construction schedule delays. Solid framework holds future maintenance costs down. Simplifies future expansion, too. Erected costs for steel frames are fully competitive with concrete or other competitive systems (and sometimes steel frames are substantially lower in cost).

STEEL JOISTS—Steel joists arrive at the site fully fabricated, ready for immediate placing. No falsework, no delays. And the open webs in Bethlehem joists are freeways for heating lines, air-conditioning ducts, communications lines, sprinklers—any mechanical installation.

SLABFORM—Top it off with Slabform, our solid steel centering. Saves concrete (up to 20 per cent) over flexible centerings, makes a solid, safe working platform, reduces clean-up costs to a minimum. After floor slabs are poured, the entire structure is braced and stiffened, and you get maximum lateral strength because of the integration between steel beams, joists, and Slabform.

We make a full line of structurals (including new hollow sections), a complete series of open-web joists, and Slabform in five gages, galvanized and plain. The nearest Bethlehem sales office will be glad to discuss your next building with you.


For more data, circle 108 on Inquiry Card
New design freedom in the Open World of L·O·F Glass

Parallel-O-Bronze is the plate glass used in this vast showroom of the Lou Bachrodt Chevrolet Shopping Center, Rockford, Ill. Designed by Cherry & Fraboni, Inc., of Beloit, Wisc. Glazed by Cadillac Glass Co., Rockford.

More ways to control the sun

A different sun-control glass was used in each of the four buildings shown here. L·O·F offers a range of tints and thicknesses for varying degrees of glare-reduction and solar-heat exclusion. There are Parallel-O-Grey* and Parallel-O-Bronze* Plate Glass in $\frac{3}{8}$", $\frac{1}{4}$", $\frac{3}{8}$", and $\frac{1}{2}$" thicknesses. Each thickness provides slightly different depth of tint. And there's blue-green Heat Absorbing Plate in $\frac{3}{8}$" and $\frac{1}{2}$". All in regular or heat-tempered glass. Polished or rough plate. And as the outer pane in

Heavy-Duty Parallel-O-Grey (3/8" thick) was used in the largest lights of these vertical sections. Others are 1/4". This is the pump house for Chicago's central district filtration plant. Architects: Naess & Murphy, Chicago. Glazing Contractor: Hamilton Glass Co., Chicago.
Parallel-O-Grey plate glass was used in the Orange Park (Fla.) Civic Center for sun control.

Thermopane® insulating glass units. You get design freedom with a right glass for every need.
So design freely, but within glass limitations.
For example: avoid heat traps that can cause thermal breakage. Drapes and venetian blinds should be hung at least 6” from the glass with space at top and bottom to permit air movement. For additional information, see Sweet’s Architectural File 26A, or call your L·O·F distributor or dealer listed under “Glass” in the Yellow Pages.

Libbey·Owens·Ford
Toledo, Ohio 43624

Heat Absorbing Plate is the outer pane in Thermopane insulating glass units in the Student Services Building at Michigan State University, East Lansing. Architects: Ralph R. Calder & Associates, Detroit, Mich.

For more data, circle 109 on Inquiry Card
Rudolph’s award-winning concrete “castle”

This remarkable new concrete structure in Garden City, N. Y. is the $4-million administrative, research and production center of Endo Laboratories, Inc. Blending function and form in a creative environment both inside and out, it was named “Concrete Building of the Year” by New York’s Concrete Industry Board.

Designed by architect Paul Rudolph, the fortress-like structure has turret projections on the outside which serve as skylit alcoves for offices and laboratories on the inside. Staircases and animal exercise runs are separate elements. Curved entrance ramps and windowless facades add to the striking castle effect.

Vertically ribbed, exposed-aggregate concrete dominates 90,000 square feet of interior and exterior finish—a sparkling new surface texture for an age-old material. Close color control, strength, and durability of the concrete were essential to produce this unusual surface texture.

Lone Star Portland Cement was selected after careful research by the architect and builders, and was used exclusively throughout the project.

Corduroy-like texture was achieved by casting a stiff concrete mix in special forms built at the site. The 1½” fins were knocked off ½” to 3/8” by hand bush hammering, alternating left and right blows, to leave ridges of exposed aggregate. For uniform color, separate bin storage was provided for the Lone Star Portland Cement and selected aggregates.
MIES DESIGNS FEDERAL CENTER

Designing the new Federal Center in Chicago gave the architects—four associated firms with Mies as design lead—a rare opportunity to plan some open space in the heart of the Loop.
OPEN SPACE IN CHICAGO'S LOOP

With less than 50 per cent of its block-and-one-half plot covered by buildings, the Federal Center in Chicago will provide some badly needed open space in the heart of that city's tightly-packed Loop area. The amenity of the carefully planned and landscaped plazas will be enhanced by the calm spareness of Miesian architecture. The plan above and model photographs at right show the disposition of the three buildings comprising the center. The 30-story courthouse and office building, A in the plan and at left in the photo, was recently completed and is shown on the seven pages that follow. The 43-story office building, B in the plan, and the single-story post office, C in the plan, are now under construction. The entire complex is scheduled for completion in January 1968.

Mies has made the most of the open spaces, and the buildings play a key role in the concept. The courthouse and office building houses a glass-enclosed "great hall," 100 feet wide and 25 feet high, at mid-point (see plan, page 128). This sizeable space will serve as a gateway connecting the center to a cul-de-sac street (Quincy) which leads east to State Street. The net result will be a straight visual shot from State Street through the aforementioned lobby and on across Dearborn Street to the heart of the large plaza in front of the low post office. It is interesting to note—in the plan above—that each building will have its own plaza; and that the largest plaza will be centrally located and at the point of maximum pedestrian traffic.

The two towers will be disposed much as the Lake Shore Drive Apartments, an arrangement that will offer the observer an interestingly changing visuality from various angles. In the more practical sense, occupants will benefit from minimum obstruction of outlook. The post office is shown in the model photographs as a clear span building with an overhead plate girder and a peripheral bearing wall composed of structural mullion-columns. It has been redesigned—and will be built—as a more conventional steel cage of three bays on a side.
COMPLETED COURTHOUSE AND OFFICE BUILDING

The serene face and lean elegance of Miesian architecture have great merit in a dense urban situation. The pleasing shapes and sizes, artful proportions, and meticulous detailing—already on view in the courthouse building—will add a large measure of visual delight to the Federal Center.

The courthouse building's unusual plan and double core are due in large part to the arrangement of those upper floors housing the actual courtrooms; refer to plan, page 132. The scheme does clear the way for the central "great hall" at ground level. The building is framed in 28-foot-square bays; is 4-bays wide and 13-bays long; mullions divide each bay into 6 modules of 4 feet 8 inches each. Movable partitions, acoustical ceilings, and units for lighting and air conditioning are all keyed to the basic building module, providing great flexibility of division and use.

Architect Karel Yasko, assistant commissioner for design and construction, GSA, in discussing his experience with Mies in the construction of the courthouse says: "It was an exciting experience. The Mies philosophy—that construction is design; is, in fact everything—came clear as the intricate parts began to fit together with ease. Everything worked; there was no head scratching. This clarity, plus CPM scheduling, enabled us to make beneficial occupancy six months ahead of the original completion date, thereby saving the government $400,000 in rent."
CURTAIN WALL DETAILS

One-half size details of the curtain wall—the mullion above and vertical sections at ceiling and floor on the right page—reveal the familiar Miesian refinements in even more sophisticated terms. The 7/8-inch-square lugs facilitate installation of the aluminum window frames, which are shop constructed with corner reinforcement for weather-tightness. Note how aluminum windows are insulated from steel mullions and spandrel assemblies to prevent electrolysis; note inside glazing for ease in handling glass. The plaster ceiling is aligned with the under side of the head angle; the asphalt tile floor comes against the outstanding toe of the sill angle. Concrete fireproofing for the spandrel beam is poured directly against the 7/8-inch steel spandrel fascia and the reinforcing angles at top and bottom; a procedure that eliminates spandrel flashing and makes for a more weather-tight construction. All exposed steel is finish-painted with a graphite paint that produces a velvety black surface; the aluminum frames add precise, bright pencil lines to the facade pattern and enliven it; the glass is bronze in color, and absorbs a measure of the sun’s heat.
INTERIORS: COURTROOM AND LOBBY

The major function of the building is the provision of 15 courtrooms, each two-stories high, in the upper part of the tower; floors 17 to 27. There are built-in arrangements for expansion, so that 20 courtrooms can be furnished without revising structural or mechanical systems. As the plan above shows, each courtroom is inside-located for sound isolation and elimination of visual distraction, and is served by a private elevator system. Peripheral offices at courtroom level, and on the alternate floors between, are occupied by individuals and agencies that comprise or support the court system. Circulation is carefully worked out: the judge's private elevators connect to underground parking; four special elevators carry prisoners to cells adjoining the courtrooms; jurors use the private corridor (towards top of plan), as do judges, lawyers and staff; the public is restricted to the wide corridor (towards bottom of plan) serving the courtrooms.

The upper photo at right shows a typical courtroom, approximately 42 by 56 feet in area and with an 18-foot ceiling, designed by the architects. All woodwork—including wall paneling, low partitions, judge's bench, attorney's tables, and molded plywood spectator benches—are of matched black walnut. The panels of vertical strips are designed for sound control. The luminous ceiling is composed of cast aluminum egg-crates supported by aluminum T's forming 17-inch squares. The wool carpeting is gray-brown in color; all chairs are upholstered in black leather.

The two lower pictures at right are of the lobby, which has a white plaster ceiling and floor of Rockville granite with a honed finish. The steel-clad columns are painted flat black, as is the glass wall framework. Core walls are of Rockville granite with a flame finish; the revolving doors are stainless steel.
United States Courthouse and Office Building
The Federal Center, Chicago, Illinois

CLIENT: General Services Administration

ARCHITECTS: Chicago Federal Center Architects
a joint venture of Schmidt Garden & Eikson, Ludwig Mies van der Rohe,
C. F. Murphy Associates and A. Epstein & Son

CONTRACTORS: A. L. Jackson Company, substructure
Paschen Contractors, Inc. and Peter Kiewit Sons Company, superstructure

134 ARCHITECTURAL RECORD March 1965
NEW FEDERAL ARCHITECTURE

The Public Buildings Service, with support from the highest levels of the Government, is making a real effort to improve the quality of Federal architecture. The buildings on these pages represent some of the first tangible results of this new architectural policy.
New Federal Architecture

Housing and Home Finance Agency Office Building
Washington, D.C.
ARCHITECTS: Marcel Breuer, Nolen-Swimburne and Associates
Associates: Herbert Beckhard, Chard F. Webb
STRUCTURAL ENGINEER: Paul Weidlinger
MECHANICAL ENGINEERS: Joseph R. Loring & Associates

Left: Site plan shows how building comes to lot line only at the corners. Below: Section through central portion of the building. Above right: Plan of typical office floor showing partition module at left, structural module at right. Inset portion (2) shows lighting fixtures and inset (3) the under-floor ducts. Below right: Ground floor plan shows cafeteria (6) and kitchen (7). Ramps to the garage (8) are at lower portion of drawing. The other ramp (9) is for service.

A BOLD SOLUTION TO A DIFFICULT PROBLEM

The new offices for the Housing and Home Finance Agency are the antithesis of those recent Washington buildings that look as if they were the inexorable result of circumstances beyond anyone's control. Its design is one of the first results of the new Guiding Principles for Federal Architecture, sent as a directive to the heads of all Federal agencies by President Kennedy in June, 1962, and also of extensive changes in procedure that have taken place at the General Services Administration. The GSA acts as the client.
for all Government buildings within the United States, except for military installations, post offices and the Capitol itself. Changes set in motion when Leonard Hunter was assistant commissioner for Design and Construction (the chief architectural post at the GSA), and the full support of good design objectives from high levels of the administration, have given Hunter’s energetic successor, Karl Yasko, far more freedom of action than any of his predecessors. The effects of Yasko’s direction are visible in the HHFA Building, and in the three other new buildings shown on the following pages.

The form of the HHFA office building was closely determined by the restricted nature of the site and the program requirements of the client. The building will ultimately need to accommodate 6,000 people, and the HHFA wished to house as many of them as possible in peripheral office space. The site is not only small, and bounded on all sides by streets, but also adjoins the proposed L’Enfant Plaza redevelopment,
which contains a building that bridges Ninth Street and comes right up to the lot line.

The building form that evolved, and which is related to Breuer buildings for UNESCO and for IBM in Nice, France, solves both problems neatly. It draws back from the lot lines, except at the corners, and most of the office space is only 30 feet deep.

The building is approached from a large vehicular courtyard paved in hexagonal concrete blocks. A tall sculpture, which the architects refer to as a “banner,” marks the main motor entrance. The ground floor, set back behind the pilotis that carry the structural wall, contains the lobbies and a cafeteria that looks out on a landscaped court on the opposite side of the building. There is a parking garage in the basement, and additional cars are accommodated at grade. These have been made as inconspicuous as possible, with some parking places actually under the building itself. The nine office floors are all similar, with the mechanical equipment being fed from the penthouse.
The basic 10-foot module is expressed by the structural window units, which transmit their loads to pilotis that are not so much double columns as large single columns from which an inessential central portion has been omitted. Pre-cast concrete double tees span 30 feet from the outer face to a poured-in-place continuous beam, supported by columns on 30-foot centers. The frame of the interior portion of the building is poured-in-place concrete, as are the elevator cores, which provide lateral stability.

Fan-coil units in the window wall serve the peripheral area, with an otherwise conventional duct system serving the rest. The suspended ceiling acts as the return plenum. Diffusers, lighting and under-floor wiring are arranged to provide the greatest possible flexibility.

The GSA was impressed with the speed and directness with which the architects answered a difficult problem. The architects in their turn have found the GSA a client for whom they can do their best work.
The National Air and Space Museum, Washington, D.C.

ARCHITECTS: Hellmuth, Obata & Kassabaum
Mills, Petticord & Mills

DESIGNER AND PRINCIPAL IN CHARGE: Gyo Obata

STRUCTURAL CONSULTANTS: The Engineers Collaborative

MECHANICAL ENGINEER: Harold P. Brehm

LIGHTING CONSULTANTS: Seymour Evans Associates

FOOD SERVICE CONSULTANTS: Flambert & Flambert

ACOUSTICAL CONSULTANTS: Bolt, Beranek & Newman, Inc.

The National Air and Space Museum will occupy a prominent site in Washington right on the Mall, opposite the National Gallery and only a few blocks from the Capitol itself. The new museum will house the Smithsonian Institution's collection of historic airplanes, missiles and other relics of the air and space age.

This type of exhibit involves two seemingly contradictory requirements. The planes and missiles need a great deal of space around them, otherwise...
their scale is lost. At the same time, it is necessary for the public to get close enough to the exhibits that it can see them clearly.

Gyo Obata’s solution was to organize the plan around 12 towers, which form the supporting portion of the structure and house all vertical circulation and mechanical equipment. Deep steel trusses span between these towers and support large areas for the display of missiles and planes. The trusses house within themselves smaller, special exhibit spaces, and provide galleries from which to view the large halls. The result is a series of inter-penetrating large and small spaces which permit the public to view the exhibits from many different levels and angles.

The Air and Space Museum is about the same length as the National Gallery across the Mall, and the building’s 12 towers have been arranged to reflect, in some respects, the modeling of its neo-classical counterpart. The main entrance hall is accessible from both the Mall and the Independence Avenue
sides. The north elevation, facing the mall, has large projecting areas of glass, expressing the pattern of trusses and towers. The south facade has been left without windows, except at the entrance hall. The building will contain a garage for 1,200 cars in two basement levels, five levels of exhibition space that move through, and around, the skylit entrance hall and two skylit interior courts, a mechanical floor with space for a restaurant looking out towards the Capitol, and then, forming a cornice at the top of the build-

ing, the administrative offices and research library.

The architectural expression is forthright, and a strong continuity is maintained from interior to exterior. The concrete will be left exposed and not veneered with the marble surface that is usually considered synonymous with an important government building. The architect feels, and the client and the Fine Arts Commission agree, that a veneer of stone blocks would be false to the monolithic nature of the construction.
This office building complex consists of three parts: a long block that bridges the 10th Street Mall, a square office block and a cafeteria. The perspective is taken from the terrace of the square element looking north towards the long block.

OFFICE COMPLEX
BRIDGES
NEW MALL

This unusually large building, almost 2,000,000 square feet of gross area, occupies an irregular site, bounded by two super highways and a railroad, and divided by the Tenth Street Mall. The architects decided that the only way to produce a unified design would be to bridge Tenth Street, an idea which required Congressional approval. The south block, which is 660 feet long, is raised 30 feet off the ground, with the object of permitting the space of the mall to flow under the building without interruption. Pedes-
tian traffic across the site follows a lower level passage, lighted by open courtyards, that runs under Tenth Street, thus separating communication within the complex from traffic running through the site. Automobile and bus entrances are located at both ends of the pedestrian passage, where it gives on to the highways that form the boundaries of the site.

The original plan called for two symmetrical wings to project from the long block on opposite sides of Tenth Street; but in later stages of the design this space was consolidated into a single large block, in the form of a hollow square, which is connected to the long block by a bridge. The third element in the composition is a cafeteria building which is open on all sides itself, and which is low enough to open out the whole composition.

The basic architectural problem of the complex is obviously the relationship between the two large blocks, and the design went through innumerable facade studies in an attempt to find the answer.
the architects had accepted the division of the site, they would have had two buildings, but bridging the street does not seem to have completely solved the problem. At one stage the outer walls of the square block were to have been left completely without windows, thereby making the expression of the two office buildings totally different from each other. In the end, this solution did not prove practicable, but two walls are still left blank, to provide a visual foil for the lighter form of the long block.

Whatever the difficulties of the problem, however, the architects have succeeded in providing a sympathetic environment for the 7,500 people who will eventually work in these buildings. Careful attention has been paid to landscaping, which fills in the irregularities of the site, humanizes the mall, and forms a counterpoint to the building masses. The court­yards, terraces, and unified circulation pattern provide amenities which have just not been present in other Washington buildings of a similar type.
The model photographs show the basic division of the F.B.I. Building into public and private areas, and the relationship of both blocks to the Pennsylvania Avenue Plan.

The Federal Bureau of Investigation Building
Washington, D.C.

ARCHITECTS AND ENGINEERS:
C. F. Murphy Associates
Beistvenger, Hoch, Arnold and Associates
Stanislaw Gladych, designer in charge

This building, which is still under design, offers the first opportunity to implement the new plan for Pennsylvania Avenue. The new development is expected to be primarily commercial, but the F.B.I. already owned the site when the plan was approved. The problem thus became one of fitting the F.B.I.'s program to the primarily scenic conception of the street design. This has been done by placing the areas which the public visits along the avenue, separated from the main block by a court.
A NEW REGIONAL PLAN TO ARREST MEGALOPOLIS

An appraisal by LEWIS MUMFORD of New York State's new development program. The noted author and critic considers it a milestone in public policy, but warns of weaknesses that need repair.

Under the title, "Change: Challenge: Response," New York State has come out with a basic plan and policy for the future development of its cities, agricultural areas, and recreation and forest reserves, over a period of the next 60 years. The publication of this report should clear the air of the largely meaningless noises that have grown in volume during the last decade on the subject of metropolitan planning and urban renewal: noises that reach a pitch of confused emptiness in the term "megalopolis," treated as if it were a new kind of city, instead of the urbanoid mish-mash that it actually is.

Nothing of similar consequence to the arts of improving the environment has been published since the announcement of the Tennessee Valley Authority. While the computers are busily turning out more sophisticated traffic counts, population predictions and mobility estimates, proving that nothing can be done except to "go with" and accelerate the forces that are already in motion, the Office of Regional Development has introduced a hitherto unused factor not embraced by computers or by computer-directed intelligences: the human imagination.
...this report challenges the false premises

1. The New Departure

The special quality of this report appears in the very first section, which shows the present situation of New York State in the perspective of the whole world community and of the great changes in population growth, technology and urbanization which underlie all plans for improvement. The very existence of New York and its great port depended, as the planners of the Erie Canal first saw, upon forces and movements that have never been entirely under local control.

Planners who lack this perspective remain as bewildered as Mr. Robert Moses over the fact that his traffic remedies have increased the conditions they sought to alleviate. They are baffled by the insight of Benton MacKaye, who in “The New Exploration” observed that in order to overcome the traffic congestion of Times Square it might be necessary to re-route the shipment of wheat through the Atlantic ports. So, too, the Federal Housing Administration’s mistaken loan policy, which favored suburban builders, has done as much as Detroit to turn our cities into gaping parking lots.

The quality of imaginative insight lifts much of this planning report—but alas! not all—from the level of the dismally probable to that of the hopefully possible. Instead of accepting wholly the current tendency to allow short-sighted highway engineers, motor car manufacturers, and realty developers to create conditions that no public authority is able to remedy except by beginning all over again, they show, rather, the necessity for a policy of land planning and urban development on a regional scale, carried out under the authority of the state executive. They seek to control disorderly metropolitan growth in already congested areas by spreading urban and industrial development over the entire state.

In getting down to regional bedrock, this report re-establishes the vital contribution made by the first “Report on a Plan for the State of New York,” issued by the New York State Housing and Regional Planning Commission in 1926. The new proposals do not merely build upon the work that was so well done almost 40 years ago, but go further in the direction of regional integration. In certain basic assumptions, it is true, the new report has accepted without challenge the belief that intensified mechanization and ever-accelerating locomotion will remain the one constant in an otherwise changing world. In overlooking the human reactions to this
process, already visible, they unnecessarily weaken both their historic analyses and their constructive proposals.

But even in its present form, this portfolio is an important public document. Let no one be put off by its deplorable Madison Avenue “presentation” in seven colors of type and four of paper: a format that might make one unfairly suspect that a piddling idea has been inflated into a staggering sales prospectus to lure an unwary investor or flatter the ego of some corporation executive. If, however, the essential ideas that are embodied in this report are understood and carried into action, they should have a widespread effect upon the whole pattern of urbanization. And if some of its serious weaknesses are corrected, it might serve as a model program for urban and regional development everywhere.

2. The Regional Setting

What gives this new development policy special authority is the fact that it reunites two aspects of planning that should never have been separated, even in the mind: cities and their regional matrix. As the geographer, Mark Jefferson, observed long ago, city and country are one thing, not two things; and if one is more fundamental than the other, it is the natural environment, not the man-made overlay.

The biggest metropolis cannot expand beyond the limits of its water supply; and even when it wipes out the valuable reserves of countryside close at hand, instead of zealously preserving them, its inhabitants are still dependent for recreation and change of scene on some more distant area. Unfortunately, the more distant the area, the less open to daily common use, the more tedious to reach by motor car, the more costly to get to by plane, and the more empty it will ultimately be of recreation value, since crowds of people from other areas will likewise be drawn to it—thus turning the most striking natural landscape into a kind of recreation slum, like Yosemite in midsummer.

By recognizing that the conservation of the countryside is an essential part of any sound policy of urbanization, this report challenges the false premises of Jean Gottmann’s statistical nonentity, “Megalopolis,” with his picture of cities dissolving into an interminable mass of low-grade, increasingly undifferentiated, urban tissue, stretching from Maine to Georgia, and from Buffalo to Chicago. No city, however big, can hold its own against this mode of dissolution and disintegration, and no policy of highway building or urban renewal will prove otherwise than destructive until a regional framework can be established which will give form to all our diversified economic and cultural activities.

The outlining of this new framework is the first step toward a balanced urban development. The framers of this New York State report have taken this decisive step. What the clotted metropolis did in the past, the region will have to do in the future. But in still another respect, the report breaks fresh ground; or rather, it comes back to the classic report of 1926, which in turn was based on an earlier analysis of the present planning situation, published in May 1925 as the Regional Planning number of the Survey Graphic. For the present planners emphasize that any large coordinated effort at planning lies beyond the scope of municipal action in any one city, however large: it rests on bringing together in a working partnership a multitude of municipal, county, state and even Federal agencies, and in persuading individual property owners and private corporations to work within the general pattern. Unfortunately the regrouping of urban units within the regional setting cannot take place automatically through the unregulated operation of private interests—for it must halt or reverse many present tendencies that work against a sound urban development.

Not a little of the large-scale planning and construction being done today, by highway departments, municipalities and housing agencies, comes to nothing, or worse than nothing, for lack of any agreed social purposes: many radical changes are made, such as that which is now turning Long Island, New York City’s last nearby seashore recreation area, into a mere expressway bypass, merely to provide fat jobs and profits to construction companies and speculative builders, while many essentials of conservation are neglected just because they contribute nothing to the insensate dynamism of our affluent society.

Too often our most active planning agencies, for lack of any clearly defined social ends, cancel each other out. Thus, in New York City one municipal department has been commissioned to reduce the amount of air pollution. Meanwhile, the traffic commissioner and the Port of New York Authority, abetted by the State Highway Department, have been zealously working to bring an ever greater number of motor vehicles into the city. But not
"...many essentials of conservation are nothing to the insensate dynamism

merely are the poisonous exhausts from motor cars a major cause of air pollution, but the amounts of nitric oxide and lethal carbon monoxide in New York's air have doubled during the last year. This in turn defeats the municipal drive to abate cancer and heart disease, since the medical evidence that directly connects cigarette smoking with these diseases applies likewise to the concentration of dangerous motor exhausts.

Up to now planners, with only a few exceptions, have assumed that cities, or at least big metropolises, could be treated as if they were self-contained units. If they lacked the space needed to improve conditions in the existing municipal area, then the remedy was to widen the periphery and take in such independent towns, suburbs or swaths of open land as were accessible. Metropolitan government has been put forward as if it were a cure-all for our present confusion: but the city of Philadelphia has had metropolitan government for more than a century without showing the least benefit from it.

The process of metropolitan extension and aggrandizement has gone on steadily in New York, London, Paris, Rome and Tokyo without producing anything except congestion, blight and urban decay; and the fact that the same processes are now at work in some 41 other metropolitan areas in the United States does not improve the prospects for urban living or architecture: quite the contrary.

This situation was analyzed clearly for the first time in the 1926 "Report on a Plan for the State of New York" already referred to; and to understand what the new development policy has added to that report, one may profitably take a look at that classic original document, and the background thinking that made it possible.

3. The Background of Regional Planning

The extraordinarily rapid growth of both New York State and New York City during the 19th century increased the magnitude of their problems and the enormity of their mistakes. But likewise, it brought about an early series of efforts to correct them. Thus New York City introduced the first pure water supply from distant sources in the Croton system, 1842; mass transportation, first by elevated railway, 1869; improved tenement house designs (Al-
neglected just because they contribute of our affluent society"

Some of these remedies, like mass transportation and public housing, turned sour, because their effect was to add to the already formidable congestion; other efforts, like Forest Hills, did not catch on, for what was meant originally to be an experiment in workers' housing proved so expensive that the new housing estate was turned into a superior suburb for the well-to-do. But in the early 1920's a fresh start was made, in two radically different directions, by two different groups, both using the term "regional" in an entirely different context.

The first group was that created to produce a "Regional Plan for New York." This organization was under the directorship of an experienced planner, Thomas Adams, backed by the financial resources of the Russell Sage Foundation. With a freedom no single municipal agency possessed, this group focused attention upon the metropolitan area of New York, an area then covered by a circle with a 40-mile radius. With little difficulty, their economists showed that, since this was a highly concentrated market, the intensive urbanization of the entire area was inevitable: indeed, the more people here, the bigger the market and the greater the commercial prosperity. On those terms, there was no reason to look beyond the metropolitan area for a solution of New York's problems.

The other group, the Regional Planning Association of America, challenged both the premises and the conclusions of the Russell Sage group. This association was founded in 1923; it consisted of a handful of architects, planners, economists, "geotechnicians" and writers who believe that the new forces that were already visible—giant power, the telephone, the radio, the motor car—had made metropolitan congestion obsolete, and necessitated a large-scale regional coordination of the institutions that were almost automatically producing the wrong type of urban development in the wrong place for the wrong purpose.

One of the members of this little group, Clarence Stein, persuaded Governor Alfred E. Smith to create the New York State Housing and Regional Planning Commission; and another member, Henry Wright (senior) became its planning consultant. In 1926 this commission brought out its final report on the regional development of New York State, past, present, and possible.

This report shifted the focus of interest and political authority from a single metropolis to the whole state, with its highly diversified regional components. Viewing the state as a whole, it traced the early development of the state through two periods, the first that of water power, canals and highroads, with a fine balance of industry and population, the second, that of the railroad and the steam engine, with an over-concentration of population in the principal port terminuses, Buffalo and New York.

Instead of carrying metropolitan concentration further, Wright showed that if new technical facilities were utilized, and old human values were respected, a better development of the whole state would be possible, with a diffusion of power and the building of many new urban centers that would form part of a larger regional complex. This would not merely restore the balance between town and country, but make it possible for the whole population everywhere to have the advantages of genuine city life, without the dreary drill of long subway rides, crowded tenement quarters, insufficient play space and a constant expenditure of municipal funds upon repairing conditions that would, in a better-ordered environment, never have come into existence.

This was the first time any public body had taken a broad historic and geographic view of urban development. In its method of approach, it broke with all one-sided specialist attempts to deal only with piecemeal problems and patchwork solutions. Instead of wiping out urban variety by taking for granted that a single model, Megalopolis, would take its place, Henry Wright's contribution was to demonstrate that a multi-centered approach would not only give fresh life to every part of the state but would relieve the population pressures upon the Empire City itself and so, for the first time, give it opportunity to catch up with its human arrears.

Despite its apparent failure and its long neglect, this report remains the basic American document in regional planning; and nothing that covers a smaller area of life deserves to be called regional planning. Though the many planning and housing agencies created under President Franklin D. Roosevelt failed to understand the new approach made by Wright, Stein and their colleagues, the ideas behind it have lived on and, in modified form, have been adopted by the new agencies.
"...if new technical facilities were utilized, a better development of the

The report recommends the division of New York State into 10 great regions

it were too sound to be indefinitely buried. If Wright's report now comes back, through the Office of Regional Development, with renewed authority, it is perhaps because the purely metropolitan or anti-regional approach of all the specialized planning agencies has done nothing to counteract the cataclysmic economic forces that are now producing something close to total urban chaos, in which purposeless violence and bare-faced criminality and meaningless "happenings" contradict all the professed boasts of an advancing civilization. Art and architecture have both begun to tell the same story, embracing accident and chance, belittling purposeful order and humane design. Behind the smooth bureaucratic and technological facade, chaos continues to widen, for only machines can prosper in the environment we are now mechanically creating.

4. The New Regional Front

The analysis on which the new development policy is based begins, in effect, at the point where the report of 1926 left off. Henry Wright had shown that the valleys of the Hudson and the Mohawk were necessarily the backbone of any surface transportation system; but the zone of settlement was not confined to the strip immediately served by the railroad, since now the motor car, the telephone, the radio and the electric grid gave equal advantages to a much wider zone, where a network of new communities, and revivified older towns, would have, if properly organized, all the advantages of a metropolitan community without the disadvantages of congestion. The building of new towns to attract industries and population was the first means of coping with metropolitan overgrowth.

The new report points out that three patterns of growth can now be detected. First: the expansion of the hitherto minor metropolitan areas of Rochester, Syracuse, Utica, Rome and the tri-city complex of Schenectady, Albany and Troy. The second process, largely a result of highway development, is the inter-linking not only of the cities but of the major valley areas, which opens up an even larger area of settlement. This in turn leads to a possible further expansion of both smaller communities and remoter areas of the state, in order to take care of the current increase of population.
and old human values were respected, whole state would be possible...”

To handle these three kinds of change, the report has made a major advance by dividing the state into ten great regions, each with its own metropolitan center. In de-limiting these areas, the planners have given weight to both geographic and historic realities, adroitly retaining the existing counties and combining them in such a fashion as to balance environmental resources and make fuller use both of natural opportunities and the existing pattern of urban settlements. There was a beginning of such regional differentiation back in the 1920's, when the Niagara Frontier Council, the Capital District Regional Planning Association and the Central Hudson Association were formed; but now the planners propose to make these regional divisions part of the political structure of the state.

By this one stroke the Office of Regional Development has clarified and given concrete expression to the term “regional city”; it shows that it is actually a congeries of cities, big and small, including hamlets, villages, and townships, and that in this new pattern the maintenance of open spaces and rural resources is as important as the presence of economic and cultural opportunity. Unfortunately, though the writers have grasped the main factors in regional development, they are still under the spell of metropolitan expansion, with its tendency to establish centralized control. As a result, among the 15 proposals they make for carrying out a regional policy, they fail to emphasize the three that are essential to any sufficient transformation: Regional Councils, Land Control and New Towns. On these three matters, the nearly 40 years that separate the first and the second reports seem to have taught the policy-makers all too little.

5. Planning versus Inertia

Let me speak more specifically about these weaknesses, for unless they are remedied this report will be so much elegantly printed waste paper.

In the last half century, we have had enough experience with advisory commissions in city planning to learn how little influence they exercise. If regional development is to fare better, the state will have to set up competent regional authorities, with powers of planning, capital investment and corporate action similar to those exercised by, say, the Port of New York Authority: perhaps regional legislatures will be necessary to see that such authorities do not get out of hand. Advisory regional councils are certainly not enough.

All the report’s proposals for rehabilitating the existing metropolitan areas and planning new cities rest upon control of the land. To propose only a “codification and classification” of existing laws on land use control, as the report does, is to evade the issue: for if the existing laws were sufficient, land planning and land utilization would be done by the state and regional governments for the benefit of the whole community. New Jersey’s admirable “Green Acre” program to acquire 300,000 acres for conservation and outdoor recreation is already handicapped not only by speculative land-grabbing and price-raising but by local authorities seeking to retain taxable properties.

There is no use talking about the preservation of recreation areas and other open spaces when the mere announcement of such a purpose is sufficient to push up speculative land values beyond the reach of the state’s budget. What we need are regional authorities with the power to put an embargo on uses of land that do not conform to public policy. Even in heavily settled areas like the Ruhr district of West Germany, such an embargo has proved effective. Since 1920, the authorities there have been able to keep that highly congested area from clotting into a single industrial mass: they have not merely kept 40 per cent of the area in forests and farms, but have even added to the open area.

Finally, the changeover from metropolitan congestion to regional distribution cannot be achieved without building new towns—balanced communities, not residential suburbs—on a large scale. This was the policy put forward by Clarence Stein and his associates in the early 1920’s and embodied in Wright’s sketches for the further development of the state. But at that time, only two new towns of limited size had yet been built on Ebenezer Howard’s principles in England. Forty years ago, the present report’s suggestion of “a major study of the ‘new cities’ concept” would have been in order; but now that 20 towns are already being built in England under government auspices, and private developers have undertaken others recently in California and Virginia, the sort of study advocated should have been an integral part of the present report. The
next "basic step to action" is not to study the concept but to begin, experimentally, to build the towns.

Strangely, the graphic emphasis of this report falls on what should not be done, treated as if it were something that could not possibly be avoided. The report accordingly wastes four huge pages to show the kind of urban development that its writers weakly believe is going to continue: the monotonous mass housing of the suburbs and the equally monotonous and even more inhumane mass housing in high-rise apartments, done under the comic name of urban renewal. Instead of saying at this point, "This is what we must prevent," the report says confidently that 500,000 more people will be housed in the same dismal way. This is a betrayal of the basic regional concept. In the whole elaborate presentation, indeed, there is not a single picture of a well-planned town, or even of part of such a town. What the pictures unfortunately show could be summed up in Patrick Geddes's savage phrase: "More and more of worse and worse."

In a report whose main outlines are so sound, such weaknesses and contradictions as I have touched on cannot be treated lightly; for this report is nothing if it is not an educational document, and half the value of it is destroyed because the writers did not realize that the dominant tendencies in present-day urban development do not need encouragement, and that the main use of such a fresh conspectus is to point out the many desirable alternatives that actually exist. One of the best uses of statistical predictions is to call attention to undesirable consequences that may, with further thinking and planning, be avoided.

6. The Need for Feedback

Behind the specific failures of this report stands a more central one which is all too common in most predictive statistical analyses: it treats statistical predictions as if they were commands. The report takes for granted, on the basis of the recent curve of population growth, that the number of people in New York State will rise from 16 million in 1960 to some 30 million in 2020: this then becomes automatically a directive to prepare for such an expansion. To regard such statistics as final is only an excuse for succumbing to the inevitable, instead of taking action to produce what is humanely desirable.

Actually, there are many unpredictable factors, from nuclear extermination to birth control, that may nullify this prediction: not the least important factor would be an intelligent reaction, by any large part of the population, to the prediction itself, if once its consequences were spelled out. The report, instead of cheerfully preparing for the expected 30 million, might at least have pointed out that such a population could not be accommodated without a drastic shortage of recreation space and general elbow room. Thus a more realistic canvass of the possibilities of life under such conditions might lead once more to the practice of family limitation that prevailed before 1940. Even while the report was being prepared, in fact, the number of births per thousand in New York State dipped from 25.3 in 1957 to 21.7 in 1963. Given another 10 years, the population graph might be as different from the present one as those made in 1940 turned out to be.

Because it pays too much attention to statistical trends and probabilities, and not enough to fresh ideas and possibilities, except in the way of new mechanical inventions, this report lacks some of the virtues of the 1926 report. But the mistake that the framers of this report make is one that is common to a whole generation: it is the tendency to treat the technological forces and institutional practices now in operation as if they were immortal. When they plan on this assumption, they tend to make their most unwelcome predictions come true. But where they depart from this practice, as in the proposal for setting urban and rural growth within 10 newly constituted regions, the Office of Regional Development opens up a new prospect for controlling the forces that are defeating and strangling sound urban development. For this reason, the report should have the widest possible circulation and promote the most extensive critical discussion.

I know no other proposed innovation in public policy since the T.V.A. that more deserves earnest attention, not merely in New York, but in every other state of the Union: indeed all over the world.
TWO CHURCHES THAT RESPECT TRADITION:

1. Trinity Lutheran Church, Chelmsford, Massachusetts

ARCHITECT: Joseph J. Schiffer
STRUCTURAL ENGINEERS: LeMessurier Associates, Inc.
MECHANICAL ENGINEER: E. Shooshanian
GENERAL CONTRACTOR: H. Tobiason & Sons, Inc.
In church architecture the debate lies between those who wish to create a whole new set of architectural forms to symbolize the church, and those who seek to translate traditional means of organization into the language of modern methods and materials. Many successful churches, like those of Pietro Belluschi, are essentially translations of traditional architectural forms; and, as long as churches continue to use traditional symbols and ritual, this course would seem to have every intellectual justification.

This church at Chelmsford, Massachusetts, by Joseph Schiffer aims to create the shadowy interior and the arching forms of the Gothic revival. At the same time, the manner in which the church is carried out is not at all a literal one. It is completely free of the apparatus of historical detail; the structure is all of straight pieces of wood, with no arches or curving shapes except in the form of the skylights. These skylights, which accentuate the cross-shaped plan, also serve as an intellectual comment on the structural system. They separate the roof into its constituent planes, creating an effect that would not have been possible if the architect had simply followed precedent.

Another departure was the use of the baptistry, sacristy and organ loft to, in the architect’s words,
"modulate" the space. Their placement effects a transition between the centralized, symmetrical form of the church and the directional arrangement of the plan, which places the altar at the east end, rather than under the crossing as one might otherwise have been led to expect. The asymmetrical placement of sacristy, baptistry and organ loft is also expressed on the exterior, where each of these elements appears to break through the facade, producing the same opposition of forms that takes place in plan. The nave is designed to seat 210, with an additional 70 places in the choir. With over-flow seating, the sanctuary can accommodate 380. The church and education building comprise 8,000 square feet, and were built at a cost of $185,600, exclusive of furnishings, land and fees. Future additions will double the size of the education building and add a social hall and a bell tower, forming a three-sided court.

The basic colors of the interior are warm tones of wood and brick. The stained glass pattern progresses from blue-white glass in the baptistry and narthex areas, to blue-purple and then to red in the sanctuary. The chancel cross of hammered bronze and silver is by Richard Filipowski of the department of art at M.I.T. The altar, pulpit and font are of the local gray granite.
TWO CHURCHES THAT RESPECT TRADITION:

2. Chapel for the University Presbyterian Church, Rochester, Michigan

ARCHITECTS: Linn Smith Associates, Inc.
STRUCTURAL ENGINEERS: McClurg, McClurg, Paxton & Mikle, Inc.
MECHANICAL AND ELECTRICAL ENGINEER: Gordon E. Hoyem
GENERAL CONTRACTOR: Sund Construction Company
The separation of the roof from the brick walls of this chapel serves as a comment on the structural system, in much the same way, and for much the same reason, as the skylights in the church at Chelmsford that is shown on the preceding pages. The separation indicates that, although the form of the roof is traditional, the structure is not; and this simple chapel draws on history as a source for quotation and re-interpretation, without using any overt stylistic detail.

The University Presbyterian Church occupies the grounds of an estate across a valley from the site of Oakland University, a new campus of Michigan State, in Rochester, Michigan. Rochester, a rapidly developing community about 45 minutes driving time from Detroit, is also the site of new campuses for Oakland Community College and Michigan Christian College.

The chapel, which is designed to seat 180, is the first unit of a master plan which will ultimately include a sanctuary, an education building and an administrative unit. The social narthex is designed to be a gathering place for the congregation after the service. The glass panels between narthex and
nave can be opened, and the narthex can then seat an additional 80 people. Exterior walls are a warm-colored brick, interiors primarily brick and wood.

This chapel won the only First Honor Award given by the Detroit Chapter of the A.I.A. last year. The jury, whose members were J. Roy Carroll Jr., Vincent Kling and Robert L. Geddes, commented: "This building is appropriate in every way. It is coherent, has repose and great dignity, shows good over-all consistency in detail and use of materials. It looks like a church—one you'd like to enter."
WELL-ZONED HOUSE HAS BOLD SPACES

Separation of family, service and entertaining areas into three parallel but connected wings has enabled Tarapata-MacMahon Associates to create dramatic and flexible living spaces.
This rather formal elegant house was designed to give ample scope for entertaining on a large scale. Mr. and Mrs. Bachman felt that it was important for there to be some separation between family living and party areas, although spaces should be capable of being combined to handle large groups of people when required.

The solution divides the plan into three parallel wings, each of which is expressed by a roof ridge. Family living space is in the south wing, garage and service areas in the north wing, with the entertaining rooms between the two. The two teenage sons’ bedrooms in the south wing have their own entrance direct from the entry court.

The house is placed on the high point of a three- and a half-acre wooded site overlooking a small lake and island. Describing the way in which the scheme was worked out, the architects said: “Care was taken not to reveal at once the entire sequence of spaces and beauty of the site and view, through the use of a series of visual baffles.”

The sculptured concrete screen at the opening to the entry court forms the first baffle, and the second is provided by the 16-foot-wide fireplace which separates the living room from the main entrance. Sliding shoji screens within the living area make it possible to close off the dining room and family den when privacy is needed. When these screens are thrown back the center of the house is in effect one enormous room, which can accommodate a very large party of guests. A glass wall leads from the garden room to a terrace, and ledge rock garden walls of varying lengths and heights form the last visual baffle.

The house is constructed of nailed and glued wood trusses on a light steel frame. Foundations are grade beam, except the basement area which is concrete block. Exterior walls are textured, split-block veneer painted white; the roof is dark brown asphalt shingle.

Residence for Mr. and Mrs. William B. Bachman Jr. Bloomfield Hills, Michigan
LANDSCAPE ARCHITECTS: Johnson, Johnson & Rey, Inc.
INTERIOR DESIGNER: William Denler

ARCHITECTURAL RECORD  March 1965  165
The floor of the living and garden rooms is 16 inches lower than the rest of the house, so that a comfortable sitting ledge is formed around the main living area. Special lighting in the low passages at both sides of this room creates a suitable display area for the owners' art collection. This contrast of low and high ceilings serves to emphasize the magnificent feeling of space. The house is heated by a forced-air perimeter heating system. Air conditioning is provided in five zones.
SCHOOLS

An upsurge in new concepts and the promise of new funds indicate a busy future for public school planning.

New vitality is clearly apparent in the construction and renovation of public school facilities. Instead of a post "baby boom" lag, which seemed a strong probability a short while ago, more funds and initiative are being pumped into the area of public education at all levels. Scanning over the scene, from the President's national program to activities in local communities, one is recurrently faced with news leads about new plans and ideas: Chicago's long-term $1.1 billion program for "quality education"; Shreveport's plan for a big new high school for all the new teaching aids and methods; the school renovation study (under a grant from Educational Facilities Laboratories, Inc.) for the Great Cities Research Council—which include the 15 largest United States cities.

Nor is there any lack of exploration of new ideas. In addition to the continued study of ways to cope with the newer teaching methods via flexibility in classroom spaces and variations in their shapes, concepts of a larger scope are being planned: dispersion of resources into educational "service centers"; putting a school district on a single campus; using "air rights" in urban areas.

On the following pages, we have shown a series of schools which incorporate many of these newer concepts.

"In 19xx, EDUCATIONAL NODES—places to learn—will be everywhere; where people are," predicts William Caudill. Bearing a strong resemblance to the President's concept of educational service centers, Caudill's nodes would "be available like filling stations, all over the city." They would radiate out from a single service center, controlled and operated by the superintendent, for distribution of teaching materials.
A CONSOLIDATED CAMPUS for an entire city school system is being planned for East Orange, New Jersey. Conceived as a seven-stage construction program, the preliminary scheme shown here of the entire complex has been prepared by architect Emil A. Schmidlin. The program is a long range one, covering 15 years. The first stage would be the building of a new middle school, initiating a 4-4-4 system—which would also be a step toward an envisioned ungraded curriculum.

East Orange is a compact city of 3.9 square miles on the edge of the metropolitan New York area, with some 80,000 inhabitants and 9,800 children enrolled in 13 schools: 10 elementary, one junior high and two high schools. These would all be replaced by facilities on the single, new 16-acre central campus or "educational plaza."

AIR RIGHTS over subway yards are used for the site of this new combined elementary and junior high school in New York City. Designed by Francis X. Gima & Associates, Architects, and with Severud Associates as structural engineers, the school is to be constructed on a 300- foot platform, 15 feet above the yards of the IRT subway system. In explaining the selection of the site, the architects state that, "due to the number of housing developments and the deterioration of existing school facilities in Manhattan's East Harlem section ... a new site was required which would not require the relocation of a large number of families and the condemnation of a great deal of real estate which would be taken off the tax rolls."
UNIT ADDITIONS CONVERT AN ELEMENTARY SCHOOL INTO A JUNIOR HIGH

North Shore Junior High School
Glen Head, New York

ARCHITECTS: The Perkins & Will Partnership

STRUCTURAL ENGINEERS: Seelye, Stevenson, Value & Knecht

MECHANICAL ENGINEERS: Segner & Dalton

CONTRACTOR: Angelo J. Martone & Son, Inc.

EDUCATIONAL CONSULTANTS: Engelhardt, Engelhardt & Leggett
Big additions to North Shore School use sloping site to preserve scale

One of the major problems in the conversion of this small elementary school into a junior high was to preserve the character of the original building, and to keep the additions from overpowering it. The extra facilities required were four times as large as the existing unit. This question of scale was neatly answered by separating the addition into two elements, and placing the units on the site to take advantage of the irregular topography to match roof heights. A new two-story academic unit was constructed adjacent to the original school on a slope. The massive lively arts unit, with gymnasium and cafetorium, was placed on a much lower portion of the site (at left in the photo above, seen from the edge of the original building). The architects used the same materials and detailing in the additions as were in the existing school. In the older building itself, a multi-purpose room was remodeled and enlarged to provide proper library facilities for the junior high program.

The addition provides 12 new classrooms, shops, music, science and art rooms, a two-station gymnasium and a cafetorium with stage. To give the school added flexibility, the cafetorium was designed with two sets of folding doors, which permits a limited team teaching program in the school. At various points in the room are audio-visual screens.
COMPACT K-1 ADDITION FEATURES CARPETS AND FLEXIBLE PLAN

The friendly and familiar atmosphere of this little addition was conceived as an individual space completely devoted to the beginning student and his special needs. The space was also geared to give sufficient internal flexibility to allow a complete range of participation—from individual to large group—with minimum preparation and interference. To create a larger room, the center part of the building can be opened into a continuous space; at other times, it can be closed to form two classroom areas and a teacher work center. Each room has access to the outside under wide overhangs.

The building is constructed of steel columns supporting laminated wood beams decked with wood. Exterior walls are brick, exposed on the inside. Classrooms have cellular floors, surfaced with carpet, which conduct hot air from a central furnace to grills at the exterior wall. The resulting warm, comfortable floor is frequently used by the children as a sitting surface. Pattonville's school board president, Milton G. Henselmeier, states that the carpeting's "effect on student morale is excellent," and that it "subtracts from maintenance costs."

Primary Unit
Penn Junction School
Pattonville, Missouri

ARCHITECTS:
Pearce & Pearce, Inc.
Schools

PLAY AREA

EXISTING BLDG

PRIMARY UNIT

ARCHITECTURAL RECORD March 1965
HIGH SCHOOL CLUSTERS
"LITTLE SCHOOLS" IN AN EXPANDABLE PLAN

A two-phase land acquisition and construction program, coupled with the need for facilities for new teaching methods, resulted in this extremely interesting scheme for a high school. It is a campus plan of linked buildings, but compactly organized in two stories. Zoning of activities is applied by building and level, with the plan organized into two clusters of interrelated facilities. First, academic classrooms grouped (on the second level) in houses around an instructional materials center and audio-visual lecture hall. Second, science and manual arts facilities grouped (on the first level) around an audio-visual lecture hall. Each academic house or "little school" contains regular and specialized classrooms, study areas, counseling and teacher offices, conference space, and dining-social area for about 650 students. Two houses will be completed in the first stage, two added later. Each is clearly articulated to give it identity and reduce the scale of the over-all project. The compact grouping shortens circulation paths and uses a minimum of the original tight urban site: in the first stage, 11 acres are available under an Urban Renewal Project; 17.1 acres will be provided later. The structure has reinforced concrete columns and beams, concrete pan joists. Walls are face brick, backed by lightweight block. Provision is made for future air conditioning. Estimated cost is $2,490,000 or $16.27 per square foot.
DIVISIBLE CLUSTER
PLAN FOR A COMPACT
ELEMENTARY SCHOOL

In December 1962, the town of Greeley, Colorado, launched a highly innovative program to construct six new schools: four elementary, a junior high and a senior high. Due to be completed during this year, all were designed by John A. Shaver, and represent a variety of plan shapes, room arrangements and structure. The Sherwood Elementary School is the fourth, and final, elementary school of the series, and incorporates a synthesis of the ideas used in the preceding three. In a sort of three dimensional “bubble chart” scheme, a series of circular areas are tightly linked into functional groups. Eighteen classrooms for grades one through six are grouped into three clusters, six rooms and two grades to a cluster. Folding partitions open each of these areas into a single large space. At the hub of the classroom clusters are teachers' offices and a resource center. Each cluster has a domed roof, with unit ventilators at the apex. The entire school is air-conditioned and cost $13.85 a square foot, equipped.

A fourth cluster centers on a multi-purpose cafeteria, which doubles (via folding partitions) as added play space for the two kindergarten rooms. Administration and special rooms are also included in this cluster. The school is flanked by a play shelter to extend the season for outdoor activities.

The structure is supported by a ring of concrete piers around each cluster, and has brick exterior walls. Roofs are concrete over plywood forms.
AN UP-TO-THE-MINUTE MIDDLE SCHOOL FOR VERY LOW COST

Full facilities for a very advanced intermediate school program were incorporated in this tidy building at the cost of $8.88 per square foot. The price includes kitchen and all built-in equipment, and air conditioning for 12-month use, but excludes land value, movable equipment and professional fees. Research and planning for the school were materially assisted by a grant from Educational Facilities Laboratories, Inc.

The four-year middle school is physically divided into an “upper” and “lower” school of two grades each. Facilities, including a resources center, used by both sections are placed in the center of the plan. Each section has a multi-purpose room which serves, among other purposes, as the dining room, served by hot and cold floor service carts during lunch.

The architects state that: “The school was planned to accommodate two teaching techniques: (a) the conventional system of a teacher with a class group of some 30 students . . . and (b) the more advanced systems accommodating teaching teams, specialists, all teaching aids that offer promise, group endeavors, and student participation in the teaching process. It is expected that the teaching techniques which will finally be employed must be evolved over a number of years . . .” The structural frame is steel, with brick exterior walls. Total cost was $413,500.40.
CIRCULAR AUDITORIUM SUBDIVIDES INTO FOUR

Candlewood Junior High School
Half Hollow Hills, New York
ARCHITECTS: Frederic P. Wiedermann Associates
SITE CONSULTING ENGINEERS: Eberlin & Eberlin
MECHANICAL ENGINEER: Clyde M. Alston
CONTRACTOR: D. Fortunato, Inc.

The hub of this new school is a two-story circular building containing an auditorium with 764 seats, which may be subdivided into two, three or four smaller sections by means of folding partitions. The area has fixed seating and a central stage (which may also be subdivided) for theater-in-the-round, music, meetings or lectures. The folding partitions are electrically operated, and supported by ceiling tracks and dwarf partitions to maintain a constant horizontal surface at the bottom. Major lighting is provided in a coffered ceiling. The master control booth for all lighting and sound systems is in a booth at second floor level. Each segment of the room has its individual heating and ventilating system. Other divisible group instruction areas, language labs and vocational training facilities are also included in the school. The exterior walls of the school are load-bearing, with concrete lintels bearing on piers of face brick and concrete block. Interior framing is steel; floor slabs are concrete.
SCHOOL FOR THE DEAF ADDS FACILITIES FOR PRE-PRIMARY TRAINING

Pre-Primary School
New York School for the Deaf
White Plains, New York

ARCHITECTS:
Frederick G. Frost Jr. & Associates
Architect-In-Charge: A. Corwin Frost
Job Captain: Rachelle Bennett

STRUCTURAL ENGINEER:
Wayman C. Wing
MECHANICAL & ELECTRICAL ENGINEERS:
Segner & Dalton

LANDSCAPE ARCHITECT:
Vincent Cerasi

CONTRACTOR:
Bair & Bair, Inc.
Pleasant design and appropriate scale gear facilities to the very young deaf

This new pre-primary building at the New York School for the Deaf is specifically planned to teach three- to six-year-old children basic speech and language, and prepare them for entering the primary grades at the usual age. The building contains classrooms for 64 children, dormitory facilities for 48, meeting and play rooms, dining room and kitchen, apartments for house parents and administration.

As the very young deaf children are taught in very small groups, a special type of classroom was developed for the second level to permit the teacher to concentrate on two or three, while the others carry on individual activities. Alcoves and bays permit various groupings within each classroom space, and are supplemented by such auxiliary services as a tutoring room, toilet and a viewing room with one-way glass. More standard classrooms are on the lower level, and serve as a transition to primary grades which are housed in another building.

The dormitories group bed, dresser and closet units to separate the children into groups of four, while keeping them in two large rooms for control purposes. Low storage walls give separation for privacy, yet do not cut off views of any part of the room. The building has an exposed concrete frame and exterior walls of red brick. Garden courts are provided for outdoor instruction and play.
A COMMUNITY COLLEGE PROVIDES CAMPUS PLAN FOR TWO-YEAR PROGRAM

A burgeoning building type in the school field, plans for community colleges are in at least the discussion stage in every sector of the United States. This new campus, on the site of the old Ford estate in Dearborn, Michigan, is planned to accommodate a two year, liberal arts, technical-terminal college for 2,625 full time and 9,200 part time students.

Eberle Smith comments that “the community college is a relative newcomer to the American scene. In the simplest terms, it is an institution of higher learning offering programs beyond the high school level less than four years in length (and) bridges a difficult gap between high school and university, or high school and employment ... it is within commuting range of the area it serves; so that, in general, students incur no expense for board and room.”

In this example, the individual buildings are closely grouped around a center square to provide a completely pedestrian inner campus. All vehicular traffic — drives, parking, service areas — is limited to the periphery of the complex. The 75-acre site adjoins the University of Michigan Dearborn Center, and it was planned for the two institutions to be complimentary and to share such facilities as auditorium, library and physical education plant.

The structures of most of the buildings have concrete frames, pan joist floors, precast wall panels and brick trim. The cafeteria building in the center of...
the middle court has a shell concrete roof, and serves as a focal point. Most of the buildings are connected by covered walkways, and most of the courtyards are paved and landscaped for outdoor activity use.

Generalizing on an approach to this type of facility, Eberle Smith comments: "The size of the college community may be established according to three major considerations. First, of course, there must exist a socially and geographically integrated group which needs and wants a community college. Second, the area to be served must conform to the requirements of the enabling act of the state. Third, the area must have an adequate tax base to carry its share of the support of the community college. . . . Among the possible sources of support are individual donors, local tax revenue, fees for tuition, state aid to education and Federal funds. Part of the architect's service is to develop a master plan and a construction schedule which will take the best advantage of each of these sources. Usually, construction must take place in several stages as funds become available, year by year. Periodically, some units may be added and others may be expanded or converted to new uses as required by increases in enrollment and enlargement of the curriculum. . . . Community colleges are infants by comparison to the public elementary school, and their pattern is not set; each is a challenge and an opportunity. . . ."
An architectural firm which has designed many Long Island schools makes a special point of maintaining close contact with the fire rating bureau and with insurance agents for local school boards during the initial planning stages of school design to obtain maximum fire safety while keeping premiums as low as possible. In addition, the firm, Frederic P. Wiedersum Associates, Architects-Engineers, recently conducted a meeting with the Nassau County fire marshal to exchange information on new techniques for fire safety. The fire marshal, Peter Lynch, stated that he favors single-story structures which do not have exceptionally long unbroken corridors, preferring cut-offs dividing them into smaller areas to minimize threat of rapid spread of smoke and fumes. He also called attention to a new regulation of the New York Department of Education which requires that at least one window in each classroom be suitable as a means of egress.

The Weidersum firm has developed a number of standard practices relating to fire safety. One of these specifies that all partitions must be built up to the floor slab above to isolate individual classrooms. If a partition happens to be located directly under an open web joist, the partition is built up tight to the bottom of the joist, and the slab or deck above is sealed off with a chemically treated, fire-retardant fiberboard. In science laboratories, fire hazard is reduced by providing the instructor's desk with a safety cut-off switch which automatically disconnects gas and electricity on student's desks in case any of the individual valves or switches have been inadvertently left open.

While scissor stairs save floor space and are cheaper to build than two stairways in separate enclosures, the question might be raised as to whether scissor stairs meet code requirements for exits. Some of the pros and cons which could influence the answer are discussed in a short article on the subject in the January 1965 issue of the new publication, Fire Journal, issued by the National Fire Protection Association. Provision of alternate routes for escape, fire resistance of the enclosure and exit to the outdoors are some of the aspects considered. The bi-monthly Fire Journal is sent to members of N.F.P.A. as part of their membership service.

In the next 35 years, between 30 and 150 billion dollars will be spent on urban storm drainage, reports the Engineering Foundation. Because many large gaps exist in current storm drainage knowledge, the Engineering Foundation is sponsoring a conference on Urban Hydrology Research to be held at Proctor Academy in Andover, New Hampshire, August 9-13, which will present papers from university and government authorities in the field. In addition to technical discussions on such parameters as rainfall rates and related run-off rates, the economic, political and organizational aspects will be investigated.

Research on instant buildings of plastic for military purposes in remote areas has been described by Professor Z. S. Makowski recently in Interbuild magazine. The research has been conducted on a flexible foamed-epoxy sheeting which has a built-in heat source, which, when ignited, foams the plastic and expands it into a rigid wall more than 3 in. thick. Professor Makowski also cites research in the United States on plastics for expandable, rigidizing honeycomb space structures. Such configurations as a sphere and a torus have been tried out. The structures, once placed in orbit, are expanded by air pressure.

Engineer William J. Mouton Jr. applies imagination and strict economy to structural designs using space-frames for a glass dome, latticed box frames for a high-rise, folded trusses for a gymnasium.

"Every structure is something special, not just an isolated gem but a unique problem with its own solution." So says William J. Mouton Jr. in describing the three structures shown here. "For instance, the glass-covered space frame can be constructed for the cost of a steel frame and built-up roof; the trussed box frame high-rise allows conventional windows with 40 per cent less tonnage and 300 per cent increase in stiffness. It is necessary only to approach each problem as a new one."

While a few space frames have been built in this country, their use has been limited due to their higher cost in comparison with more conventional structures. The main cause of the poor economy is the large number of small identical parts and joints.

This particular glass-covered steel space frame employs none of the construction or joint techniques common to most space frames. It was erected in large pieces to effect economies in construction. Welded assembly was used because mechanical joints allow a small amount of movement at each joint and reduce strength at the joint since connections are punched or threaded.

With the advantages of welding and almost complete shop prefabrication, it was possible to execute the space frame for a cost no higher than constructing a conventional longspan steel structure with a built-up roof. This structure was built, with glass in place, for less than $4.50 per sq ft.

A basic module of 4 ft square was chosen in plan and it was erected to have all members also 4 ft in length. With this configuration, depth was 3 ft, with diagonals and all other members having an unsupported length of 4 ft.
In the shop the main trusses were prefabricated as triangular half arches 50 ft long. Half trusses were set up on a special jig and joined in a "V" shape by 3/4-in. round steel bars

having each leg of the "V" 4 ft in length.

At the top chord, a steel "T" section 1 ½ by 1 ½ by 3/4 in. was used at the perpendicular connection member which, together with the horizontal legs of the angles, served as framing to receive the 3-ft 1 ¼-in.-square panes of tempered glass. Due to the simplicity of the jig, two men were able to turn out one half-truss each day.

On the job, an assembly area was set up away from the building and the two half-trusses were welded together at the center and a temporary tie cable was attached and tensioned between supports. Another pair of half trusses was similarly joined at the end of the first pair. These two complete arches were then tacked together and hoisted up to the roof by crane and rolled into position with small dollies. This procedure was repeated until all trusses were erected.

Next time, a 3/4-in. round steel rod was passed through the bottom of each "V" formed by diagonal bars to make the construction a homogenous space frame. In appearance, the largely pre-assembled roof seemed to have been fully welded piece by piece in the air.

Finally the adjacent top chords were tacked together and the glass panes were installed with polysulfide placed below the glass and caulk above it. The steel "T" sections had been previously cut away for proper drainage.

This type of system gives several advantages: only two kinds of pieces are brought to the job (the triangular half trusses and the straight rods); the steel structure serves as the support for the glazing; any combination of angles, rods, tubes, and pipe of any type of weldable steel can be used; corrosion resisting steels are feasible.

According to the structural engineer, the structural analysis for such a roof is quite simple; any arch analysis will suffice but graphical analysis is best suited. Spans of up to 1,000 ft are easily possible in a single curvature and much greater spans (possibly up to 5,000 ft), may be feasible with double curvature.

By simply decreasing the distance between the bottom chord members of the triangular arches during erection, double curvature construction is possible.

The space frame described weighed 4.5 lb per sq ft, and a 1,000 ft span could be accomplished, the engineer believes, for under 10 lb per sq ft using high-tensile steels.

This 45-story Plaza Tower of latticed steel box frame design, now being built in New Orleans uses less steel than conventional construction and has considerable stiffness to resist wind loads.

The key component of the latticed steel box frame is the spandrel truss. It looks somewhat like a ladder lying on its side with cross-bracing in the form of "x's" between the steps. Lattice truss framing of a building structure is not new; perhaps the best known application is in the Eiffel Tower.

The depth of the criss-crossed truss is about half the height of a floor. The truss is bolted directly to the perimeter columns of the structure, with the mid-section of the truss at floor level. Large rectangular window openings are possible and the building had the strength of a cross-braced tower.

The same structural principles and techniques employed in the new office building will also be embodied in the proposed 72-story New Orleans Place Vendome Hotel, which will be 750 ft high.
Steel Framing

These structures have no interior columns between the elevator core and the exterior walls. Floors are bolted directly to the spandrel trusses in the exterior walls and to the service core in the center of the structure. The floors are of composite concrete and steel construction and add to the structure's rigidity. The service core is of conventional column-and-beam construction and houses elevator shafts, stairways and provides space for all utilities. Only 17 pounds of steel per sq ft are required for the 45-story Plaza Tower, and 17½ pounds for the 72-story Place Vendome Hotel. In both, large precast exposed aggregate channel sections serve as truss and column covers providing waterproofing, insulation and architectural finish of the building exterior.

One of the most substantial savings in steel is made by reducing the floor height from 12 ft to 9 ft 6 in. This is possible, the engineer states, because the structural members between floors need not be heavy and deep. A conventional ceiling height of 9 ft is still possible with 5-in. composite floor slab serving as floor above and ceiling below. Of course it is not possible to have ductwork runs above suspended ceilings with this system. Air-conditioning and electrical facilities are carried in an area surrounding the service-elevator core.

Long-span Folded Trusses

The Hammond Junior High School gymnasium's economical structural system is based on folded lattice-type steel trusses designed on the folded-plate principle as developed by the late Felix Samuely. To the best of structural engineer Mouton's knowledge, this is the longest span of any structure of this type in the United States. Span is 83 ft 4 in. between columns erected 16 ft on centers, with 10-ft cantilevers at each end.

The top and bottom chords of the trusses are respectively 7-in. and 6-in. steel channels. Web members consist of small-diameter pipe that varies in size according to stress. The total weight of the steel structure including columns is 4.5 lb per sq ft.

The trusses were shop fabricated and then assembled at the site. For erection, the top chords of each pair of adjacent trusses were welded together on the ground, and pairs of trusses were lifted to the roof and secured to their columns as single units. This method allowed installation of a roof area measuring 16 by 103 ft with a single operation.

The roof system provides a structure that is extremely rigid in all directions without bracing of any kind except for tie-rod corner bracing of the steel columns. Inherent rigidity is further increased by the 2 by 6 wood decking that is secured directly to the truss members.

Though the roof area is somewhat larger than a comparable flat-roof system would be, cost of roofing was minimized by use of asphalt shingles. This building design was chosen primarily because of its cost—due to less weight and simplicity of erection. Cost of structure was less than $1.00 per sq ft. Other considerations in its favor were the clear definition of space and the handsome appearance it provided, particularly in the interior.

Architectural details are few and extremely simple. The glass on the north and south walls is set outside the column line in steel "T" mullions fabricated from flat steel bars. The wood screen in the column line serves the dual purpose of reducing glare and protecting the glass. Water is removed from the roof through galvanized steel tubes installed at each of the valley ends.
DETAILING A PRECAST PANEL FACADE

Demonstration of the rational approach required by new construction methods and materials

By Maurice Wolff

In the current surge of new design concepts, new structural techniques and new building products, the architect now finds his construction details becoming more inventive and experimental. He is developing construction techniques never before attempted. It might be of value for future texts on detailing to concentrate less on specific reference details (as they may soon be obsolete), and more on the thought process behind them.

A recent building using a modern material may serve to demonstrate some of the step-by-step considerations made before detailing lines were drawn.

The facade of the Massachusetts State Office Building (Figure 1) now under construction in Boston, has precast concrete panels with quartz aggregate added to provide color and texture. Tinted plate glass windows are set in neoprene “zippered” gasket frames surrounded by shadowbox framing integral with the panels.

Shape

The first question the detailing architect asks himself is: “What shape or shapes shall the component parts of the facade take?” Two schemes come to mind. The first is a series of horizontal members with cut-outs to receive the vertical and mullion members (Figure 2). The second scheme envisions complete four-sided frames which can be placed on the structural skeleton like a child’s set of building blocks (Figure 3). The second scheme is naturally selected for its ease in construction and for the reason that a “zippered” gasket window is less likely to leak if it fits over a monolithic framed opening. Joints would interrupt its continuous weather seal.

Size

The next question is: “What size shall the frame be?” Of course the

Maurice Wolff, architect, was formerly chief detailer for Emery Roth & Sons
larger the frame, the fewer the parts to install and the fewer the joints for possible leakage. At this point, a call to a manufacturer would reveal that trucks can transport panels up to 10 ft in width and 35 ft in length with no great difficulty. The planning module of this building is 4 ft 10 in., so a panel width of 9 ft 8 in. is selected. Since the panel will be fairly heavy due to its depth, it should be supported at every floor. Therefore the floor height of 12 ft 6 in. will be used as the panel height. An attempt to form two- or three-story lengths, although possible, might lead to breakage in handling.

Now comes the meaty question: "How shall the panel be supported?" The structural engineer will advise that structural support should be near the center of gravity of the panel. After considering various methods of support such as outriggers, lintels and hanging devices, the scheme shown in Figure 4 is found to be acceptable. Continuous notches are cast into the top and bottom, lightening the panel and forming shoulders such that the panel may seat directly over and under the spandrel beams and be supported in static equilibrium by the beams. The clip angles fastening the panel to the beam at the top and bottom are then merely locking devices. The bottom of the panel has recesses for the clip angle so that the rigid insulation glued to the back of the panel may be uninterrupted. The supporting steel is left exposed on top, bottom, and front since the concrete panel itself will act as fireproofing. The top of the steel is flush with the floor slab, enabling the panels to be installed before or after the slab is poured. This feature gives the general contractor greater flexibility in his scheduling of work.

Alignment
Alignment is a problem. To compensate for imperfect alignment of the structural skeleton, warpage of the panels, etc., reasonable dimensional tolerances must be made. The panel will be positioned 1 in. above the beam to allow wedges to raise or lower the panel to the exact height of the adjacent panels, after which
grout will be forced into the opening to distribute the load uniformly on the beam. A \( \frac{1}{2} \)-in. clearance between the back of the panel and the vertical leg of the clip angle allows the panel to move either forward or backward. Washers fill the space after the panel is positioned. Horizontally slotted inserts cast into the panel allow it to slide sideways (Figure 5). The bolt protruding from the slotted insert engages a vertical slot in the clip angle allowing the angle to be shop-welded to the spandrel beam. The horizontal and vertical slots form a plus sign. The bolting occurs at the intersection. If the horizontal slot of the panel slides within its tolerance, and the vertical slot of the clip angle remains in a fixed position, the plus sign becomes asymmetrical, but the intersection remains for the bolt insertion. Note that the panel can move in any direction before final bolting takes place.

Window Cleaning
Since fixed windows have been selected, cleaning must be done from the outside. Provisions have been made on the roof for a window cleaning machine to travel around the perimeter of the building. This apparatus requires tracks in the wall to guide the cleaning platform up and down the building. The depth of the panel affords an opportunity to contour the joint in order to form such a track (Figure 6).

The back surface of the track will be the sealed joint between panels. Neoprene rope will be inserted into the joints with a special tool placing it exactly \( \frac{1}{4} \) in. from the exposed surface. This acts as a back-up for the polysulphide sealant which will next be applied with a caulking gun. An additional precaution is taken in the shaping of the panel to form a ship-lap joint.

Corner Panels
The corner panels, unlike the typical wall units, are not easily accessible from inside the building because of the structural column behind (Figure 7). Because of the ship-lap joint, the ideal sequence of erection would seem to be to start from one corner and work around in a clockwise direction until one story of the building is completely enclosed. The last frame would be a special finisher panel with male joints at both sides. However, this sequence is not possible as the second, third and fourth corners would be open at only one side and thus lack accessibility.

It is necessary, then, to erect all four corners before the typical panels are placed. Working from corner to corner necessitates one finisher panel for each wall instead of one for each floor.

Obviously, there is not enough depth in the corner panel for it to be hollowed out and supported in the same way as the typical panel. Like a flat slab of limestone, this corner slab can be placed on a shelf angle support at every floor. This is one of the many instances when the older, established methods apply. Anchor-age and alignment can be attained in much the same manner as described for the typical panels.

Order of Work
One might think that, since buildings are built from the bottom up, they are detailed in the same order. This is not so. The bottom and top of the facade are detailed after detailing of the typical floor panels is completed. Like the corner panel, the base, parapet, and coping panels are not frames but are continuous members. The base panel (Figure 8) is sandwiched between a lower granite band and the first tier of typical panels. It is comparatively light in weight. Attempting to place it in equilibrium would prove impractical because of its awkward diagonal position. It is far simpler to partially hang it on top from the web of the spandrel beam, and to partially rest it on the bottom over an intermediate beam (which is also utilized for the granite and its masonry back-up). At the roof, the parapet panel (Figure 9) can be poised above the spandrel beam in the same manner as the typical panel, therefore can be supported similarly. The upper portion of the panel is a facing for the actual brick parapet behind. Above, lapped over the panel and anchored into the brick, is the final precast concrete coping panel.

Such is the line of reasoning used in the development of details of this particular building. It will be recognized that certain factors have been over-simplified and others glossed over. The important lesson is that experience gained and the principles learned may be applied to future projects, but by no means should standard details be evolved.

Figure 8. Base panel

Figure 9. Parapet panel
ALUMINUM AND PLASTIC DOME FOR A PLANT ROOM

A lightweight 56-ft diameter transparent acrylic plastic dome atop the Interpretive Center Building at the Kalamazoo Nature Center, Kalamazoo, Mich., lets daylight into a two-and-a-half-story room housing tropical plants and glacial boulders. The boulders and tropical plants represent the Michigan landscape during prehistoric times. High humidity for the tropical plants is provided by artificial rainfall, waterfalls and a large pool, while daylight is admitted by the transparent dome. The gray-tinted acrylic plastic panels reduce heat gain and glare.

The modular structural system consists of extruded aluminum tubular structural members and connectors. The connectors are four-pronged units of malleable cast aluminum which insert flush into the tubular members. Additional custom extrusions are secured to the tubes to hold the plastic panels and to drain off any condensate accumulations. The plastic panels are engaged within neoprene channels between clamping plates or bars.

The compressive stress is transferred from one vertical meridian member to the one below without creating eccentric bending moments. The horizontal members act as tension rings. The Plexiglas acrylic plastic panels are formed to bubble-like contours which increase the strength of the panels and help accommodate thermal expansion and contraction. This type of structural system is intended to be used for domes up to 250-ft base diameter.

Forming a Plastic Bubble
Since the Kalamazoo dome has a 35-ft radius, it was necessary to hold edges of each of the bubble-like plastic sections of the enclosure to this curve. The required radius was obtained by means of the plywood clamping ring in the thermoforming operation. Cast acrylic sheet ⅜ in. thick was heated to softening temperature and clamped in position under the ring. Air pressure was then used to blow the desired bubble contour in the softened sheet.

Fourteen ft in height, the Kalamazoo Dome has a diameter of 56 ft at its base and has the form of a 70-ft diameter sphere cut off 21 ft above the equator. There are 84 acrylic panels in the dome and a ventilating unit at the apex.

The use of acrylic plastic in this dome offered the advantages of lightweight, transparency, heat and glare reduction, breakage resistance and safety, ease of formability and proven outdoor durability.

Alden B. Dow Associates, Inc., Midland, Mich., were architects for the Kalamazoo Interpretive Center. The dome was designed, manufactured and erected by Ickes-Braun Glasshouses, Inc., Chicago, Ill.
A rugged problem in dependability solved by new "OVERHEAD DOOR"

You may never have to dig into the rocky problems of such massive doors requiring such unusual dependability. But most architects do run into a stubborn vein of closure problems from time to time. When you do, our Architect Design Service can help you solve them with skill and imagination, and The "OVERHEAD DOOR."

THE "OVERHEAD DOOR" TRADE MARK
made only by
OVERHEAD DOOR CORPORATION


For more data, circle 110 on Inquiry Card

ARCHITECTURAL RECORD March 1965 195
AN ARCHITECT LOOKS AT TERNE: Percival Goodman, one of the foremost living designers of ecclesiastical buildings, has this to say of the eighty thousand square feet of Terne metal roofing recently installed on Shaarey Zedek, the world’s largest synagogue: “To be entirely frank, we had originally wanted to use a considerably more expensive material than Follansbee Terne. Now that the latter is in place, however, we are satisfied that no better choice could have been made. Terne not only afforded the widest possible latitude in form and color along with time-tested functional integrity, but it did all this at a figure well below preliminary estimates for a metal roof.”
NOW!

150-amp EZ STACK

for easiest multi-metering installations

a complete selection of merchandised devices

- basic meter-breaker devices
- fusible main switches
- circuit breaker mains
- terminal boxes
- 200 amp house meter

Now Square D offers a new line of 2- and 3-unit devices with 150-amp meter sockets, fully compatible with the present 100-amp Vertical E-Z STACK line.

Completely merchandised components permit one-man installation by eliminating the need for bulky factory-assembled units and heavy hoisting equipment. Individual units are completely factory-assembled, ready for coupling with interconnecting bus kits. Load conduit can exit top or bottom anywhere in the assembly. Each meter is factory-bussed to its feeder breaker. Vertical construction allows installation within minimum wall space.

Terminal box mains are available from 200 to 1,200 amp, fusible switch mains from 200 to 600 amp, circuit breaker mains from 400 to 1,200 amp. New commercial service units attach to either end to provide 200 ampere house meter and breaker.

Get All The Facts on E-Z STACK multi-metering devices
Write Square D Company, Dept. SA, Mercer Road, Lexington, Kentucky 40501

SQUARE D COMPANY

wherever electricity is distributed and controlled

For more data, circle 111 on Inquiry Card

ARCHITECTURAL RECORD  March 1965  197
EGGERS

GO! That's the nice thing about working with Eggers Plywood Company. They're willing to take your design ideas for architectural hardwood plywood, and go. In the direction you want. Take even the basics: paneling and doors; or a ceiling, a divider, a table top or bench. You name it. Eggers will match, curve, machine and finish your select species of hardwood plywood with just the effect you want. Eggers has been custom crafting architectural plywood panels and doors for leading architects since 1884. There's nothing old about their enthusiasm or facilities, just the old fashioned good kind of workmanship they put into every job. That combination is hard to beat. If you're thinking of an exciting new design for architectural plywood and want to go, come to Eggers. They'll go with you. Write for their award winning Plywood Catalog for Architects. Eggers Plywood Company, Two Rivers, Wisconsin, Since 1884

For more data, circle 113 on Inquiry Card
Industry Study Produces

A DESIGNATION SYSTEM FOR ALUMINUM FINISHES

Until recently, the architect and fabricator concerned with aluminum finishes specifications has had to cope with a confusing assortment of designations for aluminum finishes and the processes used to achieve them.

Because of the obvious need for a clear understanding of terminology on the part of the architect, metal supplier, fabricator and finisher, The Aluminum Association, through its technical committee, directed a four-year study toward establishment of a system broad enough to cover presently used finishes and sufficiently flexible to accommodate processes that may be developed in the future.

The system classifies finishes as shown in the accompanying Listing of Designations, the various finishes in each classification are identified by an initial letter and two-digit numeral. Letters indicate categories, and numerals reflect finishing process and character. The use of the letter X in place of the second digit, provides for the designation of non-assigned finishes. When the letter X is used by the specifier in the designation, the non-assigned finish should be described in words.

The following discussion of finishes is based on the Finish Manual of the National Association of Architectural Metal Manufacturers.

Mechanical Finishes

Mechanical finishes are those that do not require the use of chemical or electro-chemical treatment or additives. These finishes differ widely, ranging from "natural" surfaces resulting from many production processes to highly reflective surfaces produced by successive grinding, polishing and buffing operations.

"As fabricated" does not refer to the fabrication or manufacture of a product, but to the production of the metal itself. Typical variations of the "as fabricated" finish include:

**M10 Unspecified**—a natural finish from extrusion, casting, hot rolling or cold rolling with unpainted rolls. On rolled products, the finish may vary from dull to bright and may have stains or films from rolling oils.

**M11 Specular as fabricated**—a mirror-like rolled finish on one or both sides of a sheet produced from final passing through highly polished rolls. It does not apply to extrusions, forgings or castings.

<table>
<thead>
<tr>
<th>LISTING OF DESIGNATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MECHANICAL FINISHES (M)</strong></td>
</tr>
<tr>
<td><strong>As Fabricated</strong></td>
</tr>
<tr>
<td>M10—Unspecified</td>
</tr>
<tr>
<td>M11—Specular as fabricated</td>
</tr>
<tr>
<td>M12—Non specular as fabricated</td>
</tr>
<tr>
<td>M1X—Other (to be specified)</td>
</tr>
<tr>
<td><strong>Buffed</strong></td>
</tr>
<tr>
<td>M20—Unspecified</td>
</tr>
<tr>
<td>M21—Smooth specular</td>
</tr>
<tr>
<td>M22—Specular</td>
</tr>
<tr>
<td>M2X—Other (to be specified)</td>
</tr>
<tr>
<td><strong>Directional Textured</strong></td>
</tr>
<tr>
<td>M30—Unspecified</td>
</tr>
<tr>
<td>M31—Fine satin</td>
</tr>
<tr>
<td>M32—Medium satin</td>
</tr>
<tr>
<td>M33—Coarse satin</td>
</tr>
<tr>
<td>M34—Hand rubbed</td>
</tr>
<tr>
<td>M35—Brushed</td>
</tr>
<tr>
<td>M3X—Other (to be specified)</td>
</tr>
<tr>
<td><strong>Nondirectional Textured</strong></td>
</tr>
<tr>
<td>M40—Unspecified</td>
</tr>
<tr>
<td>M41—Extra fine matte</td>
</tr>
<tr>
<td>M42—Fine matte</td>
</tr>
<tr>
<td>M43—Medium matte</td>
</tr>
<tr>
<td>M44—Coarse matte</td>
</tr>
<tr>
<td>M45—Fine shot blast</td>
</tr>
<tr>
<td>M46—Medium shot blast</td>
</tr>
<tr>
<td>M47—Coarse shot blast</td>
</tr>
<tr>
<td>M4X—Other (to be specified)</td>
</tr>
<tr>
<td><strong>Chemical Finishes (C)</strong></td>
</tr>
<tr>
<td><strong>Nonnotched Cleaned</strong></td>
</tr>
<tr>
<td>C10—Unspecified</td>
</tr>
<tr>
<td>C11—Deglacified</td>
</tr>
<tr>
<td>C12—Inhibited chemical cleaned</td>
</tr>
<tr>
<td>C1X—Other (to be specified)</td>
</tr>
<tr>
<td><strong>Etched</strong></td>
</tr>
<tr>
<td>C20—Unspecified</td>
</tr>
<tr>
<td>C21—Fine matte</td>
</tr>
<tr>
<td>C22—Medium matte</td>
</tr>
<tr>
<td>C23—Coarse matte</td>
</tr>
<tr>
<td>C2X—Other (to be specified)</td>
</tr>
</tbody>
</table>

*Published in a brochure entitled "Designation System for Aluminum Finishes," available from The Aluminum Association, 420 Lexington Avenue, New York, N.Y., 10017
Chemical Finishes

There are numerous methods of providing intermediate process finishes by washing or dipping the fabricated product in chemical solutions. Many of these are proprietary.

Non-etch cleaning refers to various chemical treatments widely used for cleaning prior to application of other finishes. As there is no physical effect on the surface, they are not classified as true finishes, but such preparatory cleaning is essential for successful application of any type of additive coating.

Etched finishes provide various grades of matte surfaces. The so-called “frosted” finishes are obtained by this means, and the etching process is often used also to prepare surfaces for anodizing.

Bright finishes, a variety of which range from mirror-bright to diffuse bright, are produced either by immersion in certain acid solutions, or by electrolytic brightening. Similar results are obtained by both methods, but each finds limited application in architectural work.

Conversion coatings, although generally used on aluminum to prepare the surface for painting, may also be used for a final finish. Since the natural oxide film on aluminum surfaces does not always provide a good bond for paints and other organic coatings, its chemical nature is often converted to improve adhesion. These conversion films are generally applied by use of proprietary processes using phosphate or chromate solutions.

Anodic Coatings

The anodizing process provides probably the most important of all the aluminum finishes. Several anodizing processes are commonly used, but they vary according to the type of electrolyte used, the voltage and current density, and the temperature of the bath. Anodic coatings vary considerably in thickness, hardness and porosity.

The sulfuric acid process is the most widely used because of its relatively low cost and is employed for all “conventional” architectural anodizing. Comparatively thick, transparent, and absorptive coatings result that are suitable for certain types of coloring dyes and pigments. Thin films are also produced, which are excellent pre-treatment for paint, enamel or lacquer coatings.

The chromic acid process, seldom used for architectural products, produces greenish-gray or gray coatings somewhat less porous than sulfuric acid coatings but with outstanding corrosion resistance. Higher voltage requirements and a more expensive electrolyte, however, make it more costly than the sulfuric acid process. An advantage is that it is suitable for anodizing assemblies because the electrolyte has no harmful effects should it be trapped in joints.

The phosphoric acid process yields rather porous anodic coatings sometimes used as a base for electroplated coatings. It is not used for architectural work.

The boric acid process, used primarily for highly specialized electrical applications and not for architectural work, provides a hard, impervious, non-absorptive film with high electrical resistance.

The oxalic acid process provides a hard, impervious coating that has a slight gold tinge in its “plain” state. It is more expensive than the sulfuric acid process.

Colored anodic coatings are obtainable either by impregnating the absorptive anodic coating (usually produced by the sulphuric acid process) with certain organic dyes or mineral pigments, or by using alloys or processes that produce integral color in the anodic coating.

Integral colors in the bronze-gray-black range are provided by certain anodizing processes and by the characteristics of certain aluminum alloys themselves. They have extreme light-fastness and excellent durability, making them highly suitable for exterior applications.

Proprietary hardcoat color processes have also been developed to provide integral anodic colors. These range from light gold to dark bronze and from gray to black, depending upon both the process and the alloy. Alloys which develop only clear coatings in the sulfuric acid process readily develop colors when treated with these processes. Such coatings are heavier, denser, and more abrasion-resistant than any of those provided by conventional anodizing processes.

Architectural Class I coatings are appropriate for interior architectural items subject to normal wear, and for exterior items which receive no maintenance care regularly and are subject to weathering.

Architectural Class II coatings are appropriate for interior items not subject to excessive wear or abrasion, and for exterior items, such as store fronts and entrances that are regularly cleaned and maintained.

Example

Under the designation system, an architect seeking a matte anodized finish could specify AA-M32C12A31. This combination calls for a medium satin finish (M32), chemical cleaning (C12) and a clear anodic coating (A31). The finish for chromium-plated aluminum panel, achieved by a specular mechanical finish (M21), a non-etch chemical cleaning (C12), a thin anodic coating (A1X) and direct chrome plating (E1X) would be designated as AA-M21C12A1XE1X. Similarly, any desired finish or sequence of processes can be clearly designated and readily understood by anyone in the aluminum industry.
VINYL ROOF EXHAUSTERS HAVE LOW SILHOUETTE

The substantial reduction in the height of Jenn-Air's new vinyl roof exhausters has been made possible by the introduction of the J-45 centrifugal wheel, which has been designed to deliver air at an oblique angle rather than in a radial direction, by means of pitched blades. Because of this, the wheel can be nested into the curb area—considerably reducing over-all fan height—while still delivering maximum air volume. Further reduction in height is achieved by moving the back draft dampers out of the curb area and mounting them on each side of the square shaped wheel housing. This has the added advantages of reducing the sound of damper flutter from inside the building, offering a guard against snow and rain, eliminating the need for bird guards and allowing louveres to be inspected and adjusted from the roof without removal of the fan. In addition, noise caused by high inlet air velocity is reduced by a 25 per cent increase in the inlet area.

These new Unitary Roof Exhausters, which combine curb, fan and damper in single pre-assembled units are available in centrifugal direct and belt drive models with capacities up to 35,000 cfm. Curbs and covers are formed of a non-flammable structural vinyl, which has high impact strength, and is said to be resistant to rust and corrosion and impervious to nearly all acids and alkalies. Jenn-Air Products Company, Inc., 1102 Stadium Drive, Indianapolis, Ind., 46207 CIRCLE 300 ON INQUIRY CARD

CERAMIC WALL SURFACING WITH MANY VARIATIONS

Ceramic Design Palettes have been developed by Design Technics as a means of producing large scale sculptured and textured wall surfaces at comparatively low cost. Each design palette consists of a group of related ceramic units which represent a number of variations of a central theme, and can be combined in an almost infinite number of ways.

Although each wall is designed and produced to meet the specific requirements of individual clients, the built in pre-designing and tooling in the system contributes to its relatively low cost. Architects can choose from a wide variety of designs, finishes and colors. Design Technics, 7 East 53rd St., New York, N.Y., 10022 CIRCLE 301 ON INQUIRY CARD

more products on page 208
Architect: Walton & Madden, Riverdale, Md.
Screen erected by: Acme Iron Works, Inc., Washington, D.C.

BORDEN DECOR PANEL AS BUILDING FACADES

Shown above is Deca-Grid style Borden Decor Panel used as a facade for the Pargas, Inc. building in Waldorf, Maryland. Set off by piers of white precast stone, the sturdy aluminum Deca-Grid panels are finished in blue HINAC, Pennsalt's new finish for metals.

This Deca-Grid installation has tilted spacers, a feature called the Slant-Tab variation wherein spacers may be mounted at angles of 30°, 45°, 60° or 90° as desired.

The Slant-Tabs may be further altered by use of non-standard angles, or lengthened tabs.

All the Borden Decor Panel styles, including Deca-Grid, Deca-Gril, Deca-Ring and Decor-Plank, are highly versatile in design specification and in application as facades, dividers, grilles, fencing and the refacing of existing buildings. In standard or custom designs, Borden Decor Panels provide a handsome, flexible, maintenance-free building component.

Write for latest full-color catalog on Borden Decor Panel

BORDEN METAL PRODUCTS CO.
MAIN OFFICE: 822 GREEN LANE, ELIZABETH, NEW JERSEY • ELizabeth 2-6410
PLANTS AT: LEEDS, ALABAMA; UNION, NEW JERSEY; CONROE, TEXAS

When in New York City, see our exhibit at Architects Samples, 101 Park Avenue
For more data, circle 114 on Inquiry Card
**COOLING AND HEATING COILS**

Booklet No. 96-385A presents in quick reference form complete technical data covering the company's chilled water cooling and hot water heating coils, direct expansion cooling coils, standard steam heating coils and distributing tube steam heating coils. Each type is briefly described, its operational principle explained, and its chief design features and construction advantages pointed out. Dimensional data and quick selection procedures are given for each type of coil. Total heat tables, air mixture curves, air friction data and M.E.T.D. tables are also given. The text is supplemented by a number of schematic drawings and cross sectional diagrams. Acme Industries Inc., 600 North Mechanic St., Jackson, Mich., 49202

**CIRCLE 400 ON INQUIRY CARD**

**POST TENSIONING FOR APARTMENTS AND DORMATORIES**

A new, two-color brochure describes the techniques of post-tensioning concrete slabs for apartment buildings and dormitories ranging from four-level structures to high-tower buildings. Illustrations are given of various structures, forming for anchors, cable laying, finished slab edges, etc. Structural plans and apartment layouts are also included. Specifications are given in the brochure and laboratory tests and step by step illustrations can also be obtained free on request. Atlas Prestressing Corp., North Mechanic St., Jackson, Mich., 19202

**CIRCLE 401 ON INQUIRY CARD**

**DOOR CATALOG**

A new, 12-page illustrated catalog contains descriptions, specifications, illustrations and diagrams of a wide variety of industrial and special doors. Industrial and cold storage doors described include power-operated and manual, single and double horizontal sliding, bifold, half-bifold, bifold slide, horizontal telescope, vertical slide, and double swinging doors. Clark Door Company Inc., 69 Myrtle St., Cranford, N.J., 07016

**CIRCLE 402 ON INQUIRY CARD**

**PERFORATED MATERIALS**

The Diamond Manufacturing Company has issued a 36-page catalog giving details of the many different perforation patterns designed for a wide range of uses. Photographs of typical applications are given as well as illustrations of perforation details. Step by step instructions for ordering perforated metal and other materials are included. *The Diamond Manufacturing Company, Wyoming, Pa.*

**CIRCLE 403 ON INQUIRY CARD**

**USES OF HARDBOARD**

"Masonite Contemporary Studies" consists of a collection of 20 architectural renderings which illustrate interior and exterior uses of hardboard in residential, institutional, commercial and office installations. Suspended canopy treatments, fence designs, vaulted arches, small shop decor, office wall designs, acoustical applications, and shopping center planning are among the subjects treated. *Masonite Corp., 29 N. Wacker Drive, Chicago, III.*

**CIRCLE 404 ON INQUIRY CARD**

**SANITARY APPLIANCES**

An extensive range of sanitary appliances and plumbing fixtures are described and illustrated in a new loose-leaf catalog. Items are presented in tabular form with drawings of each model alongside description, dimensions, catalog number, price and other relevant data. Some of the items are treated more fully on separate pages as well. *Mansfield Sanitary, Inc., Perryville, Ohio*

**CIRCLE 405 ON INQUIRY CARD**

**METAL PRODUCTS**

Four new brochures have recently been issued by Overly Manufacturing Company describing some of their product lines. These brochures deal respectively with acoustical, blast and shielding doors; metal batten roofing and coping; swinging and revolving entrance doors; and church spires and crosses. Specifications are included in all brochures, which are illustrated by detail drawings and photographs. *Overly Mfg., Co., 574 W. Otterman St., Greensburg, Pa.*

**CIRCLE 406 ON INQUIRY CARD**

**FIRE AND SMOKE PROTECTION FOR SCHOOLS**

A 12-page brochure discusses the causes of the increasing number of school fires, and illustrates ways in which protection may be afforded by the use of the *Pyr-A-Larm* fire, and smoke detection and warning system. *Pyrotronics, 2343 Morris Ave., Union, N.J.*

**CIRCLE 407 ON INQUIRY CARD**

**ALUMINUM PAINT MANUAL**

This new publication provides a comprehensive discussion of the selection and use of aluminum paints. Illustrated in color, the booklet gives details of the uses of aluminum paint for different types of surface, including metal, masonry, wood, high-temperature and decorative materials. Prepaint preparation is also outlined. Application guides are given in chart form, and there is also a paint coverage table for appropriate brush and spray application of the three types of aluminum paint on 15 different surfaces. *Aluminum Company of America, 797 Alcoa Building, Pittsburgh, Pa.*

**CIRCLE 408 ON INQUIRY CARD**

**OUTDOOR LIGHTING**

A large selection of lighting fixtures for all kinds of outdoor lighting are displayed in the company's recent catalog, Bulletin No. 175. Photos are included of each model and electrical data is given. A section is included on boxes, wiring troughs, covers and other lighting accessories. *Swivelier Company Inc., Nanuet, New York, 10063*

**CIRCLE 409 ON INQUIRY CARD**

**CEMENT BONDED WAFFLE CEILING UNITS**

Cement-bonded wood fibre ceiling waffle units, which are believed to be the first units of this type to make use of cement-bonded fibre, are described in a new illustrated folder. *Concrete Products, Inc., P.O. Box 180, Brunswick, Ga., 31521* *CIRCLE 410 ON INQUIRY CARD*

*Additional product information in Sweet's Architectural File

more literature on page 246*
This trim beauty
Steel vs. Steal... and the challenger lost.

This is the door to a restaurant in one of New York's most successful chains—Chock Full O'Nuts. You’d never know that would-be burglars tried to jimmy it a few days before these pictures were taken. The door is stainless steel. The burglars didn't get through because of the toughness of this fine architectural metal. The minor damage was repaired the next day without removing the door. Today it's as good as new.

The problem of good design and maximum safety has always been a challenge to owners and designers of entrances for commercial and monumental buildings. This restaurant found the practical answer in low-cost stainless steel doors and frames, manufactured by The Alumiline Corporation, Pawtucket, R. I., from stainless steel provided by Jones & Laughlin Steel Corporation.

If you have a design idea that involves stainless doors and entrances, contact The Alumiline Corporation. For further information concerning stainless steel, let us refer you to our Architectural Services.

For more data, circle 115 on Inquiry Card
A new HI-TEMP VINYL by the B. F. Goodrich Chemical Company has paved the way to Jenn-Air's breakthrough in exhauster design. Hi-temp Geon® polyvinyl dichloride (PVDC), the most stable of vinyls, retains high impact strength from a low of —40° to a high of 1225° F. This new material will not craze, rust, corrode, or lose color—provides excellent resistance to corrosive applications and is self-extinguishing because it will not support combustion. The properties and characteristics of HI-TEMP VINYL made possible the development of the Unitary Centrifugal Exhauster line, and all these features:

1. The new Unitary design incorporates curb, fan, back-draft dampers, and bird guard protection into a single, easily installed unit. Always the right curb and damper size for the job.

2. An optional in-the-roof sound attenuator—recessed to maintain unit's low profile—offers maximum quietness for sensitive areas of the building. This arrangement also deletes damper noises, since dampers are located on the discharge side.

3. Lower fan height comes from nesting the wheel into the curb and re-locating the back-draft dampers outboard of the wheel housing . . . prevents entry of snow and moisture into fan compartment, eliminates need for bird guards, permits damper servicing without removing the fan.

4. The new, high performance J-45 centrifugal wheel nests into the vinyl curb and discharges the air at a 45° angle from radial. Its new 25% larger inlet produces much lower inlet velocity and lower noise level, accordingly.

5. The inconspicuous slate grey color of the HI-TEMP VINYL is homogenous and permanent—retaining its color for life.

6. To match premium HI-TEMP VINYL housing durability, all metal hardware in the airstream is vinyl coated. This adds years of life; for inside and out, the exhauster is protected from salt spray and corrosive conditions.

7. Seamless curb of HI-TEMP VINYL (filled with foamed-in-place insulation) and wood nailing strip on curb provide faster installation.

8. Fan melts clear even when submerged by snow.

9. Available in centrifugal belt and direct drive, 72 models in capacities up to 35,000 cfm . . . belt drive, direct drive and relief vents are identical in basic profile and contour.

WHEN YOU SPECIFY THE UNITARY LINE, ALL THE UNITS ON THE ROOF WILL HAVE AN UNOBTRUSIVE LOOK.

© 1965 Jenn-Air Products Company, Inc.

© Geon is the registered trade name of B. F. Goodrich Chemical Company.
Exhauster Breakthrough
Exhauster by

JENN-AIR

Patents Pending

World's Largest Producer of Power Roof and Wall Exhausters

JENN-AIR PRODUCTS CO., INC.
Department 28, 1102 Stadium Drive
Indianapolis, Indiana 46207

Please send Bulletin No. 5-UV describing the complete line of Centrifugal Vinyl Roof Exhausters.

Name: _____________________________
Title: _____________________________
Address: ___________________________
City: ___________________ State: _______ Zip Code: ________

For more data, circle 116 on Inquiry Card
cleared and unobstructed
without loss of usable floor, wall or overhead space

Kinnear Rolling Doors

... roll straight upward clearing the entire entry way. When closed, their interlocking all-metal slat curtain provides extra protection against weather, fire, vandals and intruders. Extra heavy galvanizing and Kinnear's special paint bond add many extra years of care-free service life and lower maintenance costs. Also, every Kinnear door is REGISTERED to insure availability of genuine Kinnear service and door replacement parts over the life of the building.

When motor operated, Kinnear Doors offer automated efficiency, permitting push-button control from any number of remote convenient locations. Write today for full details!

The KINNEAR Manufacturing Co. and Subsidiaries

FACTORIES: 1860-80 Fields Avenue, Columbus, Ohio 43216
1742 Yosemite Ave., San Francisco, Calif. 94124 — 3605 Dundas St., West, Toronto, Ont., Canada
Offices and Representatives in All Principal Cities

One of 41 Kinnear equipped doorways in the new multi-million dollar plant of AMF Beaird, Inc. (Subsidiary of American Machine & Foundry Co.) at Shreveport, La.

Product Reports
continued from page 201

URETHANE FOAM PIPE INSULATION
The CPR Division of the Upjohn Company is now producing a new, extremely lightweight, precast rigid urethane foam pipe insulation, designed to give high efficiency and ease of application at competitive cost. Designed for either cryogenic or elevated temperature applications

(-425 deg F to +200 deg F continuous, and +450 deg F for short periods), the units are manufactured in lengths up to 20 ft to fit all standard pipe diameters. Covering is supplied in various types of paper or aluminum. CPR Division, The Upjohn Company, 555 Alaska Ave., Torrance, Calif.

CIRCLE 302 ON INQUIRY CARD

FIBERGLASS CHAIRS
Krueger's 3000 and 6000 series fiber glass side, stack and pedestal side chairs are now available in upholstered models, featuring 3/8-in. foam cushion padding, molded and sealed to the fiberglass shells. The chairs are provided in a choice of six colors with a selection of leg finishes mounted on stacking, side chair or swivel/pedestal bases. Krueger Metal Products Company, Green Bay, Wis.

CIRCLE 303 ON INQUIRY CARD

For more data, circle 117 on Inquiry Card

more products on page 212
And Exposed the True Beauty of Outdoor Mercury Vapor Lighting

Clean, functional, attractive . . . that's the look Art Metal has given their new Mercury Vapor Wall Bracket. Many mercury vapor units of this type feature an ugly extension housing the ballast, but not Art Metal's. Using a smaller ballast which is enclosed within the housing itself, Art Metal has enhanced the fixture's beauty and made it far more compact.

With this streamlined styling, you can mix and match these mercury vapor fixtures with Art Metal incandescent units, because they look exactly the same. But for lighting value, they're unmatchable. The 100W color-corrected mercury vapor lamp gives approximately the same lumen output as the 200W incandescent; a life of 10,000 hours compared to 750 for incandescent.

Construction is of the best: die cast aluminum housing and trim ring give strength and durability; silicone rubber gasket keeps out dust and moisture; universal metallic or brushed natural aluminum finish blends with any building exterior; release ring lets ring and lens hinge down for quick maintenance. And you'll like the price—always competitive, often lower than comparable models.

Want to surface wire the unit? This is easily accomplished with an optional aluminum housing extension. Wattage . . . 100W; Extension from wall . . . 9¼"; Over-all height . . . 8"; Overall width . . . 8½". Write for Bulletin giving complete details on these beautiful new mercury vapor lighting fixtures.

ART METAL
LIGHTING DIVISION
1814 E. 40th St., Cleveland 3, Ohio
New...from Von Duprin!

Rim-type Fire Exit Hardware!

FOR A,B,C,D,E Labeled Doors
For Single Doors . . . Or Double Doors With Removable Mullion

Removable mullion eliminates need for overlapping astragal and coordinator!

Here's another major engineering breakthrough by Von Duprin! We call it our 88 Rim Fire Exit Hardware. You'll call it a boon to building . . . because now, for the first time, you can recommend double-door Fire Exit Hardware with a removable mullion that eliminates the overlapping astragal and the coordinator.

Four types of operation are available: thumbpiece, knob, exit only, and nightlatch.

Available in stainless steel, bronze or aluminum. All lock stile cases are stainless steel, plated or finished to match crossbar and hinge stile case in bronze or aluminum.

Von Duprin 88 Rim Fire Exit Hardware also incorporates other outstanding features, such as a pick-proof auxiliary dead-locking latch bolt.

For complete details on the new Von Duprin 88 Rim Fire Exit Hardware, write today for your copy of catalog Bulletin 652, or contact your Von Duprin representative.

Von Duprin

VON DUPRIN DIVISION • VONNEGUT HARDWARE CO., INC. • 402 WEST MARYLAND STREET • INDIANAPOLIS, INDIANA 46225
IN CANADA: VON DUPRIN LTD. • 903 SIMARD STREET • CHAMBLY, QUEBEC

For more data, circle 119 on Inquiry Card

ARCHITECTURAL RECORD March 1965 211
New Bostwick
H. P. Terminal*

GIVES A “FINISHED FACE” TO PARTITIONS-HEADERS-JAMBS

Bostwick Hollow Partition Terminal provides a ready-made steel face to headers and jambs of openings in hollow steel stud partitions and gives a finished, neater look to plastering jobs. When used with Bostwick Channel-Form® Steel Studs, you can finish off partitions 3 3/8", 3 3/4" and 4 1/4" thick. Easy and faster to install. No corner bead needed! Save money! Save time! Save plaster! Custom-made to job sizes and lengths with face of bonderized electrolytic galvanized steel welded to galvanized perforated and expanded double wings. Better investigate Bostwick H. P. Terminal today. Phone or write for details.

*Patent Pending

THE Bostwick®
STEEL LATH COMPANY
WEST FEDERAL STREET • NILES, OHIO
AREA CODE: 216 652-2547

Product Reports
continued from page 208

NEW ASBESTOS TILE DESIGN
Cortina is a new diffused swirl pattern in the Azrock range of vinyl asbestos floor tiles. The patterning is distributed through the full thickness of each tile, so that the floor pattern is not impaired by heavy traffic in commercial and institutional areas. The new tile is said to be grease proof, stain and alkali resistant and is available in a range of 13 colors. Azrock Floor Products, P.O. Box 315, San Antonio, Tex., 78206
CIRCLE 304 ON INQUIRY CARD

REMOTE STORAGE FOR PARTITIONS
Robert Haws Company has designed a simplified switching track to meet the difficulties of accommodating folding retractable walls in buildings where wall recesses are not provided. In the new system, panels of the partition are not hinged together, but operate independently on the track. A switch at the end of the track permits changing the direction of travel and side tracking the panels to a remote location where they can be stored out of sight. Robert Haws Co., 19400 Allen Road, Melvindale, Mich., 48122
CIRCLE 305 ON INQUIRY CARD

more products on page 216
No One Will Ever Know how many high-rise buildings might have been “All-Electric” had the designers known about the ISO-QUENSUR®

A New Concept in Metal Enclosed Switchgear

Kearney has engineered Service Value into the Iso-Quensur. Brings high voltage into your building safely, dependably and at less cost. Saves space, too!

Value through Reliability — The Iso-Quensur is the most durable Interrupter-Disconnect Switch on the market today. By test, it provides 90 full load operations at rated voltage — has close-in and latch ratings equal to short circuit duty available on modern distribution circuits. Means longer life, less maintenance.

Value through Design — The Iso-Quensur saves 50% of the space required for conventional oil fused or draw-out, metal enclosed switch gear. A cabinet measuring only 2½' x 3' x 5½' houses Kearney’s unique Group Operated Switchgear and Current Limiting Fuse.

Value through Economy — The Iso-Quensur provides a cost-saving way to go all-electric in high-rise buildings, institutions and industrial plants. It will save up to 80% of initial equipment costs because it interrupts and visibly disconnects in one operation.

Value through Safety — Cabinetry and switch have been engineered for maximum safety, with a three-position latch on the upper door, a clear protective dead front viewing panel and a visual gap in the switch-open position.

5KC-1A

JAMES R. KEARNEY CORPORATION
MANUFACTURING TRANSMISSION AND DISTRIBUTION EQUIPMENT FOR ELECTRIC UTILITIES SINCE 1926

4236 CLAYTON AVENUE • SAINT LOUIS, MISSOURI 63110

For more data, circle 121 on Inquiry Card
How to improve the exterior appearance of your building:
Your architectural rendering looked superb. The finished structure's exterior appearance was all you hoped it would be. But how will this building look two years after completion?

Exterior design of a building is most vulnerable at fenestration areas. Unless you take positive steps to assure correct window treatment, your building's exterior appearance can quickly become a hodge-podge of various shading devices.

Your best opportunity to keep your building a faithful reproduction of its original concept is through specification of Feneshield fabrics, made of PPG Feneshield fiber glass yarns.

Feneshield fabrics provide a pleasing appearance at every window, permit a flow of bold line street to top of building, and eliminate random vertical settings so common with mechanical shading devices.

A wide range of Feneshield colors, patterns, and weaves are available to complement any building design, including even the most advanced designs of spandrel treatment. The fabric becomes a part of the overall design to help you maintain aesthetic control.

CHOOSE FENESHIELD FABRICS SCIENTIFICALLY.

In addition to control of exterior appearance, Feneshield fabrics offer many advantages for interior use. Research by PPG has produced a new system, based on fabric characteristics, which provides a scientific method of selecting fiber glass draperies to meet environmental control needs.

Through this system, Feneshield fabrics can be chosen to subdue radiant heat, control glare, improve sound control, enhance a pleasing view, or modify a bad view.

Important, too, Feneshield fabrics offer substantial savings in maintenance costs over other types of shading devices.

COMPLETE INFORMATION AVAILABLE.

Participating fabric resources have authorized Feneshield presentations which show the wide range of fabric weaves and colors available. They can help you select fabrics for specific installations through the use of PPG technical data. Write PPG for names of jobbers near you.

You can obtain complete technical information, including means of selection of Feneshield fabrics for any type of building installation. Just mail the coupon.

Pittsburgh Plate Glass Company, Fiber Glass Division
Dept. 101, One Gateway Center, Pittsburgh, Pa. 15222

□ Please send me technical information on Feneshield fabrics.
□ Please send me names of authorized Feneshield converters.

Name
Title
Company
Address
City State Zip Code

PPG makes the Feneshield fiber glass yarns only, not the fabric.

For more data, circle 122 on Inquiry Card
for just a few pennies more per opening you can have THIS

McKINNEY MODERNE HINGES bring you so much more

...in modern appearance...in quality

- Fewer horizontal lines to break the clean, modern lines of this beautiful hinge.
- Flush Plugs at both ends of the barrel to prevent rising pins and to provide a smooth clean barrel with more modern appearance.
- Stainless Steel Pins to absorb unusual lateral strain and to prevent corrosion.
- Stainless Steel Oil-Impregnated Bearings to carry the vertical load, to provide lifetime lubrication at points of greatest wear, to resist corrosion for the life of the door.
- Annealed Zytel nylon bushings in the door leaf to provide a perfect bearing surface. Long sleeve minimizes lateral wear. Needs no lubrication.

This is the hinge design architects say they want ... and it costs so little more—only pennies more. Wouldn't it be smart to specify them on your next building.

McKinney Moderne Hinges ... choice of quality-conscious consultants.

SCRANTON, PENNSYLVANIA 18505 / IN CANADA: MCKINNEY-SKILLCRAFT LTD., TORONTO 3, ONT.

Product Reports
continued from page 212

SPRAY-ON ADHESIVE
A new adhesive called G-318 has been developed by Armstrong Cork Company for bonding lightweight porous insulating materials to themselves or to metal surfaces. This new synthetic rubber resin adhesive allows spraying at very low atomizing pressures which minimizes overspray. The company says that bonds of 2-in.-thick, 3.25-lb density insulation will withstand exposure to temperature as high as 250 deg F. Armstrong Cork Company, Lancaster, Pa.

CIRCLE 306 ON INQUIRY CARD

SELF-SUPPORTING PARTITION
Unispan is an integrated self-supporting wall system which is said to offer the combined versatility of a folding partition and the flexibility of a relocatable partition wall. The system consists of a single module made up of three basic components—a steel truss, two end posts and a Hufcor folding partition. The introduction of the Unilift lifting device consisting of a lever within the post system which raises the entire partition from the floor enables the partition to be opened and closed easily. Hough Manufacturing Corp., Janesville, Wis.

CIRCLE 307 ON INQUIRY CARD

For more data, circle 123 on Inquiry Card
New! Here is almost everything you might want to know about...

SILENT GLISS

the silent drapery track

• Description of every track • Suggested specifications
• Vital statistics like bending radii, maximum fabric weights, stock track lengths, and support spacing • Illustration and identification of fittings for each track
• All this, plus actual-size cross-section drawings of each track (with dimensions) ready for tracing — and 3” samples of every track in the line, with samples of carriers and other small fittings, for easy examination.

This complete “gold mine” of information on Silent Gliss is combined in the new Silent Gliss Track Sample Binder ready to help you specify the World’s Finest Drapery Track. Sorry, the binder is not available by mail; a Silent Gliss sales representative will bring one in person when you ask him to call. (A similar folder, in simplified form without track samples, is available by written request on your letterhead.) You owe it to yourself and your clients to get the facts about this revolutionary track development — unlike any other on the market today. Please address your inquiries to Dept. AR-3.

SILENT GLISS, INC.

Distributing Companies:
Angevine Co., Freeport, Illinois • Drapery Hardware Mfg. Co., Monrovia, California

THREE OF THE NEWELL COMPANIES... first family in drapery hardware since 1903

For more data, circle 124 on Inquiry Card
Leading designers, fabricators and erectors of structural steel

Haven-Busch offers a full service program that assures you of the finest in structural steel design and value. Our program begins with the services of trained engineers able to help you plan any project from the smallest structures to large building complexes. Modern Haven-Busch equipment and efficient fabrication methods handle structural steel assignments of most any type and size to your exact specifications. In addition to conventional structural steel framework, Haven-Busch also fabricates the internationally-known longspan joists which permit clearspans up to 175'. Skilled supervisors and iron worker crews, equipped with modern tools and machinery, follow through and erect projects to completion. Our new facilities brochure and longspan joist catalog tells the complete story. May we send you copies?

Haven-Busch Co., 3443 Chicago Dr., S.W., Grandville, Mich.
NORTHSTAR CENTER, $25-million city-within-a-city, located in the heart of Minneapolis, combines a 180-room luxury hotel, three fine restaurants, shopping arcade, post office and full service facilities connected by weather-conditioned "skyways" and tunnels.

Music by Muzak plays an important role at Northstar Center, bringing a pleasant environment to many public and office areas of this unusual complex.

Scientifically arranged and recorded to provide just the right mood for customers and personnel, Music by Muzak has a unique ability to mask noise, replace cold silence and enhance smart architectural design and decor.

More than a motivational device, the Muzak sound system may serve as a versatile communications tool for paging, public address, signalling and other uses. Save time, effort and expense; specify a Muzak system in the early planning stages.

A.I.A. File No. 31-1-7. Sweets Catalog File 33a/Mu. For full details, write Muzak headquarters or contact your local Muzak franchised distributor today.
HAWS DRINKING FOUNTAIN
Model 10F—specializing in colorful eye appeal. Smooth receptor vacuum molded in reinforced fiberglass; choice of six colors at no extra cost. A leader in service with two fountain heads and two smooth-action lever valves with automatic flow regulation. Top of the class for refreshing design. Popular: succeeds remarkably well in pleasing nearly everyone.

For full, immediate details see Sweet's 29d/11a; refer to your Haws Yellow Binder; call your Haws Representative; or write for spec sheet or complete catalog to HAWS DRINKING FAUCET CO., 1441 Fourth Street, Berkeley, California 94710.

ONE-PIECE PLASTIC GLOBES
Habitat has introduced an extensive line of seamless plastic globes ranging in size from 6 to 36 in. in diameter. Globes are designed for indoor and outdoor use and the line incorporates three different ceiling suspension methods. Habitat Inc., 336 Third Avenue, New York, N.Y., 10010
CIRCLE 308 ON INQUIRY CARD

SCALE BUILDING MODELS
Exact scale models of individual buildings and redevelopment projects can be supplied to scales of $\frac{3}{8}$ in., $\frac{1}{2}$ in., or $\frac{3}{8}$ in. as required. These three-dimensional models are available as Study models, prepared from architects' rough sketches to give an over-all impression of a scheme before details are completed, and as Presentation models prepared from architect's final drawings for client presentation. Dimensional Arts Inc., Cleveland 5, Ohio
CIRCLE 309 ON INQUIRY CARD

For more data, circle 127 on Inquiry Card

For more products on page 226

For more data, circle 128 on Inquiry Card
NEW DUAL-SERVICE INSERT AND FLOOR FITTING FOR CEL-WAY

Telephone and power outlets in one fixture!

Why one fixture is better than two. Granco's new Cel-Way In-Floor Electrification System puts electrical and telephone outlets in one compact floor fitting. Result: you've just eliminated 50% of the floor fixtures. Imagine a finished floor like the one above, with these new, single, low-profile, satin-finish fittings. All the double-fixture, dust-traps are gone. Floors are now attractive, uncluttered, easy to wax and clean.

But that's just the beginning. With Cel-Way, your installation costs are substantially reduced too. Compact, dual-service insert easily accommodates 100-pair cable; is roomy enough to house two amphenol jacks. The die-cast, contoured fitting and insert also make it easy to pull thick cables through cells to fitting. Marker screws pinpoint insert location for future use.

These are just a few of the reasons why you'll find Cel-Way practical for your next in-floor electrification system. Write today for more information on the exclusive features and benefits of this promising new floor system. Granco Steel Products Company, 6506 N. Broadway, St. Louis, Missouri 63147.

GRANCO / IMAGINATION IN STEEL
FOR THE NEEDS OF TODAY'S ARCHITECTURE

For more data, circle 135 on Inquiry Card

ARCHITECTURAL RECORD  March 1965  235
We invested our dollars here...
to protect dollars you invest here!

Typical installations of Richards-Wilcox Folding Partitions

New sound laboratory permits a continuous research program to improve sound retarding techniques

The photos, left, illustrate an important new Richards-Wilcox customer-service facility—a Sound Testing Laboratory constructed to meet ASTM requirements. It was built under the consulting guidance of the Riverbank Acoustical Laboratories of the Illinois Institute of Technology, Research Institute. After completion the laboratory was calibrated for sound tests by Bolt, Beranek and Newman Inc.

**Another R-W First**

To our knowledge, this Sound Testing Laboratory is the only one ever built by a manufacturer of folding partitions to assure customer satisfaction in the sound retarding qualities of his product and is one of only three test labs in the United States where tests of this magnitude can be conducted.

**ASTM Test Standards**

Without exception, sound tests for product evaluation are conducted to conform with ASTM testing procedures. All sound tests for product certification will be conducted and certified by recognized independent testing organizations such as those previously mentioned.

**Why a sound laboratory**

The constant availability of a test facility such as this enables R-W Engineers to conduct immediate, scientific tests on individual panels and prototypes of assembled walls to determine their true sound retarding qualities. In addition it provides a laboratory large enough so that an independent testing organization can move in and make tests for certification of complete R-W Folding Walls and their very important perimeter seals to evaluate the on-the-job sound retarding quality.

Sound Test evaluations permit the design and construction of R-W Folding Partitions that are custom-engineered to provide the sound retarding quality desired and compatible with the surrounding construction for each specific installation.

**Documentary Film Available**

A full color, 10 minute documentary film showing how sound tests are conducted has been produced and is available for your viewing. Test sequences and sounds were filmed and recorded just as they were generated for the tests.

The short time required to view this film should prove to be of definite value to anyone involved in the specification and purchase of a Folding Partition or Moving Wall.

One very interesting sequence was filmed with the front or receiving chamber in complete darkness and the adjoining source chamber brightly lighted. As the mechanically actuated perimeter seals are released you can almost see as well as hear the sound coming through the resulting cracks.

This exciting sequence offers graphic evidence that over and above sound-retarding panels the complete Folding Wall must be equipped with a positive perimeter seal to effectively retard sound transmission.

We would appreciate the opportunity of showing you this film at your earliest convenience—just contact us indicating your interest. In addition, we would be happy to send you a copy of our latest Folding Partition Catalog for your file.

RICHARDS-WILCOX DIVISION
116 THIRD STREET • AURORA, ILLINOIS 60507
For more data, circle 136 on Inquiry Card
Wilson SQUARGRID-50 and CIRCLGRID will not support combustion...the ONE plastic lighting louver that meets more building codes than any other plastic lighting louver available! (And it's good looking, too!)

Wilson adds flexibility to ceiling design. You can specify either SQUARGRID or CIRCLGRID in building code areas where other plastic illuminated ceiling panels cannot qualify. These vinyl louvers combine the ease of installation and maintenance of plastic with a UL Tunnel Test rating of 20... and they are fully approved for use with automatic sprinklers.

Open or closed panels give freedom of design to meet installation requirements.

New, larger size available in SQUARGRID...2\(\frac{3}{4}\) x 5'. Both CIRCLGRID and SQUARGRID are also available in 2' x 2' and 2' x 4' sizes.

Choice of two translucencies lets designer achieve maximum visual comfort with all lighting levels while minimizing glare.

Unique round or square cellular section provides structural strength and rigidity, eliminates brittleness, and affords on-the-job cutting to fit irregularities precisely.


NEW CHAIRS
Two new chairs have recently been introduced by JG Furniture Company. The cantilever side chair has a steel frame with demountable upholstered seat and back and special steel rubber cushioned removable glides. The D 17 chair series has been designed specifically to make use of expanded vinyls. The chair is available in a range of 64 colors and with a choice of six base versions including aluminum pedestal bases and walnut legs. JG Furniture Company, 160 East 56th St., New York, N.Y.

COLD LIGHT CYLINDERS
The new C.50 spotlight for all surface-mounted interior accent lighting applications makes use of an efficient convection venting system in conjunction with the new PAR-38 lamp, to decrease the radiant heat content of the light beam and thus reduce heat damage, fading and personal discomfort. Incident glare and spill light are said to be eliminated by an integral 45-deg cellular louver. Color toning is achieved with a range of color filters. Lighting Services Inc., 77 Park Ave., New York, N.Y., 10016.

For more data, circle 137 on Inquiry Card

more products on page 242
When you want the subtlety of success, design his office with the finest wood in the world. You’ll build good taste and good sense around him and he’ll have it easier with both customers and board members. You’ll have a friend and client forever—thanks to Genuine Mahogany.

As the world’s largest importer and manufacturer of Genuine Mahogany, Weis-Fricker produces only *Swietenia Macrophylla* from Central and South America. It’s yours quickly in any quantity at prices that will please you, and at lengths up to 20 feet, widths to 24 inches, and thicknesses to 4 inches!

From Weis-Fricker you’ll get the same magnificent material that tests by the U.S. Forest Products Laboratory and Cornell University show superior over all other popular hardwoods in nearly all properties for mortising, boring, planing, warping, shrinking, shaping and turning. You’ll have the same wonderful wood that remains unchanged, uncracked, unwarped in the Cathedral of Ciudad Trujillo after 450 years of tropical climate with hurricanes, earthquakes, and insects. And you’ll join America’s top architects who chose Genuine Mahogany recently for the interior of the luxurious Hotel Sheraton in San Juan, the Professional Golf Association’s (PGA) clubhouse in Palm Beach, and the Library at the University of Chicago. In fact, watch for *House Beautiful’s* 1965 Pace Setter Home. It’s full of Genuine Mahogany from Weis-Fricker!

For the name of your nearest dealer, write today. Free mahogany kit on request. Contains samples with finishes in red, yellow, green, blue, brown, and violet, plus mahogany fact book with mechanical stresses and other information. Circle number 10 on the readers service card or write Weis-Fricker Mahogany Company, P. O. Box 391, Pensacola, Florida.
# Zonolite Roof Deck Systems

**Zonolite Insulating Concrete** consists of a mixture of Stabilized Zonolite Vermiculite® Concrete Aggregate, portland cement and water.

## Features

**Lightweight** — As little as 1/6th the weight of ordinary concrete. Cuts framing costs on many buildings.

**Specified Insulation Value** — Obtainable by varying thickness of insulating concrete.

**Permanence** — Will not rot or decompose. Chemically stable.

**Monolithic** — Continuous surface. Forms ideal surface for the application of built-up roofing.

**Slopes, Crickets, Saddles** — Are easily formed to meet drainage requirements.

**Flexibility of Design** — Follows any contour.

**Incombustible** — All mineral, Zonolite concrete will not burn.

**Economical** — Low in original cost. Maintenance cost is virtually non-existent, and most important...

**Certified Application** — Installation of roof deck systems is made by approved applicators trained in the proper placement of Zonolite roof deck systems, according to specifications, using the most advanced techniques to insure highest standards of quality.

## 1. Over Structural Concrete

<table>
<thead>
<tr>
<th>Thickness of Structural Concrete Roof Deck</th>
<th>2&quot;-4.34 lbs/sq ft</th>
<th>3&quot;-6.50 lbs/sq ft</th>
<th>4&quot;-8.67 lbs/sq ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Ceiling</td>
<td>Heat Flow</td>
<td>Ceiling</td>
<td>Heat Flow</td>
</tr>
<tr>
<td>Heat Flow</td>
<td>Up</td>
<td>Down</td>
<td>Up</td>
</tr>
<tr>
<td>2' Double Tees</td>
<td>0.25</td>
<td>0.23</td>
<td>0.12</td>
</tr>
<tr>
<td>4' Concrete</td>
<td>0.24</td>
<td>0.22</td>
<td>0.12</td>
</tr>
<tr>
<td>6' Concrete</td>
<td>0.24</td>
<td>0.22</td>
<td>0.11</td>
</tr>
<tr>
<td>4' Concrete</td>
<td>0.24</td>
<td>0.22</td>
<td>0.20</td>
</tr>
<tr>
<td>6' Concrete</td>
<td>0.24</td>
<td>0.22</td>
<td>0.20</td>
</tr>
</tbody>
</table>

**Notes:**

1. Add 6 lbs/sq ft for built-up roofing.
2. Ceiling used in "U" value calculation is 1/2" Zonolite Acoustical Plastic, applied directly to underside on concrete slab.
3. "U" Value may be reduced when other than 140 lb density concrete is used.
4. Zonolite Insulating Concrete does not require expansion joints except where required in the structural framing.
5. Zonolite Insulating Concrete does not require mesh reinforcement.
6. Authority for "U" Values based on ASHRAE Guide and Test Data by recognized laboratories.

## Over Shredded Wood Fiber Formboard

**Technical Data:** Mix—1:6... Oven Dry Density—25-30 lbs./ft.²... Compressive Strength—125-225 lbs./in.²... Indentation Resistance—165-270 lbs./in.²...

<table>
<thead>
<tr>
<th>&quot;U&quot; Factor Table (Includes Built-Up Roofing)</th>
<th>Zonolite Cast-In-Place Insulation Thickness and Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness of Structural Concrete Roof Deck</td>
<td>2&quot;-4.34 lbs/sq ft</td>
</tr>
<tr>
<td>No Ceiling</td>
<td>Heat Flow</td>
</tr>
<tr>
<td>Heat Flow</td>
<td>Up</td>
</tr>
<tr>
<td>2' Double Tees</td>
<td>0.25</td>
</tr>
<tr>
<td>4' Concrete</td>
<td>0.24</td>
</tr>
<tr>
<td>6' Concrete</td>
<td>0.24</td>
</tr>
<tr>
<td>4' Concrete</td>
<td>0.24</td>
</tr>
<tr>
<td>6' Concrete</td>
<td>0.24</td>
</tr>
</tbody>
</table>

## Over Fiberglas Formboard

**Technical Data:** Mix—1:4... Oven Dry Density—35-40 lbs./ft.²... Compressive Strength—350-500 lbs./in.²... Indentation Resistance—410-515 lbs./in.²...

<table>
<thead>
<tr>
<th>&quot;U&quot; Factor Table (Includes Built-Up Roofing)</th>
<th>Zonolite Insulating Concrete Over Shredded Wood Fiber Formboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zonolite Concrete Thickness Over Formboard</td>
<td>1&quot; Thick Formboard</td>
</tr>
<tr>
<td>Weight of Concrete and Formboard</td>
<td>No Ceiling Heat Flow</td>
</tr>
<tr>
<td></td>
<td>Up</td>
</tr>
<tr>
<td>2&quot;</td>
<td>7.32</td>
</tr>
<tr>
<td>2½&quot;</td>
<td>8.40</td>
</tr>
<tr>
<td>3&quot;</td>
<td>9.48</td>
</tr>
</tbody>
</table>

**Notes:**

1. Add 6 lbs sq ft for Built-Up Roofing.
2. Ceiling used in "U" Value Calculations is 1/4 Fiberglas lay in panel.
3. Zonolite Insulating Concrete does not require expansion joints except where required in the structural framing.
4. Weight of concrete and Formboard does not include weight of Sub-Purlins or mesh.
5. Sound absorption coefficient of the Shredded Wood Fiber Formboard is N.R.S. = 0.50 to 0.60 db.
6. Authority for "U" Values based on ASHRAE Guide and Test Data by recognized laboratories.
8. UL Inc. Flame-Spread Rating 10
9. Fuel Contributed 15
10. Smoke Developed Negligible
ZONOLITE ROOF DECK CERTIFICATION PROGRAM
... and what it means to the architect

APPROVED APPLICATORS—A national network of skilled applicators is available to install versatile Zonolite Roof Decks. They are bound by contract with the Zonolite processor to place these systems in strict accordance with the Standard Specifications of the Vermiculite Institute.

JOB CONTROL OF MATERIALS AND WORKMANSHIP—To insure quality standards on each roof deck project, the Zonolite processor requires that the approved applicator maintain job records which include a continuous log of mix proportions, water content, densities and weather conditions.

LABORATORY CHECKS—Test specimens are periodically taken during placement on the project and shipped to the Zonolite Building Products Laboratory to assure conformance to published technical data. Specimens are tested for proper dry density and compressive strength.

JOINTLY CERTIFIED BY MANUFACTURER AND APPLICATOR—On completion of the Zonolite Concrete Roof Deck, a certificate jointly signed by the Zonolite processor and the approved applicator, is issued to the architect. It states that the Zonolite concrete roof deck was applied in accordance with the standard Specifications of the Vermiculite Institute.

You will be assured of a certified application of your Zonolite roof deck if your specification states:

"Upon completion of the roof deck installation, a certificate from the aggregate manufacturer shall be furnished to the architect, stating that the applicator is approved, and that the Zonolite Concrete was prepared and applied in accordance with specifications of the Vermiculite Institute in effect at the time said installation was made."

OVER VENTED, GALVANIZED STEEL DECKS

OVER VENTED, GALVANIZED STEEL DECKS

ZONOLITE CAST IN PLACE INSULATION OVER VENTED GALVANIZED STEEL DECKS

"U" FACTOR TABLE (INCLUDES BUILT-UP ROOFING)

SAFE UNIFORM LOAD IN POUNDS PER SQ. FT.—TWO SPAN CONDITION

SAFE UNIFORM LOAD IN POUNDS PER SQ. FT.—THREE SPAN CONDITION

For more details, please consult your Zonolite Certified Roof Deck Applicator or write for his name

ZONOLITE is a registered trademark of Zonolite Division, W. R. Grace & Co.

ARCHITECTURAL RECORD March 1965

241
for the special convenience of the younger set

SIDE-MOUNTED FOUNTAINS
Most Halsey Taylor free-standing water coolers can be adapted for bi-level use by adding a side-mounted drinking fountain. Ideal for elementary schools where adults and children use same fountain. Separate valve and automatic stream regulator — available in stainless steel or vitreous china.

BI-LEVEL FOUNTAINS & COOLERS
The convenient, practical way to serve refrigerated water to both adults and children. Ideal for supermarkets, department stores, and public buildings frequented by different age groups. Bi-Level installation consists of factory-adapted, wall-mounted cooler with low-level accessory fountain. Insulated cold water line connects through adjacent panels — only single waste line is required to serve dual units.

Stainless steel receptacles; cabinets are available in Bonderized steel with choice of colors, stainless steel, or vinyl-laminated steel in silver, spice, or mocha brown.

For complete information about the Halsey Taylor Bi-Level wall-mount assembly or other Halsey Taylor coolers and fountains, write for NEW CATALOG. Also advertised in SWEET'S ARCHITECTURAL FILE and the YELLOW PAGES.

Halsey Taylor®
THE HALSEY W. TAYLOR CO. • 1554 THOMAS RD. • WARREN, O.
For solar control...

sun screens of PLEXIGLAS

When the architect for the Texas A. & M. University Architectural School at College Station, Texas, considered the problem of solar control with sun screens, PLEXIGLAS® acrylic plastic was specified. Why? Because the light weight and impact resistance of PLEXIGLAS make possible a minimum structure to support the sun screens.

The 3/16" thick transparent gray #2088 PLEXIGLAS sheet selected for these sun screens is one of a full range of tints that are available to satisfy a wide variety of light transmittance, glare and solar heat requirements.

Get information and installation details on sun screens of PLEXIGLAS acrylic plastic. Write to Rohm & Haas for technical bulletins PL-591 and PL-592.
Women know Frigidaire

...as the name they can trust. They'll be delighted to see beautiful Frigidaire appliances like this whisper-quiet Custom Imperial Dishwasher (or a Frigidaire Frost-Proof Refrigerator or Flair Wall Oven) in your apartments, townhouses, or model homes. What a wonderful way to say "quality" to your prospects!

Building Owners know Frigidaire

...for low, low maintenance. Frigidaire's reputation for sturdy performance and minimum upkeep has often made the competitive difference on an investment property specification. But when service is needed...it's there! Factory-trained Frigidaire servicemen are everywhere.

Where real quality shows...

Refrigerators  Freezers  Cooking Tops  Free-Standing Ranges  Wall Ovens
Contractors know Frigidaire

...for fast, easy installation. The only cost that matters is cost installed—another reason why Frigidaire gives you the competitive edge! Easy installation is a quality feature of all Frigidaire Built-Ins. It's what lets you offer the performance and beauty people want at such low cost.

Architects know Frigidaire

...for design flexibility. Frigidaire offers you wide variety in product design, models, sizes and colors. Your Frigidaire Representative can suggest a beautiful Frigidaire appliance package to suit any design or budget requirement...one with all the Frigidaire quality features your clients know and want.

...use the appliance brand people know!

Disposers  Washers  Dryers  Built-in Ranges  Dishwashers  Room Air Conditioners

Build-in satisfaction...build-in

FRIGIDAIRE PRODUCTS OF GENERAL MOTORS

Find them all in your Sweet's Catalog Files

For more data, circle 142 on Inquiry Card
X-Panda Shelves
architecturally styled for beauty, utility

"sales glamour" to the first place a woman looks in your new home or apartment. There are X-Panda Shelf styles to fit every type of closet or storage application... providing solid, strong, durable steel shelving that instantly expands to fit space without sawing or planing. X-Panda is now factory-finished in four fashion colors... never needs painting... actually costs far less than installing conventional wood shelving. Send coupon today for complete details.

Please send information on X-Panda Shelf, plus other proven products in the Home Comfort line as follows:

- VENT-A-SYSTEM attic ventilation
- LOUVERS & SHUTTERS

Name:
Firm:
Address:
City: State: Zip: AR

For more data, circle 143 on Inquiry Card
Durable coating based on Shell Epon® resin beautifies 250,000 square feet of Baltimore Civic Center


Low maintenance coating of Epon resin selected for appearance and long service in one of nation’s largest epoxy coating applications.

Interior walls throughout the $13,000,000 Baltimore Civic Center are finished with Farbo-Tile®, a tile-like coating based on Shell Epon resin. The coating was applied to an average thickness of 30 mils, in six colors. This coating gives the concrete block walls an eye-catching finish that will last for years. It can be cleaned easily and resists marring, scratching and attack from chemicals and solvents. Colors won’t fade.

How coatings were applied to concrete block
The first coat was applied by brushing. Within 48 hours, following inspection and touch-up, the final coat in the specified colors was applied by airless spray. Because the coating of Epon resin is easy to clean and resists abrasion, the job was done while other construction was still in progress.

Mail the coupon below if you would like to be referred to a supplier of tile-like coatings based on Shell Epon resin.

Shell Chemical Co.
Plastics & Resins Div.
110 W. 51st St.
N. Y., N. Y. 10020

Please put me in touch with a supplier of tile-like coatings based on Shell Epon resin.

Name
Position
Firm
Address
City State

For more data, circle 144 on Inquiry Card
For a busy supermarket...

you can depend on

YORK AIR

More and more architects and consulting engineers are specifying York for advanced equipment that assures automatic heating in winter, crisp, healthful cooling in summer...filtered air the year around.

One of York's outstanding units is the Sunline air conditioner, roof-mounted so it requires no floor space. This means greater freedom of design for the architect...more flexibility for the engineer.

Outstanding Sunline features include low ambient cooling...weatherproof design...complete application flexibility, with side or bottom discharge available. And there is a complete range of capacities available—cooling, from 60,000 BTU/HR to 178,500 BTU/HR; heating, from 150,000 BTU/HR to 400,000 BTU/HR. Cooling-only models are also available for application in existing buildings where present heating system is adequate.

For complete specification data on York Sunline air conditioners, contact your nearby York Sales Office; or write York Corporation, subsidiary of Borg-Warner Corporation, York, Pennsylvania. In Canada, contact National-Shipley Ltd., Rexdale Boulevard, Rexdale, Ontario.
Mrs. Franklin Shop, Haverford, Pennsylvania. This well known dress shop, located on Philadelphia's Main Line, is air conditioned by York "packaged" units. Contractor, Airchamp, Inc.

or a high fashion salon...

CONDITIONING

The York Sunline Air Conditioner may be installed anywhere on the roof, not necessarily over the area to be conditioned; unit may also be located on the ground, outside building.

For more data, circle 145 on Inquiry Card
Office Literature
continued from page 246

WEATHER DATA FOR COOLING EQUIPMENT DESIGN
A new manual has been published by Fluor Products with the object of furnishing dry bulb reference material for architects and engineers who determine design criteria for mechanical equipment used for both heating and cooling. The manual was published to satisfy the need for reliable weather data at locations throughout the United States. Fluor Products Company, Inc., P.O. Box 1267, Santa Rosa, Calif. *

CIRCLE 415 ON INQUIRY CARD

ORGAN DESIGN
Almost 50 years experience of organ building is displayed in this beautifully produced new catalog. Photographs showing stages in the construction of an organ are included as well as a selection of shots showing organs in place in churches throughout the country. The Reuter Organ Company, Lawrence, Kan.

CIRCLE 416 ON INQUIRY CARD

ENVIRONMENTAL CONTROL
An all-electric environment system which uses re-circulated, non-refrigerated water and includes water-cooled luminaires, water cooled thermal louvers, an evaporative cooler, a non-refrigerated circulatory water system connecting these elements with appropriate control valves, and supplementary equipment to adapt the system to specific climatic or operating conditions, is described in a new brochure. Diagrams are included to explain the function of each part of the system. Environmental Systems Corp., Conyers, Ga.

CIRCLE 417 ON INQUIRY CARD

LIGHTWEIGHT TEXTURED AGGREGATE
Versa-Tex architectural paneling is made up of thermo-setting resins, reinforced with fiber glass and faced with natural exposed aggregate. A new catalog sets forth the many applications of this material and also gives installation procedure and joint details. Versa-Tex Division of Pritchard Products Corp., 4025 Roanoke Parkway, Kansas City, Mo., 64112

CIRCLE 418 ON INQUIRY CARD

*Additional product information in Sweet’s Architectural File

FOR MORE DATA, CIRCLE 146 ON INQUIRY CARD

— Continue from page 246

FOR MORE DATA, CIRCLE 147 ON INQUIRY CARD

FOR MORE DATA, CIRCLE 148 ON INQUIRY CARD

FOR MORE DATA, CIRCLE 149 ON INQUIRY CARD
Who's creating exciting new carpet with electronics?

Monarch is...with Colorset

When electronics and carpet get together, watch out for COLORSET. When multicolor patterns come vibrantly alive in free-flowing uninhibited designs, then it's sure to be COLORSET. And when you see the same plush resilience, the same deep, deep pile and luxurious quality in each patterned carpet, of course it's COLORSET! Monarch's COLORSET process combines the creative craftsmanship of the past with electronic know-how and inventiveness of today. COLORSET glows with progress and personality... with new ways to magnetically dye and preserve color... to shape designs... to turn out better quality in less time — at a lower cost. The old laborious, loom-threading methods for making patterned carpet are obsolete. Monarch's COLORSET marks the advent of a modern era in carpet-making. So... if you like to pioneer... look to COLORSET for exciting interiors. Select from a collection of elegant patterns in a wide range of color combinations... in any yarn. For additional information and samples, please write today to our CONTRACT DEPARTMENT.

Monarch carpet mills

Monarch fashions ACRILAN ACRYLIC — NYLON — HERCULON OLEFIN (the longest wearing carpet fibers known) into luxurious COLORSET carpet pile of radiant, enduring multicolor designs.

CHAMBLEE, GEORGIA
On the Calendar

March
1-5 21st Annual Technical Conference, Society of Plastics Engineers, sponsored by Eastern New England Section—Statler-Hilton and Prudential Center Hotel, Boston
1-4 61st Annual Convention and Exhibits, American Concrete Institute—Sheraton-Palace Hotel, San Francisco
8-10 American Concrete Institute meeting reconvenes—Hilton Hawaiian Village Hotel, Honolulu, Hawaii
8-11 1965 Industrial, Institutional and Commercial Building Conference, sponsored by the American Institute of Consulting Engineers—Cobo Hall, Detroit
10-11 First Annual Technical Conference on Elastomer Technology, sponsored jointly by the Elasto-Plastics Division of the Society of the Plastics Industry, Inc., The Institute for Applied Chemistry and Physics and the College of Engineering of Wayne State University—McGregor Memorial Conference Center, Wayne State University, Detroit
14-15 Annual Convention, National Housing Conference—Statler Hilton Hotel, Washington, D.C.
15-18 46th Annual Convention and Exhibit of the Associated General Contractors of America—San Francisco

April
2 Conference on Chemistry Facilities for the Two-Year Colleges, a one day conference co-sponsored by the Junior College Chemistry Round Table, El Camino College and Henry Ford Community College—Henry Ford Community College, Dearborn, Mich.
21-22 Conference on “Planning for the Quality of Urban Life” sponsored by Washington University through a grant by the St. Louis Regional Planning and Construction Foundation, as a contribution to the St. Louis Bicentennial celebration—Washington University, St. Louis
25-29 Joint Planning Conference, American Society of Planning Officials and the Community Planning Association of Canada—Royal York Hotel, Toronto
27-29 The 1965 Conference on Church Architecture and Architectural Exhibit on Religious Buildings, the American Society for Church Architecture, the Church Architectural Guild of America, and the Department of Church Building and Architecture of the National Council of Churches of Christ in the U.S.A.—Pick-Congress Hotel, Chicago
30ff Fifth Annual Conference on Theater Architecture, United States Institute for Theater Technology—Indiana University, Bloomington, Ind.; through May 2

May
19-21 Second National Convention of the Consulting Engineers Council—Chase Park-Plaza Hotel, St. Louis
21-22 Annual seminar and meeting of the International Society of Food Service Consultants—Bismark Hotel, Chicago

continued on page 258
different buildings, different budgets

...all with tomorrow's comfort control

The Inland Radiant Comfort System is making indoor climate history. Each building on this page provides the most advanced heating, cooling and air treatment ever available to man. Yet, each building has a different plan, a different client to please, and a different budget. The Inland Radiant Comfort System is completely flexible and meets the requirements of every building. It is designed as an integral part of the building itself, and each component is tailored to give utmost performance. The IRC System assigns heating and cooling loads primarily to radiant ceilings, reducing air volumes to those required only for ventilation. Chemical air conditioning keeps close control of humidity and airborne contamination. For a complete explanation, send for the booklet, "Breakthrough in Office Comfort Control." Write for it today to Inland Steel Products Company, 4400 W. Burnham Street, Milwaukee, Wisconsin.

Administration Building, State College Of Iowa, Cedar Falls, Iowa
Architects: Altfillisch, Olson Gray & Thompson
General Contractor: John G. Miller, Waterloo, Iowa
Mechanical Engineer: Harold E. Rucks
Structural Engineers: Peterson and Appelli

The Montgomery Bldg., Bethesda, Md.
Architect: John Samperton
General Contractor: Thomas H. Ryon Co.
Structural Engineer: R. Weiss

Inland Steel Products
On the Calendar
continued from page 25U

24-26 9th National Convention of the Construction Specifications Institute—El Cortez Hotel, San Diego

Office Notes
Offices Opened—
Winifred H. Hyde has opened an office for the practice of architecture at 618 Grand, Oakland, Calif.

Charles A. Wilsam Jr., Architect, has announced the establishment of his office at 1901 North 81st St., Omaha, Neb.

New Firms, Firm Changes
John L. Bartolomeo has announced the formation of a partnership with Joseph A. Hansen for the practice of architecture. The Chicago firm will be known as Bartolomeo and Hansen, Architects.

Alfred A. Calcagni, A.I.A. and Richard B. Frazier, A.I.A. have formed a partnership for the practice of architecture under the firm name of Calcagni and Frazier with offices at 18 Marshall Drive, Burlington, VT. and Park St., Stowe, VT.

The firm of Collins and Kronstadt, Silver Spring, Md., has expanded to include F. Michael Leahy, Donald J. Hogan and Richard E. Collins Jr. The firm name will be Collins & Kronstadt, Leahy, Hogan, Collins.

John J. Farrell has become an associate of the New York-based firm of Steinmann and Cain, Architects.

The New York City firm of A. Robert Fisher, A.I.A. has been renamed Fisher-Friedman Associates, with Robert J. Geering as an associate.

Ronald J. Gee has been made chief draftsman of Marchesiani & Cohn, Architects, Miami Springs, Fla.

Rose, Beaton, Corsbie, Dearden & Crowe, Architects and Engineers of New York City and White Plains, has announced the appointment of Charles L. Koester, Louis H. Li, Robert J. Vanneck, George Harrison and Lee Hilton as associates.

A. J. McArthur has been made a vice president of Charles Luckman Associates, New York, Boston, Los Angeles.

Smith, Smith, Haines, Lundberg & Waehler of New York has appointed Charles L. Macchi a senior associate and Bronislaus Frank Winckowski an associate.

Faulkner, Kingsbury and Stenhouse, Architects, Washington, D.C., have admitted James Philip Marshall and Alberta Fuller West as associates.

Peter R. Norris has been made a partner of the firm of Morris Hall—Architect, henceforth to be known as Morris Hall & Peter Norris—Architects, Atlanta.

Tician Papachristou and Daniel Havekost have announced the formation of the firm Papachristou and Havekost, Architects and Planners, with offices located at 1755 Glenarm, Tower Suite #2 of the Continental Oil Building, Denver.

Millard F. Whiteside, A.I.A., Architect, of White Plains, N.Y., has admitted Laszlo Papp, A.I.A. as a partner of the firm which will be known as Millard F. Whiteside and Laszlo Papp Architects.

Ross W. Pursifull has been made a partner of the firm of Morris Hall—Architect, henceforth to be known as Morris Hall & Peter Norris—Architects, Atlanta.

These outdoor-indoor fabrics don't fade

Guaranteed 5 years not to!

This could be a color ad of our fabric as parabola, fence, chair covers, blinds and canopy. But there are 25 Sunbrella® colors and patterns available, so we'd rather you used your imagination. Woven of 100% Acrilan® acrylic fiber, tests prove Sunbrella astounding. Plus colorfastness, it's mildew and rot proof. Retains its strength. Excellent porosity. Lightweight. Same color underneath as on top. Leave it up safely year 'round. Soft, non-glare finish. Increases efficiency of air-conditioning equipment up to 75%! Write for Sunbrella information and free new design idea booklet. Glen Raven Mills, Inc., Glen Raven, North Carolina. *Reg. T M of Chemstrand

For more data, circle 154 on Inquiry Card
source of full-spectrum capability in elevator system design

An example: 1090-M Standard Elevator Operation and Control Modules. Pre-engineered. Flexible. Designed for use in any combination compatible with your elevator automation requirements, they enable you to provide precisely the amount of elevator automation you need . . . keep costs down without sacrificing performance. Each standard module handles one or more operating functions. Should building traffic demands change, modules to handle the necessary operation and control functions can be added readily. Compact, modular design for rack mounting saves space, simplifies maintenance. 1090-M Operation and Control Modules are a product of the continuing original research and development program in Elevonics* that keeps us far ahead in technology and capability. For expert assistance in planning elevator systems to meet new construction or modernization needs, consult with your Haughton representative. He's in the Yellow Pages. Or, get in touch with us.

*Haughton's advanced program in systems research and engineering with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance. Registered in U.S. Patent Office.

Martin Lovett, P.E., has announced the appointment of Alan H. Rozman and Karl Annen as associates in the firm to be known as Martin Lovett & Associates, Consulting Structural Engineers, New York.

Muhlenberg Bros. of Wyomissing, Pa. has changed its name to Frederick R. Shenk—Lee V. Seibert—Architects.

The Detroit-based architectural and engineering firm of Giffels & Rossetti, Inc. has appointed A. J. Smith as the director of industrial engineering.

Charles H. Stark III has been named an associate in the Toledo, Ohio, firm of Richards, Bauer and Moorhead, architects and engineers.


New Addresses
Malsin-Reiman Architects, 347 Madison Ave., New York City.
Stephens, Walsh, Emmons & Shanks, Engineers & Architects, Suite 114, Building Arts Building, 5045 North 12th St., Phoenix 14, Ariz.

THAI EDUCATOR RECEIVES AWARD
An Nimmanahaeminda of Thailand has received the seventh annual Pan Pacific Architectural Citation of the Hawaii Chapter of the American Institute of Architects, an award originated in 1958 to honor outstanding contributions to the architectural profession in Pacific Basin countries.

This year’s citation is in recognition of Mr. Nimmanahaeminda’s achievements in the field of architectural education. A native of Thailand, he was educated in England and in the United States. While a professor at Chulalongkorn University in Bangkok in 1958, he organized a five-year curriculum for the Silpakorn Fine Arts University. At present, he is acting dean of architecture at Silpakorn and professor of architecture at Chulalongkorn. Mr. Nimmanahaeminda has engaged in private practice and has served in the Thai Ministry of Interior. In addition, he is active in committees of the Bangkok Municipality, including work in slum clearance, housing and planning, and revision of building codes.

Previous recipients of the award include: Kenzo Tange and Kiyonori Kitutake of Japan; the firm of Grounda, Romberg and Boyd of Australia; Leandro Locsin of the Philippines; Arthur C. Erickson of Canada; and Hector Mestre of Mexico.

For more data, circle 158 on Inquiry Card

For over 30 years...

All-American Athletic Lockers

There's an All-American Locker to meet every need...full length, double tier and gym lockers...all completely ventilated...in a choice of 7 baked enamel finishes (or custom finished)...available for uniform installation or in combination.

The original All-American Locker was a custom locker...built to particular specifications for a particular installation. They were ordered because lockers of the size, quality and serviceability were not available in standard locker packages.

Since that time the line has been adapted, expanded, altered and refined...but the Quality features of design, materials and construction have never been compromised.

Today the All-American Locker is the leader in the quality field...providing maximum ventilation, light, roominess and cleanliness...exacting built of heavy duty materials to assure long life service.

The All-American Line has been copied, imitated, adapted and appropriated but it has never been equaled. Ask the coaches and players who demand the best...and have All-American!

Send for our complete line catalog and complete information.

DeBourgh Manufacturing Co.
9300 JAMES AVE. S., DEPT. AR, MINNEAPOLIS, MINN. 55460

For more data, circle 159 on Inquiry Card
Caprolan nylon took all-day classes at Michigan State for a year,

and still looks good.
A year ago Michigan State University installed carpet in one of its classrooms as a test. The room was used all day for classes and every evening as a study hall. The carpet: "Zenith" by Commercial Carpet Corp., of 100% Caprolan® nylon pile.

How did students and faculty react to a carpeted classroom?
They loved it! Loved the cozy feeling and quiet of a carpeted classroom. What's more, students treated the room better—picked up papers, didn't crush out cigarettes on the floor. The building maintenance staff cut cleaning time by over 50%. Carpet eliminated the daily sweeping and buffing that tile floors required. And after a year, carpet of resilient Caprolan pile still looks new. Still doesn't need to be shampooed. The University has just installed an additional 390 yards in the new planetarium.

To find out more about carpet of 100% Caprolan nylon pile, clip this coupon.

For more data, circle 166 on Inquiry Card

ARCHITECTURAL RECORD March 1965 279
If you don’t find the industrial lighting you need here...
it's probably on our drawing boards

Gentlemen: I am interested in receiving the following catalogs which I have checked below:

- Spartan Troller Lighting
- Lumi-Flo® Air Handling Troffers
- Commercial Fluorescent Lighting
- Industrial Fluorescent Lighting
- High-Bay Mercury-Vapor Lighting
- Protected Incandescent Lighting
- Floodlighting

Name: ____________________________ Title: ____________________________
Company: ___________________________
Address: ___________________________
City: __________________ State: ______ Zip: ______

Please have a representative call.

"STANDARD OF PREFERENCE AND PERFORMANCE"

THOMAS INDUSTRIES INC.
207 E. Broadway • Louisville, Ky. 40202

For more data, circle 167 on Inquiry Card
To deal with these new problems will require a new conservation... Our conservation must be not just the classic conservation of protection and development, but a creative conservation of restoration and innovation. Its concern is not with nature alone, but with the total relation between man and the world around him.

Its object is not just man's welfare but the dignity of man's spirit.

For preservation of natural beauty in the cities, the President reiterated the proposal for community "extension" programs suggested in his education message.

The conservation message also called for an extension of the Open Space Program so that the Federal government could make matching grants for the cities to acquire and clear areas to create small parks, squares, pedestrian malls and playgrounds; for landscaping and installation of outdoor lights and benches; and for Federal demonstration projects in city parks.

The President encouraged and supported the National Trust for Historic Preservation, and said that he will propose legislation to help local authorities acquire, develop and manage private properties for preservation purposes.

The President intends to use the Land and Water Conservation Fund to acquire lands for use as national parks in Maryland, Virginia, New Jersey, Pennsylvania, North Carolina, Michigan, Indiana, Oregon, Nevada, Texas, West Virginia, Montana, Wyoming, Utah and California.

For increasing the beauty of highways, President Johnson reiterated proposals outlined earlier in his letter to the Secretary of Commerce.

"... The time has... come to identify and preserve free flowing stretches of our great scenic rivers before growth and development make the beauty of the unspoiled waterway a memory.

"To this end I will shortly send to the Congress a bill to establish a National Wild Rivers System."

Then President Johnson discussed the increase in pollution in all areas and called for various programs dealing with clean water, clean air, solid wastes and pesticides, and disclosed that a National Center for Environmental Health Sciences is being planned as a focal point for health resources in this field.

The President concluded by stating that a White House Conference on natural beauty will meet in mid-May of this year under the chairmanship of Laurance Rockefeller. It is the President's hope that this conference will produce new ideas and approaches for enhancing the beauty of America.

Grave Appropriation

On February 8, President Johnson asked Congress for $1,770,000 to finance construction near the grave of President Kennedy in Arlington National Cemetery.

The government's appropriation would finance construction of walks, platforms and other facilities for the many visitors to the grave. The work in the immediate area of the grave, estimated at $395,000, will be financed by the Kennedy family.
Entirely new steel access door has UL 1½-hour "B" rating, temperature rise 30 minutes, 250° F. maximum.

NEW MILCOR FIRE-RATED ACCESS DOOR

First access door to earn the Underwriters Laboratories 1½-hr. "B" Label — the Milcor Fire-Rated Access Door. You can specify it for service openings in plaster, masonry, tile, or wallboard construction. Sizes, 12" x 12", 16" x 16", 24" x 24", and 32" x 32".

Door has continuous hinge — and latches automatically. When closed and locked, door is semi-tamperproof, but unlocks easily with a screwdriver. The Milcor Fire-Rated Access Door is found in Sweet's, section 16k/In. Write for catalog 210-5.

Inland Steel Products Company
DEPT. A, 4033 W. BURNHAM ST., MILWAUKEE, WISCONSIN 53201
BALTIMORE, CLEVELAND, KANSAS CITY, LOS ANGELES, MILWAUKEE, NEW YORK

For more data, circle 84 on Inquiry Card
LOF SUGGESTS:

How to get your money's worth from your architect

Tell him all the things you want your building to do... then rely on his creativity.

Tell him exactly how much you can afford to spend... then trust his experience.

Tell him to give you only the best in building products... then respect his judgment and stay with his specifications.

Libbey-Owens-Ford Glass Company, Toledo, Ohio
(This advertisement appears March 17 in The Wall Street Journal. Free reprints available.)

For more data, circle 168 on Inquiry Card
SOMETHING TO THINK ABOUT...

IN PURCHASING UNIT VENTILATORS

Some manufacturers leave out value... needed essentials. They design their product around the "low bid." This may get them the order but what does it get the buyer?

However, if you are among the value-conscious businessmen who ask first "what do I get" and then "how much," check up on the Schemenauer Unit Ventilator — Heating or Cooling.

It's the only unit on the market today made to last longer, perform better and cost less to operate and maintain the entire life of the classroom.

We can prove this on your terms. It doesn't make any difference whether you're from Vermont or Missouri, hold a Ph.D. in engineering or are somewhere in between like the rest of us.

For lasting value, it pays to go first-class — and going first-class is much more than a matter of money.

As a starter, let us send you two "Eye Opener" Bulletins on unit ventilators. Just clip this ad to your card or letterhead and mail to us today. We thank you for this opportunity.

"Guaranteed the finest Unit Ventilator any amount of money can buy."

For more data, circle 169 on Inquiry Card
If your building calls for more than one floor, it's in the Otisphere. Otis has helped more architects and builders solve more vertical transportation problems than anyone else. One solution is America's most advanced elevator system—one that makes elevatoring practically waitless. Instant Elevatoring.* Just touch the button—there's your Otis. Touch the telephone—there's your Otis man. Do it while your project's still on paper.

Electric and Hydraulic Passenger and Freight Elevators • Escalators • Moving Walks • Dumbwaiters • Elevator Modernization and Maintenance • Military Electronic Systems • Gas and Electric Trucks by Baker Division • Otis Elevator Company, 260 - 11th Avenue, New York, New York 10001

*Instant Elevatoring is a Trademark of Otis Elevator Co.
All over the Spartan campus — in student dorms and apartments, in the planetarium and veterinary clinic, in research labs and classroom buildings — Bruner water softening equipment is at work:

Eliminating scale build-up in plumbing. Keeping hot water heaters running at peak efficiency. Saving tons of janitorial cleaning products.

The choice of Bruner equipment indicates the foresight and good judgement of university purchasing officials. For Bruner equipment should bring immeasurable savings year after year:

In water heating costs. In cleaner, easier to maintain rest room facilities. In reduced plumbing repairs. In lightening the work load of janitorial crews.

Further savings result from trouble-free Bruner operation. A minimum of moving parts, corrosion-proof materials, 100% factory checkout of electrical components are typical of better-engineered Bruner products.

For more information on Bruner commercial and home water conditioning equipment, write Bruner Corporation.

MICHIGAN STATE UNIVERSITY
BRUNER INSTALLATIONS

Substantial savings in plumbing maintenance, water heating bills and cleaning products are being realized by University officials because of Bruner equipment in all of these campus buildings.

BRUNER WATER CONDITIONERS
SCORE HIGH AT MICHIGAN STATE

For more data, circle 170 on Inquiry Card

ARCHITECTURAL RECORD  March 1965    287
ernment Center project until the B.R.A. agreed to give other developers the opportunity to bid for the site.

Therefore, in order to have the City Council act favorably on the urban renewal program, Mayor John F. Collins agreed to name a seven-man panel and open the Parcel 8 project as a competition. The Blue Ribbon Panel was formally announced by Mayor Collins on May 6, 1964.

Critics of the B.R.A. point out that the developers who came in later would have had less time than Cabot, Cabot & Forbes to develop their schemes and question whether a true competition could be held in these circumstances.

**Competition Timetable**

The Parcel 8 competition was held in two stages. The first stage, which ended August 31, 1964, included the submission of the developers' qualification and responsibility; the names of the architects and associate architects; a proposal letter; and a $5000 deposit. On September 14, 1964, the panel announced the three competitors who had passed the prequalification stage.

The Stage II submissions, which required a detailed financial program for the building and the design proposal, were due on December 7, and the panel's final decision was scheduled for December 21.

After the panel's decision was accepted by the B.R.A., the successful developer was given 30 days in which to accept the designation and submit a letter of intent to the authority. As we go to press, it is reported that Cabot, Cabot & Forbes will submit this letter before a meeting of the B.R.A. on February 25. At this time it is also expected that Cabot, Cabot & Forbes will announce that construction on the project will begin by October of this year instead of April 15 next year as originally scheduled.

**Controversy**

On the morning of December 7, the State Street Tower Associates announced that it was not submitting its proposal in the second stage of the competition for financial reasons. The State Street Redevelopers also were...
ARCHITECT
LUDWIG
MIES VAN DER ROHE
Chicago, Illinois
Fenestration
by
MARMET CORPORATION
Quarry Tile of Special Shapes

The unique beauty of Ludowici special shapes shale flooring tile is now practical for your most budget minded client. Because of greatly increased demand, price reductions have been made on all special shape styles. No difference in quality or texture.

You can now afford the world's most beautiful flooring tile. Provence, Valencia and Renaissance patterns available in brushed or smooth, in red or fire flashed colors.

For complete information and the name of your nearest distributor write:

FLOORING TILE DIVISION—Dept. A. R.

* LUDOWICI-CELADON CO. • 75 East Wacker Drive, Chicago 1, Illinois

WEST COAST REPRESENTATIVES: International Pipe & Ceramics Corp., Los Angeles

HENNA REPRESENTATIVES: Lewers & Cooke, Ltd., Honolulu

Valencia Provence Renaissance

For more data, circle 172 on Inquiry Card

FABRIC FORM school trays...

... your LOW COST answer to classroom storage problems!

- Made of sturdy high-impact plastic, with high gloss finish — UNBREAKABLE in normal use
- Smooth surface resists soiling — easily cleaned
- Lightweight and easy to handle — even by small children
- Six sizes with label holders
- Beautiful pale tan, grey or green colors

These trays solve your present storage problems immediately — yet are always adaptable to a more elaborate storage system later!

The FABRI-FORM Company, Byesville 4, Ohio

For more data, circle 173 on Inquiry Card

These are the outside dimensions of Bro-Dart's New Comprehensive Furniture Catalog. ([WAI'T'LL YOU SEE WHAT'S INSIDE!])

Write for Details TODAY!

Write for your free copy to:

Bro-Dart Industries
Dept. 1529X, 56 Earl St., Newark, N.J. 07114
1888 S. Sepulveda Blvd., Los Angeles, Calif. 90025

For more data, circle 174 on Inquiry Card
If Mill A and Mill B made a carpet from the exact same specs, would you get the exact same carpet?

How could you?
You can specify, for example, 4000 sq. yds. of 3 ply all wool yarns.
But can you specify, how the wool should be scoured?
You can specify Mint Julep green.
But can you specify the quality of the dye process?
You can specify a 3/4 inch pile height.
But can you specify even weight from yard to yard?
You can specify a double jute back.
But can you specify how to put it on?
You can specify a pattern.
But can you specify 63 inspections to make sure of no skips or misweaves?
See our point?
A carpet mill can foul you up.
At Lees, we don't.
We don't give you wool from mangy sheep.
Or nylon or acrylics from mangy manufacturers.
Or streaked, mismatched, off-colored, ravelled, pulled, fluffed, puckered, wrinkled or tacky-backed carpets.
Put it this way. We don't give you trouble.
Except sometimes.
Sometimes we get specs we can't afford to follow as they are.
If we did, we'd have to make sub-standard carpet.
We won't.
We won't sacrifice quality.
You can expect a good carpet from Lees no matter what you specify.
(Or what you don't.)
For a lot of good, down-to-earth reasons, "those heavenly carpets by Lees."

© JAMES LEES & SONS CO. BRIDGEPORT, CT. A DIV. OF BURLINGTON PUBLISHING

For more data, circle 175 on Inquiry Card
Here lies the Boiler
Laid to rest
It steams no more
(though some protest)
And in its place
(to our delight!)
We find the modern
"Heat-of-Light"
R.I.P.
"Every building needs a boiler."
(or some other fuel-burning heat source)

balderdash!

New Barber-Colman Heat-of-Light® Systems use heat generated by lights, people, and equipment to heat the building.
Result: You can reduce the amount of heating equipment required and lower operating costs. Clip coupon for details.

How to harness light-generated heat
Today, lighting levels of 100 foot-candles (or more) are common. Light-generated heat often accounts for more than 50% of the total heat gains in the building. This heat has been paid for... why not use it?

Heat-of-Light Systems use heat-transfer light fixtures to capture up to 85% of the light-generated heat, keeping it out of the occupied space. Barber-Colman Jetronic mixing units in the ceiling cavity use some of this heat to maintain comfort conditions in interior areas—the rest is available to offset heat losses at the building perimeter, or for storage (to be used later during unoccupied hours). Result: You realize major savings in the cost of air conditioning (often eliminating the need for boilers or other high-output heat sources).

Simple design offers major savings in system cost
With a Barber-Colman Heat-of-Light System, hot air ducts, reheat coils, and piping are eliminated. Less pipe and duct insulation are required. And, you get the most possible air conditioning in the least possible space.

What's more, fluorescent lights operate at ideal temperatures (75 to 80°F) increasing light output 12 to 15%. Lighting levels can be doubled without increasing conditioned air requirements.

System offers new design freedom
With a Heat-of-Light System, you have new freedom to design your structures for maximum esthetic appeal and flexibility—uncluttered ceilings... higher lighting levels... off-the-wall thermostat locations... movable walls where ever needed... and zone comfort control for every occupied area, if desired. Instead of imposing design problems, Barber-Colman Heat-of-Light Systems reduce the restrictions on your creativity.

Electronic computer evaluates Heat-of-Light for your building
You can evaluate a Heat-of-Light System for your building without leaving your office. All it takes is a one-page Feasibility Study, a short discussion between one of our field people and your design engineer, and a few minutes’ work by our computer.

Get the full story. Clip the coupon below or contact your nearest Barber-Colman field office. Many of our customers and prospects are finding this Feasibility Study an invaluable service. And, it's free.

BARBER-COLMAN COMPANY
ROCKFORD, ILLINOIS 61101
In Canada: BARBER-COLMAN OF CANADA, LTD.
Toronto, Ontario
... where originality works for you

Please send me your new booklet on the Barber-Colman Heat-of-Light System.

Please have your local representative call me to discuss a computerized Feasibility Study.

Name

Title

Company

Street

City State Zip Code

For more data, circle 176 on Inquiry Card
Boston Competition
continued from page 288

given more time to work out financial
details. The Blue Ribbon Panel there­
fore postponed its final deliberations
until January 29 to allow these en­
trants further time to work on their
financial packages.

Mr. Breuer was not notified until
the morning of December 7, the date
when the second-stage proposals were
due, that the State Street Tower As­
ociates were not going to submit.
Francisco Iglesias, vice president in
charge of real estate for New Eng­
land for the Perini Land and Devel­
opment Corporation, one of the com­
ponent firms of State Street Tower
Associates, stated that he “didn’t
think it was financially wise to submit
their entry under the rules of the com­
petition as established.”

A spokesman for Cabot, Cabot &
Forbes made the following statement
about the competition: “As a result
of a political controversy on Parcel
8 in Boston’s new Government Cen­
ter, a competition was arranged, and
Mayor John F. Collins appointed a
distinguished Blue Ribbon Panel to
select the developer. Cabot, Cabot &
Forbes Co. was chosen to build the
new office building by this eminent
group. Franklin King, Jr., vice pres­
ident of the development firm, in an­
nouncing details about the new tow­
er to the Boston press stated that in
such competitions for urban renewal,
there is a needless economic penalty
on firms which do not win. He fur­
ther confirmed that Cabot, Cabot &
Forbes would not seek out opportu­
nities to enter other competitions for
urban renewal.”

Esther Maletz, project director of
the Boston Redevelopment Author­
ity for the Government Center stated
that “it was unfortunate that archi­
tects thought of Parcel 8 as an archi­
tectural competition because it was
a developer’s competition. Designs
weren’t necessarily the overriding
factor in the judging.”

The Jury

The “blue ribbon panel” which
served as a jury for the competition
consisted of Robert W. Meserve, pres­
dent of the Boston Bar Association,
chairman; Pietro Belluschi, F.A.I.A.,
dean of the School of Architecture
and Planning at Massachusetts In­
stitute of Technology; Phillip W.
Bourne, president of the Boston So­
ciety of Architects; Charles A. Cool­
idge, president of the Committee for
the Central Business District, Inc.;
Harold G. Kern, publisher of the Bos­
ton Record-American and Boston
Sunday Advertiser; Anson Phelps
Stokes Jr., Bishop of the Episcopal
Church, Diocese of Massachusetts;
and Benjamin Thompson, A.I.A.,
chairman of the Department of Ar­
chitecture, Harvard Graduate School
of Design.

Pietro Belluschi of the Blue Rib­
on Panel said that if the competi­
tion “had been a project in an archi­
tectural school, the Kelly & Gruzen-­
Nervi entry would have won on the
basis of architecture alone. But, the
Cabot, Cabot & Forbes building was
an excellent scheme that was de­
signed as a commercial building that
could pay its own way. The winning
design makes a much more profitable
use of the lower floor. It is suitable
continued on page 308
Fresh uses for trusted woods.

Western Wood Decks

Whatever the size, shape or topographical challenge of your deck or patio situation, Western Woods have an inviting answer. Old and experienced, they are also comers in the field—fresh, "new idea" woods of dependable quality and performance.

Here is a booklet-ful of examples—in full color—showing Western Wood Decks used to expand floor plans beyond roof lines ... providing more useful space, leisure space and pleasure space, all at nominal cost. Mail in this coupon now.

We'll also send you the Western Lumber Technical Manual. Both books free, of course.

Please send the Western Wood Decks booklet and the Western Lumber Technical Manual.

Name

Firm

Address

City State Zip

WESTERN WOOD PRODUCTS ASSOCIATION
Dept. AR-365, Yeon Building, Portland, Oregon 97234
Ceco Steelform Service (Steeldomes illustrated) includes (1) furnishing, erecting and removing shores and open wood framing (centering), and (2) supplying the necessary Steelfoms and labor for their erection and removal. Ceco Service takes the guesswork out of floor forming. The architect, engineer, contractor and owner know the final cost before the job starts. A firm quotation from Ceco takes the variables out of cost estimating.

Another Ceco high-rise project, under construction (Ceco Steeldome, Longform and Centering Service) / Columbia Broadcasting System, Administration Headquarters, New York City / Eero Saarinen & Associates, architects / Paul Weidlinger, structural engineer / George A. Fuller Company, general contractors / Brennan & Sloan, Inc., reinforced concrete construction / This 38-story project was erected on a tight schedule—a floor completely poured every four days.

Typical high-rise Steeldome project (Ceco Steeldome and Centering Service) / One Charles Center Building, Baltimore, Md. / Mies van der Rohe, architect / Farkas & Barron, structural engineers / Metropolitan Structures, Inc., general contractors / Bollinger-Leland Construction Company, concrete contractors / This waffle flat-slab design, with high-strength bars and lightweight concrete, cost 50¢ per square foot less than the alternate structural steel design.
In the Southwest, still another high-rise building (Ceco Flangeform and Centering Service) / Petroleum Club, Tulsa, Oklahoma / Kelley & Marshall, architects / T.C. Bateson Construction Company, general contractors / Ceco also formed the flush beams for the floor system, and the beams around elevator shafts and stair openings. Further, Ceco did the shoring for the roof overhang (illustrated). Call on Ceco for experienced forming service.

up, up, up!

with CECO Steelform Service

Look around the country at the new high-rise buildings. Everywhere you'll see monolithic concrete joist construction formed by Ceco Steelform Service. One Charles Center in Baltimore. CBS Headquarters in New York. The Petroleum Club in Tulsa. The Merchandise Mart in Atlanta. Kiewit Plaza in Omaha. Lamar Towers in Houston. These are only a few of the modern multiple-story buildings with floor systems formed by Ceco.

Your own design can be exciting and unusual . . . yet economical, because Ceco Steelforms are available in a broad range of standard sizes coast to coast. You can achieve the effect you want without costly special sizes.

Ceco Steelform Service keeps construction on schedule. Result: Buildings are completed on time — earn income quickly. Architects, engineers and contractors are sure of dependable service because Ceco has more than 52 years of Steelform experience, and has formed more than 500,000,000 square feet of monolithic concrete joist construction.

There are other advantages. Fill in coupon for Bulletin 4001-S, which gives full details.

extensive? yes!
expensive? no!

The CECO Corporation
5601 West 26th Street
Chicago, Illinois 60650
Sales offices and plants in principal cities

Please send Bulletin 4001-S, entitled "Ceco Steelforms."

We are interested in studying the use of monolithic concrete construction for the following project:

name____________________title____________________
firm____________________
address____________________
city____________________state____________________zip code____________________

For more data, circle 179 on Inquiry Card
**To make roofs of unusual design**

**WATERPROOF and WHITE**

Specify **ADDEX HEAVY DUTY ROOF SHIELD** coated with **ADDEX COLOR-SHIELD**

Unusual roof shapes often present problems that conventional roofing materials can't handle. That's when to specify Addex. No joints or lap lines mar the smooth white beauty of Addex surfaces because Addex materials feather-edge perfectly. ADDEX ROOF SHIELD has a sixteen-year record for providing highly durable waterproofing while conforming snugly to even the most difficult roof contours. Its combination of chemically-improved asphalt and tough glass fiber mesh provides unique protection against ugly, destructive cracking and blistering. COLOR-SHIELD is an enduringly white surfacing developed exclusively for application over Roof Shield. Color-Shield resists soil penetration and chalks off at a controlled rate to retain its high reflectivity. And because it permits only one-fifth the amount of heat to enter the roof as a conventional black surface, Color-Shield keeps interiors cool in hot weather and cuts air conditioning costs.

For Addex Roof Shield and Color-Shield specifications, write Dept. 103, ADDEX MANUFACTURING COMPANY, WICKLIFFE, OHIO

---

**Southern’s In The Kitchen**

at **MARION SR. HIGH SCHOOL**, Marion, Indiana

Food service equipment in the above installation is “Custom-Bilt by Southern.” Why are more and more owners, architects and consultants insisting on Southern? Find out today from your “Custom-Bilt by Southern” distributor or write us for copies of our free brochures of recent installations.

For more data, circle 182 on Inquiry Card
Just off our drawing board and ready for yours. New Westinghouse Semi-Recessed Water Cooler. Available as a drinking fountain or an electric water cooler. Either way, it blends with any new building decor.

Care to get better acquainted?

As a drinking fountain, this new cooler answers your new construction—low budget specifications. Add a refrigeration system and you've got an electric water cooler. What's more, its recessed-four-inch design allows for more complete usage of hallways and aisles. It has an all stainless steel fountain with a new finger-tip push-button bubbler—plus automatic stream height control and built-in strainer. Completely vandal-proof... bubbler valve locked to basin.

Models WSR8 (8/gph) and WSR12 (12/gph) are available with widest selection of cabinet finishes: pearl-gray baked-on enamel; or neutral beige decorative vinyl on zinc-coated steel; or all stainless steel cabinet.

Available for September delivery, but to accommodate earlier roughing-in schedule, you can specify June delivery of wall mounting box. For full details, refer to Sweet's Architectural File 29 d/We, Engineers' Product File. Check the Yellow Pages for your local distributor, or write Westinghouse, Columbus, Ohio.

You can be sure if it's Westinghouse

For more data, circle 183 on Inquiry Card
coming in mid-May

RECORD HOUSES

From hundreds of the best new architect-planned houses from coast to coast, Record editors present the 20 houses that herald notable new achievements in U.S. residential architecture. The houses win for their architects and owners Architectural Record's Award of Excellence for House Design. They incorporate the widest range of contemporary design, geography, structure and cost.

In 84 pages Record editors provide multi-page coverage of every award-winning house, using hundreds of professional plans, drawings and photographs (many in full color) to illuminate every aspect of house design. Concise text analyzes each house in relationship to the owner's wants and needs and such basic planning factors as budget, site and climate.

In addition, Record Houses of 1965 will present these timely features:

• Heating and Cooling—Architectural, Consultant Henry Wright discusses recent innovations in heating and cooling methods used in two new houses. In one—instead of the traditional cooling tower—a waterfall has been installed in the courtyard.

• Kitchen and Bath Design—Architect Paul

House for Mr. and Mrs. David G. Rawls, Jacksonville, Fla.
Architect: William Morgan, A.I.A.
Drawing by Davis Bate
OF 1965

Wiener writes about new architectural approaches to kitchen design.

- Comparative Cost Calculator—Handy guide to estimating the cost of building Record houses in other key localities.
- Progress in Products — Editorial roundup of quality residential products.

These editorial features combined with the multi-page presentation of each of the 20 houses make Record Houses of 1965 the "House Issue of the Year."

Record Houses of 1965 comes to you as part of your subscription to Architectural Record. "Record Houses" is also distributed to 20,000 foremost builders to accelerate the trend toward greater architect-builder collaboration on tract housing. The house buying public will find it on sale in leading book stores.
Boston Competition
continued from page 300

to Boston, uses good materials, and was well conceived financially."

Winning Design Concept
The winning concept, by Edward L. Barnes and Emery Roth & Sons, associated architects, will serve as a transitional landmark from the historic to “New Boston.” The 40-story tower will have a steel framework with recessed tinted glass windows and a warm textured pink granite exterior. The granite spandrels are tipped inward to provide sun protection and to make the glass line flush with the interiors of columns, therefore providing a flush interior wall. The floor line will come approximately in the middle of each spandrel level.

The tower will contain a gross area of 67,000 square feet, and a net rentable area of 544,000 square feet. Direct subway access and nearby parking facilities will be available.

The tower conforms to its sloping site and creates what Mr. Barnes calls a “medieval podium effect.” It will be surrounded by a large, terraced colonial brick plaza which sweeps from City Hall to Congress and State Streets. Specimen trees will be included in the plaza scheme.

A large columned arcade runs the length of the 97'-by 175'-foot building, paralleling the plaza and linking the historic Old State House to the new City Hall.

A special design feature of the tower is the stepped top which permits the 39th and 40th floors to overlook a roof garden adjacent to the restaurant on the 38th floor. Floors 39 and 40 are penthouse floors and feature two-story executive board rooms at either end, each with its own terrace.

The utility core is placed slightly off center to provide wider bays on the Congress Street side of the structure. To date a total of 65 per cent of the space is committed, with an additional 12 per cent reserved and 9 per cent reserved for expansion. Construction is scheduled to begin on April 15, 1966 with a completion date of October 15, 1968.

The New England Merchants National Bank will be the prime tenants in the new building, and will have 13 floors for its own use.

Runner-Up Design Concept
The design concept for the Kelly & Gruzen-Nervi entry is a four-story open space which serves to visually link the building to its plaza and surroundings, above which are 39 office floors each containing about 17,000 square feet of gross area.

Essentially the tower consists of three tiers, placed one above the other. Each tier is an independent 13-floor tower. Part of the loads are carried by the core, and the remaining loads are carried by the structural section in each window unit down 12 stories where the loads are picked up by a framework of trusses. These trusses transmit the loads of all of the above tiers into the four large columns at the base.

Breuer-Glaser Design Concept
The design concept for the Breuer-Glaser scheme consists of the ground

For more data, circle 184 on Inquiry Card

For more data, circle 185 on Inquiry Card
Steel Windows have the strength and rigidity that no other window can match.

In the early planning stages of this outstanding eight building project, Sert, Jackson & Gourley called upon Hope's to assist in a thorough study of the window requirements. Certain design features were desired. Steel windows were recommended, and after careful consideration selected for their inherent high strength and rugged durability plus an advantage that these characteristics lend to appearance—trim, narrow sections which permit the assembly of ventilation panels, fixed windows and casement doors in articulate combinations, without heavy sight lines. Economy was an important additional advantage favoring the use of steel. Custom engineering and fabrication produced units to meet every requirement of the architectural plans; erection by Hope's skilled crews completed and provided undivided responsibility for an extensive and satisfactory installation. Ask any Hope's sales office or our home office for assistance with your window or curtain wall problems. There is no obligation.
How to Cool them free all winter
AND ALL SPRING AND ALL FALL

One active person can generate 800 btu/hr. A veritable space heater.

Pack 100 or 1,000 in a modern building. Add lights, motors, and sun on the windows. And guess what’s cooking:

The people.

Even when it’s freezing outside!

The answer: Lennox POWER SAVER™ air control center. It air conditions free at any temperature under 60°F, with fresh dry, clean, cool outdoor air.

No compressor wear or power cost. No low ambient problems. Your mechanical air conditioner hibernates.

How much could POWER SAVER save you?

Example: In Boston-type climate 4,600 of the year’s 8,760 hours are in POWER SAVER’s free cooling range: 30°F to 60°F.

Write for temperature/hour tables on 158 leading cities.

Lennox Industries Inc.,
464 S. 12th Ave., Marshalltown, Iowa.
See our catalog in Sweet’s.

POWER SAVER is the air control center of Lennox heat-vent-cool commercial systems, including rooftop, direct multizone, Landmark®, Comfort Curtain® and split systems.

For more data, circle 186 on Inquiry Card
Do plans for a round, glass curtain walled building mean custom fenestration? Architects Marr and Holman found that it isn’t necessarily so. For their Municipal Auditorium at Nashville, Tenn., Michaels provided a “modified standard” system ideally meeting the building’s needs. Often the Michaels engineers can select one of our numerous pre-engineered aluminum, stainless steel, or bronze systems and modify for the profile or load capacity you want. In this case, a system with a continuous formed aluminum sill and variable snap-in stops provided the answer. When you have an individual concept or a problem to solve in metal curtain walls, it pays to call on Michaels.

THE MICHAELS ART BRONZE CO.

MICHAELS
Mailing Address: P. O. Box 668, Covington, Ky. • Plant & Office: Kenton Lands Road, Erlanger, Ky.

FIND THESE CAREY BUILDING PRODUCTS FAST IN YOUR NEW 1964 SWEET’S ARCHITECTURAL FILE

WATCO-DENNIS CORPORATION
Michigan Ave. and 22nd St. • Santa Monica, Calif. Dept. AR-365

WATCO-DANISH OIL
for prestige by the gallons.

Better than a portfolio of client-relations plans are fine wood surfaces finished with WATCO Danish Oil. It’s the miracle oil-and-resin that cures into a tough solid inside the wood, not just on it. Makes any surface permanently beautiful, harder by about 25%, virtually impervious to scratches, stains, burns. Whatever the wood, WATCO primes, preserves, hardens, seals, and beautifies . . . gives lasting, “hand-crafted” luster. Used throughout such prestige buildings as the Hilton Hong Kong Hotel and Humble Oil Building (Houston), The American Walnut Manufacturers’ Association and others recommend it! Give your clients this old-world beauty without old-world labor. Send for full information now.

WATCO-DENNIS CORPORATION
Michigan Ave. and 22nd St. • Santa Monica, Calif. Dept. AR-365

CAREY PRODUCT CATALOG INDEX NO.

<table>
<thead>
<tr>
<th>Product</th>
<th>INDEX NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire-Chex Roofing Shingles</td>
<td>8c</td>
</tr>
<tr>
<td>Built-Up Roofing</td>
<td>8a</td>
</tr>
<tr>
<td>Structural Insulating Panels</td>
<td>8b</td>
</tr>
<tr>
<td>Corrugated A/C Roofing-Siding</td>
<td>8b</td>
</tr>
<tr>
<td>Asbestosol Vapor Barrier</td>
<td>9c</td>
</tr>
<tr>
<td>Bathroom Cabinets/Accessories</td>
<td>26d</td>
</tr>
<tr>
<td>Access Doors</td>
<td>16k</td>
</tr>
</tbody>
</table>

For additional copies of any of the Carey Product Catalogs listed above, write:
Dept. AR-365 • The Philip Carey Mfg. Company • Cincinnati, Ohio 45215.

For more data, circle 189 on Inquiry Card
The heating system in this apartment house reflects the architect’s concern with tenant comfort as well as the aesthetics of design. The building has a forced hot water system furnishing radiant heat by means of copper tubing buried in the ceiling plaster. All circulating pumps and exchangers for heating water are B&G!

Tenant comfort is not merely a matter of furnishing sufficient heat...absence of mechanical noises within the building is also extremely important. That’s why the quiet, vibrationless operation of B&G Universal and Booster Pumps has made them the unchallenged favorites. Nearly 5,000,000 of these specially designed pumps for heating and cooling systems have been installed in every type and size of building.

The B&G type "WU" Heat Exchangers used in this building meet the requirements of the ASME Code. They are particularly notable because boiler water is pumped through the shell by a B&G Booster, permitting an amazingly small unit to deliver a large volume of hot water.

For information on the complete line of B&G Hydro-Flo heating products, write to ITT Bell & Gossett Hydronics, division of International Telephone and Telegraph Corporation, Morton Grove, Ill., Dept. IK-32.

For more data, circle 190 on Inquiry Card
### Type of Roof

<table>
<thead>
<tr>
<th>Typical Bay Dimensions*</th>
<th>Short Barrel Shell</th>
<th>Long Barrel Shell</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Width</strong></td>
<td>100 to 250</td>
<td>30 to 60</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>30 to 50</td>
<td>80 to 150</td>
</tr>
</tbody>
</table>

**Main Features**

- Short Barrel Shell:
  - Usually cast-in-place but can be pre-cast.

- Long Barrel Shell:
  - Barrel shell roofs are capable of providing large areas free of interior columns.
In evaluating structural costs, the roof system is a basic factor, and its square-foot price is quite often the most meaningful cost guide available to a prospective owner.

In most cases, concrete roof systems are in the $1.00 to $3.00 per square foot range. Construction costs, of course, are not uniform throughout the nation and are dependent upon variables such as spans, loads, bay sizes, and manufacturing requirements. Local builders can provide accurate estimates geared to local labor costs and other considerations.

Since the roof system is such a basic factor in most industrial or one-story building construction, the selection of roof type and the spacing of its supports are especially important. The roof and its column spacing must be designed to meet specific occupancy requirements. These include the arrangement of machinery, processing ductwork, accessory equipment and production layouts. Concrete roof systems can be efficiently and economically designed to meet all industrial and commercial needs. The chart below compares some common concrete roof systems.

Write for free literature. (U.S. and Canada only.)

Portland Cement Association
Dept. A3-25, 33 W. Grand Ave., Chicago, Ill. 60610
An organization to improve and extend the uses of concrete, made possible by the financial support of most competing cement manufacturers in the United States and Canada.

<table>
<thead>
<tr>
<th>Roof System</th>
<th>Span (feet)</th>
<th>Verdict</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folded Plate</td>
<td>15 to 30</td>
<td>Versatile designs can accommodate a wide variety of span and processing requirements.</td>
</tr>
<tr>
<td></td>
<td>50 to 150</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hyperbolic Paraboloid</th>
<th>Span (feet)</th>
<th>Verdict</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20 to 100</td>
<td>Adaptable and very economical.</td>
</tr>
<tr>
<td></td>
<td>20 to 100</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prestressed</th>
<th>Span (feet)</th>
<th>Verdict</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 to 50</td>
<td>Structural members provide long, clear spans with esthetically pleasing shallow depths.</td>
</tr>
<tr>
<td></td>
<td>30 to 100</td>
<td></td>
</tr>
</tbody>
</table>

*Representative dimensions only. Specific column spacing and spans may vary for individual designs. Dimensions given in feet.
floor of glass and brick walls set on a brick plaza to relate to the Old State House, and above 38 floors of precast, reinforced concrete to relate to the new City Hall. The enclosing column wall is factory molded in two-story-high, deep, modular sections, of which the hollow uprights act simultaneously as load-bearing supports and as pipe and duct chases. The building would have 16,990 square feet of space on each floor.

**Jury Criteria**
The developer's kit for the competition explained that the three principal criteria which would form the basis for the panel's selection were:

- **Experience**: For an important building of this kind, the members of the team—developer, architect, and contractor—should have a proven record of performance.
- **Financial strength**: Urban renewal plans have frequently suffered delays because of inadequate financial resources to execute the project. The developer will, therefore, be required to make a sufficient showing of financial strength to assure that if selected on the basis of design, he can be relied upon financially to perform.
- **Design**: The Government Center Project has set a very high standard of design quality, and the mayor and the authority wish to assure that these high standards will be carried through in the Parcel 8 tower.

**Government Center Background**
The basic site plans and site controls for the Government Center were made by I. M. Pei & Associates under contract to the Boston Redevelopment Authority. These plans include 15 parcels of land, 10 for private and five for governmental development.

The parcels for government development consist of the site of the $25 million City Hall (architects and engineers: Kallmann, McKinnell & Knowles; Campbell & Aldrich; and William J. LeMessurier Associates) now under construction. Another Parcel is the site of the $34 million State Service Center (coordinating architect Paul Rudolph; associated architects, Shepley, Bulfinch, Richardson & Abbott, M. A. Dyer Company, Pederson & Tilney, and Desmond & Lord.)

Also a part of the governmental development is the site of the $23 million John F. Kennedy Federal Office Building, under construction and designed by The Architects Collaborative and Samuel Glaser.

**Parcel 8 Site**
Parcel 8 is situated at the southern edge of the Government Center project area. To the east it is bounded by New Congress Street, a major street leading into the downtown central business district. To the south, it is bounded by State Street, the most important street in the financial district, with the historic Old State House located on its far side, across from Parcel 8. To the west, it is bounded by a broad pedestrian right-of-way which connects the City Hall with Washington Street, the principal retail street in downtown Boston. On the north, it is bounded by the Government Center Plaza and a major pedestrian access system.
FRAMELESS AMERICAN LOUVERS offer a monolithic appearance since there are no unsightly frames or visible hinges and latch mechanism.

AMERICAN FRAMELESS LOUVERS offer more light for each ceiling opening because there is no frame obstruction. This also means that the fixture traps less light.

AMERICAN FRAMELESS LOUVERS are lower in brightness because the light is spread out over a larger area.

AMERICAN FRAMELESS LOUVER means lower maintenance cost because there are no tricky latches or hinges, they are 70% open therefore accumulate 70% less dirt, and there are no metal frames to rust or discolor when washing.

Fixture costs are reduced since costly frames are eliminated.

american louver company
5308 NORTH ELSTON AVENUE • CHICAGO 30, ILLINOIS
**some feats are impossible without steel**

Steel has the most favorable strength-weight-cost combination of any building material. Because of its strength, flexibility of fabrication methods, and wide range of available structural shapes, steel makes possible esthetic and space-saving achievements unattainable with other materials. Steel can be designed as a beam, rigid frame, continuously, compostly, plasticity, orthotropically. Steel can be erected in any season, can be handled more roughly than other material. Because there are so many grades of structural steel of varying strength levels, it is never necessary to over-design.

**Only steel columns could bear the load.** The 30-story Michigan Consolidated Gas Company Building in Detroit is the world’s tallest all-welded building for a reason: integrated architectural design prohibited use of columns larger than 2 ft. 4 inches square. Reinforced concrete columns that size couldn’t carry the required 6 1/2 million pounds. Connections were welded to eliminate bulkiness and achieve smooth right angles between beams and columns. Heavy columns for lower stories are four plates welded into a rectangular box section. Where extra strength was needed a fifth interior plate was added. Lighter upper columns are regular rolled sections. The field-welded wind-resisting system contains the equivalent of 40 miles of 5 1/4-inch fillet welds, American Bridge Division fabricated and erected 5,700 tons of steel, inspected welds by radiographic and dry powder magnetic particle techniques. Architects: Minoru Yamasaki-Smith, Hinchman & Grylls. Associated Architects & Engineers, Contractor: Bryant & Detweiler Co.

**Steel dome saves Syracuse University $193,500.** Fabricated and erected by American Bridge, the low-profile dome of the Syracuse University field house has a rise of only 32 ft. and a diameter of 300 ft. Because there are no interior supports, all of the 80,000-sq.-ft. floor is usable. Seating capacity is over 4,000 with room enough for basketball, track and field meets, or a 70-yd. football practice field. In a competitive bid with the alternate concrete design, steel saved $193,500. Architect: King and King. Engineer: Eckerlin and Kleper. Contractor: R. A. Culotti Construction Company.

**High-rise truss walls—now possible with unique design and the “combination of steels.”** Through a new building design concept using four different steels of varying strengths, designers trimmed 200 tons of steel (and saved $200,000) from the skeleton of Pittsburgh’s IBM Building, first high-rise building with truss walls. External framework is a diagonal, criss-crossing truss system. Only interior vertical supports are the six columns of the central service core. Outer truss walls direct all wind, wall and most floor loads down to two ground contacts on each side of the building. Using different strength steels (from 33,000 to 100,000 psi) engineers accommodated stress levels much as bridge designers have done in the past. This principle also kept truss members a near-uniform size from top to bottom regardless of stresses, and permitted American Bridge use of time-saving modular fabrication and erection.

**Truss walls form the facade, eliminating spandrels and independent curtain wall system.** Diagonals were fireproofed with asbestos plaster and sheathed in 22-gauge stainless steel. Architect: Curtis and Davis Associates. Engineer: Worthington, Skilling, Helle & Jackson. Contractor: George A. Fuller Company.

For more data, circle 193 on Inquiry Card.
6,144
Square feet
of Venetian Blinds
all
operated by
the Sun

No sun glare—no eye strain—perfect light level at all times and not one minute
used in adjusting the Venetian blinds.

In the new Allen-Bradley building, Milwaukee, Wisconsin, there are 32 large
Venetian Blinds, engineered and built by LEVOLOR. All of these Venetian Blinds
(192 square feet each) are controlled by one light cell that responds to the
intensity of the sun. In addition, each Venetian Blind is operated by a slave box,
and all are connected to a master control panel.

From the master control, all of these blinds can be tilted independently
of the sun and if desired, all Venetian Blinds can be stopped in any position
and will remain so for any length of time. From the slave box, each Venetian Blind
can also be raised, lowered, and tilted individually for window maintenance.

If you would like detailed information on these sun controlled blinds write to:
LEVOLOR LORENTZEN, INC., 722 MONROE ST., HOBOKE, NJ.

LEVOLOR
VENETIAN BLINDS

ENGINEERED VENETIAN BLINDS FOR 33 YEARS

For more data, circle 194 on Inquiry Card
LOOK TO THE LEADER...

McQuay

FOR A NEW Seasonmaker® HIDEAWAY FAN-COIL UNIT THAT CUTS INSTALLATION COSTS AND IS FULLY ACCESSIBLE FOR MAINTENANCE

Extremely compact with a modern thinline design, McQuay's new Model CSH Hideaway Seasonmakers offer benefits never before attainable in horizontal fan-coil units. They are available in eight sizes, 200 through 1,200 cfm with nominal cooling capacities of ½ through 2½ tons—Standard Ratings ARI Certified. The CSH Model is a fully encased horizontal unit for recessed applications with an adjustable ceiling frame and access panel permitting installation in stages compatible with construction progress. Important time savings result. The ceiling frame is telescopically fitted into the cabinet enabling a perfect alignment regardless of the ceiling type. Maintenance is highly simplified as the controls, filter, fan deck and entire base unit are readily reached, or removed, through the hinged ceiling panel. Maximum thermal efficiency is achieved with McQuay's exclusive Rippled-Fin and staggered tube coil design.

FREE TECHNICAL & ENGINEERING DATA for all 4 Thinline Seasonmaker models (6 sizes each, 200 thru 1,200 cfm with nominal cooling capacities of ½ thru 2½ tons) from your McQuay representative in Bulletin 7714—or write McQuay direct.
1. **EICHLER SUMMIT** — San Francisco
   - Owner: Eichler Homes, Inc.
   - Architects: Neill Smith & Assoc.; Claude Oakland, Associate Architect
   - Structural Engineer: Stefan J. Medwadowski
   - Contractor: Eichler Homes, Inc.

2. **EICHLER CENTRAL TOWERS** — San Francisco
   - Owner: Eichler Homes, Inc.
   - Architect: Claude Oakland, A.I.A.
   - Contractor: Eichler Homes, Inc.

**COLUMN-FREE AREAS (1), SLIP-FORMED WALLS WITH POST-TENSIONED SLABS (2) ACHIEVED USING PRESCON SYSTEM**

**THE EICHLER SUMMIT** 30-story apartment building has completely column-free living areas. It is thought to be the highest reinforced concrete structure west of Chicago. The 10" floor slabs are post-tensioned by PRECON tendons, with bays 35' x 104'. The first six floors are for parking and the lobby. An unusual design feature includes the tapering-in of the upper part of the nine columns while the post-tensioned floor slabs cantilever out, so that the structure flares outward and is wider at the top than at the bottom.

**EICHLER CENTRAL TOWERS** is the first U. S. job combining slip-formed walls and post-tensioned slabs. The two 15-story towers are connected by a central plaza at grade, with two underground parking levels. The towers are slip-formed from the second floor up, with the PRECON tendons running one direction, through 2 1/2" diameter holes precast in the slipped walls. The post-tensioned parking and plaza slabs (115' x 137") vary in thickness from 9" to 13", for surface drainage.

Write for brochures giving advantages and applications of the Prescon System of post-tensioned prestressed concrete.

**The Prescon Corporation**
502 Corpus Christi State National Building, Corpus Christi, Texas 78408
Atlanta * New York * Boston * Chicago * Memphis * Dallas
Houston * Denver * St. Louis * Los Angeles * San Francisco
San Juan * Toronto * Honolulu * Mexico City
MEMBER OF PRESTRESSED CONCRETE INSTITUTE

For more data, circle 196 on Inquiry Card

322 ARCHITECTURAL RECORD March 1965
1. Honeycomb kraft core, pound for pound, produces the strongest and most economical sandwich structure known.

2. Rigid Urethane foam is molded into the top and bottom sections of each Honeycomb cell. With trapped air between the Urethane layers, it need not be necessary to fill the cells completely with foam to obtain the required amount of insulation.

3. Outer surfaces of the composite URECOMB core provide a continuing bonding surface for the application of wood, metal, asbestos, plastics or whatever facing material suits the designer's taste.

A new sandwich created for your taste

Union-Camp's new URECOMB core gives you the insulation of rigid Urethane foam plus the strength of Honeycomb—in one lightweight sandwich panel core.

What a combination! Rigid Urethane foam—an outstanding insulator. And Union Honeycomb—incredibly strong and lightweight. Together, they make URECOMB—the most efficient structural sandwich core ever developed.

Amazing strength-weight ratio. The URECOMB core in a typical wall panel (2" thick) has a compression strength of more than 50 lbs. per square inch...yet it may weigh less than ½ a pound per square foot!

Built-in insulation. URECOMB core has good heat resistance and an outstanding coefficient of thermal conductivity. The two pound density of the Urethane in URECOMB has a "K" factor of 0.12...about twice as effective as the next best insulation. This may allow reductions in insulative panel thicknesses of up to 50%.

Flammability. The Urethane used in URECOMB is self-extinguishing. This characteristic of the Urethane foam is desirable in many applications. When sandwich constructions are involved, non-fire retarding foams have been found suitable, since the facings obstruct surface flame spread and prevent air from entering and feeding the flame in the core.

URECOMB insulated panels are easy to handle. Easy to install. Lightweight to ship. They are extremely rigid—ideal for floors, walls, partitions, roofs of varied structures.

For more data, circle 197 on Inquiry Card

ARCHITECTURAL RECORD March 1965
PRATT STUDENTS PLAN NEW TOWNS

Eleven concepts for new towns of 100,000 population for Suffolk County, Long Island, New York, were presented by senior architectural students at Pratt Institute, Brooklyn, New York, on January 14. William Slayton, commissioner of the Urban Renewal Administration and Lee Koppelman, director of planning for Suffolk County, as well as other county officials were present.

The five critics in charge of this study were Professors Stanley Salzman, William Conklin, Dean McClure, Robert Dennis and Olindo Grossi, dean of the School of Architecture.

The problem posed to the 50 students, who were divided into 11 teams, was that the population of Suffolk County is expected to increase by one million people by 1985. How could this additional population be accommodated in new towns instead of formless subdivisions?

In three months' work each team developed a master plan for 18 towns of 100,000 population in areas from Port Jefferson to Patchogue and Montauk Point. Each team then planned one of the towns and built a model. The students planned for education, highways, utilities, government structure, retail trade, industrial activity, taxes, land use, housing and zoning.

Generally the communities had a great amount of high-density residential housing, allowing for preservation of recreational and open areas.

Urban Renewal Administrator Slayton praised the proposals in general. However, he pointed out that the students displayed a "New York provincialism" in assuming that a majority of people would live in a high density environment similar to New York City.

Mr. Koppelman praised the students for the quality of their presentations as well as for their astuteness in grouping industrial facilities along the central transportation core of the island, thus leaving the shore areas available for residential and recreational use. "You have in three months arrived at conclusions that took the Suffolk County Planning Board five years to perfect," Mr. Koppelman added.

and our Vault Door because—the advantages are greater than those of an ordinary fire door.

Insurance rates are lower (qualifies for B rate).

Protection from both fire and theft is greater.

And our doors are equipped with an inside emergency escape device and an Underwriters Laboratories approved relocking device.

All single door and three double door models are easily installed. Each has an adjustable vestibule—a Schwab exclusive. Each is a flat-sill, non-grout type. Every delivered model is accompanied by easy-to-understand installation instructions.

Our doors are built to Underwriters Laboratories specifications for prevention of heat damage to vault contents for 1/2, 1, 2, 4 or 6 hours.

We offer customized service and a complete line of interior accessory equipment. Write us for a complete vault door catalog or see Sweet's 34-A.

Our products are your protection

SCHWAB

P.S.: We had planned to use a photo of our vault door installation. But a burglary attempt left extensive damage to the walls around the door. So we used a drawing to show you how nice the installation did look. By the way, the burglary attempt failed.

Schwab Safe Co., Inc. / Lafayette, Indiana

For more data, circle 198 on Inquiry Card
SECO elastomeric roofing systems

...tough and resilient as natural rubber plus outstanding resistance to weathering!

Here is an architectural roofing system that provides all the toughness and elasticity of natural rubber plus the added advantage of remarkable resistance to weathering.

Not a paint but a combination of two well-known DuPont elastomers—Hypalon* and Neoprene—that protect, beautify and waterproof thin-shell concrete roofs of unusual geometric design. Outstanding example is the SECO-protected roof on the St. Louis Planetarium. Can also be used just as effectively on lightweight concrete, exterior grade plywood, certain types of insulating materials... and many other surfaces.

Hairline cracks on monolithic substrates are easily bridged by the highly elastic SECO membrane—surface maintains a beautiful and seamless plastic film. Structural load is less than 20 pounds per 100 square feet—less than 1/25 of conventional roofing systems. Self extinguishing—will not support flame.

Write today for catalog on the complete line of SECO protective coatings!

*Registered trademark of DuPont

SURFACE ENGINEERING COMPANY
834 Ohio Avenue
ST. LOUIS, MISSOURI 63103

For more data, circle 199 on Inquiry Card
SYLVANIA
INTRODUCED ALL OF THIS

The SPARTAN Series
A unique fixture designed for use with either Mercury or Metalarc lamps. Features many of the lighting characteristics of fluorescent lighting fixtures in a Mercury-type unit. Ideally suited for high and medium mounting. Provides wide, efficient, comfortable light distribution. The entire integrated unit is supplied complete—porcelain reflector, lamp and ballast.

MIRALUME Troffer Series
A new recessed fixture line featuring the elimination of door frames, shallowness of depth (only 4 inches) and a large luminous area. Exposed metal is held to a minimum—just enough to fit the ceiling opening and to provide adequate trim. Fits all popular ceiling types. Available in 1' and 2' wide units with a variety of shieldings.

The MAYFAIR Series
Here is a series featuring high efficiency and low maintenance in a shallow, surface-mounted unit. Ideal for schools, offices, stores. 45° x 45° cutoff provides comfortable, efficient illumination. Frameless plastic louver is hinged to swing down for simple re-lamping and cleaning.

The STRATFORD Series
This completely contained unit with one-piece, diffused, medium impact polystyrene wraparound shielding presents a clean, smooth appearance with low brightness and reduced reflected glare. The budget-priced Stratford combines attractive appearance with quality illumination. Excellent for general lighting in a variety of applications.

POST TOP Series
A new outdoor series combining efficient illumination and attractive styling for driveways, walkways, parks or garden areas where distinctive lighting is desired. A variety of designs allow you to select the styling of your choice. Various wattages available in mercury, incandescent and fluorescent.

Sun Flood CARIBBEAN
This outdoor fixture features a quartz-iodine lamp with screw base. The Caribbean provides 4,000 lumens and 86% beam efficiency with color that doesn't change. Combines versatility, modern styling and rugged construction. Available with or without clamp and cord.

The CORWAY Series
Here is a new unit combining modern styling and effective light control in a single lamp fixture for lighting corridors, hallways, rest rooms, utility rooms, bin and stack areas. Wide distribution of light at high angles assures good vertical illumination on sidewalls of long narrow areas with good brightness ratios. One-piece wraparound shielding available in two types of plastic.

Economy Industrial
Selected models of Sylvania's QWIK-STRIP Series have been equipped with 12" wide reflectors to provide an economical line of industrial-type fixtures. These are offered as complete units and are available in 2', 4' and 8' lengths, each 2-lamps wide.

THERE IS MORE—MUCH MORE—COMING IN
NEW LIGHTING EQUIPMENT DURING THE PAST 12 MONTHS

QWIK-STRIP Series
This complete series of open-type fixtures is designed to give you a broad selection of lamp types and number in a variety of lengths. Installation and maintenance features are outstanding. Over 40 different standard models are available. You'll find all of your Strip Fixture requirements in Sylvania's QWIK-STRIP Series.

4' x 4' MOHAWK
A new addition to Sylvania's popular surface-mounted series with wide application for large area lighting. Features solid sides and shallow depth. Rugged construction features assure easy installation without sagging. Available in 6 and 8 lamp models with a choice of four attractive shieldings.

PSM—PSH Floodlight Series
PSM—a new outdoor, multi-purpose series offering a full line of mercury floodlights using Clear Mercury, Color-Corrected Mercury or Metalarc Lamps. Available with a choice of ballast to accommodate a variety of power supplies. PSH—powered by a 1000-watt quartz iodine lamp. Versatile. Durable. Can be operated in any position.

Tandem SPARTAN
The 2-lamp tandem versions of The Spartan Series consist of two porcelain enameled reflectors, lamp sockets, ballasts and lamps. Provided as a complete package from Sylvania. Available with a choice of lamps—2 Metalarc, 2 Clear Mercury or 2 Color-Improved Mercury—or with one of these and the other wired for incandescent lamp operation. Easy to install. Slotted reflector provides wide, efficient and comfortable high level light diffusion.

THE MONTHS AHEAD!

Here are just 12 of the many reasons you should check Sylvania first when it comes to Lighting Equipment... both indoor and outdoor.

New ideas—new designs—new innovations are always on the boards or on the production line at Sylvania... to bring you modern, efficient equipment to answer just about all of your illumination problems.

Make a mental note right now to remember Sylvania the next time you specify or purchase lighting equipment, either indoor or outdoor.

You won't be disappointed.

SYLVANIA LIGHTING PRODUCTS
A Division of SYLVANIA ELECTRIC PRODUCTS INC.
One 48th Street, Wheeling, W. Va.

For more data, circle 200 on Inquiry Card
NEW FROM BEMIS!

...top quality
SOLID PLASTIC SEATS
for every market!

RESIDENTIAL • COMMERCIAL • INDUSTRIAL
Molded of high impact plastic, Bemis seats feature a sparkling luster that will not fade, chip or peel. Absolutely fade-proof color is throughout the heavy section solid plastic.
To satisfy every requirement, Bemis provides a complete line of styles, and colors to match any major fixture manufacturers' color. The broad range encompasses regular, elongated and heavy duty models...including varied hinge constructions. All seats are exceptionally durable and designed for easy maintenance. Bemis solid plastic seats...an excellent choice for every market. Look for us in Sweet's catalog directory. No. 26a/Be; A.I.A. File No. 29-H-22.

May we send you our completely illustrated catalog?

be seated by...BEMIS
Bemis Manufacturing Company • Sheboygan Falls, Wis. 53085

For more data, circle 201 on Inquiry Card

Is your Blood Pressure HIGH?

Only your doctor can tell. And he can now help most cases of this disease with new drugs and new methods of treatment developed with the help of your Heart Fund dollars. More Heart Fund dollars will support more research to prevent and cure this leading cause of heart attack and stroke.

Give to your HEART FUND

For more data, circle 201 on Inquiry Card
They paint beautifully

We cold-form our hollow structural sections from blast-cleaned steel to make sure you get a smooth surface that paints beautifully. 146 sizes and gages from which to select the sections that fit your ideas exactly. Good reasons to specify Bethlehem.

Hollow structural sections are ideal for exposed beams and columns... handrails, mullions, lintels... spandrels, roof trusses, and joists, curtain wall systems, and space frame structures...

For more data, circle 202 on Inquiry Card

BETHELHEM STEEL CORPORATION, BETHLEHEM, PA.
Asbestibel

We think new about Ceilings

NO WARP

NO SAG

NO SHRINK

Dartmouth College Pool, Hanover, New Hampshire.

These perforated asbestos panels are permanized by autoclaving. Will not warp or sag under high-humidity conditions. Shrinkage is held to less than 1/10 of 1%. A sound-absorptive membrane backing puts them in the .70-.80 NRC range. Sizes: 2’x2’ and 2’x4’ for grid application. Finished with a high-reflective (74%) washable white paint and the
panels have a distinctive ripple texture. Thinking about a moisture problem? Think new with Gold Bond. Your Gold Bond Representative has samples and information. Or write to Department AR-35, National Gypsum Company, Buffalo, New York 14225.

Gold Bond
ASBESTOS

One of many fine products that come from 40 years of thinking new

NGC NATIONAL GYPSUM COMPANY
Some buildings need two-way mirrors

DUOVUE
TRANSPARENT MIRRORS

Most of the buildings you are designing — or building — have some security requirements. That's when you need the very special features of Duovue Transparent Mirrors. Duovue looks like a conventional mirror from one side — but becomes a transparent window when looked through from the other. Banks, offices, labs, schools, stores, government buildings or anywhere where security is important all need Duovue mirrors. Duovue also looks as good as it works. This unique product can be specified in laminated form for sound reduction and shatter proofing applications. Duovue puts a little intrigue in your building work.

Write for bulletin DV

KINNEY VACUUM DIVISION COATING DEPARTMENT
THE NEW YORK AIR BRAKE CO.
1325 ADMIRAL WILSON BLVD.
CAMDEN 11, NEW JERSEY

For more data, circle 204 on Inquiry Card

EXHIBIT MARKS CENTENNIAL OF LANDSCAPE ARCHITECTS

The American Society of Landscape Architects is circulating an exhibition of the works of Frederic Law Olmstead as part of its centennial program. It was about 1865-1864, when Central Park, New York City, was being developed by Mr. Olmstead, that the Park Commission of New York City first used the term "landscape architect" rather than "landscape gardener" in referring to Mr. Olmstead.

The Olmstead exhibit, prepared by students at the Harvard University Graduate School of Design, is being shown at the Washington County Museum of Fine Arts, Hagerstown, Maryland, from March 8-31.

The tentative itinerary for the exhibit then calls for the exhibit to appear at the Howard University Gallery, Washington, D.C. and at the Peale Museum, Baltimore, in April; at the New Jersey State Museum, Newark, from May 10 to June 4; and at the New Jersey Historical Society, Trenton, from June 4-24.

Also, the exhibit will be shown at the Wadsworth Atheneum, Hartford, Connecticut, from June 24 to July 18; at the Brooklyn Museum, New York, in September; at the Kent School Gallery, Kent, Connecticut, in October or November; at the Springfield Museum of Fine Arts, Springfield, Massachusetts, in January, 1966; and at the Hopkins Center, Dartmouth College, Hanover, New Hampshire, in February, 1966.

Serving on the Centennial Committee of the American Society of Landscape Architects are: Theodore Osmundson, San Francisco, chairman; Wolcott E. Andrews, New York City; Robert F. Foeller, Norfolk, Virginia; Richard C. Guthridge, New York City; and Sidney N. Shurecliff, Boston.

In connection with the centennial program, a book, "Landscape Architecture of the United States" is being prepared under the direction of Walter Keith, a member of the Department of Landscape Architecture at the University of Illinois. It will be a series of illustrated critical essays on history of garden design in America.

For more data, circle 205 on Inquiry Card

Reflectovue lets you design with glass without worrying about the discomfort factor of excessive solar heat. Now effective environmental control is possible because Reflectovue reflects up to 71% of the sun's heat. This kind of protection results in reducing air conditioning costs, and eliminates the need for costly shading. Reflectovue gives you full range vision from all interior angles without color distortion. Reflectovue is specially laminated for added safety. Reflectovue lets you use your imagination when building.

See Sweets Cat. 73 or write for Bulletin RF

KINNEY VACUUM DIVISION COATING DEPARTMENT
THE NEW YORK AIR BRAKE CO.
1325 ADMIRAL WILSON BLVD.
CAMDEN 11, NEW JERSEY

For more data, circle 215 on Inquiry Card

For more data, circle 214 on Inquiry Card
BE 306 . . . one of the group of Forcast Controlled Brightness Downlights. Designed with considered attention to detail, this concept gives equal value to esthetics, performance and mechanics. Combining a general service lamp with a compound reflector system, you can select the appearance to satisfy most architectural lighting requirements. For additional information contact your Smithcraft representative, or send us the upper right corner of this page with your letterhead.

Smithcraft Corporation

CHELSEA, MASSACHUSETTS 02150
Smithcraft of Canada, Ltd. Ste. Therese De Blainville, P.Q.
Thinking stainless steel?

Dodge helps architects realize their ideas. The project information you give to your Dodge Reporter helps contractors and suppliers fit their skills and products to your requirements more accurately, at greater savings of everybody's time—and money.
Four Jamison Doors solve special problems

a variety of unusual doors
from Jamison's complete line

Manual Mark II
Vertical Sliding Doors
for refrigerated
loading docks and other
installations with high
ceilings. Extremely light-
weight door with foamed-
in-place polyurethane
insulation, 26 gauge
galvanized steel front
and back panels.
Available as electric
power door.

Manual Mark II
Overhead Door for
refrigerated loading
docks and other
installations with low
ceilings. Same light-
weight, rugged
construction as other
Mark II doors.
Vertical doors permit
closer positioning of
doorway in loading
docks to provide
service to more
trucks. Available as
an electric power door.

New Jamotuf* Plastic Door is a low cost,
heavy duty plastic door with stainless steel
kick plate on door and frame. Plastic surface
equals stainless steel in scratch and
impact resistance.

*Jamison Trademark

New Electroglide® Mark II Power Doors are
lighter, smaller doors for cooler and freezer
rooms with simplified sealing adjustment,
faster drive mechanism and precision
travel adjustment.

Write for complete data on these and other Jamison doors
to Jamison Cold Storage Door Company, Hagerstown, Md.

For more data, circle 206 on Inquiry Card

ARCHITECTURAL RECORD  March 1965  335
There's only one "best way" to keep snow-free walks, docks and drives — automatic, electric Sno-Melter!

Embedded in concrete or asphalt, pre-engineered SNO-MELTER Electric Heat Mats operate unseen—at the flip of an electric switch—or entirely automatically! The specialized construction of SNO-MELTER Electric Heat Mats assures even distribution of low-temperature heat because the PVC-insulated wire is pre-assembled on 1" centers and anchored in place in mats. Snow removal is complete, not spotty. Installation saves time and money because pre-wired mats roll out quickly, to free surfacing crews sooner. And now operation can be entirely automatic! New Automatic Switch detects snowfall, turns system on and off only as it is needed. Write for new illustrated spec folder and cost data on the one "best way" to melt ice and snow.

* A Trademark of THE SINGER COMPANY

EASY-HEAT • WIREKRAFT DIVISION
THE SINGER COMPANY, DEPT. 590 LAKEVILLE, INDIANA

HEAT CONCRETE FLOORS WITH EASY-HEAT ELECTRIC MATS

Wherever warm slab floors are desired—factories, schools, laundry rooms, porches, etc.—EASY-HEAT Electric Floor Heat Mats, embedded in concrete, offer great flexibility at lowest cost. Factory assembled, with PVC heating wire bonded to Fiberglas mesh to provide either 10 or 20 watts per sq. ft. of heated area. Mats can be fitted around corners and curves... columns, planters, other fixtures. Write for construction facts and component specs. Or contact nearest representative below.
So little of the total building cost goes for weatherproofing sealant

Sealant material costs for wall joints and window units in a typical $1,000,000 building seldom reach $5,000. Initial savings in the cost of one sealant over another, therefore, are relatively insignificant regardless of any slight price difference per gallon.

But any difference in sealant quality is never insignificant. No architect would consciously risk the hazards of an inadequate sealant. It can mar professional reputations even before the building is completed.

High quality and reliability are just two reasons why so many architects have high regard and preference for Structureseal®... it has proven to be the architects' low-cost insurance against sealant failure.

Structureseal is one of Presstite's 400 different sealants. Eighty-three are for architectural work alone. This wide selection provides the proper sealant, exact grade, color, adhesion, resistance to heat and cold extremes, and ability to “give without giving way.” Each is the finest of its kind for the specific job it is formulated to do. Like Structureseal, each has proved its reliability on really tough jobs like the Pan American Building.

Do you have complete data on Presstite's polysulfide sealants, butyl caulks, Ropax, and sealing tapes? Write or call Presstite, 39th and Chouteau, St. Louis 10, Mo., MOhawk 4-6000.

PRESSTITE DIVISION Interchemical CORPORATION

For more data, circle 208 on Inquiry Card
ARCHITECTURE'S BEST-READ PUBLICATION...

... is Architectural Record, according to the results of 207 independently sponsored readership surveys which have been conducted among architects and engineers since 1937.

It is best-read because, through its exclusive information sources, it best serves the needs of its readers in terms of the work actually on their drawing boards. For example, each month the Record presents a Building Types study known through Dodge Reports, McGraw-Hill/Dodge Construction Statistics and Continuing Readership Research, to be of outstanding current interest to architects and engineers. In addition, there are featured building presentations that represent the finest architectural achievements at home and abroad—buildings such as Eero Saarinen’s North Christian Church shown in our illustration.

These two editorial elements combined with definitive articles on architectural-engineering, philosophy, construction trends and costs, news and new products—make up “architecture’s best-read publication.”

Want proof? Write for your copy of 207 independently sponsored readership surveys, or better yet, conduct your own survey.

ARCHITECTURAL RECORD
330 WEST 42ND STREET
NEW YORK, N.Y. 10036

North Christian Church, Columbus, Indiana
Architects: Eero Saarinen and Associates
Drawing by Davis Bitte
Wears five times longer than paint

beautiful tile-like finish, wide range of colors

waterproof, rustproof, stain-resistant, sanitary

Don't paint it. Mira-Plate it with this miracle epoxy coating.

Super polyamide epoxy coating gives long term savings in maintenance time and money—far outlasts any conventional finish. Mira-Plate metal, concrete, brick, wood, plaster, tile, etc. Fire-resistant. Non-toxic. Defies wear, abrasion, water, rust, fumes, solvents, etc. Wide range of colors. Also available in special acid-resistant formulation.

O'Brien Corp., Dept. AR-3
South Bend, Indiana 46621
Send me color samples and information on how O'Brien's Mira-Plate will give me long term savings in maintenance time and money.

Name:
Position or Title:
Address:
City State Zip Code:

MARBLE INSTITUTE OF AMERICA, INC.
48 Pennsylvania Building
Washington, D.C. 20004

For more data, circle 210 on Inquiry Card

WHAT ARE Sanymetals?

SEE PAGE 255

ARCHITECTURAL RECORD March 1965
1965 REVISED EDITION
INCLUDING NEW
STANDARD SPECIFICATIONS†
FOR J AND H SERIES JOISTS

Behind this *32-page manual from the Steel Joist Institute is more than 30 years of research, testing, design, application and standardization of open web steel joists.

From 36,000 psi J and LA (longspan) series to new 50,000 psi high strength H and LH (longspan) series... the designer will find everything he needs for fast, accurate specification of open web steel joists for every category of today's building needs.

Steel joists are better and more versatile than ever, thanks to the standardization leadership of the Steel Joist Institute. This handy reference manual shows you how to use these versatile structural members to best advantage.

Send for your free copy today.

*Load and Spacing Tables may also be obtained by writing to the Institute.
†Adopted by SJI February 10, 1965.

STEEL JOIST INSTITUTE
DuPont Circle Bldg.
Washington 6, D.C.

For more data, circle 211 on Inquiry Card
Index to Advertising
PRE-FILED
C A T A L O G S of
the
manufacturers listed helow are available in the 1965 Sweet's Catalog File
as follows:
( A ) Architectural F i l e
(green). ( I C ) Industrial Construction F i l e (blue),
( L C ) L i g h t Construction File (yellow).

A
A-IC
A-LC

A-IC
A
A
A
A
A-IC-LC
A
A-LC

Addex Mfg. Co
804
Aerofin Corp
84
Air Devices, I n c
66
Allen Mfg. Co., W . D
32
Allied Chemical Corp
279
Allied Chemical Corp., Barrett
Dlv
16-17
Amarlite Div., Anaconda Aluminum
Co
21
American Automatic Ice Machine
Co
SIR
American Bridge Division . . . 318-319
American L a u n d r y Machinery
Industries
W
American Louver Co
317
A M W E L D Building Products
22
Architectural Record
338-339
Armco Steel Corp
68
Armstrong Cork Company
2nd Cover, 1, 19
A r t Metal, I n c
72
Azrock Floor Products
32-13

A Bally Case and Cooler, Inc
114-115
A - I C Barber-Colman Co
298-299
A - I C - L C Barcol Overdoor Co.. sub.
Barber-Colmnn Co
96
A - I C Barrett Div., Allied Chemical
Corp
16-1"
A Beckley-Cardy Company
343
A Bern is Mfg. Co
328
A - I C Benjamin Div., Thomas
Industries, I n c
280-281
A - I C Bethlehem Steel Corp
68, 121, 329
Bigelow-Sanford Carpet Co
78
A - I C Borden Metal Products Co
202
A Bostwick Steel L a t h Co
212
A - I C Bradley Washfountain Co
89
Bro-Dart Industries
290
Bruner Corp
287
A-LC
A-IC-LC
A
A-IC-LC
A
A-IC

California Redwood Association . . 282
Carey Mfg. Co.. Philip
312
Carnes Corp
271-272
C a r r i e r A i r Conditioning Co
70
Ceco Steel Products Corp
802-303
Celotex Corp
64-65
Chemstrand Company
87
A Corbin, P & F , Div. E m h a r t Corp. 41-42
C P R Div.. Upjohn Co
82-5

A
A-LC
A-IC-LC
A-IC
A-IC-LC
A-IC
A-IC-LC

Day-Brite, Div. of Emerson
Electric Co
224-225
DeBourgh Mfg. Co
262
DeVac, I n c
250
Devoe & Raynolds Co.. I n c
95
Dodge Reports
384
Dover Corp., Elevator Division . .
2-3
Dow Chemical Co
88 to 86
Druwhit Metal Product* Co
32-22
DuPont de Nemours & Co.,
E. 1
53, 118-119
D u r - O - W a l . Inc
11

A Eastern Products Corp
3rd Cover
A-TC E a s y - H e a t / W i r e k r a f t Div.,
Singer Co
836
Edison E l e c t r i c Institute
44
Eggers Plywood Co
198
Electric Heating Association, Inc. fil-62
A - L C Elkny Mfg. Co
32
A - L C Engineered Products Co
116
A - L C E v a n s Products Co
83

A-IC
A-LC
A
A-TC
A-LC

F a b r i - F o r m Company
Fenestra. Inc
F i a t Prod. Dept., American
Cyanamid Co
Flexicore Co., I n c
Flintkote Company
Floor Tile Dlv., Ruberoid Co

A Flynn Mfg. Co.. Michael
A Follansbee Steel Corp
Ford Motor Company
A Formica Corp
A - I C - L C F r a n t z Mfg. Co
A - L C Frigidaire Div., C M C

A Gail International Corp
32-22
General Concrete Products, Inc. . 32-8
A - I C - L C General Electric Co
100
A - I C - L C Georgia-Pacific Corp
227-228
Glen Raven Cotton Mills, I n c
258
A Global Steel Products Corp
63
A Glynn-Johnson Corp
256
IC Goodyear T i r e & Rubber Co
57
A - I C Granco Steel Products Co
235
A
A-IC
A
A-IC
A-IC
A

Haughton Elevator Company
Haven-Busch Company
Haws D r i n k i n g Faucet Co
Hickman Co., W . P
Hillyard Chemical Co
Holcomb & Hoke Mfg. Co
Holophane Co., Inc
A - L C Home Comfort Products Co
L C Honeywell
A Hope's Windows, Inc

261
218
220
104
229
254
25
246
29
309

A Ickes-Braun Glasshouses, Inc. . . 110-111
A - I C - L C Inland Steel Products Co
257, 283
A - L C I T T Bell & Gossett, Inc
318
I T T Direct Fired Equipment Div.,
Reznor Mfg. Co
60
A I T T Nesbitt, Inc
232 to 234
A Jamison Cold Storage Door Co. . . 335
J e n n - A i r Products Co., Inc
206-207
A - I C Jones & Laughlin Steel Corp. . . 204-205
A - I C Josam Mfg. Co
55
A Kaiser Aluminum & Chemical
Corp
58-59
Kaiser Steel Corp
32-17-18
A Kawneer Company
45
Kearney Corp., James R
218
A - I C - L C Kentile. Inc
7
A - I C K l n n e a r Mfg. Co
208
A - I C Kinney Vacuum Div., New Y o r k
A i r Brake Co
332
A Knoll Associates
38-39
A - I C - L C Koppers Company
291 to 296
K - S - H Plastics, Inc
87
A L C N Closers. Inc
112-113
Lees & Sons Co., James, Div.
Burlington Industries
297
A Lennox Industries, I n c
810-311
L e R o y Construction Services . . . . 32-21
A Levolor Lorentzen, Inc
820
A - I C - L C Libbey-Owens-Ford Glass Co.
122-123. 284
L i K h t i n g Products, I n c
88
A Lockwood Hardware Mfg. Co. . . . 109
Lone Star Cement Corp
124
A Loren Cook Company
24
A Ludowici-Celadon, Inc
290
A Luminous Ceilings, Inc
79
A-IC
A-IC
LC
A
A
A

A-IC
A
A
A-IC-LC

A-IC
A

290
106-107
82
28
99
27

266-261
196
76
103, 274-275
52
244-245

A
A-IC
A-IC-LC
A

Macomber, Inc
260
Mahon Co., R . C
273
Malta Mfg. Co
54
Marble Institute of America, Inc. . 340
Marble Products Company
116
Mnrmet Corp
288-289
McGraw-Hill Book Co
324
McKinney Mfg. Co
216
McQuay, I n c
108, 321
Meadows, Inc., W . R
226
Medusa Portland Cement Co
251
Michaels A r t Bronze Co
812
Mississippi Glass Co
277-278
Modine Mfg. Co
40
Monarch Carpet Mills
258
Montgomery Elevator Co
223
Muzak, a Div. of Wrather Corp. . . 219
NAARCO
90-91
Natco Corp
259
National Gypsum Co
830-331
New Castle Products, I n c .
67, 69. 71. 73, 75, 77

Northern California Electrical
Bureau
A Norton Door Closer Div., Yale
& Towne, I n c
O'Brien C o m . , The
A Otis Elevator Co
A - I C Overhead Door Corp
A - T C - L C Owens-Corning Fibergla3 Corp.

32-19
85-86
840
286
195
. . 74

Pabco Gypsum Division
32-15
A - I C - L C Pittsburgh Plate Glass Co. . . 97, 214-215
Portland Cement Association . . 314-315
Prescon Corp
322
A Prosstite Div.. Interchemicnl Corp 337
Prestressed Concrete Institute . . 80-81

A
A-IC
A
A
A-LC
A
A-LC
A

Rain Bird Sprinkler Mfg. Corp. . 32-14
Rauland-Borg Corp
250
Red Jacket Mfg. Co
66
Rhodes. I n c . . M . H
304
Richnrds-Wilcox Div.,
Hupp Corp
236-237
Robbins Flooring Co
43
Rohm & Haas Co
243
Rolscreen Company
221-222
Rowe MfK. Co
60
Royalmetnl Mfg. Co
101
Ruberoid Co.. Floor Tile Div
27
R U S S W I N . Div. E m h a r t Corp. . . 30-31

A St. Charles Mfg. Co
252
A Sanymetal Products Co., Inc.
102. 255, 340
Schemenauer Mfg. Co
285
Schlegcl Mfg. Co
92
A Schwab Safe Co., I n c
324
Shell Chemical Co
247
A Silbrico Corp
102
A Silent d i s s , I n c
217
A-TC Slonn Valve Company
4th Cover
A Smithcraft Corp
333
Smith-Gates Corp
116
Southern California Edison . . . . 32-6-7
A Southern Equipment Co
304
A Speakman Company
82
Square D Company
197
Stagecraft Corp
98
A - I C Standard Conveyor Co
265
A Standard Dry Wall Products, Inc. . 344
Steclcase, I n c
47
Steel Joist Institute
341
A - I C Surface Engineering Co
325
Sweet's Catalog Service
348
A Sylvania Electric Products, Inc. 32fi-327
A - L C Symons Mfg. Co
54
Talk-A-Phone Co
A - I C Taylor Co., The Halsey W
Thermal Engineering Corp
A Torjesen. Inc
T r i n i t y White, General Portland
Cement Co

308
242
94
120
8

A Union Bag-Camp Paper Corp..
Honeycomb Div
323
United States Borax
32-12
A - L C United States Plywood
263-264
A - I C United States Rubber Co
»3
A - I C United States Steel Corp.
51. 230-231. 818-319
A Universal Atlas Cement
51
A - I C - L C Upco Co
32-16
A - L C Uvalde Rock Asphalt Co
32-13
A Vogel-Peterson Co
A Von D u p r i n Division

102
210-211

Wakefield Corp
209
Watco-Dennis Corp
312
Weis-Fricker Mahogany Co
239
Western Mineral Products Co
268
A - I C - L C Western Wood Products Association 301
A - I C Westinghouse Electric Corp. . . 117,305
A Wilson Research Corp
288
A - I C Y a l e & Towne
A - I C - L C Y o r k Corporation

49
248-249

A Zero Weather Stripping Co.. Inc. . 300
A - I C Zonolite Division
240-241

NEW
YORK—Jamna
E. Roddorf. Advertising
Sales Mgr., Sam H. Patterson,
Promotion
Mgr.; Joseph R. Wunlc, Advertising
Production
Mgr.. 330 W. 1,2nd St.;
NEW
YORK SALES OFFICE—John
I. Howell. James B. Ryan, Donald T. Lock. 500 Fifth Ave.: ATLANTA—Shelden
F. Jones.
1S75 Peachtree
St...
N.E.;
CHICAGO—Robert
T. Frandcn.
James A. Anderson.
Robert Klieseh,
81,5 N. Michigan
Ave.; CLEVELAND—John
C. Jackson.
Louis F. Kutscher.
55 Public
Square;
DALLAS—Bradley
K. Jones.
Vaughn
Building;
DENVER—John
W. Patten,
1700 Broadway:
DETROIT—Louis
F. Kutscher.
S5B Penobscot
Bldg.;
LOS ANGELES—Robert
L. Clark.
UtS West Sixth St.; PHILADELPHIA—Michael
J. Davin. John A. Teefy,
6 Penn Center Plaza;
PITTSBURGH—John
C. Jackson.
Four Gateway
Center; ST. LOUIS—Richard
Grater.
7751 Carondclet
Ave.; SAN FRANCISCO—Tom
Trcdwcll,
255 California
St.
342

A R C H I T E C T U R A L RECORD

March

11)05


These symbols are used in the facing index to tell you which advertisers make their catalogs instantly accessible in Sweet's Catalog Files. The letters stand for the Architectural, Industrial Construction and Light Construction Catalog Files.

*These symbols are used in the facing index to tell you which advertisers make their catalogs instantly accessible in Sweet's Catalog Files. The letters stand for the Architectural, Industrial Construction and Light Construction Catalog Files.

SWEET'S CATALOG SERVICE,
F. W. DODGE CO., 330 W. 42ND ST., NEW YORK 36, N.Y.
DIV. OF McGRAW-HILL INC.

THE VERSATILE CHALKBOARD THAT FITS ANY WALL FOR ANY PURPOSE

1. EXCLUSIVE SURFACING PROCESS. Highest quality controls of materials and application assure industry's best and most uniform chalkboard surface.
2. VAPOR SEALED. Porcelain-surfaced chalkboards have rust resistant metal or aluminum foil.
3. BACKING CHOICES. Fiberboard, hardboard, plywood and cement asbestos.

GUARANTEED

GREATEST WRITING EASE — Uniform surface "bite" assures highest readability, best cleaning.
LONGEST SERVICE — Special plasticized surface will maintain original writing and cleaning properties for entire board life.
BEST VISIBILITY — 7 surface colors scientifically evaluated to command attention and reduce eye-strain.

TYPES FOR EVERY NEED AND BUDGET . . .

Write for FREE LOXIT CATALOG, gives all data on chalkboards, tackboards, customboards and trims.

LoXiT
PRODUCTS FOR PROGRESS
BECKLEY-CARDY CO., 1900 N. MAZARANSETT
CHICAGO 46, ILL.

For more data, circle 212 on Inquiry Card
Thoroseal Plaster Mix

WATERPROOFS AND DECORATES
new college with longtime finish

Years from today this college building will look just as new as it does now. Why? Because a far-thinking architect called for durable, waterproof THOROSEAL PLASTER MIX (plus ACRYL 60) as the finish over poured and precast concrete surfaces. Now, this building is protected and sealed from weather, water or temperature damage for years to come!

Students of the future will be able to enjoy the beauty of a well-planned campus—a building as new as the day it was built, thanks to good design and Thoro System Products.

For more information on Thoro System Products, write for Brochure #17.

STANDARD DRY WALL PRODUCTS
DEPT. 65-AR-1, NEW EAGLE, PA.

For more data, circle 213 on Inquiry Card