the architect and his community
Better Concrete Behavior... with POZZOLITH

Special concrete requirements for these four ultra-modern Florida hotels varied widely. They included: easy placeability with the least amount of water... accelerated strength for early form removal... minimum shrinkage... retarded rate of hardening for minimum cracking.

These special concrete properties, as well as improvement in overall quality, were obtained by employing Pozzolith—key to lowest water content, control of entrained air and control of rate of hardening.

More than 150,000,000 cubic yards of concrete for all types of structures have been produced with Pozzolith since 1932, to increase user's control of concrete behavior and to obtain desired properties most advantageously.

Call in any one of our more than 100 full-time fieldmen to discuss and demonstrate the benefits of Pozzolith controls for your project.
No wonder architects are specifying it by name!
THERE IS NO "OR EQUAL"

Here is famed Goodyear quality in the richest terrazzo pattern ever engineered into a resilient floor covering!

New

TERRAZZO RUBBER
FLOORING BY

GOOD\_YEAR

(in tiles and full yard-wide rolls!)

IN 14 SHADES
★ New in Pattern!
★ New in Design!
★ New in Freshness!
★ New in Beauty!

(It's the closest in design to that achieved by old-world artisans in polished, crushed stone!)

AND it's priced lower than many vinyls!

WHY ALL HYDRAULIC

First name in oil-hydraulic passenger and freight elevators—industrial lifting devices—auto lifts.

OILDRAULIC®

Engineered and built by Rotary Lift Co.
Division of Dover Corporation
Memphis, Tennessee • Chatham, Ontario
ELEVATORS ARE NOT ALIKE

This unit, the Oildraulic Controller, governs movement and speed of the Rotary Elevator. Each function is externally adjustable.

- The Rotary Oildraulic jack plunger is seamless steel tubing, turned and polished to a super-smooth finish.

Today's hydraulic elevator, as perfected by Rotary Lift Company, is a precision engineered machine with built-in dependability and economy.

It is unlike other hydraulic elevators, for these and many other reasons:

- Rotary is the largest manufacturer of hydraulic elevators in the country... has more experience and skill.
- The Oildraulic Controller has no equal in the industry. This “heart” of the hydraulic system combines all operating valves and controls in one unit. It makes possible extremely accurate control and easy adjustment.
- The Rotary hydraulic jack, which moves and supports the elevator, is fitted with a precision turned and polished plunger to insure smooth operation and long packing life. Anti-friction bearings, casing of heavy steel tubing, rugged car platforms and other components are all perfectly matched to make the complete elevator installation a quiet, trouble-free, efficient unit.
- Completing the package is a nationwide organization that sells, installs and services Rotary Oildraulic Elevators. The largest independent elevator organization of its kind, this distributor group assures your clients expert installation, inspection and maintenance service.

So for the best in hydraulic elevators, always specify Rotary Oildraulic. Mail the coupon for more information, see our catalog in Sweet’s Files, or look in your phone book for “Rotary Oildraulic” under “Elevators.”
Duriron corrosion resisting drain pipe is high silicon iron throughout the entire thickness of the pipe wall. It's the one permanent drain pipe specified by architects and engineers for more than 30 years. Installed by ordinary plumbing methods, Duriron usually lasts longer than the building. Specify...and insist on... DURIRON. Duriron pipe and fittings are available from stock through leading plumbing jobbers in principal cities.
February 1958


Office practice

7 It's the Law by Bernard Tomson
9 Mechanical Engineering Critique by William J. McGuinness
11 The Fontainebleau Summer Course by Edmond A. Pachner
13 Guaranteed or Reliable Estimates—III by Michael F. Kenny
17 Views
89 Philadelphia Host to P/A Awards Dinner
92 News Bulletins
94 Financial News by William Hurd Hillyer
94 Convention Center Proposed for South of the Loop
96 Washington Report by Frederick Guthheim
99 The Architect and His Community
Architects Associated: New York, New York
120 The Spirit of Architecture in the Canadian Northwest
133 Store for E. V. Haughwout & Company—1857
New York, New York
J. P. Gaynor, Architect
137 Building Identification by Ralph Stoetz]
140 Welded-Steel Tubing: Curtain-Wall Applications
146 Research Report: Modern Masonry Cements
148 Display Wall
149 Diving Tower
151 Specifications Clinic by Harold J. Rosen
152 Design and Structure by Edgardo Contini
157 Airlines Ticket Offices by Louise Sloane
158 Japan Air Lines Company, Ltd.: New York, New York
Antonin Raymond & L. L. Rado, Junzo Yoshimura, Architects
160 Capital Airlines, Inc.: New York, New York
J. P. Baker, Architect
162 KLM Royal Dutch Airlines: Los Angeles, California
Craig Ellwood Associates, Designers
164 Interior Design Products
168 Manufacturers' Literature
185 Products
198 Reviews
234 Jobs and Men
240 Advertisers' Directory
242 P.S.
Curtain Walls
By the World's Largest Manufacturer of Aluminum Windows

Stately and clean of line, this studio-office building was "prefabricated."
Factory prepared, two-story Ualco Curtain Wall units were erected quickly, economically.
Tall, covered mullions, big hopper-vented windows, and pink-marble panels add up to dignified beauty, easy to maintain.
Specify Ualco Curtain Wall — four series, with awning or intermediate projected windows.

Southern Sash
Sales & Supply Co., Inc. Sheffield, Ala.

WBIR Radio-TV, Knoxville, Tenn. Architects, Painter, Weeks & McCarty, Knoxville. Contractor, Emory and Richards
P/A Office Practice article discussing: What is the legal and ethical position of an architect whose associate becomes involved in a dispute with the owner?

This column (IT'S THE LAW, AUGUST 1956 P/A) has discussed the right of one associated architectural firm to obtain arbitration of a dispute with the Owner without the consent of another associated architectural firm. The dispute referred to in that column has now been determined by arbitration and men, because the arbitrator's findings are of interest in respect to the respective obligations and rights of associated Architects, Owner, and Contractor.

We previously reported that a Board of Education entered into a contract with Architects "A" and "B," in association, for the purpose of furnishing plans, specifications, and supervision for the construction of a school building. The agreement between Architects "A" and "B" provided that Architect "B" was to furnish the working drawings and Architect "A" was to supervise construction. During the process of construction, Architect "A" became involved in a dispute with the Contractor and refused to issue a certificate of payment on the ground that certain requirements were not correctly valuated and that the work had not been properly performed. The contractor threatened to terminate his contract and filed a claim for damages against the Owner. The Owner eventually discharged Architect "A" and made a substantial payment to the Contractor. Architect "B," who had furnished the working drawings, thereafter took over the supervision of the project.

Architect "A" requested Architect "B," his associate, to join with him in a demand for arbitration against the Owner claiming that the contract had been breached by the Owner. Architect "B" refused. The New York Court of Appeals eventually ruled that Architect "A" was nevertheless entitled to an arbitration of the dispute which had arisen between the Owner and himself.

In the arbitration which followed, Architect "A" broadened his claim not only to include the alleged damages sustained by reason of the action of the Board of Education but included any claim against his associate, Architect "B." Architect "B" did not make any claim except as an offset against any claim that might be made against him by Architect "A." The Board of Education claimed damages against both Architects "A" and "B" based upon the additional monies the Board had been required to pay to the Contractor in order to obtain the Contractor's agreement to complete the job. Although the provision of the contract between the associated Architects and the Owner merely provided for arbitration of disputes between the said Architects and the Owner, the arbitrator ruled that the clause was sufficient to cover any dispute between the associated Architects themselves.

According to the findings of the arbitrator, the Contractor was approximately two months ahead of schedule when differences developed between him and Architect "A." Architect "A" advised the Board of Education that the Contractor's work was defective and refused to issue a certificate for certain progress payments. The Contractor admitted the defects to others but according to the arbitrator was quick to take offense at Architect "A's" methods which the Contractor claimed were arbitrary. The Contractor served a seven day notice of termination of contract because of the failure of the Board to pay his requisition and he cut his force on the job from 55 to 10 men. Subsequently, the work came to a complete halt. The Contractor advised the Board of Education that he planned to correct the defective work but that he could not work with Architect "A" and suggested that Architect "B" take over supervision. Architect "B" however suggested that a third disinterested party undertake supervision. The Board initially adopted a resolution expressing confidence in the architects but was unsuccessful in attempting to adjust the difficulties which had arisen.

The Board of Education brought in an outside architect and engineer of outstanding reputation for the purpose of trying to get the parties together. This outside architect inspected the work and came to the conclusion that the Contractor had done a reasonably good job and that the difficulties listed by Architect "A" were minor and could be corrected for approximately $3000. The suggestion was made that due to the difficulties which had arisen between the Contractor and Architect "A," supervision be turned over to the associated Architect "B." Architect "A" refused to accept this suggestion stating that the Contractor alone was at fault and that if necessary his contract should be terminated and rebid. On the other hand, the Contractor took the position that he would never return to the job if Architect "A" had anything to do with it.

The outside architect who had been brought in for mediation purposes informed the Owner that the failure to pay the Contractor's requisition was, in his opinion, a breach of contract and that there would be a great loss of time and money if the contract was relet. The Board of Education thereupon entered into a supplemental agreement with the Contractor not only agreeing to pay him his requisition but in addition thereto to pay that Contractor any losses sustained because of the delay and reactivation of the work. The Board of Education also passed a resolution requiring Architect "A" to discontinue all further direct connection with the work. Architect "B" then took over supervision of the project.

In pointing out the duty of a supervising architect, the arbitrator stated:

"In a contract of this kind, the supervising architect acts as the agent of the Owner in some matters, but in other matters he acts as the arbiter between the Owner and the Contractor. When acting in this latter capacity, he must be careful to govern his conduct by judicial standards. This is clearly explained in Architectural & Engineering Law by Bernard Tomson (page 181)."

The arbitrator concluded that Architect "A" was not wrongfully discharged and was therefore entitled to no damages. On the other hand, he also ruled that the Board of Education was entitled to no damages against Architects "A" or "B." In respect to Architect "B" the arbitrator was of the opinion that he was the "innocent third party in this whole transaction." Respecting the claim of the Board against Architect "A," the arbitrator ruled that the Contractor was partly responsible for the dispute which had arisen and for the delay occasioned by such dispute and that Architect "A" should not be held responsible for the settlement which the Board made with the Contractor which was "dictated more by expediency than what might have been strictly due the contractor."

Would all or some of the problems here have been avoided if the architect had been made the final arbiter of all disputes arising out of the construction contract?
**TOPS IN SCHOOL HEATING...**

**Comfort THROUGHOUT THE SCHOOL**

**Norman Three-Sixty®**

Gas-fired Unit Heaters Radial-Flo models circulate warm air outward through full 360° circle to form an umbrella of comfort. Ideal for corridors, vestibules, large rooms with normal ceiling heights. Down-Blo models provide quick, direct heating for gyms, auditoriums and other high-ceiling rooms.

Norman Three-Sixty Unit Heaters feature patented sealed combustion system — 100% outside air is used for combustion and all flue and combustion products are removed outside under positive pressure.

Norman Heating and Ventilating Systems for the classrooms: Norman Three-Sixty Unit Heaters for corridors, lobbies, vestibules, cafeterias and multi-purpose rooms; and Norman Southerner horizontal furnaces for school offices, restrooms, gymnasiums and auditoriums can be combined for comfort... Throughout the School. Norman Heating and Ventilating Systems Offer Triple Economy:

- Economy of Installation... Pre-wired and partially assembled, this complete classroom package saves installation time... cuts costs of expensive boiler rooms, chimneys, tunnels, revamping of central systems.
- Economy of Use... Supplies heat evenly, when it's needed, and maintains uniform temperature without wasting heat. No need to heat entire school when only a few rooms are being used for evening meetings.
- Economy of Maintenance... sturdy construction, finest materials, and the latest A. G. A. approved controls — standard to the heating industry — assure extra years of trouble-free performance.


IN CANADA: A. D. PALMER PRODUCTS LTD., Lethbridge, Alberta — A. D. PALMER & CO., Port Credit, Ontario

We want to learn more about Norman Products for School Comfort. Please send complete information to:

NAME ______________________
COMPANY NAME ______________
ADDRESS ____________________
CITY __________________ ZONE STATE ______

See Sweet's Arch. File 299, American Sch. and Univ. Annual C-1/ue
Mechanical Engineering Critique by William J. McGuinness

P/A Office Practice column on mechanical and electrical design and equipment, devoted this month to planning hospitals for economical heating.

Good insulation and double glazing in hospitals can cut the size of radiators and boilers in half, and make a similar reduction in annual fuel bills. These are broad claims, but when they are made by Charles F. Neergaard,* for many years one of the nation's leading hospital consultants, they carry considerable weight. Neergaard's interest is the improvement of comfort and economy in all hospitals, and he has records to back his statements. Issued recently through a number of sources, including The Modern Hospital and Heating, Piping and Air Conditioning, his information is convincing. The table of comparisons, shown below, is from his broad experience. It has been verified by recent official audits of operating costs. He has had a voice in the planning of all the hospitals listed. In most cases his advice on heating has been accepted and the good results are evident. In some other cases his recommendations were not followed by the owner and engineer and the poor results are equally clear.

Neergaard and his associate, Charles E. Daniel, have long had a yardstick for the scrutiny and judgment of hospital heating systems. They have continually stated that in a well planned and well insulated building, one sq ft of radiation will take care of about 100 cu ft of building volume, while with poor thermal planning it may only serve about 80 cu ft. This kind of standard can only be developed in a broad practice, but it should be applied to all proposed work. The portfolio of investments for hospital funds is very carefully studied by trustees; too frequently, however, the plans for a new building are not scaled against the best performance of structures currently operating.

The table shows how well these results of good planning can be achieved. For instance, the walls in the best examples (A, B, and C), were 12 in. of brick, a 2 in. air space, 3 in. of wood fiber, and a layer of plaster. The roof had similar insulation; glass was double. With poorer insulation, or none, and single glass (I, J, K, and L), one sq ft of radiation took care of less than the standard of 80 cu ft assigned to poor buildings.

Comparison of the Number of Gross Cu Ft in Insulated Hospitals Heated by 1 Sq Ft of Radiation As Designed by Different Engineers in Different Areas

<table>
<thead>
<tr>
<th>CONSERVATIVE ENGINEERING</th>
<th>Gross cu ft of building</th>
<th>Sq ft of radiation of 1 sq ft of radiation</th>
<th>No. of cu ft to ea. sq ft Insulation</th>
<th>Walls Windows</th>
<th>Approx. design temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Bethlehem, Pa.</td>
<td>750,000</td>
<td>3,750</td>
<td>200</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(B) Glens Falls, N. Y.</td>
<td>605,000</td>
<td>4,400</td>
<td>137</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>(C) Hagerstown, Md.</td>
<td>560,000</td>
<td>3,590</td>
<td>156</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(D) New Haven, Conn.</td>
<td>1,605,000</td>
<td>13,248</td>
<td>121</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(E) Prince Edward Island</td>
<td>550,000</td>
<td>5,100</td>
<td>107</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(F) Toronto, W.</td>
<td>1,880,000</td>
<td>16,600</td>
<td>113</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(G) Mount Sinai, Toronto</td>
<td>3,110,157</td>
<td>30,500</td>
<td>102</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>(H) Sick Children, Toronto</td>
<td>5,874,347</td>
<td>55,100</td>
<td>106</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

EXTRAVAGANT ENGINEERING

<table>
<thead>
<tr>
<th>Approx. design temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I) Long Island</td>
</tr>
<tr>
<td>(J) New Jersey</td>
</tr>
<tr>
<td>(K) Virginia</td>
</tr>
<tr>
<td>(L) New York City</td>
</tr>
</tbody>
</table>

*Now retired from active practice.
76 Quarts of Actual Water
Permeate the Average Home EACH WEEK...

.. in the form of 152 lbs. of WATER VAPOR

NO WONDER TIMBER ROTS — 
PAINT PEELS — PLASTER CRUMBLES — 
STEEL BEAMS RUST!

Because vapor has slight density, about 1/205,000th the density of water at 32°F and 1 millionth at zero degree F., it passes through brick, stone, plaster, etc. Most building materials, even asphalt paper, are porous to vapor.

When vapor meets a cold front inside walls and ceilings and reaches a dew-point, it condenses. This destructive "fall-out" (condensation), stimulates the growth of the ever-present microscopic spores of fungi in timber that cause dry-rot. Paint peels! Plaster cracks! Masonry crumbles! Iron rusts! Destructive condensation cost over a MILLION DOLLARS in repair bills to one apartment development alone!

Metals are the best vapor barriers because they have almost ZERO vapor permeability. Multiple layers of aluminum interspersed with air spaces, also scientifically minimize condensation formation on or within them; as well as the flow of heat by radiation, convection, and conduction.

When multiple sheets of aluminum stretch parallel all the way from joist to joist, they insulate the entire area with full-depth, uniform protection.

Such insulation is available commercially in continuous pre-fabricated lengths of 375 to 750 ft. It is installed in ceilings, walls, floors and crawl spaces; between wood beams and studs, steel girders and trusses.

The U.S. National Bureau of Standards has published an informative booklet describing the destruction that condensation can cause, and means of its prevention. It is entitled "Moisture Condensation in Building Walls". Send us the coupon for a FREE copy.

THERMAL VALUES*, INFRA RECTANGULAR INSULATIONS
Non-metallic Insulation Equivalents†

<table>
<thead>
<tr>
<th>Type</th>
<th>Up-Heat</th>
<th>Down-Heat</th>
<th>Cost, Installed §</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2</td>
<td>C.177=1¼&quot;</td>
<td>C.064=5½&quot;</td>
<td>5¢ sq. ft.</td>
</tr>
<tr>
<td>Type 3</td>
<td>C.142=2½&quot;</td>
<td>C.049=6¼&quot;</td>
<td>6¢ sq. ft.</td>
</tr>
<tr>
<td>Type 4</td>
<td>C.105=3¼&quot;</td>
<td>C.042=8&quot;</td>
<td>8¢ sq. ft.</td>
</tr>
<tr>
<td>Type 5</td>
<td>C.081=4&quot;</td>
<td>C.034=9½&quot;</td>
<td>10¢ sq. ft.</td>
</tr>
<tr>
<td>Type 6</td>
<td>C.068=4½&quot;</td>
<td>C.034=9½&quot;</td>
<td>11¢ sq. ft.</td>
</tr>
<tr>
<td>Type 9</td>
<td>C.043=7¼&quot;</td>
<td>C.029=11¼&quot;</td>
<td>16¢ sq. ft.</td>
</tr>
</tbody>
</table>

Types 1, 7, 8 also available

†Calculated on basis of limiting thermal values cited in Fed. Spec. LIL-1-1511; HH-1-561; HH-1-521c; HH-1-521a.
§Approximate cost, material and labor, new construction between wood joists.

CAN BE PURCHASED THROUGH YOUR PREFERRED LOCAL DEALER

Infa Insulation Inc., 525 Broadway, N.Y.C. Dept. P-2
Please send National Bureau of Standards booklet BMS53.
The Fontainebleau Summer Course by Edmond A. Pachner

P/A Office Practice article describing one architect's experience in the search for continuing professional education.

The American schools of architecture are failing in their duty to the profession, in their refusal to provide adequate facilities for further study for practicing architects. Each year, perhaps each month, there are dozens of seminars for doctors somewhere in the country. Every summer there are scores of music festivals, attended not only by young hopefuls, but by successful and famous performers, both to teach and learn. Actors, insurance salesmen, building inspectors, members of every profession which which they themselves would seek to improve himself and find advanced training to fit themselves better for the performance of their work. Strangely, in the most complicated of all professions, architecture—this opportunity is conspicuous by its absence.

Because of a promising practice and a deficiency in architectural education, about three years ago I started a search for a curriculum of one or two months each year which I hoped would help to raise the quality of my design. I wrote to a dozen outstanding architectural schools, to PROGRESSIVE ARCHITECTURE, which was kind enough to publish my letter, and to the American Institute of Architects. I spoke to delegates to the AIA Convention in California. From all this correspondence and conversation, the only conclusion to be reached was that the self-satisfaction of the profession and the unwillingness of the average practitioner to improve himself were eclipsed only by the refusal of the universities to provide the means, other than the standard course.

Only one ray of light showed through. It seems a well kept secret, but the School of Fine Arts in the Palace of Fontainebleau, France, has offered for a number of years a two-month summer course in architecture. The school was started after World War I as a music school for American students, sponsored partly by the French Government and partly by a number of prominent Americans. Later a department of architecture was inaugurated by Jean Labatut, then Director of the School of Architecture at Princeton University, as an adjunct to the graduate school. The directorship has since been taken over by French architects and holds promise of filling a great need.

I have recently returned from attending this summer course. Although there are natural shortcomings to such an abbreviated curriculum, it is worth the consideration of anyone seeking further study.

The present guiding light of the school is Pierre Devinoy, a Paris architect who, at the expense of his young and growing practice, has thrown himself into the work of cutting through the familiar French disorganization and languor to organize and implement a course of study that crams more opportunity for intellectual and esthetic growth into two months than one could expect to find in a year, anywhere.

The course of study is threefold: design problems, lectures, and tours, all interrelated so that each complements and fulfills the others.

This year, the design problem was one that is uppermost in the minds of all French architects: the design of a new city. The Government of France is earmarking likely sites for new cities. The primary problem was to develop one of these sites, a beautiful plateau overlooking the Seine, about 50 miles from Paris, as a city of 50,000 inhabitants.

A secondary problem was to design the community center with its facilities for commerce, administration, recreation, and cultural activities. A third problem (although given first) was to study the housing of the population, with living units in accordance with the French version of our FHA-minimum property requirements. These units were to be arranged in predetermined proportions for apartment buildings and row or individual houses.

Interpersed throughout the period were lectures and critiques given by many leading architects and city planners, each relating his talk somewhat to the problem at hand. At least once a week, a tour was conducted through projects of architectural interest, either old or new, always with a view toward implementing the solutions to the problem. The newer works were often explained (and sometimes defended) by the architects responsible for them; the older works were explained by the architects in residence. Among the newer works were the University City by Eugène Beaudoin, the Chapel at Ronchamps by LeCorbusier, the UNESCO building by Breuer, Zehrfuss & Nervi, the Chapel in Le Raincy by Auguste Perret, SHAPE Village by Jean Dubisson, and a number of others. The older works included the Cathedrals of Chartres, Strasbourg, and Troyes, the chateaux of the Loire, Vaux-le-Vicomte, and the palaces of Versailles and Fontainebleau, to name just a few.

There are naturally many pros and cons to a curriculum of this sort. The pros include the fact that this is an entire package deal, flying from New York via KLM to Amsterdam, thence by train to Paris and return by the same route. (This can all be arranged by writing to the Fontainebleau Fine Arts and Music Schools Association Inc., 122 E. 58 St., New York 22, N. Y.) Room and board are provided by the school and if the rooms lack a few of the modern conveniences, the board, in true French tradition, is a monument to what can be done to institutional food in a country famous for its cuisine.

The opportunity to meet and work with students from all over our country, and to meet and exchange ideas with architects of a foreign country (most of whom speak English) and to see at first hand the way of life and methods of work is invaluable to those who may in no other way have this opportunity.

As for the cons; they are only of temporary annoyance and will probably soon be eradicated by the forward-looking M. Devinoy. The French lack of organization is traditional. Confusion, changing of lecture times and dates, buses losing their way on tours, incomplete programs, forgotten details of the package tour, led many of the students to underestimate the magnitude of the effort and accomplishments.

The number of practicing architects attending this year (or perhaps any year) was small: three out of nineteen. They were Kendall Starrat, of Fort Pierce, Fla.; Nina Pence of Klamath Falls, Ore.; and myself. It is conceivable that a growth of this group will improve the operation of the school by the very determination of the students to get the most from the two months.

The profits I received from the experience were real, but not too easily cataloged. I was seeking a clear-cut program of problems and critiques in the esthetics of buildings. Instead I received a concentrated study of community planning, a kaleidoscope of varied architectural philosophies, and an opportunity to see the concrete examples of both. The use of space and scale by city planners of other ages have, for the first time in my life, made me aware of these as architectural entities. It is my hope that this new awareness will show itself in my work.

February 1958 11
This is KENTILE® rubber tile

It has the finest, most evenly distributed marbleization possible... with mirror-smooth, jewel colors that wear longer!

Available in Rubber, Cork, Vinyl Asbestos, Solid Vinyl, Cushion-back Vinyl, and Asphalt Tile... over 150 decorator colors.

SPECIFICATIONS:

SIZES:
9" x 9", 6" x 6", 12" x 12", 18" x 36". (37" x 37" untrimmed slabs also available for custom designs.)

COLORS:
23 exciting marbleized colors.

THICKNESSES
5/64", 1/8", 3/16".
Guaranteed or Reliable Estimates—III

by Michael F. Kenny*

P/A Office Practice article continuing the discussion of methods of producing reliable estimates, begun in the June and September 1957 issues of the magazine.

That there are a need and a responsibility for the architect to design structures to a stated budgetary limitation, depends on whether the client wants it that way. Most clients do, and the architect tries to meet their wishes in his preliminary researches. It is after the job goes into the design stage, when changes and improvements creep in, and the owner perhaps starts asking for more than he did in the beginning, that the design ceases to fit the budget. Later, when bids are opened and found to be too high, the architect can rightly point to price fluctuations, hunger of bidders, as well as to the foregoing reasons why the work will have to be rebid on a revised basis, or the budget upped.

Neither of these courses endears the architect to the owner. He can avoid the unpopularity, save the owner disappointment, himself costly drawing revisions, and the bidding contractors' time and trouble, by remembering that estimating is a specialized service that costs money.

Primarily, the architect is a designer. His task is to give the client the right structure for his needs. When the client asks how much it will cost, the architect is too often on unfamiliar ground, even though design and costs are so closely integrated. He knows that certain types of construction are more expensive than others, that one kind of building costs more per square foot or per cubic foot than another, but, unless he maintains an efficient estimating department, he does not know all the detailed costs that go into the making of a building.

Obviously a client has a right to know the approximate cost of a structure. This the architect can indicate to him in the preliminary discussions by means of cube or square foot costs or other approximate methods, stressing that because a detailed estimate cannot be made at this stage, only the region of cost can be arrived at. If the client then asks the architect to design for him a building to meet a budgetary limitation, he is asking for something that requires the preparation of a careful analysis, estimated in detail, of different types of construction and design; and continuing cost checks during the preparation of the plans and specifications.

Architects tend to overlook these matters, and frequently try to absorb the cost of the estimate in their fees for the design, accepting it as something they have to do to get the job. This results in poor estimates, with perhaps the work being delegated to the least busy member of the staff, who may be unfamiliar with the techniques of take-off and pricing. Continuing cost checks are omitted altogether.

If the client asks for a guaranteed estimate, he is asking for something the architect cannot give, for the only guaranteed estimate is the "package deal" or the contract bid. Certainly an estimate can be made so high it will be above the low bid, but this sort of estimate is worthless for budget purposes. Reliable estimates can be made by architects, however, just as they are made daily by contractors, subcontractors, and material suppliers, on all manner of projects. But the architect must take the trouble to learn what is involved.

The difference between a contractor's estimate and most architects' estimates is one of personnel and approach. In estimating, a contractor knows he can make or lose money, so he gives the work to a skilled, highly paid estimator. The estimator makes a detailed take-off of the work his firm will do, computing the cubic yards of concrete, the square feet of formwork, the number of different masonry units, etc., required. These he prices out for both material and labor. Material rates are derived from current material quotations, labor rates from recorded labor productivity, or rates the estimator is reasonably sure can be met. He also gets in touch with one or more subcontractors for each trade he proposes to sub-let. The subcontractors go through the same process as the general-trades estimator, each one computing his own quantities and prices. When the estimate is finally put together in the general contractor's office, it is safe to assume that every phase of the work has been carefully scrutinized and estimated and carries a competitive price.

Contractors go through this admittedly laborious and expensive process because experience has shown it is the only way to produce reliable estimates. Architects may question whether they have to go through an analogous process to furnish a similar estimate. They must—because there is no other method.

The architect has the choice of doing the work in his own office, by hiring competent architectural, mechanical, and electrical estimators, or he can use an outside estimating agency. If he elects to do it in his own office, he should realize the importance of the estimating department, pay it accordingly, and give it full authority to collect and co-ordinate cost data, to maintain constant cost checks on all jobs, and to let it act as liaison between his own forces and the client in all matters affecting costs, so that these won't go out of hand. If he hires an outside estimating agency, he should select a good one, and give it the same co-operation.

Being a quantity surveyor myself, engaged in the business of producing reliable estimates, I know the pitfalls of estimating. In our organization, all estimates are carefully checked; we keep in touch with price changes and labor productivity; and we have specialists for such trades as carpentry, structural steel, miscellaneous metals, plumbing, heating, and ventilating work, and electrical work. Nevertheless, we cannot guarantee that our estimates will be within 10 percent of the low bid, even though we strive to be closer. In this respect we are no different from all others engaged in estimating, whether they be contractors, subcontractors, or estimating firms, as a glance at any big tabulation will show.

Architects may ask whether estimates prepared by skilled personnel by the detailed method, which cannot be guaranteed, and which are reliable only to within, say, ninety percent, are worth the high cost of producing them. The construction industry answers, yes; for no other method has yet been developed that will produce estimates that are even ninety percent accurate.

---

*Quantity Surveyor, Detroit, Mich. Kenny has been engaged by Chief of Engineers, U.S. Army, to prepare an estimating manual for standardization of Corps of Engineers estimating procedures.
FOR FAST, ECONOMICAL ROOF CONSTRUCTION any time of year, nothing tops a Granco Steel Roof Deck system. Weld sheets to structural framing. Apply insulation board and built-up roof. That's all there is to it! Structures designed for Granco Roof Deck often save 5¢ to 10¢ per sq. ft. over heavier type decks. And now, to improve the system, Granco Roof Deck has been completely modernized. Check the exclusive new features on the facing page. For more facts, see your nearest Granco representative.
LONGER SHEETS . . . FASTER PLACING. New Granco Roof Deck sheets are available in sizes up to 21 1/2 ft. long and cover up to 43 sq. ft. Greater length makes possible continuous spans for stronger, more economical construction. Also means faster placing, more area covered per sheet, fewer laps and welds. New roof deck sheets cover 24 inches, easily adapt to all roof sizes.

TOUGH NEW FINISH STAYS ON. A thin phosphate coating, applied to clean sheets, protects metal and prepares it for painting. Then, rust-preventive battleship grey enamel is "flow coated" over the metal for an even finish. Baked on at 400° F. for 20 minutes, this durable flint-hard enamel adheres tightly, resists abrasion and chemical corrosion, protects metal years longer.

Plus . . .
- Available in 18, 20 and 22 gage
- Finish paint coat may be field-applied if desired
- Flared ends for convenient nesting

STRONGER . . . SPANS GREATER DISTANCE. Improved angular pattern with wider rib opening makes more effective use of steel, gives greater strength. This efficient new pattern helps sheets support wheelbarrows, welding machines and other heavy construction loads without bending or buckling. Wide rib openings also mean faster, easier plug welding from above.

FREE Technical Manual! Mail Coupon!
New booklet describes and illustrates advantages of roof deck system and new features of Granco Roof Deck. Gives load tables, specifications, installation instructions and special engineering details on constructing eaves, hips, valleys, wall and roof openings. Lists Granco Roof Deck accessories. For your free copy, mail coupon now.

GRANCO STEEL PRODUCTS CO.
Dept. P-82, 6506 N. Broadway, St. Louis 15, Mo.

Please send me without cost or obligation a free copy of the new Granco Steel Roof Deck Product Manual.

Name ____________________________

Firm ____________________________

Address __________________________

City _______ State _______

SEE OUR CATALOGS IN SWEET'S ARCHITECTURAL AND INDUSTRIAL CONSTRUCTION FILES

February 1958 15
Wrought iron and concrete expand at practically identical rates. So the buried wrought iron coils maintain a solid bond with the concrete. Slab cracking is minimized and the pipe is not overstressed.

To keep corrosion from “calling collect”—
Pacific Telephone & Telegraph uses Wrought Iron Pipe

This radiant heating system serves 22,500 square feet of floor area in PT&T’s warehouse at San Leandro, California. It’s an excellent example of the company’s insistence on durability. More than 16,300 feet of corrosion resistant wrought iron pipe safeguard the system against premature failure and costly repair.

The system, planned and designed by PT&T’s Engineering Department, features some interesting construction details which protect the floor against damage from heavy fork-lift trucks and impact from bouncing reels of cable. After the 10-inch structural slab was poured, wrought iron pipe coils were laid in place. Over the pipe coils, a wire mesh was stretched to strengthen the concrete “topping” slab, and contribute to more even heat distribution. Then the pipe and mesh were covered with 3 inches of concrete. Finally, a metallic floor hardener was applied to the surface.

Briefly, here’s why wrought iron pipe was so ideally suited for this application at Pacific Telephone & Telegraph Company. It’s easy to install and dependable in service. It takes short radius bends without springback. It produces sound welds free from pinhole leaks. Its uniform structure assures sharp, full-depth threads. And because of its great mechanical strength, wrought iron pipe takes punishment well during installation. It all adds up to long service life, at low cost per year.


Architect: Thomsen & Wilson, San Francisco.
Consulting Engineer: Harry S. Haley, San Francisco, in collaboration with PT&T engineers.
Installation: Scott Company, Bay Area Mechanical Contractors.

BYERS Wrought Iron Tubular and Hot Rolled Products
ALSO ELECTRIC FURNACE AMBALLOY STEEL PRODUCTS AND PVC PIPE
Corrosion costs you more than Wrought Iron

16 Progressive Architecture
Dear Editor: Your November 1957 issue, featuring Modular Assembly, is the most practical and lucid presentation of the subject I have ever seen.

Most of us have been very receptive to the idea for years and do plan to put it into actual practice in the drafting room as soon as the current job is finished; after which we have usually been too busy looking for the next job.

Reviewing some of our work, we find that we have actually used the principle of modular measure to a very large degree, primarily to effect savings in construction cost. What savings, if any, can be effected in drafting costs, we have yet to experience.

Meyer Katzman
New York, N. Y.

Fears design controls

Dear Editor: I have been concerned about the module for a long time and aware of its advantages in today's industrial society from a production point of view, as well as its new design possibility; but I do fear possible design controls.

Your presentation is fair, thoughtful, and presents all sides of the question; the possibilities and the dangers. I am glad to see it done in this manner because architects must be aware and thoughtful to assure that this type of standardization remains our servant and will not become our master. We must act as the creative conscience to avoid sterility because industry will not, nor is it fitted to do so, economically or psychologically.

There will always be the individual who will defy a module, and the general mass group which will usually welcome it to make work simpler. We need both—the architect looking for subtleties and refinement which today may be of the unusual, and the architect who accepts the industry's favors and does the creditable work.

Let's not discourage either! Too, there will always be the "new" Ronchamps, as personal as the most exotic individual—all are needed. Man's history is a history of breaking imposed barriers.

Let's not discourage anyone—the modular bound, and the free, free agent!

Max Abramovitz
Harrison & Abramovitz
New York, N. Y.

Rebirth or destruction

Dear Editor: I have been out of the office quite a bit in the last few weeks and hence, have not had a chance to give you my reaction to November 1957 P/A which covered, pretty thoroughly, the question of Modular Assembly.

My first reaction is that you have done a much needed job on a complicated subject and presented it as clearly as it has been done in a long time. Certainly, the careful analyses of the various approaches should clear up a lot of people's thinking on a much misunderstood problem. I cannot help but feel, as you do, that more and more of our building products must come to the site completely fabricated. The building industry cannot lag behind the rest of the world much longer.

The really soul-searching problem for the architects is whether we will be able to control this offspring, or wind up creating a Frankenstein's monster. In the hands of the people whose work you have illustrated, the results are superior; but I cannot think of anything worse than having others, particularly manufacturers, take what is basically a good idea and develop chaos where we should have order and discipline. In essence, the test might well mean either the total destruction of our profession, as we now know it, or the rebirth of the architect as the accepted leader in the field. It seems to me that the architectural profession

(Continued on page 18)
Phantom ruled vellum leaves more time for creative drafting

Working with scaling aids often takes valuable time from the basic job of creative drafting. Add the wasted hours spent drawing guide lines, lettering and handling similar routine drafting problems, and you have the reasons why POST developed Phantom Ruled Blutex.

This new vellum is basically POST's Blutex, unchanged except for the addition of phantom grid lines. The result is a combination of all the time-saving advantages of grid paper with all the drawing and reproduction advantages of famous Blutex vellum.

By using the grid lines, a draftsman works quickly to scale without constantly reaching for scaling instruments. Proportioning and resizing are easier and faster. Frehand drawing truly becomes a rapid, highly creative method of recording ideas. Even lettering and dimensioning are transformed into simpler, less time-killing jobs.

In printmaking, the grid lines disappear completely, leaving a sharp, contrasty print.

More about Blutex

The carefully controlled, uniform tooth on Blutex's surface easily "takes" dense, opaque pencil lines that resist smudging and smearing. Those sharp lines, plus Blutex's excellent transparency, assure fast printback and sharp reproductions.

Due to its carefully selected 100% rag content base, Blutex stands-up well under prolonged handling. Even when alterations are done years after an original drawing is completed, Blutex still retains its fine ghost-free erasing qualities and easy erasability.

Free sample offer

For a test sample, write to the Reader Service Division of Frederick Post Company, 3642 N. Avondale Ave., Chicago 18.

p/a views

must provide both the inspiration and the restraint. I sincerely hope that your magazine will continue to serve as the profession's conscience in these respects.

JOHN W. MOLKOD
McLeod & Ferrera
Washington, D. C.

issues circulated

Dear Editor: I read NOVEMBER 1957 P/A "out of context": I studied it direct from mail to home, in contrast to two to three months behind from where I place them on the chest by my bed.

We were interested indeed and the issues have circulated in the drafting room.

RICHARD L. AESK
Aesk Associates
Atlanta, Ga.

grateful for "lift"

Dear Editor: Your November 1957 issue leaves me ecstatic with appreciation. It does a magnificent job for MODULAR ASSEMBLY in over-all as to philosophy, and in detail as to application. MBSA is very much in your debt. Speaking for it, permit me to say we are grateful indeed for this great lift to our program.

C. E. SILLING
C. E. Silling & Associates
Charleston, West Va.

writing and drawings

Dear Editor: After reading the article on MODULAR ASSEMBLY, etc., in NOVEMBER 1957 P/A, we would like to compliment you on the fine, complete piece of writing and the drawings which were included.

JOHN P. BUSH
Industrial Designer, Product Development
Kaiser Aluminum & Chemical Sales, Inc.
Chicago, Ill.

favors 1" grid

Dear Editor: As a draftsman, I consider your article on Grid System detailing an insult to me if I can't lay out a job without following a "grid" pattern.

Detailing a job to imaginary grid

(Continued on page 20)
NOW save 50% on
3 HR. (A) label Fire Doors
by specifying

Overline®

Savings in dollars:
up to
$400.00
per pair
(including frame and hardware)

You can now afford to use 3 HR. (A) label Flush Hollow Metal Fire Doors for all openings where maximum fire protection is desired.

Here's why:

We have just developed and obtained Underwriters’ Laboratories 3 HR. (A) label approval on a pair of Flush Hollow Metal Fire Doors featuring a simple ¾” throw lockset—mortise or cylindrical type—and flush bolts with standard weight hinges and closer. They are also approved for panic hardware operation. These new doors are the first in the hollow metal industry to eliminate the elaborate and costly 3-point lock and 2-point latch—enabling us to build a lighter weight, less expensive door that retains all the protective qualities of its predecessor. These new doors are also qualified for B, C, D, and E labels. Specify Overline 3 HR. (A) label doors wherever extreme exposure conditions exist. • Get our new TECHNICAL DATA SHEET from your nearest Overly representative, or write us direct—today.
lines as shown on page 175 of November 1957 P/A, where major dimensions are not even to a rough or finish dimension and then adding fractions to find a total or finish dimension, is bad detailing and would create many field problems.

A grid or module is reserved for structural or panel sizes. If otherwise, I suggest a 1" grid which is the basic unit of the foot measure.

FRANK R. PERL
Monterey Park, Calif.

salutary effect

Dear Editor: It was only during Christmas recess that I had an opportunity to study carefully November 1957 P/A. I have now done so and take this opportunity to congratulate you on the excellent presentation of the modular idea.

As I think you know, I have long beat the drum for Modular Measure and I can think of nothing that would have a more salutary effect on the growth and adoption of the idea than the presentation contained in your November magazine.

Dean HAROLD D. HAUF
School of Architecture
Rensselaer Polytechnic Institute
Troy, N. Y.

toward real beauty

Dear Editor: I think the Modular Assembly issue was outstanding. I personally am of the persuasion that the movement, if it could be called that, should lead toward real beauty, not sterility nor neutrality; but this, of course, depends upon the genius of the architects.

I found myself worrying that Modular Assembly may overencourage rectilinear design, may too glorify 90° angle. Many of our new materials offer wonderful opportunities in non-geometric, let alone non-rectangular shapes. Reinforced concrete is one. But Modular Assembly need not impede the use of freer shapes in these materials. Perhaps the obvious possibility of great contrasts between the extremes of shape character is the answer—rigid versus free, all under control of the architect, whose task is the more challenging.

Let us hope P/A can keep up more on the subject. Certainly this is the healthiest kind of didactic journalism for a profession which needs it, and badly.

ALEXANDER S. COCHRAN
Cochran, Stephenson & Wing
Baltimore, Md.

the beginning of the end

Dear Editor: Your November 1957 issue on Modular Assembly is an important step toward focussing attention on a key problem of contemporary architecture. The whole future, not only of the architect's profession but of Man-made Environment, depends on the extent to which architecture adopts or rejects industrial materials and production methods. This future seems indicated by a quotation from Robin Boyd,
Beautify with blocks

Bruce Block Flooring is distinctively different, yet stylishly right for all homes. The modern geometric pattern is high in decorative interest and there's always-appealing beauty in the grain and coloring of this solid oak floor. Bruce Blocks may be blind-nailed to wood subfloors or laid in mastic on concrete. They are available with the famous cost-saving Bruce factory finish or for on-the-job finishing. Write for color booklet. See our catalog in Sweet's Files.

E. L. BRUCE CO.
Memphis 1, Tennessee
This precision-engineered modern module is Lightolier’s newest solution to the problem of efficient, evenly diffused lighting for public and commercial interiors. It is designed for swift installation in the modular pattern of almost all suspended 2' x 4' acoustical and plaster ceilings. The clean-lined structural vinyl diffuser spreads optimum glare-free illumination over a broad area. It swings down on hidden hinges for speedy, economical cleaning and relamping. Available in 2' x 2' and 2' x 4' sizes for individual, continuous or pattern mounting. For more detailed information, write to Jersey City 5, New Jersey or see the authorized distributors listed on this page.

Pat. Pending

LIGHTOLIER
ARCHITECTURAL LIGHTING • RESIDENTIAL FIXTURES • PORTABLE LAMPS

THE ARCHITECTURAL LIGHTING DIVISION
9 E. 36 St., New York
SHOWROOMS: 1237 Merchandise Mart, Chicago

22 Progressive Architecture
New fashion in color from Alcoa for aluminum-clad buildings!

With a characteristic flair for color, the Fashion Institute of Technology Building brings a new hue to the New York scene this spring: a curtain wall building of Alcoa® Aluminum in rich Architectural Brown, 4020. The facade of 12-foot panels is beautifully accentuated by Alcoa Gold 4010 window frames. Gold mullions highlight the auditorium, too.

As part of Alcoa’s new look for architecture, this development brings the number of colors available for aluminum-clad buildings to nine. To help you color-style your next building, and for color swatches and specifications, contact your nearest Alcoa sales office, or write: Aluminum Company of America, 1888-B Alcoa Bldg., Pittsburgh 19, Pa.

who writes: "The significance of this boom in curtain walls ... marked the beginning of the end of the gentleman's profession of architecture which has served the world."

His forecast is documented by every line and every illustration in your issue. A composite photograph of some of the modular structures, presumably chosen by you for their quality, demonstrates appalling results. They prove the key theme of modular assembly, which is speed and economy of construction.

If we are to align architecture with the manufacture of commodities, we should drop the designation and the false pretense of being a profession. Exclusive motivations of cost and speed finally make building part of the Industrial Revolution in which—to the despair of the Bauhaus—it had never fully partaken. But why, then, the hypocrisy, the doubletalk of art and design in the comments that frame your articles on theory, practice, and calculation of modular structures?

Like incantations of frantic minds haunted by bad conscience, "infinite variety," "widest variety," "imagination and taste," "individual application" are bandied around in your issue as if every single building you show did not bear out the naked fact that these are design clichés, incompatible with industrially produced buildings. You either have standardization or you have "infinite variety": you cannot have both.

Dr. Gropius spotlights the most catastrophic consequences of this foggy thinking by our leaders, when he writes: "The coming generation will certainly blame us if we should fail to overcome those understandable though sentimental reactions against prefabrication."

The coming generation—which is always invoked when a doctrine is of doubtful validity for the contemporaries—will, according to my experience, do just the opposite. There is a desperate bewilderment among architectural students, who are acutely aware of the schism between their professional education and the promotion of building mass-production. They are fully conscious of the evident fact that the U.S.A. is losing out to the architecture of Italy, Scandinavia, and South America, not because these countries build cheaper, faster, and more uniformly than we—but precisely because they do not. Unless we drop the old-fashioned romanticism of the 20's, which saw in the machine "a liberator from human toil," and confine its contribution where it belongs, which is the building of commercial structures, the noblest, oldest, most influential profession of humanity will die a cheap, fast, and totally uniform death. SIBYL MOHOLY-NAGY
Pratt Institute
Brooklyn, N. Y.

(Continued on page 27)

CONSTRUCTION DETAILS
for LCN Closer Concealed-in-Door Shown on Opposite Page

The LCN Series 302-303 Closer's Main Points:
1. An ideal closer for many interior doors
2. Mechanism concealed within door; flat arm not prominent, and provides high closing power
3. Door is hung on regular butts
4. Closer is simple to install and to adjust
5. Hydraulic back-check protects walls, etc. on opening
6. Practically concealed control at little more than exposed closer cost

Complete Catalog on Request—No Obligation or See Sweet's 1958, Sec. 18e/La

LCN CLOSERS, INC., PRINCETON, ILLINOIS
Canada: LCN Lift Lock Hardware Industries, Ltd., Peterborough, Ontario
MODERN DOOR CONTROL BY LCN

CLOSER CONCEALED IN DOOR

WALT DISNEY ELEMENTARY SCHOOL
TULLYtown, PENNSYLVANIA

John S. Curvin Architect

LCN Closers, Inc., Princeton, Illinois

Construction Details on Opposite Page
This shopping center captures the flavor of an Old World bazaar with the attendant gaiety which heightens the buying instinct... yet the functional, two-story design fits the modern shopping center concept perfectly.

The architects helped themselves liberally from ceramic tile's riotous palette... created with tile color and texture the "visual excitement" so necessary for a consumer buying climate. Function, too, is served by the device of having different tile colors serve as a visual separation of store units.

Add to this other ceramic tile benefits: unmatched durability of floors for shopper-traffic, no waxing needed, cleaning costs held to a minimum, fireproof surfaces. Ceramic tile subtracts from overhead costs—adds to the profit side of your client's ledger!
The multiple benefits of ceramic tile will pay off handsomely for yourself and your client on any residential, institutional or commercial project you undertake. See your local tile contractor for up-to-date information—including all the details on the new lower-cost installation methods and the new dry-curing, thin-setting bed mortars.

PARTICIPATING COMPANIES
American Encyclopedic Tiling Co., Inc.
Atlantic Tile Mfg. Co.
Carile Tile Co.
General Tile Co.
Gladding, McBean & Co.
Jordan Tile Mfg. Co.
Lane Star Ceramics Co.
National Tile
Monarch Tile Mfg. Inc.
Mosaic Tile Co.
Murray Tile Co., Inc.
National Tile & Mfg. Co.
Oleon Tile Co.
Pacific Tile and Porcelain Co.
Porcelain Tile Mfg. Co.
Ridgeway Tile Co.
Robertson Mfg. Co.
Royal Tile Mfg. Co.
Sparta Ceramic Co.
Stylon Corp.
Stylon Southern Corp.
Sanuville Tiles, Inc.
Texarcana, Inc.
United States Ceramic Tile Co.
Wenzel Tile Co.
Winburn Tile Mfg. Co.

TILE COUNCIL OF AMERICA, INC.
800 Second Avenue, New York 17, N. Y.
Room 923, 727 West Seventh St.,
Los Angeles 14, Calif.
Room 220, 3409 Oak Lawn Avenue,
Dallas, Texas

p/a views

(Continued from page 24)

visual criteria

Dear Editor: It is a good sign for the future that the Grand Design, i.e., the new classical, was the subject of the P.S. in your distinguished magazine (JUNE 1957 P/A). Discussion in matters of taste in the arts is not without its virtues. Few are the great buildings, pictures, and statues which have not aroused or followed on eager, if not bitter debate.

May I offer one or two suggestions and amplifications? The drawing, entitled “Monumental Entrance for Brooklyn Navy Yard” by John Barrington Bayley — it illustrated your editorial — is to be found in “The Modern Is Dead — Long Live the Modern,” which appeared in the Mentor New World Writing #11.

To apply political phrases such as “Far Left” and “Extreme Right” to the current debate of the Grand Design is meaningless. As for “Brutalism” it was, I believe, first adopted as a term of praise in the idiom of the Modernist.

It should be clear by now that the springboard of the Grand Design is the visual, whereas that of the Modern is the structural or nonvisual. It is a matter of indifference to those of us of the Grand Design, if a fig bar is substituted for a steel bar in construction so long as the fig has the useful qualities of steel. But when making use of the fig bar we would not have the design “express” the fig nor convey the “clean,” “pure,” “organic,” “functional” nature of the fig.

All architects whose approach is primarily structural (or rational or functional) are Modernists no matter the product. The glass-and-steel examples offered in the Harper’s article were mentioned because they are more with us than the other varieties. With few exceptions the basis for all of them lies in the theories of Viollet-le-Duc.

Your editorial derides the statement that “few architects are aware of who in the past most influenced their work,” in the description of the great Frenchman’s role. His name is mentioned only casually in the standard books of the Modernists, by such authorities as J. M. Richards, Nikolaus Pevsner, Henry-Russell Hitchcock, and Sigfried Giedion. It would be interesting to know how many times he has been mentioned in the pages of Progressive Architecture in the past 20 years. Only John Summerson in his Heavenly Mansions can claim to have presented Viollet-le-Duc in his true stature.

Toward the end of the editorial, such terms as “reactionary,” “retrogressives,” and “progressives” are found. While perhaps satisfactory in a discussion of politics, these somewhat dated terms, like the others mentioned above, do not belong in a discussion of art. In the Grand Design the criteria are visual. For example, one of the first in judging a building is: What welcome does it offer the sister arts? Is there place for painting and sculpture, bronze work, and tapestry? What is the role of ornament? By such standards, the work of Frank Lloyd Wright slips easily to the bottom of the list. Our latter-day hamadryad covers his buildings with the creeping vine and the spreading bush but he leaves no place for a picture or a statue, nor does he admit wrought iron or bronze work. Like all Modernists he is terrified of incorporat-

(Continued on page 32)

A proposal for Columbus Circle, New York. Drawing by John Barrington Bailey, from New World Writing (11).
HOPE'S CUSTOM STEEL WINDOWS
IN MODULAR ASSEMBLY

In this university building the reinforced concrete structure was developed around a basic laboratory module of 12' by 20' with concrete columns left exposed. Movable partitions accommodate for changing projects in faculty and graduate research.

Curtain walls along the building's east and west walls are steel framed into which glass, enameled-steel panels and Hope's heavy intermediate projected and awning type windows were installed.

Experience over the past decade with Hope's Window Walls has given architects complete confidence in Hope's layouts, specifications and details. Speedy construction, labor-saving installation, low maintenance cost, many extra square feet of usable floor space, and structural economies which carry right down to the footings, are some of the owner benefits.

The flexibility of Hope's Windows in layout, makes it easy for the building designer to meet interior requirements for daylight and either natural ventilation or air conditioning. You are invited to use Hope's engineering assistance. For further information, write for Hope's catalog 158.

HOPE'S WINDOWS, INC., Jamestown, N.Y.
THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS
BEFORE YOU CHOOSE LIGHTING ... get this free booklet!

How Fluorescent Lamp Ballasts that bear this Emblem Insure your Lighting Investment

Tells how CBM protects you on these and other pay-off factors...

BALLAST LIFE—Certified CBM ballasts are tested for temperature ... must confine to set limits, as overheating drastically cuts ballast life.

QUIET OPERATION—CBM specifications require a ballast to be well-designed mechanically and electrically, so that it will operate quietly and not create objectionable noise.

RATED LIGHT OUTPUT—Certified CBM ballasts are "tailored to the tube" ... assure rated light output, steady light, peak lighting performance.

Send for this free booklet and learn how these factors and 11 others help insure your lighting investment when you buy fixtures equipped with Certified CBM ballasts.

Eight leading manufacturers now make up the association of

Certified Ballast Manufacturers

2116 Keith Building • Cleveland 15, Ohio

Participation in CBM is open to any manufacturer who wishes to qualify
Announcing
a new concept in
ceiling design

Embossed Travertone

The latest addition to high-style ceilings is Armstrong Embossed Travertone, a striking new acoustical material. By varying the depths of embossing, Armstrong stylists have designed a soft, mellow ceiling—highlighted by thin, wavering relief surfaces. This deep, rich texture makes Embossed Travertone ideal for areas where exceptional overhead beauty is desired.

Armstrong Embossed Travertone is a mineral wool material that will not support combustion (Class A: Fed. Spec. SS-A-118b). It has excellent sound-absorbing qualities, can be cleaned by conventional methods, and can be repainted without appreciable loss of acoustical efficiency.

For free sample and full details, call your nearest Armstrong District Office, your Armstrong Acoustical Contractor, or write the Armstrong Cork Company, 4202 Watson Street, Lancaster, Pennsylvania.
ing the human form, clothed or nude, into a building. His contribution to the New York scene is to be covered with shrubbery and although it is a museum, presumably to house painting and sculpture, neither art has a place as part of the building. On second thought, perhaps we of the Grand Design can give new life to the dated terms. A building is reactionary because it leaves no place for the sister arts. An architecture which offers nothing but bare surfaces is retrogressive. A building may be considered progressive where there is ample room for painting and sculpture, where there are lunettes, cove ceilings, moldings to serve as frames, niches for sculpture, where there are high ceilings for tapestries, etc., etc.

Your editorial observes at the opening that "... a large part of the practicing profession has little time to read literature which might relate to the work-in-hand to current discussion of, let's say, the philosophy of esthetics." The professionals may not have time but, happily for those of us who write, their clients do.

HENRY HOPE SEED, JR.
New York, N. Y.

another winner

Dear Editor: The Association for Applied Solar Energy regrets that an error was made in announcing the fifth prize winner in the 1957 International Architectural Competition to Design a Solar-Heated House (page 68, November 1957 P/A). The credit for this entry should have gone to Marvin Goody, of Hamilton & Goody, and Robert Pelletier.

MRS. R. E. JENSEN
Editor, A.A.S.E.

notices

new offices

PETER BLAKE & JULIAN NESKI, Architects, RICHARD S. STARK, Associate, 157 E. 33 St., New York 16, N.Y.

EDUARD H. BULLERJAHN, Architect, Front St., Marion, Mass.

BEN SCHLANGER, Architect, now practices exclusively as Consultant on Auditoriums and Audio-Visual Buildings, 108 E. 37 St., New York 16, N.Y.

DESIGN ART CORPORATION, Decorators-Product Designers, 2905 Vernon Pl., Cincinnati, Ohio, and 60 E. 56 St., New York, N.Y., is affiliated with A. M. KINNEY, INC., Consulting Engineers and PROCESSES RESEARCH, INC.

new expansion

ADRIAN WILSON & ASSOCIATES, Architects-Engineers, enlarge facilities at 816 W. Fifth St., Los Angeles, Calif.
Stainless steel mullions

Special Armco Steels provide unique advantages in architecture

Freedom in design conception and execution . . . economical durability that preserves beauty and structural integrity . . . integration of structure and color.

Armco Stainless Steel—Combines rich lustrous beauty that defies time with high strength and hardness, and excellent corrosion resistance. Preserves the original beauty of your designs with little or no maintenance even in severe outdoor exposures. Assures client-pleasing durability and economy for facades, Mullions, curtain walls, entrances, interior applications and building products.

Armco Enameling Iron—The world's standard base metal for porcelain enamel. Proved by more than a quarter-century of use in architecture, porcelain enamel on Armco Enameling Iron assures durable colorful beauty and low maintenance for curtain walls and interiors.

Armco ZINGRIP® PAINTGRIP® Steel—This special hot-dip zinc-coated steel combines economical rust protection with a Bonderized surface that takes paint without pretreatment and holds it longer. Ideal for roof drainage, partitions, doors, building panels or curtain walls.

Armco ALUMINIZED STEEL Type 2—A hot-dip aluminum-coated sheet steel with the surface properties of aluminum and the strength of steel. Gives economical, long-time resistance to atmospheric corrosion without paint. Provides strength and durability for roof decking, building panels, rolling doors, curtain walls.

For full information on Armco's Special Steels, where they can be effectively used and how to specify, just fill out and mail the coupon. Armco Steel Corporation, 1288 Curtis Street, Middletown, Ohio.
Cold facts on redwood

The high insulation value of California redwood means schools, homes and commercial buildings that are warmer in winter, cooler in summer, more pleasant the year around.

Specify grade-marked, trade-marked "Certified Kiln Dried" CRA redwood for uniform quality on every job.
The sensational, new

OASIS
IN-A-WALL
Water Cooler

So thin, an 8" wall can hide it!

The Oasis In-A-Wall Water Cooler is new, slender, inconspicuous... so thin it can be specified for mounting in an 8" wall. It supplies refreshingly cold water—round-the-clock—to as many as four new or already installed remote drinking fountains, in restaurants, office buildings, factories, institutions, even homes.

The In-A-Wall Water Cooler is super-compact, extremely versatile. It mounts and performs equally well on joists, in closets, or on-a-wall.

Oasis engineers endowed the In-A-Wall with the capacity and endurance of a giant, the slenderness of a nymph, the versatility of an acrobat, and enough design potential to kindle a gleam in an architect's eye.

Comes in two models—IW-5 supplies 5 GPH, sufficient for 60 persons in offices or schools, 35 in light industry. IW-10 supplies 10 GPH, enough for 120 people in offices and schools, 70 in light industry.

OASIS Water Coolers for Every Requirement

The complete Oasis Water Cooler line includes models with capacities from 2 to 35 GPH, hand or foot operated, pressure or bottle, stainless steel, heavy duty, explosion proof, air-sealed industrial, juvenile, refrigerated compartments, and the famous Oasis Hot 'n Cold which makes piping hot water as well as cold.

For complete specifications and roughing-in details, mail coupon below.

THE EBCO MANUFACTURING COMPANY
Dept. 4-G, Columbus 13, Ohio

Send Oasis In-A-Wall specifications and roughing-in details.

name__________________________
company_______________________
address________________________
city_________________zone____state__________

February 1958 35
Seeing is believing — a sound structure in a good location was in need of a new look. Davidson Architectural Porcelain created for Goldsmith's Department Store in Memphis, Tennessee, a new, modern effect. Any structurally sound building can have that "refreshing look" and increase its business activity when it is architecturally planned to be faced with Davidson Architectural Porcelain, the most modern building material.

Davidson Porcelain Panels are porcelain enamelled on both sides and are mounted with stainless steel clips and screws. The quality of the Davidson porcelain is Grade A or AA. For new or existing structures, use Davidson Panels.

Davidson
ENAMEL PRODUCTS, INC.
1124 E. KIBBY STREET • LIMA, OHIO

THE WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF ARCHITECTURAL PORCELAIN
Goldsmith's Department Store,
Memphis, Tenn.

Architect:
Nowland Van Powell, Memphis, Tenn.

Contractor:
Tri-State Construction Co., Memphis, Tenn.

Davidson Architectural Porcelain
Distributed and Erected by:
Architectural Porcelain, Inc.,
Memphis, Tenn.

Please send 1958 Sweet's Catalog and File of Typical Details.

Name: ___________________________ Company: ___________________________

Street: __________________________ City: ______ Zone: ______ State: ______

February 1958 37
Place Your Window and Curtain Wall Jobs In Experienced Hands

To save time—consult experienced window and curtain wall Engineers in the initial designing stages of your projects. Bayley is glad to render such counseling. It's one of Bayley's extra services. Highly qualified and known for reliability they'll not steer you wrong. And with their years of background in originating and design-

ing many of today's most advanced window and curtain wall developments they can assist you in achieving individualized treatments of sound construction with the maximum economy of time and building costs. Call or write your local Bayley Representative for this Bayley service. There's no obligation.

The WILLIAM BAYLEY Co.
Springfield, Ohio

District Sales Offices: Springfield • Chicago • New York • Washington

38 Progressive Architecture
Send for NEW 16-page Bulletin on this revolutionary New Steam Coil Design

Complete with:
- Photographs
- Ratings and Specifications
- Installation Instructions
  and other valuable information

Send Coupon Today for Your FREE Copy

MARLO coil co.
SAINT LOUIS 11, MISSOURI
Quality Air Conditioning and Heat Transfer Equipment since 1925

MARLO COIL COMPANY
7100 S. Grand Blvd., St. Louis 11, Missouri

Please send a copy of your Revolutionary New Steam Coil Design Bulletin to

NAME

COMPANY

POSITION

ADDRESS

CITY___________________________ZONE________STATE________
It's WATER-TIGHT when it's Kawneer

Water can't get through the panels or between the panels—can't get in at all!

can't get through...
Kawneer Unit Wall offers positive moisture control—provided within the wall are vinyl weatherseals and a complete hafli and drainage system to catch any moisture that might escape the Vinyl weatherseals.

can't get between...
The Kawneer Unit Wall expands and contracts on a controlled basis—special split mullion design distributes all wall movement from temperature changes.

Simple construction and trouble-free maintenance are insured by these other Kawneer features:
- Modular Units—-in either standard or optional types, sizes and arrangement.
- Flush Interior Design—frame surfaces are flush, facilitating mechanical work and installation of furnishings.
- Clean Sight Lines—vinyl glazing in fixed or operating sash add to appearance and improve weathering.
- No Exposed Fasteners—fasteners are concealed within the units themselves.
- Standard Door Units—factory assembled, and designed to fit with wall units.
- Special Sash—Operable, has double Vinyl weatherseal and lifetime hardware.
- Highest quality materials and workmanship.

From store fronts to skyscrapers... the "Kawneer Touch" means
How the "Kawneer Touch" on unit wall offers greater design freedom, smooth scheduling, fast erection

Great Design Flexibility:
Kawneer Unit Wall is pre-engineered and pre-assembled with a wide range of unit types, sizes and color panels. Optional widths, heights and multi-story applications are also available in dimensions of the architect’s choice.

Single Responsibility for All Materials:
Framing members, wall units, door units, insulated panels and sash are all job-planned at the factory, all arrive at once, so there are no complex schedules, no worry, no cutting to fit in the field.

Pre-Assembled, Ready for Installation:
All units arrive complete with panels ready for glazing, or with operable sash in place, and with pre-hung doors. Only field work required is installation of units and glazing.

Unit Wall

practical beauty, proper installation, exceptional durability
GLARE REDUCING SHEET GLASS

Picture windows of American LUSTRAGRAY
draw tourist trade

Specify AMERICAN LUSTRAGRAY for your new commercial buildings—and your clients will tell you that the attractive gray windows act as “beacons of welcome.”

Here's a case in point. According to the owner of the motel, George Fuller Sr., the LUSTRAGRAY glazing "invites more casual tourist business than any other form of outdoor advertising tried by the Company."

And—from the inside looking out—sun glare is softened by this neutral gray glass. Through giant picture windows, diners enjoy the view of Mobile Bay in bright sunlight without squinting.

AMERICAN LUSTRAGRAY also reduces a significant amount of solar heat, adding considerably to comfort. This economical gray glass is available through more than 500 glass jobbers. Thicknesses: \( \frac{3}{16} \), \( \frac{1}{8} \), \( \frac{3}{8} \). Maximum size: 6' x 10'. Check your classified telephone directory for listing.
When you design with color in mind specify Ceramic Veneer

Visualize any color or texture, polychrome panel or eye-arresting sculpture, whichever fits perfectly into your plans can be reproduced faithfully in Ceramic Veneer. So versatile is this modern architectural terra cotta, so economical when you consider its lasting beauty and simplicity of maintenance, that it's easy to understand why Ceramic Veneer is specified so often for so many different types of buildings. In units large or small, for interiors or exteriors, it combines impressively with all other building materials. Custom-made by Federal Seaboard craftsmen, Ceramic Veneer extends the architectonic horizon...provides complete freedom of expression to match function. Without charge we will gladly furnish construction detail, data, color samples, and advice on preliminary sketches involving use of Ceramic Veneer.

FEDERAL SEABOARD
TERRA COTTA CORPORATION

10 East 40th Street, New York 16, N. Y. Plant at Perth Amboy, New Jersey
Westminster High School was built for $7.69 per square foot by using contemporary design and modern Wolmanized® pressure-treated timber products. Pressure-treated arches, posts, beams and decking afforded economical construction... a structure of decided aesthetic appeal. The glulam timber design effected a $130,000 saving at a contract price of $393,893 for the building.

If you are designing schools, churches and similar buildings—see for yourself how Wolmanized pressure-treated lumber can effect substantial savings with full design freedom, structural strength, permanency.
The colored aluminum curtain wall design of the new Fashion Institute of Technology will make it one of the outstanding school buildings of our times.

Not only does the modern curtain wall offer many economic advantages to the owner — such as faster construction, more rentable floor area, earlier tenancy, etc. — but it also enables the architect to give his buildings a truly modern appearance.

As a result of our pioneering efforts in the field of curtain walls and our 11 years of practical experience on more than 40 individual jobs, both large and small, we at General Bronze have learned the answers to many of the intricate and detailed problems that are a part of this highly specialized business.

If you are thinking of curtain walls, in terms of aluminum, bronze or stainless steel, either complete skin or grid system, we offer you the benefit of our experience working with all types of buildings, all types of materials — experience that can help eliminate many headaches for you and save time and money for your clients. Call in the General Bronze representative today. He is anxious to serve you. Our catalogs are filed in Sweet's.
Give your clients a modern building that stays modern, returns more on its investment.

Start with a Systems Control Center by Honeywell

For hotels, motels, or any building's entire operational equipment—Temperature · Air Handling · Detection, Signalling and Command.

Through years of working with leading architects and consulting engineers, Honeywell has developed a new concept for commercial buildings—systems control centers. It helps you design buildings that:

* **Reduce client's operating costs** because of the increased efficiency and economy of centralized controls for your automatic equipment;
* **Lengthen the building's life** because this completely flexible system provides for future needs and Honeywell experience can help you predict them;
* **Increase the building's utility** because systems control centers allow you to be more creative in designing for the particular needs of each client.

Honeywell is the only company which has designed systems control centers for commercial buildings. And such Honeywell systems are working now in hospitals, schools, hotels, office buildings and banks.

You can draw on this Honeywell experience even before the blueprints are started—can choose from the great variety of Honeywell products to design a system that will fit your plans best.

A Honeywell systems specialist will be glad to submit proposals for your evaluation at no obligation for any building you're planning. You can reach him at the nearest Honeywell office or by writing Honeywell, Dept. PA-2-30, Minneapolis 8, Minnesota.
The status of each room; occupied, reserved or vacant is indicated on the front desk console. It can be read at a glance by the desk clerk.

Maid signal notifies clerk and housekeeper where maids are working and when rooms are made up. Enables clerk to signal what rooms are to be done.

Morning call—"message for you" signal frees busy switchboard, wakes guest with buzzer, bell or chimes. "Message for you" light stays on until acknowledged.

Honeywell designed Systems Control Center for hotels, called the Hotel-Motel Master, puts up to 24 separate functions under the control of one man at a hotel's front desk.

Guestroom temperature control (Honeywell Wall Mounted Thermostat) allows each guest to select the temperature at which he feels most comfortable.

Weatherscope automatically signals an up-to-date weather forecast to each guest, enabling them to dress according to the weather. Clerk operates master signal only.

Fire detection signal rings buzzer at the front desk. Flashing light indicates origin of the fire, enables clerk to send help immediately to the area.

Centralized controls for air conditioning, heating, lights, TV allow clerk to shut off equipment when guests leave, turn it on just before room is occupied.

Hold-up alarm operated by foot notifies house detective and others of trouble at the front desk, brings help quickly in case of emergency.
FROM INDIANA—
"the strength of Gibraltar"

Like the famous landmark of their slogan, the crisp new Chicago office building of the Prudential Insurance Company of America will owe much of its durability to limestone — limestone from the quarries of Indiana.

And there's more than new buildings coming from the Hoosier state's bustling limestone pits. Watch the skyline for new developments, too. Like the new insulated curtain wall panels — all are now gaining popularity because of their relatively light weight, speed and simplicity of erection. Both the Indiana Limestone industry and members of the architectural profession are today discovering new potentials in this time proven, building material.

Architects Neys & Murphy
Chicago, Illinois

Full specifications on all Indiana Limestone products available.

INDIANA LIMESTONE INSTITUTE
Founded 1932 as a service organization for the architect and contractor.
BEDFORD, INDIANA
MASONITE® PEG-BOARD® again demonstrates its potential in contemporary design...this time, protected exteriors. Peg-Board here illustrates just one of the many ways it can complement your finest designs. Unlimited possibilities...exterior, interior...commercial, industrial, residential.

An important consideration for you is Client Satisfaction. Masonite's contribution to design that satisfies is a completely versatile line of hardboard panels plus a continuous development of products for new architectural applications.

For current product information, consult Sweet's Architectural File and your Masonite Representative, or send the coupon.

MASONITE Panel Products

*Masonite Corporation—manufacturer of quality panel products.*
SIX GOOD REASONS FOR DESIGNING WITH STEEL JOISTS

FIRE-RESISTANCE—Steel joists in combination with floor slab and plaster ceiling form a barrier with up to four hours' fire-resistance, depending on slab thickness and the type of plaster. And greater fire-safety is of particular importance in multi-story buildings such as hospitals, apartments and schools.

NON-SHRINKING, NON-WARPING—Building maintenance is greatly simplified when you design with joists. They provide non-shrinking, non-warping construction which eliminates sagging floors and cracked ceilings.

COLUMN-FREE SPACE—Steel joists are ideal for long spans such as auditoriums, gymnasiums, garages, stores. And in any building they give a maximum of column-free space.

VIBRATION-RESISTANCE—Good, firm floor construction is assured with steel joists. Adequate stiffness in floors is of special importance in multi-story buildings.

SOUND-RESISTANCE—Bethlehem Joists used with concrete floor slabs and plaster ceilings provide a dead air space. Also there is minimum contact between floor above and ceiling below, effectively dampening the transmission of sound in both directions. Here's a real advantage for hospitals, offices, and apartments.

FAST, ECONOMICAL CONSTRUCTION—Joists arrive at the job fully fabricated and tagged, ready for immediate placing. Two men can easily place small joists, and a simple derrick lifts the larger sizes. The open-webs permit concealment of pipes, conduit and ducts, and simplifies installation of recessed lighting.

These are some of the important advantages you get when you use Bethlehem Open-Web Steel Joists. And Bethlehem Joists are fully approved by the Steel Joist Institute.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation Export Distributor: Bethlehem Steel Export Corporation
"Floors instead of doors," "The boys have it, why can't we?" demand the placards. "We want maple!" shout the high school girls in East St. Louis, Illinois. They march en masse into the school board meeting to insist on maple flooring for the girls' gymnasium in the new East St. Louis Senior High School. They explain to the board members their reasons for wanting maple. "Substitute floors hurt their feet," they say, "and provide a poor surface for games." For the small extra cost, they feel maple flooring is well worth it.

The board listens to their plea and considers, weighs the advantages of maple against substitute flooring...and then changes the plans. The girls win the day.

They argued so strongly because they play in gymnasiums and know there's a lot of difference in quality between maple flooring and substitutes. And the board had to agree that the big difference in quality was worth the small difference in cost.

Don't you?
Announcing a promotion

... a promotion designed to focus the attention of prospective home builders and homeowners on the importance of color and design in bathrooms...

Get your official entry form by going or writing to the Eljer Plumber displaying this sign

$50,000 in prizes just for dreaming of an Eljer bathroom

100 BIG PRIZES

FIRST PRIZE—your dream bathroom with a value up to $4000 built in your home exactly as you designed it. Plus tax fees for land and labor.

SECOND PRIZE—your dream bathroom with a value up to $3000 and a week in Miami with all expenses paid for two.

THIRD PRIZE—your dream bathroom with a value up to $2000 and a week in Miami for two.

SEVENTH-FOURTH PRIZES—dream bathrooms each with a value up to $200.

TWENTY-SIXTH PRIZES—convenient Eljer powder rooms each with a value up to $100.

SIXTY-CENTIPEDES—ten awards of $100 in cash and fifty of $50 in cash.

PLAN NOW TO BE A WINNER...

Have you ever dreamed about a beautiful new bathroom... designed just the way you want it... with gleaming modern Eljer fixtures... stylish, spacious cabinets... soft-toned colors and subdued lighting? A dream bathroom... one that marks your home with distinctive good taste... a bathroom that reflects your own personality... a gracious Eljer bathroom.

Now this dream can come magically alive. All you have to do is put your dreams down on paper. If your simple sketch and statement are selected as the winner, Eljer will build your bathroom for you... exactly the way you dreamed it.

How to enter... Mail in or drop any of the entries to the Eljer Plumber, 500 E. 11th St., New York, N.Y. 5. It can also be dropped at the Murray Corporation of America, Three Gateway Center, Pittsburgh, Pennsylvania. It must be postmarked by July 31, 1958.

This first big national contest ever designed to point directly to the convenience and beauty that can be enjoyed when bathrooms are correctly styled to appeal to today's homemakers has already awakened tremendous interest in the industry. It is another Eljer contribution to stimulate widespread interest in home modernization and properly designed new homes. Eljer Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh, Pennsylvania.
FOR THE ARCHITECT OR DESIGNER: New, slim joining mullion provides the advantage of attractive horizontal lines.


FOR THE HOME OWNER: The "double-hung" look with all the conveniences of modern awning windows.

Composed of a fixed window at the top and a ventilating unit of equal size at the bottom, PELLA TWINLITE is available in seven modular sizes, including 32" x 44" frame widths. In addition a picture window in combination with a ventilating unit is also available.

Features like these are standard equipment: self-storing screens, in-the-sash storm panels, underscreen operator with exclusive Glide-lock, and complete weatherstripping. And... they can be installed on their sides to form beautiful casements with narrow mullions.

For complete details, check and mail coupon today.

ROLScreen COMPANY Dept. J-18, Pella, Iowa

Please send detailed literature describing Pella's new TWINLITE combination fixed and ventilating windows.

Name ____________________________
Address ____________________________
Company ____________________________
Title ____________________________
City ____________________________ Zone ____________________________ State ____________________________
AEROFIN
Smooth-Fin Coils offer you

Greater Heat Transfer
per sq. ft. of face area

Lower Airway Resistance
—less power per c.f.m.

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.

AEROFIN CORPORATION
101 Greenway Ave., Syracuse 3, N. Y.

Write for Bulletin 5-55

Aerofin is sold only by manufacturers of fan system apparatus.
List on request.
Wind hits a screaming 130 m.p.h.
Rain whips out in a 12-inch-per-hour deluge. The curtain wall unit shudders, bends under this man-made blast . . .
but doesn't leak. WEATHERBAN Brand Curtain Wall Sealer seals its seams.

The purpose of this torturing, simulated weather test? To prove the weather-tightness of this WEATHERBAN sealed curtain wall, even under the lash of hurricane fury.

This new curtain wall sealer is a two-part polysulfide rubber-based compound. It cures chemically without shrinkage into a durable, solid rubber seal. It stretches, compresses with wall movement, adheres strongly to glass, stone and metal.

Here's why WEATHERBAN Sealer is being picked to seal new buildings . . . why it's being chosen also to repair leaks in older buildings originally sealed with conventional sealers.

SEE WHAT WEATHERBAN SEALER OFFERS YOU!
Consult 3M Research. Send for free brochure. Write on your company letterhead to: 3M, Dept. M-2, 417 Piquette Ave., Detroit 2, Michigan.
HERE'S THE EVIDENCE

The original WRIGHT floors in this famous building, installed 18 years ago... are still "young"!

A busy office is the perfect testing lab for on-the-job performance of a flooring. Wright passes with ease... surpasses expectation. There's still a long life ahead for this 18-year-old floor (of course, it's waxed regularly).

For projects requiring colorful, luxurious flooring that's quiet, comfortable and easily maintained, specify Wright Rubber and Vinyl Tile with confidence. There's plenty of proof that Wright is not only one of the most beautiful but also the most practical of floor tiles.

WRIGHT MANUFACTURING COMPANY

A Division of Mastic Tile Corporation of America
Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.
Thoughts needn't struggle over mechanical hurdles to get down on paper. Tracings convey your ideas and designs most clearly when your drafting is concise and sharp. When it reproduces perfectly.

Like thousands of your colleagues, you will find the shortest distance between idea and execution in MARS drafting products. They are your brain's best friends.

For the engineer, architect and draftsman who demands direct and accurate expression, it's MARS—clear across the board! Ask for these quality drafting aids at your dealer's.
MEMO:

Dear Bill:
If you are building a new school or planning to renovate an old one, you unquestionably need the new Anemostat School Catalog.* Suggest you write for your copy to Anemostat Corporation of America, 10 East 39th Street, New York 16, N. Y.

Tom

ANEMOSTAT ALL-AIR HIGH VELOCITY SYSTEMS FOR SCHOOLS

A NEW DEVELOPMENT FOR HEATING AND VENTILATING

*Contains performance and dimension data, control diagrams, everything you need to specify.
"I always specify Hako floor tile"

Builder: "Individuality. That's what the buyers want. Got any more suggestions?"

Architect: "Yep—floors. Give them color, pattern. A real personal effect."

Builder: "How do you do it within MY cost structure? I've got to meet competitive prices!"

Architect: "Easy. Use asphalt tile—the colors and floor patterns make every home different inside. And the material is economical."

Builder: "Sounds good. We'd have no trouble putting it in and I'll have something that gives me a selling plus. I suppose any tile will do the job?"

Architect: "Oh no! I want you to be satisfied with color, price and value. That's why I always specify HAKO."

Builder: "Did you say Hako?"

Architect: "That's right. Hako asphalt tile, remember? Unique colors and floor patterns. And we've got the experience to help make your job easier.

For best results we recommend Milmark® wax...cleaners...adhesives

HAKO BUILDING PRODUCTS
A DIVISION OF MASTIC TILE CORPORATION OF AMERICA
Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N.Y.

Asphalt Tile • Vinylflex • Polykrome • Corktile
Parquetry • Coronet Plastic Wall Tile

For full details and specification data...
Hako Building Products
Division of Mastic Tile Corp. of America
Dept. R9-2, P.O. Box 128, Yonkers, N. Y.

Please send me full details and specification data on Hako Asphalt and Vinyl-Ashbestos Tile.

NAME

ADDRESS

CITY ZONE STATE

February 1958 65
Eastland Shopping Center in the northeast section of Detroit, Michigan. 56,000 Sq. Ft. of Mahon Insulated Metal Curtain Walls and 48,000 Sq. Ft. of Mahon Steel Roof Deck were employed in the construction of this outstanding and colorful structure. Victor Gruen & Associates, Architects. O. W. Burke Co., Gen. Contrs.

**INSULATED METAL WALLS** are Skillfully

---

**ELECTRIFIED M-FLOORS**
Mahon M-Floors provide electrical availability in every square foot of floor surface—safeguard buildings against electrical obsolescence in years to come.

**ACOUSTICAL and TROFFER FORMS**
Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.

**CONCRETE FLOOR FORMS**
Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.
Employed to Lend Color and Attractiveness to Exterior of Mammoth Shopping Center!

The low-cost permanence and attractiveness of Insulated Metal Curtain Walls are today being designed into an ever broadening range of building types. In the Eastland Shopping Center, illustrated at the left, you see an unusual building in which Mahon Metal Curtain Walls in harmonizing colors were used extensively in combination with other materials to produce an attractive and colorful exterior.

Some of the country's outstanding architects have employed Mahon Insulated Metal Curtain Walls skillfully and to good advantage, costwise, in producing striking exterior design effects in office buildings, shopping centers, schools, armories, military barracks, sports arenas, parking garages, warehouses, industrial buildings of all types—including powerhouses, and some important monumental buildings.

Metal Curtain Walls with exterior plates of embossed or colored aluminum, stainless steel, or cold rolled steel painted, employed in combination with brick, ornamental stone, glass block or other materials offer unlimited possibilities in architectural treatment of exterior design. Bright metal, or colored metal, provides the designer with the means of individualizing and creating distinctiveness in almost any type of building.

In Mahon Insulated Metal Walls, vertical joints are invisible—symmetry of pattern is uninterrupted across the wall surface . . . and, the field constructed walls can be erected up to sixty feet in height without a horizontal joint. These two design features, which are extremely important from an appearance standpoint, were engineered into Mahon Insulated Metal Curtain Walls to give you a finer appearing wall surface with a continuous pattern free from unsightly joints.

You'll want to investigate these Mahon "better look" features before you select a metal curtain wall for any building.

See Sweet's Files for information or write for Catalogue W-58.

THE R. C. MAHON COMPANY • Detroit 34, Michigan
Sales-Engineering Offices in Detroit, New York and Chicago
Representatives in all Principal Cities

MAHON
Connecticut General Life Insurance Company, Bloomfield, Conn.

architects: Skidmore, Owings and Merrill, N.Y.C.

consultant on interiors: Florence Knoll
Knoll Associates, Inc., N.Y.C.

general contractors: Turner Construction Company, N.Y.C.

LINOTILE PRE-TESTED IN MOCK-UP

In this detailed, full-scale mock-up built by the general contractor, structural materials were subjected to painstaking examination for long periods. Of the many resilient floors tested here, Armstrong Linotile proved itself by every measure of appearance and function. Especially impressive was the evidence that Linotile's beauty is actually heightened by use and maintenance. Despite the fact that Linotile increased flooring costs 4% over other materials considered, the test data convinced Connecticut General officials that the extra cost was a sound investment.
LASTING BEAUTY

The recently completed headquarters of the Connecticut General Life Insurance Company have been cited by the AIA as one of the "Ten Buildings in America's Future." The Armstrong Cork Company is proud that Armstrong Linotile—a floor which has been tested in use for many years—was chosen for virtually all the important areas of this most modern building. A single coloring, No. 169 Graphite Gray, is used throughout. Its subtle graining makes a perfect background for the modern architectural features. And because Linotile is regarded as one of the most durable and serviceable of all resilient floors, it will retain its beauty for many years to come.

EASE OF MAINTENANCE

Even in busy work areas, maintenance is always fast and economical because Linotile is specially processed for easy care under severe traffic conditions. Because Linotile is very dense, it has remarkable resistance to abrasion, indentation, and staining. Heavy furniture won’t mar the good looks and smooth surface of Linotile. Employees are pleased with the floors because Linotile is comfortable and quiet underfoot, restfully diffuses light.

Armstrong Linotile—an exclusive Armstrong floor—has an enviable record of more than 40 years for ease of maintenance, exceptional durability, and decorative versatility. Linotile should not be confused with linoleum cut into blocks. A full 1/8" thick, the wearing surface extends through the entire thickness of the tile; it has no felt or burlap backing. Linotile is capable of withstanding furniture loads up to 200 lbs. per sq. in. without showing permanent indentation. It comes in two stylings—an unusually bold marbleizing and a subtle tone-on-tone effect; in many colors and sizes; and may be installed on all types of suspended subfloors.

Armstrong makes all types of resilient floors and can therefore offer unbiased recommendations for every flooring need. For information, samples, specifications, design assistance, call the Armstrong Architectural-Building Consultant in an Armstrong District Office, or write direct to Armstrong Cork Company, 702 Watson St., Lancaster, Pennsylvania.

Approximate Installed Prices per Sq. Ft. (Over concrete, minimum area 1000 sq. ft.)
Another Loxit First!

LOXIT® MIRAWAL® PORCELOX
Porcelain Steel CHALKBOARDS

in Standard Heights and
UPTO 16 FT. LONG in one piece

and in Eight Attractive School Colors

LOXIT MIRAWAL PORCELOX Porcelain Steel Chalkboards are produced in single, straight-line continuous electric furnaces to make the long lengths possible. The vitreous porcelain surface is fused to the nicked steel sheet at a temperature of 1600°F, making it unexcelled as a porcelainized metal coating for all chalkboard uses.

Check these advantages!

1. TWO TYPES AVAILABLE
LOX-85 NU-VICTORY LOXIT MIRAWAL PORCELOX—a light gauge porcelain steel chalkboard face sheet laminated to 3/8” “structo-core” with a porcelainized steel backing. Available up to 4’x16’—in one piece. LOX-86 NU-IMPERIAL LOXIT MIRAWAL PORCELOX—a light gauge porcelain steel chalkboard face sheet laminated to 1/4” exterior grade plywood with a rust resistant metal backing. Available up to 4’x12’—in one piece.

2. DURABLE AND PERMANENT
The vitreous inorganic porcelain surface will not craze or crack. Shrinkage and expansion is negligible. Will take magnets.

3. SCRATCH AND IMPACT RESISTANT
The flint-hard, glass-smooth porcelain surface provides high resistance against scratching and marring. Tests at least 6.5 on scale of Hardness of Minerals.

4. SANITARY AND EASY TO CLEAN
The glass-hard porcelain surface is impervious to acids, odors, grease and solvents. Easily cleaned with a damp cloth.

5. FIREPROOF CONSTRUCTION
LOXIT MIRAWAL PORCELOX chalkboards are fireproof. Will not support combustion.

6. LIGHT WEIGHT—SIMPLE TO INSTALL
The thinness of gauge which is adequate for all chalkboard requirements makes them light in weight; simple to install and easy to handle during erection.

7. EIGHT BEAUTIFUL FADEPROOF SCHOOL COLORS
Rite Spring Green, Rite Dork Green, Rite Gray, Rite Tan, Rite Coral, Rite Blue, Rite White (Ivory), and Rite Black.

8. MAINTENANCE FREE—ECONOMICAL
They are maintenance free except for cleaning. Will meet any reasonable budget both in the construction of the building and in its maintenance.

9. TRIMMED
Available completely trimmed ready to set in place—with or without the use of the Loxit Miracle Adjustable Chalkboard Setting System.

Write today for literature and sample panel.

LOXIT SYSTEMS, INC.
1217 W. WASHINGTON BLVD., CHICAGO 7, ILLINOIS
"Based on our experience," says B. E. Robinson, master mechanic of Aluminum Industries, Inc., of Cincinnati, O., "I certainly recommend Frank Adam Busduct to any company interested in maximum production efficiency.

"Frank Adam Busduct added substantially to the efficiency, economy and flexibility of our plant operations. It enables us to make quick changes in plant layout without disrupting production, cuts maintenance costs to a minimum and affords other economies by reducing power losses and voltage drop to a minimum."

Take a leaf from Mr. Robinson's book of experience. Give your clients power distribution geared to their needs. Specify Frank Adam Busduct, the modern system of power distribution in all your future plans. Consult Sweet's architectural or contact your nearest representative for additional information.

FRANK ADAM ELECTRIC COMPANY
BOX 357, MAIN P. O. • ST. LOUIS 3, MO.

makers of
busduct • panelboards • switchboards • service equipment
safety switches • load centers • Quikheter
Howard Johnson Motor Lodge, St. Louis, Mo. (Office interior above).

Howard Johnson Motor Lodges designed with Insulite Roof Deck

In St. Louis, and at Huntington, L. I., New York, travelers now find luxurious new Howard Johnson Motor Lodges. Rooms are light, airy, and spacious. A most striking interior feature is red-beamed white ceilings . . . achieved with Insulite Roof Deck.

To make best use of these Motor Lodge sites, Architects Carl Koch & Associates, A.I.A., have created a single-loading one-story design at St. Louis; a two-story plan at Huntington. After careful comparative study of decking materials, the architects selected Insulite Roof Deck for both Motor Lodges. Why? Because it cost least . . . looks best . . . works best.

As to cost, think of this: each 2' x 8' Insulite Roof Deck panel provides decking stout enough to carry any normal rooftop traffic . . . plus a built-in vapor barrier . . . plus finest insulation . . . plus a finished, painted ceiling . . . all in one. Carefully detailed V-grooved joints help make ceilings truly handsome; and tough white paint gives excellent light reflection.

Want further facts on Insulite Roof Deck? Write us—Insulite, Minneapolis 2, Minnesota.

Room Plan "A" is largest of four standard room plans developed by the architects for Howard Johnson Motor Lodges. Designs feature many built-ins: headboards, desks, luggage racks, etc. Open-beam Insulite Roof Deck ceilings add height, light and character.

Application of Roof Deck proceeds with astonishing speed, cutting roof and ceiling costs to rock bottom. Motor Lodges described here have 3" thick panels, with built-up roofing and marble chips. 2" thickness also available. Tongue-and-groove joints make vapor-tight seal.

build better, save labor, with

INSULITE®

Roof Deck

Insulite, made of hardy Northern wood. Insulite Division, Minnesota and Ontario Paper Company, Minneapolis 2, Minnesota.
"spaciousness, flexibility, more effective merchandising" with Rilco

Acme Supermarket, Clifton Heights (Philadelphia)
Architects: Kelly & Gruzen, New York
Contractor: Wallace Engineering and Construction Company, Bryn Mawr (Philadelphia)

Say the architects: "The primary purposes for the use of these Rilco laminated members (in the Acme supermarket) were to achieve a large open commercial area without hindrances of columns, etc.; to permit, through this spaciousness, changes in floor layouts with the utmost flexibility, more effective merchandising techniques and ease of customer traffic."

And the Rilco precision-engineered members saved time "... helpful for commercial projects, particularly when speed of erection is a vital factor in meeting an opening deadline date."

Because Rilco laminated members are custom-built for every job, they allow wide freedom of design, blending well with any styling concept. In addition, their proved economy of time and money plus their dramatic appearance and warmth win kudos from clients.

And the economy and beauty continue on down through the years — for Rilco members won't rust, corrode or vibrate, withstand impact or temporary overload without permanent damage ... actually mellow, becoming more beautiful with age.

Such Rilco members — engineered to your specification, your design, may help you with a future problem. For more information write your nearest Rilco office.

RILCO LAMINATED PRODUCTS, INC.
W817 First National Bank Bldg., Saint Paul 1, Minn.
Another New School Helping to Build a Greater Chicago

has an economical

POWERS

Temperature Control System

DUNBAR VOCATIONAL
HIGH SCHOOL

erected at a cost of $8,000,000 provides an efficient modern plant with the best equipment and instruction obtainable. It is coeducational and accommodates some 2300 day students. Night classes for adults are almost as large.

Photo at Right: Electric Furnace used in Foundry Practice.

Largest Chicago Public School built in the past decade offers students a bright future in the career of their choice.

Students may major in one of 27 courses ranging from architectural and mechanical drafting, building trades and electronics to cosmetology (beauty culture), millinery or welding.

Proper Thermal Environment for Learning is provided by a Powers pneumatic control system. Students and teacher in each room can enjoy the proper temperature for their type of activity.

If you Are Planning a New Building, ask your architect or engineer to include a Powers Quality System of Temperature Control. You'll help insure utmost comfort, fuel economy and low cost maintenance.

THE POWERS REGULATOR COMPANY
SKOKIE, ILLINOIS

65 Years of Automatic Temperature and Humidity Control
Fenestra...
Announces new custom engineered

Curtain Walls of Steel or Aluminum

Here's a bold and imaginative structure... an excellent example of how Fenestra® can take your building design—single story or high-rise monumental—and engineer, fabricate, deliver and erect the curtain wall... as a package!

You have a wide selection of steel or aluminum systems. A choice of subframes, windows and mullion patterns... a choice of vents including projected, vertical pivoted, double-hung, top-hung and casement... a choice of insulated panels, plain or embossed aluminum, or porcelain enameled steel. All materials, including the panels are produced by Fenestra. The completeness of the Fenestra line is a challenge to your creative design ingenuity.

Specifying and ordering curtain walls from a single responsible source saves you the time and trouble of searching out and fitting together components from various sources. Fenestra coordinates production, delivery and erection to eliminate confusion and save time and money.

Your local Fenestra representative can give you the details. Call him today—listed in the Yellow Pages—or write Fenestra Inc., Dept. PA-2, 3409 Griffin Street, Detroit 11, Michigan.

Fenestra INCORPORATED
YOUR SINGLE SOURCE OF SUPPLY FOR
CURTAIN WALLS • BUILDING PANELS • DOORS • WINDOWS

Fenestra Curtain Wall—Steel subframes with applied projected sash. Lodge Hall and Recreation Building, Masonic Homes, Elizabethtown, Pennsylvania.

Contractor—The Pottiger Company, West Reading, Pa.

February 1958 77
Extra protection features for Jamison super freezer doors

- Batten doors and vestibule save refrigeration
- Metal cladding on frame and back of door for protection from vapor and moisture
- Exclusive Jamison Vap-r-tyt* construction for protection against vapor penetration, has locked and soldered seams and sealed bolt holes
- Metal kick plate 48" high on frame and inside and outside of door for protection against bumping and abuse

*Vap-r-tyt is a Jamison trademark

JAMISON
COLD STORAGE DOORS
HAGERSTOWN, MARYLAND, U. S. A.
Here's Customer-inviting beauty that lasts longer with less care

Bolta-Floor's rich decorative colors and patterns help “dress-up” stores... make them more appealing to shoppers. Best of all, heavy store traffic has little effect on Bolta-Floor. Its smooth, non-porous surface resists soil, scuffs and stains... keeps its lustrous “just-polished” appearance with far less care than other types of flooring. Bolta-Floor is dimensionally stable... won’t crack, chip or shrink. Exceptional beauty and outstanding performance makes Bolta-Floor the wise choice for modern stores, buildings and institutions.

**SPECIFICATIONS:**

Bolta-Floor is available in 23 marbleized, 24 "Terrazzo," or 5 solid colors, in standard 9" x 9", or 6" x 6", 12" x 12" and 18" x 18" tiles on special order, in .080", and ¼" gauges. Solid or marbleized are also offered in ¼" and are produced in 27", 45" and 54" roll widths for floors, walls and countertops. See Sweet’s 13/Gee.

**SOLID VINYL FLOORING**

**THE FINEST QUALITY FLOORING FOR...**

Stores, Restaurants
Hotels, Motels
Banks, Offices
Hospitals, Homes
Glare reduced Coolite glass achieves high levels of illumination without heat and glare for Ford Motor Company Garage, Dearborn, Michigan.

Glazier: Pittsburgh Plate Glass Co., Detroit

New York - Chicago - Fullerton, Calif.

World's Largest Manufacturer of
TRANSLUCENT GLASS

Modern Buildings Utilize Diffusing Glass to Make the Most of Daylight

These outstanding buildings enjoy more and better daylighting per glazing dollar because translucent glass diffuses daylight deep into interiors to achieve even, comfortable, overall illumination at low cost. Areas are flooded with inexpensive, natural lighting, free of raw glare. Sharp shadows and contrasts are reduced to make seeing tasks easier. Translucent glass helps create a feeling of spaciousness and comfort. Occupants see better, feel better, work better under improved daylighting. The resulting efficiencies and improved morale make it good business to install translucent glass.

Today's leading architects are taking fullest advantage of translucent glass to achieve interesting, highly functional structures that provide high levels of low cost, natural illumination. Specify glass by Mississippi. Available in a wide range of patterns and surface finishes to solve any daylighting requirement.

Glass Company
88 Angelica St. • St. Louis 7, Mo.
Rolled, Figured and Wired Glass
The vast majority of the nation's fine buildings are Sloan equipped

Skidmore, Owings & Merrill
architects-engineers

Turner Construction Company
general contractor

Economy Plumbing & Heating Co.
plumbing contractor

Warren Barr Supply Company
plumbing wholesaler

Richmond Plumbing Fixtures,
Division of Rheem Mfg. Co.
fixture manufacturer

Superbly crafted
of
Steel and Glass

The new 19-story INLAND STEEL BUILDING in CHICAGO is a gleaming structure of stainless steel and green-tinted glass above a recessed ground floor—no stores or shops. It is a praiseworthy achievement in planning that provides occupants with many most-wanted features. The entire main block is supported on seven pairs of exterior columns. Each floor is a wide open area, unobstructed by pillars, and may be divided by movable steel partitions which are anchored into metal channels in ceiling grids. An adjoining 25-story windowless steel tower houses elevators, fire stairs, washrooms and other utilities. The cellular steel flooring, topped by lightweight concrete, carries air conditioning to perimeter floor grilles and electrical service and telephone wiring to all sections of the office floor. As are thousands of other expertly planned buildings, this new pace setter is completely equipped with Sloan Flush Valves.

Sloan Flush Valves
Famous for Efficiency, Durability, Economy

Sloan Valve Company • Chicago • Illinois

Another achievement in efficiency, endurance and economy is the Sloan Act-O-Matic shower head, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the Act-O-Matic—the better shower head for better bathing.

Write for completely descriptive folder
RUSCO Window Modernization

Improves Appearance, Comfort and Maintenance
In 1 to 2 Hours Per Opening

Custom-fitted Pre-assembled Windows and Frame Liners Eliminate Scaffolding, Gutting ... entire installation is made from inside. Interior trim is undisturbed.

Tenants are happier with cleaner, more comfortable space. Rusco's "Easy-slide" feature eliminates window operation complaints. Optional insulating sash helps maintain a 15° differential in summer, draft-free comfort in winter, and provides draft-free ventilation.

Heating—cooling—maintenance costs go down because Rusco's felt weatherstripping stops infiltration. All glass is removable for washing inside.

There is a Rusco Replacement Window to meet your architectural requirements. Satin finish aluminum or hot-dipped galvanized steel with baked-on enamel for low maintenance and long wear.

THE F. C. RUSSELL COMPANY, Columbiana, Ohio
In Canada: Toronto 13, Ontario
Write Dept. G-2 for further Window Modernization information.
The decorative versatility of these functional ceiling materials helps make ideas "come alive."

Architects everywhere... working with expert Acousti-Celotex distributors... are creating new beauty in architecturally pleasing room and ceiling designs while solving functional problems in noise control.

Such planning freedom results from a wide range of products and installation systems. Acousti-Celotex products integrate with heating and air conditioning equipment, Celotex Acousti-Lux translucent panels or other lighting systems... enhance any design motif.

Your Acousti-Celotex Distributor is a man you should know. He has worked with architects on every type of project. His experience and the facilities of his trained service organization are always available. You'll find consultation with him, right from the start, helpful and profitable.

Directors' Room, Bank of Texas, Houston showing ceiling of Acousti-Celotex Cavity Tile on a T & T® Suspension System.
Architects: Duryea & Elkins—John A. Greening Associated Architects.
Acousti-Celotex Contractor: Straus-Frank Co., Houston.

**Specifications:** Write for portfolio of specifications, including detail drawings, covering this and other ceiling assemblies and Acousti-Celotex applications.

---

**Sound Conditioning** Products to Meet Every Sound Conditioning Problem... Every Building Code—

The Celotex Corporation, 120 S. La Salle St., Chicago 3, Ill. • In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec
Flour City Balanced Doors of aluminum and tempered glass are a prominent feature of this sparkling aluminum entrance—also by Flour City.
In the modern new Onondaga County Office Building in Syracuse, New York—as in more and more buildings across the country—planners used the complete line of Pass & Seymour wiring devices for super-tested, thoroughly proved trouble-free performance.

The famous precision-engineered P&S 20-AC1 Switch was among the devices chosen. It operates quietly, yet electrical contact is firm and positive. Can be used at full-rated capacity on fluorescent and tungsten filament lamp loads. Features positive kickoff, back or side wiring terminals, oversize long-life silver alloy contacts.

The P&S 1530 Duplex Outlet was picked for its long heavy-duty life. Rated at 15 Amperes, 125 Volts, it features precision-formed double grip contacts, T-slots and washer ears. Strap is enclosed and completely insulated for extra protection.

Intensive research, expert engineering and more than 67 years of specialized experience are behind every Pass & Seymour device. Their long-life, low maintenance reliability will add to your reputation.

For information on any of the long line of dependable P&S devices, write Dept. PA-258.
Gold Bond Metal Lath Centering

You combine a rigid pouring form with excellent slab reinforcement when you specify Gold Bond ¾" Rib Lath for centering in poured concrete roof and floor slabs.

Gold Bond® ¾" Rib Lath offers exceptional reinforcing for concrete because it is mechanically bonded to the very bottom of the slab—the place where tension stresses are greatest. And there’s no need for stretching or erecting costly temporary bracing—the lath is simply laid across the joists and easily clipped in place.


RIGID REINFORCEMENT

Gold Bond
BUILDING PRODUCTS

NATIONAL GYPSUM COMPANY
PHILADELPHIA HOST TO P/A AWARDS DINNER

Winners in P/A's Fifth Annual Design Awards Program gathered from all parts of the country on January 10 and 11 to receive and discuss their Awards and Citations at a two-day meeting in Philadelphia, Pennsylvania. On the evening of the first day a reception and banquet were held at the Bellevue-Stratford Hotel, co-sponsored by the Philadelphia Chapter, AIA, and on the second day a Seminar discussion of the five Award-winning projects took place at the University of Pennsylvania, co-sponsored by the Department of Architecture of that institution.

P/A's Design Awards Program (the results of which, for 1958, were reported in full in last month's issue) is conducted
yearly to honor work in the design stage, with its stated purpose to "give recognition to good design in the period of design development, rather than after completion, in order to encourage the designers and owners of the projects so honored." The presentation dinner, customarily held in the home town of the winner of the First Design Award, this year paid tribute to the firm of Robert Geddes, Melvin Brecher, and George Qualls for their top-Award-winning housing project, and also called attention to the two Citations won by the Philadelphia firm of Vincent G. Kling and his Associates, and pointed up the fact that Philadelphia has had many winners in past Design Award Programs as well. The Philadelphia Chapter, AIA, was a most warm host to the assemblad group. Not only did Chapter President John Carver, Program Chairman Harry Kale, and others help plan and conduct the banquet; the Chapter feted the visiting architects again with a cocktail party after the Seminars.

The roster of guests included not only almost all of the Award and Citation winners (many, photographed during the reception, shown on these pages) and four of the Jurors (Arthur Davis, Carl Koch, I. M. Pei, Dean Henry Kamp-hoefner) but also many local civic leaders, including William Rafsky, the Mayor’s Development Co-ordinator, and a number of clients of premiated projects, such as the City Manager and Vice-Mayor of Norfolk, Va. (for Vincent Kling’s and Oliver & Smith’s Civic Center), Dr. Carroll Johnson, Superintendent of Schools of White Plains, N.Y. (Perkins & Wills’ client) and, among others, members of the Delaware County Housing Authority who commissioned the top-winning project.

On the second day an articulate, analytically critical group of architects went over in detail the five Award-winning projects. These discussions, tape recorded, will be published in P/A during the year: the presentations by the originating designers, the critiques by Jury members and University of Pennsylvania faculty (Dean Holmes Perkins himself taking one), and discussion from the floor. Basic problems in architecture—scale, unity, structural expression, social application, and others—came into the analysis, always (the great distinction of these Seminars) in relation to specific, work-in-progress projects.
As in past years the group broke up reluctantly, and only after further hospitality in several local architects' homes. The combination of good fun and serious purpose among those who gather for these annual affairs has quite apparently established a tradition of unusual, high-level conviviality unique among architectural gatherings.

At the dinner, after the projects had been shown in slides and the presentations had been made, the Jury Chairman, Henry Kamphoefner, Dean of the School of Design, North Carolina State College, spoke to the gathering in words of congratulation—but distinct warning—that drew serious applause. Pointing out that the Jury members found much work of high quality, which made them happy with the results, Kamphoefner warned of two things: "First is the rather shocking amount of mediocre work from so many offices, including some of the first-rate firms; second is the tendency . . . to permit single forces to dominate design . . . ."

"I think we all sadly realize," he said, "that the architect was not a respected professional man in American society in the early part of the 20th Century . . . in the Beaux Arts system as practiced by the leading schools of architecture 25 years ago, the emphasis was on a shallow esthetic based on form, and that effort was further strangled by a desire to win the competition . . . ."

Pointing out that "architecture (with architectural teaching) has made giant steps in the middle of the 20th Century," the Dean emphasized that nevertheless "the position of architecture in society is in jeopardy if the great body of our profession accepts the thesis that solutions to architectural problems can be found by concentration around a single idea."

Kamphoefner concluded: "To be led to believe that great architecture is based on a single element or design alone, such as structure, or . . . any other dominant factor of design to the exclusion of other considerations . . . is going to force the public to look at us with distaste and a jaundiced eye . . . . We need to broaden the base of our efforts . . . . As we encourage adventure, experiment, research, and creativity in architecture, we must not lose sight of the essential character of our obligation—the total solution of the whole complexity of problems that face us in contemporary society."
**a news bulletins**

- Determined campaign of alert preservationists against mandatory demolition of historic East Front of Capitol in Washington, in course of impending alterations to that landmark, has gained fresh impetus from new bills introduced in both Senate and House and referred to Public Works subcommittees. Architects in charge now would be permitted to preserve the facade created by Thornton, Latrobe, and Bulfinch. Now is the time for interested persons to rush appeals to their Senators, Representatives, and the subcommittee chairmen: Sen. Pat McNamara of Michigan and Rep. Robert Jones of Alabama.

- American Registered Architects, Inc., founded two years ago by a group of Georgia architects headed by Wilfred J. Gregson, Atlanta, now is conducting a national membership drive hoping to enroll all registered architects and establish a Regional Director for every State.

- Recently announced by Spyros P. Skouras, President of 20th Century-Fox Film Corporation, are master plans for "Century City" (below), 176-acre redevelopment program in Los Angeles. The project—involving tall office buildings, multistory apartment buildings, garden apartment, shopping center, 1000-room hotel, restaurants, and parks—is to be built on a portion of the film company's 284-acre property, immediately west of Beverly Hills, between Santa Monica and Pico Boulevards. In addition, there will be a film-industry center, including an office building, exhibit hall, motion-picture museum, and multipurpose auditorium. Architects and land planners for gigantic, $400 million development are Welton Becket & Associates (see also FINANCIAL NEWS). On remainder of land, 20th Century-Fox will construct new sound stages and offices. Interestingly, first unit scheduled for construction in Century City will be world headquarters for the Becket office. Don Becket is Project Architect; planning is by William Brownyard and James Pulliam.

- John Knox Shear, Architect, Educator, Author, and Editor of Architectural Record died Jan. 10 at Princeton, N. J. after a brief illness. He received architectural degrees from Carnegie Institute of Technology and Princeton University, and prior to joining Record in 1955, was head of Department of Architecture, Carnegie Tech., also practicing architecture in Pittsburgh.

- Notice has been received of the death during December of Frederick Law Olmstead, noted Landscape Architect, in Malibu, Calif.; of Walter P. McQuade, former Chief Architect for Port of New York Authority and former Editor of The Architect, in New York; of Arthur D. McVoy, Architect-Planner, in Baltimore; and of Prof. Hans Hofmann, in Zurich, Switzerland.

- Plans for a vast urban, rather than suburban, shopping center have recently been completed by John Graham & Company, Architects-Engineers, of Seattle and New York. Lloyd Center (below) is to be built in "T" form with more than 100 stores on either side of two shopping malls. Major drawing points—department stores, super-markets, junior department stores, and high-fashion stores—are to be at extremities of each mall. Three parking and shopping levels are to be interconnected by 36 escalators. Undercover parking has been provided for 8500 cars; service and deliveries to stores will be from underground or roof tops.

---

![Image of Lloyd Center and Century City](https://via.placeholder.com/150)
• Research Center for Tile Council of America, Inc., has recently been completed on site near Princeton, N. J. Designed by O. Kline Fulmer, Architect, building was planned for research operations of 26 members of Council. In designing the structure, Fulmer used ceramic to its fullest extent. Exterior panels (right) of brilliant red, blue, yellow, mellow taupe have pattern of small white units to establish rectilinear appearance of tile. Interior design utilizes ceramic mosaics, quarry tile, ceramic tile patterns. Woods were selected to complement tile applications.

• Following trend of establishing branch offices, Parke-Davis has announced construction plans for 1958 completion of new structure at Skokie, Ill. Designed by Yamasaki, Leinweber & Associates, Birmingham, Mich. Architects, one-story office and warehouse (right) will feature reinforced concrete roof, brick walls, large expanse of glass. Office area will be 6000 sq. ft.; warehouse space, 40,000 sq. ft. Building to cost $500,000 will be set on 3-acre site.

• Joseph Young, muralist, and author of "Course In Making Mosaics" (Reinhold, 1957) will teach at Positano (Italy) Art Workshop and Institute of Industrial Design (Haifa, Israel) this summer, and will conduct "Italian Mosaic Tour" in June.

• Two winners of 7th annual $5000 Frederik Lunning Prize for talented young craftsmen in field of industry arts and crafts are Erik Hoglund, Sweden, and Hermann Bongard, Norway.

• 1958 LeBrun Fellowship Prize Competition is now open to architects from 23-30 years old. Prize of $3000 for travel abroad will be awarded for best design of a Memorial Exhibition Building in environs of an open square in city of approximately 100,000 population. Program may be obtained from LeBrun Fellowship Committee, New York Chapter, American Institute of Architects, 115 E. 40 St., New York 16, N. Y.

• Most interesting roof raising in recent years took place Jan. 3 when 1150-ton steel-grid roof of cadet dining hall (below) at new Air Force Academy was put in position. Roof was raised by lift-slab methods onto supporting 16 "X" steel columns. First raised to one-in. above columns, temporary timbers supported roof while final welding was accomplished. Stainless-steel ball-and-socket joints top each column, to allow roof movement. During erection by American Bridge Division of U. S. Steel Corp., hydraulic jacks placed on top of columns turned nuts which drew up bolts attached to roof beams. Operation took about six hours.
Robert Louis Stevenson, in one of his less-known stories, told about the ups and downs of "a leather business." At the end of a fiscal year, its owners embarked upon a carefully charted policy of expansion. All they succeeded in expanding were the liabilities. A twelve-month later, endeavoring to profit by experience, they decided upon a drastic plan of contraction. But all they contracted were the profits. In similar ironic vein was the 19th Century narrative of the credulous householder who wagered with a couple of traveling swindlers that he could announce for five minutes every swing of his clock's pendulum. He sat wagging his finger and repeating, "Here she goes—there she goes!" while the miscreants sneaked off with his money. We are reminded of these anecdotes by official and quasi-expert efforts to resolve today's conflicting economic trends: expansion-contraction, here and there, while inflation and deflation successively deplete the nation's savings.

- Municipal bonds continue their upward path. This speaks well for 1958's city and county building outlook. As an example featuring a thinly populated region in the smaller brackets: Clark County, Nevada, last month floated a courthouse bond issue on as low an income basis as 2½% to 4½%. Four new issues totaling some $250 millions were floated around New Year's, as listed in the Bond Buyer's Major Accounts. Bond Buyer Average income-yield basis was down to 2.85% for 20 typical bonds.

Evidence of the up-climb in personal savings—much of it finding its way into mortgages—is furnished by the announcement of a $1.35-billion net increase of mutual-savings-bank deposits during 1957. Total deposits made for that year reached a record high of $21.7 billions. These banks, says the executive vice-president of their national association, now hold a larger percentage of their assets in mortgages than at any time since 1930. Savings deposits remaining in banks of every sort totaled $87.5 billions at '57 year-end, a net rise of $7 billions or 9%, as compared with $4 billions or 5% in 1956.

- Perhaps the most notable of current efforts to encourage expansion is put forth by FHA as a tonic for residential sales. Under the new rules, buyers are granted more mortgage money in proportion to their income than under last year's procedure. Belief is expressed by FHA Commissioner Norman Mason that more families than formerly can meet payments for housing expenses. A $550-a-month family can afford, officials think, to spend about $143 a month for housing compared with $132 in the past; and a $650 family can shoulder around $163 as against a former $141. Such
families, who have been lucky enough to keep their jobs in the midst of the current firing wave, should find shelter-encouragement under the new ruling. Meanwhile, builders and realty men note an improvement in the January residential market.

The phrase "pump-priming"—20 years moribund—has been dusted off to describe the $177-millions additional boost authorized at the turn of the year for mortgages on "armed-service-family housing." Reckless nonprofessional building will, it is hoped, enter into the picture less than formerly, since the recent severe lessons in such wildcat practices.

- Shift from transitory to permanent assets is exemplified by the decision of Twentieth Century Fox to erect a planned city in the Los Angeles area on all but 79 of the 284 acres now used by that concern as a movie production lot. Improvements will include four office buildings, a 1000-room hotel, a large auditorium, a shopping center and 3 million sq ft of apartment-building space for a 15,000 population. An insurance company will provide the greater part of the $25-millions cost. The durable dwellings and commercial structures which will arise in place of plaster sets may be symptomatic of a major evolution. The change began a very few years ago with the decline of shoddily depreciating construction in favor of highly durable combinations of concrete, glass, and metals. In step with such a development is the substitution of long-term amortized mortgages for short-lived obligations that face hazards of renewal every half decade. Financing as well as construction is becoming more and more durable. (See also NEWS BULLETINS.)

- A second financial system, rivaling in magnitude the combined asset structure of all banks, is revealed through a report released in mid-January by the National Bureau of Economic Research. Prepared under the egis of Princeton University and entitled, Federal Lending and Loan Insurance, the report is the first document to collate all such activities into aggregate figures. Lending and loan insurance by Federal and Federally sponsored agencies is shown to have reached a total of $138 billions in the decade just ended. The authors of the report conclude that Federal housing-credit aids have promoted a decrease in the average size of homes and in the number of rooms per dwelling.

- Have the suburbs developed too far and too fast? Has this development been at the expense of the urban areas? Will the next tide flow back into the cities? These questions are posed by a long established New England real estate authority, which urges "wise and integrated planning" in answer to the first query, and says "yes" in reply to the second. The cities, we are reminded, offer much that the suburbs cannot give and their waking up to this fact may result in a reversal of tendency. Respecting the cities, we may add that in times past—as in the 30's—an economic downslide has been checked not by suburban but by urban development. At this moment, we see great present and prospective activity in office-building construction, with consequent brightening of outlook for basic materials and industries.
by Frederick Gutheim

The critical vocabulary is lacking to describe the showy monument to Simon Bolivar designed by Sculptor Felix de Weldon installed here last month according to plans by Luis Malassena of Caracas; Favrot, Reed, Mathes & Bergman, of New Orleans; and Faulkner, Kingsbury & Stenhouse, of Washington. (I should add that the project is under the direction of the Venezuelan Ministry of Public Works.) Standing in a small triangle of land between Paul Cret's two buildings of Pan American Union, immediately south of Waddy Wood's Interior Building, the heroic equestrian statue is set in elegant surroundings of marble paving, formal pools, and lavish planting. One can easily imagine the Fine Arts Commission, whose offices adjoin the monument, gleefully greeting this revival of uninhibited high design. The government of the Venezuelan dictatorship, which has recently weathered one revolt and still appears wobbly and woozy, has certainly pulled out all the stops. Weldon, whose flamboyant and super-heroic Iwo Jima monument here can only be compared to modern Soviet military sculpture (as in the East Berlin cemetery), is perfectly in command of the situation. Another work of undoubted popularity has been born. I confess, however, to a greater interest in this project as an example of the intensively designed and richly developed urban park, of which the garden of the Museum of Modern Art, Pittsburgh's Mellon Square, and the Rawlins Park on the north side of the Interior Building here are examples. There is a real need for such "parkitecture," and we should be glad to have it at all instead of receiving it too critically.

A considerable volume of architecturally interesting work has been currently exhibited by National Park Service. Most of it is embraced in the "Mission 66" program, designed to prepare the parks for an estimated 80,000,000 attendance in 1966. The typical national park requires roads, bridges, and parking lots to make it accessible. The key building is generally a visitors' center, where some form of orientation is provided, as well as lavatories, lounges, and other reception facilities. In more elaborate installations, museums will be included. Offices, staff residences, facilities for educational talks [both indoor and outdoors], and a variety of utilities and service buildings are other parts of the equipment of a typical large park. The trend in park architecture seems to be away from the log-cabin type of structure that was supposed to blend with the background into invisibility, and toward a more positive type of design that achieves its effect by contrast. I was especially impressed with the new buildings going up or proposed for Grand Teton, Yosemite, and Dinosaur parks. The San Francisco firm of Spencer & Ambrose has done an outstanding visitors' center at Grand Teton and an excellent lodge at Yosemite. Both seem to have met the demands of large occasional crowds without creating facilities that are startlingly empty the rest of the time. Anshe & Allen designed the visitors' center in Dinosaur National Monument, one of their boldly aggressive structures. Yellowstone has a very good motel, designed by Welton Becket & Associates, and a visitors' center by Hurt-Trimbell-Caprat. Another San Francisco firm, Malone & Hooper, designed at Grand Teton one of the most satisfying buildings in the program. A couple of years back P/A gave one of its Design Award citations to the visitors' center at Coquina Beach, and the color photographs of this structure confirm the earlier expectations of a first-rate job. Everglades National Park contains an array of residences, utility buildings, and other structures by Park Service Architects John N. Cabot and Donald F. Benson that set a high standard for such buildings. Other notable work at Mount Rushmore National Memorial, Great Smoky Mountains National Park, and elsewhere was noted.

- The foggy future faced by General Services Administration's "lease purchase" construction program has cleared a little with the brisk response to the elimination of its 4% interest ceiling. Bids ranging from 4.74% to 5% for long-term investment have been received. Pending analysis of the bids on 10 projects, 90 others in the stalled program may be released for bid. The big question is still Congressional attitude on the program, whose principal attraction is that of any installment buying scheme—the low down payment.

- With the actual removal of Atomic Energy Commission to its new headquarters 20 miles northwest of Washington, questions concerning the ability of its employees to deal with extraordinary transportation and housing problems should be resolved. The National Security Agency's earlier move did not involve such a drastic distance, and other Federal agencies whose problems will be similar to AEC's are watching this with interest. So far, most of the AEC people have elected to try car pools as their way out, but a substantial number is cautiously exploring the possibilities of building in the area. A subsidized bus system seems to be meeting the immediate need, but titanic commuting is the alternative to AEC's determination not to get into another "company town" operation like Oak Ridge, and any more comprehensive approach to the housing question that would involve a new town has been firmly rejected.

- Further development of Gallaudet College, Washington's unique higher education institution for deaf mutes, includes a classroom and laboratory building designed by William N. Denton, Jr., and a banjo-shaped building containing classrooms and offices by the architectural firm of McLeod & Ferrara. The institution, just a hundred years old, is named for Dr. Thomas Hopkins Gallaudet, pioneer teacher of the deaf, whose son was its first superintendent.

- As generally predicted, the Administration's first direct step to counter the economic slump was to liberalize housing credits. Military housing, co-operative housing, and slum clearance were the beneficiaries of the Presidential order. Biggest and most immediately effective was the authorization to the Federal National Mortgage Association to buy mortgages on 11 military-housing projects.
NEW SINGLE PEDESTAL DESIGNS BY EERO SAARINEN.

MAY WE SEND YOU AN ILLUSTRATED BROCHURE?

KNOLL ASSOCIATES, INC.  FURNITURE AND TEXTILES

575 MADISON AVENUE, NEW YORK 22

BOSTON, CHICAGO, DALLAS, DETROIT, MIAMI, SAN FRANCISCO, WASHINGTON, PUERTO RICO
Adlake
America's Finest Windows

Only Adlake combines these 6 basic advantages:

- No warp, no rot
- Minimum air infiltration
- No painting, no maintenance
- Fingertip control
- No rattle, stick or swell
- Guaranteed non-metallic weather stripping

Also, Double-hung Windows with Patented Serrated Guides

Building—U. S. Fidelity & Guaranty Co., Richmond, Va.
Architect—Henry Weller, Jr.
Contractor—Daniel Construction Co.
Type—Adlake Curtain Wall Windows

The Adams & Westlake Company
NEW YORK  ELKHART, INDIANA  CHICAGO
Big-City Practice Stresses Human Values

Architects Associated, New York, New York
The New York firm, known today by the awesome name of Katz, Waisman, Blumenkranz, Stein, Weber, Architects Associated, started out very modestly in October 1944, when Sidney Katz and his wife Taina Waisman rented a tiny office at 101 Park Avenue. All drafting equipment "as well as a full measure of encouragement" was given to them by Antonin Raymond, for whom both had worked at an earlier date. From the beginning, the long-range goal was to develop the office until it was ready to undertake major design and construction projects in New York. In addition to the trickle of residential and commercial work that came to them in the early years, there was "a huge effort to win some competition money." Success in this line came with the winning of First Prize in both General Motors and American Gas Association contests. Today, the firm has an impressive list of such distinctions.

In 1945, Joseph Blumenkranz, Architect and Hospital Consultant, who had served as Senior Hospital Architect for New York and the Government of Puerto Rico, joined the firm. Following World War II, Richard Stein and Read Weber joined the firm. He was fresh back from service with Army Engineers, and she had worked several years with Frank Lloyd Wright and subsequently with William Lescaze. In 1948, the firm found it could not legally use a shortened name. Hence, the "tongue twister."
There was never any question but that the practice would be in New York—for two solid reasons: the members of the firm like New York, and "it is our community." And all feel that "nowhere are the problems more challenging; the need greater; and the solutions more basic." They like the stimulation of participation in its busy cultural life and the unique accumulation of persons working creatively in all the arts. They readily admit that in a city of this size competition for commissions is intense and office space limited and comparatively expensive. Nonetheless, "New York's problems—planning and sociological problems—are our problems, and we are concerned with their solutions."

Architects Associated feel strongly that in approach to design, every building needs painstaking study, careful planning, sound structural analysis, realistic cost studies and—a point they stress—intense concern for the people using it. They strive for "a major form and structure that is strong and comprehensive, related to the major program requirements and structural demands. It must provide the spaces, the volumes that are most satisfactory for the building's intended use. . . . The work of the finest painters and sculptors, working with the architects, must be included."

The present office force consists of a dozen technical employees; a bookkeeper, three clerical employees, and the six principals—five architects and an engineer. When a new commission arrives, "we decide jointly who will handle it as the partner-in-charge. He or she is responsible for it thereafter though under constant review of all the partners."

The practice has included hospitals, schools, health centers, dormitories, housing, factories, stores, showrooms, shopping centers, residences, and offices. "At present, we are working on Bellevue Hospital; a hospital for the chronically ill connected with a home for the aged; a large municipal housing project; an elementary school; a school for emotionally disturbed children; a small department store; and a foreign-car showroom. . . . The work on the boards aggregates more than a hundred million dollars—somewhat more than there has been in the past. . . . We enjoy the diversity of the practice and would prefer to increase the diversification rather than limit it."

Three of the partners teach at either Pratt Institute or Cooper Union. One or more members are active in the AIA; the Citizens Housing and Planning Council; Chelsea Neighborhood Planning and Re-development Commission; and neighborhood groups. "We feel that the young people entering the profession are of great importance, and their education to introduce them to the highest level of professionalism, a responsibility of the whole profession." To that end the firm gives an annual tuition scholarship at Pratt to permit deserving and talented students to go into graduate study.
In this factory for Bloomington, Indiana—incidentally one of the few buildings designed by Architects Associated erected outside the New York region—the client wished to centralize all of his manufacturing operations. The plant was to be built speedily, and at minimum cost. The objective was achieved by a 250,000 sq ft production plant for 2000 to 3000 workers erected in nine months at a cost of $4 per sq ft. Facilities comprise not only the spaces required for the manufacture of electronic parts, but also areas for medical, social, and recreational use for factory personnel as well as members of the community. A large hall doubles as dining room for 1000 employees and a community hall for movies and dances. Construction consists of steel barrel vaults which gave extra height at no added cost, and, with blanket insulation sandwiched between the double roof skin, gave the desired insulative quality for a climate of extremes. Warm-air distributors were specified to heat the area in winter, and to supply air changes during the summer. Acoustically, the barrel vaults were found to be highly suitable since production noises were contained within each bay. Benjamin L. Spivak was Mechanical Engineering Consultant; Jerome L. Strauss, Plant Layout Consultant.

For Construction Outline, see page 226.
In this instance Architects Associated not only translated the building requirements into architecture but established, together with the client, the basis for a new merchandising process and shopping environment. Customers in this recently opened store may select from specially designed sales racks which incorporate both display and stock; or may be directed to stock-room windows for special items; and leave the store past checkout counters not unlike those in a supermarket. Departures which mark this new store in West Orange, New Jersey, from the conventional department store are the following: 1. complete elimination of sales counters in favor of steel fixtures for merchandise display, wrap-up counters, package consolidation points, checkout counters; 2. strong regularity of plan to provide order despite great profusion of merchandise; 3. use of color as an aid to identification of individual departments. Merchandise, however, is seen against white, gray, or black. 4. high intensity lighting at merchandise level, moderate intensity at ceiling; 5. uniformity of all graphic markers and lettering throughout the store; 6. consistency in design details of such items as pintickets, labels, binning strips, shopping bags. Typographic standards and display symbols were developed by Ladislav Sutnar; a sculpture by Costantino Nivola; nonpermanent display by Tom Lee.
Sales fixtures (above) are designed for display of merchandise as well as storage of wrapped articles for self-selection. On completion of shopping tour customers pass check-out counters (left). All lettering is co-ordinated using specially designed lower-case letters—bold italics for logotype, and vertical sans-serif type to convey information.
Bay View Houses in Brooklyn were constructed by the New York Housing Authority in an effort to alleviate the shortage of middle income housing. Under this program funds are provided by the City and repaid entirely by rentals. Of the 30 acres adjoining a seaside park, 25 percent is covered by the buildings, the remainder is devoted to playgrounds and parks. "In order to avoid the institutional quality of the vast housing project," write Architects Associated, "we broke the area into four neighborhood quadrants, each with its own central playground, sub play and sitting areas. The visual result is gratifying—from the center of each of these areas the scale becomes more human and intimate." Each quadrant has been given an identifying color—yellow, blue, brown, green—for balcony columns, glazed brick patterns, lobby trim, numerals, and signs. Screened balconies, their first use in city-sponsored housing, are for the use of the nine families on each floor. For economy and freedom in apartment planning a flat-slab and reinforced-concrete framing system was chosen. Exterior walls are cavity brick and block construction. Plaster is applied directly to the blocks on the interior. Structural Engineering Consultants, Farkas & Barron; Mechanical Engineering Consultant, Guy B. Panero; Landscape Consultants, Clarke & Rapuano; Lettering, Arnold Bank; General Contractor, C. E. Youngdahl.
co-operative housing
Mutual Apartments, Inc., a 160-unit cooperative housing development in Brooklyn, New York, was built under the provisions of New York's Mitchell Lama Law. Under this statute the State may lend 90 percent of the development cost to private developers for the purpose of building limited profit housing for the moderate income level. A small number of the apartments have been specially designed for the aging. The relatively small and flat site left little choice in the placement of the building. However, considerable thought was given to making the limited area as useful and attractive as possible. To further this cause, Costantino Nivola was asked to collaborate in the design of playground sculpture (below) and to study the use of color in the project. Color has been introduced at slabs and dividing walls of all balconies. Structurally the building is of interest for employing pre-cast concrete wall panels—the first use of prefabrication techniques in multistory housing in this area. The panels are 8" thick and have an integral interior and exterior finish. Sizes of the panels vary from 3'-6" x 4'-0" to 4'-0" x 10'-0". Part of the reinforced concrete frame has been left exposed. Window frames are of aluminum. Architects Associated were assisted by Structural Engineers Fradoli-Blum-Yesselman; Mechanical Engineer C. J. Wurmfeld; Landscape Architect Leo Novick; Reinstein Construction Co., Inc., Builder.

February 1958 109
One of the most intricate design problems which Architects Associated have had to solve was this vocational school for 2000 boys in Brooklyn, New York. Not only was it necessary to overcome the physical limitations imposed by a restricted city site, but also the complexities of the mechanical and pedagogical program as well as psychological considerations. "To combat the prevalent misconception that this was a step above a reform school," write the architects, "we felt it was necessary to make the environment as dignified, inspiring, and significant as we could." This wish is evident in every facet of the school—in the articulation of the architectural spaces, in materials and colors, in the attention given to details such as display cases and lettering, and above all in the inclusion of two major pieces of art, a sculpture and a mosaic mural. The vocational training shops were the subject of a special study by Partner Jerome L. Strauss, in co-operation with representatives of the Board of Education. Shops were generally placed in proximity to academic classrooms so that psychologically, as well as physically, theory and practice will be closely joined. Other criteria in planning the school were separation of the areas to be used by the community, integration of gym and play fields, and place-
ment of noisy shops away from the street. These considerations, with other restrictions such as location of existing sewers and roads, determined the distribution of the building elements. Heavy loads, large spans, and poor soil conditions requiring pile foundations, made steel a more economical structural material than concrete. Columns in the classrooms and shops are set back from the exterior wall to allow heat risers to pass unobstructed, and maintain wall-to-wall fenestration.

Besides the architects, who in 1955 received a P/A Award Citation for the design of this school, the following contributed to the success of the completed structure: Charles J. Bensley, Chairman, Committee on Buildings and Sites for Board of Education; Dr. David H. Moskowitz, Associate Superintendent, Division of Housing for Superintendent of Schools; William H. Correa, Superintendent of School Buildings, Design and Construction; Michael L. Radoslovich, Director of Architecture; Carl A. Peterson, Chief Engineer for the Bureau of Construction. Farkas & Barron were the Structural Engineers; Benjamin L. Spivak, Mechanical Engineer; Michael J. Kodaras, Acoustical Consultant; John C. Mason, Food Service Equipment Consultant; Leo A. Novick, Landscape Architect; Caristo Construction Corporation, General Contractor.

Main entrance (right) forms a link between classroom/shop/administration wing (below) and block containing gym, auditorium, and cafeteria. Letters mounted on entrance canopy are of cast aluminum, designed by Arnold Bank. Cast concrete sculpture, mounted on limestone-faced wall of auditorium, is by Constantino Nivola. A mosaic mural by Ben Shahn, located above entrance to gym and auditorium, is visible in view from Coney Island Hospital (acrosspage, also color photo). Major exterior materials are brick, limestone, aluminum, and porcelain enamel.

Photo: Ezra Stoller
1. conference room
2. principal
3. secretary
4. evening school office
5. teachers' suite
6. administrative assistant
7. guidance suite
8. waiting room
9. general office
10. record file
11. custodian
12. record vault
13. supplies
14. receiving
15. incinerator
16. food serving
17. dishwashing
18. auditorium
19. choral room
20. music classroom
21. instrument room
22. fan room
23. instructor
24. storeroom
25. coat check
26. emergency room
27. office
These areas, also intended for community use, may be partitioned off from classroom/shop/administration wing. Main lobby (acrosspage left) is dramatic skylit space with broad ramp leading to auditorium (below) and gym (right). To avoid maintenance problems, corridor walls are surfaced with plastic-coated concrete block; lobby and cafeteria columns with stainless steel; floors with terrazzo, blue stone, concrete.

In the auditorium absorptive and reflective surfaces are carefully balanced. Materials included are masonry blocks with cellular-aggregate, sprayed ceiling finish protected by colored vinyl skin, ceiling baffles of white plaster, and fireproofed plywood with acoustic backing.

The gymnasium combines plastic-faced blocks in vulnerable areas with blocks of lightweight masonry above. A series of Vierandel trusses support the roof structure. Lightweight concrete channel slabs form the roof decking.
A total of 32 shops is provided in the three-story classroom/shop wing and a fourth floor, to be added later, will provide vocational training facilities for 500 girls. Floors have double-loaded corridors with shops on one side, related academic classrooms on the other. Store rooms, lockers, and mechanical spaces serve as sound buffers. In shops and service spaces, masonry blocks have been left unpainted and the structure left exposed.

Structurally, the spatial needs in the classroom and shop wing were answered by a noncontinuous steel frame in which the typical bay spacing stops at the corridor. Shops have an unobstructed area of 35'x50' and were designed for a live load of 100#. Heating is radiant on the lowest floor, conectors above, with unit heaters in special locations. Exhaust ventilation has been provided in classrooms, corridors, and toilets. Basic lighting is fluorescent with supplementary incandescent fixtures in certain areas.
West front of building (above) faces playground developed by Park Department. Cafeteria is at ground level and opens onto a terrace paved with colored concrete squares, and lined with trees and benches. Ramp leading to gym and auditorium is kept ice-free by radiant heat.

From main lobby (right) at the south side of the building stairs lead down to cafeteria; a ramp up to auditorium and gym; and exhibit gallery to classroom/shop/administration wing.
related design fields

the Work of Samuel G. Wiener, Jr.
"I try to make the available materials work to add interest and excitement to what might otherwise be plain and unenticing," writes Samuel G. Wiener, Jr., "or to use materials which will add to the richness, or beauty, or fun in the visual experience of the building."

Wiener has long been interested in architecture. He studied architecture before graduating from Yale as a painter in 1951, and worked as a draftsman in an architectural office. His father and uncle are architects; architecture was everyday conversation in his family. This intimate familiarity with building determines, perhaps, the artist's conviction that "art should make the architecture more beautiful, not that the building is a fine frame for my art."

In addition to many collaborations with his father and uncle, he has worked on architectural commissions with Percival Goodman; Mayer, Whittlesey & Glass; Michael Radoslovich, Director of Architecture for Board of Education of City of New York; Daniel Schwartzman, and others.

The finest instances of the amalgamation of art and architecture, he feels, are the monuments of the Mediterranean region which he visited while on tour with the Navy. Ravenna in particular exerted great influence on his work and gave added impetus and direction to this young artist, whose main concern is the total harmonic end result.

To enrich the interior of Congregation Beth El Synagogue in South Orange, New Jersey, designed by Davis, Brody & Wisniewski, Architects, Wiener designed tapestries (acrosspage below) using religious symbols as decorative motifs. In the glass side walls (acrosspage above) of the synagogue's sanctuary, the transition from brilliantly colored leaded glass panels through darker and lighter gray glass to clear glass at top solves problems of, 1. reducing heat load and glare (colored glass); 2. maintaining visual effect of roof floating (with view of roof overhang through clear glass); 3. small budget (minimum use of expensive leaded stained glass). Tapestry executed by Edward Fields, Inc.; stained glass by W. & J. McLoughlin Studios, New York.

Pair of mosaic panels (below and detail left) are bright focal points on brick interior wall of Marjorie Lyons Playhouse for Centenary College in Shreveport, Louisiana: Samuel G. Wiener, Architect. Photos (except as noted): Thurman C. Smith.
Entrance area (right) for Marjorie Lyons Playhouse employs fluted clear and amber glass panels divided by standard aluminum strips. Dark panels above door are aluminum.

Terrazzo floor (below) of Commercial National Bank in Shreveport, Louisiana, is in pattern of black, gray, and white. William B. Wiener, Architect.

Design for a free-standing exterior wall (above), for a public school in Shreveport, uses black and white structural glazed tiles inserted in sand-colored brick wall. Samuel G. Wiener, Architect.

Tower (right), designed to support lights for a Shreveport shopping center, was transformed into a daytime attraction by brightly colored porcelain enamel panels. Samuel G. Wiener and William B. Wiener, Architects.
Glazed terra-cotta relief tiles (drawing above) are designed to add texture to facade while maintaining rectangular quality of spandrel. Four different tiles, each approximately 1'x2'-6", form a varied pattern in the 8' spandrels. For Post Graduate Medical School, Louisiana State University, Shreveport. Samuel G. Wiener, Architect.

Mural (right) was painted directly on wall in oils. Colors are whites, grays, yellows, blues, and greens. Emile Cahn residence, New Orleans: Samuel G. Wiener, Architect.
Owing to the relative isolation of the far western regions of Canada, the authors of this article, PETER AND CORNELIA OBERLANDER, feel that architects, engineers, and artists have worked together more closely there than elsewhere, and that an architecture is emerging whose progress deserves watching. The Oberlanders have lived in Vancouver for a number of years and are presently practicing in the field of architecture, she as landscape architect, he as townplanner for one of the “new towns” and as Head of the Graduate Course in Community and Regional Planning, Faculty of Graduate Studies, University of British Columbia.

the spirit of architecture in the Canadian Northwest

British Columbia is Canada’s Pacific Northwest Region and covers an area of more than a third of a million square miles. By area, it is Canada’s third largest province and is more than twice the size of California. It is a region of great contrasts, with almost 40% of its territory covered by forests and only 5% arable. More than half of British Columbia is rocky and barren, some in Alpine meadows, snowfields, and glaciers; its highest mountains reach beyond 15,000 feet, and within the boundaries of the province one finds a great variety of climates, natural resources, and landscape. The latter ranges from wet and rainy coastal regions to desertlike conditions in the interior. Rainfall on the Coast in some places is in excess of 150 inches annually whereas only 100 or 150 miles inland, beyond the Coastal mountain range, the Okanagan Valley has less than 10 inches.

The natural resources of the province encompass a wide range of metals, woods, oil, and gas, as well as the traditional bounties of fishing and trapping. Lumber, fish, apples, hops, lead, zinc, and silver have traditionally been great export items for a province which can boast the largest single pulp and paper mill in the world, at Powell River, as well as the largest integrated mining and metallurgical operation in Trail.

Recent discoveries of nearly limitless oil and natural-gas resources in the province’s Peace River region have only just been tapped. The first major gas and oil lines are currently being completed and will bring their treasures to markets in B. C. and the Pacific Northwest generally. British Columbia is a young province. Just over a century ago, under the Oregon Treaty of 1846, the boundary was established between British Columbia and the United States. In 1871, British Columbia entered the Confederation of Canada; 15 years later the Canadian Pacific Railway was completed to the Pacific Coast, binding British Columbia to the rest of the Dominion.

Population growth has been rapid since then. Due to its early origin as a British Crown Colony and its mild climate, at least along the Coast, settlers of British stock predominated. Vancouver and, particularly, Victoria have always attracted people from England, Scotland, and Wales; in many ways the atmosphere of the old world has lingered on Canada’s West Coast longer than elsewhere across the country.

Significant aspects of B. C.’s population are its points of concentration and lack of wide distribution. Eighty percent of the million and a third people of the province live within the metropolitan areas of Victoria and Vancouver, and in the settlements along a hundred-mile strip paralleling the U. S. border. Consequently, the buildings reflecting recent developments in British Columbia are most readily found in these areas. Here are a high concentration of population, means of production, and ideas of self-expression, especially as they relate to the Architects and their designs. There are more than 250 registered Architects at present in British Columbia—nearly a 100% increase in professional registration since World War II. Where, in all this rapid and technologically astounding development during the past decade, stands B. C.’s architecture? To what extent does its architecture reflect the tremendous economic and social changes that have taken place or are currently in progress?

The widely known and unprecedented economic developments in B. C. have produced a vast quantity of buildings. This sheer volume of construction has enabled some architects to experiment with ideas, concepts of design, and materials and techniques of construction. History has shown that when architects are involved in a vast production of buildings such as we have just witnessed in B. C., out of the sheer quantity some quality emerges; and these buildings become pace-setters for the new forms and ideals in architecture.

British Columbia has often been considered Canada’s California, due to some similarity in climate and spectacular landscape. In that sense, buildings in British Columbia have often reflected architectural trends in California—particularly single family houses in their setting. It is important, then, to turn toward nonresidential buildings and examine their contributions to the gradual evolution of an architectural language characteristic, or at least descriptive, of British Columbia. In addition, the vast
B. C. Electric Company Office Building, Vancouver: Thompson, Berwick & Pratt, Architects; Otto Saff, Structural Engineers; Fred Severud, Engineering Consultant; T. W. Thomson, Mechanical Engineers; M. Thomas, Electrical Engineers; B. C. Binning, Collaborating Artist; Knoll Planning Unit, Furniture.

Photos (except as noted): Graham Warrington
economic changes that have taken place are most readily reflected in buildings of commerce and industry, where architects often enjoy a freer hand, unfettered by precedents, esthetic preconceptions, or romantic aspirations.

Vancouver's skyline has undergone some spectacular changes during the last three or four years—due to at least three new office buildings and one block of apartments. The Head Office Building of the B. C. Electric Company, located on one of the high points of the downtown area, dominates the central skyline. A considerable achievement in solving functional office requirements, it is Vancouver's first example of design synthesis. The curtain wall and its architectural expression have been combined with a sensitive use of tile mosaic to lend the vast building an appropriate scale.

An example of comprehensive design, it provided an opportunity for the Architects to serve the client fully by having complete control over the design of the building, including the design of furniture and equipment. Furthermore, it provided an occasion where a single-minded client, together with an energetic and sensitive architect, was able to enlist the skills of a painter, interior designers, and craftsmen to produce an integrated whole. As a commercial building, it has established a high benchmark of achievement for architectural form and design through collaboration among artists in B. C.

The new Burrard Office Building, a short distance from the B. C. Electric Building, affords a good study in contrasts in design and concept; whereas the B. C. Electric Building is reinforced concrete, the Burrard Building is steel. Both use curtain walls, but with vastly different results. The Burrard Building accommodates innumerable and separate offices, each with its own requirements, and, consequently, it was designed as an over-all framework within which individual tastes and designs were able to play their roles. Stores at street level, with offices above, make it a modern prototype of commercial building. It has a strong urban quality and contributes substantially to the downtown cityscape of the downtown area.
Along the same street is Vancouver’s **Customs House (2)** which, designed by the same architect as the Burrard Building, represents an interesting example of architectural kinship. It is a combination warehouse and office building, serving the regional needs of the Customs and Excise Division of the Federal Government.

**Georgia Towers (3)**, the tallest apartment building built to date, reaches 22 stories, and is oriented along a north-south axis. It provides a variety of small and medium-size apartments, all of them taking advantage of some aspects of the spectacular panorama of mountains, sea, and sky.

Buildings of a similar scale and impact on the skyline of a city can be found in **Victoria**.

Again, the **B. C. Electric Company (4)** built an office building to serve its requirements in that city. Here concrete was the structural material and the necessity of sun control was exploited for architectural purposes. The curtain wall has been reduced to an over-all grid pattern and aluminum shades running horizontally across the face of the building reveal the basic floor structure.

Office buildings elsewhere in the province are much smaller in size and seldom have the opportunity of affecting the overall skyline to any degree.

The office building for the **Powell River Company (1)** in Powell River is a good example. In its setting in a small town of 10,000 people, it represents an advanced architectural form and vocabulary often restricted to the bigger cities. The use of the curtain wall has set the tone for office buildings throughout the province to the same degree that it seems to have become the common architectural grammar elsewhere in North America.

In the **Lovick Building (5 and 6)** the curtain wall seems to appear in its purest form. It is applied to a small office building with relentless logic in a convincing architectural manner. The curtain wall and its glazing, in the inner courtyard of the building, establishes an immediate and full integration of outside and inside space.


Georgia Towers, Vancouver (3): Thompson, Berwick & Pratt, Architects; Otto Safir, Consulting Engineer.


Lovick Building, Vancouver (5 and 6): McKee & Gray, Architects; J. D. Nicol, Construction Engineer; Simpson & McGregor, Electrical Engineers; The Rankin Co., Ltd., Mechanical Engineers.
A special opportunity to develop a comprehensive architectural environment occurred when the Grosvenor-Laing Industrial Estate was planned and built. In 1951, the late Duke of Westminster chose Annacis Island, in the estuary-harbor of Fraser River, as site of the industrial estate. English planners, architects, and engineers produced the basic plan and detailed layout for the 1200-acre island; a causeway—with highway, railway, water, and gas connections—links it to the mainland.

The main objective was to provide a large, fully serviced area with every modern convenience for warehousing, bulk breaking, and packing plants; processing and cold storage facilities; assembling, finishing, or complete manufacturing operations. The Industrial Estate, developed on a lease-hold basis, has attempted, with considerable success, to create a pleasant atmosphere conducive to high productivity and low labor turnover; it provides banks, cafes, gas stations, and related services for tenants and their employees.

Considerable effort has developed a consistent architectural appearance for all construction on the island. The Estate maintains its own architectural and planning staff which is responsible for the design and execution of all buildings and structures, including street furniture and landscaping. It builds factories for specific needs of future tenants; or leases land for firms to build their own buildings; or, as a third alternative, provides rental spaces in various unit sizes within a large structure for young companies or pilot and branch plants of firms who wish to test the market before committing themselves to a full-scale operation. These rental facilities, known as standard factories or warehouse space, are available for short-term leases in units of 6000 sq ft working space plus 700 sq ft of office space facing the main street. Annacis Island Estate shows the success achieved, under single land-ownership, by determined architectural designers who completely control the development of an area, from design of buildings to flower pots and details of landscape arrangement.
architecture in Canadian Northwest

Grosvenor-Laing Industrial Estates, Annacis Island: Photos show restaurant forecourt with gas station in background (above); restaurant with custom-built factory in background (below); interior of restaurant with gas station in background (left). Massey Residence, West Vancouver (acrosspage right): Erickson & Massey, Architects.

Wong Residence, Vancouver (acrosspage below): Duncan McNabb & Associates, Architects; Harry Lee, Associate-in-Charge; Thorson & Thorson, Structural Engineers; Cornelia Hahn Oberlander, Landscape Architect.
Architectural achievement in British Columbia has often been demonstrated by single-family houses built in dramatic settings. The Massey Residence is a good example of such a building; sitting as it does on a rugged rock outcropping, relating itself easily to the natural environment by its very contrast with it.

There are many examples—the Wong Residence is one—where sensitive and detailed landscape attention has been paid to a small site within a typical town lot.

The large scale of the natural setting, within which so many buildings in British Columbia find themselves, threatens to dwarf them. This represents, if not an unique, at least a very critical challenge to the landscape designer and architect in choosing plant material, and in deciding on its relationship to the building and the outdoor functional spaces.
A variety of other buildings is included in this survey to indicate the considerable range of architectural design in British Columbia. In some ways, these buildings reflect the achievements of individual architects; and considered together they begin to form an interesting, and, in some instances, an exciting fabric of contemporary design. Some of the buildings are straightforward answers to specific needs such as schools or office buildings, banks, or churches, and in that respect are not markedly different from comparable work produced elsewhere in North America today. British Columbia, by its geographic location, has tended to think of itself as isolated, and in that context the development of a varied but completely contemporary architectural language as expressed in current buildings is of significance. There is some evidence that a sort of isolation, or at least separation, from the main stream of esthetic and technological development of contemporary architecture has produced one or two tentative results of its own.

One of them seems to be a rapidly growing and earnest collaboration between architects and artists in the development of a meaningful synthesis of the arts in architecture. Murals of various sizes and in different media have become important attributes of most large buildings in British Columbia. Although this art form strongly tends toward abstraction, consistent and strong attempts have been made to have this abstraction grow out of regional experiences and natural forms related to the buildings and their setting.

Vancouver’s central Public Library, when completed, will have a rather ingenious sculpture, as indicated by the photographs of the model mock-up. These runic forms, executed in bronze, correspond to the symbols used in the mural inside above the circulation desk. The sculpture will present varying images during the day and night; the relationships between the individual forms will be important during daylight and electric lights from behind each object will emphasize their respective silhouettes during the night.
Selwyn Pullan

Drive-In Laundry (1): Davison & Porter, Architects.
Pacific Great Eastern Railway Station, North Vancouver (3): Hale & Harrison, Architects; A. H. Couser, Structural Engineer; D. W. Thomson, Mechanical Engineer; Simpson & McGregor, Electrical Engineers.
Church of St. John the Apostle, Vancouver (4): Toby & Russell, Architects.
Central Public Library, Vancouver (5): Lionel Thomas, Sculpture.
Vancouver Lawn & Tennis Club, Vancouver (6): Davison & Porter, Architects; Read, Jones & Christoffersen, Structural Engineers.
In an architectural sense, the slender concrete tower (left) of Westminster Abbey and Seminary of Christ the King, at Mission City, successfully relates to its immediate site and landscape environment. It dominates the space before it with distinction and seems to enhance the natural landscape forms, again, by its contrast with them.

In summary, the range of buildings presented indicates a wide variety of architectural forms and solutions to well known building problems. The spirit of Canadian Northwest Architecture, however, is emerging through a remarkable unity within this variety. A very pleasant climate and an heroic landscape, together with some enlightened clients, have presented many of the young architects with unique opportunities of developing quickly professionally, and contributing in small, and some big ways, toward a slowly emerging consistent architecture.

Owners of the Westminster Abbey and Seminary of Christ the King are monks of the Benedictine Order; Gardiner, Thornton, Gathe & Associates, Architects; Read, Jones & Christoffersen, Structural Engineers.
PROGRESSIVE ARCHITECTURE IN AMERICA

STORE FOR E. V. HAUGHWOOT & COMPANY—1857
New York, New York
J. P. Gaynor, Architect
The Architectural Iron Works of New York, Builder
The Broadway of 100 years ago was not only New York's most important artery but also, according to contemporary visitors' accounts, one of the great boulevards of the world. The quiet street where casually rooting pigs had surprised strangers 30 years before, had become a busy promenade of fashionable brilliance, of high style and high life, centered in the city's grandest hotels and most popular stores. While white omnibuses rattled by in heavy traffic, elegant dandies loitered in front of the new St. Nicholas Hotel and the famous Astor House, and ladies of the haut- and demi-monde in gigantic crinolines swept unwary gentlemen off the curb in the hectic shopping hours of the afternoon. The glamour of Broadway soon put older European cities to shame. Charles Mackay, recording his impressions in Life and Liberty in America, or Sketches of a Tour in the United States and Canada in 1857-58, noted Broadway's extraordinary "beauty, extent, life, bustle and wealth," and concluded, in a dazzling confusion of comparisons, that "... no street in London ... can be declared superior, even equal, all things considered, to Broadway. ... It is longer, more crowded and fuller of fine buildings than the Boulevard des Italiens; it is as bustling as Cheapside; and more than all, it has a sky above it as bright as the sky of Venice. Its aspect is thoroughly Parisian... " Architecturally, it must have been dazzling. The avenue that Mackay saw, from Trinity Church to Union Square, was a "grand succession of commercial palaces" of granite, brownstone, costly white marble, and a new material just coming into favor—cast iron. Conspicuous among the edifices that gave "its most imposing character to this busy and beautiful street," he remarked a particularly handsome building "... the iron palace of Messrs. Haughwout and Company."

Of all the important structures "in Broadway" at that date, the five-story Haughwout Store was the last word in architectural design. Not only was it completely fronted with the miraculous new building material of the mid-19th Century—cast iron—but also these impressive metal façades were in the most elegant avant-garde style of the day—the Venetian Renaissance. Most remarkable of all, the building incorporated a wonderful new device, the safety elevator; the first practical passenger lift in New York, and possibly in America. The Haughwout Store's iron elegance contained all the seeds of the future: its metal façade was to lead, in turn, to the metal frame; the elevator, combined with the metal frame, was to produce the skyscraper; and its repetitive Palladian rhythms were to become the basis of today's esthetic of prefabricated, mass-produced, structural units.

According to entries in the original notebooks and account books of Elisha Graves Otis, the Haughwout passenger elevator was shipped on March 23, 1857, and completed on April 6. It was a Number 1 lifting power, duty 1000 pounds and 40 feet per minute, and it cost $300. Charles R. Otis, Elisha's son, noted in his reminiscences (1911) that he had worked on the passenger elevator for "E. V. Haughwout and Company, dealers in French china and glassware. ... The car of this machine was enclosed and provided with safety appliances." This safety system, invented in the early 50's by Otis and used for freight lifts until 1857, was patented in 1861, four years after its installation for passenger use in the Haughwout Store. Chief among the safety devices was a spring release that operated automatically if the rope broke, securing the car in a series of ratchet platforms in the sides of the shaft. Although mechanical hoists had been used since time immemorial, it
was Otis' invention and commercial promotion of his safety system that eventually brought the passenger elevator into common use. A feature article in The Architects' and Mechanics' Journal (December 10, 1859) pointed out the success of this initial installation and a more recent one in the Fifth Avenue Hotel—urging greater use of the new device. By the 70's the passenger elevator had become an accepted part of new construction, marking the real beginning of the high-rise building.

Although the Haughwout Store was one of the most outstanding examples of the cast-iron palace in New York, it was not the first building of its type. As Turpin Bannister has pointed out, James Bogardus constructed the iron fronts of the Milhau and Laing stores in 1848 and 1849, and even these were probably preceded by earlier examples in the Middle West, as well as John Haviland's famous 1829-30 cast-iron bank façade in Pottsville, Pennsylvania. Not Bogardus, however, but Daniel Badger was the builder of the Haughwout Store. His firm, incorporated in 1856 as Architectural Iron Works of New York, gave increasingly successful competition to Bogardus in the rapidly growing field of iron architecture. The catalog of Architectural Iron Works, Illustrations of Iron Architecture (1865), contains many handsome renderings of proposed and executed designs by leading architects of the day.

The revolutionary advantages of metal construction, as listed by Badger in his publication, were "strength, lightness of structure, facility of erection, architectural beauty, and economy or cheapness." Concerning its greater strength, he stated, "The established superiority of Iron in this regard now requires no argument. We may safely affirm that no substance, available for building purposes, has such closeness of texture, or is equally capable of resisting immense pressure." Stronger and lighter iron construction also opened up the building's façade: "A light and ornamental edifice of iron may be safely substituted for the cumbrous structures of other substances, and sufficient strength be secured without exclusion of light—which is often highly desirable for mercantile and mechanical purposes." As for its ease of erection: "Nearly all of the work of an iron structure can be previously prepared and fitted in the foundry and finishing departments, and these transferred to the place of erection and put together with rapidity and safety. In some kinds of structures the facility of erection approaches the incredible." If, in the matter of architectural beauty, both Bogardus and Badger stressed the ease of casting elaborate ornamental forms, today we see the successful unity of mass-fabricated elements. The Haughwout Store's repeated horizontal bands of arched windows, separated by the vertical rhythms of sharply cast Corinthian columns, create an extraordinarily rich mechanical pattern of light and shade. Its architectural effect is as abstract as its forms are precise.

By some miracle, the Haughwout Store has escaped the destructive rush of progress and stands in calm, abandoned elegance at the corner of Broadway and Broome Street in New York. Badger's name can still be seen in the cast-iron doorway. Even the coat of dingy black paint added by the somber Late Victorians fails to disguise the fact that this is one of the handsomest surviving examples of America's Iron Age.

ADA LOUISE HUXTABLE

Appreciation is expressed for generous assistance of The Museum of The City of New York and Otis Elevator Company; and for photographs contributed by W. Knight Sturges and Otis Elevator Company.
Total esthetic effect of many buildings has been sullied by inappropriate and oftimes vulgar means of identification. Since identification is a requirement for most structures—certainly for commercial ones—this review of the many factors governing the selection of type faces, choice of material, and proper method of specification should have both interest and value.

building identification
by Ralph Stoetzel*

One of the most important details of any architectural project of a civic, commercial, or industrial nature is identification. Barring a few tasteless individuals who mount billboards on the lawn, most clients expect their architect to include in his elevation or perspective a definite area where the building can be identified.

The detail of identification is of utmost importance to the architect, because the entire impression of his work can be determined by such a simple thing as appropriateness of design of letters. It should be kept in mind, though, that the architect's or artist's design must be translated into a finished product. To do this with the quality of workmanship desired, highly skilled men with considerable technical "know-how" are needed. Permanence must also be considered carefully. Not only must the metal of the letters be of a suitable alloy, cast under scientifically controlled conditions, but fastening must be permanent. Rust streaks from fasteners reflect discredit on both building and architect.

Reputable manufacturers of metal letters, castings, and other means of identification will provide sample specifications which can be used; there is always, however, the matter of suggested "equals." These suggested equals must be studied most carefully before approval.

One of many factors which must be considered in selecting a source of metal letters for building identification is the nature of the firm offering to supply letters: Is this firm really in the business of designing, manufacturing, and supplying metal letters, or is this type of work a sideline of a metal-working "job" shop? Extensiveness of the line—in terms of variety of type-faces, custom molding, and casting—is a principal criterion to use in evaluating a metal-letter manufacturer. The variety of type-faces must be given special consideration. Some shops will offer what appears to be several different type-faces, yet close inspection of literature or samples will show that only a half-dozen or so of the letters in each series are of different design—the bulk of the simpler letters may be the same in each of several type-faces. Use of such composite alphabets produces an inharmonious identification.

In addition to the extent and quality of the line, degree of service offered is another criterion to use in evaluation of a metal-letter manufacturer. Service includes: Willingness and ability to design a logo, special sign, or alphabet; ability to translate an architect's design into a satisfactory finished product; provision of spacing and mounting templates; willingness to assist in supervising the actual mounting of letters or erection of signs or logos.

There are optical factors which a skilled letter-designer always considers in making a mounting or spacing a template—the basic principal being to make the total space between letters approximately equal rather than making letters equi-distant, center to center. If a template shows the latter to be the case, the manufacturer is not doing first-class work. When letters, logos, and signs are designed, the matter of optical illusion must be taken into account.

The matter of an "equal" to whatever is specified must be considered. Have letters or devices proposed as being equal been designed by someone who is skilled in design, application, and placement? Further, is the type-face or alphabet offered really the same as that specified, or is it a makeshift from a composite alphabet?

Most of the above factors relate directly to the appearance and esthetics of the completed identification. While esthetics is of major importance, permanence is vital. Permanence and long term satisfaction may be obtained for the client only by giving careful consideration to materials selected for the letters.

Background material, purpose of the message, indoor or outdoor location, and atmospheric conditions are factors which most affect selection of materials. Generally speaking, aluminum will be first choice for most raised letter applications—indoors or out. Aluminum has a pleasing sheen and appearance, together with a measure of warmth in its coloration. Both of these elements enhance legibility—a very important factor in all identification work. For inland areas where the atmosphere is not unduly influenced by salt air or chemicals from manufacturing plants, anodized aluminum will be quite satisfactory. In areas where salt air is a factor, special aluminum alloys—such as F214—should be used because of their corrosion resistance. In other problem locations a specific alloy can be selected, or even created if necessary.

If the letters are designed by the architect, which makes it necessary for the manufacturer to create special dies for

*Architect, Chicago, Ill.
the molding process, the cost will be approximately three times as much as letters selected from a supplier's stock alphabets. If this cost factor makes custom design in aluminum undesirable, stainless steel ought to be considered. At somewhat less cost, stainless steel can offer a greater range of freedom to the designer because it can be formed by a soldering process without the aid of molds.

If the use of stainless steel is considered, special thought must be given to the final placement of letters in relation to usual lighting conditions. Because of its reflective surface and strong highlights, stainless steel has an undesirable tendency to appear black.

Heliarc welding, a relatively recent development in the metallurgical field, may make it possible to create custom designed letters from aluminum at a price comparable to that of custom letters of stainless steel. This process permits anodizing of aluminum without discoloration inherent in other welding processes.

Bronze is another metal that is frequently used for identification purposes—for logos and plaques as well as other ornamental applications. For metal letters, bronze has a high degree of legibility and is considered very durable, if not actually permanent. Maintenance costs for bronze letters can be held down by using lacquer coatings which prevent darkening from oxidation. Coatings are easily replaceable and will last from six months to two years, depending on climate and exposure.

Metallic effects are generally considered to be most effective and most durable; nevertheless, general decor of the interior or exterior design and coloration of a building may make it desirable to use color. As an example—plain, neutral walls, such as architectural concrete or concrete block, may require colored letters.

Color may be obtained most economically through use of steel which has been given a paint-grip surface; the appropriate color of enamel is baked onto this surface. Work must be done with extreme care since steel will rust. To prevent rusting, the steel should be boronized or given a similar treatment before the enamel is applied. Aluminum can also be prepared to receive enamel. Use of aluminum will definitely eliminate the rust problem. Both metals can be painted if desirable. Regardless of the metal selected or type of coloration or color process used, the architect must check carefully to see that specifications are met. If the metal is to be painted, the specifications should call for a “fast-color” paint, intended for outdoor application. A commercial paint not specifically intended for outdoor use and not compatible with metal painting surfaces should not be allowed. In specifying the metal, specifications should read “bronze metal” and possibly list various percentages of metals used to make the bronze. Terms such as “bronze-coated” or “bronze-color” should be avoided. The client may think he is getting bronze metal, but the supplier is offering a less expensive simulated letter. Difficulties can be encountered in specifying aluminum, too. For example, an aluminum “finish” can mean steel or wood painted with aluminum paint just as easily as genuine metal letter. “Aluminum metal” is what the specifications should read in most instances; also, include alloy number.

Further, specifications should actually state how the castings and molds are to
be made, as well as describing metals and finishes to be used. If this is not done, the specification should refer to an established and accepted procedure. These details are necessary so that the manufacturer is certain to use the correct mold-making metal and alloy. The client is assured that other manufacturing operations are done by skilled men and that all melting and casting are done under properly controlled conditions. Control is of utmost importance, and an architect should not select a source nor approve an "equal" unless he is familiar with the qualifications of the manufacturer. For instance, if the temperature of an alloy is raised beyond a certain limit in the casting and pouring operation, porosity will develop in the letters—their appearance will be substandard and maintenance problems greater. Maximum temperature allowed should be a part of the "specs." Any visible pock marks in a metal letter should be indication of rejection. Grinding and finishing must be carefully done and a description of the finishing operation should be included in the specifications. The best way to do this is to state the number of steps necessary for grinding and finishing. Three steps may mean an inferior job because changes of grinding wheels or finishing surfaces is too abrupt. Five steps constitute normal procedure and naturally this produces the better finish.

Fastening methods to be used should also be described accurately in the specifications for metal letters. Reputable manufacturers will offer a variety of fastening methods and sound recommendations as to why one method should be used in preference to another. One cardinal principle to keep in mind is that the quality of fastenings must be equal to or better than the quality of the letters themselves. To avoid streaks of rust, iron fasteners should be avoided and stainless steel, bronze, or aluminum used, even though the cost may be higher.

In addition to the material, specifications should also state the exact location of fasteners and preparation of the mounting surface. Basically there are two methods of fastening: The simplest is fastening the letter directly to the mounting surface with only a slight projection allowed for wash; the second method is the use of brackets which are fastened to the mounting surface and to the back of the letter. All mounted pieces will be placed so that they project from the wall or surface to some extent. This is necessary because shadow enhances legibility. The amount of projection can vary, of course; for instance, letters mounted on a brick wall opposite an entrance or approach will need little shadow, while plain letters mounted on a neutral wall will need considerable shadow.

Quality versus cost is the primary problem in selecting materials for metal identification letters or logo castings. Quality versus cost is likewise the primary consideration in evaluating a suggested "equal" to a specified item! A little thought easily shows that saving a small percentage of initial cost on identification of a building is not a saving at all if quality of materials and workmanship obtained do not produce satisfaction over the long term.

In the long-run, quality pays and an architect ought to keep in mind the factors outlined in deciding whether to accept or reject metal identification letters suggested as "equal" to or better than what has been specified.
In panel curtain-wall construction, means must be provided to resist wind forces and to carry weight of various components to the structural frame. Because of its lightweight-high-strength ratio, welded-steel tubing performs as an efficient and economical support material for thin-skin walls. Discussion of method, examples of installation, and selection of tubing are presented here.

**welded-steel tubing: curtain-wall applications**

When the devastating tornado of April 1957 struck Dallas, Texas, with its full force on the newly finished 13-story Exchange Bank and Office Building (Figure 1), one of nature’s most crucial testing devices proved that the architect’s choice of a new lightweight structural principle for the building’s curtain-wall construction—using welded-steel tubing as frames and supports—was a good one that resulted in not only an economical but also a safe, weatherproof structure. That month’s rainfall of 13.33", wind-driven up to 73 mph, was the heaviest recorded at Dallas in 40 years. Following an afternoon during which 3" of rain fell in solid wind-blown sheets, an inspection was made of all interior surfaces of the bank building’s curtain wall, window by window, checking for leaks and damage. Not a single leak was found! The use of rectangular welded-steel tubing, with its inherent structural advantage of lightweight-high-strength ratio, was without doubt a primary instrument in proving the ability of the window walls to carry excessive wind loads and to provide maximum weather-tight protection.

While the concept of curtain as opposed to loadbearing wall is not new, the increasing number of applications of strong, lightweight, welded-steel tubing for frames and supports is comparatively recent, and represents a significant advance in structural engineering.

**characteristics**

The welded-tube form has enabled the designer to create a trim and efficient steel support that has proved successful in achieving substantial cost savings. Its lightweight-high-strength ratio vs. that of more costly and heavy structural steel, enables an architect to include in his plans more appropriate curtain walls by reducing size and weight over designs of conventional methods.

Tubing generally serves to transfer wind load from the curtain wall to the structural frame, and to carry the weight of curtain-wall paneling and windows. In some instances, the tubing also supports the dead load of sun-shade devices. The framing may consist of horizontal and/or vertical mullions, either exposed or concealed in the completed wall. Grids made of tubing may be installed in separate pieces or prefabricated into larger units joined by welding or by mechanical methods. Of special interest to the build-
ing owner is that shallow-tube sections permit true thin-wall construction, thereby increasing the amount of usable and rentable floor area.

Prefab sections of welded-steel tubing are readily available from most tube producing mills. Their light weight makes them economical to transport from the producer and easy to handle on the job. Curtain walls can be fabricated into larger sections off the job, greatly reducing the number of job-site joining tasks that sometimes are sources of trouble or causes of delay.

installations

In addition to the Exchange Bank and Office Building (Architects: Lane, Gamble & Associates), other tall office structures that have curtain walls of welded-steel tubing are: the 14-story First National Bank Building Addition (Figure 2), Oklahoma City (Architects: Sorey, Hill & Sorey); the 26-story Murchison Tower, Denver (Architect: Raymond Harry Ervin); the 10-story Braniff Building, Dallas (Architects: Lane, Gamble & Associates); and the seven-story Kern County Courts and Administration Building, Bakersfield, California (Architect: Ernest L. McCoy).

Many of the techniques developed in curtain-wall design employing welded-steel tubing for skyscraper construction can be profitably transferred to light-construction projects. This is especially true for one- and two-story schools, shopping centers, and some residential designs. One-story buildings, however, sometimes present an anomalous situation. The curtain wall for buildings of this height, designed to support its own weight and to resist wind loads when supported by welded-steel-tube framing, also has sufficient strength to be used as a bearing wall to support relatively light roof loads. Whether it then ceases to be a curtain wall is a question for the theorists. The fact remains, however, that a panel designed as a curtain wall can best double as a bearing wall when it is reinforced by welded-tube structural members.

Major advantages of welded-steel tubing in school applications are emphasized at The Francis Dunlavy Elementary School at Lebanon, Ohio—designed by Joseph Baker & Associates.1 This school (Figure 3) is composed of five separate buildings housing 16 elementary classrooms plus multipurpose and administrative units in a campus-type arrangement. The buildings are connected by open, but sheltered, outside corridors as found in the West and Southwest. Common-size welded-steel tubes are generally used—

1 Featured in the United States Exhibit of School Buildings last July at the 20th International Conference on Public Education in Geneva, Switzerland.
2"x4" and 4"x4" with an occasional 2"x2" —while various other sizes are used for bracing only. Wall thickness of all tubes is held to 3/16" (7 gage, 0.1875"). The steel is new billet, mild steel of A-7 Federal Specification. Finish of all tubes is cold drawn with a shop coat of zinc chromate applied at the mill. Two or three coats with lead and oil or enamel will be applied after erection.

In other schools designed by this firm (Figure 4), welded-steel tubing is used almost exclusively for enclosing walls. Usually, 2"x4" tubes serve as mullion posts with the 2" face out, where the strength of steel is needed to resist wind loads and carry the roof overhang. A 4"x4" tube, welded to the tops of these posts, serves to replace the back part of a confirmation sash. For the face, aluminum extrusions are used as exterior trim. (For monumental buildings, stainless-steel tubing can be specified to eliminate the need for separate trim.) Sash is found only where ventilation is needed.

In the Southeast, the citation winning Wilson Junior High School2 in Mecklenburg County, North Carolina, designed by A. G. Odell, Jr. & Associates, is unusual in that it was almost entirely shop-fabricated for speedy assembly (Figure 5). The plan consists of a cluster of units for separate age groups—classrooms for seventh, eighth, and ninth grades made up of six rooms each, plus six special classrooms, homemaking and administrative units, and a multipurpose room and shop. Welded-steel tubing paid off in economy and speed of fabrication and erection with promise of many years' durability and trouble-free service. Except for small wall areas in service portions, the framing consists of 4"x4" tubes with 0.250" wall thickness used as columns and welded
box beams made up of two lightweight channels.

The architect preferred square tubing for columns instead of the conventional round. "Although it costs more," Odell has said, "square is more economical, since the flat sides make attachment of beams, windows, spandrels, sliding glass doors, etc., considerably easier." In five other schools now under construction, this firm has specified welded-steel tubing in square form for frames and supports.

A new "packaged-plans" idea for low-cost, expandable, single-story schools—to be developed into final form by local school architects—has recently demonstrated its practicality in the Otter Creek Elementary School at North Terre Haute, Indiana (Figure 6), designed by Yeager Architects, Inc. Design and layout possibilities are numerous and involve the use of standard, readily accessible building products adapted to a basic, flexible plan—modular in design since it incorporates standard dimensions in unlimited combination. It is planned that architects will be retained to adapt the basic pattern to individual requirements of capacity, arrangement, instructional concepts, suburban terrain, and other variations.
Typical of other possible welded-steel tubing applications are tubular handrails. Because of lasting appearance, strength, and corrosion resistance, stainless tubing is becoming widely accepted for both interior and exterior handrails and balustrades. An unusual handrail design finished in porcelain enamel was developed by Ralph R. Calder for several buildings on the campus of Michigan State. There, the tubing was designed slightly larger in diameter than the shorter pieces of wrought-iron pipe fittings used for joining. Ends were slotted lengthwise to provide "spring" and to insure a tight fit after insertion into ends of the enameled pipe. Thus, a butt joint was provided at each connection and self-tapping metal screws, which fasten to the inner fitting, secure the assembly. A special type of acid-resistant porcelain enamel was applied to produce minimum surface friction and maximum resistance to perspiration acids and oils originating from constant handling. Non-etching characteristics, wear resistance, and color permanence assure the existence of such handrailing for the life of the building.

**selection of welded tubing**

The possibilities for the use of welded-steel tubing—carbon and stainless steel—in architectural applications are great. Here are additional facts about its technology needed by the various members of the architectural team.

Welded-steel tubing is regularly made in round, square, and rectangular sections, and in special shapes when mill order runs can be utilised (Figure 7A). Round welded tubing is progressively roll-formed from hot-rolled pickled or cold-rolled steel, with the butting edges fused together by electric resistance welding (Figure 7B). Square, rectangular, and special shapes are made by re-rolling or cold-drawing, deforming the round welded tube to the required contour (Figure 7C).

The roll-forming process used to manufacture tubing does not alter the gage dimension of the flat-rolled steel; therefore, it produces a round tube of exceptional uniformity of inside and outside diameter wall thickness. Round welded tubing also is extremely concentric. These same qualities are maintained in all other shapes deformed from the round tube. Square and rectangular tubing dimensions most commonly used in architectural applications are as accurately held in width, depth, or wall thickness as the round tubes from which they are deformed. The diagonal dimension is usually held to plus or minus 0.015". Convexity or concavity on the sides does not exceed 0.010" on sides up to 2½". Squareness is held to plus or minus 0.006 times the dimension of the longest side.

Most of the quality tube producing mills can furnish welded-steel tubing fully prefabricated-to-specification, complete with welded flanges or drilled for mechanical fastening, or with other types of attachment devices welded in place. Such conditions are rapidly becoming common practice, since most suppliers
will deliver a "ready-to-install" product to the job site in KD form. Many intermediate degrees of prefabrication can also be specified.

Without a complete realization of all inherent advantages, architects and engineers have already made extensive use of welded tubing as described previously. Many of the current uses, however, reveal that most architects think of the material primarily for compression loads.

All welded-tubular shapes of equal cross section serve equally well as tension members; however, in compression loading, each has its own uses. For one-directional side loading, either in columns or beams, the rectangular section excels when placed with the long axis of the section in the direction of loading. Square tubing is most efficient for two-directional loading.

The formula needed to determine the size of section required for a member in tension or compression is \( S = \frac{F}{A} \), where \( S \) equals strength (allowable stress), \( F \) equals force (applied load), and \( A \) equals area (in sq in.). Of course, forces other than axial enter into most applications of welding; such as eccentric loading, for example, which would introduce bending.

The rectangular tube is most valuable as a beam, especially where the loading is in two directions at right angles to each other. It is also efficient as a long column member for design conditions involving two-directional side loading. Of course, it is as strong as its cross section for tension or short column compression loading.

The square tube is more valuable as a beam, especially where the loading is in two directions at right angles to each other. It will resist tension, compression, or shear loads to the limit of its cross section.

In developing specifications for architectural applications of welded-steel tubing, the experience of the quality tubing manufacturer can be of great value, since technological advances in tubing have been so rapid that only those within the industry have remained fully informed.

Gage numbers and fractions of inches are in general use in the building industry; the steel industry, however, more often uses decimals of an inch to designate wall thickness. The American Iron and Steel Institute has proposed the universal use of this latter more accurate designation.

### TABLE I: Decimal Equivalents of Gages and Fractions of an Inch

<table>
<thead>
<tr>
<th>Gage</th>
<th>Fractions of inch</th>
<th>Decimal equiv.—inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>1/8</td>
<td>0.120</td>
</tr>
<tr>
<td>10</td>
<td>9/64</td>
<td>0.140</td>
</tr>
<tr>
<td>9</td>
<td>5/32</td>
<td>0.148</td>
</tr>
<tr>
<td>8</td>
<td>11/64</td>
<td>0.165</td>
</tr>
<tr>
<td>7</td>
<td>3/16</td>
<td>0.171</td>
</tr>
<tr>
<td>6</td>
<td>13/64</td>
<td>0.187</td>
</tr>
<tr>
<td>5</td>
<td>7/32</td>
<td>0.197</td>
</tr>
<tr>
<td>4</td>
<td>15/64</td>
<td>0.200</td>
</tr>
<tr>
<td>3</td>
<td>3/8</td>
<td>0.230</td>
</tr>
<tr>
<td>2</td>
<td>17/64</td>
<td>0.233</td>
</tr>
<tr>
<td>1</td>
<td>9/24</td>
<td>0.284</td>
</tr>
</tbody>
</table>

Note: Due to space limitations, complete formulae and property tables referred to cannot be included in this article. However, they are presented in a comprehensive Handbook of Welded-Steel Tubing published by the Formed Steel Tube Institute, 80 Hanna Building, Cleveland 15, Ohio. Available free to architects and engineers principals on letterhead request. Editor.

### TABLE II: Design Data, Elements of Sections

<table>
<thead>
<tr>
<th>Round Tube</th>
<th>Rectangular Tube</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Area</td>
</tr>
<tr>
<td>( A = \frac{\pi}{4} (d^4 - d'^4) )</td>
<td>( A = D'D'D' - d'd'd' )</td>
</tr>
<tr>
<td>( D = ) Outside diameter</td>
<td>( D = ) Outside length, long side</td>
</tr>
<tr>
<td>( d = ) Inside diameter</td>
<td>( d' = ) Outside length, short side</td>
</tr>
<tr>
<td>Moment of Inertia</td>
<td>Moment of Inertia</td>
</tr>
<tr>
<td>( I = \frac{\pi}{64} (d^4 - d'^4) )</td>
<td>( I = \frac{D'D'D' - d'd'd'}{12A} )</td>
</tr>
<tr>
<td>Section Modulus</td>
<td>Section Modulus</td>
</tr>
<tr>
<td>( Z = \frac{\pi}{320} (d^4 - d'^4) )</td>
<td>( Z = \frac{D'D'D' - d'd'd'}{6D} )</td>
</tr>
<tr>
<td>Radius of Gyration ( r = \frac{1}{4} \sqrt{\frac{D^4 - d'^4}{A}} )</td>
<td>On axis through center parallel to long side:</td>
</tr>
<tr>
<td>( r = \frac{1}{4} \sqrt{D^4 - d'^4} )</td>
<td>Moment of Inertia ( I = \frac{D'D'D' - d'd'd'}{12A} )</td>
</tr>
<tr>
<td>Square Tube</td>
<td>Rectangular Tube</td>
</tr>
<tr>
<td>Area</td>
<td>Area</td>
</tr>
<tr>
<td>( A = \frac{D^2 - d'^2}{12} )</td>
<td>( A = D'D'D' - d'd'd' )</td>
</tr>
<tr>
<td>( D = ) Length outside</td>
<td>( D = ) Outside length, long side</td>
</tr>
<tr>
<td>( d = ) Length inside</td>
<td>( d' = ) Outside length, short side</td>
</tr>
<tr>
<td>Moment of Inertia</td>
<td>Moment of Inertia</td>
</tr>
<tr>
<td>( I = \frac{D^4 - d'^4}{60} )</td>
<td>( I = \frac{D'D'D' - d'd'd'}{12A} )</td>
</tr>
<tr>
<td>Section Modulus</td>
<td>Section Modulus</td>
</tr>
<tr>
<td>( Z = \frac{D^4 - d'^4}{60} )</td>
<td>( Z = \frac{D'D'D' - d'd'd'}{6D} )</td>
</tr>
<tr>
<td>Radius of Gyration</td>
<td>On axis through center parallel to short side:</td>
</tr>
<tr>
<td>( r = \frac{1}{4} \sqrt{D^4 - d'^4} )</td>
<td>Moment of Inertia ( I = \frac{D'D'D' - d'd'd'}{12A} )</td>
</tr>
<tr>
<td>( r = \frac{1}{4} \sqrt{D^4 - d'^4} )</td>
<td></td>
</tr>
</tbody>
</table>
The mortar, which must bond masonry units together for years, is of utmost importance in masonry construction. Ideally, the mortar is a material which, after hardening, neither shrinks nor expands to any degree that would alter the relative position of the masonry units nor allow space for the entrance of water. Watertightness and durability of mortar joints are essential to good performance and low maintenance. Durability is necessary to resist deterioration caused by alternate freezing and thawing and to keep the mortar in place permanently, continuing its job of binding the masonry units.

For many years, mixing portland cement, hydrated or slaked lime, and sand was the common method of preparing mortar. Proportions varied but experience led to relative standardization, in architects' specifications, on a 1:1:6 mix. Today, however, masonry-cement/sand mortars proportioned 1:3 are extensively used and are finding increasing favor in architects' specifications. Masonry cements for mortar have been developed and perfected through the years by portland-cement manufacturers who saw an opportunity to simplify and improve the mortar mix by combining the cementitious materials in one package.

In the early development of masonry cement, portland-cement manufacturers and many materials companies interground or mixed hydrated lime with portland cement and/or natural cement to have the masonry cement resemble the cement-lime combination in mortar. Complaints of excessive shrinkage or expansion from some of these early combinations were thoroughly investigated and many were found to be the result of inherent characteristics of the lime used in the mixture.

Producers found that the volumetric stability of a portland-cement/lime mortar varied considerably depending upon the type and source of the lime. Observing that the lime component frequently caused undue expansion, masonry-cement manufacturers looked for other materials with which to improve their product. This points up one of the principal reasons for the wide substitution of finely ground limestone powder for lime in the present-day masonry cements produced by the majority of manufacturers. Limestone interground with portland-cement clinker produces a very fine powder which contributes extreme smoothness to mortars, together with a very high degree of volumetric stability from a chemical, as well as a physical, standpoint. In the extensive research and development work of perfecting masonry cements, the cement manufacturers also discovered that air entrainment in mortar greatly improved durability, workability, and watertightness —just as in concrete.

**modern masonry cements**

Today's quality masonry cements are mostly composed of an interground mixture of calcareous materials, portland-cement clinker, air-entraining agents and, in some cases, water-repellent materials. These materials are carefully proportioned and blended during manufacture to produce a uniform, sound product. Frequent testing of the product is done during manufacture to make certain that the requirements of ASTM and Federal Specifications for masonry cements are met.

Mortars containing quality masonry cements provide product uniformity, excellent water retention and workability, assurance against delayed expansion, durability against weathering, less initial and total shrinkage, and better job-control of batching and inspection.

**soundness**

The old pat test for soundness (pat over boiling water), although still a method shown in the lime specifications, has been replaced by the autoclave test in specifications for masonry cement. Soundness of masonry cements is assured when they are guaranteed to meet ASTM Specification SS-C-181c, which limits autoclave expansion to not more than one percent. The autoclave test requires that a 1" x 1" bar of 10-in. effective gage length be made of the cementitious material and subjected to high-pressure steam treatment for a specified period of time. Such treatment hydrates any active oxides to the same extent as would occur after many years of exposure to natural weather. If these oxides are present in sufficient amount, the bar will expand more than one percent in the autoclave—an indication of potentially harmful expansion of the mortar in the wall.

While limes are produced for many purposes, the only hydrated limes considered suitable for mortar are described in ASTM C207 and designated as Type N and Type S. Type N lime is normal hydrated lime with no limit on unhydrated oxides; there is no test required for soundness of this lime. Such a lime, however, can contain enough unhydrated oxides to cause excessive delayed expansion with resultant expansion cracks. Type S limes are generally pressure-hydrated limes and differ from Type N limes by their ability to develop high early plasticity and higher water retentivity, and by their limit of eight percent on unhydrated oxides.

In 1955, the State of Ohio conducted extensive tests on 10 brands of masonry cements marketed in Ohio and reported good uniformity in standard tests with the averaging results shown (Table I). Mixing these masonry cements with local sand, testing according to ASTM C270: Mortar for Unit Masonry, and testing for air, the average results are shown (Table II). The Ohio investigation also included autoclave tests on a mixture of two-parts masonry cement and one-part lime. It is significant that the two Type S limes used, when mixed in these proportions with masonry cement, caused expansion of two to four times the masonry cement alone. In these particular tests, however, the combinations using the select Type S limes fell within the one percent maximum limit required for masonry cements. While masonry cement specifications require the soundness test,
unfortunately the architect is not pro-
tected by a similar requirement in spec-
ifications for mortar mixes where other
materials are involved.

durability
The durability of mortar joints is meas-
ured by their freedom from spalling and
weathering during cycles of freezing and
thawing. All recent laboratory tests and
field experiences show that adequate air
entrainment in a mortar mixture gives
durability protection. This was recog-
nized by both Federal and ASTM Speci-
fication bodies in recently revised speci-
fications for masonry cement requiring a
minimum air content of 12 percent. The
same bodies, however, have not yet added
a minimum-air-content requirement in the
specifications, Mortar for Unit Masonry.

Freeze-thaw testing of mortar bars in-
dicates the degree of durability of mortar
mixes. The poor durability of the low
air content mortar bars also illustrates
the importance of adequate air entrain-
ment with regard to the resistance of
mortars to freezing and thawing. The
air-entraining property of masonry ce-
ments is accurately controlled by meas-
ured additions of air-entraining agents
during manufacture.

Finely ground limes tend to inhibit
the air-entraining ability of air-entraining
cements. For proper air content in ce-
ment-lime-sand mortars, an additional air-
entraining agent needs to be added at the
job and the mix periodically checked
with an air meter.

shrinkage and absorption
Early shrinkage is greatly affected by
the mixing-water demand of the mortar.
The entrance of water into shrinkage
creacks generally causes subsequent de-
terioration of mortar joints. The very
low absorption of masonry-cement mortars
impedes the soaking of water through
mortar joints. This desirable charac-
teristic together with air entrainment
helps make the mortar more watertight
and weather better than many old-type
job mixed materials. Low absorption also
prevents excessive volume change due to
wetting and drying.

ease of batching, inspecting
Since only one cementitious material is
used in masonry-cement mortar, propor-
tioning errors are minimized. If excess
sand is used in violation of job specifica-
tions, a resulting harsh mix can readily be
noted by inspection. This is not neces-
sarily true when the cementitious ma-
terials are job proportioned, because a
variation in proportions of cement and
lime may allow large additions of sand
which cannot be detected by eye but will
result in a definitely inferior mortar. The
plainly marked bag in which almost all
masonry cements are packaged states
clearly what specifications are met. This
insures against using a cementitious ma-
terial which does not pass the soundness
test.

Specification masonry cement contains
enough air-entraining agent to insure suf-
ficient mortar air content for dependable
durability.

| Table I |
| Gillmore time of set | Water retention | 28-day compressive strength | Autoclave exp. |
| Initial | Final | 81.7% | 2024 psi | .076% |
| 3 hr: 32 min | 6 hr: 42 min |

| Table II |
| Air | Water retention | 28-day compressive strength |
| 167% | 79.3% | 1603 psi |

water retention, workability
Water retention and workability are
'somewhat dependent on each other. The
air-entraining property of masonry cement
helps produce higher water retention in
the mortar which in turn improves hydra-
tion of the cement and provides work-
ability. Adequate water retention pre-
vents rapid loss of water from the mortar
to the masonry unit. This greatly im-
proves the bond strength of the mortar
to the masonry units. Air entrainment
produces minute air bubbles which act as
lubricants and make the mix more cohe-
sive and plastic. It also acts to prevent
the formation of interconnected capillary
systems or channeling caused by bleeding
water. Building Material and Structures
Report No. 146: Plasticity and Water
Retentivity of Hydrated Limes for Struc-
tural Purposes, published by the United
States Department of Commerce, shows
how water retention and plasticity of
limes is increased by soaking overnight,
indicating the importance of this addi-
tional treatment.
Western Washington Fair Photographer Salon
Robert Billsbrough Price, Architect
specify HILLYARD Floor Treatments for
final Clean-Up and Initial Finish

The floors you have so carefully selected for color and design will be a sorry-looking sight by the time the interior trades have completed their work.

Final clean-up and initial finish are crucial.

Specify safe cleaning with Hillyard neutral chemical Super Shine-All to be sure that ALL the dirt is gone before the finish is applied.

Be sure color and texture are not damaged by harsh, so-called “quick” cleaners.

Specify Hillyard Super Hil-Brite 100% Carnauba Wax to bring out to the full the natural beauty of the flooring material—cover it with a tough, lustrous film of protection that will add years to the floor’s life, pleasure to the client’s eyes as the floors reflect the beauty of a new building.

The local Hillyard "Maintaineer®", a trained floor treatment specialist, will be glad to serve as your own expert consultant, without charge or obligation.

Ask him to survey the floors on your boards, recommend treatments, serve as your "Job Captain".

Ask him also for A.I.A. numbered files containing Architect’s information on treatment of all types of floors, and detailed step-by-step treatment instructions for use by your contractor.

The Hillyard Maintaineer is
"On Your Staff, Not Your Payroll"


**Plaster Chalkboards** by Harold J. Rosen

Building-material manufacturers, as well as architects and owners, are equally striving to reduce the cost of building construction.

An old material which has been discovered recently to have potentiality in a new field is plaster used as a chalkboard surface. Ordinary plaster, conventionally applied, is not the answer. However, high-strength gypsum plaster having extreme hardness and durability, finished with a power trowel is being investigated and tried as a sound substitute for the conventional chalkboard.

A high-strength gypsum gaging plaster with a hardness factor exceeding that of Keene's cement finish and one which has easier workability than Keene's cement is Structo-Gauge, a product of the U. S. Gypsum Company. This material is finished with a color proof colors and finished with a power trowel, provides an extremely dense, hard-surface chalkboard with a colored background for paint application. By providing map rails, chalk troughs, and trim, a plaster chalkboard can be delineated on a plaster wall. The integral chalkboard provides an opportunity for unusual application in that the area of chalkboard can be increased at practically no cost. It is claimed that maintenance of the plaster chalkboard presents no more of a problem than maintenance of a prefabricated conventional chalkboard.

The plaster chalkboards may be formed on any wall by outlining the board area with head or casing, applying a hard dense basecoat of gypsum plaster to the thickness provided by this trim and finishing with a hard, dense gypsum gaging plaster-lime finish coat power troweled to smooth uniform surface. This surface is finished with one coat of primer sealer and two coats of chalkboard paint. This method may be used on concrete masonry units or on metal surfaces lathed with gypsum lath. Due to their lack of compressive and tensile strength, lightweight aggregates should not be used for basecoats in this type of construction.

---

**SPECIFICATIONS FOR PLASTER CHALKBOARD CONSTRUCTION (On Metal Stud Partition)**

1. **Scope:**
   - Plaster chalkboards shall be installed in all areas indicated on the drawings and as specified herein.

2. **Materials:**
   - **Metal Studs:** Standard product of a recognized manufacturer formed from cold rolled steel strips or fabricated from steel wire. Runner tracks and accessories for metal studs shall be manufacturers' standard items. Metal studs and accessories shall be given a coat of rust-inhibiting paint.
   - **Gypsum Lath:** Shall be 3/8" thick gypsum lath, plain or perforated. Clips for attachment to metal studs shall be manufacturers' standard items.
   - **Metal Trim:** Shall be 26 gage curved point base screed.
   - **Basecoat Plaster:** Neat gypsum plaster or wood Fibered plaster
   - **Finishing Plaster:** Structo-Gauge gaging plaster
   - **Lime:** Hydrated lime or pulverized quicklime.

3. **Installation of Metal Studs:**
   - Runner tracks shall be provided at top and bottom of studs. Tracks shall be securely anchored to concrete floors and structural concrete surfaces above or to other adjacent structural support with concrete stud nails or other approved fastening. Both ends of studs shall be wired or clipped to the runner tracks. Shoe clips connecting studs to runner tracks shall be wired thereto with two double strands of No. 4 wire. Studs shall be not over 16" on center.

4. **Lathing:**
   - **Apply gypsum lath to either side of the studs using manufacturers’ standard clips to fasten the lath to the stud. Joints in the lath shall be staggered between courses; joints in the lath shall occur between studs and shall be reinforced with manufacturers' standard clips.
   - **Cornerite:** Shall be applied at all intersections of plaster surfaces. Intersections of plaster surfaces with unplastered surfaces shall be finished with casing bead.
   - **After the application of the gypsum lath, install the curved point base screed to outline the chalkboard and tackboard areas by either wire tying securely in place or stapling with 2½ galvanized staples. All corners shall be properly mitered (not copied). The 1/2" ground on the base screed shall face the field of the plaster and the 1" ground shall face the chalkboard or tackboard. All screw installation shall be level or plumb unless specifically indicated.
   - **Install picture mold as a map rail where shown on the drawings. All mold shall be level.

5. **Plastering:**
   - **Plastering shall be two coat work consisting of basecoat and finish coat:**
     - **Basecoat Proportions:**
       1. Neat cement plaster mixed with sharp sand in the ratio of 100 lb plaster to 200 lb of sand.
       2. Wood fiber plaster mixed with water only.
     - **Basecoat Application:** Basecoat shall be applied with sufficient material and pressure to form a good bond on the gypsum lath and to cover well and then double back to bring the plaster to within 1/8" of the face of the base screed in the chalkboard area and to within 1/4" of the face of the base screed in the tackboard area. (Minimum 1/8" finish is required for chalkboard area and 1/4" for mastic and 3/16" tackboard in tackboard area.) Basecoat on areas outside chalkboard and tackboard area to be finished to 1/2" ground of the base screed.
     - **Finish Coats:** Finish coats of the chalkboard shall be applied first. The finish coat of the chalkboards shall be MACHINE mixed as follows:
       - 100 lb Finish Lime
       - 100 lb Structo-Gauge gaging plaster
       - 7 1/2 lb Tamms or equal black or green color
       - 25 lb of #1 White Silica Sand
     - **Chalkboards shall be scratched and doubled back with the finish coat material to a minimum thickness of 1/8". Finish coat shall be laid up carefully to the ground surface around the chalkboard and left after doubling free of ridges, cat faces, and winds.
     - **After the finish coat has taken up so it is firm to the touch, the chalkboard will be troweled twice with a Powel Trowel. The first troweling shall be done with enough water to lay down any irregularities and bring the chalkboard to a smooth, dense level surface free of any irregularities. The second troweling should be done with no water at the finish coat is very firm but before it has set so as to leave the surface very hard and polished. Do not brush the blackboard after the final troweling.
     - **Painting:**
       - When the chalkboard areas are dry they shall be painted with one coat of primer sealer and two coats of chalkboard paint of equal quality to that manufactured by Lowe Brothers, Pittsburgh, or Sherwin-Williams, Glidden. Color to be selected by the Owner.
     - **Chalk Trays:**
       - Furnish and install chalk tray similar to Knepp Bros. #761, Leot #88-832 or New York Standard #100, directly under the chalkboard areas by attaching the snap-on clip to the plaster surface by toggle bolts or Molly fasteners. Screws may be used for attachment if wood strips to receive them were previously installed by wiring to the metal studs.
I would like to take issue with the implications of the phrase "design through structure." I hope that I will be allowed to take a critical stand without fear that the motives may be misunderstood by my architect friends or my engineer colleagues who know that I have worked for long toward a more constructive understanding of the relationship between structure and architecture.

The fact that many conferences are given over to discussion of matters of structure (recently, at a national gathering of young architectural teachers, the major topic was carried by a panel of engineers on the subject of structural forms) should be a reason for rejoicing and concluding that great progress has been accomplished during the last few years in again bringing together the two component parts of the building art that had been arbitrarily separated about a century ago by the discovery of mathematical analysis; a reason to surmise that a fresh love is blooming, and that, perhaps, out of this match, the new forms of the society of which he is part are created.

Yet, upon closer analysis, one discovers something unusual; something one-sided in this courtship. It can be noticed that there has been a far more aggressive initiative on the part of the architect toward the engineer than vice versa, and I know of no architect who has been invited to speak about form at a gathering of structural engineers. I fear that the emphasis of purpose is being somewhat misplaced: that marriage is perhaps not intended! What should have been on the part of the architect primarily an effort toward better understanding of structure and structural principles, an attempt to make the acquired knowledge and sensitivity to structural behavior an integral part of his creative background, which would widen and enrich his design potential, has, instead, become merely participation in a kind of glorified refresher course, designed not so much at passing a higher standard of examination as to acquaint the architect with the latest tricks of the structural trade. Thus, "educated," he will be in the forefront, ready to grasp the latest form, the cleverest trick for incorporation in his very next project (and for publication in the earliest available architectural magazine). I fear that the too ready and uncritical interest of the architect in things structural betrays something of a forfeiture of his responsibility as a creator of environment and of his function as the maker of the physical forms of the society of which he is part.

Design, architectural design, the creation of environment, are ultimately the responsibility of the architect, and it is very seldom that structure alone is adequate to create environment or even to express architectural sensitivity. There are, of course, exceptions—some unconscious, such as the beautiful outstretched arms of the pylons supporting the suspension cables for the gas line across the Mississippi River—and some very conscious—such as Maillart's bridges (1), in their extremely sensitive response to the natural environment in terms of form and scale; a response that is revealing of Maillart's very rare twin gifts of design sensitivity and structural inventiveness.

Otherwise, in general, a structural expression alone, however brilliant, however imaginative, however "tensional" or "tetrahedral," is not adequate or self-sufficient as an expression of architecture. Thus, "design through structure," should it become a prevailing trend, could mean the architect's withdrawal and surrender.

I do not imply by this, of course, that structure is not an essential part of architecture and that the ultimate form should not respond to and, in many cases, express the elements of structure. On the contrary, I rather take this for granted and go beyond. I believe that not only should we be understanding of and ready to develop the potential of new structural forms but we should also acquire the critical sensitivity necessary to exercise choice or rejection of structural forms and capable, if a choice is made, to carry through its implementation and its integration with the project as a whole. I believe that we should cease to drool, by reflex reaction, every time a new building is covered by a thin-shell dome or an entrance canopy is constructed with involved concrete shapes. I feel that it is time to develop a much more mature critical evaluation of the relationship between structure and form and cease to be taken in by the very novelty and cleverness of the forms that the structural engineer has evolved, with ingenuity and curiosity, out of available materials and techniques.

It is very important that this critique be developed and expressed in our architectural magazines: they have been very useful instruments in awakening the interest of the architect toward the structural forms and in bringing together the thinking of the engineer and the architect; yet they have been, in general, somewhat unsophisticated in analyzing the finished product that this new relationship has brought about. It is also very important that this critique be developed in the schools by giving added emphasis to the ability to design, and less reward to superficial cleverness. Of course, I do
not advocate by this a return to academic formalism but, rather, a wariness of the trend toward eclecticism that has received disproportionate acceptance in the solution of classroom problems.

I believe we need more critique and more tolerance of critique. Of course, critique in all matters of design, and especially in the architectural field, is a controversial subject. Yet it is still the best tool for cultural growth.

When analyzing the combined product of architectural design and structural inventiveness, there are a number of different criteria of critique that can be exercised.

First, indeed, are the criteria of balance and harmony. The question should be raised, once a structural form is selected and expressed, whether its relationship to the building as a whole and to its surroundings is an accomplishment of total aesthetic balance. Let us consider, for instance, the St. Louis Airport. (Incidentally, I hope that, by choosing as the first target an example toward the design of which I was a contributor, I will be given absolution for any other critical remarks that might follow.) In the St. Louis Airport, an old form (the Roman basilica) was revived in proportions and scale consistent with our new materials (reinforced concrete) to create a space enclosure of somewhat new expression. Very good, yet the question should be asked: does the form fit properly in the total balance of the building? Is a cross barrel roof set on top of a two-story building, its points of support resting on the very corners of a delicate-looking structure, a properly expressed form of the structural equilibrium of a classical arched roof?

Conversely, in the case of Nervi's Exhibition Hall in Turin, should we not regret the lack of sensitive communication between architect and engineer that has resulted in a most imaginative and satisfying roof enclosure for an otherwise conventional and unimpressed building?

A second design criterion is purpose. Is the selection of a structural form consistent with the use and purpose to which the building is to be dedicated? Undoubtedly, the answer will be positive when a thin shell vaulted cantilever is used (such as the stadium at Bogota) to shelter the spectators where uncluttered visibility is a prerequisite. Is the answer still positive if we question the choice of a thin shell roof for the MIT Auditorium Building (2) which, by the very nature of its purpose, must be totally enclosed and secluded from the outside; in which the acoustical requirements deny the expression of the structure from within, and in which the levity and gracefulness of the form selected was visible and evident only for the short period between the removal of the form-work and completion of the enclosure of the building? I consider a critique of this building in this direction far more important than criticism of its difficulties of structural behavior, which must be attributed to the daring of concept and which should be accepted as part of growth through experimental knowledge.

The third element of critique is scale. While we certainly can develop interesting and clever forms for the enclosure of any space, shouldn't we respond to a sense of propriety suggesting that, for the covering of relatively short spans, the effort in development of new forms is occasionally wasted and meaningless? The hyperbolic paraboloid, delicately balanced on its two points of support, holds a superb design potential for the covering of a large uncluttered space, such as a hangar or a major open shelter, but does it make as much sense when used by Catalano in his house (3) to shelter a plan of otherwise relatively conventional nature, which impairs the viewing of the fully expressed form by partitioning and separations, and in which the varied and slight slopes of the ceilings in each room fail to express the basic concept that prompted the design?

The fourth criterion, and perhaps the most difficult to define, is the one of design consistency. When forms derived from structure are adopted, the problem of relating them to each other, to the various elements of a building, and to the surroundings of the building itself remains to be solved in terms of total architectural consistency, for the lack of which no amount of imaginative or technical brilliance can provide absolution. I saw recently the design of two projects of our friend, Candela. One, a fantastic, sensitive combination of vaults for a proposed large church project (4). The other, an industrial complex consisting of warehousing, office buildings, lofts, where an encyclopedic vocabulary of structural forms has been used, possibly with absolutely valid economic or structural justification. In the first case, I think the question of consistency would receive an enthusiastically positive answer; while in the second, architectural consistency seems to me to have remained unsatisfied.

I trust these remarks are understood not as critiques of individual projects or of individual architects or engineers. They are rather meant as a critique of us all: a critique, in a sense, of our lack of expressed critical response.

(Continued on page 230)
A full color idea book on Formica Interiors is yours for the asking. Write Formica, 4604 Spring Grove Ave., Cincinnati 32, Ohio. Formica regional offices now have a color slide film "Decorative Art in Formica" illustrating a wide variety of Formica wall treatments and application methods as described on the facing page. A showing can be arranged at your convenience by calling your local Formica office.
A Wall of Distinction with FORMICA AND BRASS

This serpentine wall is made up of 4' panels of plywood scored or kerfed from the back for bending to proper radii. Using Formica Fast Dry Contact Bond Cement, 1/8" decorative Formica and Formica backing sheet were veneered to either side of the formed plywood. The panels were shop assembled in sections and screwed and glued to vertical and horizontal framing. Standard grades of Formica are completely satisfactory for any large radius of this type and no heating is required. The brass divider strips were handled in accordance with the detail drawings. A wide variety of Formica wall treatments can be obtained either through shop veneering or on-the-job application. Multicolor effects in random planking or geometric designs can be done with standard material.

New Decorative Art in FORMICA

For the first time in the laminated plastic field, a new kind of decorative art is available. Formica can duplicate your paintings and murals or execute original art pictures of your ideas. The art is sealed in the Formica sheet, thereby protecting it from dirt, fading and damage. In addition, nearly any pattern, trade mark or repetitive design can be produced in Formica via silk screen printing.

There is a Formica district representative near you who is well qualified to provide technical assistance. If you would like technical specifications on Formica wall surfacing, write Formica, 4604 Spring Grove Ave., Cincinnati 32, Ohio, ask for spec. bulletins 114A and 105A.

This mark certifies genuine

Be sure you get genuine Formica. Look for this wash-off registered trade mark on the surface.
No other continuous air outlet combines the distinctive practical features found in STRIPLINE air diffusers—unvaried, noiseless, draftless, air distribution over unlimited lengths.

Blend it...hide it...or combine it—in ceilings, side walls, under windows, lighting coves, windows stools, side of soffits, floors—almost anywhere to suit interior design.

Write for Complete Stripline Catalog

Type F Stripline Shown in Above Installation
“Motivational design” might be an apt name for the challenge of creating an airlines ticket office that must at once insinuate the lure of travel, proclaim the company's service advantages, and state with dignity its functional safety and reliability. Such psychological orientation is clearly evident in the design of the three ticket offices that we show on the following pages.

An invitation to even the most disinterested to experience the charms of Japan is “the floating world of Yoshimura,” Japan Air Lines ticket office collaboratively designed by Japanese Architect Junzo Yoshimura and the American firm of Antonin Raymond & L. L. Rado. Viewed by the passer-by on the Rockefeller Center Promenade, the furnishings of the interior seem suspended in space, since no element touches another. Japan’s renowned “dry gardens” are represented through the full-length windows, and traditional Japanese household and landscaping motifs are recreated in contemporary materials and techniques. Composed with the taste and simplicity, characteristic of best Japanese work, the total design is entirely modern in its lightness, brightness, and elegance.

Craig Ellwood’s Los Angeles ticket office for KLM Royal Dutch Airlines achieves the bold, attention-getting quality for which European travel posters are famed. Strong, warm color areas and cool color planes are deftly juxtaposed, framed in gleaming aluminum, dramatically lighted. The look of cleanliness, associated with Holland, is happily present, as is a reassuring air of solidity.

As staff architect for Capital Airlines, J. P. Baker is uniquely understanding of his company's requirements for a specific facility as related to the whole; and a resulting co-ordination of design and function is inevitable. For Capital’s Fifth Avenue ticket office, the prime consideration was a design to compete successfully with neighbors and justify the special location. Turning a disadvantage (an unwanted mezzanine area) into an advantage, Baker created a commanding cove of light that cannot fail to stop pedestrian traffic, viewed through the unrestricted glass front. Materials and discreet color plan suggest luxury, design integration of the company’s familiar trademark is a reminder of reliability.
ticket offices

client | Japan Air Lines Company, Ltd.
location | New York, New York
architects | Antonin Raymond & L.L. Rado, Junzo Yoshimura
Design Theory: Showcased in New York's Rockefeller Center, this eye-catching ticket office draws on Japanese inspiration, executed in American materials and techniques, using the traditional Japanese concept of space to express today's jet age, and classic Japanese forms and motifs recreated in American technological terms.

Color Plan: All white floors and walls, with Sky Blue in the luminous ceiling, natural woods, black Formica.

Furniture, fabrics
Round Tables, Stools, Wall Bench: white central shaft supports/ walnut hanging drawer units/ black Formica tops on tables/ stools with multicolored Japanese silk upholstered tops on white tubular steel legs/ cantilevered slat bench with wall-hung backs and cushions upholstered in Japanese brocade/ architect-designed/ custom-made/ Richter & Ratner Contracting Corporation, 121 Johnson Ave., Brooklyn, N. Y.

Desk Chairs: walnut with brass frame/ Georg Jensen, 667 Fifth Ave., New York 22, N. Y.


Walls, ceiling, flooring
Walls: white plaster/ shoji wall of Sitka spruce, with back-lighted translucent plastic backing/ lattice wall of Alaskan spruce, adapted from the "koshi" vertical wooden strip shutter.

Ceiling: luminous ceiling with Sky Blue baffles spaced 12" o.c./ Luminous Ceilings, Inc., 2500 W. North Ave., Chicago, Ill.


Display, sculpture
Airplane Wall Display: walnut/ architect-designed/ Roth Associates, 220 Fifth Ave., New York, N. Y.

Table Fountain Sculpture: Junzo Yoshimura in collaboration with Genichiro Inokuma.
Capital Airlines, Inc.

New York, New York

J. P. Baker, Administrator, Architectural and Construction Department, Capital Airlines, Inc.

Schofield & Weed
data

Design Theory: In a design-competitive Fifth Avenue location, the problem was to convert the first two floors of an antiquated building (broken up into stores, shops, and a mezzanine over 80% of the area) into a design-effective ticket, sales, and traffic airline office. Large glass areas were introduced to give breadth and view. The major portion of the mezzanine was removed, and the resulting space accentuated with a pitched plane in the form of an exaggerated light cove. The curvilinear ticket counter, feature light fixtures, produce visual excitement. Sales office is under remainder of mezzanine.

Color Plan: Basic scheme of white and gold against walnut, with accents of primary colors in fabrics and accessories.

doors


walls, ceiling, flooring

Walls: white-painted smooth-finish plaster/3/4" matched walnut plywood.

Ticket Office Ceiling: white-painted plaster, walnut strip.

Sales Office Ceiling: featured mineral acoustical tile.

Ticket Office Flooring: vinyl-tile, white with gray and gold aggregate terrazzo pattern, gold feature strip/Robbins Floor Products, Inc., Tuscumbia, Ala.

Sales Office Flooring: "Trend-Tex"/gold/Mohawk Carpet Mills, Inc., Amsterdam, N. Y.

lighting

Feature Chandelier and Counter Light: custom-built designed by J. P. Baker/Architect Lighting Co., 248 McKibben St., Brooklyn, N. Y.


furniture, fittings, fabrics

Counter: white Formica top/gray linoleum work surfaces/Parkwood marble faces/bright polished brass guard rail and trim.

Desks, Chairs, Tables: custom-made/architect-designed/Robert Barber, Inc., 6 E. 53 St., New York 22, N. Y.

Tile-Top Tables: custom/Mosaic Crafts, 80 W. Third St., New York, N. Y.

Planters: ceramic/Architectural Pottery, Los Angeles, Calif.


accessories

Route Map: designed by J. P. Baker/Rogay Industrial & Commercial Models, Washington, D. C.

Ashtrays: Design Technics, 4 E. 52 St., New York 22, N. Y.

Clock: custom design/Howard Miller Clock Co., Zeeland, Mich.
ticket offices

client | KLM Royal Dutch Airlines
location | Los Angeles, California
designers | Craig Ellwood Associates
architect | Walter 't Hart, KLM Staff Architect
Design Theory: In remodeling an existing store front to provide airlines ticket office quarters, characteristic Dutch colors (blue and white) and suggestive materials (tile) create a crisply appropriate atmosphere. Aluminum grill work also provides air-conditioning system outlets. Focal point is light mural with jewel-like perforations glowing through colored plastic.

Color Plan: Colorful interior has brilliant poster-like quality—aluminum framing shines around terra-cotta tiled floor; far mural wall is orange, the orange repeated in sofas against gray-stained fir siding wall; blue desktops and yellow chairs contrast with stark white wall, the blue repeated in building column on facing wood wall.

decor, accessories
Light Mural: of 1/4" thick Masonite, with holes drilled to form continent outlines and major ports, airline network pegged into these holes; back-lighted by 27 fluorescent tube fixtures/ Jan de Swart.
Clock: Dutch antique/ imported from Holland.
Travel Folder Rack: clear plastic/ architect-designed.
Desk Trays: Knoll Associates, Inc.

furniture, fabrics
Desk and Desk-Side Unit: custom-made/ architect-designed/ natural walnut plywood and blue Micarta.
Desk Chairs and Customer Chairs at Desk: yellow and blue-gray/ Herman Miller Furniture Co., Zeeland, Mich.
Sofas and Table: orange upholstery, black steel frames, white Formica top/ Van Kappel Green, 951 Santa Monica Blvd., Los Angeles, Calif.

lighting
Fixture Over Desks: four 4-ft sq fluorescent tube, plastic-faced/ Gruen Lighting Co., 8336 W. Third St., Los Angeles, Calif.
Ceiling Fixtures: Surface-mounted louvered metal cylinder units, hanging milk-glass cone units/ Gruen Lighting Co.
Wall Bracket Fixtures: Century Lighting, Inc., 521 W. 43 St., New York, N. Y.

walls, ceiling, flooring
Entry Closet Wall and Structural Column Facing: blue "Micarta"/ U.S. Plywood Co., 55 W. 44 St., New York 36, N. Y.
Other Walls: plaster, painted/ Pittsburgh Plate Glass Co.
Ceiling: 4' x 4' perforated cement asbestos board over mineral wool sound-absorbing blanket/ Simpson Logging Co., Shelton, Wash.
Flooring: 8' x 4' x 3/4" terra-cotta quarry tile/ The Mosaic Tile Co., Zanesville, Ohio.

mural, accessories
Light Mural: of 1/4" thick Masonite, with holes drilled to form continent outlines and major ports, airline network pegged into these holes/ back-lighted by 27 fluorescent tube fixtures/ Jan de Swart.
Clock: Dutch antique/ imported from Holland.
Travel Folder Rack: clear plastic/ architect-designed.
Desk Trays: Knoll Associates, Inc.
Ceramic Tile: (right) "Byzantile"/ mosaic tiles adapted by designer Kenneth Gale from Byzantine originals/ in seven color values, including Pebble White, black, light gray, dark gray, light beige, tan, red, light buff/ basic shapes include: diamonds 1-1/16"; squares 3/4", 1-1/16", 1-9/16": diagonal halves of squares 3/4" and 1-1/15"/ illustration shows wall application in three colors, using squares and diagonal halves/ The Mosaic Tile Company, Zanesville, Ohio.

Leather Winner: (below) honeycomb-textured leather, with die-cut slits/ 1957 Design Competition Award winner for designers Earl Koeppke and Jack Waldheim of Milwaukee, Wis./ for use in drapery, curtain, or screen treatment/ The Upholstery Leather Group, 141 E. 44 St., New York 17, N. Y.

Recirculating Ceramic Fountain: (below) craftsman-sculptured, original ceramic design/ 24" high over-all, in wrought-iron stand/ patent pending plastic pump, producing active recirculation/ plug-in unit, consuming 4 w. of electricity/ for indoor or outdoor use/ The Fountain Mart, 145 E. 53 St., New York 22, N. Y.

Packaged Fireplace: (above) of corrosion- and heat-resistant materials, including all-stainless-steel flue lining/ Underwriters Laboratories-approved for installation directly against any combustible material/ requires no foundation alterations or masonry/ ceramic hearth kit completes unit/ Temco, Inc., Nashville, Tenn.
this fraction of an inch reduces depreciation in feet

The distance between a salesgirl’s smile and frown is often a matter of feet. That’s why so many architects know it’s good business to specify Sofstep Rubber or Wearever All-Vinyl Tile when long-standing comfort is important. Extra resilience in these exceptional floorings helps reduce depreciation of feet. Isn’t this combination of beauty, easy maintenance and durability, with the utmost in comfort and quiet, just what you need for projects now on your boards?

MASTIC TILE CORPORATION OF AMERICA
Houston, Tex.- Joliet, Ill.- Long Beach, Cal.- Newburgh, N. Y.

Quality Controlled by Accuray®

MAIL COUPON TODAY
Mastic Tile Corp. of America, Dept. 9-2, Box 128, Vails Gate, N. Y.
Please send me complete specifications and full details on Sofstep Rubber and Wearever All-Vinyl Tile.

Name................................................. Address.................................................... City........................................ Zone.........State...............................
concealed floor type door closers

4 basic styles in a variety of sizes and types to meet every installation requirement

- nos. 18·20·25
  offset hung
  single acting
  Allow full unobstructed door opening space and wide door swing to 180°. Has arm jocking device for vertical adjustment of door.

- nos. 18½·21·26
  center hung
  single acting
  Hanging hardware completely concealed. Ideal for batteries of doors. Requires no mullions allowing greatest open entrance area.

- nos. 318½·321·326
  butt hung
  single acting
  For installations where it is desirable to have door hung independently from closer. RIXSON ball hinges with vertical adjustment recommended.

- nos. 30·40
  center hung
  double acting
  For doors that swing both in and out. Each swing separately adjustable to local wind and draft conditions. Completely concealed.

write for complete information and templates

THE OSCAR C. RIXSON COMPANY
9100 w. belmont ave. • franklin park, ill.

CANADIAN PLANT: 43 racine road • rexdale, ontario
With the increasing use of curtain-wall construction, numerous systems have been developed. The Geyser Grid System for curtain walls and windows utilizes the single bar for both wind brace and glazing member. Horizontal bars run continuously past outer faces, giving an unbroken line without joints or seals. This brochure contains design features of the system, including data concerning framing, vertical, horizontal members, and ventilator units. Two series—3000 and 6000—are shown with photos of representative installations, drawings, tables. Standard details of components given.

System is adaptable—components may be used in various combinations. Descriptions of glazing method is given, as well as general data for economical designing, architect’s check list, and specifications.


279. Engineered for Design—Aerohat Curtain Walls, 8-p. booklet describes complete package unit of aluminum windows, window wall, curtain wall, and various entrance treatments. Discussion of intermediate projected windows which may be used individually, as one-story continuous windows, or integrated component of curtain wall. Feature is continuous wool pile seal to minimize air infiltration. Monumental projected windows have 1/8” wall thickness, can be accessory to curtain-wall system. Construction details given as well as specifications for window series. Drawings of single story, multistory curtain walls. Aerobat Industries Inc., Box 6823, Dallas, Tex.

How to Design Pole-Type Buildings, 68-p. guide by Donald Patterson, for planning, engineering this type of structure. Complete engineering, design data on uses of pressure-treated round and sawn timbers for commercial, industrial buildings.
doors and windows


329. Nudor Aluminum Sliding Glass Doors, 8-p. brochure concerns three main series of sliding glass doors—d'Cor, Nudor, Hi-Lo. Each described by detail photos; installation detail drawings for frame, sturco, brick veneer, construction drawing; drawings of components, specifications. Size and glass schedule table included for three types. Special features of each shown. Nudor, 7326 Fulton Ave., N. Hollywood, Calif.


437. Lab-Volt, 4-p. booklet discusses unit power package for high school science laboratories. Small unit can be built into laboratory table—gives safe, convenient power—leaves table top clear. Outlets for 120-v AC (at 10 amperes), 0 to 12-v DC and (at 2 amperes) given, with voltage control indicator. Face panel measures 3-3/8" wide, 3-3/4" deep. Voltage can be adjusted individually. Specifications given. Buck Engineering Co., Inc., Freehold, N. J.

438. Lighting Equipment, Multi-function Ceilings, 60-p. catalog for contractors describes complete line of equipment. Thirteen basic models and various combinations described as to material, design, color patterns available. Details, tables given for reflectability, weight, etc. Special attention to Wakefield Ceiling '58 line, recessed equipment. Prices given. The Wakefield Co., Vermilion, Ohio.

440. Directo-Lens, AIA 31-F-23, 4-p. booklet concerning new line giving accurate prismatic light control. Available in clear crystal or with inner surface acid-treated for more diffused light. Advantages claimed are higher intensities, less glare in visual range, good over-all appearance. Photos, dimension tables for square, round lenses. Six photometric data sheets included—data based on outside testing results. Diffusers also pictured. The Phoenix Glass Co., Monaca, Pa.


544. Paint, AIA 25, 28-p. architect's specification manual aids selection of finishes for all surface conditions. Selection chart gives description of painting sys-

(Continued on page 177)
Another New Ware Window...

WARE MONUMENTAL PROJECTED

offers greater strength and rigidity for large operating glass areas

- Tubular ventilators have \( \frac{1}{4} '' \) minimum thickness, frame and vent depth \( 2 '' \) horizontally, \( 3\frac{1}{8} '' \) vertically (min.), and for even greater strength, corners are mechanically joined by interlocking corner angles and weld.
- Completely weatherstripped by premium wool pile locked in extruded channel. Climate control assured by Key locks at jambs.
- Optional glazing, interior or exterior—channel or snap-on glazing bead available.

Top-hinged type eliminates outside cleaning for multi-story buildings

This alternate top-hinged, in-swinging type makes both inside and outside surfaces easily available for rapid inside cleaning—saving the cost of cleaning bolts, greatly lowering maintenance costs.

Our engineering department is at your service to help meet your special requirements. For complete details, write Dept. PA-2.

Aluminum WARE Windows

Ware Laboratories, Inc., 3700 N. W. 25th St., Miami, Florida
Hop, Skip and Jump on it!

and Feel the Cushioned Flex of KREOLITE Gym Floors

Here is a floor that welcomes any kind of action.

Because of its high resiliency, Kreolite Flexible Strip End Grain Wood Block Floors are actually kinder to the feet by lessening fatigue.

In addition to this highly desirable feature, Kreolite Floors resist wear, stay new longer and require only a minimum of maintenance.

For long lasting floor beauty and resilience, get all the facts on Kreolite . . . the better floor for gyms, multi-purpose rooms and school shops. Write today for installation data and specifications.

KREOLITE FLEXIBLE STRIP END GRAIN FLOORING

THE JENNISON-WRIGHT CORPORATION TOLEDO 9, OHIO

February 1958 175
announcing...

Two new Robertson Long-Span Deck Types...

Because Long-Span Q-Deck is manufactured with exceptional accuracy, rib lines are clean and straight—make ideal exposed ceilings. And because the fluted shape has demonstrated a marked degree of noise reduction, further acoustical treatment is not necessary in many cases.

H. H. Robertson Company
2405 Farmers Bank Building - Pittsburgh 22, Pennsylvania

Please send additional information on Long-Span Q-Deck.

NAME

TITLE

COMPANY

ADDRESS

CITY
Robertson's Section 5 Long-Span Q-Deck has enjoyed wide acceptance since its introduction two years ago. It has filled the requirements for economical long spans in the construction of schools, supermarkets and other building types. Now, two new variations have been added to further increase cost-savings and add to design latitude.

You will notice from the drawings above that the basic cross-section is the same—only the vertical dimensions have been changed. The underside of the decks retain the same appearance making practical the combination of all three types for greater economy for varying load and span requirements.

As with all of Robertson's five Q-Deck types, the new Long-Span designs are weight-saving, strong, precisely made and easily erected. Lighting fixtures can be recessed, surface mounted or suspended. Any type of insulation (1" minimum) and built-up roofing can be applied. Write for literature which includes complete details, load and property tables.

ROBERTSON LONG-SPAN Q-DECK

H. H. ROBERTSON COMPANY

2405 Farmers Bank Building • Pittsburgh 22, Pa.
In England—Robertson Thos Ltd., Eeleaves Point, Cheshire
In Canada—Robertson-Lewis Ltd., Hamilton, Ontario

The basic cross-section of Section 5-45 and 5-30 is the same as standard long-span Section 5-75. Only the vertical dimensions are different.

p/a manufacturers' literature (Continued from page 169)

750. 1958 Dole Valve Catalog, AIA 30-C-24, 14-p. release shows complete line of plumbing, heating control valves. Air valve operation explained, types illustrated, for automatically fired and hand-fired one-pipe steam heating systems, vacuum valves, automatic hot-water air-valves, water mixers, relief valves, flow-control valves, solenoid valves and pressure-relief valves. Specifications given, data on installation. Several detail drawings shown. The Dole Valve Co., 6201 Oakton St., Morton Grove, Ill.

751. Lead for Modern Plumbing, 4-p. leaflet gives data on installation methods for lead pipe, fittings, in commercial, hospital, residential buildings. Advantages of lead listed: durability, flexibility, smooth inner bore, bonded joints, low cost. Types of installation described: interior plumbing, chemical laboratory drainage systems. Photos data on service pipe, shower pans, calking lead given. Architectural Dept., Lead Industries Association, 60 E. 42 St., New York 17, N. Y.


specialized equipment

804. Superior Sheet Metal Fabrication, 4-p. brochure describes line of payment depositories and ticket-sorting racks. Envelope holders obtainable for interior or exterior use—exterior type in two styles. Wall payment depositories, 16-gage sheet steel units with cast bronze face plates, available in 16" or 30" high units for 10½" wall thickness. Extension collars can be supplied. Door depositories for 1½" thicknesses listed. All units in light gray, baked enamel finish; standard face plate is bronze, can be supplied in chrome or brushed aluminum. Ticket sorting racks have heavy-steel frame, two-hinged assemblies removable for storage—all compartments clearly numbered. Appearance said to be like metal office furniture. Wayne Engineering Corp., 26 Essex St., Hackensack, N. J.

A wood-paneled office speaks worlds about its owner—and its designer

Especially in business, first impressions do count. And for a wonderful first impression that will last, nothing does so much for an office as luxurious real wood paneling—guaranteed for life by Weldwood.

Here are three ways Weldwood helps you give offices the warmth and beauty of wood paneling—warmth and beauty that grow through the years, with only occasional waxing. Weldwood Paneling—over 70 types and finishes of choice woods in big panels that make installation quick and easy. Weldwood Flexwood®—real wood veneers, cloth-backed, that can be hung on any smooth surface—curved or straight. Weldwood Movable Partitions—give the advantages of wood paneling, yet permit you to change office layouts overnight.

FREE WELDWOOD BOOKLET with more than 100 photographs... "Functional Beauty for Business and Institutional Interiors." Write for your copy. We will be glad to have a Weldwood Architects' Service Representative consult with you—no obligation. United States Plywood Corporation, Dept. PA 2-58, 55 W. 44th St., New York 36, N. Y.

Weldwood®

PANELING • FLEXWOOD • PARTITIONS
Offices in 111 principal cities in the United States and Canada

Weldwood Walnut Paneling—adds distinctive spirit to this office in Investors' Planning Corp., New York. Architects: Joseph & Vladeck

Weldwood walnut paneling—adds distinctive spirit to this office in Investors' Planning Corp., New York. Architects: Joseph & Vladeck


Weldwood birch movable partitions, installed with 3/16-inch clearance below luminous ceiling, follow the curve of this corridor in the new home office of Medusa Portland Cement Company, Cleveland, Ohio. Arch.: Ernest Payer.
We discipline copper.

We put it through the roaring heat of our own smelter... the high-amp stillness of electrolytic refining tanks... the irresistible pressures of piercing mills and extrusion presses... the long reaches of our drawbenches... through coiling, annealing, straightening and testing equipment.

We work our will on copper—through every chemical change, every physical gyration known or needed—to deliver it perfect and enduring, yet submissive... as Lewin-Mathes seamless tube, pipe and fittings.

Like the ancient coppersmith, our pride of product is that of the integrated specialist. And the Lewin-Mathes nation-wide supply facilities serving you, we believe, are second to none.
motels, civic centers. Framing is cold-formed heavy-gage steel; ribbed roof sheets; finish of fascia—galvanized or baked-on alkyd enamel. Specifications detailed for standard parts available; load carrying table given. Special attention to Continental Carport line—photos of possible installations. Childers Mfg. Co., 3620 W. 11 St., Houston 8, Tex.

806. The Vacuslot System, 4-p. booklet concerns centrally located vacuum producer and dirt separator cleaning system. Piped throughout building, having flush-mounted inlet valves, system gives speed of dry-mopping, sanitation of vacuum cleaning. Dirt is pushed to vacuslot and sent out through piping. Photos show operation for cleaning erasers, hand dusters, dust mops. Typical plan view shown. Possible uses, specifications, suggested tubing sizes included. The Spencer Turbine Co., 486 New Park Ave., Hartford, Conn.

807. Classroom Equipment, AIA 29-E-6, 35-B-4, 4-p. catalog shows complete line of stainless steel top coolers, shown, were specified at Bishop DuBourg High School—Architects: Murphy & Mackey. Plumbing Contractor—J. Sheehan Pflp. & Htg. Co., Florissant, Mo.

In St. Louis, as in all of the nation’s metropolitan centers, Halsey Taylor is the practical specification for drinking-water equipment. Whether it's a skyscraper or an institution, a school or a church, building authorities know they can rely on the un-failing health-safety and everyday dependability of Halsey Taylor fixtures. Find out how Halsey Taylor can best meet your building program.

The Halsey W. Taylor Co., Warren, Ohio

fountains - coolers by Halsey Taylor

interior furniture

71. The Lunning Collection, 48-p. catalog of furniture in Scandinavian collection. Emphasis is on both utility and comfort. Collection includes works of such designers as Finn Juhl, Hans J. Wegner, Borge Mogensen. Types of furniture includes pieces suitable for home or office use—tables, chairs, etc. Several pages devoted to lamps, fixtures. Price list included. Frederick Lunning Inc., 665 Fifth Ave., New York 22, N. Y.
do your **drawings**
do justice to
your **designs**?

It takes a sharp drawing to sell a sharp idea—and you're halfway there when you pick up an EAGLE TURQUOISE drawing pencil. *No pencil on the market can match TURQUOISE for reproduction!*

For one thing, TURQUOISE is tops for uniform grading. 17 scientific formulas guarantee exactly the blackness you want—from every pencil, every time! You get a strong needle point that just won't crumble—and stays sharp for line after line of unchanging width. You can't beat it for smoothness, either—thanks to Eagle's exclusive "Electronic" graphite. TURQUOISE makes your drawings look sharp—and you, too!

---

**EAGLE **

**TURQUOISE**

are the largest-selling in the United States!

---

**EAGLE PENCIL COMPANY • NEW YORK • LONDON • TORONTO • MEXICO • SYDNEY • BOGOTA**
Cut field painting costs
with Milcor Bonderized Deck!

Milcor's prime finish withstands rough handling

Shipping, storage, and erection can damage ordinary factory-applied prime paint. And, as you know, a finished paint job can be no better than the prime coat.

To assure a high-quality base for field painting, Milcor Roof Deck is Bonderized, then flow-coated with an epoxy-resin enamel, oven-baked to abrasion-resistant hardness. The result is the most durable prime finish ever applied to steel roof deck. If field painting is required, one coat will do the job instead of two.

See Sweet's section 2f/InL — or write for catalog 240.

*Milcor* Steel Roof Deck

*It pays... in many ways... to specify Milcor Steel Building Products*

**INLAND STEEL PRODUCTS COMPANY**  Member of the «INLAND» Steel Family

DEPT. B, 4069 WEST BURNHAM ST. • MILWAUKEE 1, WISCONSIN • ATLANTA • BALTIMORE • BUFFALO • CHICAGO • CINCINNATI

CLEVELAND • DALLAS • DENVER • DETROIT • KANSAS CITY • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • NEW YORK • ST. LOUIS.
select

**Air Cooled Package Chillers**

No selection problems or engineering headaches with these reliable HEAT-X units! No components to match and assemble. Simply pick the unit you need for the capacity required. Each unit is complete, pre-engineered, "packaged".

**‘ARPC’ Air Cooled Package Chillers** are designed primarily for residential and light commercial air conditioning applications. Furnished with 2, 3 or 5 HP compressors, Inner-Fin air cooled condensers, water chillers, superheaters and all necessary controls. Chiller is of patented Inner-Fin construction with all copper and brass water passages, completely eliminating the rust problem.

**‘RCU’ Remote Condensing Unit Assemblies** are designed for use with remote direct expansion coils and consist of 2, 3 or 5 HP compressors, Inner-Fin air cooled condensers, superheater and all necessary controls.

**All Units Feature:**
- **Condenser** of air cooled type with high efficiency Inner-Fin coil.
- **Superheater-Heat Interchanger** of exclusive Inner-Fin construction which combines the advantages of the heat interchanger with the additional advantage of a superheater—insuring full use of the evaporator surface for cooling. Additional liquid subcooling improves overall system performance.
- **Cabinet** finished in blue aluminum paint, suitable for indoor or outdoor installation.

Request Catalog No. 8027 containing complete specifications.
New-type semirigid film, low in cost and capable of transmitting almost 100% of sunlight, is available in rolls in 5 and 10 mil weights and in widths of 36" and 42". Material can be cut with scissors and attached with hand stapler. Withstands wind and hail, supports heavy snow loads. Among anticipated uses are sunhouses and greenhouses, cold frames and industrial structures, storm sash, porch enclosures, etc. American Sisalcraft Corp., Attleboro, Mass.

Fifty special 8' x 8' units, operating on 600-v, 400-c power system, provide 60 to 65 ft- c initially 18" above floor for field house (above). This 400-c system produces higher illumination levels at lower costs; requires smaller ballasts; reduces fixture weight; uses lower-cost distribution system; and allows less heat loss at fixture—as compared with 60-c system. Edwin F. Guth Co., St. Louis 3, Mo.

New perimeter and cavity-wall insulating material of expanded polystyrene—1" thick, 2' wide, and 8' long—has three prominently marked striations cut the length of each board at 3, 12, and 20 inch marks across its width (below). This allows installer to easily snap off widths of 3, 4, 8, 9, 12, 17, 20, and 21 inches, as well as utilize the original 24" width. The Dow Chemical Co., Midland, Mich.

Two new lengths of electric baseboard heaters—4' and 6'—have been added to the 2' length previously available from Westinghouse (below). Fewer sections, connections, and faster assembly cut installation time. Only power requirement is source of 240-v ac; units are rated at 250-w per ft, are 7" high and 2½" wide. Maximum temperature of vertical outer surface is just above normal body temperature. Westinghouse Electric Corp., F. O. Box 2099, Pittsburgh 30, Pa.

Radio-intercom unit provides two-way communication between a master unit and as many as six remote units, and between the remote units themselves (below). Master includes radio which may be heard, as required, at any or all intercom stations. An electric clock turns the intercom—as well as household appliances—on and off at preselected times. Provision is also made for phonograph attachment. This system may be used for programming and intercom simultaneously. An outdoor remote permits conversations with callers while the door is closed. Retail price will be approximately $135, which includes master, three interior and one exterior remote stations, plus all necessary wire, boxes, and brackets. Additional remotes are available at $13. Progress Manufacturing Co., Inc., Philadelphia 34, Pa.
United Nations Chooses Grant 5000

Why did they pick Grant 5000? The answer is easy.

There is no better sliding door hardware made than Grant 5000 Continuous Ball Bearing Hangers... And there is no manufacturer, other than Grant, who has been supplying sliding hardware of the highest order to Architects for over 60 years. Grant hardware can be depended upon for greatest service, most efficient operation and quality construction.

The 5000 line can support doors up to 300 lbs. (And over on special request.) Its motion is so smooth and so easy that no other hardware can compare. It has been specified into many of the nation's leading buildings because Architects have found it without equal.

How can you find out more about Grant?

Write for your copy of the award-winning Grant Catalog.

GRANT PULLEY & HARDWARE CORPORATION
9 High Street, West Nyack, New York
944 Long Beach Avenue, Los Angeles 21, California

SLIDING DOOR HARDWARE • FOLDING DOORS • DRAWER SLIDES • DRAPERY HARDWARE • TUB ENCLOSURES • PULLS • POCKET FRAMES • SPECIAL SLIDING HARDWARE
"This all-weather arena will meet almost any needs, can be made large enough to accommodate from 10,000 to 200,000 spectators. The design principles call for a minimum of structural materials, costly excavation and foundation work, since the prestressed concrete bowl is bound together into a unified structure by the steel cables that also support the transparent plastic roof. Land requirements, too, are held to a minimum. The problem of parking space is taken care of by the spacious multi-deck parking ramps that are an integral part of the underside of the bowl. This simple, practical arena design is made possible by the versatility of concrete."

LEV ZETLIT, Consulting Engineer

One of a series of advertisements being presented in national magazines by Universal Atlas—to promote interest in architectural contributions for a greater America through the medium of concrete.
NEW member of the STYROFOAM® family...

A snap to use! Only Scorboard offers this exclusive “snap-off” feature: No saws, knives or other cutting tools are needed. Simply snap to required width.
Cuts fitting time as much as 80% in foundation perimeters and cavity walls

There's a brand spanking new member in the Dow family of plastic foam insulations. Its name is Scorbord* and it offers all the advantages of the very best insulations on the market—plus some exclusive features of its own!

SCORBORD is designed to speed construction and cut labor costs. Big 2-foot x 8-foot boards make the work go faster—and they're light weight, easy to handle. Clearly marked pre-scorings at strategically located intervals make it possible to snap off a piece to almost any desired width. This exclusive feature reduces sawing and cutting to a bare minimum. Saves time and effort in any installation. And Scorbord is approved by the F.H.A. for perimeter insulation.

Here are some other important facts about Scorbord: It provides permanent insulating efficiency. It effectively resists water, water vapor, rot and deterioration. It has no food value to attract rodents and other vermin. Scorbord has an unusually high compressive strength (over 2,000 lbs. per sq. ft.), although it weighs less (3.3 oz. per sq. ft.) than any other commonly used rigid insulating material.

This unique insulation is designed specifically for use along the edges of concrete slabs or foundations and in cavity walls. These are the areas where the advantages of Scorbord, such as imperviousness to moisture and permanent insulating efficiency, are most needed.

Scorbord was developed by the manufacturers of Styrofoam*, the insulation that has had outstanding success in both the low temperature and the comfort insulation fields. All the experience gained by Dow in more than a decade of working with Styrofoam is represented in every board foot of Scorbord!

*SCORBORD and STYROFOAM are trademarks of The Dow Chemical Company.

Architects and Builders—For more information about Scorbord or for copies of this informative descriptive booklet, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. PL1928F.
BUILT TO LAST A LIFETIME!

P-H Quality Refrigerators and Freezers

A feature by feature comparison will prove to food consultants, architects and food management that Puffer-Hubbard Refrigerators and Freezers are superior in many ways. Their lifetime construction, modern streamlined appearance and many convenience features make them the ideal refrigerators for schools, restaurants, food stores, bakeries and institutions. It will pay you well to investigate P-H Refrigerators before you specify.

Genuine Porcelain or Stainless Steel Finish

**Only P-H Gives You All These Features**

- Exclusive “Grad-U-Matic” and Dual Fan Mullion Coil cooling systems assure positive cooling top and bottom.
- Choice of various combinations of Porcelain, Stainless Steel and Aluminum finishes — exteriors also available in colors.
- Heavy Electric-Welded Steel Frame Construction.
- 3½” to 4” Vapor-proofed Fiberglass Insulation.
- All Mullions Protected From Sweating.
- Heavy Duty Condensing Units pull-out for cleaning — all units tested 15 to 24 hours with operation chart.
- Optional Vap-O-Matic Drain requires no plumbing hook-up.
- Interchangeable interior accessories include adjustable Shelves, Salad Tray Racks or Bun Pan Slides.
- Complete Sales and Field Service in every state.

Write For Literature Or See Our File In Sweet’s Catalog

PUFFER-HUBBARD REFRIGERATOR CO.
GRAND HAVEN, MICHIGAN

Export Office — Puffer-Hubbard International
440 Lafayette St., New York City — Cable “MANREFSUP”

Capitolaire VRS Fan-Coil Unit: designed for individual room temperature control, unit is flush with wall, with outtake concealed. Units can be tied into water heating equipment, or can be integral units of new hydronic heating, air-conditioning systems. Heavy mounting reduces noise; aluminum fins on copper tubes give large surface area for quick heating, cooling. Rheostat control simplifies control for special conditions. Water is supplied through piping system from central boiler, chiller. National-U. S. Radiator Corp., P. O. Box 1047, Johnstown, Pa., construction.

Panelseal: new permanent sealant for curtain-wall panels is cold-flow, single-component bonding agent — nonvolatile, vinyl-plastic material. Can be easily injected into seams, retains elasticity, need not be coated, not affected by outside conditions. Material can be used on most porous and nonporous surfaces. Available in standard gray, or other colors if specified. Panelseal, The Bettinger Corp., Wilbraham, Mass.

WoodX: wood particle flooring resembles polished cork, has excellent wearability. Expansion is minimal. Random graining provides slip-proof surface with some acoustical properties. Installation is same as for any other hardwood floor. Hard finish is noted feature. Material may be compressed in various densities for different installations, L. D. Reeder Co., Dept. P, 3900 Rowena Ave., Los Angeles 39, Calif.

X-Cell-All Surface Preparer: liquid “sandpaper” prepares painted or varnished surfaces for refinishing. Clear liquid is put on surface with cloth, reduces gloss of floor or wall. Also gives “tack” to aid new finish to bond to surface. Preparer removes wax, grease, polish; new finish—enamel, paint, varnish—will not creep or run. National Chemical & Mig. Co., 3617 S. May St., Chicago 9, Ill.

InterAct: recently developed joining material for uniting similar and dissimilar nonferrous metals. Chemical joining of copper and aluminum, other metals, possible through ion exchange. Join becomes stronger, resistant to corrosion; retains electrical, physical, chemical properties of original metals. Material is a reaction eutectic. Available in three forms: coils, powder, granular substance—each slightly different in make up for different applications. Application process varies as to types of elements joined. Interetcetics, Inc., Northfield & Forbes Rds., Bedford, Ohio.

Stylite Chalkboard: glass fiber, reinforced-polyester plastic chalkboards are reputed not to crack, shatter, peel. Lightweight gives easy installation; maintenance is minimum. Weight 8-oz psf; panel sizes: 4’ x 8’. Colors available are light green,
Color plus something extra. Hanley tile comes in a wide range of beautiful colors... colors that complete any architectural concept and provide lasting beauty. This beauty is just one reason for Hanley tile's popularity with architects, builders and owners. You get beauty plus a product that is the result of years of experience in the structural clay products field, scientific quality control, and the most modern manufacturing facilities in the industry. It is your guarantee of lasting beauty and satisfaction.

Literature describing Hanley glazed brick and tile is filed in Sweet's Catalog Services. For copies, contact your nearest Hanley Sales Office or Distributor.
justly, the pride of six communities!

New Sealeor High School of the Chambersburg Joint School Authority, Chambersburg, Pa., serving six school districts. Architects Lawrie and Green, Harrisburg, Pa.

One of many splendid features—this ideal multi-purpose gymnasium, end-result of the meeting-of-minds of 36 forward-looking school directors.

Floored, for a long future, with NORTHERN HARD MAPLE

The endurance, resilience and brightness that have made Northern Hard Maple flooring virtually the universal choice for gymnasium and multi-purpose rooms, make it ideal for other hard-usage school areas. It fights abrasion and impact, doesn't splinter. Cleaning and maintenance are easy. Refinishing, when finally needed, is simple (there's always a “new floor” underneath). Specify Northern Hard Maple with the confidence it has earned. It is available in regular strip or in block and pattern designs, in standard, warranted MFMA grades, offering almost endless variety. The MFMA mill-mark is your warranty of strict grading, genuineness of species and precision manufacture.

SEE SWEET'S —Arch. 13J-Ma, for full technical data.

WRITE

—for 1958 official MFMA listing of approved floor finishing products.
**ACOUSTICAL and TROFFER FORMS**

... for Acoustical Ceilings with Recessed Lighting!

Mahon Acoustical and Troffer Forms provide an effective acoustical ceiling with recessed lighting as well as serving as the permanent forms for concrete joist and slab construction of floors and roofs. These are long span units which are integrated with and remain as a part of the conventional concrete structural system. Only a minimum of temporary shoring is required at mid-span during pouring and curing of concrete. This is permanent, fireproof construction which has a broad application in modern buildings... it is used extensively for auditoriums, school classrooms, and in other rooms where an acoustical ceiling with recessed lighting is desirable. Mahon Troffer Sections can also be used with either of the two Mahon M-Deck Sections to provide a combined roof and acoustical ceiling with recessed lighting. In this arrangement the long span M-Deck Sections serve as the structural members, the finished ceiling material and the acoustical treatment—all in one light weight, quickly erected unit. Purlins are eliminated... M-Deck Sections span from wall to wall or from truss to truss. See Sweet's 1958 Files for complete information including Noise Reduction Coefficients and Section Properties, or write for Catalogue AT-58.

**THE R. C. MAHON COMPANY • DETROIT 34, MICHIGAN**

Sales-Engineering Offices in Detroit, New York and Chicago • Representatives In Principal Cities

Manufacturers of Acoustical and Troffer Ceiling Forms; Steel Roof Deck and Long Span Acoustical M-Decks; Electrically-Raised M-Floors; Insulated Metal Curtain Walls; Underwriters' Rated Fire Walls; Rolling Steel Doors; Grilles and Underwriters' Listed Automatic Rolling Steel Fire Doors and Fire Shutters.

doors and windows


electrical equipment, lighting


Mus-Talk System: music and voice intercommunication system for residential installation allows simultaneous operation to master control. Packaged in two kits for builder convenience. Fanon Electric Co., Inc., 98 Berriman St., Brooklyn 8, N. Y.

sanitation, plumbing, water supply

Rapidayton 2-Wire Dolphin Submersible Pump: developed for suburban, farm installation, pump can be used for either shallow or deep-well applications. Can be used for depths up to 360'; models from 1/2 to one hp. Pump is frost-free, does not need priming. Dielectric fluid-filled motor is hermetically sealed. No control box necessary; pump operates completely submersed. Stainless-steel stage cases, nylon impellers used in construction reduce abrasion. The Tait Mfg. Co., 500 Webster St., Dayton 1, Ohio.

gray, white, dark green. Adaptable for schools, institutions. Stahl Industries, 130 Linden Ave., Youngstown, Ohio.

p/a products

(Continued from page 190)

NEW YORK
Robert J. Harder, Inc., Lockport, L. I.

NORTH CAROLINA
The Bonitz Insulation Co., Greensboro, Goldboro and Asheville Best Building Equipment Co., Charlotte

OHIO
Acoustical Contracting & Supply Corp., Cleveland and Youngstown Cincinnati Floor Company, Cincinnati Kilhemt Acoustical Company, Columbus

OKLAHOMA
Cemen Flors Company, Oklahoma City Harold C. Parker & Company, Oklahoma City Midwest Fibre & Tile Company, Tulsa

OREGON

PENNSYLVANIA
Ascuat-lcraft, Inc., Philadelphia Standard Floor Company, Pittsburgh

SOUTH CAROLINA
Bonitz Insulation Co., Columbia

TEXAS

UTAH
Utah Pioneer Corporation, Salt Lake City

VIRGINIA
Anning-Johnson Company, Alexandria Manson-Smith Company, Inc., Norfolk and Richmond

WASHINGTOm
Elliott Bay Lumber Company, Seattle Fiberglas Engineering & Supply, Spokane

WEST VIRGINIA
Asbestos & Insulating Co., Charleston

WISCONSIN
Building Service, Inc., Appleton and Milwaukee

WYOMING
Construction Specialties Company, Casper

CANADA
F. Drexel Company Limited, Edmonton, Alberta, Vancouver, B. C., Victoria, B. C. and Calgary, Alberta Hankock Lumber Ltd., Edmonton, Alberta

HAWAII
Hawaii Builders Supply Company, Limited, Honolulu

Economical Forestone is available through the following Simpson Certified Acoustical Contractors:

SIMPSON LOGGING COMPANY
1010 WHITE BUILDING, SEATTLE, WASHINGTON

General Offices in Shelton, Washington
Attractive, Economical Sound-Conditioning—
A Most Important Part of Good Building Design

Simpson Forestone is the world’s first fissured woodfiber acoustical tile. Its random textured surface adds beauty and warmth to the design of any building and the decor of any room. Its sound absorption efficiency is comparable to that of standard perforated woodfiber acoustical tile. And Forestone costs no more than the popular thicknesses of perforated woodfiber tile.

Forestone is available in 12” x 12” and 24” x 24” tiles, installed by nailing, cementing or hanging in mechanical suspension systems; in 12” x 23¾” tiles for exposed Z and T suspension systems; in 12” x 24” flange-jointed tile for easy nailing or stapling; and as 24” x 24” and 24” x 48” ceiling board to fit exposed grid suspension systems. The La Torre Restaurant installation (shown above) is Forestone Ceiling Board.

Consider Forestone when you are planning or designing your next job. It quiets rooms—beautifully and economically! You can get full information about Forestone from your nearest Simpson Certified Acoustical Contractor (see list on opposite page).
Now...TRUSCON

Other Republic Steel Products for Safe, Dependable Construction

REPUBLIC STEEL LOCKERS are safe, pilfer-proof, tamper-proof. Wide choice of styles and locking mechanisms. Bonderized for lasting paint adherence and resistance to damage—practically maintenance-free. Send coupon today.

TRUSCON Series 57 METAL DOORS are designed to withstand the high frequency usage of commercial and public buildings. Available in a wide selection of types, designs, and finishes in both single-swing and double-swing units.

NEW! 24-INCH-WIDE TRUSCON FERROBORD® is now available in new design and in lengths up to 32' 6". It roofs large areas quickly. Straight lay means several crews can roof without delay. Strong, light, fire-resistant. Mail coupon.
Certifies Every "O-T" Steel Joist

For your protection, Republic’s Truscon Steel Division now offers you, upon request, written certification that the Truscon “O-T”® Steel Joists you specify are manufactured in accordance with the standards of the Steel Joist Institute and are fully qualified to bear the SJI Seal of Approval.

This certification is issued by authority of the Steel Joist Institute to cover “O-T” Open Truss Steel Joists for each individual building for which they are engineered. Written certification will also be provided the owner at your request.

This is further assurance of predictable, dependable load bearing. Don’t take chances on just any joist. Specify Truscon “O-T” Shortspan Steel Joists . . . manufactured according to the rigid standards of the Steel Joist Institute and fully qualified to bear the SJI Seal of Approval—and now certified in writing.

For additional information, see or call your Truscon representative . . . or send coupon today!

THIS IS WHY TRUSCON CAN CERTIFY

The Quality Verification Program conducted by “this man in the white coat” is a continuing program of checking and inspecting of member company joist manufacturing processes and materials.

This thorough inspection on an unscheduled basis protects the integrity of the Steel Joist Institute Seal of Approval. This voluntary program gives the Seal of Approval real meaning.

The Quality Verification Program is administered for the institute by a nationally known testing laboratory. Every fabricating step is checked for adherence to standards. And, Truscon certifies it!

REPUBLIC STEEL

World’s Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL CORPORATION
DEPT. C-4989
3186 EAST 45TH STREET • CLEVELAND 27, OHIO

Please send information on the following Republic products:
☐ Truscon “O-T” Steel Joists ☐ Republic Lockers
☐ Truscon Series 57 Doors ☐ Truscon 24-Inch Ferrobord

Name_________________________Title_________________________
Firm_____________________________________________________
Address__________________________City_______________________
Zone____State________________________

February 1958
**books received**

How to Find Your Own Style in Painting. Ray Bethers. Hastings House, Publishers, 41 E. 50 St., New York, N. Y., 1957. 96 pp., illus. $3.50


Oil and Tempera Painting: 500 Questions and Answers. F. Taubes. Watson-Guptill Publications, Inc., 24 W. 40 St., New York, N. Y., 1957. 144 pp., illus. $3.75


---

**A SPENCER CENTRAL VACUUM SYSTEM**

**SPEEDS MAINTENANCE**

**GUARDS SANITATION**

_at this Modern Hospital_

A Spencer system—consisting of vacuum producer and dirt separator located in the basement and piping to inlets throughout the building—permits fast, thorough cleaning.

Routine maintenance of corridors and patients’ rooms is speedily accomplished by dry mopping. Mops are then vacuum cleaned by passing them over Spencer Vacuslots® (flush-mounted floor inlets) or Mop-Vacs® (cabinet type mop cleaners).

Positive, "closed system" vacuum cleaning action whisks away dust and dirt, leaves mops fresh and clean—while eliminating any possible spreading of dust or germs into the air.

The Spencer vacuum system has many other cost and labor saving uses, too, including boiler cleaning, water pick-up and conventional hose and tool vacuum cleaning.

For complete information on Spencer vacuum cleaning systems, contact

**The SPENCER TURBINE COMPANY**

HARTFORD 6, CONNECTICUT

---

**the persistent esthetic battle**


Like the weather, taste is always a timely topic. With typical American efficiency, we do what we can about both. For the first, we provide air conditioning; for the second, we have created a well regulated climate of equally stunning artificiality. However, in spite of our current preoccupation with scientific standards and controls, and our growing conviction that there is nothing that cannot be pinned to a point on a graph or given a mathematically graded rating from A to Z, taste remains an ephemeral thing. It refuses to be defined, and its only consistency is the reliable way in which it flouts its own rules. For anyone interested in the history of this elusive and provocative topic, Russell Lynes’ classic study of the cultural crusade in America has already proved itself a superior guide. It has a particularly poignant kind of fascination today, when skilful manipulation of the mass mind for commercial purposes is exploiting and exploiting the subject of taste as never before, and the basic American concept of beauty-for-everyone seems doomed to disappear with the Indian and the nickel cigar. Lynes’ entertaining account of the dedicated men and women who have been directors of this odd and persistent esthetic battle leaves us a bit sadder, a little more skeptical, and infinitely less optimistic about the future of the great American dream.

In the sense that the battle is concerned with the elevation of standards of our physical environment, the story is largely architectural. The American landscape is the best documentation of American taste. The buildings that crowd it, in a bewildering succession of styles, are the most tangible record of our inconsistencies; their decorative and utilitarian furnishings, including art objects, tell the rest of the tale. The passing pretentions of architecture (Continued on page 200)
Here's another excellent example of the versatility of modern skin construction. Despite the unusual arrangement of windows which complicated trim and anchorage, the architectural design was accomplished without deviation by the use of standard sections, thus holding the cost to a minimum.

In addition to the windows, aluminum panels and tubular mullions, the following aluminum features are also by Cupples: louver frames which include porcelainized blades; doors, frames and hardware; window cleaner safety devices; band course; condensation gutter; coping; sub-sill. Alumilite finish throughout.

Cupples' dominance in sound, economical curtain wall design, construction and erection keeps pace with its leadership in the fabrication of aluminum windows, doors, ornamental products and Alumi-Coustic grid systems. Our catalogs are filed in Sweets'.

OFFICE BUILDING,
200 E. 42nd St.,
New York City
Emery Roth & Sons, Architects
Diesel Construction Company, Contractor

PRODUCTS CORPORATION
2660 South Hanley Road • St. Louis 17, Missouri
All mineral, KILNOISE®, acoustical tiles offer the architect or designer an unusual combination of beauty, practicality and design. Outstanding white Kilnoise tile can now be contrasted or complemented by ocher Kilnoise tiles . . . in delicate hues of pink, grey, lime, blue or sand. For more forceful decorating, charcoal or dark blue tiles are also available and all colors are offered in both plain and striated patterns.

Mechanical or adhesive suspension . . . glare free . . . controlled sound absorption. Kilnoise tile ceilings complete your effort to make private and public buildings . . . inspiring.

and their accompanying changes in decor seem to reflect all that is most foolish in human character in any given moment in time. Our faulty aspirations and overly flattering self-evaluations come through our domestic arts all too clearly: we imagine ourselves statesmen of democracy in the great Greek tradition and build temples to live in; we believe that we are sophisticated connoisseurs of world culture and dwell in clever cottages reminiscent of our travels—Swiss chalets and Oriental villas—filled with a smothering assortment of exotic bric-a-brac; we are princes of commerce, and commission palaces filled with the most ostentatious treasures; we discover the ultimate snobbery of understatement and demonstrate our new found refinement by substituting pewter for gold plate. The whole historical process is detailed chronologically, from the emergence of the Common Man and the age of public taste in the 1820's, through the growth of individual fortunes and private taste in the latter part of the century, to the corporate taste of today. Not too surprisingly, since Americans are a puritanical people who want their pleasures duty-coated, the justification of each succeeding style has always been argued by identical moral claims of the "honesty," "suitability," "inevitability," and "rightness" of the new ideas; and the movements have invariably collapsed with the deterioration of the style into a mockery of mannerisms and clichés. Whatever the fashion, whoever the leader, the change has inevitably been carried out in the name of rationality and reform. Andrew Jackson Downing called for the abolition of "poor and tasteless temples" and the substitution of "beautiful, durable, and convenient mansions," built in the Gothic manner. Charles Lock Eastlake preached the need for "simplicity" and "sincerity" as expressed in
better living

When you make anything in metal for homes, kitchens and appliances, and you want enduring beauty and sales appeal in your product . . . design it, improve it and protect it with McLOUTH STAINLESS STEEL.

specify

McLOUTH STAINLESS STEEL
HIGH QUALITY SHEET AND STRIP
for home and building products

McLOUTH STEEL CORPORATION  DETROIT, MICHIGAN
MANUFACTURERS OF STAINLESS AND CARBON STEELS
At Bartlesville, Okla., the H. C. Price Co.—veteran oil and gas pipeline construction firm—recently opened their beautiful, new cantilever-design Price Tower. Containing both offices and residential apartments, this 19-story, fully air-conditioned structure uses Youngstown “Buckeye” full-weight rigid steel conduit for protection of its important electrical wiring system from damaging elements such as water, moisture, vapor, dirt and dust.

Field reports across the nation state: “Youngstown’s ‘Buckeye’ Conduit is easier to bend—easier to fish wires through and, due to its superior corrosion resistance, affords a much longer trouble-free service life.”

Leading distributors in every industrial and electrical market are ready to serve you quickly and efficiently from their ample stocks of Youngstown “Buckeye” Conduit. They’re as near as your phone—why not call today?
As rewarding as a royal flush, or checkmate in three moves... your identity in Beautiful Holmes carpet. Skilled Holmes designers will interpret your ideas—or create original motifs in harmony with the decor—speedily, accurately, and at prices that are competitive without sacrifice of quality. If you prefer, choose from our library of distinctive patterns; all are quickly available in 27-inch widths, many in wider widths. For the name of your nearest Beautiful Holmes contractor, write or call Archibald Holmes & Son, Erie Avenue & K Street, Philadelphia 24, Pennsylvania. Now in our second century of fine carpet weaving.

Sprightly chessmen march across a background of burnt orange, dappled with black and accented by gold, giving a distinctive character to the decor of the Mint Casino at Las Vegas. This carpet was developed by Holmes from an original sketch. Interior design and furnishings by Albert Parvin Company, Los Angeles.
The Carrier Multi-Weathermaker System...

A NEW LOW-COST WAY TO

The Carrier Multi-Weathermaker* System is a unique, new concept of air conditioning so flexible it can be adapted to any commercial or industrial building. Three main factors contribute to its flexibility—a Master Plan, Utility Core and self-contained Weathermaker units. Where funds are limited, the System can be installed in critical areas first, then expanded to include other areas later. Or the entire System can be installed at one time. Either way, there's no disruption of normal routine. The questions and answers here describe the System's advantages in some detail. For complete details, call your Carrier dealer, listed in the Classified Directory. Or write for the booklet, "Carrier Multi-Weathermaker System." Carrier Corporation, Syracuse, New York.

In a typical multi-story office building, the Utility Core of the System is installed vertically to provide service outlets to each floor. In a low, horizontal factory, the Core is suspended parallel to the floor to provide maximum flexibility. Units can be used many ways, four of which are shown on the right.
AIR CONDITION A BUILDING!

For individual offices, the Carrier Multi-Weathermaker System can economically air condition each office. Individual Weathermaker units connected to inexpensive ducts, do the job. Units can be recessed in a wall or storage area.

Q. What makes this System new and unique?
A. The Master Plan, which co-ordinates installation of individual Weathermaker units in one integrated System—not a hodgepodge of unrelated “packaged installations.”

Q. How is the Master Plan applied to an average office building?
A. First, a survey determines the cooling capacity required to air condition the building. Then, zone by zone, the Plan pinpoints the location of individual Weathermaker units required to handle the load. In addition, to simplify the installation of utilities from cooling tower to Weathermakers, the Plan provides a unique central Utility Core that houses the cooling tower supply and return piping, drain piping and electrical service. These utilities are sized to service all of the Weathermakers that will ultimately become part of the Multi-Weathermaker System.

Q. How many Utility Cores are required in a building?
A. In an average building, usually one. In larger buildings, several are required.

Q. How does the System’s flexibility apply to installation and financing?
A. If financing is available, the System can be installed all at once. Otherwise, it can be installed in predetermined sections step-by-step—an area, a floor or several offices at a time. In this way, financing can be conveniently spread over a period of years.

Q. Does “low-cost” apply both to installation and operation?
A. Yes. Here’s why: Weathermaker units are relatively low in cost and inexpensive to install. They operate only when needed, so operating costs are strictly controlled. They’re as easy to turn on and off as an electric light, so the expense of hiring an operating engineer is usually eliminated. Because of Carrier quality, service expense is minimum. And the System offers substantial tax advantages.

Q. How quickly can a System be installed?
A. That depends on the building. And whether you want to install it all at once or step by step. In general, it’s fast. All work can be done during regular hours without interrupting routine. And once the Utility Core is installed, individual units may be moved about and connected wherever they are needed to meet a temporarily increased heat load.

Q. What does a Weathermaker unit look like?
A. We’ve shown four here in commercial and industrial installations. More are shown in the 24-page booklet on the System. We’ll be glad to send you this on request. We think you’ll find it interesting and helpful.
a monumentally awkward kind of furniture “honestly” fastened with wooden dowels instead of nails. The arguments of the prophets of modern design, stressing suitable use of materials and expression of function, sound surprisingly unchanged today. In each case, the hope of the elevation of mass taste flew from Pandora’s box briefly, brightly, but with ultimate futility.

If the history of taste in America has been a cycle of pretention and caprice, are we any better off today? The Modern Movement has staged a remarkable half-century crusade to improve public standards, preaching its sermons in the name of propriety and art. Now that the architectural revolution is a fait accompli, has the missionary zeal of its promoters successfully substituted the unadorned elegances of the contemporary style for the excesses of the Victorian Age? The sad truth is that, faithful to the well established pattern, new abuses are being substituted for old; the clichés have already set in. The intellectuals of today revere correctness above creativeness; with minor variations their houses are carbon copies of approved, museum-sponsored models; interiors are remarkably alike, since the same furnishings, pictures, bits of statuary, oddarty pots, and the inevitable hi-fi are to be found in all. On another level, our suburbs are a marvel of contemporary gimcrackery; if gingerbread has been eliminated, factory-weathered shingles and artificial stone combine with corrugated siding and whitewashed brick in a busy caricature of modern design.

Nor does the architect, dedicated man that he is, stand much of a chance in the present scheme. The forces working against him for control of the public are too many and too strong. Taste today is in the hands of one of the most powerful pressure groups of all time. In our overproduced economy, the forces of advertising and merchandising guide the major processes of creation—determining all forms of useful and decorative design—with one ultimate aim: to achieve the biggest potential “sell.” The sales-inspired “streamlined baroque” of the industrial designer has penetrated every aspect of our physical lives, and the designer himself has discarded all sense of esthetic obligation in favor of the kind of blatant commercial styling that is based on the pseudo-science of consumer surveys and motivational research.

The picture today—without benefit of charts and graphs—is all too clear. Modern man is seated behind his picture window, relaxed in his womb-chair, or relieving his tensions in the more impressively upholstered Lounger. Depending on the “purity” of his tastes, he is surrounded by walls of stark white and blue, or the...
a new dimension in Roof Deck Construction

sound conditioning

The steady hum of motors, machines and mechanical vibrations can be greatly lessened when "sound bounce" is reduced. Tectum roof decks absorb sound as much as 85% for 3" material making busy plants more comfortable—better places in which to work. Tectum panels over exposed joist or beam make an attractive interior ceiling without need for further finishing. Wood-toned, textured pattern is both attractive and durable; goes down fast, saves time and labor charges during erection. Tectum is now available in greater quantities than ever before. Ask for a complete file on Tectum for roof decks, sidewall and acoustical suspended ceiling usage, or see Sweets Architectural and Industrial Files.

TECTUM Corporation, 109 S. Sixth St., Newark, Ohio

Branch Offices in Philadelphia, Columbus, Atlanta, Dallas, Chicago, Beverly Hills and Seattle, with distributors in all leading areas. Factories in Newark, Ohio, and Arkadelphia, Arkansas.
reviews

(Continued from page 206)

less sophisticated but equally chic Saffron, Cantaloupe, and Siamese pink. His kitchen is equipped with an impressive array of appliances with complex, glittering dashboards suggesting the possibility of a not-too-distant rocket trip to the moon. His packaged foods project appetite appeal in strong, come-hither hues that might be considered, by the more querulous, offensively garish. The highbrow lives smugly with his safe, stock-version of the avant-garde. The middlebrow is completely furnished and serviced by the oppressive mediocrity of brand names. The lowbrow lives in contented chaos. The question is, where do we go from here? What new crusader will arrive to deliver us from the deadly sterility of esthetic conformism on the one hand, and the deliberately depraved idiocies of commercially promoted design, on the other? And if such a savior does arrive, what convincing moral arguments will he bring, to be transformed, in turn, into another set of disappointing clichés? We can only wait and see, and hope that Russell Lynes will continue his delightful documentation of the process.

ADA LOUISE HUXTABLE
Author, Architecture Historian
New York, N. Y.

best seen and not read


There are two approaches to the writing of architectural history. One is the academic report in the tradition of 19th-Century scholars which tabulates conscientiously those facts that are substantiated beyond doubt by archeological evidence. The other approach is that of the interpreter who deducts from visual evidence cross-influences and socio-esthetic implications, bearing on the lives of those who built, used, and inherited man-made structures. Professor Pevsner, editor of THE PELICAN HISTORY OF ART, has chosen his authors exclusively from the aca-

(Continued on page 216)
the fresh crispness
the limitless expanse
of the outdoors...

CARPENTER'S
newest vinyl
wallcovering triumph

ICRTEX V.E.F.

NATIVE NET

Walls seem to move outdoors... take on a fresh crispness, the tang
of the sea... expand under sunny skies
like the shifting sands of an island paradise.
Indoor walls come alive!
The intriguing handcrafted look, airy
coolness, soft colors of Vicrtex VEF
Native Net won't fade, scuff, crack or peel.

Created by Carpenter's exclusive process,
this electronically fused vinyl wallcovering
fabric is practically indestructible.

Amazingly versatile, Vicrtex VEF
can be hung directly on bare structural block
walls, untaped wallboard... may be folded,
draped, pleated or stitched... never
needs backing however used. A damp cloth
keeps it bright and clean.

More than 30 textural and tri-dimensional
patterns... 36 colors and color combinations
... open up new avenues for designers,
decorators and architects.

Write, wire, phone RIGHT NOW
for samples and prices.

* vinyl
electronically
fused.

L.E. CARPENTER & COMPANY, INC.
Sales Office: Empire State Building, New York 1 • LONgacre 4-0080 • Mills: Wharton, New Jersey
STOCK STEEL DOORS, FRAMES, COMPLETE WITH HARDWARE THAT REFLECT YOUR CREATIVE INDIVIDUALITY

AETNAPAK advantages boil down to this: complete design freedom and Aetna custom quality, with stock service at stock prices:
1. Choose from 280 ready-to-install type-and-size combinations for commercial, industrial, institutional requirements from AETNAPAK's new stock component catalog. Doors and frames shipped complete with your choice from the broad selection of AETNAPAK hardware.
2. True custom features not found on ordinary stock doors: completely flush design; uniform clearances; mortised deadbolts; furniture-grade steel in doors; standard beveled door edges; other beveled-down or strip frames.
3. Choice of mortised or cylindrical locksets, hinges, push plates, closers, push bars, bumpers, panic devices, and other accessories.
4. Refinements, like welds and seams dressed smooth and extra reinforcements, offer you stock packages with custom workmanship, appearance and features.
5. Shipped to meet YOUR schedule—whenever you are—through nation-wide representatives.

AVOID CUSTOM ENGINEERING DELAY. SPECIFY AETNAPAK IN-STOCK DOOR-AND-FRAME PACKAGES, COMPLETE WITH HARDWARE, SEND FOR COMPLETE CATALOG NOW!

Please send free catalog on AETNAPAK Custom-Quality Stock Steel Doors, Frames, and Hardware.

Individual

Firm

Street

City

Zone

State

AETNA STEEL PRODUCTS CORPORATION

730 Fifth Avenue, New York 19, New York Dept. 3-C
For years Southern has consistently and successfully created special food serving equipment to meet the most unusual performance demands. "Custom-Bilt by Southern" equipment can be designed, engineered, fabricated, installed and expertly fitted to available space for any food service operation. Get expert help today—call your "Custom-Bilt by Southern" Dealer, or write to Southern Equipment Company, 4550 Gustine Ave., St. Louis 16, Mo.
HOW
J & J GOT 2 FOR 1
With Brown & Grist Window Walls, Johnson & Johnson got a two-story building for almost the cost of a one-story, conventional wall structure. B & G custom-built the 31-foot, two-story panels at stock prices. They went up fast, saving months of costly building time.

WHY
THE OVERHANG
This pleasing feature is also functional, keeping glare out, and letting daylight in. Thanks to the feather-lightness and high rigidity of Brown & Grist Window Walls, it could be included without costly structural steel support.

HY
PORCELAIN PANELS
Designers picked porcelain-enamel steel for long wear, low upkeep. Like 100 available materials, these panels were weather-sealed at B & G's plant. Kidde engineers chose B & G because "price and delivery time were better" and "our experience with Brown & Grist has been very good."

BROWN & GRIST WINDOW WALLS
Got a building on the board? Write for B & G Sweet's catalogs today!

BROWN & GRIST, INC. 25 Tyler Avenue, Warwick, Va.
During 1957, plants of these leading U.S. Corporations were among the hundreds roofed with:

<table>
<thead>
<tr>
<th>Whirlpool Corporation</th>
<th>I. B. M.</th>
<th>Firestone Tire &amp; Rubber Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois Bell Telephone Co.</td>
<td>Standard Oil Company (Ohio)</td>
<td>LeTourneau-Westinghouse Company</td>
</tr>
<tr>
<td>Kraft Foods Company</td>
<td>Sears, Roebuck &amp; Company</td>
<td>General Electric Company</td>
</tr>
<tr>
<td>General Foods Corporation</td>
<td>Chrysler Corporation</td>
<td>Westinghouse Electric Company</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Sylvania Electric Products Inc.</td>
<td>Caterpillar Tractor Co.</td>
<td>Goodyear Tire &amp; Rubber Co., Inc.</td>
</tr>
<tr>
<td>Ford Motor Company</td>
<td>Pepsi-Cola Company</td>
<td>Clark Equipment Company</td>
</tr>
</tbody>
</table>

**F. E. SCHUNDLER & COMPANY, Inc.**

*504 RAILROAD STREET • JOLIET, ILLINOIS*

Eastern Office: Chatham Phoenix Bldg., 29-31 41st Ave., Long Island City, N.Y.

**RATED FIREPROOF MATERIALS-ACOUSTICAL & INSULATING**


Manufacturer of today's finest roof insulation board
Sealing Around Mullion and Sill Joint in an aluminum-porcelain window wall.

Horizontal and Vertical Expansion Joints between cast stone and panels.

...protected TODAY with PRESSTITE No. 1175.1 THIOKOL* LP-BASE SEALING COMPOUND

This development, right in the heart of Dallas, will cover 120 acres, provide a total of 2,894,065 sq. ft. of usable floor space and have a normal occupancy of about 25,000 persons.

In addition to four office buildings, the community will include a 1000-guest room hotel, medical research center, maintenance building, major department store and 100 retail shops.

The polysulfide used in this composition is sold under the registered trademark "THIOKOL", manufactured by the Thiokol Chemical Corporation.

WANT MORE INFORMATION?

Write for Free Users Manual
or write for copy
...and soon to protect the Braniff Building

Olynthus is here supplemented by detailed house plans, confirming variety-in-unity as the common denominator of Greek town planning. In spite of two invariable spatial elements—atrium and square room layout—each house on the uniformly cut gridiron blocks is different: a magnificent expression of the fierce Hellenic sense of individuality.

A surprise is Lawrence's report on Greek baths, which remain undemonstrated in other publications. There is an extremely handsome unit of two circles in a squared establishment from Oenidae and an elaborate compound from the Greek settlements in the Crimea, proving that the Romans based even their thermae on Greek prototypes. The other unexpected find in the PELICAN volume is an excellent pictorial report on Greek fortresses and walls. We are so used to identifying Greek architecture with the attenuated perforations of peripteral temples, that the massive strength and high craftsmanship in ashlar masonry adds a new appreciation to Greek building genius. Some of the fortresses, notably Messene, equal the finest stone work of the Incas.

The question posed by Professor Lawrence's book is whether architectural histories should only be looked at, or also read. As a visual report, his contribution is excellent: as text it is bewilderingly inadequate. In his anxious insistence on proved evidence, he omits all cross-references to sources of origin. He denies the Danubian roots of the Hellenic tribes by labeling all basic building forms as "origin unknown," although there exist such illuminating analogies as Celtic beehive tombs, with dromos in prehistoric Ireland (New Grange); the grave circle of Stonehenge, resembling closely the grave circles of Troy and Mycenae; the megaron plan of Neolithic lake dwellers (Lake Constance) north of the Alps; and the persistence of the

(Continued on page 222)
In kitchens where speed and capacity are demanded, a Hobart flight-type dishwasher is the complete answer for making your kitchen layouts work economically and efficiently. Completely automatic fresh water scraping, power washing and rinsing...dishes are racked in the conveyor in one amazingly fast operation...no need for constant supervision. Flight-type sizes range from 12 to 26 feet long, with conveyor speeds from 5 to 12 feet per minute. Check the features above that assure you of trouble-free operation. In the complete line of Hobart dishwashers there are over 50 different models...one is exactly right for any operation, regardless of size or volume.

You, as an architect, can readily appreciate the flexibility and adaptability of the Hobart line as well as the nationwide sales and service organization that backs all Hobart products. The best kitchen layout is not efficient unless the machines you specify are dependable. Check Sweet's Architectural File for specifications on all Hobart kitchen and dishwashing machines or send in the coupon.

The Hobart Manufacturing Co., Dept. HPA, Troy, Ohio
Please send information and complete specifications on Hobart continuous racking dishwashers ☐, semi-automatic ☐ or dual-drive automatic dishwashers ☐, kitchen machines ☐.

Name of Firm

My Name

Address

City....Zone...State
For Better CONTROL of Costs

Kinnear Motor-Operated Steel Rolling Doors

A proved way to “put the finger” on unnecessary costs is to install Kinnear Motor Operated Rolling Doors. Combining quick, easy push-button control with highly efficient coiling upward action, they save time, steps, effort and space.

For example, you never have to make sure all’s clear before you touch the button to open Kinnear Doors. They coil upward without using a single extra inch of floor, wall or ceiling space.

Push-button control promotes prompt closing of opened doors — saves heated air in winter and cooled air in summer.

You save floor, wall, and ceiling space — all fully usable for storage or equipment at all times.

The KINNEAR Manufacturing Company

FACTORIES:
1900-20 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

reviews

(Continued from page 220)

chieftain’s hall as central feature of the settlement, which is a most zoroastrian tradition. Wherever Professor Lawrence does not describe with scholarly precision the evident structure, he relies on two standard works, familiar even to undergraduate students of Greek architectural history and therefore hardly new: the English Handbook of Greek and Roman Architecture, by Robertson, and the American Architecture of Ancient Greece, by Dinsmoor. To the latter, there are well over 80 references in the Notes. This lack of independence in the text seems puzzling, till one comes to the Epilog. Here the author not only reveals but also emphasizes his lack of sympathy with his subject matter. He insists that the Greeks are alien and incomprehensible to modern times and that “the spiritual gulf between the modern world and that of the Greeks” is much wider than he ever suspected. By way of proof, he warns us to envision the altar and the sacred precinct as filled with “the bellowing of frantic cattle, flies, blackening the widening carpet of blood, and a reek fouler than in any slaughter house.” “The most cultivated citizens were liable to think in a surprisingly old-fashioned [sic] manner” — exemplified by a most naive appraisal of the Oedipus tragedy of Sophocles, and by the good Professor’s incomprehension of Socrates’ execution and the (magnificently ironic) last words of the sage. He concludes with a paragraph enumerating primitive religious habits, “hide-bound traditionalism and a frantic patriotism, constant and irrationally exclusive as the feelings of a school-boy.” “The paragraph above,” continues Professor Lawrence, who is an Oxford-trained professor of archeology at the University of the Gold Coast, “was actually written to describe present-day mentality in the West African bush but has required no modification except...
A New “First” on New York’s Skyline!

for The First Time...FIREPROOFING
Direct to the Underside of Steel
Floors—“Machine-Gun” Applied!

New Advanced Technique Surpasses Fire Rating
Requirements...Speeds Work Progress...Reduces
Material Costs!

ZONOLITE MAKES HISTORY!

In the new Deering-Milliken & Co. Inc. Building, Zonolite vermiculite fireproofing was “machine-gunned” directly to the underside of steel floor decking for fire protection. It’s the first job of its kind in New York.

Zonolite and the machine technique made it feasible to achieve substantial savings in time and materials. Other benefits of this new technique: Reduction in floor height; ease of tenant and mechanical changes; 4-hour fire protection. Zonolite and the speedy plaster machines were hailed as “accelerators in the coordination of the trades”—a further contribution to over-all efficiency and economy.

What happened in New York is happening in many other cities, as architects and engineers make use of new Zonolite direct-to-steel fireproofing. Get the whole Zonolite story! Tear out the coupon.

MAIL COUPON TODAY FOR FREE BOOKLET

ZONOLITE COMPANY
Dept. PA-28, 135 S. LaSalle Street, Chicago 3, Ill.
Please send me booklet PA-41 on Zonolite Plaster, Acoustical and Fireproofing systems.

Name ___________________________
Firm __________________________
Address _________________________
City ___________________ Zone __ State __________
a change in tense to make it applicable to the average Greek of the Fifth Century when an educated minority was already emancipated: It should apply in an intensified form to the preceding centuries. . .

This statement from an Englishman is ironical indeed, because it betrays not only a profound unconcern with the contributions of pre-Socratic philosophy and mathematics from Pythagoras to Empedocles, who were members of the Milesian and Southern Italian Schools, which meant a way of life; it also fails to comprehend (by way of the academic pin-point view) the achievement of the Hellenic world, against the background of early Iron Age Primitivism. The average Greek citizen met in free assembly to approve and finance the architecture and art of his time. There was no Semitic Hierarchy to decree cultural achievements. The temples, stoas, sanctuaries, gymnasiums, theaters, and private houses, were as much expressions of Greek society and its standards as were the factory towns, the slums, and gingerbread villas of the Victorians. If Professor Lawrence insists on his unfortunate analogy with the West African Bush, it seems to us that an English fox-hunt where the participants smear each other with the quarry's blood, dripping from the severed tail; the parochial jingoism of the English middle class; and the inflexible adherence to outworn traditions "for the best of the state"—unmodified by great architectural or artistic achievements — are much more "primitive" than Fifth-Century Greece. We had once before this same congenital incomprehension of the Greek phenomenon, in Kitto's curious book, The Greeks. So one must conclude that it is imperative that the work of an English art historian, dealing with more complex societies, be best seen and not read.

SIBYL MOHOLY-NAGY
School of Architecture
Pratt Institute
Precast concrete construction throughout...

The growing trend toward precast concrete is illustrated by this new Beth Israel Synagogue and School at Vineland, New Jersey. From standard concrete block to huge 60 ft. prestressed double tees, precast concrete serves both architecturally and structurally.

In precasting these units, the Edward Campbell Company used Lehigh Early Strength Cement for maximum production efficiency and economy. For example, in making the double tees, they used Lehigh Early Strength Cement and hot water curing. Result: early removal of units and reuse of forms in less than half the time required with regular portland cement.

This is typical of the advantages of Lehigh Early Strength Cement in modern concrete construction.
Servicised "Green Streak" Corner Former provides a quick, easy and low cost method of forming perfect 1" radius rounded corners on piers, beams and all outside corners of poured concrete. Made of a tough, durable and resilient plastic, the Corner Former is simply fastened to the form (see installation drawings at left) and it automatically assumes the correct radius. Because it is readily removed and re-installed, Servicised "Green Streak" Corner Former is by far the lowest cost method of round corner forming you can use.

Available in standard lengths of 10 ft. Four 10 ft. pieces packaged in a tube. Write for full details and prices.
MODERN VAMPCO HEAVY RIBBON ALUMINUM WINDOWS ADD CHARM AND BEAUTY TO NEW CHURCH...

The Immaculate Heart of Mary Roman Catholic Church in Maplewood, New Jersey is a striking example of how architects and builders everywhere are turning to Vampco Aluminum Window Walls for modern beauty, functional design, structural strength and durability. The muntin bar arrangement in window wall is highly specialized and with the glazing of colored glass definite images of three crosses are clearly visible. The cross at the lower left is green, the center cross is ruby and the cross at the right is blue. Other colors utilized are shades of blue, amber, red and natural opaque.

Vampco Aluminum windows for every type of construction are available in casement, combination casement, awning, intermediate projected, curtain walls of varying sizes and thicknesses, heavy ribbon, window walls, glass block and custom designed types. For complete illustrated literature, mail coupon below today.
It Takes Both For MORE STRENGTH & PROTECTION IN MASONRY WALLS

Blok-Joint is a cross-shaped rubber extrusion used to make control joints in masonry walls. No special blocks are required—no building paper and mortar fill is necessary. No cutting or sawing to be done. Blok-Joint is used with any standard metal window sash block.

The secure interlock provided by Blok-Joint adds to the lateral stability of the wall. It allows for contraction and expansion while maintaining a firm joint.

Blok-Joint is effective in single block walls, with brick and block backup and at pilasters and columns.

The big advantage you get with Blok-Mesh is the exclusive “Deep-Grip” swedging. It allows the mortar to get a real bite on the reinforcing yet requires no more area in joint than other types of superficial deforming.

Blok-Mesh is designed to eliminate cracks above lintels and below sills. It minimizes ordinary shrinkage cracks. Notice in the illustration how the “Deep-Grip” swedging of Blok-Mesh is large, deep and well-defined to form effective dovetailing.

Write for FREE Blok-Joint sample and literature on Carter-Waters 2-point better masonry wall design.

For Further Information See

Write today for your 10-day-FREE examination copy.

REINHOLD PUBLISHING CORPORATION
430 Park Ave., Dept. 5252, New York 22, N. Y.
Though held under water for years, FOAMGLAS retains its full buoyancy—proof that its sealed cell structure absorbs no moisture.

FOAMGLAS roof insulation stays dry before, during and after application—lessens the chance of water damage to the roof, the building or its contents. With its high strength, FOAMGLAS provides a firm base for built-up roofing. It's light in weight and easy to cut. Write for latest literature.

© Pittsburgh Corning Corporation
Dept. AB-28, One Gateway Center, Pittsburgh 22, Pa.
In Canada: 57 Bloor Street West, Toronto, Ontario
**TV plant**

(Continued from page 226)


**design & structure**

(Continued from page 153)

I believe that if we attune ourselves to a more sensitive understanding of the more subtle relationships between structure and form—if we conceive of design with structure rather than through structure—if we work together rather than borrowing from each other—we might evolve toward a relationship between structure and form that will have a far greater significance to the forthcoming architecture of our country than the occasional exuberant adoption of a barrel vault, a folded hip roof, or a daring prestressed cantilever.

I believe that it is important that we develop this more mature critical sensitivity and that we do so soon enough, because it is very likely that a major mutation in the forms of American architecture will occur in the near future.

The character of contemporary architecture, as it has become established over the last quarter of a century, does not, I believe, present an indigenous reflection of the country's standards of life and emotional tastes. As a style, in its emphasis on simplicity and sobriety, it is far more consistent with the standard of living and the limitations of modern Europe (in which changes and new elements of progress are developed in response to scarcity of materials and high costs of processing) than it is to our habits of plenty and our economy of induced ob-

(Continued on page 232)
No matter which **FINISH** you like—you can buy it in

**MicroRold**® QUALITY STAINLESS STEEL

**2D**—A silvery white, but non-lustrous, surface produced by annealing and pickling cold reduced material. Steel sheets & strip in this condition are most ductile and the surface holds lubricant well for severe drawing operations.

**2B**—Steel in the 2D condition which is subsequently rolled on a "skin pass" or temper mill. The surface acquires a bright finish from the polished rolls. This surface is somewhat more dense and hard than 2D and is a better starting surface for later finishing and buffing operations.

**No. 3**—This surface is made by grinding with a No. 100 abrasive. This surface is smooth but not as reflective as 2B.

**No. 4**—A finer finish than No. 3 made by grinding with a No. 150 abrasive. Like No. 3, this surface is easily blended with hand grinders after forming, drawing or welding.

**No. 7**—Good reflectivity and brilliance made by polishing with a No. 400 abrasive. This semi-mirror finish must be protected during fabrication by adhesive paper or strippable plastics lest the finish be marred beyond repair.

**BRIGHT**—A highly reflective surface made by cold reducing with highly polished, glass-hard rolls. This finish is only available in Type 430 stainless.

These are our standard surface finishes that are available in types 201, 202, 301, 302, 304 and 430 except Bright which is type 430 exclusively.

These finishes are regularly supplied in sheet and coil form in widths up to 48 inches.

Since Nos. 3, 4, 7 and 430 Bright are smooth reflective surfaces, they are not recommended for severe drawing without special precautions as the mill finish may be marred. Applications such as dairy machinery, kitchen and restaurant equipment and architectural decorative work require only local forming, so these highly polished surfaces are not greatly disturbed. All mill polished sheets are carefully packed to avoid handling imperfections. Protective adhesive paper can be specified by the buyer when needed.

For specific information on recommended surface characteristics for a particular stainless steel sheet and strip application, address your request to our Product Development Dept.

---

**Washington Steel Corporation**

Producers of Stainless Sheet and Strip Exclusively

2-M Woodland Avenue, Washington, PA.

February 1958 231
design & structure

(Continued from page 230)

solescence.

Our tendencies, our tastes, our habits, all tend toward expressions of greater dimensions and imaginative potentials than contemporary architecture in America seems so far to have explored. In other fields, the tremendous difference of attitudes, tastes, and standards is clearly reflected; compare the American automobile or the American household with its European counterpart!

If the contemporary architectural movement has eventually gained acceptance, it is mainly as a "style," almost as a fashion, and very much because of its inherent characteristics of economy, which have been keenly appreciated by the developers, and have not been balanced by an expressed public demand for higher quality of environment. Yet we are now reaching a point where the demand for richer and more imaginative architectural environment is going to be felt. Already, with the creation of the new suburban centers, the taste for new nuclei of greater civic meaning is established; and the forces of competitive enterprise may well be coaxed into sponsoring such richer urban environments. At the same time, in the coming tasks of urban renewal, where large areas of our old cities are going to be razed and rebuilt, a tremendous potential for grandiose planning will be opened, and it is probable that a newly expressed assertion of civic pride might sponsor new forms for our city's cores.

Toward the birth of a demand for richer environment, the architect should be an eager coaxer, a competent midwife, as well as a very prudent guide. These forces, if properly guided, may soon bring about a magnificent age of American Baroque, with all of the characteristics of imagination, grandiosity, and visual delight that characterized its classical predecessor, yet expanded to the benefit of all of the people. If, on the other hand, these forces are not properly guided, we may, in striving for the expensive and the plentiful, entirely bypass the baroque and plunge straight into an eclectic modern-day rococo—a molasses-like quagmire of environmental banana.

(Continued on page 237)
Careful planning of schools, hospitals and commercial buildings calls for windows and window wall systems that save important maintenance dollars year after year. “Quality-Approved” aluminum windows — double-hung, casement, awning, projected or sliding — are rust-proof, rot-proof...never need painting or expensive maintenance...retain their modern appearance and operating efficiency for the life of the building...save money every year.

For latest copy of “Quality-Approved” window specifications, consult any manufacturer listed below, or write to Dept. PA-82.

**Aluminum Window Manufacturers Association**

45 North Station Plaza, Great Neck, N. Y.


Pictured above: North Penn Senior High School, Lansdale, Penna. • Architects: Howell Louis Shay & Associates • Contractor: Work & Co.
situations open

ARCHITECTS & ARCHITECTURAL DRAFTSMEN—Immediate openings for men with three (3) to five (5) years experience for long term employment in excellent working conditions. State age, education, references, experience, marital status, availability, salary expected, along with work sample and recent photograph in first letter. William F. Bernbrock, A.I.A., Fifth Avenue Building, Moline, Illinois. Moline 2-7943.

ARCHITECTURAL DESIGNER—Excellent opportunity for permanent affiliation with progressive office, located sixty miles north of New York, specializing in contemporary work. Must be good designer and delineator with background in interior design. Work consists of resort hotels, public buildings, housing and other private work. In reply give complete resume, including education, experience and availability; salary open. Reply to Box 598, Progressive Architecture.

EXPERIENCED ARCHITECTURAL SPECIFICATION WRITER—with at least 10 years background; some additional field experience desired; medium to large sized office; general practice, New York area. Submit full information, references and salary expected. Box 600, Progressive Architecture.

EXPERIENCED ARCHITECTURAL FIELD SUPERVISOR—with at least 10 years background; medium to large sized office, general practice, New York area. Submit full information, references, and salary expected. Box 601, Progressive Architecture.

PARTNER WANTED—Architect approaching retirement, after handling 1,256 jobs of all types in last 47 years, needs man who can sell. Either NCARB or recent graduate accredited school needing experience to get license. Progressive southern city on new transcontinental highway in growing territory. Last salesman died. Box 602, Progressive Architecture.

WANTED—Two senior architectural draftsmen and one junior architectural draftsman. Ideal working conditions. Give full information on education, experience, starting salary, availability, age, etc. Replies held confidential. (Continued on page 836)

Advertising Rates

Standard charge for each unit is Five Dollars, with a maximum of 50 words. In counting words, your complete address (any address) counts as five words, a box number as three words. Two units may be purchased for ten dollars, with a maximum of 100 words. Check or money order should accompany advertisement and be mailed to Jobs and Men, c/o Progressive Architecture, 430 Park Avenue, New York 22, N. Y. Insertions will be accepted not later than the 1st of the month preceding publication. Box number replies should be addressed as noted above with the box number placed in lower left hand corner of envelope.

CONCRETE REINFORCING STEEL INSTITUTE

38 S. Dearborn St., U. S. 4, Chicago 3, Illinois

NEW EDITION!

Completely revised to conform to the recently amended A. C. I. BUILDING CODE

REINFORCED CONCRETE DESIGNS

ALL WORKED OUT!

No more algebraic formulas or calculations to make. Simply locate the table covering the member you are designing, apply span and load requirements, and then read off directly concrete dimensions and reinforcing steel data. Follows the latest codes and practices. Send check or money order for your copy, today.

Prepared by The Committee on Engineering Practice

CONCRETE REINFORCING STEEL INSTITUTE

38 S. Dearborn St., U. S. 4, Chicago 3, Illinois

$6.00

10-Day, Money-Back Guarantee

NO C.O.D. ORDERS

O VER

450 PAGES

450 PAGES

$6.00

10-Day, Money-Back Guarantee

NO C.O.D. ORDERS

450 PAGES
TO YOUR ADVANTAGE

STRUCTURALLY! ECONOMICALLY!

IN THE SPAN RANGE TO 48 FEET

THE MACOMBER V-BEAM

DAYTON TOWN & COUNTRY SHOPPING CENTER
C. MELVIN FRANK, A. I. A., ARCHITECT

MACOMBER CANTON 1, OHIO

SEND FOR V-BEAM CATALOG
V-BOWSTRING TRUSSES
V-GIRDERS STEEL JOISTS

NAILABLE V-BEAMS
V-LOK STEEL FRAMING
**situations wanted**

**ARCHITECT**—registration by examination. 10 years varied experience. Desires responsible position with southwestern or western firm with possibility of associateship or partnership. Resume upon request. Box 605, PROGRESSIVE ARCHITECTURE.

**ARCHITECTURAL DRAFTSMAN**—29, married, 9 years experience, desires outside position as assistant clerk-of-works. Willing to travel anywhere—United States or abroad. Excellent references. Box 604.

**PROMINENT ISRAELI ARCHITECT**—low 30's, 10 years experience, desires outside position with southwestern or western firm.references. Box 604.

**YOUNG, GRADUATE ARCHITECT**—ten years of thorough experience in planning, design and detailing of department and chain store interiors. Will handle jobs from inception to completion, including client contact, contract negotiations and supervision. Desires association with architectural firm wishing to expand into the field of commercial interiors. Box 606, PROGRESSIVE ARCHITECTURE.

**miscellaneous**

**PROFESSIONAL MODELS**—made from your plans by experienced model makers. Estimates given prior to acceptance. All inquiries answered. Write Architectural Design Associates, Model Division, 150 East 49th St., New York, N. Y.

**SCALE MODELS**—buildings, interiors, space usage and land usage models, three-dimensional floor plans and presentations, dioramas. Quality workmanship exquisitely executed. References and estimates furnished. Hull Roberts, 39-84 45th Street, Long Island City, N. Y. Tel. RA 9-1211.

**DESIGN PERSONNEL**

Qualifies for designing structures in wood, concrete or steel. Successfully conducted for the past twenty-two years. For many this is the most difficult section of the examinations. Prepared by Clinton H. Cowgill and Ben John Small. This comprehensive book covers the professional, business, and legal aspects of architectural practice. Commissions for professional services are traced in minutest detail from the day the client arrives to the last payment for work performed. The social and economic implications of contemporary practice are translated in terms of ready-to-use forms, guides, advice, graphic illustrations, and the like. Accounting procedures, bookkeeping systems, almost every procedural form an architect requires for his practice, agreements of every nature, specifications, insurance and bond requirements are all presented in orderly sequence.

**Send for a copy on approval**

REINHOLD PUBLISHING CORPORATION

Dept. X-54, 430 Park Ave. New York 12, N. Y.

**ARCHITECTURAL Practice—Revised Edition**

by Clinton H. Cowgill and Ben John Small

This comprehensive book covers the professional, business, and legal aspects of architectural practice. The social and economic implications of contemporary practice are translated in terms of ready-to-use forms, guides, advice, graphic illustrations, and the like. It describes the procedures, books, and systems an architect requires for his practice, agreements of every nature, specifications, insurance and bond requirements, and the like. Accounting procedures, bookkeeping systems, almost every procedural form an architect requires for his practice, are clearly explained. The book also provides guidelines for the client and the architect, along with a complete Structural Engineering course well known for forty-six years.

**Send for a copy on approval**

REINHOLD PUBLISHING CORPORATION

Dept. X-54, 430 Park Ave. New York 12, N. Y.

**ARCHITECTURAL ENGINEERING**

A Practical Course (HOME STUDY) by Mail Only

Prepares Architects and Draftsmen for structural portion of STATE BOARD EXAMINATIONS

For many this is the most difficult section of the examinations. Qualifies for designing structures in wood, concrete or steel. Successfully conducted for the past twenty-two years. Our complete Structural Engineering course well known for forty-six years.

**Literature without obligation—write TODAY**

WILSON ENGINEERING CORPORATION

College House Offices Harvard Square

CAMBRIDGE, MASSACHUSETTS, U. S. A.
splits. The evidence offered us by the automobile design and by the juke-box styling should stand as fair warning of the danger ahead.

The choice of direction that we, as a culture, may eventually take, to a great degree will be affected by the influence that the creators of design and the critics of design will themselves develop and be instrumental in transmitting to the people as a whole through available and new educational channels. In this sense, it is then important that the more mature sensitivity that I mentioned before be rapidly acquired, lest we be forever attracted by the new and the glamorous rather than by the maturely creative, and so that we might be instrumental in steering the future of our environment away from an air-conditioned nightmare of fin-tails, juke-boxes, and tricky structures, into a new architecture capable of extending the benefits of our physical wealth into its emotional and cultural counterparts.

notices

p/a congratulates . . .

RICHARD K. MILLER, appointed Marketing Manager for Stanley Judd, Wallingford, Conn., a division of THE STANLEY WORKS, by H. HENRY MARTENS, General Sales Manager of the division.

ROBERT B. LEROY, appointed Assistant General Sales Manager of THE MOSAIC TILE COMPANY, Zanesville, Ohio, by ROY E. JORDAN, JR., President.

JOHN F. MCDANIEL, named General Manager of HOTPOINT COMPANY'S new Sales and Distribution Department.

LORING S. BROCK, named Manager of Structural and Plate Products for UNITED STATES STEEL CORPORATION, by RICHARD F. SENTZNER, Executive Vice-President—Commercial.

DODGE CORK TILE, INC., LANCASTER, PA.

assista t

ENGINEER

available

His name is STANPAT, and though he is not human he can swallow up your tedious re-drawing and re-lettering of standard and repetitive blueprint items for 24 hours a day if need be—withoutiring. STANPAT is the remarkable tri-acetate sheet that is pre-printed with your specification and revision boxes, standard symbols, sub-assemblies, components and cross-sections . . . with adhesive front or back, waiting to be pressed into position in 15 seconds! Reproductions are unusually crisp and clear, guaranteed not to wrinkle, dry out or come off. STANPAT saves hundreds of hours in drafting time and money, allowing the engineer more time for creative work.

Already employed in numerous firms, STANPAT can go to work for you, too! Send us your drawing details now for quotation and free sample, no obligation.

 indicates notes
REASONS WHY ARCHITECTS SHOULD BUY THIS NEW BOOK . . .

- First, because the biggest construction dollar in the whole building industry is now centered around the merchant built house.
- Second, because the builders are finding they need a better product to stay competitive, and are seeking the professional advice of architects.
- Third, because the architect must realize that this is a good legitimate field of practice and that he is needed if the level of housing is to rise in this country.

Today there are over a million houses built each year which are designed and built prior to knowing who the occupant will be.

BUILDERS' HOMES FOR BETTER LIVING is the first book to deal with the past, present, and future problems of this type of single family house. It covers all phases: the planning of the community; site planning; design concept of the house; structure; interiors; and landscaping, including indoor-outdoor living areas.

Of special interest is the section devoted to The Business of Building, with complete reference to Merchandising Methods, Codes and Regulation, Financing, Governmental Influence, etc.

Every step is carefully illustrated with more than 200 crisp photos, ink drawings and plans. Works by over 40 Architectural firms are included. A grandly planned, brilliantly executed book for the architect, builder, engineer and site planner.
How to Create Color Effects for Exteriors and Interiors

New Horizons in Color

By FABER BIRREN

Now you can make the most of color, through the guidance of this complete treatment of all problems concerning color in architecture, decorating and building. Never before has a book offered so much understanding of the esthetic, psychological, physical and functional aspects of color.

This valuable book will prove the outstanding reference work for solving the problem of color in architecture and decoration.

220 pages, over 120 black and white illustrations, charts, diagrams plus 6 full color reproductions and a two-page chart of color chips for reference. $10

Write today for your 10-day-FREE examination copy.

REINHOLD PUBLISHING CORPORATION
Dept. 5246, 430 Park Avenue, New York 22, N. Y.

For the unusual and outstanding lighting effects required in the Seagram building, architects Mies van der Rohe and Philip Johnson with lighting consultant Richard Kelly, specified Kliegl.

Kliegl Regressed Lens Downlights are the prime light source for the sales presentation rooms; one of which is shown above. For special effects and display purposes, the new Kliegl Disappearing Display Lights are featured. These new units are concealed in the ceiling when not in use, are motor operated and are remotely controlled. Other Kliegl fixtures are extensively used in entrances, lobbies, hallways and reception areas.

For further details concerning our full line of Architectural Lighting equipment, write to:

Kliegl Bros.
Universal Electric Stage Lighting Co., Inc.
321 W. 50th St., New York 19, N. Y.

ORIGINATORS AND MANUFACTURERS OF Klieglights

February 1958 239
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam, Frank, Electric Co.</td>
<td>71</td>
</tr>
<tr>
<td>Adams &amp; Westlake Co.</td>
<td>98</td>
</tr>
<tr>
<td>Adrian-Pearless, Inc.</td>
<td>239</td>
</tr>
<tr>
<td>Advance Transformer Co.</td>
<td>56</td>
</tr>
<tr>
<td>Affin Steel Products Corp.</td>
<td>214, 215</td>
</tr>
<tr>
<td>Air Devices, Inc.</td>
<td>156</td>
</tr>
<tr>
<td>Aluminum Company of America</td>
<td>23</td>
</tr>
<tr>
<td>Aluminum Window Mfrs. Assn.</td>
<td>233</td>
</tr>
<tr>
<td>American Photocopy Equipment Corp.</td>
<td>173, 174</td>
</tr>
<tr>
<td>American Window Glass Co.</td>
<td>42</td>
</tr>
<tr>
<td>Amaca Steel Corp.</td>
<td>30, 31</td>
</tr>
<tr>
<td>Armstrong Cork Co., Bldg. Products</td>
<td>68, 69</td>
</tr>
<tr>
<td>Bayley, William, Co.</td>
<td>38</td>
</tr>
<tr>
<td>Bethlehem Steel Co.</td>
<td>50, 51</td>
</tr>
<tr>
<td>Brown &amp; Gris, Inc.</td>
<td>217</td>
</tr>
<tr>
<td>Bruce, E. L., Co.</td>
<td>21</td>
</tr>
<tr>
<td>Byers, A. M., Co.</td>
<td>16</td>
</tr>
<tr>
<td>Cobot, Samuel, Inc.</td>
<td>32</td>
</tr>
<tr>
<td>California Redwood Assn.</td>
<td>34</td>
</tr>
<tr>
<td>Carpenter, L. E., Co.</td>
<td>213</td>
</tr>
<tr>
<td>Carrier Corp.</td>
<td>204, 205</td>
</tr>
<tr>
<td>Carter-Waters Corp.</td>
<td>228</td>
</tr>
<tr>
<td>Celotex Corp.</td>
<td>84, 85</td>
</tr>
<tr>
<td>Certificated Equipment Mfrs.</td>
<td>29</td>
</tr>
<tr>
<td>Concrete Reinforcing Steel Institute</td>
<td>234</td>
</tr>
<tr>
<td>Cupples Products Co.</td>
<td>199</td>
</tr>
<tr>
<td>Davidson Enamel Products, Inc.</td>
<td>36, 37</td>
</tr>
<tr>
<td>Dodge Cork Co.</td>
<td>182, 189</td>
</tr>
<tr>
<td>Doar Chemical Co.</td>
<td>184</td>
</tr>
<tr>
<td>Dunham-Bush, Inc.</td>
<td>4</td>
</tr>
<tr>
<td>Durcan, Inc., Co.</td>
<td>236</td>
</tr>
<tr>
<td>Eagle Pencil Co.</td>
<td>181</td>
</tr>
<tr>
<td>Ebco Mfg. Co.</td>
<td>35</td>
</tr>
<tr>
<td>Electric Power Door Co.</td>
<td>228</td>
</tr>
<tr>
<td>Eljer Div., Murray Corp. of America</td>
<td>53</td>
</tr>
<tr>
<td>Facing Tile Institute</td>
<td>171</td>
</tr>
<tr>
<td>Federal Seaboard Terra Cotta Corp.</td>
<td>43</td>
</tr>
<tr>
<td>Fenestrela, Inc.</td>
<td>76, 77</td>
</tr>
<tr>
<td>Floor City Ornamental Iron Co.</td>
<td>86</td>
</tr>
<tr>
<td>Forreira Co.</td>
<td>154, 155</td>
</tr>
<tr>
<td>General Bronze Corp.</td>
<td>45</td>
</tr>
<tr>
<td>General Tire &amp; Rubber Co., Banta Floor Div.</td>
<td>79</td>
</tr>
<tr>
<td>Gotham Lighting Corp.</td>
<td>167</td>
</tr>
<tr>
<td>Granco Steel Products Co.</td>
<td>14, 15</td>
</tr>
<tr>
<td>Grant Pulley &amp; Hardware Co.</td>
<td>186</td>
</tr>
<tr>
<td>Hako Building Products</td>
<td>65</td>
</tr>
<tr>
<td>Henley Co., Inc.</td>
<td>191</td>
</tr>
<tr>
<td>Hears Drinking Faucet Co.</td>
<td>20</td>
</tr>
<tr>
<td>Hillyard Chemical Co.</td>
<td>150</td>
</tr>
<tr>
<td>Hobart Manufacturing Co.</td>
<td>221</td>
</tr>
<tr>
<td>Holmes, Archibald &amp; Son</td>
<td>203</td>
</tr>
<tr>
<td>Hope’s Windows, Inc.</td>
<td>28</td>
</tr>
<tr>
<td>Indiana Limestone Institute</td>
<td>48</td>
</tr>
<tr>
<td>Infra Insulation, Inc.</td>
<td>10</td>
</tr>
<tr>
<td>Inland Steel Products Co.</td>
<td>183, 183</td>
</tr>
<tr>
<td>Insullte Div.</td>
<td>72, 73</td>
</tr>
<tr>
<td>Jenison Cold Storage Door Co.</td>
<td>78, 175</td>
</tr>
<tr>
<td>Kewnee Co.</td>
<td>40, 41</td>
</tr>
<tr>
<td>Kentile, Inc.</td>
<td>12</td>
</tr>
<tr>
<td>Kinnear Mfg. Co.</td>
<td>229</td>
</tr>
<tr>
<td>Kliger Bros.</td>
<td>239</td>
</tr>
<tr>
<td>Knoll Associates, Inc.</td>
<td>97</td>
</tr>
<tr>
<td>Koppers Co., Wood Preserving Div.</td>
<td>44</td>
</tr>
<tr>
<td>LCN, Inc.</td>
<td>24, 25</td>
</tr>
<tr>
<td>Lehigh Portland Cement Co.</td>
<td>225</td>
</tr>
<tr>
<td>Lewin-Mathes Co.</td>
<td>179</td>
</tr>
<tr>
<td>Libby-Owens-Ford Glass Co.</td>
<td>61, 62, 63, 64</td>
</tr>
<tr>
<td>Lightliger, Inc.</td>
<td>22</td>
</tr>
<tr>
<td>Lexit Systems, Inc.</td>
<td>70</td>
</tr>
<tr>
<td>Macomber, Inc.</td>
<td>225</td>
</tr>
<tr>
<td>Mahon, R. C., Co.</td>
<td>66, 67, 193</td>
</tr>
<tr>
<td>Maple Flooring Mfrs. Assn.</td>
<td>192</td>
</tr>
<tr>
<td>Marine Coil Co.</td>
<td>39</td>
</tr>
<tr>
<td>Masonite Corp.</td>
<td>49</td>
</tr>
<tr>
<td>Master Builders Co.</td>
<td>2nd Cover</td>
</tr>
<tr>
<td>Mastic Tile Corp. of America</td>
<td>165</td>
</tr>
<tr>
<td>McAlp Corp.</td>
<td>201</td>
</tr>
<tr>
<td>Minneapolis-Honeywell Regulator Co.</td>
<td>46, 47</td>
</tr>
<tr>
<td>Minnesota Mining &amp; Mfg.</td>
<td>57</td>
</tr>
<tr>
<td>Mississippi Glass Co.</td>
<td>80, 81</td>
</tr>
<tr>
<td>National Gypsum Co.</td>
<td>88</td>
</tr>
<tr>
<td>New England Lime Co.</td>
<td>200</td>
</tr>
<tr>
<td>Norman Products Co.</td>
<td>8</td>
</tr>
<tr>
<td>Overly Mfg. Co.</td>
<td>19</td>
</tr>
<tr>
<td>Posen &amp; Seymour</td>
<td>87</td>
</tr>
<tr>
<td>Pittsburgh Corning Corp., Foamglas</td>
<td>229</td>
</tr>
<tr>
<td>Post, Frederick, Co.</td>
<td>18</td>
</tr>
<tr>
<td>Powers Regulator Co.</td>
<td>75</td>
</tr>
<tr>
<td>Pressite Keystone Engineering Products Co.</td>
<td>220</td>
</tr>
<tr>
<td>Puffer-Hubbard Refrigerator Co.</td>
<td>190</td>
</tr>
<tr>
<td>Reynor Mfg. Co.</td>
<td>230</td>
</tr>
<tr>
<td>Reinhold Publishing Corp.</td>
<td>207, 208, 209, 210</td>
</tr>
<tr>
<td>Republic Steel Corp.</td>
<td>196, 197</td>
</tr>
<tr>
<td>Rigidized Metals Corp.</td>
<td>224</td>
</tr>
<tr>
<td>Ritco Laminated Products, Inc.</td>
<td>74</td>
</tr>
<tr>
<td>Rissey, O. C., Co.</td>
<td>166</td>
</tr>
<tr>
<td>Robbins Flooring Co.</td>
<td>52</td>
</tr>
<tr>
<td>Robertson, H. M., Co.</td>
<td>176, 177</td>
</tr>
<tr>
<td>Reiscreen Co.</td>
<td>54, 55</td>
</tr>
<tr>
<td>Rotary Lift Co.</td>
<td>2, 3</td>
</tr>
<tr>
<td>Russell, F. C., Co., Inc.</td>
<td>83</td>
</tr>
<tr>
<td>Schindler, E. F.</td>
<td>218, 219</td>
</tr>
<tr>
<td>Serviced Products Corp.</td>
<td>226</td>
</tr>
<tr>
<td>Simpson Logging Co.</td>
<td>194, 195</td>
</tr>
<tr>
<td>Sloan Valve Co.</td>
<td>82</td>
</tr>
<tr>
<td>Southern Equipment Co.</td>
<td>276</td>
</tr>
<tr>
<td>Southern Sash &amp; Supply Co., Inc.</td>
<td>6</td>
</tr>
<tr>
<td>Southern Screw Co.</td>
<td>232</td>
</tr>
<tr>
<td>Spanier Bros., Inc.</td>
<td>234</td>
</tr>
<tr>
<td>Spencer Turbine Co.</td>
<td>198</td>
</tr>
<tr>
<td>Stedtler, J. S., Inc.</td>
<td>59</td>
</tr>
<tr>
<td>Stanpot</td>
<td>237</td>
</tr>
<tr>
<td>Sterling, John, Co.</td>
<td>206</td>
</tr>
<tr>
<td>Structural Slate Co.</td>
<td>212</td>
</tr>
<tr>
<td>Taylor, Halsey W., Co., The</td>
<td>180</td>
</tr>
<tr>
<td>Tectum Corp.</td>
<td>211</td>
</tr>
<tr>
<td>Tile Council of America</td>
<td>26, 27</td>
</tr>
<tr>
<td>Timber Engineering Co.</td>
<td>232</td>
</tr>
<tr>
<td>Trinity Div., General Portland Cement Co.</td>
<td>Back Cover</td>
</tr>
<tr>
<td>United States Plywood Corp.</td>
<td>178</td>
</tr>
<tr>
<td>Universal Atlas Cement Co.</td>
<td>187</td>
</tr>
<tr>
<td>Valley Metal Products Co.</td>
<td>227</td>
</tr>
<tr>
<td>Were Laboratories, Inc.</td>
<td>170</td>
</tr>
<tr>
<td>Washington Steel Corp.</td>
<td>231</td>
</tr>
<tr>
<td>Wilson Engineering Corp.</td>
<td>236</td>
</tr>
<tr>
<td>Wright Mfg. Co., Div.</td>
<td>58</td>
</tr>
<tr>
<td>Youngstown Sheet &amp; Tube Co.</td>
<td>202</td>
</tr>
<tr>
<td>Zenonita Co.</td>
<td>223</td>
</tr>
</tbody>
</table>
What do you really know about Frank Lloyd Wright and his living architecture? Now—For the first time the complete personal and professional story of the early life of this great architect is told in

FRANK LLOYD WRIGHT TO 1910 The First Golden Age

by the man whom Mr. Wright has introduced as
"GRANT MANSON, who knows more about me than I do."

How did organic architecture start? Was it Mr. Wright's experience with Froebelian kindergarten gifts, or his interest in Japanese prints and architecture, or primarily his native-genius?

Questions like these and many others are answered with striking clarity and direction in this new book, the first of a three-volume biography, telling the complete saga of one of the greatest architects who ever lived. This volume takes the reader up to 1910, a turning point in Wright's life as an architect, and as an individual.

Most outstanding perhaps during this period was his conception of the Prairie House. Brilliantly conceived, following few precedents, the houses evolved and flowed into such milestones in American Architecture as the Willits, Coonley and Robie Houses. Also shown and discussed are the many precedents for non-residential architecture which Mr. Wright evolved, including Unity Church, the Larkin Building, and Hillside House, now part of Taliesin North.

GRANT CARPENTER MANSON, an Art Historian and Graduate Architect, culled most of the 250 photographs, drawings and plans illustrating this book from the archives of Taliesin North.

Mail Today for 10 days FREE Examination
REINHOLD PUBLISHING CORPORATION
430 Park Avenue, New York 22, N. Y. Dept. 5243
In Canada: Burns & MacEachen, 76 Grenville Street, Toronto 8, Can.

Please send me a copy of FRANK LLOYD WRIGHT to 1910 entirely on approval. Unless completely satisfied I will return it within 10 days and pay nothing. Otherwise I will send only $10.00 plus a few cents postage as payment in full.

NAME
ADDRESS
CITY ZONE STATE

SAVE POSTAGE! Check here if you enclose $10.00 as payment—then we pay postage. Same 10-day return privilege with full refund guaranteed. N.Y.C. residents add 3% sales tax.

February 1958 241
As I listen to talks on architecture—and make some of them myself—it occurs to me from time to time that we have become very limited in our after-dinner-speech approach to this field. Dean Henry Kamphoefner's paper at our Design Awards Presentation Dinner (see News Survey in this issue) was fresh and refreshing in this respect. In general, however, there seem to be certain stereotyped themes, and we tend to be receptive to them or not, depending on our conditioned reactions to each of the subjects.

As I left one of the meetings at last year's AIA Convention in Washington, after a particularly able delivery of one of the familiar topics, a good friend said to me, "My, that was a wonderful talk! Why don't you publish it?"

And I replied, "We have, many times." He was naturally feeling a strong sense of satisfaction at having heard words with a warm, familiar sound stringed together in sentences that expressed long-familiar beliefs. If we had published that particular version he would not have read it again, but once more he would have felt pleased at seeing the familiar expressions in print.

This being so, why would it not be a good idea for the beautiful new Journal of AIA to publish, definitively, once and for all, these various prototype speeches, and give them file numbers? This would accomplish two things. In the first place, the need for long talks after ample dinners would be eliminated. The speaker could simply stand up and say, with proper emphasis: "Eight Cl," receive whatever applause was due him, and sit down. The success of the delivery and the reception of the audience would depend on the sincerity (a quality cherished by advertising agencies and after-dinner speakers) with which the identifying key numbers were spoken.

Further, none of the other magazines would ever have to publish these speeches as articles, in full, after original publication and keying in the Journal. Instead of our publishing the one which argues that the competitive magazines could simply give half a page to bold, beautiful prototype speeches, we could simply stand up and say, with proper emphasis: "Eight Cl," receive whatever applause was due him, and sit down. The success of the delivery and the reception of the audience would depend on the sincerity (a quality cherished by advertising agencies and after-dinner speakers) with which the identifying key numbers were spoken.

In case the idea should seem feasible, here are suggested outlines of the opening gambits of some of the readily-recognized and generally approved subjects.

First there is the we have lost warmth and humanity in our architecture approach. Ladies and gentlemen (it goes): in the last hundred years there has been a great change in the design of our buildings. Now in the face of that phenomenon we can take two attitudes. One is to look forward; that is known in the trade this year as The New Century Behcoks, and was the subject of last month's talk. The other attitude is to look backward, which I denote as The Old Century Behcoks Some People, Too. Has man lost his humanity; has architecture lost touch with the past? Who can find warmth and humanity in a steel-and-glass building? Have we lost forever the cozy humanity of the Egyptian pyramid; the warmth and intimacy of a Renaissance palazzo; the homeyness of a Roman amphitheater? The uplift of an emotional experience is missing from our stripped modern buildings, and when a modernist adds the uplift of emotional experience to his buildings, I don't want to hear about it—because it disproves my point.

Then there is the one we might call the technico-esthetic speech. Ladies and gentlemen (it starts): what I want to talk to you about tonight is the influence of the Erg on architecture. We have just finished a series of experiments at South Wabash Institute of Technology in which we weighed all the belongings of a family of two parents, three children, and a brother-in-law, divided the total, which we call the oppression factor, by the gravity acceleration of the food consumed during a typical 24-hour work-play-sleep cycle, and, considering this the square root of the floor area of a desirable living unit, designed a prefabricated spaceframe. The lessons to architecture are obvious, at least to my students at the University. Thank goodness they aren't obvious to you, or I wouldn't be asked to make any more lectures.

The reluctant-historico-nostalgic talk is another. Ladies and gentlemen (it begins): one of the great faults in our contemporary architectural scene is our lack of understanding of architectural history. Now, none of us would like to see history studied for emulation—although what a glorious thing it would be to see our great cities like New York cloaked in the majesty that was Roman architecture—and none of us would like our students to copy directly from the classics—although what a wonderful thing it would be if today's young rebels learned to draw the glorious acanthus and were taught the subtle sensuousness of an entasis. No one wants us to lose the great advances that have been made by our leading modernists, such as Paul Cret and Bertram Grosvenor Goodhue, but what an understanding of architecture was lost when the last man who could accurately full-size the moldings of a Gothic arch died at his board in Ralph Adams Cram's office.

Related to this is the appeal for regionalism. Ladies and gentlemen (it might go in the Northwest): here in this part of the country where you have barns, it seemed to me that we might discuss tonight the need for a regional approach to contemporary design. Recently during a lecture in New England, it was pointed out to me by a heckler in the audience that there are barns there also. I have heard it rumored that there are barns in Ohio. Let us not be discouraged by irrelevant facts, my friends. These are different barns, discovered by different people. The Northwest barn was discovered either by Pietro Belluscio or by John Yeon, and I don't want to get involved in that argument again. The New England barn was discovered either by Carl Koch or Robert Woods Kennedy, as a result of which Koch developed the Techbuilt house and Kennedy wrote a book. Koch's royalties are greater than Kennedy's, I understand, but Belluscio makes more speeches than either. But let's forget barns; let's consider, instead, the separate ethnic backgrounds of the great American regions. There is the great Southwest, for instance, with its culture based on Hollywood movies and TV programs piped from New York night clubs. And there is the great Eastern industrial seaboard, with its culture based on Hollywood movies and TV programs piped from Southwest barn dances. Even with the spread of communications and technology, these regional differences must not be allowed to die; from them come invaluable architectural achievements such as the Long Island ranch house.

Maybe this isn't such a good idea after all. I have two speeches to write, and I suddenly realize that all of the fresh, original, and non-stereotyped approaches that I had planned would probably be covered in the keyes, pre-published talks I've suggested. I guess I like the whole thought is dangerous.

Thomas H. Church