Imagine the ideal flooring—the one that combines underfoot comfort with all of the advantages of vinyl. You're thinking of Quiet Zone Vinyl Corlon® from Armstrong.

As you can see from the insert, Quiet Zone has a thick backing of Cushioncord® vinyl foam. So, as its name implies, it cushions footsteps. It makes standing and walking on Quiet Zone a pleasure. At the same time, it muffles the noise of dropped objects and foot traffic, giving you the double benefit of quiet and comfort.

Naturally, Quiet Zone's sheet vinyl wear layer offers excellent resistance to stains and scuffing, and provides all of vinyl's proven maintenance advantages.

A bonus is its design—not only does Quiet Zone come in two handsome patterns—but it is richly textured to help disguise traffic marks as well as subfloor irregularities. Install Quiet Zone in your next open plan office. Then just sit back and listen to Quiet Zone at work.

For more information, clip this coupon, fill it out, and mail it to Armstrong, 4202 Watson St., Lancaster, Pa. 17604.

Shh.
Quiet Zone™ at work.
You know it's vinyl, but you might think it's carpet.

The Quiet Zone pattern illustrated here is called Grand Central.

Please send me more information about Armstrong Quiet Zone Vinyl Corlon.

Name
Company
Address
City State Zip

FROM THE INDOOR WORLD® OF
Armstrong
Circle No. 325, on Reader Service Card
Briggs gives you a big water heater choice

Gas and electric. Residential and commercial. In capacities ranging from 6 to 120 gallons. Whatever the water heater need, you'll find exactly what you're after in the Briggs line. And not just size, but features... features to make every Briggs water heater the quality choice. Warranties to back you up, too. But we'd like you to have all the details about the complete line... and make the model-by-model comparisons for yourself. Our handy pocket-size Selector Guide has all the facts. Ask your Briggs distributor, or write us. Yes, Briggs offers a big water heater choice...

then makes it easy for you.
Environmental impact

Design planning

Editorial
To introduce a special issue on Environmental impact, architect Malcolm Wells makes a plea for making peace with nature.

Forest murmurs
A photographic essay in which landscape architect A.E. Bye describes the many moods of nature and how to elicit them.

The nature of the built environment
Robert Geddes argues for a close integration of indoor and outdoor architecture, looking at various building-to-land relationships.

Getting at the issues
The work of Willis & Associates provides a step toward assessing environmental impact by establishing a methodology to define data.

Planning for the brave new world
Profile: Wallace McHarg Roberts and Todd, an architecture/planning firm shows how to live graciously with life's probabilities.

Second Wall House
The second of the Wall house series studies, a structure by John Hejduk will soon be built on a hillside in rural Connecticut.

Technics

Selected details: An underground office.

Departments
Views

News report 146
Job mart

It's the law 154
Directory of advertisers

Products and literature 157
Reader service card

Cover: drawing by John Hejduk of the A.E. Bye house (p. 98) soon to be built in Connecticut.
Busy buildings need hard-working elevators.
That's where Dover dependability pays off.

Most buildings are busy and work hard.
That's the kind of building Dover Elevators are made for. At Dover, dependability comes first.
To assure this dependability we manufacture the major components of our elevators ourselves. It's the best way we know to be positive that the integral parts will work together as they were designed.

Making our own components gives us the highest degree of quality control, too. Dover's standards are stringent, and the hard-nosed quality control people in Dover plants as well as in the field won't settle for anything less than top quality.
The result is elevators that work hard. Elevators that stay on the job. Elevators you can depend on.
And there's a dependable Dover-built elevator for your building: Dover Oildraulic® Elevators for low-rise buildings, Dover geared traction elevators for medium-rise, and Dover gearless traction for higher-speed, high-rise installation.
The next time you design a busy building, talk to your Dover representative about the elevators. And for a set of Dover catalogs for your files, write Dover Corporation Elevator Division, Dept. B-3 P. O. Box 2177, Memphis, Tennessee 38101.
In Canada: Dover/Turnbull.

DOVER DEPENDABILITY
It's better in the long run.

Circle No. 338, on Reader Service Card

Left: LIBRARY-LEARNING CENTER, UNIVERSITY OF WISCONSIN-
GREEN BAY, ARCHITECT: Daverman Associates, Inc., Grand Rapids,
Michigan, and Milwaukee, Wis. GENERAL CONTRACTOR: Fluor Brothers
Construction Company, Oshkosh, Wis. Four Dover Geared Passenger Elevators
installed by Northwestern Elevator Co., Inc., Franchised Distributor, Milwaukee
and Green Bay.

Below: FIRST NATIONAL BANK BUILDING, DAYTON, OHIO, ARCHI-
TECT: Harry Weese & Associates, Chicago. GENERAL CONTRACTOR:
Turner Construction Company. DEVELOPER AND LEASING AND MANAGE-
Elevators installed by Dover Elevator Co., Dayton.
Q. Do all vinyl wallcoverings of equal weight offer equal resistance to tearing?

A. No. Many VICRTEX “medium weight” vinyls offer two to three times as much resistance to initial tearing as many competitive “medium weight” vinyls.

Most tears in wallcoverings result from a glancing blow occurring on a plane parallel to the floor — such as by an attache case, shown above.

IMPACT-SCUFF TEST
Torn competitor’s vinyl, left, is supposedly “or equal” to VICRTEX, right, which is not torn at twice the impact level.

To specify the right vinyl wallcovering for the job, it’s just as important to know its limitations as it is to know its advantages. Look at the results of this Impact-Scuff test shown in the insert.


Write for your copy, or call your Vicrtex man!

L.E.CARPENTER
AND COMPANY
984 Third Ave., New York, N.Y. 10022
(212) 355-3080

New Vicrtex GUIDE
“VINYL WALLCOVERINGS — QUESTIONS & ANSWERS”

Letters from readers

Views

Life safety

Your choice of copy of a de Chirico for your April 1974 cover was well taken. Mystery and Melancholy of a Street is a succinct statement of the inherent threats and dangers that lie just around the corner on the sunny street of every life. De Chirico’s use of point/counter-point (e.g., sunlight/shadow; carefree/threatening, etc.) helps to emphasize the uncertainty of tomorrow, or even of the next moment.

I would also like to compliment you on the use of the picture of the Guardian Figure on your editorial page.

Joyce Karen Schiller
Ferndale, Mich.

Thank you for your serious issue on life safety. The aftermath of tragic fire and natural disasters is always filled with the best intentions for change. As a result there have been many modifications in codes and standards. But regrettably, there has not been enough change. As you suggested in your editorial, frequently changes are not made because of costs and calculated risks are taken because of pressures from business interests.

After the fire in the Carpet Building on Third Avenue, New York, promised fire drills in Manhattan office towers never materialized. After several notorious nursing home fires (Marietta, Ohio, 1970; Atlanta, Ga., 1972; Pleasantville, N.J., 1973) we still do not have sprinkler and smoke detection systems as government standards. The hazards of carpet flammability have become a political issue and there has not been any change in our Flammable Fabrics Act. In the revised federal specifications for carpeting, DDD C 0095 A, the Pill Test was still specified in spite of the Life Safety Code issued in the Federal Register of 1971 recommending the Tunnel Test. Was this reluctance to change to the Tunnel Test a result of a political contribution of $94,580 to the Committee to Re-elect the President (CREP) made to Maurice Stans by a group of carpet manufacturers?

Up until now little public notice has been given to the lethal effects of the smoke of synthetic carpet fibers. An important study was reported to the American College of Surgeons by Dr. Donald P. Dressier, of the Harvard School of Medicine, and reported...
in World Medical News of Nov. 9, 1973. The smoke was demonstrated to be as deadly as any poison gas planned for warfare. Dr. Dressier stressed that biological smoke standards for synthetic carpet fibers must be established. Under this kind of prodding perhaps fiber producers can develop less toxic forms of fibers in time.

Carpet flammability should be seen in relation to the environmental setting where fire control is most effectively treated by sprinkler and smoke detection systems. As you said in your editorial, it is a serious matter and "our lives depend on it as do every one else's."

Lila Shoshkes
Interior Designer
South Orange, N.J.

Binghamton Science Complex

In Robert Jensen's criticism of the Binghamton Science Complex by Davis, Brody & Associates [P/A Mar. 1974, p. 82] he asserts that the "no nonsense" aesthetic, "historically an expression of science in its applied technology, its rationality, as an image to the layman, and as such an artistic idealization," is the embodiment of objective, or rational decision-making. He further argues that architects attempting to use objective and rational methods in design tend to trick themselves and this is resulting in the debilitation of "human" nature and the nature around us.

I find the author has confused the stark aesthetics, intuitively and artistically achieved, a seemingly undesirable manifestation of the scientific world view, with uses of objective methodology in the design process, a use of principles original-

Fedders new E-Flex air cooled split air conditioning systems feature a rotary compressor matched to especially designed components to achieve new high levels of efficiency.

The rotary compressor is manufactured by Fedders and has only 3 basic moving parts...so there is less to wear out, less to go wrong.

Chart below shows the wide selection of Fedders E-Flex systems and the exceptional btus-per-watt efficiency ratings.

For more complete information circle number shown below on Reader Service Card.

*Based on comparison of E-Flex models CEC060D7A and CFA236A0A with Fedders Flex- hermetic models CFC060D8A and CFA072A1A.

<table>
<thead>
<tr>
<th>CAPACITY (BTU/HR)**</th>
<th>CONDENSING UNIT</th>
<th>EVAPORATOR COIL</th>
<th>BTU/WATT</th>
</tr>
</thead>
<tbody>
<tr>
<td>18,000</td>
<td>CEC018D7A</td>
<td>CFA018A0</td>
<td>8.18</td>
</tr>
<tr>
<td>22,000</td>
<td>CEC022D7A</td>
<td>CFA022E0A</td>
<td>11.0</td>
</tr>
<tr>
<td>24,000</td>
<td>CEC024D7A</td>
<td>CFA024A0</td>
<td>9.60</td>
</tr>
<tr>
<td>30,000</td>
<td>CEC030D7A</td>
<td>CFA030A0A</td>
<td>8.57</td>
</tr>
<tr>
<td>36,000</td>
<td>CEC036D7A</td>
<td>CFA036A0B</td>
<td>9.00</td>
</tr>
<tr>
<td>42,000</td>
<td>CEC042D7A</td>
<td>CFA224A0A</td>
<td>10.00</td>
</tr>
<tr>
<td>48,000</td>
<td>CEC048D7A</td>
<td>CFA230A0A</td>
<td>10.00</td>
</tr>
<tr>
<td>60,000</td>
<td>CEC060D7A</td>
<td>CFA236A0A</td>
<td>9.52</td>
</tr>
</tbody>
</table>

**Capacities Certified by A.R.I.

CIRCLE 305 ON READER SERVICE CARD

FEDDERS
Edison, N J 08817
Lime Crest Roofing Spar
saves energy for Hampton Township!

Architects: Radey & Radey, Cherry Hill, N.J.

How? By reducing the air conditioning load in this new Marion E. McKeown Elementary School. So much so that our marble aggregate has already been specified for the roof of their new regional high school. Lime Crest Roofing Spar, with its high reflectivity, increases the effectiveness of roof insulation. It also resists weather and corrosion, defies dirt and smoke, stays bright indefinitely. What’s more, Lime Crest Roofing Spar often costs less than other white aggregates, in some areas even less than slag! Let us send you a sample, so you can see for yourself.

Lime Crest Roofing Spar
Limestone Products Corporation of America
Newton, New Jersey 07860

Views continued from page 7

ting in science to structure and solve problems of complex nature.
The resultant aesthetic of the science center, however, stems not from the use of objectivity in the design process, but from the more traditional intuitive, artistic value judgments of the selection of materials, their composition, and the massing of the complex. These decisions were based on an artistic interpretation of a “no nonsense” premise of science to create an image congruent with D-B’s view of the nature of science. The architects “did not rely on the quantification of data and procedure to miraculously generate a perfect building for them.”

Beyond the disdain for the “no nonsense” aesthetics, found also in quite intuitively conceived art museums, housing, and office buildings where little objective design methodology is used, the author attacks objective design methods in general, basing his statements on the specifics of the Davis-Brody method.

The author’s premise that objectification, as a designer’s tool, turns humans into objects, is as invalid as the use of artistic values of “tasteful” proportion, composition, and massing used in making architectural decisions will create a work of beauty. Davis-Brody’s use of the set of terms such as “walk, drop off, circulate, reach, park, and identify” in establishing specific situations to be accommodated seems more rational than to attempt to make the design decisions relevant to these activities from intuition and the inherent limits of cognizance. The use of objective operations in identification insure that the human user’s need will be clearly specified and therefore clearly facilitated. The author argues that terms such as student, teacher, reach, and identify are value-laden and ambiguous, thus devaluing them as successful elements of objectivity. To the contrary, student is hardly a value-laden or ambiguous title, it simply means one who learns, a teacher is one who imparts knowledge; clearly defined roles. Reach can be concisely defined as to arrive at, identify means to establish the identity of. These terms with commonly agreed upon definitions thus become elements of objectivity. These role and activity “titles” focus a human activity or a human need that is to be fulfilled to accomplish a successful design. This clarity gives the designer specifics toaccom-
[continued on page 107]
FOUR MODERN TOWERS, ONE ANCIENT WINDOW PRINCIPLE.

New York's four newest office towers share a window-covering based on one of the world's oldest kind: an offspring of a Venetian blind. Because, through the centuries, only blinds have offered infinite light control, privacy and unmatched design latitude.

But not just any blind. For these four buildings, the architects used the Levolor Riviera blind.

Rivieras enhance design, regardless of structure. Their less than one-inch-narrow slats and lace-like ladders "disappear" when viewed from a distance. And Levolor's Top-Lok keeps blinds uniform: they are either fully up or fully down.

While each building uses Rivieras with distinctive modifications, all four enjoy their easy maintenance and ability to cut air-conditioning power costs; two bonuses master builders of past ages didn't ask of their blinds.

But you can ask today, for tomorrow, and get them from Levolor—in 90 colors and designs, in two color slats, in perforated slats, in metallics . . .

For complete details on Rivieras and other Levolor blinds, write to Levolor-Lorentzen, Inc., 720 Monroe Street, Hoboken, N.J. 07030.

LEVOLOR RIVIERA BLINDS

A fresh old idea... unsuccessfully imitated the world over.

Circle No. 356, on Reader Service Card.
Basic Sanymetals,*
Hard to Beat Value

*Basic Sanymetals... floor or head rail braced, wall or ceiling hung are made from electrolyzed zinc coated steel finished with baked Acrylic enamel in the color of your choice.

FOR COLOR
23 standards...if you need a 'match' to your design, send a sample! Costs a little more but very reasonable.

FOR HARDWARE
Durable and proven... clean and flush... concealed, mortised, recessed and vandal resistant.

FOR FIRE/VANDAL RESISTANCE
Steel does not support combustion. Concealed, non-visible fastenings defy vandals.

FOR SILENCE
No wood on wood sounds... no metal on metal sounds... all connections buffered with rubber or floated in nylon and insulated with 'Bridgecore'... a very quiet compartment.

FOR RIGIDITY
AND STRENGTH
The strength of formed steel, welded construction, heavy-gauge connections and lock seamed headrail assures a solid lasting installation.

FOR FAST INSTALLATION
Integral hinge brackets eliminate drilling. Snap-in concealed latch eliminates on-site assembly. Pilaster shoe snaps in place, door hinges factory installed... less parts mean savings!

FOR SAFETY
No raw edges... all corners welded and ground smooth. Flush recessed hardware... controlled door swing.

FOR PRICE
Basic Sanymetals are very economical... generally one half to one third the price of wood, plastic laminate, stainless steel and other expensive finishes and materials.

FOR FAST DELIVERY
All factory branches and many representatives stock stalls... if they don't have your color, just pick a Sanymetal standard in head rail braced... we'll ship in 5 working days.
Protects wood beautifully.

Olympic Stain is just about the most beautiful thing you can do for wood. It brings out the grain and subtle beauty of wood, yet penetrates for real protection. And because it allows the wood to breathe, Olympic Stain will never crack, peel or blister. (The solid colors are also excellent for re-do over old paint on rough wood siding, shingles or shakes.)

If more storage space is what your client wants specify ROLL-SHELF.

ROLL-SHELF is storage shelving on wheels. Unlike conventional shelving, ROLL-SHELF requires less cubic area. Excess aisle space is eliminated, so one aisle does the job of four, five or more.

Your client gets up to 80% more storage capacity. And it is done without having to increase floor space or having to move into a new building. Initial construction and subsequent maintenance costs are reduced for lighting, heating, flooring, painting, cleaning.

There's more.
A unique "Turn-Glide" control mechanism lets anyone move tons of storage with fingertip ease. A pilfer-proof locking device cuts internal theft.

End panels in wood-grain finish or in colors of your choice help to beautify interiors. And, ROLL-SHELF is easy to install. Whether you are planning a new installation... or the refurbishing of an existing building... if more storage space is what your client wants... specify ROLL-SHELF—the mobile storage shelving system by MEG.

Today, send for your FREE copy of the ROLL-SHELF specifications catalog. It'll give you all the facts you need. Write: Kidde Merchandising Equipment Group, Inc., South Windsor, Ct. 06074.

ROLL-SHELF mobile storage shelving system.
SUPERIOR-HIDING, ONE-COAT EXTERIOR FLAT ACRYLIC LATEX. SPECIFICALLY FORMULATED FOR USE OVER OLD PAINTED SURFACES OR ON NEW HARDBOARD.

At last, a new product specifically for hardboard!

Introducing new Olympic Overcoat. It covers like crazy!

For information and color samples write: 1148 N.W. Leary Way, Seattle, Washington 98107, Olympic Stain, A division of COMERCO, INC. Circle No. 363, on Reader Service Card
Next time someone says you must sacrifice overhead beauty if you want a functional ceiling—or vice versa—you can answer with one word. The word is Celotex. And it makes the very notion of an either/or choice between looks and utility seem old-fashioned. Start with that name, and you can choose a ceiling system with wide design possibilities. Without giving up beauty. Perhaps a non-directional patterned Celotex ceiling tile for a monolithic effect; or a Celotex reveal-edge lay-in panel for a bold contrast; or a design tile for that special interior.

The same reliable name will help you satisfy noise control requirements, because Celotex ceiling products can deliver Noise Reduction Coefficients to .90. Time rated ceiling assemblies? You can get U.L. time ratings of one, two or three hours with Celotex.
Where the plan calls for complete environmental control, check Celotex Vari-Tec™ systems—sound control, lighting and air handling all provided for in one beautiful, integrated ceiling system. Which brings you back to where we started: beauty. Your Celotex ceiling can be beautiful as well as functional. Our success in delivering this valuable combination has made Celotex as popular with architects as with contractors, building owners and managers. Consult the Celotex Acoustical System catalog. You’ll find it in Sweet’s Architectural and Industrial Construction Files. Or, contact your Celotex commercial ceilings representative.
Go ahead. Be creative.
Congoleum can match ideas with floor designs for any theme.

We've got bricks, sunbursts, geometrics and slates. Woodgrains, parquets, ceramics, mosaics and fieldstones. We've got Spanish, Mediterranean, American, European and Eastern. Our cushioned vinyls have the features women want most... the carefree convenience of Shiny-Vinyl® with a no-wax finish, the comfort of cushioning, and 375 exciting patterns and colors to choose from. So go ahead... create with us on your next project.

For complete product specifications, installation guidelines and maintenance information, write for your free copy of our Professionals' Flooring Guide. Congoleum Industries, Inc., 195 Belgrove Drive, Kearny, New Jersey 07032.

Circle No. 334, on Reader Service Card

Copyright, 1974, Congoleum Industries, Inc.
Renaissance of the waterfront

The historic nucleus for urban growth has been the waterfront: the seaport, river landing, ocean harbor, channel, inlet, canal. As transportation evolved into the era of the internal combustion engine, cities were freed from dependence on the water, and the move inland began. Decades passed, and the importance and color of the waterfront retreated into nostalgia. "In a search for attractive waterfront areas in the United States, it is difficult to locate more than a handful of cities which have provided a civic and recreational waterfront area for the enjoyment of their citizens," reported Arthur Cotton Moore/Associates of Washington, D.C. in a study for the U.S. Dept. of the Interior.

Suddenly, it seems, the romance and practicality of waterfront living have inspired the imagination of planners and developers across the country. A year ago the National Endowment for the Arts' "City Edges" program awarded more than $1 million in grants to municipalities and individuals whose study included waterfront potential.

Several reasons accounting for this resurgence of interest logically present themselves. Not the least is the environmentalists' clamor for pure air and water and the concern for historic preservation and humanitarian planning. Waterfront property especially lends itself to development because, as architect-planner Moore notes, it has been held in safekeeping by "the greatest of preservationists—neglect."

The sweep of planning takes various approaches; one could wish for a better mix of uses at the water's edge within each individual project. Nearly all proposals endeavor to link the waterfront with the city center. As the long-range programs are realized over the next decades, the success of different planning concepts will make interesting comparison.

Beyond the waterfront projects described in the News report, including Buildings on the way up, are Boston's Lewis Wharf restoration by architect-developer Carl Koch and the downtown waterfront renewal plan by the Boston Redevelopment Authority; Philadelphia's plan to renew the river front at Penn's Landing on the Delaware and to create a park along the Schuylkill River; Baltimore's proposed redevelopment of the National Register-listed Fells Point according to plans by architect Louis Sauer of Philadelphia, who won the contract by vote from the community; the multimillion dollar urban [continued on page 24]
Renaissance Center office-retail complex including a 70-story hotel on the Detroit River front by John Portman & Associates of Atlanta, Ga.; in Long Beach, Calif., a 143-acre waterfront development, Marina Pacifica, with a two-level enclosed mall right on the water so shoppers may arrive by boat and moor them in slips provided; and in Jersey City, N.J., across the Hudson from the World Trade Center a 2200-acre new town, Liberty Harbor (P/A May, 1973, p. 42), for which $1 million has just been approved for developing a state park.

**Yonkers looks to the river**

Recognizing that its Hudson Riverfront is the city's greatest natural asset, the Yonkers Department of Development is allowing the thought of a massive, $225 million renewal effort to grow in the minds of citizens and public officials. The project would reclaim about 3.3 miles of land along the Hudson River from its present heavy industry usage. Most of the industry would be relocated, and air rights over one remaining industrial building would be used for housing. The land then would be ready for residential, commercial, and recreational uses and would be linked by way of a "Park Avenue" kind of causeway to a main shopping area in the center of town—Getty Square. From Yonkers, on the east side of the Hudson just 25 minutes by train from Manhattan, the view across the river is of densely wooded banks and a bluff.

**Chicago: baptism by water**

The Chicago 21 plan to revamp the central city area by the 21st Century (P/A, Sept. 1973, p. 25)—includes intensifying uses of the lakeshore and riverbanks. A $40,000 federal "City Edges" grant helped with this aspect of planning. Already underway as a city project is creation of an esplanade along the south bank of the Chicago River toward Lake Michigan where it will continue on a proposed 100-acre landfill park. Also anticipated is conversion of the enclosed Navy Pier into a water-recreation center. In the same vicinity, northeast of the Loop, a residential-commercial high-rise development is well into its first phase. This project, Illinois Center, is bounded on the north by the river and on the east by the lake. South of the Loop, on property occupied by defunct rail yards, a town-in-town is envisioned extending parallel to the river to Chinatown, where a boat basin will be created for the community. In this river zone the plan emphasizes recreational activities with shops and restaurants. In some areas housing has been designated for strips adjacent to the river and its esplanade.

**Peoria looking for developers**

The Office of Angelos C. Demetriou, AIA, of Washington, D.C. recently presented a plan to the city of Peoria, Ill, for the "rebuilding" not the replanning of the city's downtown. A key phase of the plan will be to restore the Illinois River bank to vital use and connect it to the commercial sector. Land adjacent to the river is used for parking now, but Demetriou wants it for predominantly singles and elderly housing and for restaurants, marinas, and a civic auditorium. The study was funded by a grant from the Peoria Downtown Development Council which is seeking developers and capital to begin the rebuilding. Several of the proposals are under special study including a downtown mall, for which Demetriou has completed preliminary drawings, and the waterfront residences which are in the drawing phase.

**Over and up in Puerto Rico**

Urged by high-density population housed in low-density dwellings, Puerto Rico has established new planning guidelines. A project for a new community 8 miles east of San Juan by William L. Pereira Associates of Los Angeles is the first to incorporate these regulations. Cacia Talega, the proposed development, owned by P.F.Z. Properties of San Juan, is on the coastland of what's known as one of the last large, privately owned parcels suitable for urbanization in the metropolitan region. The density will be 215 per acre on the 200-acre site. Both commercial and residential structures will be built. Transportation will include the island's rapid transit system already under construction and will take advantage of San Juan's natural channels and lagoons. It will be possible, planners say, to travel by water to Cacia Talega even from the airport. Cost of the project is estimated at over $500 million. Work preparing the land has begun, and actual construction will be in full swing within 20 months.

**Omaha courts the Missouri**

Nebraska and Iowa have collaborated on a 50-mile masterplan for the Missouri River that includes new towns, a scenic parkway, housing, and industrial parks. "City Edges" funds have been awarded to accommodate the arts in the overall scheme. Encouraged by the plan, several river-oriented projects have been built already and several are awaiting to be implemented. One of these is Central Park Mall, a joint venture of two Omaha firms, Bahr Hanna Vermeer & Haecker and Hartman Morford Bowen. The plan is a block-wide ribbon of park that cuts through eight blocks of the downtown on its way to the river. There the greenway ends at a proposed marina and "marina city" cluster of homes. Preserved in the plan is the vintage Burlington Building, an old-fashioned market, and warehouses turned into loft housing. Proposed as satellites around the greenway will be a new university and a public library.
Memo to Community College of Denver/North

I was trying to get a form, and I remembered being in college, and it was an experience—not a form... Form follows function, and that's easy to say, but what is function?

Dreaming a bit... color in and out—you over there dancing to the heartbeat of a river flow... each day gets better. CCD North is Broadway with classrooms on either side and lots of good turned on people... The land of nostalgia is the occasion of entering CCD North; it is an event, a recollection and homage to the past...

What about form ula? The heart is the centrifugal core... CCD North expressed functionally in terms of technical, i.e., solar power... Oh the form is a $32.50 sq. ft. experience that can last a lifetime.

See ya next semester.

Team B

ps. Concrete truss here, concrete truss there and precast twin tees everywhere.

The foregoing is an actual statement of design appearing on blueprints of CCD/N. The A-B-R partnership, Architects, of Denver has created what it calls "the largest valentine in the world" for the college: a heart-shaped reservoir holding 400,000 gals. of solar-heated water. This will provide 100 percent of the heat for the quarter-mile long, linear structure.

The soon-to-be-constructed building has a sawtooth roof that collects the sun's rays heating water capable of warming the school at night and for seven sunless days. After talking with the students, A-B-R came up with the idea for the "super-duper solar silo circus," which not only conserves energy but also saves the air from pollution by not burning fossil fuels.

The valentine shape of the water tank on the lower level is repeated in the form of a central counseling area, upper level. The Broadway axis serves as the student center with academic and vocational classes on either side. Structures including several barns in good condition were left on the property and together with a small pond they form the formal entrance to the college through what is called "land of nostalgia."

Members of the Colorado legislature needed some, but not much, convincing before approving funds for the $11 million school. The solar heating system will add $700,000 to construction costs, but after 10 to 15 years the state should recover initial expenditures and thereafter save approximately $60,000 annually on heating.

The A-B-R Partnership principals, Team A, are John Anderson, Donald Barker, Ronald Rinker, and R. Russell Seacat. Designers of the College, Team B, are Alan Brown, Sal Didomenico, Ron Mason, and Phil Tabb.

[continued on page 26]
The glorified brick

Common, reliable and familiar... the brick is all these, but in the hand of Birmingham, Ala. sculptor John Spofforth this timeless material becomes an actor. Sturdy brick walls buckle under the illusion of superforces, and ramrod chimneys appear to melt as if made of butter. These are exactly the effects Spofforth wants in his brick sculpture.

After graduating from art school at the University of Ohio, Athens, he laid brick for a living and continued as a mason during a four-year stint with the Navy’s Seabees. "I liked masonry," he admitted, "and yet it was very dull work. I like art, but I don’t like making little objects. So I combined the two, and it satisfies me."

His first large commission after returning to receive a master’s from OU was the Unitarian Fellowship church in Athens (1968) where in three summers he and a helper laid an undulating brick façade over the cement block shell built by a volunteer crew whose foreman was a mechanical engineer. It took the helper a week before he loosened up, said Spofforth, "then he started laying uninhibited brick."

Word-of-mouth brought other commissions such as a Dutch oven-fireplace combination and a solarium, and around Athens his architectural-type works now include a 14-foot fireplace wall for the home of Fred and Carole Weiner, both OU professors; a sculpture wall for Siegfried Hall at OU; and walls, a fireplace and chimney for the Morris Apartments. Currently he’s designing a wall for the art center of the Greater Birmingham Arts Alliance and is consulting with architects for the new State Supreme Court building, Columbus, Ohio.

"The weight of brick makes it dance like a stairway above and a groan below," once remarked the late Louis Kahn. The challenge sends Spofforth into experimentation with techniques and careful selection of his materials. His favorite brick is the solid, sand-mold type. He often stains the mortar for certain effects—as in the green cast he gave the wall in the Weiner’s home to complement their furnishings. The Fellowship church has grapevine tooled joints to add texture and give a rock strata look.

The projects he feels most inspired by are ones in which he isn’t "framed" by having to work within existing structural confines. "Imagine building a series of forms," he says, "all related to each other as a ‘network’ of shapes for installation over the entire area of a shopping center including some of the shapes springing up from inside the building."

Construction manager: heir apparent?

Architect, contractor, or aardvark, what is a “CM”? This was the question before the recent Construction Management Seminar in New York City organized by Advanced Management Research, an executive-level educator. Assembled were architects, engineers, builders, attorneys, CMs, and owners to consider this newest member of the “building team.” No single answer emerged, but two ideas dominated the three-day proceedings.

The CM can be a professional who advises the owner and protects his interests before architects, engineers, and builders, who proposes design changes and value engineering to comply with local conditions of labor, materials, and financing, and who phases and supervises procurement and construction. He also could be the owner’s agent who hires and [continued on page 30]
The Mosque of Sheik Lutfullah, Isfahan, Iran, 1601-1618. By Muhammad Rida ibn Ustad for Shah 'Abbas I.

Inspired architects have been using ceramic tile to unify the decorative and structural aspects of their concepts for more than 5,000 years.

And today's technologies make lavish use of ceramic more feasible, in terms of cost, than ever before.

For a free copy of the Tile Council Handbook, spec sheets, and a full-color brochure of innovative residential tile installations, write to P.O. Box 2222, Room 477, Princeton, New Jersey 08540.

Tile Council of America, Inc.

Photographs courtesy of H.C. Scherer: Themes, Design and Color in Islamic Architecture.
This beach has the 3 essentials
Owens-Corning has the system

1. Acoustically non-reflective "ceiling"

1. An acoustically non-reflective ceiling is a must—to keep sound from bouncing to other areas. An independent acoustical testing laboratory examined eight ceilings, including expensive coffered and baffled systems. Their verdict: Owens-Corning’s Nubby II Fiberglas* Ceiling Board (left) in any standard exposed grid suspension system is best for achieving speech privacy at economical installed cost.

*Reg. T.M. O.-C.F.
for speech privacy in open offices.
that puts it all indoors.

2. An unobjectionable background sound helps mask distracting speech. Special electronic speakers, installed in the plenum, make it possible to hear normal conversation clearly within defined areas, without being overheard in other areas.

3. A barrier or the proper acoustical screen is necessary to keep unwanted speech from going directly between work areas.

All three essential elements should be “tuned” to work together with the help of an acoustical consultant.

News report continued from page 26

directs subcontractors and offers the owner a guaranteed maximum building price, including contingencies. The seminar was informative and provocative. Architects and contractors curious to see who might join them someday soon may attend another project management seminar that AMR, 1370 Avenue of the Americas, New York, N.Y. 10019 will conduct in New York, June 3–6.

Washington report

AIA helps revive land use bill

One of the more unusually effective lobbying campaigns—concerning land use bills—mounted in Washington in recent years may have had a profound effect by the time this issue of P/A appears.

The American Institute of Architects, in league with 38 other groups, was instrumental in reviving a bill from the usual graveyard of the House Rules Committee. The bill incorporates a number of principles outlined in the recent AIA report on national growth policy.

Not surprisingly, after a close study of the proposed legislation, the lobbying campaign has succeeded in calming one major source of initial opposition: that of state and local government officials, who feared a land use bill as some sort of national "zoning ordinance" interfering with one of the most cherished local government powers.

As of early May, the status was this: two major bills on land use control were in congressional hoppers: S 268 by Senator Henry Jackson (D-Wash. State) and a House bill, HR 10294, by Congressman Morris Udall (D-Ariz.).

Udall, as head of a House subcommittee on environmental matters, had held several days of hearings on his own measure before passing it along with full committee backing to the powerful Rules Committee (which schedules bills for floor consideration). Meanwhile in the Senate, Jackson's bill had been approved last fall by the full Senate and was also in the Rules Committee awaiting action or reconciliation with Udall's proposal.

The Rules group, chaired by Congressman Ray J. Madden (D-Ind.), decided to "defer action indefinitely" on both bills. Normally that's the kiss of death under the hierarchical operations of the House.

But in late March, the AIA and other groups urged members to contact their congressmen on the matter, and House staffers subsequently reported a "mass" of mail and other contacts favoring the measure. This encouraged Udall to hold three more days of hearings in mid-April and to request a further appearance before the Committee Rules to argue for his bill. Udall was confident that the measure would be passed if brought before the full House for a vote.

The program as outlined in both bills considered as "critical" those areas of ecological, historic, or scenic value. They call for proper siting of needed public services and utilities well beforehand to prevent indiscriminate location of power plants or other facilities and for planning of population and (continued on page 32)

Our new film stars.

We'd like to give you a preview of our latest attraction—Pentel's Film Lead Pencils. They're the perfect ticket for draftsmen and engineers who never want to sharpen pencils again.

You'll find a 5mm sliding sleeve on the 0.5mm Ultra-Fine and 0.7mm Extra-Fine pencils. It's especially convenient for accurate template work. Broken leads become a thing of the past since the sleeve retracts as you draw. The 0.9mm regular Fine-Line pencil has a 4mm long sleeve and regular mechanism.

Our pencils are hand assembled with watchmakers' tools for precision accuracy. They feed themselves automatically because of mechanical fingers that advance the lead with a simple push of the Quick-Click top. You don't reload until a dozen lead are used.

All three pencils use Pentel's exclusive Hi-Polymer washable, erasable film lead. It's made of a unique compound of synthetic resin, carbon and graphite.

Pentel Film Pencils and Leads are being featured at drafting stores across the nation. Come in and ask for a private showing.

Pentel of America, Ltd., 2715 Columbia St. Torrance, CA 90503 (213) 775-1256

Circle No. 368, on Reader Service Card
**Rezklad® Epoxy Grouts** are available in colors to enhance the beauty of any tile floor or wall. Choose quarry red, seaway blue, maple brown, slate gray, meadow green, limestone white or anthracite black.

In any color, Rezklad epoxy grouts resist acids, alkalies, cleaning agents, salts, greases and exhibit low absorption and resistance to freeze-thaw cycles. For consistent high-strength quality that lasts... and extra beauty at no extra cost... specify Atlas epoxy grouts.
News report continued from page 30

business “growth areas.” Moreover, the states needn’t consider all lands under their jurisdiction—only special areas selected under these (and other) criteria.

Some significant areas of the business community oppose the bills. These include forest-product organizations, chambers of commerce, and other groups which argue that such legislation is an unconscionable interference in private rights to land use.

Elsewhere in Washington, doldrums seemed to have set in as Congress concentrated on political matters almost to the exclusion of anything else. There was a move to revive another bill of interest to architects: that of creating a new National Institute of Building Sciences which would coordinate the many private and governmental research and development, testing, and standards-setting activities and sponsor some R&D work on its own. A version of the bill died in the House some months ago. [E. E. Halmos]

Post, post-tensioned

Sixty years after it was built, a brick structure in downtown Cambridge, Mass., has been post-tensioned so that its shell could be turned into a shopping arcade. “The Garage” originally housed the town’s trolley horses; now architects ADD, Inc., of Cambridge have turned it into a multi-level retail center with the help of the Office of Irwin G. Cantor, engineer, New York. Post-tensioning the structure’s one-way concrete joist system saved $3.50 per sq ft over the alternative method of creating a shoring structure and took only three weeks to accomplish. Extra space was gained by the addition of both a mezzanine and a fourth story. Some interior ramps were eliminated; one was saved to enhance circulation, and numerous arched windows were opened after years of being sealed.

Unisex buildings

Speaking out on professional feminism, Chicago architect Gertrude Lempp Kerbis told participants at a recent “Women in Architecture” symposium that architecture falls into three categories: male, female, and neuter. Moreover, because of a declining tension between object and space—male and female, contemporary buildings are neuter, unisex, less interesting. “This is due to a lack of dynamics in our lives,” she declared.

Her thesis begins with an observation that design elements [continued on page 34]
The new generation...

Smok-Chek IV™

Latest addition to the industry's premier line of fire/life safety door controls

Mighty SMOK-CHEK IV™:

Steel strong, whisper quiet ... combination door holder-release and heavy duty rack and pinion hydraulic closer... with or without integral smoke detector, for superior door control and fire/life safety protection.

Unmatched! Steel arm, rail and hold-open mechanism... positive hold-open at any point... full swing between 0° and 180°... conveniently adjustable hydraulic backcheck, independent latch and closing controls... modular, quick-service design... exceptionally low current drain.

Ask the experts:

Rixson-Firemark, Inc.

9100 W. Belmont Ave., Franklin Park, IL 60131
In Canada: Rixson-Firemark (Can.) Ltd.

Circle No. 388, on Reader Service Card
News report continued from page 32

fall into threes—three primary colors; three basic shapes; and three elementary volumes: the pyramid, the sphere, and the cube. The pyramid she sees as a phallic male symbol for its piercing objectivity; the sphere, with its womblike spatiality, as a female symbol. The cube is neuter. In her talk she illustrated male architecture with high-rises. “Females,” she said, “are always relegated to doing interiors. I used to wonder why.”

Chicago lighting awards
Northeastern Illinois University, Chicago, by the Perkins & Will Partnership, architects and A & T Engineering, both of Chicago, and Playboy Enterprises Inc. by Kirsmith Group Inc., Chicago, have won the two distinguished awards from the Chicago Lighting Institute. The school won for floodlighting of lecture halls and the cafeteria, and Playboy received its award for the main lobby and reception areas.

News in education
Carnegie-Mellon University in Pittsburgh and Pratt Institute, New York City, are engaged in new educational programs. In the fall Carnegie-Mellon will start its new, two-year Advanced Building Studies Program leading to a master’s degree in whichever discipline a student specializes: architecture, civil engineering, or urban and public affairs.

Pratt Institute for the second time will offer in the fall a special continuing education course entitled “Design for Energy Conservation.” The noncredit program (two credits for students) is open primarily to professionals and is taught by outside architects conducting research in the field.

Hardy, Holzman, Pfeiffer receive Brunner Prize
For the first time since the inception of the coveted Brunner Prize in 1955, a team of three architects has received the award. The New York firm of Hardy, Holzman, Pfeiffer was given the distinguished award by the National Institute of Arts and Letters for its contribution to the art of architecture. The prize was established by the widow of Arnold W. Brunner, an architect and former treasurer of the Institute. Previous recipients include the late Louis I. Kahn, I.M. Pei, Gordon Bunshaft, Harry Weese, and Robert Venturi.

Getting to know you
Politicians and building team members mingled earlier this year in Washington, D.C. at the annual Architects-Engineers Public Affairs Conference where major issues were how to meet your congressman, the energy question, and ethics.

Tackling the difficult ethics imbroglio, Rep. Lawrence Ho- [continued on page 36]
The only organic roof that might outlast the Owens-Corning all-Fiberglas roofing system.

Conventional asphalt roofing systems have organic felts. So moisture and heat can cause them to curl, wrinkle, fishmouth, char and rot. And that can lead to an early failure.

Not so with our all-Fiberglas* roofing system. Here's why

1. It begins with Fiberglas Roof Insulation. This has a bottom surface that conforms to minor roof irregularities. And a top surface that stays flat. (FM Class 1 construction. UL 1, 2, and 4. Thickness from 15/16ths to 2 1/4 inches. C-value certification.)

2. Fiberglas Roof Tape then provides reinforcement at the roof insulation joints and helps reduce failures caused by normal deck movement.

3. Fiberglas roofing felts come next. Unlike conventional felts, ours won't absorb or hold moisture. So they won't char or rot. They resist curling, wrinkles and fishmouths.

4. Fiberglas PermaCap (where available) tops everything off. It's surfaced with inert, non-combustible ceramic granules that help beautify the roof.

More information? Refer to our section in Sweets Catalog, Built-Up Roofing Systems 7.1/Ow, or contact your Owens-Corning representative. Or write: Architectural Products Division, Attn.: Mr. D. R. Meeks, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

*Reg. T.M. O.-C. F.
YOU'VE HEARD

about
Structures Unlimited Pool Enclosures . . .
Here's what one looks like!

And this is just one of an "unlimited" number of design possibilities. And the number of ways the enclosed pool facility can be used is "unlimited" too... Ordinary pools, and those that cannot be used in the cold months, can be turned into something really wonderful, with a Structures Unlimited Enclosure.

Individually engineered, factory pre-fabricated and installed, Structures Unlimited Enclosures are based upon the Kalwall Translucent Wall System, in conjunction with the exclusive Structures Unlimited Box Beams.

There are many positive advantages to this type of construction . . .
- insulated (2½ times more insulation value than any other light transmitting material),
- lower construction costs,
- rugged, yet lightweight,
- glare-free, diffused light,
- wide range of design possibilities,
- optional motorized roof,
- self-cleaning, virtually maintenance-free.

A full color brochure has complete information and pictures of other Enclosures. Write or phone Robert Keller Jr. for a copy!

Structures Unlimited, Inc.
37 Union Street
Manchester, N. H. 03103
Phone 603-627-7889

News report continued from page 34

gan (R-Md.) brought out the unpleasant fact that architects and engineers in Maryland were receiving $100 in contracts for every 67 cents donated toward the 1970 Democratic gubernatorial election. In the "great haste" to remedy the situation, Rep. Hogan said the Maryland House passed a competitive bidding bill which, if enacted, would not be the answer. At the federal level he has introduced a bill (HR 3546) allowing the government to end a contract and recover any fees paid in a situation wherein the contractor or any associated individual is convicted of unethical practices. However, as the congressman pointed out, statutes already are on the books, but not enforced, to prohibit such activities.

Rep. Mike McCormack (D-Wash.) spoke on his bill (HR 11864) to create a large-scale solar energy demonstration that would be mass-produced and implemented nationwide. The project would "Push everybody off the end of the diving board at the same time," he said, referring to the seeming reluctance to approach the energy problem other than on a piecemeal basis. In his proposal 4000 solar units would be installed—2000 monitored for heating effectiveness and 2000 for cooling. The design would be selected by a competition.

Co-sponsors of the two-day seminar in Washington were the AIA, the American Consulting Engineers Council and the American Society of Civil Engineers.

NEOCON 6

The sixth annual Congress on Interior Environment will be held June 19-21 at the Merchandise Mart in Chicago opening with a panel discussion on current crises and challenges to design. Panel members will be Archibald Rogers, president of the American Institute of Architects; Sir Hugh Casson, a professor of environmental design, London; John Parkin of Parkin Architects Planners, Toronto; and Norman DeHaan, president of the American Institute of Interior Designers. Former Secretary of the Interior Stewart Udall will speak on "Energy Gluttons: Monuments to our Technological Arrogance" Friday morning the 21st; his talk will be followed by a discussion on the subject moderated by P/A Editor John Dixon.

Personalities
Fazlur R. Khan, Skidmore, Owings & Merrill, Chicago, has been awarded the J. Lloyd Kimbrough Medal by the American Institute of Steel Construction for his contributions to the field of structural design and engineering.

Warren G. Arnett, FNSID, chairman of the board of the National Society of Interior Designers, has received honorary membership in the Interior Design Educators Council. C. James Hewlett, FNSID, Roslyn W. Mallin, FNSID, Edward Perrault, FA IID and James Merrick Smith, FA IID, trustees of the Foundation for Interior Design Education Research, also became honorary members.

Chester P. Siess has been elected president of the American Concrete Institute, Detroit. Professor Siess is head of the Department of Civil Engineering, University of Illinois, Urbana-Champaign.

Malcolm Carpenter of The Hall & Goodhue Community Design Group has been appointed to the Landmark Preservation Advisory Board, Oakland, Calif.

Charles Luckman, FAIA of Charles Luckman Associates, Los [continued on page 40]
Safelite bullet-resistant glass now gives you protection and beauty, too.

Now you can provide the security they need and the beauty you want. It's bullet resistant, UL-approved. And it comes with mitered edges for clean, clear vision. Or, sawed edges for butt glazing and a new, fresh outlook.

Safelite's riot and sound control glass utilizes a wide range of acceptable architectural colors, each at a specific light transmission, a constant U value and shading co-efficient.

Solve your security and comfort problems now. Specify Safelite for on-time deliveries, as promised, for your next project.

Write us for complete catalog or call for information.
Red cedar makes a school a home.

The Walker School in Needham, Massachusetts, is a special school for youngsters with emotional and educational difficulties. Its design answers the problem of giving an institutional structure warmth and humanity. While employing dramatic lines, the architect has retained an inviting, comforting atmosphere.

Red cedar shingles are part of the solution. Their texture and organic feeling moderate the structure’s upward motion, blending it with the New England landscape. Making it a home.

Red cedar shingles’ unique durability and insulative properties will help keep the school warm and heating costs down during the hard Massachusetts winters.

Next time you have a design problem, consider Red Cedar Certigrade Shingles and Certi-Split Shakes, the distinctive materials that help make a New England school a home.

For more details, write: Red Cedar Shingle & Handsplit Shake Bureau, 5510 White Building, Seattle, Washington 98101, (In Canada: 1055 West Hastings Street, Vancouver 1, B.C.)

These labels on bundles of red cedar shingles or handsplit shakes are your guarantee of Bureau-graded quality. Insist on them.

Red Cedar Shingle & Handsplit Shake Bureau
One of a series presented by members of the American Wood Council.
Circle No. 370, on Reader Service Card
Most water coolers look pretty much the same on the outside. Only one looks like this on the inside.

Halsey Taylor.

Not that you’d recognize it. Very few people ever have to look at the inside of our water coolers. Including repairmen.

That’s because we concentrate on what really counts—function. Besides, where could anyone get the idea that an architect specifies functional products on appearance alone?

The ultimate pay-off is a cold, satisfying drink of water. But the pay-off that counts is years of service, extremely low maintenance, quality construction—and knowing that the product you specify is as good as your own reputation.

We put a lot more into it so your customers will get a lot more out of it. Cold water included. Here’s how:

1. **Exclusive 2-stream bubbler.** Builds a large, drinkable mound of water. Anti-squirt and vandal resistant. One piece chrome-plated brass forging prevents contamination.

2. **Cooler top.** Satin finish stainless steel, polished and buffed for beauty and ease of cleaning. Separate drain strainer removable for easy cleaning without removing cooler top.

3. **Pre-cooler.** Incoming water line coiled around and tin-bonded to cold water drain. Boosts cooling capacity by 60%.

4. **Cooling storage tank.** All copper, hot-dipped pure tin lining. Incoming water coil is tin-bonded to refrigerant coil to cool water before it enters tank.

5. **Condensing unit assembly.** Hermetically sealed, lubricated for life. Automatic re-set overload protector prevents overheating. Capacitor insures compressor startup. All components designed and coordinated for top efficiency and long life.

6. **Cabinet.** One-piece unitized body of heavy gauge bonderized steel. Baked-on enamel resists wear, moisture, heat, sunlight. Cabinets also available in stainless and vinyl-clad steel.

7. **Dual temperature controls.** Two thermostats, primary and secondary, provide double protection against freeze-up.

8. **Automatic regulating/operating valve.** Maintains constant stream height under line pressures varying from 20 p.s.i. to 90 p.s.i. Easy to service. Tamper-proof. Large orifices resist deposits and clogging. All parts are corrosion-resistant.

Halsey Taylor Division, 1554 Thomas Road, Warren, Ohio 44481.
Angeles, has been reappointed trustee of the California State Universities and Colleges.

Edward G. Petrazio, AIA has been named administrator of the professional practice department of the American Institute of Architects. Nicole Gara is the new director of congressional liaison in the government affairs department. Harold B. Glover has been named director of community development in the department of environment and design.

Calendar

June 7. Conference on project financing and building cost estimating sponsored by Washington University, St. Louis, Mo.


June 10–12. First intercommunal world conference of the World Federation of United Towns, Bologna, Italy.


June 16–22. Congress of the International Federation of Park and Recreation Associations and the International Federation of Landscape Architects, Vienna, Austria.


June 18–22. Fifty-third annual meeting of the National Council of Architectural Registration Boards, Dallas, Tex.

June 19–21. Sixth annual conference on contract interior environment (NEOCON), Merchandise Mart, Chicago.


June 24–28. Institute on industrial archaeology sponsored by Rensselaer Polytechnic Institute, Troy, N.Y.

June 30. Entries due for "Work of Women in Architecture" exhibit organized by the Archive of Women in Architecture (sponsored by the Architectural League of New York) and supported by a grant from the National Endowment for the Arts.

July 1. Deadline for entries to the sixth biennial Department of Housing and Urban Development awards for design excellence, Washington, D.C.

July 4–6. First joint national convention of the National Society of Interior Designers and the American Institute of Interior Designers, Denver, Colo.

July 15. Deadline for entries to the aluminum building products design competition sponsored by the Architectural Aluminum Manufacturers Association and the Aluminum Association, Chicago.


Sept. 8–10. Sixth international conference on urban transportation, Pittsburgh.

You get more from Jamison

Wherever you are, Jamison makes sure the most comprehensive technical help is available close at hand... backed up by our specialized engineering. Jamison cold storage door specialists offer more technical assistance than anyone else... provide whatever you need to select cooler and freezer doors which suit your purpose precisely, and most economically. Jamison's newly expanded line makes traditional Jamison quality, durability and service easy to get in every price range. Write or call for details on the most complete line of doors in the industry.

Circle No. 350, on Reader Service Card
"FreeSpace" for Your Clients

Put all your files in one fourth the area

With Lundia FULLSPACE® Mobile Filing and Storage Systems

Now you can "free" valuable floor space. It's a matter of record. In business firms nationwide, Lundia FULLSPACE systems are saving space, retrieval time and money.

FULLSPACE occupies about one quarter the floor space of drawer files of equal capacity. Suppose your drawer files and aisles occupy 400 sq. ft. FULLSPACE of equal capacity saves space for other purposes by requiring only 100 sq. ft., or you can put four times the filing and storage in existing space.

Swedish-designed Lundia FULLSPACE mobile wood shelving has no equal... for efficient management of general files, records, computer tapes, printout forms, ledgers, books, stationery, supplies of all kinds, and even parts inventory.

When you select FULLSPACE for centralizing records-keeping and storage, you really have something working for you. Ask how FULLSPACE can pay for itself. Have a Lundia representative survey your requirements, present a free layout, and provide a cost estimate.

Your installation date will be met. That's in the record, too.

CALL FRANK BROWN COLLECT

217-423-3451

OR WRITE TODAY FOR COMPLETE DETAILS

LUNDIA
The World's Record Holders

PA-674
LUNDIA, MYERS INDUSTRIES, INC. DECATUR, ILLINOIS 62525
Circle No. 359, on Reader Service Card
Protect your waterproofing and dampproofing systems

...with Asbestoseal® and Elastibord Vapor Stop products from Celotex.

The waterproofing and dampproofing systems you select protect your building against water. But, what protects your waterproofing-dampproofing systems?

Answer: Celotex Asbestoseal and Elastibord Vapor Stop Products. Job conditions call for extra protection to resist damage from backfilling operations, installation of forms and reinforcing steel, traffic from other trades, as well as concrete pourings and shifting of the soil. Both Asbestoseal and Elastibord Vapor Stop products are especially designed to provide extra protection for waterproofing and dampproofing systems.

Asbestoseal Vapor Stop is an inorganic vapor barrier and protection board constructed of a core of special asphalt and inert stabilizers with glass mesh reinforcement in the center of the core. The core is sandwiched between two layers of inorganic, coated asbestos felt, making it ideal for applications such as plaza areas where a tough protective product is required.

Elastibord Vapor Stop Board is a vapor barrier and protection board with organic coated felts on each side of the asphalt core, but without the glass mesh reinforcement.

Both are well suited to protect sub-grade waterproofing systems of all types including Liquid membranes, Elastomeric systems, etc.

Both Asbestoseal Vapor Stop and Elastibord Vapor Stop can also be used under slab or on walls as a vapor-barrier, and are ideal for waterproofing by themselves where the prospect of water damage is minimal.

Get more information. Write for new catalog, "Celotex Membrane Waterproofing and Dampproofing Systems," or consult Sweet's Architectural Files.

Celotex Asbestoseal and Elastibord Vapor Stop products each have water vapor transmission ratings of less than 0.0050 perms. Puncture resistance (7 days soaking), Mullen Test, 150 psi; tensile strength of 89 lbs. per in. They are available in thicknesses of 1/8 and 1/4 inches; width 30 to 60 inches; length 8, 10 and 12 feet.

The Celotex Corporation, Tampa, Florida 33622

a Jim Walter company

Circle No. 332, on Reader Service Card
The subdued approach to Reflective Glass

With the increasing use of reflective glass for outstanding solar control and lower operating costs, more and more buildings are sticking out in harsh, metallic glare.

Now, Shatterproof Glass Corporation has developed a refined, subdued Reflective Glass that still offers the benefits of the harsh reflective glasses.

...Manufactured in three configurations—Insulating, Laminated and Monolithic—for complete versatility.

Depending on the type specified, it can also provide thermal control, sound control, security and safety benefits. Available in subdued tones of bronze, gold, gray and chrome . . . in the largest quality sizes in the industry.

To learn more, write for our Reflective Brochure, Shatterproof Glass Corporation, Dept. 101A, 4815 Cabot Avenue, Detroit, Michigan 48210. Phone: 313/582-6200.
More effective building systems from Amspec

STYROFOAM insulation provides lifetime energy savings for a wide variety of installations.

STYROFOAM® brand plastic foam insulation has a twenty-year record of proven performance throughout the country. It is accepted by all major and most local codes; just as importantly, it is accepted by builders and contractors as the best, most practical and easiest way to perform insulating jobs that must last the life of a building. And with energy becoming more costly and less available, the value and importance of STYROFOAM brand insulation will continually increase for owners of all types of buildings.

STYROFOAM is a superior insulation: It has a low and constant “K” factor; its high compressive strength makes it an excellent base for interior and exterior finishes; STYROFOAM resists sagging, compression and moisture that can lower the thermal resistance of most other insulations. STYROFOAM is its own vapor barrier, eliminating the need for a separate vapor barrier.

Although all STYROFOAM brand plastic foam insulation products sold by Amspec contain an effective fire retardant compound, STYROFOAM is combustible. But installed properly with one of a variety of finishes, it does not present an undue safety or fire hazard.

Here are four practical, energy-saving design approaches for STYROFOAM brand insulation:

1. DRYWALL/STYROFOAM LAMINATE—This is a foolproof, proven way to create an insulated masonry wall with interior finish. STYROFOAM brand insulation is adhered directly to the brick or block with STYROFOAM brand mastic; gypsum drywall is then applied directly to the STYROFOAM with the same mastic, nailed only at the top and bottom of the wall into previously applied wood ledgers. Taping and spackling finish the wall for paint, wallpaper, or decorative paneling. This laminate of STYROFOAM and gypsum drywall eliminates insulation breaks; does away with furring strips, studs, batts and separate vapor barriers; minimizes nailing and resultant nail pops; and provides a continuous, solid, insulated wall system resistant to moisture penetration. The drywall/STYROFOAM laminate system installs quickly and easily, and is an economical and efficient way to build a fully insulated wall.

2. CAVITY WALL INSULATION—STYROFOAM brand insulation is the ideal material for cavity wall insulation. Because it is rigid, STYROFOAM goes into the cavity easily, with no worry of future settling. Any water which may penetrate the outer wythe will not affect STYROFOAM, because STYROFOAM is impermeable. And one inch of STYROFOAM in the cavity more than doubles the insulation value of the uninsulated wall.

3. PERIMETER INSULATION—STYROFOAM brand insulation performs efficiently under the worst possible conditions for insulation. Moisture, ground water under pressure, and high compressive loads of backfill and slabs present no problems for STYROFOAM. With its high compressive strength and excellent water resistant properties, STYROFOAM will provide comfort and heating efficiency for the life of the building.
4. INSULATION/SHEATHING IN FRAME CONSTRUCTION—STYROFOAM TG brand plastic foam insulation is finding increasing acceptance as a combination sheathing/insulation for frame construction with wood or metal studs. STYROFOAM TG is installed on the outside of the frame, insulating all of the opaque wall area including studs, sills, jambs and headers. The tongue-and-groove feature assures positive joint seal with no gaps; joints may fall on or between the studs, eliminating waste. STYROFOAM TG by itself replaces conventional sheathing, mineral wool batts, and vapor barriers.

Effective insulation plays an important role in the energy crisis. You can’t afford to give a building owner anything less than an insulation that’s economically installed, will perform for the life of the building, and will greatly reduce heating and cooling costs ... an insulation such as STYROFOAM brand plastic foam insulation.

If you want to know more about STYROFOAM insulation for any of these applications, just fill out the coupon and mail it to us. We’ll see that you get all the information you need.

Amspec Inc. is the exclusive national marketing organization for construction materials manufactured by The Dow Chemical Company. Amspec has its own sales force and technical service capabilities, and the products and systems Amspec markets have been proven by extensive testing and years of practical application throughout the United States.

I want to know more about STYROFOAM brand insulation in sidewall, cavity wall, and perimeter applications

NAME____________________________________

COMPANY__________________________________

ADDRESS__________________________________

CITY____________________STATE____ZIP_____

I’d also like information on the Amspec products and systems checked below:

☐ The IRMA (Insulated Roof Membrane Assembly) System.

☐ SARABOND® brand mortar additive for pre-fabricated and high strength brick walls.

For more information on any building systems available from Amspec, just fill out and mail the coupon, or call the Amspec sales office nearest you.

Amspec sales offices: Atlanta, 404 / 261-7496 • Boston, 617 / 655-1105 • Chicago, 312 / 858-5150 • Houston, 713 / 622-5271 • New York, 212 / 594-6398 or 501 / 227-1002 • Philadelphia, 215 / 923-6248 or 609 / 234-6400 • St. Louis, 314 / 434-5100 • San Francisco, 415 / 854-2010 or 800 / 982-5818 (So. Cal.) • Columbus, 614 / 457-2580, Ext. 50.

•Trademarks of The Dow Chemical Company.
News report

Buildings on the way up

1 Original proposal for Charles River Dam and park (above)—under construction (below) is revision in brick with arches

2 Final design of Dodge Center going up in Georgetown facing the Potomac
1 In his book, *Rivers in the City*, Roy Mann related how the one-lock Charles River Dam built in 1910 was a mixed blessing to the Back Bay Fens of Boston. Now the Charles River will have a new dam with three locks a quarter-mile away, and the project hopefully will enhance its surroundings and draw more people to share the joys of river life. The brown brick of the dam is intended to blend with the historic character of Boston’s nearby North End, and a four-acre park commemorating Paul Revere’s landing is integrated with the dam project to encourage public visits. The design by William Lee Hohenschau, project architect, of C. E. Maguire, Waltham, Mass., began as a concrete, metal, and glass structure with hard, geometric lines. Three architects—Pietro Belluschi, John C. Harkness, and Hugh A. Stubbins, Jr.—serving as a review board for the Army Corps of Engineers, which commissioned the project, felt, however, that bricks and arches would be more in keeping with the historic environment, and so the design went through six phases before a final solution was reached. Construction will not impede river use at any time and is expected to be completed in late 1977 at a cost of $30 million.

2 Dodge Center, a project by Hartman-Cox Architects of Washington, D.C., is one of the infrequent occasions of building new in the historic Georgetown area of Washington and one of the first ventures in the quaint, but undeveloped, portion of Georgetown between the old C & O canal and the Potomac River. Since the fifties, explained George Hartman, Jr., residents and the zoning authorities have gone around and around on what to do until finally, in his opinion, property has become too valuable for anything but commercial use. In designing the commercial-office center, a concrete structure wrapped around the old Dodge warehouse, architects had to contend with the elevated Whitehurst Freeway which passed 6 ft away. First reports were that the freeway would come down; then that decision was reversed. Now the highway question is again unsettled, and so Hartman, after several design changes, took the course of providing a building that would accommodate either option. The structure with its covered inner court will be completed in the spring of 1975.

3 In Charleston, S.C., where traditions might be taken for granted, a group of handsome old warehouses by the Cooper River docks just barely escaped demolition. They were rescued by Save Charleston Inc., an organization of preservation-minded women, who located a Myrtle Beach developer and an architect—Arthur Cotton Moore of Washington, D.C. A plan for bringing activity to the forgotten area is ready. The warehouses will be turned into offices, stores, and restaurants. The Ohiandt Building with its cast iron façade and column-supported floors will be turned into condominiums. A hotel to be built nearby will maintain the low scale and relate in feeling to the warehouse group. Although the area to be developed is not entirely in Charleston’s Historic District, the $13 million investment doubtless will trigger other conversion of the light industrial area into more people-oriented uses and establish a renewed interest in restoration.

4 Loews Monte-Carlo, a seven polygonal-tiered structure hugging the Mediterranean coast of Monaco, will open in May 1975. The luxury hotel was engineered to rise seemingly suspended between land and sea to preserve the view from the Casino, situated on the hill just above. Accommodating 12,000 guests, the hotel will include a gallery of shops on the lower level, roof-top pool, ballroom, restaurants, and an American-style gaming room. Each suite and bedroom will have its own terrace. Architects are Herbert Weisskamp of Germany, Jean Ginsberg of France, and Jean and Jose Notari of Monaco.

5 A Canadian Lakeside resort presently visited by the summer cottage-boating crowd will be redeveloped by Hedonics Inc. of Peterborough into a year-round sportsman’s retreat. Located in the greater Toronto area on Pigeon Lake in Harvey Township, Port Aberdeen will be a marina-centered village but will emphasize inland sports, such as golf, skiing, and riding. Developers estimate only a sixth of the recreation will be water-oriented. Scottish-born architect Desmond Muirhead of Muirhead, Casey, Baxter & Stewart, Sausalito, Calif., was called in as master planner of Port Aberdeen and designer of its 18-hole championship golf course. Up to 3000 dwelling units in clusters of villas, detached houses, and condominiums are planned for the 200-acre site, and apartments will be situated above the shops on the marina promenade.
We're celebrating our 20th reunion at Burlington-Edison High School.

In 1953, a Joy controllable pitch Axivane® fan was installed in the Burlington-Edison High School, Burlington, Washington, to quietly heat and ventilate the gymnasium building. The engineer selected a controllable pitch fan because it was the most efficient way to satisfy variable ventilation loads created by 50 to 2000 shouting spectators.

After twenty years, the Joy controllable pitch Axivane fan equipped VAV system is still in school, with no danger of becoming a dropout. Power requirements are low. Fan maintenance has been practically zero. Operating costs are minimal. Quiet operation was assured by incorporating an engineer selected sound cell.

To meet the air requirements of VAV systems, the Joy controllable pitch fan precisely adjusts the pitch of its blades. And maximum energy savings are realized at partial loads . . . a very important consideration these days. At Burlington-Edison, the fan blade angle is adjusted in response to a wall rheostat calibrated to crowd capacity.


Mechanical Engineers: Stern & Towne Consulting Engineers Seattle, Washington
Joy Axivane Fan Representative: Johnson-Barrow, Inc. Seattle, Washington

Offices and plants throughout the world

NEW PHILADELPHIA DIVISION
THIS IS THE HEADRAIL WE HANG OUR BLIND ON. AS YOU CAN SEE, YOU CAN HARDLY SEE IT.

Try as they might, until now nobody could make a one-inch blind that was beautiful all over.

The headrail, unfortunately, hurt the overall effect. It looked a little horsey, stuck out, didn't fit in everywhere.

Enter Alcan.

The headrail on our new Mark II Blind is skinnier. Only one inch square instead of the usual one by one and a half.

Not a lot less, but enough to fit almost every window frame ever made no matter how shallow.

There's more, of course. Features you can't find on any other blind.

Like a bottomrail to match. Hardly noticeable. A very light lock-seam tube so strong it keeps the slats perfectly straight, even part way up.

The rest is looks. As pretty as the picture, in any color — or combination — under the sun. But why not see for yourself, in our 16-page book of possibilities called Window Shopping. It's yours for the asking.

The Mark II Blind. As you can see, it's a nice thing to do for a window.

Circle No. 320, on Reader Service Card
One thing they don’t teach you in drafting class is how to use a drawer.

1. Open the drawer.
2. Take out whatever standard details you need.
3. Use the Xerox duplicator to copy them onto adhesive-backed Mylar.
4. Place the imaged Mylar onto the new working drawings.
5. Put the standard details back in the drawer until the next time you need them.
6. Close the drawer.

For a firsthand lesson, have our Architecture/Construction/Engineering specialists show you all the ways a Xerox duplicator can help you turn repetitive time into creative time.

And then instead of going back to the drawing board, maybe you’ll start going back to the drawer.

XEROX
Fedders brings you Unizone—a series of self-contained through-the-wall cooling and heating systems. Because they are trim and unobtrusive (only 19 1/4" deep), they give you architectural freedom. Because they offer an optional architectural outdoor louver, they are unobtrusive outside the building as well.

Unizone permits low first cost, installation cost, and maintenance expense for low and high-rise buildings. It offers up to 20 percent outside air in keeping with the requirements for schools, nursing homes and hospitals, and it will cool even at low outdoor temperatures.

Unizone is quiet because it was designed that way. It has twin double-inlet blowers, separate blower and fan motor, enclosures for the blowers and compressor, an acoustically insulated sleeve, large intake and exhaust areas. Furthermore, it has three pushbutton-controlled cooling speeds, including ultra-quiet Lo.

There are 19 cooling models, ranging from 7,000 BTU/hr. to 15,000 BTU/hr. Cooling models are also available with electric resistance heat, hot water heat, and steam heat. Unizone models are available in 230, 208, 230/208 and 277 volts. Unizone installs in virtually any wall thickness, including curtain wall with optional sub-base.

If you're considering a comfort system that won't fence you in, look into Unizone. Its trim dimensions will please you. Its quiet operation will please the building's tenants.
Outside, a low maintenance, acrylic coated aluminum exterior in one of 11 colors available.

In a Pella Clad Wood Window, all exterior wood surfaces are covered with an acrylic coated aluminum skin. An outside finish that is known for its durable, low maintenance qualities. Equally important, however, is the fact that our clad exterior lets you select colors, shapes and sizes that complement your plans. Naturally, Pella Clad Wood Windows. Available in three standard (a) and eight special colors. On our Casement, Awning, Double Hung, Fixed and Trapezoidal Windows.

(a)

Inside, the natural warmth and beauty you expect to find in a quality wood window.

While we recognize the need for a low maintenance exterior, we are also well aware of the natural warmth and beauty that a wood window contributes to a building’s interior. So we were very careful to preserve these two qualities when we designed the Pella Clad Wood Window. For example, the exterior aluminum skin never penetrates the frame or sash (b). Leaving the natural insulating value of the wood intact. And the natural beauty of the interior wood surfaces completely undisturbed.

(b)

At Fingerhut’s new headquarters, this Pella Clad window system blends in beautifully, inside and out.
Afterward, the convenience of maintaining a center-opening Pella Clad Casement Window.

Routine maintenance is a factor to be considered. Because, in a lot of ways, it has a lot to do with your clients’ ongoing satisfaction with their new structure. Our clad casement windows have a unique hinging system which allows the sash to rotate a full 90°, to the center of the frame (c). So the outside glass can be easily reached, and washed, from inside the building. And this same kind of built-in satisfaction is also found in our Awning, Double Hung and Horizontal Pivot Windows.

Pella Clad Sliding Glass Doors are as solid, as beautiful and as maintenance-free as a Pella Window.

Pella Clad Sliding Glass Doors combine the natural beauty and insulating value of wood with an exceptionally solid framing system. Welded steel T-sections (d) frame the glass in the slender wood panels. This prevents warping and keeps the panels aligned for smooth, easy operation. Pella Clad Sliding Glass Doors let you extend the view, without having to sacrifice inside appearance or comfort. They are weathertight, even under severe weather conditions. Available in all 11 colors.

For more detailed information, send for your free copy of our 24-page, full-color brochure on Pella Clad Windows & Sliding Glass Doors. See us in Sweet’s Architectural File. Or look in the Yellow Pages, under “windows”, for the phone number of your Pella Distributor.


Name
Firm
Address
City. State. ZIP
Telephone
Mail to: Pella Windows & Doors, 100 Main St., Pella, Iowa 50219 Dept. T35F

Also Available Throughout Canada
When your building project calls for sprinklers...

Your local VIKING team can take the load off your back.

You can save important time and energy by putting to work the experience, professional training and helpful cooperation of your local VIKING team. These men are qualified experts in the technology of sprinkler protection against fire. They're equipped to work with architects, engineers and contractors to insure that the job is properly designed and installed, resulting in a sprinkler system best suited to your project requirements.

Equally important, your VIKING team employs VIKING-made equipment and hardware throughout, to assure you the finest fire-protection system obtainable.

Write for this helpful 32-page book, "Viking Sprinkler System Guide". It's packed with information every building owner, architect and contractor should have.

Call the Viking Sales Department for immediate information. (616) 945-9501

THE VIKING CORPORATION
HASTINGS, MICHIGAN 49058

Circle No. 380, on Reader Service Card
Like any top-of-the-line machine, our VIP-260/CL solid state elevator system is luxurious, dependable and in the long run "cheap."
The Glass Company puts quality and safety where you need to see it.

And where people need it to see. After all, we know you can't afford to use less than the best when it comes to lighting glass. Because people do notice the difference. In case of fire, ASG glass panels won't burn—or melt and drop to the floor, causing other fires. Or release toxic fumes. Unlike plastic, ASG panels always look new. They stay cleaner longer and are quick and easy to care for. ASG panels don't warp, sag, turn yellow or scratch. They diffuse light with unsurpassed efficiency.

ASG-112 is a prismatic lighting glass developed especially for the speculative office building market. ASG-112 offers quality unique to its price range, with an octagonal and square indented prism structure, and light, neutral color composition that combine to produce a truly comfortable visual environment.

ASG Crystal includes panels with hexagonal, square or linear prisms. You can choose tempered crystal for added strength, safety and thermal shock resistance. Plus special ceramic coatings for radio interference shielding, glare reduction and color correction.

Alba-Lite, a light opal glass, provides soft, diffused light transmission and excellent lamp image hiding power. It's a superior lighting panel for reducing glare.

Write for ASG's Lighting Catalog. It contains details on these and other quality lighting products to help you see just what we're talking about.

ASG Industries Inc.
The Glass Company, PO BOX 929, KINGSPORT, TENN. 37662
As an editorial introduction to our special issue on Environmental Impact, we present a plain-spoken plea by architect Malcolm Wells of Cherry Hill, N.J. for a permanent settlement in the battle between Building and Nature. An early defender of the natural environment, Wells outlined a radical program in the Feb. 65 P/A ("Nowhere to go but down") which seems a good deal less wild-eyed in 1974. His essay below clarifies, in the simplest terms, the total interdependence of the life cycle; at stake, he points out, are resources more tangible than wildlife or scenery. In his own new office, shown on the following pages, Wells takes a small, bold step toward an accommodation with Nature.

If you'd like to see a bit of instant geology sometime, come with me when it rains to the little valley beyond the new shopping center. Even before we get there you'll hear the roar made by tons of wild storm water charging down the pipe from the parking lots. It's truly a terrifying experience. The 26 acres of buildings and blacktop that make up that shopping center pour 600,000 gallons into the pipe every time an inch of rain falls.

As terrifying as the drain roar, though, is what the water does after it leaves the pipe. Layers of earth that had lain untouched for centuries are sliced away in seconds. Blasting into what was once a quiet little ravine, the linear tidal wave chews up blocks of earth that took ages to build and spews them downstream into lifeless sand flats wherever slack water occurs. Along with this flood go the oil drippings, the cigarette butts, and other by-products of our automotive society. Literally within minutes the entire valley-form can change. Little cliffs of earth will appear and then collapse where a few minutes earlier tottering trees and vines still held the bank. And once the groundcovers go, the never-ending business of bank stabilization must begin. Sandbags may last for a while; concrete or steel sheet piling will last longer, but it's a losing battle from then on, with the magic gone from the valley.

In the valley of the shadow of the supermarkets you need not wait a million years between shows. You can see it all in minutes, see sand bars appear, disappear, and reappear, echoing geologic actions that used to take generations, sometimes even millenia, in the days when nature had more of an even chance. It's like what the forty-niners did to California's untouched valleys, except that here you see it on a grander scale; America today may lose in a week what California's valleys lost in a decade. Each year we withdraw another 10 million acres from the green side of the national ledger. As those acres are turned into what we call improved land they become very efficiently paved; if not with blacktop or concrete or roofing materials, then paved with closely mowed turf—lawn grass—which is no slouch as a paving material, either. Neatly-trimmed grass can be counted on to repel almost half as much rain water as a shingled roof. We've called ourselves the affluent society, the effluent society, and the great society, but I think of us simply as the pavers. Never has man or any other creature gone about the waterproofing of this planet with such a vengeance.

It's a deadly situation. Forgetting for a moment all the plants and wildlife denied existence on paved sites, forgetting the soul-crushing ugliness of vast paved areas, forgetting even the erosion they cause, the amount of water denied access to the land by our black, white, and green paving ex-
Environmental impact

crees the total U.S. water consumption! It has to. It can’t be calculated exactly, for no one has yet documented the total surface covered by our cities, towns, roads, houses, lawns, factories, airports, schools, railroad yards, refineries, warehouses, and shopping centers. But fourth-grade multiplication will prove the point.

The city of Philadelphia, in whose suburbs I live, has an area of 135 sq mi. Its annual rainfall is 45 in. If you convert all these miles, inches, acres, and feet into gallons you get a staggering 122 billion as Philadelphia’s annual share of the nation’s rainfall. And do you know how much water her thousands of homes and water-wasting factories consume each year? 125 billion gallons! Just the amount of rain that falls within the city limits. You might think, then, after reading all this, that Philadelphia has no water shortage. But there’s a catch: Philadelphia hardly uses the water that’s given her. No, most of those sweet, fresh raindrops are poured away, unused and polluted, into the city’s two vile rivers. Then the city goes upstream to get its own supply. It drinks diluted sewage and throws its rainwater away!

But don’t blame the Philadelphians. They do only what you and I and the people of Tokyo and Chicago are doing. We’ve all waterproofed ourselves so well that the rain just can’t soak in. We’ve changed the very nature of entire continents. I wonder if anyone has ever made a study of American placenames in the light of this massive nature-bungling. Has anyone lately thought about the Mesas that are no longer Verde, the Rios no longer quite so Grande, the thousands and thousands of pineless Pine Streets, the now-brown Greenvilles, and murky Clearwaters? Each of us is surrounded by a roster of vanished riches. Near my home in Cherry Hill (which, incidentally, has neither cherry trees nor hills) are Haddonfield, Collingswood, and Maple Shade, no one of which could possibly be recognized by its descriptive name today. And I can’t even bear to tell you about Fairview.

What an eye-opener it would be if we updated those names to the more appropriate Deadways, Shedwells and Graymuds! The most appropriate and probably the most common new city-name would have to be Runoff (which has a kind of cosmopolitan, Russian sound to it, now that I think about it—Runoff, U.S.A., my home town).

If there’s not a lesson in this somewhere then I don’t know a lesson when I see one. Just think: if enough rain to accommodate its 2 million water-wasting people falls on the few square miles of Philadelphia, than it follows that enough rain to accommodate all of America’s 220 million other water-wasting people must fall on an area only 100 times as large, or an area far less in size than that of Pennsylvania! But then I’m forgetting the huge river-drinks taken by irrigation and industry. They use 10 times as much as people do. Still, the run-off from lawns alone is staggering: they repel up to 50 trillion gallons each year. That’s half of the U.S. water budget.

Impressive, wouldn’t you say? It points up one of the reasons why most of us in the United States are in big water trouble: we throw the stuff away by building and landscaping as we do. We could build watergates on our roofs, devices for slowing the rush to the rainspouts, so the rain would have time to soak in when it reached the ground. We could even use giant sponges. But the best way by far is the natural way: do what nature always did on the land: plant trees and shrubs or grasses in deep, cheap mulch. Such watergates have to be done with care, of course, from the initial planning to the final coverup, but they hold great promise. Watergate architecture, or underground architecture, or whatever kind of architecture you care to call it, makes good sense in a lot of ways, and it’s been around for a long, long time . . .

I can picture the conventional cave man of the comic strips, the prototype Fred Flintstone, as he must have looked when he saw a cave for the first time in his life. It couldn’t have been very many minutes later that the idea of underground architecture was born. That was perhaps a million years ago, long before modern man, as we know him, started inventing war and bigotry (and the religions to excuse them), and learning how to lay continents bare and to overbreed himself.

In the millennia between then and now he has also managed to invent or discover many kinds of shelter other than caves, but architecture—really great architecture—remains, as it be-
Wells' vision (early views above and left) has been partially completed. Although planting is not yet complete (below), the building is well on its way to becoming "gentle architecture," out of sight from adjacent highway.
Environmental impact

buildings are built for the purposes of war, or for additional parking space. Sometimes they underpin a trim little park, but you can imagine how much good that does. Never do we see roofs full of tangled wild landscapes, waist-deep in wildflowers on rain-saving mulch.

In Philadelphia, where I live, the rainfall amounts to over 1 million gallons per acre each year. Obviously, then, for each acre made impervious by conventional construction, a million gallons of this precious gift go wasted, just as they do at the new shopping center. A million gallons an acre are turned into destroyers of plants and animal habitats; a million gallons an acre carry to the ocean topsoils, nutrients, and bacteria that enriched the land before we learned to pave. Underground architecture can prevent such damage by keeping its paved surfaces hidden from the rain. With a young forest to catch it, some of the rainfall is held by the rooftop foliage and the deep humus layers, some is used by plants and animals on the site, and the rest is drained directly to underground reservoirs now being robbed by conventional construction.

But not all underground structures need have forests above them. In the West, where drier conditions prevail, hardy natural grasses and wildflowers can adorn buildings just as they once adorned the prairies themselves. Parks, farms, meadows—even recreational areas—can thrive on rooftops.

Underground architecture offers us immediate, practical advantages. Because of the earth’s rather constant underground temperature (observable in caves throughout the world), very little heating and even less air conditioning is required in most latitudes. Coupled with these savings, the need for almost no outside maintenance, no snow removal, and no lawn sprinkling can further reduce operating budgets. In addition, such intangibles as isolation from both outside noises and atmospheric radioactivity are further incentives to build this way. And the prospect that we may once more find the great, green out-of-doors at every doorstep makes the hoped-for increases in leisure time seem even more appealing.

The only problem is that underground buildings cost so damned much. Supporting three or more feet of earth requires quite a structure, and heavy construction is not cheap, even at least not initially. It takes energy and environmental crises to show us that dollar costs and true costs are not the same, and to build the cheap way is the most expensive.

Even so, the words “underground architecture” often tend to repel the people who hear them. Having been exposed to the depressing look of our subways and tunnels, or to leaky basements and cold, damp caves, people tend to view the real advantages of this new architecture with great skepticism. Most people will agree that such land-wasters as parking lots and shopping centers should go below ground. And many will even concede that some of our freeways and warehouses and factories belong there, too, (in addition to railroad yards, refineries, and museums). But the thought of living underground in a windowless, artificial environment is, to them, the ultimate perversion of man’s role on earth. Fortunately, most advocates of this new architecture heartily agree.

Man was meant to live in the sun and air, to be involved in the seasons, to know night and day. When architects propose windowless, wholly underground buildings they do not include housing. Hundreds of underground houses have been designed, but they always open onto sunny, sunken courtyards or project from the sides of hills so that their rooms can be adequately lighted. Such underground buildings are perfectly dry and as sunny as any conventional house.

Whether or not underground architecture will have wide application in the downtown areas of large cities, the fact remains that it has definite applications everywhere else. It offers hope that the great, blighted areas around the city-centers and along the highways may someday become green and beautiful again. Underground architecture is no cure-all. It is only one way—one legitimate way—of bowing to the great life cycle we’re so quickly destroying. Though endorsed by most ecologists and landscapers, the idea has drawn fire from some architects who, not understanding it, fear it will create a kind of nonarchitecture. But the idea is gaining popularity each day as people react to the blight all around them.

We have always, until now, gone underground for selfish reasons, reasons like security, bombproofing, or the novelty of dialing our own lighting and “weather” effects. If we continue to build for such reasons we’re certain to create underground structures as ugly and as destructive as those above ground, but if we do develop a new respect for life—for all the myriad life forms to which we are related—we may just possibly produce an architecture our descendants will treasure.

Wells’ Underground Office

| 1 | Creates pure air | 2 | Creates pure water | 3 | Uses rain water | 4 | Produces its own food | 5 | Creates richer soil | 6 | Uses solar energy | 7 | Stores solar energy | 8 | Creates silence | 9 | Consumes its own wastes | 10 | Maintains itself | 11 | Matches nature’s pace | 12 | Provides wildlife habitat | 13 | Provides human habitat | 14 | Moderates climate & weather | 15 | Beautiful |
|---|------------------|---|-------------------|---|----------------|---|--------------------|---|-------------------|---|-----------------|---|-----------------|---|------------------|---|-------------------|---|------------------|---|-------------------|---|------------------|---|-------------------|
| 100 | Completely | 75 | Mostly | 50 | Partly | 25 | Slightly | 0 | Neither/nor | -25 | Slightly | -50 | Partly | -75 | Mostly | -100 | Completely |

On Wells’ rating system, he gives his building a + 150, as compared to the ideal + 1500 for natural environments, or —1100 for typical office buildings.
Only at the stream (top left) is the office open to grade, one end of the studio Wells will use for distraction-free work. Bronze entrance doors, by Wells’ daughter Kappy (center left), mark the entrance to the studio from the courtyard. The more open element (above and left) houses functions such as reception and other less private work. Using his own evaluation system (opposite page), Wells rates his building modestly—for now; soon waste processing equipment and solar heating will help to raise the score.
Here are monumentality and grandeur in a double row of European beeches in Holland. It took some 130 years to achieve this. American designers could duplicate the effect with tulip poplars and other columnar species in a milder, more moderate climate in one-third the time.
Steps towards a creative landscape architecture

Forest murmurs

'Tis calm indeed! so calm, that it disturbs and vexes meditation with its strange
And extreme silentness. Sea, hill and wood,
This populous village! Sea, and hill, and wood,
With all the numberless goings on of life
Inaudible as dreams. Coleridge

Like a servant whose secret life eludes us, nature conceals
an astonishing repertoire of discernible moods. A disting­
guished landscape architect offers ways to elicit them.

Landscape architect A.E. Bye of Cos Cob, Conn. has leav­
ened his professional work with the record of a long and re­
warding audience with nature. One of his many pleasurable discoveries is that nature is far from silent. It is a moody crea­
ture, capable of brilliance, humor, mystery, and melancholy. It can bear a lofty crown or play the lewd jester.

Too often this eloquence flourishes unseen. When we are not waging our quixotic "conquest of nature" we simply fail to notice it all. In his classes in the theory of landscape archi­
tecture at Cooper Union and Columbia University, Bye advo­
cates a new covenant. The terms are unencumbered: enter nature's mansions with respect; be prepared to really look and listen to your host. Bye believes that nature's inexhaus­tible inventions and the sensuality of its appointments can profoundly affect architecture and planning. In this photo­
graphic essay, he samples and describes the vocabulary at
the disposal of the designer who knows how nature speaks.
[Roger Yee]

"Frederick Law Olmsted introduced a sense of mystery and grandeur in this planting of spruces at Long Island's Cutting Arboretum. Notice that Olmsted's idea of proper spacing is noticeably tighter than we assume now."

"What majesty bordering on monotony we have in this Bel­
gian setting! The trees are closely planted, the path is deliberately obscured to prolong the passage between the shoulders. The American designer can use much the same materials as we see here: oak, linden, plane, ash."
"What might a developer do with a cleared forest besides planting grass? He might try mustard, which spreads a friendly carpet."

"Florida's coconut palm is besieged by viral attack, so its future is uncertain. In good times, as here in Naples, Florida, their shadow patterns give movement, levity, and depth to the most mundane townscape."
“Birches like the cold climate of New England and Canada. They rarely do well south of New York City. However, this doesn’t prevent them from introducing an infectious gaiety to the frostiest winter day. You can almost see white-robed dancers leaping about.”
Forest murmurs
"Bogs and marshes, rich spawning grounds for life in the open seas, behave mysteriously, even ominously from spring through fall. But winter banishes all such thoughts. The bog grass huddles in snowcapped congregations, and nature basks in gentle humor. Here the designer simply enjoys the performance."

"A bewildered mood, grotesquerie, is embodied in this green cutleaf Japanese maple at the Cutting Arboretum, Long Island. If the designer wishes to express this sentiment, he could select the black willow too."

"On the Caribbean island of Bonaire (Neth. W.I.) nature decided to be as ribald as any Elizabethan comedian. This creature may not be applicable to the American landscape. I include it to reveal nature's comic face."
"A harsh, brutal, chaotic feeling in this view of Mt. Desert Island, Maine is reinforced by the isolated occurrence of the patch pines. The lesson for designers is that given such elemental conditions, trees can and should be encouraged to grow. As for the pitch pine, it ranges from Maine to Georgia and Florida."
"One strong, simple idea often needs only one species to carry it out. To achieve this poetic serenity at the New York Botanical Garden in The Bronx, the designer used a species of willow. You can almost see the result as a painting by Constable. The sensitive designer does not have to strain for his effects. He simply has to know what nature can do for him."

"Selective forest clearing, then lawn planting, and following up with azaleas, dogwoods, and other flowering trees and shrubs has given us a scene of serenity. This is Winterthur, the du Pont garden, Wilmington, Delaware."
Architecture of buildings and land

The nature of the built environment

Robert Geddes
Examining the various possible relationships of buildings to land, an architect-teacher argues for a close integration of indoor and outdoor architecture and supports his position with examples of his own recent work.

Buildings and their landscapes—or, if you prefer, landscapes and their buildings—are embodiments of ideas. That is, ideas of purpose, of space, and of materials influence forms that are built. Even more fundamentally, if not always so obviously, built forms are influenced by ideas of nature.

"Nature" is a very ambiguous term, which has taken at least 66 meanings throughout the history of ideas. But two main aspects, it seems, are persistent and recurring, despite their inherent opposition. On the one hand, nature is taken as a model of regularity and on the other it is admired for its irregularity. Each of these views is a kind of root metaphor, an idea displaying the essence of a system of values. In other words, each image embodies a distinct notion of culture and society, and therefore of buildings, cities, and landscapes. Emerson observed that "the views of nature held by any people seem to determine all their institutions."

In both ancient and modern times, Western culture has had an image of physical nature that was regular in its changes, forces and forms; universals were framed that expressed that regularity. The geometry of nature was used as the basis of rational ethics and aesthetics. A typical statement of this viewpoint might go something like this: "The work of every reasonable creature must derive its beauty from regularity, for reason is rule and order."

The irregularity of nature has been greatly admired in the West since the 18th Century. Appreciation for irregular nature

Author: Robert Geddes is dean of the Princeton University School of Architecture and Urban Planning and a partner in the firm of Geddes Brecher Qualls Cunningham of Philadelphia and Princeton, N.J.
The nature of the built environment

is expressed in the love of the picturesque, the wild, the rough, and the rude, the passionate and the primitive, the romantic. Renoir, for example, said that artists were "careful to proceed like nature. They are always respectful pupils, and are on guard never to transgress her fundamental law of irregularity."

In American history, ideas of nature have had powerful influences on the built environment. Two pivotal men, Thoreau and Jefferson, personify very different sets of intentions.

Henry David Thoreau was a forceful exponent of the idea of a nature unmodified: "I wish to speak a word for nature, for absolute freedom and wildness, to regard man as an inhabitant or part and parcel of nature rather than as a member of society." The crucial relationship for Thoreau was not man-to-man, or man-to-society, but man-to-habitat. The Thoreau image was first built as a landscape in the cemeteries of the 19th Century (such as Mt. Auburn Cemetery, Cambridge, Mass., 1831), and later in the new suburbs (such as Riverside, Ill., designed by Olmsted and Vaux, 1868). The romantic landscape of the suburb featured curved streets and irregular placement of buildings. The significant relationships were not between building and building, or street and building; what counted was the direct relationship of any built element to the terrain, to natural topographical elements.

Before Thoreau, the dominant image of the good landscape, advocated by Thomas Jefferson, was distinctly pastoral, following the mainstream of Western culture since Hesiod and Virgil. Jefferson valued the institutions and landscapes of an agrarian society because "the countryside produces more virtuous citizens." The agrarian landscape was preferred because it supported a better political, social community. The pastoral ideal, according to Leo Marx, "has been used to define the meaning of America ever since the age of discovery, and it has not yet lost its hold upon the native imagination." Pastoralism is more than a political economy; it is a collection of images about the world. The main elements of pastoralism, as a way of life, are freedom to hold discourse, to think, to make music and love in an ideal, ordered landscape.

The pastoral ideal has been expressed since the end of the 15th Century, in pastoral poetry and the formal gardens of Italy and France. The design of these gardens was seen as natural, in the sense of essential reality; wild irregularity was not seen as orderly or natural. The garden was a deliberate abstraction, an idealization of nature. Later, in the 18th Century, the emergence of the English landscape garden provided a dramatically different alternative as a formal means of abstracting the natural landscape. But both the Italian-French garden tradition and the English garden tradition share the idea of the pastoral as the basis of landscape form. These two traditions also share a formal element of crucial importance to the understanding of the built environment. Both seek to idealize the "forest edge" in the idea and form of the garden. The garden is a formal recognition of the beauty of the forest edge, the amenity of clearings in the forest.

The scientist, Eugene Odum, in classifying the major landscape ecosystems of the world (i.e., seas, estuaries, and seashores, streams and rivers, lakes and ponds, marshes, deserts, tundras, grasslands, and forests), points out that man seeks two basic tasks from the landscape: production and protection. And unlike other organisms, he also seeks aesthetic enjoyment from the landscapes. For mankind, the habitat of the forest edge meets all three needs.

Therefore, Odum points out, from the viewpoint of biology and geography, "human civilization has so far reached its greatest development in what was originally forest and grassland in temperate regions. Man, in fact, tends to combine features of both grasslands and forests into a habitat for himself that might be called the forest edge. When man settles in grassland regions, he plants trees around his homes, towns, and farms, so that small patches of forest become dispersed in what has been treeless country. Likewise, when man settles in the forest, he replaces most of it with grasslands, but leaves patches of the original forest on farms and residential areas."

The relationship between man and nature has changed over the course of history, as his society and culture has changed. One of the most evident physical manifestations of culture is the landscape garden—the conscious making of a space that is distinguished from its surroundings and is created to express man's ideal image of nature. It is in some way always a vision of "paradise." (The word paradise originally meant a "walled garden.") Although the garden is made of elements of nature, its form is determined by man's culture, by his ideas and values concerning the role of landscape space in the built environment.

Eternal design elements

Landscapes, like buildings, are composed of space. And, like buildings, the form of a landscape is initially charted by "necessity," the necessity for protection, the necessity for shelter, the necessity for irrigation. In Joseph Hudnut's brilliant essay, "Space and the Garden," he argues that the development of the pergola, the arbor wall, and the fountain proceeded from function. But, "by successive adaptations to our spiritual, symbolic needs, they achieve beauty by conforming to our vision of Nature and of man's place in Nature, to our needs for peace and harmony in the world, to our faith in the dignity of life. The shape, arrangement, form, and content of the landscape will proclaim these aspirations."

Along with "necessity," another common basis for the design of landscape and buildings is that both are governed by the materials they embody. Although the modern movement has added important materials (steel, concrete, etc.) to architecture, it has brought no significant new materials to landscape. The essential connection between the new architecture and landscape is, therefore, not to be found in new materials or technologies; rather, the connection is in the old virtues of sun, sky, greenery, shelter, and space.

In the best of all possible worlds, what might be the relationship between buildings and their landscapes, or landscapes and their buildings? It seems to me that there are three different possibilities. The first possibility is that architecture should be formally independent of landscape, which it serves as a complement and foil. The integrity of the landscape is preserved, and the buildings do not seek intermediate gardens or terraces, serving as transitions between built form and natural or idealized nature. Implied in this contrast is a relationship of opposites (illustrations 1, 3, 4, 5).
3 (right) Hagley Park, designed by the owner, George Lyttleton, and his cousin William Pitt, around 1750. Hagley is a fine example of the English landscape movement, which in the words of an 18th-Century visitor, “will teach you where the woods, groves and lawns should intermingle to grace each other—where water should be secluded and where visible—where light and shade have the best and most agreeable effect, and where the solemn and the gloomy more happily contrast the sprightly and the gay.” The relationship of building and landscape is also one of contrast; the house is set upon rough-cropped, undulating meadows without architectural transitions made by terraces or walls. (from J.P. Neale Views of the Seats of Noblemen).

4 (below) Villa Savoye, Poissy, 1928-31, designed by Le Corbusier as an architectural object to be set upon a continuous meadow. The idea of the landscape is similar to Hagley Park; in Le Corbusier’s own words: “I shall place this house on columns in a beautiful corner of the countryside; we shall have twenty houses rising above the long grass of a meadow where cattle will continue to graze.” (from Willy Boesiger Le Corbusier, Volume I.)

5 Eames House, Pacific Palisades, Calif., 1949, designed by Charles Eames. Set in a grove of eucalyptus trees, overlooking a rye grass meadow, the Eames house is a fine example of the beauty of the forest-edge habitat seen in contrast to the man-made object.

6 Taliesun, Spring Green, Wisc., 1911–, designed by Frank Lloyd Wright. In his autobiography, Wright proposed an idea of landscape and buildings in which the transition from one to another is not perceptible. “I knew well that no house should ever be on a hill or on anything. It should be of the hill, belong to it.” The intentions are clear, but the realizations are ambiguous. (Photo: Hedrich-Blessing)

7 House in Lincoln, Mass., 1947, designed by Carl Koch. The Thoreau-like landscape and garden are interior and exterior elements of the architecture. The hillside garden connects the living room and kitchen of the house. The intention is to eliminate the distinction between natural and artifact. (Photo: Ezra Stoller © ESTO)
The nature of the built environment

A second possibility is that architecture and landscape be seen as continuous, without clear distinctions between the artifact and natural fact, between built form and natural form. Interpenetration is sought between architecture and its natural surroundings, in terms of space and materials. The building should appear to grow out of its site, to be part of the site; of it, not on it (Illustrations 6, 7).

The third possibility is that architecture and landscape should modify each other, that indoor and outdoor space be organized together as a formal geometric unity, defined by built forms such as terraces or walls, arcades, trellises, trees, and plant materials. In 19th-Century England, landscape architect Humphrey Repton suggested "the gardens or pleasure grounds near a house may be considered as so many apartments belonging to its state, its comfort, and its pleasure." The architectural potentials of the third possibility (Illustrations 2, 8, 9) are very diverse.

Having laid out three alternatives for the relationship of buildings to landscapes, I must admit to believing in only two of them. I am not opposed to efforts by others to achieve the second alternative—that is, the elimination of distinctions between natural and built forms—but I do not believe it is truly possible, because the artifact is inherently different from the natural element.

The third alternative—the inflection of buildings and landscape to each other—seems to me the most potent. It is this alternative that we have been exploring in our recent work (see following pages). Ideas of nature are among the generating ideas of architecture, and man instinctively seeks for some formal continuity between indoors and outdoors. Outdoor spaces hold an invaluable potential for mediating between man, his built forms and his natural environment.
9 Chermayeff House, Sussex, England, 1937, designed by Serge Chermayeff with Christopher Tunnard, landscape architect. Set on a meadow at the edge of a woods, the house, walls, terraces, and sculpture maintain their identity but play contributing roles in “shaping the place” as a unity.

Sources
The nature of the built environment

Fine Arts Building, Goucher College, Towson, Md. Geddes Brecher Qualls Cunningham, Architects. (project, 1970) The building provides studio lofts on the upper floor, and public exhibition galleries and halls on the ground floor. Located astride an entrance walk leading to the center of the campus, the building is an example of a hybrid of alternatives 1 and 3. That is, because of its overall subtractive form, the studio-loft top floor seems to float above the complex, sloping landscape; underneath, however, the walkways, galleries, and courtyards are examples of the mutual modification of building and landscape form.

Vienna-South Urban Extension, International Town Planning Competition, 1971. First prize: Geddes Brecher Qualls Cunningham. This growth plan for an urban extension is based upon a formal idea similar to that of the firm’s recent buildings; that is, the spatial composition of linear layers of buildings and landscapes. The building layers are flexible means to accommodate many diverse activities, developed over a period of time. There are three kinds of landscapes: first, a central space defined by high density housing, connecting the various cores; second, linear green parks along the edges; and third, a network of pedestrian walks and plazas in the sectors. The central greenway would be a civic garden, in the formal tradition of Vienna.

The Vienna-South design is a large-scale example of alternative three, in which the building layers and open spaces are a continuous, coherent interwoven grid of urban landscape.
Faner Hall, Southern Illinois University, Carbondale, Ill. Geddes Brecher Qualls Cunningham, Architects. Under construction 1974. This linear building contains classrooms, offices, museum, and other teaching facilities for the humanities and social sciences. Located in the midst of an existing campus, the new building serves as a backdrop for existing landscape spaces. Under its subtractive overall form, the building creates a covered arcade, plazas, walks, and courts.

Faner Hall is in some respects an example of the first alternative (a relationship of opposites) floating as it does above a complex set of landscapes. But underneath it is an example of the third alternative, because the ground level spaces, arcades, courts, and walks are all responding to surrounding landscape elements and buildings. In a sense, Faner Hall creates a "cartesian forest" with its own clearings and walks underneath; and it forms a "forest edge" for open spaces on both sides.
Institute for Advanced Study, Princeton, N.J. Geddes Brecher Qualls Cunningham, Architects. Zion & Breen, Landscape Architects. This group of buildings and courtyards provides dining, commons, office, and seminar facilities in an extension of an existing campus.

Located alongside neo-Georgian buildings, in a gently rolling meadow surrounded by the forest edge of a neo-English landscape, the buildings create a cloisterlike inner courtyard. An outdoor room in the pastoral tradition, the courtyard has an irregular grove of white birch trees which contrast with the regular grid of the columns. Other pastoral elements are the pergolas, the fountain, and the grass. The courtyard has the peaceful feeling of a clearing in the forest.

The interior and exterior spaces relate to each other in a great variety of ways, sometimes continuous, sometimes discrete, depending on the uses; a single kind of relationship is not sought for all purposes. Often, a "yin-yang" sort of response is developed, as for example, in the relationship between the quarter-circular coffee lounge and its adjoining terrace (above), the courtyard, and the dining hall itself. Likewise, the building enclosures are influenced by "yin-yang"
responses between inside and outside. Each building's skin serves as an environmental filter, for light and views, for privacy and community, for heat and sound, for protection, and entry.

Many of the generating ideas seem, in retrospect, to have been those that are usually associated with landscape, especially a pastoral landscape, an idealized nature in built form; paths that serve as connections between people and places; and places that encourage freedom of thought, discourse, and contemplation.

Photos: George Cserna.
Assessing environmental impact is difficult, as there are few precedents, but the work of Willis & Associates provides a beginning step by establishing a methodology which helps to define and structure the necessary data.

In 1970, Congress passed the National Environmental Policy Act "to encourage productive and enjoyable harmony between man and environment; to provide efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the nation. . . ."

While no one can quarrel with the lofty objectives set forth in this sweeping statement, the state of "harmony between man and his environment" will have as many interpretations as there are interest groups represented. In a laissez-faire, capitalistic society, "stimulate the health and welfare of man" usually implies "at someone else's expense." This Congressional act, while an important step in establishing priorities, in no way deals with the complexity of implementation. It demands performance without offering criteria, procedures for measurement, or a basis for objective evaluation. In addition to the lack of criteria and procedures, there are no sources for standard environmental data; existing procedures vary from one community to the next and evaluation seems somewhat subjective. It is a situation where the best of intentions may never be realized.

California is one of four states in the nation to require mandatory Environmental Impact Reports (EIR). (The requirements differ vastly, however: California requires an EIR for more than four units of housing; Florida for more than 500 units.) Like NEPA, the state laws simply establish general goals without specific criteria for measurement.

As a result of the ensuing confusion in interpretation, the Building Research Advisory Board (BRAB) has proposed to develop criteria and procedures which would help builders and planners prepare EIRs and help government officials evaluate and process the information. To effect this, the Board proposes to develop specific environmental criteria by identifying and defining specific "elements" (i.e., air, soils, and geology, biology, etc.) within NEPA's scope, locating valid sources of data and data measurement, and defining
Project Specific Standards and Data

Environmental Impact Consultants

Hearings

Planner (designer)

Storage of submitted EIS information

Environmental impact statement

Standard procedures, varying by project type, design phase and environmental sensitivities

D-13 Environmental value of proposed project

D-12 Environmental impact standards

D-11 Environmental impact statement

D-10 Documentation of relevant project characteristics

D-9 Proposed development

D-8 Environmental analysis

D-7 Collection of relevant project characteristics

D-6 Data and Classifications

D-5 Procedures

Collection of data (existing environment and community goals)

Evaluation of data

Generation of Alternative Designs

Selection of relevant project variables by project type and specific environmental sensitivities

Documentation of relevant project characteristics

Selection of applicable impact standards, adjustment to specific project and environmental characteristics

Generation of additional impact statements and documentation of environmental impacts

Evaluation of environmental impacts according to threshold criteria and community goals

Data and Classifications

- Generally applicable standards
- Community specific standards and data
- Project specific information

Procedures

- Generally applicable standard procedures
- Community specific standard procedures adjusted to project type
- Project type specific standard procedures derived from community standard
Getting at the issues

threshold criteria for each of these elements. To effectively use the gathered information, a rating system would be developed for each element, measuring the "significance" of the potential impact; national guidelines would be established for processing, evaluating compliance, noncompliance, and inaction. Although such standards, procedures, and evaluation guidelines would be done on a national basis, individual communities would establish their own goals—considering social and economic needs as well as environmental concerns—draw on the appropriate data, and determine their own thresholds using standardized procedures and format.

The Board's three-phased plan is as follows:

Phase I:
1. The establishment of cause and effect relationships.
2. The clear and precise definitions of environmental terms.
3. The determination of threshold criteria and levels; i.e., the point at which an impact changes from one of non-significance to one of significance.
4. The establishment of significance criteria. (The varying increases or decreases over the established threshold must be rated in order to measure significance or nonsignificance. Also, environment is a result of an accumulation of individual impacts, which would need to be defined and a formula for their relationships developed. The creation of a rating system would involve the definition of values, quantity, quality, and relativity of impact.)
5. The establishment of social and economic significance criteria; i.e., the degree to which action or inaction will affect the social and economic well-being of the community.

Phase II:
1. The exploration of appropriate planning technology to enable systemized implementation of established criteria.
2. The recommendation of standard methods for submission and processing of Environmental Impact Statements.
3. The development of recommended standard evaluation procedures (similar to the pattern developed by the Department of the Interior) to enable governmental bodies to review public- and private-sector submittals, determining if the threshold for each environmental impact has been correctly stated and the rating system correctly applied.

Phase III:
1. Communication of the criteria developed to potential users.

Professional work in this area is already being done by Willis & Associates, a San Francisco architecture/planning firm whose President, Beverly Willis, is head of the BRAB's task force group. They have developed a method of environmental analysis that allows for systematic establishment of goals, determination of those environmental characteristics to achieve these, evaluation of the cause/effect relationship between these elements, and the probable result. The Environmental Impact Report is three phased: an issue checklist; a sensitivity report; and the impact report. It is based on four general considerations—environmental goals, characteristics of the environment, characteristics of the proposed project and construction goals—as related in fig. (1). The identified environmental goals, outlined in the California Environmental Quality Act and, more specifically, established by each individual community, are used to determine the relevant environmental issues. Characteristics of the proposed project are broken into categories: proposed construction activities such as site improvement and land use distribution, and the site itself and its surroundings. The construction goals take into account social and economic factors not covered by physical and biotic concerns, and measures the value of the proposed project in relation to itself and the community, i.e., housing needs vs open space.

The first of the three phases, Environmental Issue Check-list, makes a clear list of issues to be considered, provides a framework for storing information, and clearly defines areas of responsibility for investigation. Since the issues cannot either be identified by looking at the planning variables which might have an effect on the environment or by the variables of the environment which might be affected, a matrix is used to determine the relationship between two variables. This form of documentation (fig. 2) makes it evident that each planning variable (grading, etc.) has an impact on many environmental variables (land forms, slope stability, erosion potential, etc.) and, conversely, each environmental variable (erosion potential) is affected by many planning variables (tree removal, paving, etc.).

The second phase—Environmental Sensitivity Report (fig. 3)—uses the collected information to describe the sensitivity of environmental variables toward possible project inputs. (For example, an existing storm drainage system is used close to capacity. If more than X sq ft of hard surfaces are used, an extension of the system will be necessary.)

The final phase—The Environmental Impact Report—describes all relevant project characteristics and proposed activities for its implementation, and identifies and evaluates the impact of these project characteristics on the environment (fig. 4). The EIR also includes an "Impact Overview"—a summation of all impacts on each environmental variable as well as a brief description of alternative solutions (no building, different use, different site, etc.).

While EIRs are required by California law in order to assess the potential impact, Ms. Willis feels they should be factual. All development has impact she says, and the effort should be directed toward mitigating that impact. The point of assessing impact is to provide a clear picture of the trade-offs that will have to be made.

Two points in particular that must be made show that the process, while not new, is much more broadly based than other environmental studies to date. First, instead of being limited to ecological information and assessment, the EIR assesses the social and economic impact on the community and its services as well. Second, the studies are not done simply to evaluate the impact after a project has been designed. The environmental information, the system of collecting and evaluating variables and assessing alternatives (uses as well as land planning) can go on simultaneously with the development of appropriate designs. Often, according to Ms. Willis, a developer will have such a study done before buying a piece of land, to establish what the appropriate use would be and the possible economic factors that would effect development.
feasibility. Computer programs developed by the firm are used as backup in doing the evaluations. These programs include census tract data used for locating best geographic sites for various types of development; demographic material—a socioeconomic profile of potential buyers and their preferences; buildable land analyses and net buildable land availability, based on environmental sensitivities. The land use analysis, a more complex program, enables a planner to consider optional land use concepts in terms of density, site area allocation and massing as they relate to economic and environmental feasibility. Graphic site analysis is a program that draws perspectives, site sections, drainage maps, cut-fill analyses and allows the planner to place structures, locate circulation, and determine the effects of these on the land. Many of the individual programs have been synthesized into a Computerized Approach to Residential Land Analysis (CARLA) which can determine optimum land use relationships, appropriate planning units, optimum placement on the site, ideal density and distribution.

All of the computer programs are graphic or informational tools to enable the planner to manipulate hundreds of variables at one time, or to consider many more options than would be possible if done manually.

The methodologies for assessing Environmental Impact and the computer related programs are all fact-gathering tools for structuring information, understanding trade-offs, and making decisions. Dealing with the complexity of relationships—what we do and what we affect—is a necessary task if we are to be really concerned with the quality of what we build. [Sharon Lee Ryder]
The matrix to the left shows theoretical relationships between project variables and environmental variables. The other three matrices—Environmental Checklist, Environmental Sensitivity, and Environmental Impact—show the application of the theory to one specific set of project variables to environmental variables.
Planning for the brave new world

In an uncertain world, man must still plan and design his communities of buildings and services. Living graciously with life’s probabilities is the trademark of this firm.

Life promises only uncertainties before death. Architects and planners know too well that clients change, budgets disappear, and a city’s people scatter while grandiose plans expire unlamented. Planning as an aggregation of probabilities and strategies that anticipate change represents a quantum leap from Beaux Arts debates on axis, proportion, and symmetry. Wallace McHarg Roberts & Todd in Philadelphia is one partnership of architects and planners which finds this brave new world very much to its liking. Its 55 men and women, including four partners and 10 associate partners, form an intense grouping of widely ranging talents, educational backgrounds, and professional opinions, unified by a common commitment to environmental determinism.

“Every place has its messages,” says David A. Wallace, architect, urban designer, and planner. Environmental determinism is a belief that in a given operational field, be it skid row or virgin forest, there are critical and unmistakable clues as to present and future field conditions. The planner accepts these clues as prima facie evidence, and endeavors to reconcile man’s fragile intentions to them. In order to perform these operations, he devises models that, while not necessarily mathematical and often conceptual, provide reasonably reliable pictures of future anticipated developments. From the implications of model behavior emerge strategies and tactics for plan implementation.

A landmark is sited

This game strategy of environmental design made its debut in the architectural and planning profession with the first project undertaken by WMRT, Plan for the Valleys, 1963. Wallace; Ian L. McHarg, landscape architect and regional planner; William H. Roberts, architectural designer, landscape architect, and planner, and Thomas A. Todd, architect, urban designer, and planner, sought to rationalize the future growth of the beautiful Green Spring and Worthington Valleys, situated in the path of the encroaching Baltimore suburbs. Their effort set the pattern for WMRT’s approach to many projects to come and merits close examination.

Valleys was ambitious. It was a comprehensive survey of aesthetic, social, ecological, economic, and political issues which insisted that aesthetics, the landscape’s great valleys and wooded slopes, could be preserved without sacrifice of economic and social costs.

But advancing waves of population don’t swerve for aesthetic detours. Regarding the entrance of the urban population in the Valleys as inevitable, WMRT moved to restrict growth to the plateaus. A strong statistical foundation was erected to give physical dimensions to the problem. Census data were analyzed to yield growth rates, permitting a projection of regional population growth in the Standard Metropolitan Statistical Area, an estimate of average yearly capture rate for the Valleys, and a breakdown of population increase into housing types.

Having established numerical boundaries to the Valleys’ growth, the study needed a blind against its own proposition. WMRT devised a “handicraft” (nonmathematical) model, the Uncontrolled Growth Model, to understand growth, to trace
When Urban Mass Transit Administration said substitute more buses for costly rail service, WMRT/LA with Southern California Rapid Transit District fleshed out actual implications. Result: needed investment is surprisingly great; space for right-of-way, terminals, staging areas. Studies here show bus lanes and elevated rail lines.
Public presentation for scarto of Wilshire corridor as major L.A. surface artery best supplemented by subway typifies clear WMRT approach. Imaginative coordination of graphics and photography enlarges spoken and written word.
Planning for the brave new world

the sequence of change and current development policies and programs, and to determine an "ultimate developed land value." This portrait in motion was made possible by the availability of documentation for property status expressed as susceptibility to development, and by the presence of catalytic "priming actions," such as expressways, land transactions, and institutional growth.

It was an admittedly generalized hypothesis, but its high probability carried conviction. Expressways would funnel development pressure into specific loci. Sewers would extend piecemeal into key areas. Development areas would tempt nearby tract holders to release property for speculation. Adjoining areas of employment growth would create a large housing market. A dynamic picture coalesced as development factors and land susceptibility to development were combined. This yielded a time frame for housing units on acres of land, land use patterns, and aggregated developed land values. The ravages of laissez-faire economics were sharply delineated. Here was another victim of suburban sprawl, a "smear of despoliation."

Turning to "what ought to happen," the study conformed to regional (SMSA) goals. WMRT believed that regional needs imposed certain functional, social, and political obligations. These became regional design and planning directives for the Valleys.

To this assumption was added a study of physiographic principles for conservation and development, an early example of what is sometimes called the "McHarg method" of ecological planning or "Ian's Black Box." The Valleys were analyzed in terms of their geological significance. This procedure identified the natural processes controlling the conservation of the region: topography, subsurface geology, surface and ground water, flood plains, soil permeability, slopes, forests, and woodlands.

Charting these critical factors on overlay maps defined the problem areas through graphic superimposition. Valley floors and walls were heavily shaded (thus compromised). The suitability of the plateaus, unencumbered by controlling conditions, was explicit and irrefutable. Development principles followed which classified major topographical conditions from "walls without forest cover" through "open plateau" in ranks of suitability for development.

The plateau's housing capacity was then carefully tested. By accepting a "normal" (one dwelling unit/ac) density on wooded walls and forested plateaus and somewhat less than twice the uncontrolled density on open plateaus, the area absorbed all prospective growth. Population concentrations were conceptually designed as clustered communities in recognition of the plateau's complex topography. Since regional service needs were already demonstrably satisfied elsewhere, a rural hierarchy of Country Town, Village, and Hamlet was consciously conceived.

The study considered the economic tradeoffs of planned and uncontrolled growth. Land values for uncontrolled growth were derived from the Model. The study candidly admitted that optimum development values were not so clear. Nevertheless, the optimum plan seemed at least equal and quite possibly superior in land values—the assumption rested heavily on the sway of prestige—to unplanned growth.
For downtown Buffalo WMRT used "projected growth management" developed in Baltimore, Los Angeles, and New Orleans. Existing city form is tested for susceptibility to change, compared with future development, and analyzed for areas of new opportunities. Transit system of Main St. Mall is dissected with watchmaker's eye. Mall at Lafayette Square, city's crossroads, shown in section. Plan in implementation.
Planning for the brave new world

Like other WMRT projects, Valleys was designed for implementation. More than lip service was paid to developing strategies and tactics. The nature of control, establishment of public consensus and policy, deployment of legislative controls and devices, and private action roles were thoroughly explored.

Roles in preservation, compensation, and development were assigned to country, state, and federal bodies. And an unusual role was suggested for citizen action: the real estate syndicate. Unlike conservation trusts and home associations, it would option, acquire, and develop land in key areas of the Valleys.

Encore

Valleys heralded a wave of penetrating reports too numerous to discuss here. The following outlines the benchmarks of the firm. It can be seen that its intellectual growth displays a broadening array of methods to increase control of the environment and plans for change.

1966: Lower Manhattan Plan, with Whittlesey, Conklin & Rossant, and Alan M. Voorhees, established guidelines for new development through changes in circulation and land use controls. The notion of Susceptibility to Change was formulated to predict where Manhattan development was likely to occur. Study area properties were assembled and analyzed.
Planning for the brave new world

by computer in regard to building age, residual land cost values, and current and likely zoning, and expressed as short, medium, and long-range "givens." "Policy" givens mapped out politically and aesthetically sensitive areas.

1969-70: MetroCenter/Baltimore Technical Study evaluated Baltimore's regional core as affected by previous plans and goals, susceptibility to change, and current projects. This impact study evolved still another growth management tool, the Probability Growth Model.

PGM was based on three essential uncertainties: susceptibility to change of existing structures and functions, forecasts of possible growth, and probabilities of public and private investment (using a model developed by the Regional Planning Council). PGM was a conceptual representation which enabled designers and planners to examine large urban areas in detail. It proved to be extremely flexible in New Orleans, Los Angeles, and Buffalo too. Employment space needs, retail development, and person trips/day were typical of PGM input/output projections.


1970-72: Central City/Downtown General Development Plan for Los Angeles, with Development Research Assoc., Voorhees, DMJM, and Irving W. Shandler, was the first such plan for downtown L.A., and it stretched WMRT beyond a workday's commute by car to found the Western Branch Office.

The L.A. project spun a fascinating tale of private initiative enlisting dormant public support. Besides proving that architects and planners after Daniel Burnham can still converse
Planning for the brave new world

with businessmen, it suggested that a city famed for its sprawl is consciously asserting its need for a business, government, and cultural center. Although the cooperation of city administrative agencies was important, it was the foresight and stamina of 22 of downtown's biggest employers (the Committee for Central City Planning, Inc. which persuaded the city to jointly commission the plan), their consultants, and dozens of citizen groups and private institutions together who made the plan possible. No plan is perfect. But if this one and its related programs come to pass (proposals include mass transit, an industrial park, a spacious urban park and lake, and social and physical rehabilitation of Skid Row) L.A. will be subtly and elegantly transformed.

1973: Denver Regional Transportation Plan, with DRA and Kaiser Eng., established WMRT's competence in this field by designing a regional system to shape future land development. A transportation/land use model explored the interactions of regional growth, optimum land use, and transportation routing.

Plans and designs are as good as their creators and their clients. WMRT has known disappointments; desires do change, and human political behavior can be irrational. (The Valleys enforce the physiographic principles, yet need leadership to form a real estate syndicate.) But its techniques, defining critical factors, building data banks, conceptual modeling, total environmental designing, strategic and tactical implementation, and growth management programming, are sophisticated and highly effective.

WMRT is busy. Communities, developers, and transportation districts among others repeatedly demand its planning and design services, often with award-winning results (including three P/A awards). It is a lively office. The associates, Narendra Juneja, David Hamme, Charles Tomlinson, Michael Clarke, Richard Huffman, Jonathan Sutton, George Toop, and John Clark in Philadelphia, and Donald Brackenbush and Ross Sutherland in Los Angeles joust regularly with the partners, especially the redoubtable McHarg.

Ideally, WMRT likes to design a project top to bottom, from physical and social plans to finished buildings and landscape. This may require joint venture equity positions someday. Whatever happens, the firm's future looks bright. Its leadership is capable. Its integrity has withstood many tests.

Thomas Todd declares, "We are centralists. We believe society needs the critical mass that only cities provide to sustain the highest levels of human activity. Though much of the nation's vitality and physical quality were destroyed when the population dispersed after World War II, the process is not inexorable. It was the result of public and private policy. If we wish to save our vanishing countryside, we must save our cities now."

"The next 10 years will see a strong refocus on centralization," William Roberts points out. "This calls for investing public funds in the urban cores and reordering political jurisdiction around these cores to facilitate regional land use planning."

At the city gates, Cassandra smiles. [Roger Yee]

Water Movement, At Depth

INTERSECTION OF PERCHED WATER TABLE AND GROUND SURFACE = INTERFLOW OF STREAM

INTERSECTION OF MAIN WATER TABLE OR AQUIFER OUTCROP = BASE FLOW OF STREAM

WATER TABLE

STREAM

WELL NO. 1 WELL NO. 2 WELL NO. 3

HIGH WATER TABLE LOW WATER TABLE OR AQUIFER

WET WEATHER SPRING (SEE WET WEATHER POND)

Pumped Wells

Hydrology: wells and aquifers

PRECIPITATION

PERCHED WATER TABLE

HARDPAN

Hydrology: vegetation run off/ percolation

Sophisticated ecological discussion of Woodlands New Town is given simple, striking visual treatment. Recommendations for physical planning are expressed at basic, easy-to-follow level. Views simulate actual visit for developers and builders, with site planning sketches providing additional guidelines.
Key plan

View along residential street

View at entrance to residential area

View along minor collector road
The Bye house

Second wall house

John Hejduk's studies have included Diamond Houses and Canal houses. The second of the current Wall house series is soon to be built on a hillside in rural Connecticut.

John Hejduk says he has found the ideal client in landscape architect A.E. Bye. They have known each other for over 10 years (both teach at New York's Cooper Union, where Hejduk is chairman of the architecture department) and have communicated well over that period, due to many shared attitudes in their approach to work. Because of this understanding there is a special ambience in their architect-client relationship. "Ed Bye has an impeccable eye," Hejduk says, "he understands how to place things in a very subtle way, and this house is close to that kind of thing."

The house, which is the second in Hejduk's latest series of house studies—the Wall Houses—will soon enter construction on a hill above Ridgefield, Conn., where it will face a spectacular view through a rocky, wooded valley. It will be of concrete post-and-slab construction, with metal stud and wire-mesh walls—the outside stuccoed smooth and painted while wet, the inside plastered.

Even though a cursory glance at the drawings and model shows an obvious reference to the vocabulary of Le Corbusier, especially in the construction techniques and in the freed walls and bands of windows, it might be more accurate to seek the deeper influences within the broader view of the Cubist movement itself. The house, essentially, is a piece of Cubist sculpture. Every element is detached from every other element; each is exposed, analyzed, and clarified in and of itself. And while this exposition maintains throughout the structure, from every angle, the integrity of the overall composition is also maintained. But this, although important, tells only part of the story. Regardless of how Corbusian or cubistic the house may be, it represents first and above all else a highly subjective and intuitive approach to architecture.
John Hejduk is not interested in producing systems of rational order that intrigue the intellect, but in effecting the direct, spontaneous and sensuous response to architectural form. "I'm interested in the poetics of architecture," he says, "in that which only the architect can give. Everyone else can give everything else, but it's the one thing they can't give that interests me." Of all the aspects of architecture though, this one—its art, or poetics—is the one least accessible to verbal description or analysis. Language, except as poetry, is at best only a poor substitute for the reality of art, which finally can only be known through participation in the art object itself. But for Hejduk there is another problem with language. He feels that if it is used to describe a work, there is the danger that one might view the work only in terms of the explanation, or at least that the explanation might influence one's perception of the work. This, he fears could diminish not only the authenticity of the work itself, but also the authenticity of the viewer's perception of it.
"I'm not an ambiguous architect," he says; "I deal with fabrication, with clarities... the forms are there, they don't have double meanings, they're singular, anyone should be able to look at them and see what they are, anyone can read what he wants into them." This does not mean, though, that Hejduk will not discuss his work; he will, only he hopes that you continue to see it your way; and whatever way that is, is only for you to judge.

The most prominent aspect of the Bye house is, of course, the wall itself. "It," Hejduk says, "is the most present condition possible. Life has to do with walls; we're continuously going in and out, back and forth, and through them; a wall is the 'quickest,' the 'thinnest,' the thing we're always transgressing, and that is why I see it as the present, the most surface condition."

The fact that the house is to be painted colors relates mainly to Hejduk's experience in Le Corbusier's La Roche house in Paris, where he spent several days last year installing an exhibition of his own work. "After that experience," he says, "I could never do another white or primary-colored house." In the La Roche house, the colors "were hardly apparent at first, but after you were there awhile you saw not only that they changed constantly, but that they were delicate and muted, and also saturated at the same time." Although a different palette will be used for the Bye house—one, in fact, close to that of a della Francesca painting—Hejduk hopes to achieve the same effect of the muted and saturated colors of the La Roche house by using a muted primary red, yellow, and blue, which will be visible from one direction, and their muted mixtures of orange, red-violet, and blue-violet, and green, which will be seen from the opposite direction. Using these colors intuitively, Hejduk did not consciously attempt to produce a color wheel; it was his Cooper Union colleague Robert Slutzky who pointed this out after seeing the model.

Hejduk's intense interest in painting and sculpture, so apparent in the house, can also be seen in the relationship of the house to its site. Viewed from the front, the gray wall acts as a background to the foreground composition that describes the living spaces; the whole composition is then framed by the ground and sky, and by a sheer rock cliff on one side and a stand of trees on the other. But although Hejduk maintains an abiding interest in art, which unquestionably influences his work, he explained recently at the Architectural League in New York that there is an important difference between the artist and the architect. "The painter," he said, "starts with the real world and works toward abstraction, and when he's finished with a work it is abstracted from the so-called real world. But architecture takes two lines. The architect starts with the abstract world, and due to the nature of his work, works toward the real world. The significant architect is the one who, when finished with a work, is as close to that original abstraction as he could possibly be... and that is also what distinguishes architects from builders."

The Bye house is not a house for every man, but its lesson is there for those who want to receive it. As client Ed Bye recently said: "It has beautiful proportions and an elegance you rarely see in architecture today; it represents something I'm concerned about in my own work, and to me there's magic in it—I have no doubt about that." [David Morton]
Plan legend
1 Bedroom on 1st floor, kitchen and dining on 2nd, living room on 3rd.
2 Storage
3 Bath
4 Hall
5 Drawing storage
6 Study

Data
Project: Bye residence, Ridgefield, Conn.
Landscape architect: A. E. Bye.
Consulting engineer: Peter Bruder.
Model and drawings: Richard Cordts.
Photography: Christopher H. Richie.
Anyone can make hinges, Hager creates concepts.
Combination System Provides Individual Tenant Control.
Saves Up To 41% On Installed Costs

Views continued from page 8

modate, the designer can thus rationally develop a design solution based upon these titles of role and activity. The use of these tools, objective design methodology, helps insure a level of competence in creating architecture, which must not only express individual hopes and aspirations but which must be a real problem-solving medium. This approach does not shatter architecture’s connection with real people.

Bob Brendle
Cambridge, Mass.

I can’t understand why you decided to print such unmitigated nonsense as the prose of Robert Jensen about the Binghamton Science Buildings. His points about applied science, if valid and interesting, could be made without victimizing a single, superior project. They were directed against all science facilities and all attempts at more rigorous programming methods. Many other articles have appeared which supported both these phenomena. But they have been general articles, not criticism of a single project.

Bernard P. Spring, FAIA
New York, N. Y.

[Jensen’s analysis of the Science Complex, State University of New York, Binghamton by Davis, Brody & Associates is a controversial one, even among the editors of P/A. We do not agree, however, that the building was “victimized” in the piece, but rather was discussed as an exemplary demonstration of science-based design methods. Ed.]

The ordinary way to air condition and heat a multistory building is to take care of the core with ducted chilled water air handlers and handle the perimeter offices with a two-pipe fan coil system with comfort controlled by building exposure. This system requires a boiler, water cooled chiller and pumps (located in basement) and a cooling tower on roof. The cost for a typical system for a 12 story, 144,000 square feet building may be as much as $1497 per ton installed.

The Fedders way replaces the cooling tower, condenser water piping and pumps and water cooled chiller with an air cooled chiller mounted on the roof. The smaller boiler and chiller are connected only to air handlers in core. Fan coils are replaced with Fedders Unizones (Package Terminal Units) using electricity for both heating and cooling. Perimeter tenants have individual control of their comfort winter and summer. The Fedders way may cost as little as $886 per ton Installed.

For more complete information circle number shown below on Reader Service Card.

CIRCLE 306
ON READER SERVICE CARD

FEDDERS
Edison N. J. 08817

6:74 Progressive Architecture 107
INSULATION SEE THROUGH

HOW TO UTILIZE NATURAL LIGHT AND SAVE ENERGY DOLLARS, TOO.

Economic and energy crises shouldn't keep you from designing attractively open structures. Because LOF makes high-performance glass with insulative properties that can mean year-round occupant comfort, enhanced by the use of natural light.

Thermopane® insulating units help prevent heat loss in winter; Vari-Tran® reflective glass insulates against solar heat gain in hot weather. In combination, energy costs for heating and cooling can be cut the year round.

HIGH-PERFORMANCE GLASS LOWERS BUILDING OPERATING COSTS.

In Jacksonville's Independent Square building, when completed and operating, use of this LOF high-performance duo is projected to cut building energy consumption for heating and cooling by 28% as compared to ordinary glass. This would be a savings of 3 million kilowatts a year, or 186,000 gallons of fuel oil.

A total energy concept of design must take into account, of course, all construction materials. One of our highly qualified architectural representatives will be glad to help you save energy dollars with the right glass.

Call Dan Hall at (419) 242-5781. Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43695.
Graceful greeting.

Add the warmth of wood with Sexton Uniloc® locksets and Rosewood mortise locksets by Russwin. A hearty grasp of the grain, contoured to comfort the hand... styled to enrich any decor. Enduring design in the Russwin tradition. Russwin, Division of Emhart, Berlin, CT 06037. In Canada—Russwin, Division of International Hardware.
How weathering affects building materials

Harold J. Rosen, PE, FCSI

Environmental elements must be taken into consideration when specifying building materials. A knowledge of the effects these elements can produce is a prerequisite.

A building material's durability is affected by the environment to which the material is subjected. With natural materials such as wood and quarried stone and some man-made materials such as steel and concrete a history of their resistance to weathering in specific geographical areas has developed over the hundreds of years these materials have been used. As a result, architects and specifiers have sufficient data to successfully use these materials. The effect of weathering on more recent man-made synthetic materials, however, is not so well understood.

Geographical environment produces a weathering process that can alter and affect color, composition, form, and texture, eventually producing degradation, disintegration, or a failure to perform as intended. The environmental elements producing weathering are sunlight, precipitation, temperature, gases, wind, and bacterial life.

Sunlight produces radiation at the earth's surface, which is composed of ultraviolet light, and synthetic organic building products if not properly formulated can be subject to UV degradation. Radiation in the form of ultraviolet light possesses a certain amount of energy which can cause chemical changes in organic building products thereby affecting their physical properties. Such materials can become hard and brittle. Flashing materials can crack in flexing and paint materials can fail as a result of cracking and chalking.

Precipitation—rain, snow, hail, and moisture—generally has less effect on organic building products than it has on those that are inorganic. Some organic coatings swell in the presence of water, and blisters can form behind coatings subjected to water vapor pressure. Where moisture is present, metals can corrode unless properly coated or protected. Concrete and masonry products that are porous can be affected by the freezing action of water. Hail, depending upon size and severity can cause structural damage unless special precautions are taken to guard against this possibility. Snow loads where applicable, must be taken into account to assure structural adequacy.

Temperatures can produce two distinct effects: fluctuating temperatures cause physical changes due to thermal expansion and contraction; elevated temperatures produce chemical changes, especially in organic building products, due to the accelerated rate of reaction and oxidation process. Thermal expansion and contraction produces physical changes in sealants, metals, concrete, and virtually all building products. Thermal shock may occur when the change in temperature is abrupt, especially in materials having poor conduction, since the temperature of the outer surface can be markedly different than the temperature of the inner mass and this may result in cracking.

Gases which have a deteriorating affect on materials are oxygen, ozone, and sulfur dioxide. Oxygen levels are generally consistent all over the world, but levels of ozone at the earth's surface depend upon geographical location with certain areas having higher concentrations than others. Sulfur dioxide, a product of industrial plants, is concentrated in the atmosphere in relationship to industrial activity. Oxygen can cause oxidation of organic building products especially in sealants, coatings, plastics, and roofing, resulting in discoloration, hardening, and cracking. This phenomenon can be reduced by proper formulation of synthetic products to provide chemical linkages that resist oxidation. Oxygen similarly affects inorganic building products, especially metals, resulting in corrosion unless special coatings or films are used. Since ozone is an unstable modification of oxygen its reaction with metals and organic products is even more severe. Sulfur dioxide in the atmosphere combines with water, forming sulfuric acid, which in turn has deleterious affects on certain products as a result of chemical reactions. The city of Venice has suffered more damage from this in the last 50 years than it has in the previous 1000 years.

Wind velocity varies in all parts of the world. Engineers must consider wind bracing in the design of structures and architects must take into account air infiltration and water penetration through all exposed elements. The weather bureau has statistics on wind velocities and frequencies which should be used to design properly.

Bacterial life, especially the lower forms such as fungus and bacteria are a product of the environment since these organisms either thrive or lie dormant depending upon temperature and moisture. These organisms usually produce mildew and wood decay which can be controlled by the selection of proper coatings.

To overcome these environmental problems the designer and specifier must be selective, choosing those products that can perform with the least amount of vulnerability under the conditions to which they will be subjected.

Author: Harold J. Rosen is an independent construction specifications consultant in Merrick, New York.
An underground office

It is all very easy to give lip service to environmental concern in architecture. But Malcolm Wells is not given to lip service; his concern is being expressed by his own office building. While he admits that the structure does not satisfy all of his stringent requirements, Wells has plans for a future solar collector and a waste pulper. In the meantime, he is monitoring the building's daily energy use, based on temporary electric heating system.

The details of the building are not complicated, although they are what put the "gentle" in Wells' "gentle architecture." Earth and mulch are not the standard roofing or roof load conditions, hence the details for dealing with them are crucial. Nor has Wells overlooked the finer details, such as a masonry paver (opposite page, bottom right) which will serve as a porous parking surface, retaining water where it falls. The building, nearly invisible now, will soon disappear under a heavy natural growth of New Jersey plant types.
Project: architect's office
Architect: Malcolm Wells
Site: highway embankment, Cherry Hill, N.J.
Structural engineers: Rothbaum and Davis.
Builder: Tallmen Construction Co.
Costs: $40,000 (includes drive)
Photography: Norman McGrath
Specify a permanent floor without making a permanent decision.

Collins & Aikman has developed a group of bi-component vinyl backing systems, each integrated with a super dense, man-made commercial fiber surface. They're called Tex-Tiles.

These unique 18" squares are simple to install securely... yet can be arranged and rearranged with ease for maximum good looks, maximum wear. Wherever you want outstanding beauty with minimal care.

Choose from a full range of styles, textures and colors.

For more information, write or call Collins & Aikman, 919 Third Ave., New York, N.Y. 10022. Tel. (212) 953-4357

Collins & Aikman makes the Tex-Tiles™ that make things happen.
Universality of architects' problems

Bernard Tomson and Norman Coplan

The Third World Congress of Engineers and Architects in Israel points up the need for a worldwide pooling of ideas and the enactment of uniform licensing laws.

In December 1973 one of the writers of this column (Judge Tomson) attended the Third World Congress of Engineers and Architects in Israel. Despite the uncertainties attendant on the Israeli-Arab hostilities, there were approximately 3000 participants in attendance, some 1000 of them from 68 foreign countries, including countries in Africa, Asia, Europe, Australia, as well as the Americas.

The subject of the Conference was "Dialogue in Development—Natural and Human Resources." In addition to sessions that were concerned with architecture and future training of architects, the panel sessions covered a wide range of subjects, some of which were: "Energy in Developing Countries"; "Environmental Quality"; "Transportation"; "Population Explosion and Urban Migration"; "Education Manpower Resources"; "Housing"; "The Role of the Technical University in a Developing Country—The Israeli Experience" (at Technion in Haifa); "The Planning of Jerusalem"; and some 20 other titles.

It has always been our thesis that the concerns of architects in the United States are quite similar, regardless of the state or states in which they practice, and that although the laws of the 50 states differ in respect to the practice of architecture, there is nevertheless a common set of problems which must be approached and resolved on a countrywide basis. At the Conference discussions of architects' problems of such diverse countries as Israel, Australia, Romania, Turkey, etc., reveal the fact that the problems of architects worldwide are also surprisingly similar. For example, the architectural profession in the United States has been concerned with the inconsistency and differences in registration and licensing laws in the various states of the Union and there have been recommendations that a uniform statute be adopted by all states. An analysis of similar laws in foreign countries indicates that this problem is international in scope.

In Israel, the licensing statute is entitled "Engineers and Architects Law." It was passed by the Knesset in 1958. In form, it is a "title" statute restricting the use of the title "architect," except to those duly registered, but this statute does not directly prohibit the practice of architecture by those not duly licensed. The Israeli statute is similar to that found in a minority of states in the United States (see Architectural and Engineering Law by the authors of this column, second edition, part 2) and states:

"Exclusivity of Title" 12. The Minister may by regulation, after consultation with the Council, reserve the right to carry out certain operations to licensed engineers or architects; where the right . . . has been so reserved, a person shall not carry it out unless he is the holder of a license under section 11.

The Minister referred to is a designated member of the government. The Council consists of the Minister, 4 representatives of the Israel Institute of Technology, 13 governmental appointments and 9 engineers and architects appointed as follows:

". . . by the Minister upon the recommendation of the organization representing the greatest number of persons, registered in the Register of Engineers and Architects; however, the engineers and architects appointed as members of the first Council shall be appointed upon the recommendation of the Association of Engineers and Architects in Israel."

In commenting upon the universality of the problems of the architectural profession at the Conference, with particular reference to registration laws, Judge Tomson said:

"The universality of architects' and engineers' problems, vis-a-vis the client, the public, and the registration laws, has increasingly been impressed upon me. Particularly with respect to registration-law problems facing these professionals throughout the world, there is a crying need for the development of an integrated approach to the pooling of information, for the exchange of ideas, and for the development of a 'uniform' statute. This should be initiated as soon as it can be arranged by a conference called to acquaint those struggling with the problem that the difficulties are not local in character, but international; that the problems in California are the problems in Michigan; that the problems in Georgia are the problems in Wyoming; that the problems in Colorado are the problems in Oklahoma; the problems in the United States are the problems in Israel."

The Israeli Conference was quite successful and Mr. El Hanon Peles, President of the Association of Engineers and Architects in Israel, who was responsible for its organization, well deserved the praise he received. Similar conferences, can do much to benefit the profession.

Authors: Bernard Tomson is a County Court Judge, Nassau County, N.Y., Hon. AIA. Norman Coplan, Attorney, is Counsel to the New York State Association of Architects, Inc. AIA.
Reprodrafting isn’t new. It’s made up of techniques you may know of but probably aren’t using to the fullest extent—like paste-up drafting, photodrawing, team drafting and other photographic reproduction techniques.

Reprodrafting techniques can save you up to 80% of your drafting costs, depending on the particular job involved, and give you better results. These techniques let draftsmen work more productively by relieving them of repetitive detail. And they can help you meet project schedules by condensing weeks of work into days.

We’ve collected six of these techniques in one comprehensive booklet that tells when to use them and how to use them. We’d like you to have it. It’s free. Ask for it from your reproduction service, or write: Du Pont Company, Room 24031, Wilmington, Delaware 19898.
Open invitation to gracious living.

The richly carved wood panels and hand-cast grilles of these Valencia style doors express her taste—her lifestyle. They add the character and individuality she looks for in a home. And she's the decision maker.

The elegance and quality of these carved wood panel doors are great persuaders to house-hunters. Valencia is only one of the many styles in our line of solid quality doors of exotic Malaysian Meranti, old-growth, vertical grain Douglas Fir and West Coast Hemlock—machined and assembled by skilled artisans. Many styles are available to fulfill your special design requirements and your clients' taste. These impressive doors open the way to years of client satisfaction.

To see our complete line of distinctive doors—that heighten the appeal of your home—send for our new color catalog of interior and exterior wood panel doors. Write: Lumber, Plywood and Door Division, St. Regis Paper Company, P.O. Box 1593A, Tacoma, Washington 98401.
It's funny. Just because we invented the traditional precast Washfountain, many may think that's all we make. But Bradley has 1500 other bright ideas. A full line of two-handle and single control faucets with the longest guarantee in the business. Wall showers and group showers in columns, multi-stalls, panels and modules. Soap valves and soap spray systems. Hundreds of mirrors, dispensers, receptacles and other related accessories. Drinking fountains and safety showers, eyewashes. Washfountains in new shapes and materials. Plus Duo Washfountains and Bradpack® preassembled wash centers. So come see the people with the products that serve many, save money and give you more room when you need it. Bradley. From the Washfountain to a lot of other bright ideas. Write: Bradley Corporation, 9107 Fountain Blvd., Menomonee Falls, WI 53051.

Circle No. 329, on Reader Service Card
Bradley can give people showers, wash and dry their hands, give them a drink, look good on a sink and collect the trash when they’re done.
Executive furniture in walnut or oak consists of coordinated desks, cabinets, and wardrobes. Three desk sizes are available in four styles: single or double pedestal, secretarial or work tables. Many configurations are possible. Jens Risom Design, Inc.
Circle 101 on reader service card

Axminster carpet pictured is "Antilles," available in two-ply nylon yarns in a series of patterns and colors. Test results give carpet a flame spread rating of 75 and a fuel contribution rate of 60. Lees Carpets.
Circle 102 on reader service card

Litter receptacle. Open on all four sides with no doors to push, it is available in choice of color and logo combinations and can be coordinated to individual environments. Choice of aluminum, 45-gal capacity or steel, 35-gal capacity. Jackson Co., Mfg.
Circle 103 on reader service card

Portable projection screen. Aluminum frame to which front or rear projection screen surfaces can be mounted is especially suited for use in photographic or television studios, schools, conference rooms. Available with translucent surface for rear projection, folding mat white surface for front projection, or two-way white translucent material; in 72-, 84-, and 96-in-sq sizes. Da-Lite Screen Co., Inc.
Circle 104 on reader service card

Signage. Direction, identification, and information dissemination signs are molded from fiberglass-reinforced polyesters and coated with weather-resistant glycol based gel and offer flexibility in size, shape, form, and color with durability and vandal resistance, maker states. Available in virtually any shape. Architectural Graphics, Inc.
Circle 105 on reader service card

Modular lounge furniture called "Post Time," consists of posts which serve as legs of tables, sofas, and planters and are also the units that link the various pieces of furniture to one another. The posts are made of a black PVC plastic with aluminum caps and an adjustable glide. Top cap unscrews to permit the various pieces of furniture to be linked, then tightens down to hold them together. Furniture has been designed on a basic 30-in. module, with additional 60-in. units to increase flexibility. Table tops are plastic laminate; rails are either white oak or American black walnut; planters are of white acrylic. Seating can be upholstered in any of the wide range of vinyls, leathers, or fabrics. Shipped knocked-down. The Gunlocke Co., Inc.
Circle 106 on reader service card
[continued on page 123]
Light fixtures. A seamless, cast-in-one-piece, multi-faceted, vandal-resistant sphere, it is available in translucent white, transparent clear, bronze, and gray. Two sizes, 18 in. and 22 in. diameters accommodate either incandescent or mercury vapor lamp sources. Unit can also be provided with various refractors for light diffusion and is available for indoor or outdoor mountings on post units, wall brackets, and pendant units. Habitat.  
Circle 107 on reader service card

Outdoor drinking fountain. Designed especially for use by persons in wheelchairs as well as the general public, it has a sculptured receptor mounted on a 19¾-in. extension with two lever handle valves for right- or left-hand operation and automatic stream regulation. Constructed of aluminum finished to a dark bronze tone. Haws Drinking Faucet Co.  
Circle 108 on reader service card

Papillon collection consists of a settee, sofa, arm and pull-up chairs, high back man’s chair, ottoman, and a corner unit with or without arms. All pieces are tufted over polyurethane padding, seats and backs have spring construction on hardwood frames. Arms and backs are reinforced with tubular steel, legs are molded of high impact plastic. Upholstery fabrics include cotton checks, velours, patchprint cotton, and leathers. Contemporary Design International.  
Circle 109 on reader service card

Fluorescent lamp. Said to consume 20 percent less electrical energy but maintain 90 percent of original light output, “Watt-Saver” is an 8-ft, 60-watt lamp designed to replace 75-watt tubes in the same fixture. Using krypton gas, the lamps produce 95 lumens per watt and are said to save 30 watts per two-tube fixture. Duro-Test Corp.  
Circle 110 on reader service card

[continued on page 124]
When your plans include drawers, save everyone a ton of headaches and a pile of money...

**specify interchangeable Amos molded plastic drawers**

The Amos drawer interchangeability factor means that any drawer of any given size will immediately fit and work perfectly in any opening designed and built for that size. Fitting and refitting can cost thousands of dollars. Amos drawers never require individual fitting.

This interchangeability factor can save hotels, motels, hospitals, apartments and institutions thousands of dollars and you thousands of headaches. One-piece construction ... strong enough to stand on ... and easy-to-clean cove corners are just some of the user benefits. You can even store wet or moisture producing materials in Amos drawers because they are leak proof. For decor effect you can attach any kind of drawer front you want with either adhesives or screws. And they come complete with guides and suspension systems.

Send for Bulletin 300 and learn all about the drawers with no warp ... no swell ... no splinters ... no snag ... no sag ... no shrink ... no shrink and absolutely no stick. No complaints, ever, from architects, builders, designers or users.

Amos Molded Plastics
Division N L Industries, Inc.
628 S. Kyle Street, Edinburg, Indiana 46124
812-526-5551

---

**Concrete picnic table and benches** are separate units which provide walk-in type of seating. Designed for permanent installation on a concrete slab, they are one-piece castings reinforced with steel and are available in several colors. Surface is treated with an acrylic sealer which waterproofs the surface and prevents staining, according to maker. Table is 7-ft long and benches are 6-ft long. Form, Inc.

Circle 111 on reader service card

**Power columns.** Components of office interiors system are factory-assembled and pre-wired sources of communication, power, and other services for up to four surrounding work stations with quick disconnect feature for hooking into a ceiling service grid. Offered in three types: for support by adjacent screens, 84-in. high with flexible connection rising to ceiling grid; full height column for connection immediately to ceiling service; for in-line use with full height partitions. All columns are 12-in. wide with removable front plate. Optional services are available. Hauserman, Inc.

Circle 112 on reader service card

**Metal furniture.** Designed by Hendrik Van Keppel and Taylor Green in the late thirties, it is now being handcrafted in polished-chrome steel or weatherproof baked polyurethane colors, wrapped with polypropylene white, black, or yellow cord. Suitable for both indoor and outdoor use. Benedetti Corp.

Circle 113 on reader service card

**Futuristic furniture.** American Contemporary Collection in PVC and fiberglass. Three lounge groupings are available in PVC with coordinating arm and side chairs, barstools, tables, and etageres; two fiberglass lounge groupings with matching occasional tables. For exterior and recreational areas, there are chaises, lounges, club lounge chairs, occasional pieces, two-way lounge chairs, stools and occasional tables. A wide selection of fabrics and vinyls are available. Colors are Ebon, Rouge, Navy, Butter, Cocoa, Tangerine, Gold, and Snow. Thonet Industries, Inc.

Circle 114 on reader service card
[continued on page 128]
Corbin locks in flavor.

Hunt-Wesson, Kraft. Beatrice Foods & Corbin. From soup to nuts, our mortise locks protect and decorate hundreds of famous corporate suites. And we can flavor your own plans with a new brand of hardware beauty and safety. Try us. Reach a Corbin distributor now. We're some tomato.

For information write P & F Corbin, Division of Emhart Corporation, Berlin, Conn. 06037. In Canada, Corbin Lock Division.

Circle No. 335, on Reader Service Card
PPG Solarban® 550 TWindow® insulating glass won't let anything stand in the way of beauty. Not even climate.

The Phoenix climate may be great for sinuses, but it presents some very special problems for buildings. That's why Mountain Bell Plaza is such an important achievement.

The building conquered Nature where it had to, and used it for effect where it could. And PPG Solarban 550 Twindow insulating glass made that possible.

PPG Solarban 550 Twindow insulating glass units help keep the Arizona heat from coming into the building and air conditioning costs from going out of sight. (It has a shading coefficient of 0.24, which reduces solar heat gain 76% compared to single-glazed clear glass.)

But the real beauty of it is the beauty of it. Its reflectivity. The subtle, somewhat-muted reflections in this glass belie the harsh, relentless sunlight being reflected.

Far from being a giant, garish mirror, this building reflects its surroundings with a discriminating eye. And gives the whole area a certain beauty it never had before.

Which is exactly what the architect wanted: beauty, not just beautiful architecture.

Whatever you want your buildings to do, there's a good chance PPG Solarban 550 Twindow insulating glass—or another in our family of High Performance Glass—can help you do it. For more information write for our new book about glass and energy. PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa.


PPG: a Concern for the Future
Please send me the
wellco
Contract Carpet Information Manual

Tech information: fiber characteristics, test information for acoustic and flammability ratings, FHA requirements, installation techniques, cleaning and maintenance procedures.

Manufacturing flexibilities: inventoried lines with specification information; specifier lines with color, yarn, face weight, modular and backing options.

Pocket size, 116 page booklet stuffed with facts and charts. Technical, yet understandable. Address to: Don Thompson, Advertising Manager, Dept. P6

Because we're committed to commercial quality and nothing else

name___________________________
firm___________________________
title___________________________
address___________________________
city___________________________ state__________ zip

Circle No. 382, on Reader Service Card

TOUGH ... RESILIENT ... LONG LASTING

TEENIS COURT COLOR FINISH

44 Years Weather and Wear Proven On All Concrete Surfaces

Wherever you find recreational, industrial, public utility or commercial concrete construction, you'll likely find Kemiko Col-r-tone.

Col-r-tone’s unique chemical composition defies sun, wear, moisture or alkalies for years and years. Won’t chip, crack or peel. Non-skid, glare-free in beautiful flat and matte finish. Easily and quickly applied by brush or roller it seeps right in. 8 basic colors that may be intermixed to provide over 50 contemporary colors.

Write today for free illustrated brochure and color chips.

KEMIKO INC.
DEPT. PA-64.
2443 N. Noomi St.
Burbank, Calif. 91504

Grass pavers. Cast in the form of a concrete grid with nonslip characteristics through which grass is able to grow yet it withstands the weight of heavy vehicles. It also is said to prevent mud and provide erosion control. Applications include construction sites, parking lots, road shoulders, parks, and schoolyards. Grass Pavers Ltd.

Circle 115 on reader service card

Literature

Noise control. Catalog describes products, gives functions, applications, and installation information. Product line includes absorbers, barriers, dampers, isolators, silencers, and composites. These off-the-shelf noise control measures are said to provide solutions at the noise source, along its path, and at the receiver. Lord Corporation.

Circle 201 on reader service card

Metal spires and ornamental roofs are described and illustrated in brochure. Methods of construction, specifications, and case histories of renovation and restoration are also given. Overly Manufacturing Company.

Circle 202 on reader service card

BlocBond. A mix that combines 1/2-in.-long alkaline-resistant glass fibers and a water-resistant agent with Portland cement. When mixed with water and applied to exterior and interior surfaces of dry-stacked concrete block walls, maker states it dries to a hard coating eliminating the need for mortar above the first course. Walls can be finished with paint or stucco or any other conventional facing such as drywall or brick. Needs no prime coat. Brochure shows construction and application details, surface finishes, code approvals. Owens-Corning Fiberglas Corporation.

Circle 203 on reader service card


Circle 204 on reader service card

Technical/visual film. Five different products are available to cut time and costs in graphic work by eliminating repetitive steps in design, drafting, engineering, and architectural work plus visual presentations and office procedures. Products consist of a transparent acetate or polyester film with a receptive coating on one side, a pressure-sensitive adhesive coating on the other side, and a peel-off backing sheet. Often-used symbols can be preprinted. Brochure. Saga, Inc.

Circle 205 on reader service card

Energy conservation is the subject of guide. Illustrated handbook contains many tested ideas on how to save on heating, cooling, lighting, and ventilating; how to schedule power loads and how to shed them to avoid high electrical-demand charges; how to cut energy costs with a centralized control in large buildings and with time-shared building automation in medium-size buildings. Honeywell.

Circle 206 on reader service card

[continued on page 133]
Weldwood Fire Doors
A lifetime of beauty. An hour of protection.

Weldwood® Fire Doors offer a substantial margin of safety by reducing fire spread and providing a low rate of heat transmission.

For instance, even after an hour’s exposure in a test furnace reaching 1700°F, the temperature of the unexposed side of our 1 hour rated door is low enough not to harm anyone passing by it. (The unexposed side of some hollow metal doors will reach as high as 1000°F in only 30 minutes of test.)

Weldwood Fire Doors are more than fire barriers; they’re a handsome addition to any interior. They can be faced beautifully with rich, hardwood veneers or beautifully colored with plastic laminates.

All Weldwood Fire Doors carry a UL label. Maintenance is minimal. Unlike metal fire doors they don’t rust or dent; or under extreme conditions they won’t buckle into an inoperable position.

To find out more about our full line of ½, ¾, 1 and 1½ hour Weldwood Fire Doors, contact your local U.S. Plywood Branch Office. Or, send for our new detailed brochure.

U.S. Plywood
777 Third Avenue, New York, N.Y. 10017

U.S. Plywood Division of Champion International

Circle No. 379, on Reader Service Card
...at home with the Braves!

President's Choice...
the carpet used in the Braves Training room.

A dense heavy plush... the perfect choice for
- Restaurants • Schools
- Clubs • Hospitals
- Hotels/Motels
- Dormitories
- Theatres • Stores
- Apartments • Banks

A unique blend of Dow-Badische yarn... combining the abrasion resistance and long wear life of nylon with the fine, natural aesthetic value of Zefran acrylic... this blend is optimum in accomplishing maximum beauty and performance. Depth of color is a strong characteristic.

Patcraft
MILLS INC.
Box 1087 • Dalton, Ga. 30720

I. V. Chandler, President, Patcraft, and Eddie Mathews, Atlanta Braves, shown in training room, Atlanta Stadium.
Products and literature continued from page 128

General purpose control. A complete listing of control devices ranging from products that start, switch, and sense to those that count, indicate, and operate through pre-programming are contained in this 328-page indexed catalog. Photos, applications, technical data, and detailed dimensional drawings on each product are given. General Electric Co. Circle 207 on reader service card

Steel accessories. Details on uses, sizes, styles, and weights for various steel accessories for construction of drywall and plaster assemblies are given in 36-page catalog. United States Gypsum Co. Circle 208 on reader service card

Insulated panels feature interlocking tongue and groove aluminum extrusions on the panel edges and are offered in a choice of porcelain enamel, aluminum, or aggregate facings in a variety of colors and textures, single- or double-faced for combination exterior-interior walls or for interior use as movable wall partitions. Joint covers have finishes to match. Panels have standard cores of UL-approved noncombustible moisture-resistant perlite or polyurethane. Product literature and data is available from Kaiser Mirawal. Circle 209 on reader service card

Doors. Catalog features 29 doors in color. Six series—Knot Block, Old Wood, Barbie’s Blocks, New Wood, Armijo Art, and Painted Wood—are available in a wide range of sizes and finishes. Whittlewood Corp. Circle 210 on reader service card

Curtain walls and entrance systems are covered in two color catalogs offered to architects and builders. Technical data, details, and features of the products are included. The Alumiline Corp. Circle 211 on reader service card

Wallcoverings. A sample book designed especially for architects and builders contains a wide assortment of samples—shiny vinyls, burlap, grasscloths, silk appearing “moire” finishes, embossed solids, mansard shingles, cork and more. United-DeSoto, Inc. Circle 212 on reader service card

Luminaires. Brochure describes luminaire which uses high-pressure sodium and other HID light sources for roadway, commercial, industrial, and institutional lighting applications. Included are charts, color photos, and photometric data. McGraw-Edison Company. Circle 213 on reader service card

Automatic irrigation systems. 1974 catalog provides sections on sprinklers for residential, commercial, and institutional building grounds and large turf area applications, describes controllers for both hydraulic and electric systems, commercial rotary sprinklers. Also covers installation tools and accessories. Gives recommended applications, specifications, spacing, water pressure and volume, spray radius and spray pattern. The Toro Company. Circle 214 on reader service card

Update your data on Dwyer... with our current kitchen design and specification manual

Whatever your project... commercial, industrial, institutional, or residential... there are Dwyer compact kitchen models to fit your requirements. The Dwyer Data Manual is the fast, convenient way to all the information you need...mechanical drawings and specifications at your fingertips. Throw out your dated data...get up-dated with your Dwyer man or contact —

Circle No. 340, on Reader Service Card

Circle No. 360, on Reader Service Card

McGraw-Edison Company
Michigan City, Indiana 46360
Phone: (219) 874-5236

Richard L. Van Vlack, V.P.
Dwyer Products Corporation
Michigan City, Indiana 46360
Phone: (219) 874-5236

Compact kitchen specialists for nearly half a century.

6:74 Progressive Architecture 133
Progressive Architecture

Notices

Appointments
Robert Blumin, AIA was named vice president, business development of Maxwell Starkman & Associates, Beverly Hills, Calif.
Saggus, Vaught, Spiker & Associates is now Saggus, Vaught, Spiker & Howell, Atlanta, Ga., with the addition of Harry W. Howell, AIA as a general partner.
Raul F. Trujillo has been appointed vice president of Alsbrooks & Associates, Inc., Atlanta, Ga.
Norman Cates, AIA has been elected vice president and manager, architectural division, of VTN Consolidated, Inc., Irvine, Calif.
Richard R. Klein has been named associate architect of Jones/Mayer & Associates, St. Louis, Mo.
Arthur H. Silvers, AIA has joined the Los Angeles office of Daniel, Mann, Johnson, & Mendenhall.

Thomas A. Hooker, AIA has been named director of architecture of Deems/Lewis & Partners, San Diego, Calif.
Sewa Barmi has been appointed an associate of Sigmund Blum, Vaporiyan & Mitch, Inc., Detroit.

The following have joined Ralph Hahn & Associates, Springfield and Chicago, Ill.: Steven E. Bishop, Robert W. Dawson, Ronald W. Eimer, Lourdes T. Knepler, Robert H. Power, Jr., and Larry L. Viely.
Mart Ojamaa and Robert Y.C. Hsiung have been elected vice presidents of Jung/Brannen Associates Inc., Boston.
The following have been elected partners of The Eggers Partnership, New York City: Robert L. Bien, AIA; Bernward U. Kurtz, AIA; Thomas H. Price, Jr., AIA; and Robert H. Welz, AIA.
John R. Rickey, AIA has been named marketing director of Ellerbe, Bloomingston, Minn.

Charles G. Gable, AIA has joined Gin Wong Associates, Los Angeles, as vice president and executive architect.
Sandor A. Marton and Edwin M. Denson have been appointed associates of The Office of Mies van der Rohe, Chicago.

Joe R. Milton has joined William T. Can- [continued on page 389]
All the exciting I-Line 4000 Series entrance options are covered in a new brochure available from Kawneer Product Information, 1105 N. Front Street, Dept. C, Niles, Michigan 49120

TEXTURED DOORS FROM KAWNEER
Gold Bond Metaledge Corewall.
Instead.

Looking for a way to make a windowless wall look good? An innovative curtainwall is Gold Bond® Metaledge Corewall®, under glass. Instead of conventional material. We created Metaledge Corewall as a more economical solution to enclosing elevator shafts in high-rise buildings. Or for vertical chases, or stairwells.

We made it just two inches thin to save space. And light enough for just two men to install in 7 to 16-foot lengths. So it not only cuts construction time and cost, but saves weight.

We created Metaledge Corewall for one use. Now, architects are finding new ways to use it.

For example, the perimeter wall system of this Illinois Bell Telephone equipment building designed by Chicago architects Holabird & Root. In it, 24,000 square feet of Metaledge Corewall replaced conventional nonload-bearing construction in perimeter walls as well as elevator shafts. Because Metaledge Corewall goes up fast, the building would be enclosed rapidly to protect massive electronic equipment which had to be installed before the walls were completed. And with a minimum of dust and dirt which could damage sensitive equipment.

For tight humidity and temperature control, a special wall system was designed. Our Metaledge Corewall was insulated with urethane foam and finished with our Sta-Smooth® gypsum wallboard.

This wall system was also designed to be removable for planned expansion. For more details, contact your Gold Bond representative. Or write Gold Bond Building Products, Division of National Gypsum Company, Dept. PA-64G, Buffalo, N.Y. 14225.

We’re gypsum, and then some.
The communications wall...

It chalks better than chalkboard. Because it’s quiet. It tacks better than cork. Because it’s self-healing. It wears better than wallpaper. Because it’s a vinyl wall covering ... and just that easy to apply.

Meet the total communications wall. Called Lenwall. It’s new.

Wherever people meet, learn, teach, display or in anyway deal in graphics ... there’s a need for Lenwall. And when not used as a forum for ideas, it’s a tasteful, simplistic wall covering. Available from inventory in brass, bronze, brown, brick, blue ... plus white. Need a projection screen?

The complete spectrum of Lenwall colors, including 9 additional hues, has been designed to match and complement standard vinyl wall coverings ... delivered in handy 400 sq. ft. rolls, 53 in. wide.

Lenwall costs little more than ordinary vinyl wallcovering. And anyway you cut it, that’s a fraction of the price you’d pay for equal-performance materials ... like chalkboard, tackboard and all the rest. Not to mention economy of space.

Here’s beauty and utility in a truly new design idea. Order now for a project you still have on the board or specify a communications wall in your next design.

Contact Lenwall, Inc.
P.O. Box 68204, 6230 LaPas Trail
Indianapolis, Indiana 46268
(317) 297-3335

Lenwall Specialty Wall Products

Circle No. 355, on Reader Service Card
In Oronoque Village, a condominium community in Stratford, Connecticut that will stretch for over 300 acres, GAF Timberline® Asphalt Roof Shingles is the only roofing being used.

It’s not hard to see why. Timberline combines the rugged good looks of wood shake shingles with the safety and maintenance-free convenience of modern asphalt shingles. That’s a tall order for one roofing. Moreover it won’t rot, crack, warp or split. It’s fire resistant. And it has a special self-sealing adhesive to keep it down in high winds.

Timberline’s woodlike texture comes in 6 authentic shades. All with that rich, varied shadowing that really makes a home appealing to a potential buyer.

There was one final reason why Timberline was chosen for Oronoque Village. GAF. The company that warrants this great roofing for 25 years against manufacturing defects.

GAF Timberline. The reliable roofing. Oronoque Village wouldn’t put 1200 families under it if it weren’t. For further details, call your GAF Building Products distributor, or write:

GAF Corporation
Building Products Division Dept. PA-64
140 West 51 Street
New York, New York 10020
Do things with Nevamar clad doors you've never been able to do before.

Add a dramatic surface dimension to your interior doors, a striking woodgrain, decorative color. Fabricated by your own supplier, Nevamar high-pressure plastic laminates let you design new beauty into your doors... at prefinished wood door prices... without worry about traffic, bumps or costly refinishing, ever! In fact, maintenance savings over a 20-year door life lower the total cost of Nevamar clad doors to about half of premium grade prefinished wood doors. Call our toll-free HOT LINE for Nevamar samples: 800-638-4380. Or write: Nevamar Marketing, Exxon Chemical Company U.S.A., Odenton, Maryland 21113. Nevamar, the uncommon laminate, has opened up your door design opportunities like never before.

EXXON CHEMICAL COMPANY U.S.A.
Odenton, Maryland 21113

Circle No. 384, on Reader Service Card
Goetz Hallenbeck & Goetze, Inc., San Francisco, Alameda, and Oakland, Calif., has announced the following appointments: Ildefonso Chamorro, AIA and Donald A. Neptune, AIA, senior associates; Will F. Harrison, Kuo-Ren Lin, Jadia D.J. Ng, Benard W. Savant, Terrence G. Schilling and David G. Stow, associates.

Richard L. Lang, Robert B. Lincoln, Fen Ching Ong and Robert L. Ratte have been named vice presidents of Lockwood Greene Engineers, Inc., New York City.

E. Fletcher Davis has been named director of urban and regional planning for Saunders-Thalden & Associates, Inc., St. Louis, Mo. Louis Bechtold has been appointed head of production in the landscape architectural division.

New addresses
LK & Associates, formerly Lay, Koski & Associates, are now at 594 West Ave., Tallmadge, Ohio 44278.
Alley Friends, 115 N. 34 Front and Vine, Philadelphia 19106.
Howard Brandston Lighting Design Inc., 141 W. 24 St., New York City 10011.

New firms
Wayne G. Carson, PE has formed Carson [continued on page 149]
WHY DID FIRESTONE CHOOSE PAGE® ALUMINIZED OVER GALVANIZED FENCING?

Firestone Country Club, is home of one of the most celebrated golf courses in the world. But snowmobiling, horseback riding, even drag racing, all unauthorized, were doing a lot of damage. So it had to be fenced in.

Firestone's engineering department considered both galvanized and aluminized fence fabric. The decision: Page aluminized fabric. One important reason was that aluminized fabric lasts three to five times longer than galvanized. The other reasons: there was little possibility of rust, and absolute minimal long range maintenance. In other words, zero upkeep. All of which makes a pretty good case for Page aluminized fence fabric. Makes sense, doesn't it?

For more information and a free fence spec kit, write Acco, Page Fence Division, First and River Sts., Monessen, Pa. 15062.

Page Fence Division
To begin with 40,000 tie-rod holes were patched with THORITE, the nonslump, nonshrink patching mortar before all concrete surfaces, inside and out, of this library were sprayed with two coats of THOROSEAL PLASTER MIX, cement-base, waterproof coating, PLUS ACRYL 60, adhesive bonding agent. The primary purpose of this finish not only waterproofs and preserves these surfaces for as long as they stand, but maintains the architectural detailing with a beautiful, uniform white texture over all.

Beautiful fluting of Medical Library finished and waterproofed quickly and economically with THOROSEAL PLASTER MIX!
Aquomatic. The first sprinkler head that stops itself after it stops the fire. And then automatically resets itself so it's ready to go time after time without replacement or adjustment. You'll never have to turn off the main valve for inspection after a fire.

Aquomatic. It's Factory Mutual approved. It's UL listed and it's all new from Grinnell, America's leading designer, manufacturer, and installer of sprinkler systems.

Aquomatic. The first on-off sprinkler that's totally interchangeable with other sprinkler heads. It can be integrated into an existing system or designed into new construction.

Aquomatic. The first sprinkler head that uses water with maximum efficiency by sequentially turning itself on and off automatically. It's ideal for areas containing high value inventories or materials highly sensitive to water. In situations where there's a risk of flash fires or where the water supply is limited. In high rise buildings and many other locations.

Aquomatic Sprinkler.* It's a major breakthrough in sprinkler design. And it's ready now. Write us. Or call us for a demonstration and brochure. We'll help you put the fire out.

*Pat. Applied For
Georgia-Pacific Eternawall:
Resists fire. Looks great. Made to last!

Eternawall™:
The only vinyl-surfaced gypsumboard with a UL Class A Flame Spread Rating of 25.*

And that's just the beginning!
Specify Eternawall™ over G-P Sound Deadening Board, and you'll get a UL Class A flame spread rating of 25, plus a one-hour fire rating and, with insulation, an STC of 50!

You'll get a wall that lasts, too. Eternawall™ resists most bumps, scratches, and stains. And with 30 styles to choose from, you can use it almost anywhere!

Write for our free Eternawall™ color swatch brochure. And check your Sweet's catalog. Or give your G-P man a call.

Then, make beautiful things happen. With Eternawall!

*Vinyl-surfaced gypsumboard.
**This flame spread rating available only with Eternawall's 15 standard colors.

Georgia-Pacific
The Growth Company
Job mart

Architect: An established consulting engineering office in northern Ohio desires to expand into architectural services and develop a full-service architectural-engineering office. This open position is for the right person who is interested in assuming the development of this service with securement of staff, client contact, project design and supervision and office management. Salary, fringe benefits, profit sharing, partnership options, etc. are open. Equal opportunity employer. Write to Lester H. Poggeymeyer, P.E., Inc., 121 East Wooster Street, Bowling Green, Ohio 43402.

Architectural-Engineering Construction Firm located in central Maine seeks design oriented architect registered in state of Maine to participate in all phases of design and construction. Scope of work involves residential, commercial and industrial buildings. Send complete resume, references and salary requirements to: P. O. Box 1126, Bangor, Maine.

Architect: Established east coast architectural-engineering firm with annual volume of $60 million in quality commercial/industrial practice seeks design partner. Unusual opportunity. Reply to Box #1361-695, Progressive Architecture.

Architect: International E/A firm with New York headquarters has need for registered architect with 12 to 16 years experience, strong background in design and basic talents and interest in project development to lead industrial/governmental building design division. Reply to Box #1361-696, Progressive Architecture.

Architect: Job captain required with production high-rise experience to assume number one position in new, aggressive architectural division of large, established A & E firm in north-central California. Salary range liberal, with full benefits. Respond in confidence. Reply to Box #1361-697, Progressive Architecture.


Phone (616) 796-9971 Ext. 209. An equal opportunity employer.


Designers: Major interior and industrial design firm is currently seeking designers with emphasis on non-residential and corporate abilities. Successful applicants who can speak Spanish may be assigned to expanding company office in Bogota, Colombia after initial orientation in Baltimore/Washington areas. Please forward resume (no phone calls) to my attention—Mr. John F. Walsh, The H. Chambers Company, 1010 North Charles Street, Baltimore, Maryland 21201.

District Architect: Our client is a long-established international design, engineering, and construction firm involved in large industrial, commercial, medical, and civic projects. This position would include those responsibilities of Manager of Architecture and Master Planner. Reporting to the District Vice President, he conceptualizes, develops, and designs exterior and interior plans and selects architectural materials. He is instrumental in developing national architectural recognition for the firm. Qualified architects will have eight to ten years' applicable experience in one or more project areas. Attractive compensation package with an outstanding firm. Respond in confidence by telephone or resume, Mr. John H. Johnson, Jr., Billington, Fox & Ellis, Inc., Executive Recruitment Consultants, 20 North Wacker Drive, Chicago, Illinois 60606, Telephone: (312) 236-5000.

Project Architect: An architect with at least 5 years experience, some of which should be in medical facilities planning and design. This position requires the capability to demonstrate positive management responsibilities for a variety of projects. Excellent career potential and benefits. Send replies to Perkins & Will, 1828 L Street, N.W., Washington, D.C. 20036. EOE/MF.


Projects Managers/Architectural: Large, progressive total service-oriented architectural/engineering firm, Northeastern United States, seeking qualified projects managers —architectural, proven ability, leadership, management; thorough knowledge of design, construction processes. Educational requirements include architectural registration. Salary range upon request; benefits competitive. An equal opportunity employer. Send confidential resume. Reply to Box #1361-699, Progressive Architecture.

Projects Manager/Government: A design oriented, progressive firm engaged in architecture and planning, has an opening for a projects manager with proven operational and managerial experiences in North America to control and schedule all firm's projects through production phases. The position also involves supervision of project teams, coordination of other disciplines through to completion. Diversified practice involves highest quality cultural, institutional, educational and commercial projects. Please send confidential resume, references, including anticipated salary to: Moffat Moffatt & Kinoshita, 55 Eglinton Avenue East, Toronto, Ontario, M4P 1G8, Canada.

Responsibilities: A design oriented site planner/landscape architect to be a part of the A/E project development team. A degree and 6-8 years experience desired. Excellent career potential and benefits. Send replies to Perkins & Will, 1828 L Street, N.W., Washington, D.C. 20036. EOE/MF.

Specification Writer: This position involves preparing architectural specifications using CSI and government formats and working with a computer master spec. An architectural degree and a minimum of 5 years experience is required, including some in hospitals and educational facilities. Excellent career potential and benefits. Send replies to Perkins & Will, 1828 L Street, N.W., Washington, D.C. 20036. EOE/MF.

Situations wanted

Architect: A.I.A., N.CARB, registered in several states, seventeen years experience including five years in Europe. Strong architectural/engineering/construction/financial management background; interested in organization, client relations, consulting, cooperation and complex projects. Seeks affiliation or position with architect/engineer/developer. Prefer New York, New Jersey or Pennsylvania area but will also relocate for the right opportunity. Reply to Box #1361-682, Progressive Architecture.

Architect: A.I.A., N.CARB certificate, multiple state registration, desires position in Palm Beach, Ft. Lauderdale, Fla. area with architect, engineer or developer. Over 25 years experience of diversified work including private practice. Design, office and project management, field supervision, meeting with [continued on page 150]
Bally Walk-Ins belong where the first toast is to fine food and fashionable dining.

Bally Walk-In Coolers and Freezers belong everywhere mass feeding takes place. They can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of foamed-in-place urethane, UL 25 low flame spread rated and Factory Mutual research approved. Choice of stainless steel, aluminum or galvanized. Easy to enlarge . . . easy to relocate. Refrigeration systems from 35°F. cooling to minus 40°F. freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.)

Write for 28-page book and urethane wall sample.

Bally Case & Cooler, Inc., Bally, Pennsylvania 19503.

Address all correspondence to Dept. PA-6.
Anso® Nylon’s five year carpet guarantee. It passes the school test with flying colors.

First one building. Then the second. Now the third building of this Educational Park for the Elkhart Community School System has Whipcord II carpet by Mohawk. It comes to more than 25,000 yards, all told.

Proof enough that this school community gives straight A’s to ANSO nylon. And to Guaranteesth—the guarantee with teeth. Allied Chemical’s assurance that the carpet will not wear more than 10% in five years, or we’ll replace it, installation included.

Allied can make this promise because we test every carpet made of ANSO nylon—the second-generation soil-hiding nylon—ten different ways to be sure it will stand up.

So look for the label with the fierce little animal who symbolizes our Guaranteesth. And get the carpet with the five year wear guarantee.

For your free copy of our Contract Carpet Manual, write to: Allied Chemical Corporation, Fibers Division, Contact Dept. PA, One Times Sq., N.Y. 10036.
Phone: (212) 736-7000.

25 To 110 Ton
Package Air Cooled
Chiller Design Reduces
Length, Weight.
Saves Up To 25%
On Rigging Costs

The new Fedders Air Cooled Chillers are only 54 1/2 inches high and have reduced lengths of only 7' 10" for the 25 to 55 ton units and 15' 8" for the 60 to 110 ton units. Because of this compact design, weights have been reduced as much as 41%. This unique engineering achievement means significant savings in cost of materials and labor for roof supports, parapets and rigging. Compressors in these new air cooled chillers are automatically unloaded in direct response to changing load conditions to provide lower operating costs. In addition these V-line compressors have hermetic motors designed for wide voltage range tolerances to avoid voltage fluctuation problems becoming ever more prevalent today, i.e.: 208/240 volt models range from 187V to 264V and 440/480 volt models range from 396V to 528V.

For complete information circle number shown below on Reader Service Card.

CIRCLE 308 ON READER SERVICE CARD

FEDDERS
Edison, N.J. 08817
Architect: Design oriented, NCARB, presently principle in firm, 16 years diversified experience including large scale university, health, municipal and urban renewal work. Accomplished in client relationship, programming, design, multiproject management and team coordination. Seeks responsible design-coordinator position with progressive firm. Will relocate for right opportunity. Reply to Box #1361-702, Progressive Architecture.

Architect: Executive V.P. manager of overseas and U.S. based offices of a large architectural and engineering firm desires a change and new challenge after 16 years of faithful service. Age 46, happily married, resume and excellent references upon request. All replies will be answered. Reply to Box #1361-703, Progressive Architecture.

Architect: Currently partner in medium size AE firm; over twenty years varied experience; present emphasis on client relations, project management, programming; NCARB; wish to relocate with business oriented firm producing high quality people and environmentally oriented architecture; prefer Northern West Coast or Southern Piedmont area; Reply to Box #1361-704, Progressive Architecture

Architect: Registered, 31, family, two years diversified office experience, three years comprehensive experience in design-build concept as manager of a western development firm. Desires responsible position with a development company or architectural office involved in the design-build concept. Presently employed, seeking change. Reply to Box #1361-707, Progressive Architecture.

Architect/Designer: Registered in Maryland and D.C., AIA and NCARB, 10 years diversified experience in all phases of architecture w/Eastern firms as designer and project architect. Seeking challenging, responsible position with architectural firm, corporation or company in Denver, Boulder Colorado area. Resume available. Reply to Box #1361-709, Progressive Architecture.

Architect/Facilities Planner: With heavy experience in programming judicial, academic and municipal facilities. Some corporate and office building planning as well. Available on long or short term project basis. Free to travel. Resume and references on request. Reply to Box #1361-708, Progressive Architecture.

Director of Technical Services: Architect, AIA, NCARB. 14 years experience in all phases of contemporary practice including principal in own firm, and in senior corporate administrative and management positions. Desire responsible position with progressive, growth oriented real estate developer/builder. Reply to Box #1361-709, Progressive Architecture.


Interior Designer: Draftsman, 34, married, 2 children. 8 years experience with large architectural and interior firms. Specializing

NOW! School Walls and Ceilings That Are Fire-Resistant, Vandal-Proof and Maintenance-Free.

Laminated to Type X fire-coded gypsumboard, AllianceWall porcelain-on-steel panels create a fire-resistant barrier with a "O" rating for Flame Combustion, Smoke Development and Fuel contribution. No painting or expensive maintenance is ever required. Interior panels are guaranteed for 50 years.

AllianceWall porcelain comes in 112 standard colors.

For further information write:

AllianceWall
CORPORATION
BOX 247
ALLIANCE, OHIO 44601

Plants in Alliance, Ohio; Okmulgee, Okla.; Genk, Belgium and Odense, Denmark

The 22nd P/A awards competition will be open, as before, to all U.S. and Canadian architects and related professionals engaged by actual clients for the design of built environments. Submissions will be accepted in three major categories: architecture, urban design, and applied research. Jurors for this year’s program and detailed entry requirements will be published in the July P/A.

Deadline for submissions will be August 31, 1974

Progressive Architecture
600 Summer Street, Stamford, Connecticut 06904
in commercial interiors, hotels and restaurants. Experience in client contacts, job supervision, interior layouts, detailed working drawings, graphics. Seeking responsible position abroad or west coast. Fluent in 2 foreign languages. Reply to Box #1361-711, Progressive Architecture.


Vice-President/Director of Architecture: For architectural, engineering and development firm. Wisconsin, Minnestoa, Michigan, registrations, NCARB pending, AIA, Bachelor Architecture, married, 6 plus years experience residential, institutional and commercial projects. Design oriented. Seeking similar position with West Coast or Florida firm. Resume and portfolio available. Reply to Box #1361-712, Progressive Architecture.

Architectural services

Affiliation: Progressive midwest architectural, planning, engineering, construction management firm specializing in Voc-Tech facilities, government facilities, government centers, and police facilities wishes to joint venture with local architectural firms to pursue and carry out projects. Excellent credentials, awards, experience. Reply to Box #1361-713, Progressive Architecture.

Career Builders, Inc., Agency: Ruth Hirsch has specialized in Architectural placement for fifteen years, serving architects, corporations, planners, developers and interior firms. She reviews portfolios, professionally interviews designers, project architects, managers and juniors for available openings. Executive searches and personnel consultations are available to employers. Career Builders, Inc. (Agency), 501 Madison Ave., N.Y., N.Y. 10022. (212) 752-7640.


Edwards & Shepard Agency: We are a national design and architectural placement service in business to serve these professions. Bill Shepard, a Pratt graduate, is equipped to effectively evaluate the experience and qualifications of Architectural and Interior Designers, Urban Planners, Systems and Space Planners, Construction Specialists, Exhibit, Lighting and Environmental Designers. M. Shepard conducts confidential interviews, by appointment, for recent graduates to administrators. He has access to the best prospects and can be invaluable timewise in a job search. Phone (212) 725-1280 or write: 1170 Broadway, New York, N.Y. 10001.


Rendering/Illustration: Established studio (15 years) with experience and virtuosity of staff to accept any commission. Opaque tempera color unless other treatment preferred. Hand lettered or Pres-Type titles (by request). Display quality color or black and white photo reproduction service available. Lydia Welch: Ralph Johnson Associates, Box 17543, Raleigh, N.C., 27609, (919) 782-2033.

RitaSue Siegel Agency: Ms. Woody Gibson introduces people with superior skills in architecture, interior, landscape, urban design, planning, programming and management to our consultant and corporate clients seeking genuine problem solvers throughout the U. S. A. RitaSue Siegel identifies and evaluates industrial and graphic designers. You are invited to submit resumes in confidence. Our clients pay all fees. 60 W. 55th St., N. Y. C. 10019, (212) 596-4750.

NEW from Hickman...

SERIES 100 FASCIA with “Snap-Tab” Installation

It takes a minimum of labor to install the Series 100 the quick and simple “snap-tab” way. This means economy in a narrowly-spaced fascia panel. But this doesn’t mean you sacrifice selection. The Series 100 comes in all the regular Hickman finishes and colors with a big variety of extruded battens. Perfect for use as vertical or man
dge fascia, spandrels, and interior and exterior wall accents. And something else . . . we cut the panels to the size you tell us. It’s narrowly-spaced yet rugged. It’s Hickman.
If you’re looking into the use of plastic glazing, here are some things to think about.

The use of plastics in construction is growing every day, particularly in windows and walls. Plastics are also being used to protect or fabricate frames and exterior wall components. Acrylic and polycarbonate sheet now qualify for use for safety glazing.

Plastics offer many advantages, such as light weight, durability, reasonable cost and handsome appearance. But they also offer special glazing problems that we — Tremco — can help you solve.

Pre-specification checkpoints.
Before you specify plastic glazing and frame components, you need to know the physical properties and performance characteristics of the plastic.

Many sealants that you can use with glass can’t be used with plastic. Sealants must be compatible with each other and the plastic.

Plastic has much greater thermal expansion than glass, wood or metal. So you have to allow for greater movement, especially when you consider that building exteriors are subject to temperature changes ranging over 100°F. in minutes.

Plastics create new tolerance demands because of their movement factors. A glazing system for plastic must allow for additional movement, and also be highly adhesive, unaffected by ultraviolet and permanently elastic even at low temperatures.

Designing the sash.
In general, plastic sheets need more “bite” than glass so the sash rabbet must be deeper. The depth and width requirements of the rabbet are determined by the type, thickness and windload requirement of the plastic sheet. Check the manufacturer’s recommendation for maximum size limitations.

At this point, it’s a good idea to talk to your Tremco man. With his experience, he can recommend the right sealing systems to secure the sheet into the rabbet and to seal the sheet perimeter. He can also check for sealant compatibility and adhesion, especially important on sheets with special coatings.

Glazing methods will vary according to the maximum sash opening, or long dimension.

Shown here are three methods of glazing acrylic or polycarbonate plastic along with the recommended Tremco products. Each method is based on the long dimension. If the long dimension is over 72 inches, you should dis-
1/8-inch minimum

Pre-shimmed
Tremco 440 Tape
or Polyshim Tape

Exterior

Maximum sash opening up to 36 inches.

1/4-inch minimum

Lasto-Meric

Polyshim Tape

Exterior

Maximum sash opening 48 to 72 inches.

3/16-inch minimum

Lasto-Meric

Polyshim Tape
or Pre-Shimmed
440 Tape

Exterior

Maximum sash opening 36 to 48 inches.

cuss the installation with your Tremco man and get his recommendations.

Extra technical assistance.
Remember, your Tremco man will be happy to meet with you to discuss the use of plastic glazing anytime. While you’re still in the thinking stage, at the drawing board or when you’re making specific recommendations.

Although the use of plastics is relatively new, he can draw on the experience of a company that’s been solving all kinds of glazing and sealant problems for more than 45 years.

We have some 15 basic job-proven sealants to choose from, such as MONO®, Polyshim® tape and Lasto-Meric®, as well as compression gaskets. You may also have use for our unique TREMproof® waterproofing systems and Tremline roof edging systems.

So talk to Tremco first. And avoid problems with plastic glazing later. Just contact your Tremco rep. Or write Tremco, Cleveland, Ohio 44104, or Toronto, Ontario M4H 1G7.
Advertising Sales Offices

Stamford, Connecticut 06904: 600 Summer Street 203-348-7531
William F. Bondlow, Jr. Advertising Sales Manager

Thomas J. Denver, Donald C. Stanley, District Managers

Philadelphia, Pennsylvania 19107: 12 So. 12th Street 215-922-0346
John A. Teely, District Manager

Pittsburgh, Pennsylvania 15222: Three Gateway Center—Room 1827 412-281-9421
Robert S. McGinnis, District Manager

Chicago, Illinois 60603: 10 So. LaSalle Street 312-726-1282
Daniel G. Prible District Manager

Cleveland, Ohio 44116: 21010 Center Ridge Rd. 216-331-7979
John F. Kelly, District Manager

San Francisco, California 4348 Van Nuys Blvd. 213-872-1870
Suite 205 Sherman Oaks, Calif. 91403

Los Angeles, California 4348 Van Nuys Blvd. 213-872-1870
Suite 205 Sherman Oaks, Calif. 91403

Atlanta, Georgia 30308: H. Proctor Co. 805 Peachtree Bldg.—Room 505 404-874-6427
Harmon L. Proctor, Representative

Tokyo, Japan: International Media Representatives, Ltd. 1, Shiba-Kotohiracho, Minatoku Haruo Moribayash Representative

Acco, Page Fence Division ............................................ 142
Alcan Building Products Div. of Alcan Aluminum Corp. ............................................ 51
Alliancewall Corp. ..................................................... 150
Allied Chemical ....................................................... 148
Amos Molded Plastics ................................................ 124
Am spec, Inc. ........................................................... 44, 45
Andersen Corp. ......................................................... 12, 13
Armstrong Cork Co. .................................................... IFC, 1
ASG Industries, Inc. .................................................... 58
Atlas Minerals & Chemicals Div. .................................... 31
Bally Case & Cooler, Inc. ............................................. 147
Bradley Corp. ........................................................... 118, 119
Briggs, Div. of the Celotex Corp. .................................... 2
Cabot, Samuel, Inc. ..................................................... 123
Carpenter, L. E. & Co., Inc. .......................................... 6
Celotex Corp. ............................................................ 20, 21, 42
Collins & Aikman ....................................................... 114
Congoleum Industries, Inc. .......................................... 22
Corbin, P. & F.—Emhart Corp. ...................................... 125
Dallas Market Center .................................................. 50
Delta Air Lines, Inc. .................................................... 134
Dover Corp., Elevator Div. ........................................... 4, 5
Dow Badische Co. ....................................................... 121
duPont, E. I. de Nemours & Co. ................................... 116
Dwyer Products Corp. .................................................. 133
Exxon Chemical Co. U.S.A. .......................................... 140
Fedders Corp. ............................................................ 7, 53, 107, 141, 149
Flexico, Div. of Textile Rubber Co., Inc. ............................ 34
Gaco Western, Inc. ..................................................... 16Wa
GAF Corp. ............................................................... 139
General Electric-Textolite ........................................... 49
General Portland Inc., Trinity Division ............................ IBC
Georgia-Pacific Corp. ................................................... 145
Grinnell Fire Protection Systems Co., Inc. ......................... 144
Hager Hinge ............................................................. 104, 105
Halsey Taylor ........................................................... 39
Hickman, W. F. Co. ..................................................... 151
Interform ............................................................... 134
International Masonry Institute ..................................... 122
Jamison Door ............................................................ 40
Johnson Service Co. .................................................... OBC
Joy Mfg. Co. ............................................................ 48
Kawneer Architectural Products ..................................... 135
Kemiko, Inc. ............................................................. 128
Kidde Merchandising Equipment Group, Inc. ....................... 18
Lenwall, Inc. ............................................................. 136
Levolor Lorentzen, Inc. ............................................... 14, 15
Libby-Owens-Ford Co. ................................................ 108, 109
Limestone Products Corp. of America ................................ 5
Lundia Myers Industries, Inc. ........................................ 41
Moen, Div. of Stanadyne ............................................... 133
Monarch Carpet Mills .................................................. 9-11
National Gypsum Co. ................................................ 136, 137
Olympic Stain, Div. of Comerco, Inc. .............................. 17, 19
Otis Elevator Co. ....................................................... 57
Owens-Corning Fiberglas Corp. ..................................... 28, 29, 35
Page Fence Division of Acco ........................................ 142
Patcraft Mills, Inc. ..................................................... 130
Pentel of America, Ltd. ............................................... 30
PPG Industries, Inc. .................................................... 126, 127
Powers-Flat Corp. ....................................................... 32
Progressive Architecture ............................................... 146
Red Cedar Shingle & Handsplit Shake Bureau ..................... 38
Rixon-Firemark, Inc. .................................................... 33
Rolscreen Co. ........................................................... 54, 55
Rustwin Div.—Emhart Corp. .......................................... 110
St. Regis Paper Co. ..................................................... 117
Safelite Industries ....................................................... 37
Sanyo Products Co., Inc. .............................................. 15
Shatterproof Glass Corp. .............................................. 43
Standard Dry Wall Products ......................................... 143
Structures Unlimited ................................................... 36
Thiokol Corp., Chemical Div. ........................................ 106
Tile Council of America, Inc. ....................................... 27
Tremco Mfg. Co. ....................................................... 152, 153
Trinity Division, General Portland Inc. ............................ IBC
U. S. Plywood Div. of Champion International ...................... 129
Viking Co. .............................................................. 56
Vogel-Peterson, Inc. .................................................... 151
Welco Carpet ............................................................. 128
Xerox Corp. .............................................................. 52
Described on the following pages are architectural books that are now available to you from leading publishers. Each has been selected for its use to you in the various aspects of your professional practice.

Book orders will be forwarded to the publishers who will bill you direct, including all required state and local taxes. As purchases of professional and business publications are tax deductible, we suggest that you retain a copy of the publishers invoices.

Reader Service
As a service to the profession, Progressive Architecture provides the attached easy-to-use post cards, designed to speed the latest information to you. (Note that new product and literature items and most advertisements carry a Reader Service number.)

Circle the number of the item(s) that interests you. P/A will forward your request directly to the manufacturer who will send you the information.

Subscribe to Progressive Architecture
To subscribe to P/A or to renew your subscription, check the appropriate boxes on the Reader Service card.