Finally. A lighting system that reduces energy costs by 40% yet actually helps you see better.
strong Luminaire C-60. Considering soaring costs of energy, it's a ceiling system whose time has come. Luminaire C-60 provides lighting comparable to that of a conventional ceiling with 4-troffers, yet it operates on 40% fewer watts per square foot. And it does something too. It helps you see better.

High-quality light.
looking better is not just a matter of shedding footcandles of light on a subject. It's a matter of increasing the usefulness of what's there. And the most accurate measure of usefulness is Equivalent Sphere Illuminance (ESI).

ESI measures precisely how well a viewer can see what he's doing while performing various tasks. In the comparison chart, notice how C-60 System, with 24% fewer footcandles and 40% fewer watts per square foot, produces an ESI level significantly higher than the recessed troffer system.

Integrally eliminates glare.
Luminaire C-60 System evenly distributes and minimizes glare. Its special quality of light is produced with the help of vaulted panels. Acoustical panels angle outward from each single-lamp fixture. They reflect more than 80% of the incident light and diffuse it so that glare is minimized.

Because of the uniformity of light, there's less need to place fixtures over specified work locations, making it an ideal system for open plan spaces. It's aesthetically more pleasing, too.

Integrated ceiling system.
Luminaire C-60 does more than put a higher quality light for less energy. It diffuses air evenly for cooling and heating. And panels are both acoustical and fire-retardant. They'll quiet noise and give you up to two-hour-rated fire protection. Why not find out more about this completely integrated ceiling system.

The comparison data quoted here is part of our informative show entitled "Light Wars," It's a highly entertaining film that includes an explanation of ESI and a documentation of energy savings.

<table>
<thead>
<tr>
<th>Systems Performance Comparison*</th>
</tr>
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<tbody>
<tr>
<td>Armstrong C-60 Luminaire</td>
</tr>
<tr>
<td>Fixture</td>
</tr>
<tr>
<td>1 Prismatic lens</td>
</tr>
<tr>
<td>1 lamps/fixture</td>
</tr>
<tr>
<td>48 ESI level (80% criterion)</td>
</tr>
<tr>
<td>*30'x30'x9' room; task-ESI pencil. All test data was supplied by independent laboratories; complete information available on request.</td>
</tr>
</tbody>
</table>

If you wish to see "Light Wars," or receive a free booklet on ESI and the C-60 Ceiling System, just write to Armstrong, Dept. 92NPA, Lancaster, Pa. 17604.

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at a sheet vinyl flooring.
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**Wide range of colors and designs.**

Armstrong Vinyl Corlon comes in five distinctive chip patterns and 28 colors ranging from light and modern to neutral and natural.

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**Coving where dirt can't hide.**

Flash-coving makes it simple to create a gentle radius where floor meets wall, eliminating the sharp corner where dirt can hide.

**The pattern lasts and lasts.**

Armstrong Vinyl Corlons are inlaid materials. Because the pattern and color go all the way through to the backing, they won't wear off like printed products. And because the inlaid construction is smooth and dense, spills wipe right up. Simple regular maintenance keeps the floor looking like new. These resilient floors meet the flame-spread and smoke-developed requirements of the most widely recognized building codes and regulations.

Vinyl Corlon floors can be installed with a perimeter bonding system developed by Armstrong. In most cases, you can install them right over an old floor and eliminate a lot of work and expense.

The Armstrong Vinyl Corlon Commercial Flooring System. Specify it, and you'll get one beautiful long-lasting floor. For more information, write Dept. 96FPA, Lancaster, PA 17604.
Editorial: Ethics II: Getting our expertise together

Architectural design
Introduction: The World on a string
The World Savings & Loan Association has commissioned some talented young California architectural firms to design several branch banks in that state.

Small wonder
Kamnitzer Cotton Vreeland’s World Savings branch office for a shopping center in Santa Ana, a striking striped box, is a cool retreat from the sun’s heat.

An unexpected pleasure
A new World Bank branch at Santa Cruz, designed by Eschek Homsey Dodge & Davis is visually small-scaled on the exterior, grandly spacious on the inside.

Short term savings account
Inexpensive materials and simple design are used with skill in Daniel Soloman’s design for a temporary branch of World Savings at Palo Alto.

Mellow yellow
MLTW/Turnbull Associates’ William Turnbull renovated ground-floor space in an old San Francisco high-rise into a simple, businesslike bank branch.

Introduction: Imagery and integration

Walled town
The redeveloped 19th-Century industrial community of Byker, by Ralph Erskine, turns a north-facing brick wall to a proposed motorway. By David Dunster.

Picturesque monument

Technics
High-impact materials
Noted for their easy maintenance, design variety, and cost efficiency, plastic laminates have wide acceptance among architects, designers, and owners.

A stain in the pane
Several factors contribute to glass staining on buildings. Proper storage, protective detailing, and good maintenance help to avoid serious problems.

Departments
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Hidden in this picture are thousands of tile joints.

With an Armstrong Embossed Travertone™ Ceiling, the precisely cut tiles fit so snugly, their joints are hard to see in the deep-etched pattern-matched surface. The result is a rich textured expanse of ceiling.

Travertone is available in the Highspire design pictured here as well as two other embossed patterns, Sanserra and Grandshire. They come in 12" x 12" tiles, are 3/8" thick, and offer excellent acoustical performance. Write Armstrong, Dept. 94NPA, Box 3001, Lancaster, PA 17604, and find out more about the ceiling that's as close as a tile can come to a wall-to-wall ceiling.
Ethics II
Getting our expertise together

August 1979

On the basis of education and testing, society invests certain people with the privileges of architect. In return, they are expected to apply a body of expertise to the built environment.

This architectural expertise tends to split spontaneously into two halves, identifiable as practical expertise and design expertise. The practical side originates from the fundamental requirement that buildings be safe—a demand codified by Hammurabi in about 1700 B.C. Around this, corollary expectations have grown up: the buildings are to be serviceable and durable; the architect is to see to it that they are built for a reasonable and predictable cost; he is expected to recognize, as well, the limits of his expertise, bringing in consultants to cover gaps in his own firm's knowledge.

Laws applying to the architect's performance have dealt mainly with practical considerations such as structural soundness, safety, and sanitation, and with the architect's ability to meet contractual obligations. Practical success has therefore also meant maintaining a stable, solvent office—i.e., one that can be sued for errors and omissions. All of the above requirements, however, apply equally to engineers; what distinguishes architects from engineers—as licensing qualifications recognize—is a certain design expertise.

This design expertise is not strictly aesthetic. It includes an understanding of social and psychological needs and an ability to conceive spaces, forms, and images to serve those needs. It embodies a critical understanding of existing architecture. The self-expression that now dominates other arts—at least in the "Free World"—has only a small role in this design expertise, however individualistic designers may consider themselves to be.

To a variable extent, depending on circumstances, design judgment can be given the status of law. In the 20th-Century United States, following a period of unbridled owners' rights, governments have extended their "police powers" to cover such design considerations as building height, form, materials, and even style—on the presumption that these design characteristics affect the welfare of entire communities. Architects have generally participated in the formation of preservation commissions, design review boards, and other agencies that judge design on behalf of the public. Whether these regulatory mechanisms always serve the public—or merely enforce the dominant design preferences of the moment—is an ethical question that bears constant attention.

The schism between practical expertise and design expertise has had an uneven history. In 19th-Century France, the Ecole des Beaux-Arts, which dominated U.S. architectural design, was distinct from the Ecole Polytechnique, where a different set of people learned to build utilitarian structures. The Bauhaus, which supplanted the Beaux-Arts as the model for U.S. architectural education, was founded on an idealistic fusion of the practical, aesthetic, and social considerations behind design at all scales. By the 1960s, however, there were widespread doubts about this ideal of design unity; historians and theoreticians were challenging utility and moral integrity as sources of design excellence. The 1970s saw the emergence of an avant-garde somewhat like that of the 1920s, which practices architecture only for patrons willing to sponsor life-size design experiments.

We are accustomed to thinking of architectural firms as falling into two groups: the practical ones that build expeditiously, on time, within budget, without challenging the client or incurring much risk; the firms with "design reputations," which defy conventions, generate new solutions, and rarely make money. The practical firms can be accused of doing whatever is expedient to make a quick profit—adding nothing to society but square footage; the innovators can be accused of misusing the client's trust to demonstrate theories or to enhance their own stature. We are always a bit surprised at firms such as Burnham & Company early in the century, or Skidmore, Owings & Merrill later, that advance the art of design on a large scale, in the service of hard-nosed clients. Ideally, of course, practical effectiveness and design superiority should be found together as a matter of course.

I.M. Pei, at his acceptance of the AIA Gold Medal this June, warned against the division of architectural expertise. "There seems to be the world of practice and world of ideas," he observed, "each in alienation from the other. As the world of practice struggles with the myriad demands of social, economic, and political realities, it is all too easy to relax and resign from the real challenge by acquiescing to mediocrity standards and myopic assumptions. I believe we must pay heed, precisely because we must be practical, to the forces imploring philosophic adjustment in the field." But the recently "liberated" world of ideas, he cautioned, must, for its part, "accept the discipline of the real world."

"While I believe that ideas and practice are complementary," he continued, "I reject the notion that the world of practice and the world of ideas require two different set of skills, insights, temperaments—indeed, two different kinds of architects. They belong together in one world of architecture. Only then can the profession regain its rightful role in a society that is increasingly dominated by others."

Amen. If we cannot regularly join the best of design ideas to the best of practical skills, architecture cannot fulfill its highest obligations to society.
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Views

Grand illusion?

How is it possible that architecture in the big cities is so out of touch? Cross the river, go into a woods, sit under a tree, and open up the June 1979 P/A to page 86 ("Grand Allusions"). Take a backward look from the future at the Sunar showroom by Michael Graves and notice how shallow, how insubstantial, how ugly this design is. What sort of times could have generated such praise for this sort of trash? How could so many have been suffering under the same grand illusion?

Richard S. Levine, Architect
Associate Professor, College of Architecture
University of Kentucky
Lexington, Ky

[We disagree; more Sunar in Sept. P/A. —Eds.]

Architecture and energy

Your April issue of Progressive Architecture was a great education. I would endorse and support your company as long as this type of journalism continues. I agree with Mr. John Dixon that probably the most significant area to correct the abuse of energy is within architectural form. I enjoyed this issue thoroughly.

Ted P. Lehnh
Seattle, Wa

Your April issue on energy-conscious design is a most welcome addition to the continuing re-examination of the direction of our profession in light of energy considerations. The impact of our increased awareness of a building’s energy use as a design parameter is one of the most significant single factors affecting architecture in this century. In addition to the direct impact on the actual forms of the buildings we design, energy considerations are forcing us to reevaluate how we approach the design process itself. As Mr. Dixon points out in his editorial, “more words and fewer pictures” may change the shape of our traditional vocabulary. More than mere lip service must now be paid to such concepts as life-cycle costing, building performance standards, and other issues which have for too long been ignored in the way we have traditionally approached the design process. No longer can the consulting engineer be called in during the design development or contract documents stage, in order to make do with the space left over.

Engineering considerations are (and should always have been) of prime importance in the building design. This is not to say that energy consciousness should, or ever could, be a sole determinant of how we build, but merely that design ought to reflect our ability to achieve buildings that best serve our practical as well as spiritual needs. Form indeed follows function. What sort of times could have generated such praise for this sort of trash? How could so many have been suffering under the same grand illusion?

Edward P. Brodzinsky, AIA, RIBA
Assistant Director
Office of Energy Resources
Commonwealth of Massachusetts
Boston, Ma

Whose vision?

With respect to your news report of my exhibition of visionary drawings at the Drawing Center (April 1979, p. 34), let me say for the record that indeed the matter of the visionary in architecture and planning is “unfocussed.” Not only has little been done as a study of the subject, but this selection was made intentionally, as I stressed in the catalog essay, to show the wide range of attitudes that appear to be embraced under the title “Visionary.”

Problems such as pragmatic vs. fantastic visions and the difficult distinction between the visionary and the unbuilt are treated in the opening paragraphs of the catalog, which perhaps you have not seen. In other words you have failed to grasp one of the underlying purposes of the exhibition which was to illustrate the broad focus of the visionary in any medium. “Definition” which you say is lacking, takes up six pages of the catalog text.

Although I have been told that many visitors delight in just viewing the hung walls of the Drawing Center at this point, the fact is that certain meanings of the exhibition can only be understood by reading the catalog that my colleagues and I have prepared for it—and exerted ourselves to have ready for the opening for just that reason.

George R. Collins, Professor of Art History
Columbia University, New York

Design for psychiatric care

It has become increasingly obvious that in order for long-term psychiatric in-patients to venture back into the outside world, they must have interaction both mentally and physically with their own particular milieu, rather than being mere tenants in dormitory settings. In addition, the hospital staff should be successfully integrated into the treatment of the patient through the design of the physical setting. The individual patient who will be living in the facility must be fully analyzed: behaviors of patients vary according to the particular condition, and require radically different design features.

For example, at a facility like the Hall Mercer Children’s Center, McLean Hospital, Belmont, Ma (P/A, March 1979, p. 76), the initial design for the building was executed according to a diagnosis of a very different kind of patient than is there now. It was designed for autistic children rather than children with a wide range of behavioral disturbances—as P/A reports. The behavioral interaction between patient and environment, however, differs radically between the two. While the treatment of disturbed children there is superb, the design of the building clearly did not take into account the fact that psychotic children and/or children with severe behavior disorders often have extremely aggressive and destructive behavior. It was some years before wired glass replaced breakable windows on the doors and rooms of patients. The small windowless cylindrical cells, euphemistically termed quiet rooms, were actually added after the decision was made not to house autistic children in the Hall Mercer building. The plastered walls in these “quiet rooms” made it easy for patients to pick at the plaster, eventually exposing the metal mesh on which patients could intentionally hurt themselves.

The architect must take into account the fact that the locked facilities may house patients seen as a risk to themselves or others. Attention must also be paid to size, strength, and shape of the patients—not only for their own benefit, but for the protection of the staff.

Room sizes and shapes must also be studied; immense rooms with 20-ft-high ceilings may increase disturbed behaviors; rooms that are too small or windowless may increase the sense of being trapped. Rooms provide boundaries for abnormal behavior. Thus rooms should have corners since round rooms exasperate disturbed behaviors.

Materials like concrete should be used sparingly, or at least with acoustical insulation. At Hall Mercer, a concrete room that is round and echoes can aggravate the condition of a schizophrenic patient who hallucinates. Sometimes, medication must be used to compensate for environmental stress.

Care must be given to choice of consultant, with attention paid to direct and recent experience. Most importantly, the architect should always consult the employees who work in the facilities, not just the administrator or senior trainer who may not be involved in direct treatment of the patients.

Dr. Carl Tishler
Clinical Assistant Professor of Pediatrics
Ohio State University Medical School
Columbus, Oh

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Presentation drawings for the Cooper Field Batchhouse, Trenton, NJ, were the work of Carol Humstone.
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Circle No. 353, on Reader Service Card
Progressive Architecture announces its 27th annual P/A Awards program. The purpose of this competition is to recognize and encourage outstanding work in architecture and related environmental design fields in the design phase, before it is executed.

Submissions are invited in the three general categories of architectural design, urban design and planning, and applied architectural research. Designations of first award, award, and citation may be made by the invited jury, based on overall excellence and advances in the art.

The jury for the 27th P/A Awards program: Frank O. Gehry, FAIA, president, Frank O. Gehry & Associates, Santa Monica; Helmut Jahn, AIA, partner in charge of design, C.F. Murphy Associates, Chicago; John L. Kriken, AIA, AICP, associate partner, director of urban design and planning, Skidmore Owings & Merrill, San Francisco; Wolfgang F.E. Preiser, Dipl.-Ing., MArch., PhD., partner in charge of research, Architectural Research Consultants, Inc., Albuquerque; and associate professor, co-director, Institute for Environmental Education, School of Architecture and Planning, University of New Mexico, Albuquerque; Charles F. Rogers II, principal, Perry, Dean, Stahl & Rogers, Inc., Architects, Boston; Robert A.M. Stern, AIA, Robert A.M. Stern Architects, New York; Blanche Lemco van Ginkel, professor, director, University of Toronto School of Architecture and partner, van Ginkel Associates, Toronto; Francis T. Ventre, chief, Environmental Design Research Division, Center for Building Technology, National Engineering Laboratory, National Bureau of Standards, Washington, DC.

Judging will take place in Stamford, Ct, during September 1979. Winners will be notified—confidentially—before Oct. 1. First public announcement of the winners will be made at a presentation ceremony in New York in January 1980, and winning entries will be featured in the January 1980 issue. Recognition will be extended to clients, as well as professionals responsible for the work. P/A will arrange for coverage of winning entries in national and local press.

Eligibility
1 Architects and other environmental design professionals practicing in the U.S. or Canada may enter one or more submissions. Proposals may be for any location, but work must have been directed and substantially executed in U.S. and/or Canadian offices.
2 All entries must have been commissioned by a specific client. Only work initiated on the client's behalf—not in fulfillment of academic requirements—is eligible (but design teams may include students).
3 Architectural design entries may include buildings or complexes, new or remodeled, scheduled to be under construction in 1980—that is, not completed in 1979 and scheduled to commence before 1981. (continued on next page)
4 Urban design and planning entries may include only proposals or reports accepted by the client for implementation before the strategy should be documented.

5 Research entries may include only reports accepted by the client for implementation before the end of 1980. Submissions should deal with programming, methodology and ways of disseminating findings should be documented.

Publication agreement
6 If the submission should win, the entrant agrees to make available further information, original drawings, or models, as necessary, for publication in the January 1980 P/A. The entrant will also provide appropriate slides for the presentation ceremony and reproducible black-and-white graphic material for press releases.

Submission requirements
8 Each submission must be firmly bound in a binder no larger than 11" x 17". Binders 9" x 12" or smaller are preferred.

9 Submissions must include illustrations and drawings necessary to a full understanding of the proposal—all legibly reproduced. No original drawings, actual models, or slides will be accepted.

10 Each submission must include a one-page synopsis, in English, on the first page inside the binder, summarizing the intent and principal features of the entry. Synopsis should take up economic, environmental, energy, and user need aspects of the proposal, as pertinent. Synopsis must conclude with a statement on why this submission deserves recognition.

11 Each submission must be accompanied by an entry form, to be found on this page. Reproductions of this form are acceptable. All four sections of the form must be filled out—using typewriter, please. Insert entire form, intact, into unsealed envelope attached inside back cover of submission.

12 For purposes of jury procedure only, projects are to be assigned by the entrant to a category on entry form. Please identify each entry as one of the following: Education (Higher), Education (Secondary), Education (Primary or Early Childhood), Housing (Single-family), Housing (Multiple-unit), Commercial, Governmental, Cultural, Recreational, Religious, Health, Planning and/or Urban Design, Applied Research. Mixed-use entries should be classified by the larger function. If unable to classify, enter Miscellaneous.

13 Entry fee of $20 must accompany each submission, inserted into unsealed envelope containing entry form (see 11 above). Make check or money order (no cash, please) payable to Progressive Architecture.

14 No identification of the entrant may appear on any part of the submission, except on entry form. Identifying titles may be concealed by any simple means. Client and location should be identified. For the sake of anonymity P/A will seal stub of entry form in envelope before judging.

15 Deadline for mailing is August 31, 1979. Address entries to: Awards Editor

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News report

Johnson-Oldenburg duet canceled

Claes Oldenburg throws paint on Philip Johnson's wall. What an artistic scenario—but it's too shocking for Houston. So, at least, Marshall Field & Co. seems to have thought, when the department store canceled plans for an Oldenburg sculpture on the façade of a new Marshall Field store, designed by Johnson/Burgee, in Houston's Galleria complex.

Oldenburg, who had been invited by Johnson as an exciting artistic partner (and/or opponent), designed a series of giant aluminum 'paint drops' to be mounted on the front façade. As Oldenburg explains, the forceful piece was "a counterstatement to the wall," a free, loose gesture in response to the architecture's clean geometry. The spots, in brilliant primary red, blue, and yellow, are each concave or convex, so that they relate to and oppose the smooth, intensely white curve of the shellstone wall. Oldenburg's work focuses on the sculptural, as distinct from the painterly, effect of paint drops; form and color smash across the pristine plane with three-dimensional impact.

The spot project evolved out of several earlier proposals of Oldenburg's involving thrown and dripped paint as sculpture. One such project was a scheme to cover the tiny islands in New York's Jamaica Bay with asphalt in nail-polish colors—hot pink, violet, magenta. An earlier series of blob sculptures from Oldenburg's "Store" on New York's Lower East Side was another early exploration of the themes of the Marshall Field project. Oldenburg looks at the latter as "zeroing in on" that earlier work, taking one drop off those blobs' freely colored surfaces and enlarging it. Johnson had also been interested in the Store pieces; in 1964 he had requested Oldenburg to mount some on the exterior of his New York World's Fair rotunda.

The problem to which the sculptor is returning in these "spot" works is that of creating structured expression of a free gesture. How do you make a spot—a shape which has no particular definition? Oldenburg discovered that his spots only became meaningful shapes in relation to the next spot: part of their essence as the result of a gesture is directionality. The spots for Johnson's façade, the selected and blown up results of several miles of dripped dripping, are placed so that each side of the wall reflects three gestures: red—lower left to upper right; yellow—the 'other diagonal'; and blue—down. When Marshall Field added the condition that the project be ready by November 1979 (too early to get all the spots up), Oldenburg solved the problem by making the installation itself an artistic event; a group of spots would be placed on the wall by November, followed by subsequent groups gradually intensifying the work.

Welcoming the opportunity for this interchange, Johnson altered the original design to emphasize the unbroken purity of the wall. Where the original design had called for a series of openings in the façade, Johnson/Burgee, at Oldenburg's suggestion, agreed to reduce the breaks in the surface to the huge central portal, a series of rectangular openings at the top of the façade (above the actual roof of the building), and a small row of rectangular windows lighting a restaurant at a lower level. Such formal aloofness would have made an admirable contrast to the loose vitality of Oldenburg's drop groupings. Alone, it will be an awfully blank white wall,
News report continued from page 23

and the monumental portal of bronze
aluminum, a cavern in this cliff, will read as
the entrance to a tomb.
Amen; a piece of deathly architecture is
an appropriately ironic memorial to such a
collaborative effort at unconventionality.
Perhaps some day enfant terrible,
Oldenburg and Johnson, will not only get it
together, but get it made.

Big Jim and Pardner get Rice job

What may well be the biggest little deal in
the U.S. was culminated in June when the
firm of James Stirling & Partner was re­
tained by Rice University, Houston, to
undertake what may prove to be their first
architectural commission completed in this
country. The project is hardly Texas-sized,
consisting of a remodeling to the existing
School of Architecture and an approxi­
mately 50 percent expansion of the pro­
gram spaces, a gain of only 15,000 sq ft.

However, the choice of the Stirling firm
was particularly appropriate to the specific
educational context, since the criteria for
selection recommended to the Rice Board
of Governors were that the architect be
distinguished in the profession, exhibit
strong skills in creating a new building in
an existing situation, and have some con­
nection with the University. Stirling’s part­
ner, Michael Wilford, has been a visiting
critic to the graduate professional program
for the past two years, and James Stirling
has lectured and guest-juried at the

School on several occasions. Associated
with the Stirling firm for this project is
Houston-based Ambrose & McEnany.

One of the major challenges involves
dealing with an existing building of fairly
undistinguished character which nonethe­
less occupies the heart of the central
campus quadrangle, a formal concept dat­
ing from the 1909 master plan proposed
by Cram, Goodhue & Ferguson. M.D. An­
derson Hall itself was originally designed
as a humanities classroom building but
since its completion in 1949 has been oc­
cupied in part by the School of Architec­
ture, which expanded to take the entire
facility by 1975. One objective of further
expansion at this time is to bring the physi­
fical facilities up to standards recom­
ended by the National Architectural Ac­
creditation Board.

Michael Wilford has outlined an initial
strategy to produce an ideal integrated so­
lution for the entire School, along precise
program guidelines proposed by a faculty
committee. In addition to the contextual
challenge, the small scale of the new facili­
ties and expressed budget constraints will
make up the balance of the design task.

Fund-raising efforts are underway for the
$2-million project, with a summer 1980
target date for the major initial work. For­
mal presentation of a design direction is
scheduled for September 1979 with the
beginning of fall semester classes.

[News report continued on page 28]
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Architectural exhibits of note

Roma Intermotta
Cooper-Hewitt Museum, New York
June 12 – August 12, 1979

Previously in Rome, Paris, and London, the exhibit will travel to Boston, Chicago, and other major cities on its international tour.

Drawing up his famous plan of Rome in 1748, Giambattista Nolli recognized and expressed the fundamental urbanity of this most subtle of cities, the characteristic which defines its complex order: the manner in which the public spaces of the city, both exterior (streets, piazzas, gardens) and interior (churches, ruins) are experienced as an ordered sequence of volumes defined by the masses of the intervening structures. Cutting through the city at eye level, Nolli rendered these public or unconstructed areas as open, while private buildings are shown as solid islands.

The Nolli map, thus, is both a record of Rome and of a way of perceiving the city. Since then, our perception of the experience of a city has changed. Modern maps of Rome—like those of other cities—mark major arteries and monuments, places and the direct ways between. This view reflects and makes for the interventions that have changed the appearance of Rome. Mussolini's scything wide roads, the walking Victor Emmanuel monument, vast housing projects along six-lane highways.

Sensed by Romans as a crisis, this shift in the definition of a city appears to have played a key role in developing the idea for "Roma Intermotta." Twelve architects interested in urban interventions were asked to make one in the fabric of Nolli's city. Unfortunately, the organization of the project was greatly flawed in that the allotted sections of the city were defined by the joints in the Nolli plan. These boundaries, dictated by the limitations of 18th-Century printing, bear no relation to the intricate order and organic patterns described by Nolli. To partition the city in this arbitrary fashion discourages meaningful comment on those patterns.

Six of the architects involved chose to redefine the topic according to their own concerns: Robert Venturi, Robert Krier, Aldo Rossi, and James Stirling responded with playful, if irrelevant, schemes; Piero Sartogo and Constantino Dardi with savage attacks on the existing city.

Venturi's quickie presentation of Learning from Las Vegas reduces the insights of that book to a meaningless collage. Robert Krier's reflections, Sant' Elia style, on the architectural elements of a city are profound as well as delightful. Aldo Rossi's proposal for a Bath, rendered in the marvelous surreal drawings that typify his work, is a fresh and witty exploration of the bathing establishment as a building type. Matching Rossi's lighthearted escapism with flamboyant egotism, James Stirling's project inserts his earlier works into the city as densely as possible.

Reflecting the Italians' love-hate relationship to their past, Piero Sartogo's Fourierian transformation of the Vatican ruthlessly attacks one of the greatest architectural stage sets of the world. Sartogo's violence, however, is modified by the amusing scenario he has written for this Utopia and by the abstract merits of some of the individual structures. Not so Constantino Dardi's interventions around the great trident of Piazza del Popolo, which combine outrageous mutilation of some of Rome's great arenas with boring architecture arrayed in depressing rigidity.

Leon Krier and Romaldo Giurgola attempted solutions applicable beyond the specific context of Roma Intermotta which, as a result, are inappropriate for Rome. Krier started off with the wrong map: the Imperial City, defined by monuments, as drawn by the tourist Marco Fabio Calvo. Caught between this map of monuments and an idealistic but un-Italian social hypothesis, Krier starts off criticizing centralized structures, but he ends up creating a series of them.

Based largely on a study for a section of Philadelphia, Giurgola's somewhat nostalgic scheme sensitively amplifies the strong points of the industrial grid. Although Giurgola shares Nolli's concern with the separation of public and private space, the solution is quite misplaced in Rome, ungridded city par excellence.

The remaining minority—Paolo Portoghesi, Michael Graves, Colin Rowe, and Antoine Grumbach—dealt seriously with the issues raised by Nolli's perception of Rome on its own terms, thereby producing solutions that, if examined closely, have lessons for other urban situations. In Portoghesi's case, however, the architectural result of the creative method derived from his musings on the topography of the city and the surrounding Campagna dominates nature rather than deriving from it. Michael Graves' scheme for the Porta Maggiore area, a densely intellectual scheme calling for several simultaneous visual readings, rivals any of the vast Roman parks or ruins in beauty and surpasses them in content. Colin Rowe's team produced a very delicate, carefully evolved, and suitably respectful project for the sacred Aventine Hill, with a fabulous tongue-in-cheek history as commentary.

Grumbach's project, imbued with a drier humor, attempts to grasp the special essence of Rome, its timelessness, its organic nature. Dealing with the city's time sequence as Nolli dealt with its spatial sequence, his project is (almost) as intellectually intriguing as its ostensible model.

Had all the architects made the effort that these four did to comprehend the delicate interdependencies of Rome, "Roma Intermotta" would have contained more food for thought. "Magari"—if only—a Roman would say.

[News report continued on page 32]
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| Perlite | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| Urethane | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
| Composites | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
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News report continued from page 28

Report from Atlanta

The Martin Luther King, Jr. Center for Social Change

Had he not been martyred eleven years ago, Martin Luther King, Jr. would have been 50 years old this year. His birthdate this January was acknowledged in his birthplace, Atlanta, Ga., as well as nationwide, with ceremony and circumstance: a commemorative stamp was issued; legislation was introduced in Congress to make the date a national holiday; streets were renamed and schools dedicated in memory of a great man. Next to his father’s church is a quieter tribute to a man who gave his life for a dream: Martin Luther King, Jr.’s tomb.

In King’s name a great deal of architectural and planning activity has been generated in the immediate vicinity of the tomb, next to Ebenezer Baptist Church on Auburn Ave. in Atlanta. King’s birthplace, one block east on “Sweet” Auburn, has been restored and is open to the public. An area covering several blocks, including Ebenezer Baptist and King’s birthplace, was declared a National Historic District. On the other side of Auburn Ave., a Recreation Center, an indoor pool, and housing for the elderly have all been built as tribute to his memory. The significance of these facilities lies more in their reason for existence than in their merits as planning or architecture.

One work that stands out from the rest is a vaulted arcade by Bond Ryder Associates of New York that frames the paradoxically conventional tomb. Max Bond, former executive director of A.R.C.H. (Architects Renewal Committee in Harlem) and architect of the Regional Library in Bolgatanga, Ghana, has brought a quiet dignity to a place that had been marked by a ragged picket fence, sun-faded plastic flowers, and wilted wreaths.

The setting of King’s Memorial is strikingly similar to Mahatma Gandhi’s Rajghat in New Delhi by M.M. Rani. Both places consist of an open court surrounded by a low wall of vaulted forms, a space separated from but visible to the everyday world. Each court focuses on a memorial to the martyrs that accords with their respective religious precepts. The architectural differences between the two spaces, however, reflect intrinsically different cultural attitudes toward reverence for these dead. A stone slab, the Samadhi, marks the place where Gandhi was cremated. A massive white marble sarcophagus contains the mummified remains of King. The Rajghat can be approached by quiet gravel paths. The tomb, on a circular island in a shallow but sizable reflecting pool, maintains a respectable distance from viewers either walking into the court or driving down Auburn Ave.

While Gandhi’s goals were not all fulfilled, the strength of his ideas and a space where one may reflect upon them appears to be all that is required for his memory. In an age of intense media coverage and a forgetful public, the memory of Martin Luther King, Jr.’s “Dream” is going to be kept alive through a great deal more than quiet reflections near his shrine.

What can now be seen is the first of a two-phase project for the Martin Luther King, Jr. Center for Social Change. Along with the vaulted colonnade and reflecting pool, this first phase, dedicated in January, 1977, includes the double-vaulted Interfaith Peace Chapel. The second phase includes a Conference Center and an Archives Building. Full funding has been realized for the second phase, and contract documents have been completed; construction will begin in the not-too-distant future.

The Center complex will contain quite a few activities and by its size could outscale the surrounding structures. The barrel-vaulted theme established by the first phase and carried into the architecture of the second phase will do a great deal to keep the scale of the project more consistent with the residential and light commercial architecture of its setting.

The massing of the forms will create a play of solids and voids with the existing Ebenezer Baptist Church. The reflecting pool and courtyard will be bordered on three sides allowing a view of the Tomb through several orderly rows of trees. All of this will make for a carefully executed design for a monument to be experienced at many different scales of movement and perception.

The architectural activity, both average and outstanding, that has been generated by the Martin Luther King, Jr. Center for Social Change may not reflect the same kind of reflective tranquility achieved by Gandhi’s Rajghat on its site along the Jamna River in New Delhi. The setting for this monument to Martin Luther King, Jr. along Auburn Ave. in Atlanta is one that will make a very positive impact upon Atlanta’s urban environment. In a section of the city that can boast little strong economic growth or wealth, the Center has already done a great deal and plans to do a great deal more to make not only social but also economic changes along “Sweet” Auburn, the street that once flourished as the heart of Black Capitalism in America.

[Jon Carlsen]
[News report continued on page 40]
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Japan in Aspen:
Culture makes design

Some 1800 architects, planners, art directors, graphic, industrial, and interior designers, and the curious gathered for the International Design Conference in Aspen, June 17–20 to explore Japanese design and, of course, to enjoy the scenery and to socialize.

The premise of the conference was that to understand Japanese design, an awareness of the culture which originates that distinctive design was needed. Informative presentations were made on basic cultural concepts—including "kome" (rice culture), "en" (relationships), "ai" (expression of love), "kata" (principles of form), and "ringi" (consensus decisions). Also explored were the concepts of "shinkansen" (time), "tatemai" (sense of scale), "bonsai" (control of nature), "ne" (between noise and music), "sakou" (semi-privacy), "akinai" (private enterprise), and "ke" (the atmosphere of design).

Among the principal speakers was Noboru Kawazoe, architect, author, and critic, who contended that design in Japan had moved from a naturalistic basis to a present populism, much as in the U.S. James Polshek, dean of the Graduate School of Architecture and Planning at Columbia University, urged designers not to turn to Japan for the obscure and elite, but to learn from that country’s sense of principles and discipline.

Perhaps the most besieged speaker was Michael Pittas, the new director of the design arts program of the National Endowment for the Arts, who discussed how individuals and nonprofit organizations might apply for the program’s $4 million in grants awarded each year. Conference members, some with actual applications in hand, crowded around him after the speech and during later social events.

Unfortunately, a few of the speakers based their presentations on the formula that the further they had to travel to the conference, the longer they should speak—under the theory that length equals depth. It does not.

The conference drew the largest registration since Aspen Design Conferences began in 1951. "Certainly the topic was a factor. But, of course, so was Aspen," said Louis Dorfsman, who chaired the conference program, along with Kisho Kurokawa. Dorfsman is a designer with CBS, Kurokawa one of Japan’s leading architects.

The theme of next year’s conference will be form in its various manifestations, with Moshe Safdie, the Israeli architect, as chairman. Few persons heard the announcement at the closing session. Most were outside under a bright sun participating in the traditional conference ending: exchanging business cards. [Sam Kaplan]

Sam Kaplan is on the staff of the L.A. Times.

Cool design for Dayton’s River

A marvelous bit of frosting on what promises to be a top-notch cake, this portable floating garden fountain, designed by architect Stephen J. Carter of the Dayton firm of Lorenz & Williams, was initially conceived in 1975 by a design team consisting of Carter, Charles Moore, and J.P. Chadwick Floyd (the latter two of the Connecticut architectural firm of Moore Grover Harper) as an initial and highly visible step in the Riverdesign Dayton Planning Project, for Dayton, Oh, which won a P/A design award in 1977 (P/A, Jan. 1977, p. 84). Launched late last summer, the fountain, which the architects describe as "reminiscent in its own way of the Shalimar Gardens of Kashmir," floats in the Miami River between two major interstate north-south arteries, so that it visually refreshes not only Dayton residents but passersby.

The floating garden, accessible from the riverbanks by rowboat, consists of three linked pavilions, under which are benches and flower beds, and a fountain, all floating on pontoons. The fountain is powered by a simple windmill, which draws river water up into a tank. From here the water flows down through a system of troughs, spouts, and nozzles, watering the beds of flowers, and eventually running back into the river. Funded by the local Kiwanis Club, this project was constructed by volunteers from a large section of the community (ranging from the City Beautiful Council to Sofco Heavy Movers).

Riverdesign Dayton, an urban design scheme intended to integrate with the city the 4.5 miles of the Miami River that flows through Dayton by exploiting the river’s potential for the development of the central business district and residential neighborhoods on the north and west sides of the river, was formally begun in 1972, with the
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selection of Moore Grover Harper and Lorenz Williams (then Lorenz Williams Lively Likens & Partners) as architects for the scheme.

The study and design, currently being implemented in phases, are the latest and most thoroughgoing of the community’s efforts to improve the Great Miami River Corridor. As the fountain’s story shows, citizen participation has played a key role throughout the design process and implementation. In the initial analysis phase, response from the community was generated and gathered through a storefront Riverdesign office in downtown Dayton’s historic Gibbons Arcade; through TV shows inviting viewer participation; and through the formation of a Riverdesign Panel, which worked extensively with the architects on defining issues and goals and provided feedback on architectural solutions and proposals.

What emerged was a series of zoned areas (six in all) along the river, defined in terms of perceived clusters of existing or desired activities. Overall concerns were: accessibility to the river, security and maintenance on the waterfront, the continuity of the riverfront experience, connection of the river to public transport, more waterfront housing downtown, adequate parking, the creation of a special image, and, of course, feasibility.

Next, certain key proposals were selected and designed for immediate implementation. It became clear that Daytowners wanted, rather naturally, to see the most visible and public projects—such as the fountain—accomplished first. An order of priority and a strategy for the implementation of the longer-range elements of Riverdesign should assure that the project will continue to become a reality.

**Beneficial blight of St. Louis**

Truisms: (a) Any progressive American city would wrathfully protest an allegation that its business core is blighted. (b) Any city would see nomination of a large proportion of its core buildings to the National Register of Historic Places as material for promotional use.

In St. Louis, not true. For seven years the St. Louis downtown has been a formally designated blighted district, with concurrence of the managerial establishment. Now business interests are vigorously contesting the proposed nomination of 66 downtown buildings to the National Register. In St. Louis, developers want blight.

Back in the olden days of urban renewal, the Missouri Legislature passed a law to give redevelopers eminent domain and tax incentives to replace slums with new construction—Chapter 353 of the Missouri Urban Redevelopment Corporations Law. It requires declaration of blight as a prerequisite for eminent domain.

[News report continued on page 46]
drama in stone

St. Margaret Mary Parish, Milwaukee, Wisconsin

This is a superb example of the use of natural stone in contemporary exterior and interior design. Stone creates surface interest allowing an architectural play of light and shadow. Aesthetically pleasing, stone is cost competitive and maintenance free. Combining economy and ease of installation, natural stone emerges into an architecture that is solidly constructed, tightly engineered and responsive to the energy crisis. These are the hallmarks of this architectural design of truth, tranquility and strength.

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News report continued from page 42

The 353 process was applied site by site for several years. After 1980, major downtown construction was done under this law—the Busch Memorial Stadium complex, an apartment cluster, several office buildings. Then, in 1972, after a billion dollars or so had been invested in putting new life in downtown, and the sun was glinting off new aluminum and glass on the skyline, the Board of Aldermen, at the behest of downtown interests, enacted an ordinance that declared the entire downtown a blighted district, simplifying procedures for future redevelopment anywhere in the core.

Some onlookers thought the blight designation was puzzling, PR-wise, because it seemed to be announcing to the world that downtown St. Louis was some sort of slum, even though most of it consists of physically sound buildings by eminent architects, and any number of 20th-Century parking lots where 19th-Century buildings once stood. (The newest parking lot is bordered with iron window grilles torn from the building that had stood there—a monument to both eras.) But eminent domain and tax incentives have it all over PR on the bottom line.

As a result of downtown redevelopment, St. Louis has gained employment and tax revenues. Redeveloped properties make "in lieu" payments equal to the taxes before development, and levies on earnings and business personal property have increased. So if you're a visiting critic, don't go home and confuse your readers by writing that we're blighted here. OK, we say it, but only on Chapter 353 applications.

St. Louis' blight has proved less beneficial to the cause of preservation, however. Under the blight umbrella, ten buildings eligible for the National Register vanished in expedited weekend hits. The Landmarks Association of St. Louis, which had begun an architectural survey of the core in 1975 only to see the ten buildings disappear before their eyes, prepared a roster of 66 buildings for multiple resource nomination, the new preservation umbrella process that enables a large number of buildings to be enrolled on the Register without the exhaustive detail required for an individual site. Downtown St. Louis Inc., a developers' organization dedicated to making the core a better place in which to thrive, urged that economic feasibility be included in National Register criteria, freeing the development-minded owner of an architecturally and historically important building from preservationist constraints.

Landmarks argues that its efforts to recycle worthy historic buildings is consistent with the aim of Downtown Inc. to make the core attractive to more office workers. They cite the rejuvenated riverfront, Laclede's Landing, whose steep streets have been cleared of asphalt to expose old cobblestones. A six-story tobacco warehouse with a multistory iron front, in Laclede's Landing, has been transformed for $2.2 million into a center of showrooms and offices competitive with new facilities in design and rent structure. One end of it will be the executive offices of the Bi-State Development Agency, which operates the region's street transit system.

The city's two other multistory iron fronts are currently on the brink: an old wreck now called the Dollar Store, on a half-block of lower Washington Avenue, and the adjoining Ackley Building, both faced with five stories of Renaissance iron. Both have street-level shops behind stolid signs, and scruffy loft spaces up above. For the present, there is a moratorium on demolition or renovation of any of the 66 buildings until a study of the economic impact of Register designation can be carried out late this year. The city will conduct and finance the study, and meantime, owners of individual buildings are free to pursue landmark status if they wish.

[George McCue]
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Comparative U values.

<table>
<thead>
<tr>
<th>Roof System</th>
<th>Calculated U value</th>
<th>Butler tested U value</th>
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<tbody>
<tr>
<td>1. Built-up roof with metal deck</td>
<td>2&quot; insulation .15</td>
<td>*</td>
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<tr>
<td></td>
<td>4&quot; insulation .07</td>
<td>*</td>
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<tr>
<td>2. Industry standard metal roof</td>
<td>2&quot; insulation .12</td>
<td>.19</td>
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<td></td>
<td>4&quot; insulation .06</td>
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<td>4&quot; insulation .06</td>
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<td></td>
<td>6&quot; insulation .04</td>
<td>.07</td>
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* No tested U values available.

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Butler Manufacturing Company
Energy update

Model solar homes developed for builders
Taking their cue from DOE, the solar industry is pushing for the adoption of solar technology in tract-builders' designs. Two model houses designed by the Ehrenkrantz Group, a New York architectural and engineering firm specializing in energy-conserving demonstration and evaluation projects, incorporate active and passive solar systems in market-rate designs suitable for construction anywhere in the northeastern U.S. The houses were drawn up for Exxon Enterprises, Inc., a division of which, Solar Thermal Systems, markets Exxon's Daystar solar collectors.

The commission was to design a $50,000 three-bedroom house and a $100,000 four-bedroom house, similar in size and amenities to houses in that price range on the market, using the most cost-effective solar devices. Ehrenkrantz quickly arrived at one fundamental conclusion—which probably doesn't delight Exxon—passive marketable elements are very cost-effective, active ones not.

Both houses are contained in a minimum two-story building envelope. Living areas are placed on the south, and the garage on the north, but the floor plan is devised so it can be rotated or flipped to allow for various orientations of the lots.

Windows are oriented to the south, with overhangs that allow low-angled winter sun to penetrate for direct gain, but protect the glass from summer sun. Interior shutters on the double-glazing reduce heat loss at night. There are no openings on the north side, and the northeast and west sides are sheltered by plantings.

One of Exxon's primary objectives was to test their new ASIS collector system, a combination of collectors and heat pump, before trying to market houses and heating to builders. The innovative collectors are particularly suitable for cold climates in that they allow the heat pump to be efficient at lower temperatures. In the demonstration houses, Daystar collectors on the south-facing glass wall, are filled with water and hot water heat is furnished through solar collector systems, and five retrofits with active solar space and/or hot water heating. Solar-heated asphalt emulsion tanks are another suggestion.

Although the projects are supposed to be cost-effective, the only functioning example, a 1060-sq-ft tourist information center in Lake Village, Ar, designed by Hall-Burle, Ltd., Arkansas architects and engineers, cost a staggering $400,000. Any energy costs saved by the center will be far exceeded by the energy costs expended by cars of tourists visiting it.

Rather than develop better systems of public transport, DOE encourages the national energy-wasting dependence of cars. Solar-heated rest stops (with energy-wasting flush toilets) will stimulate at best a passing interest. This is solar tokenism.

Solar awareness at 60 mph
One of the most hypocritical case studies in current solar faddism is the joint demonstration program of the Federal Highway Administration with DOE to encourage solar thermal systems for highway-related uses. The FHA is offering funds and technical assistance to state transportation agencies for pilot projects using active solar systems for space and/or liquid heating. A few proposals announced last November, none of which is yet definite, include three new rest areas whose space and hot water heat is furnished through solar collector systems, and five retrofits with active solar space and/or hot water heating. Solar-heated asphalt emulsion tanks are another suggestion.

Although the projects are supposed to be cost-effective, the only functioning example, a 1060-sq-ft tourist information center in Lake Village, Ar, designed by Hall-Burle, Ltd., Arkansas architects and engineers, cost a staggering $400,000. Any energy costs saved by the center will be far exceeded by the energy costs expended by cars of tourists visiting it.

Rather than develop better systems of public transport, DOE encourages the national energy-wasting dependence of cars. Solar-heated rest stops (with energy-wasting flush toilets) will stimulate at best a passing interest. This is solar tokenism.

Automatic awnings save energy
A form of solar screening has been applied to the new classroom/laboratory building of the British Columbia Institute of Technology, Canada. Rhone & Iredale Architects of Vancouver designed the building and the automatic awning system, which is activated by a solar cell device and an anemometer. The building is designed with corridors along the outer walls, forming a temperature "buffer zone" that reduces demands on mechanical HVAC. The awning's polyvinyl glass-fiber fabric contributes to energy conservation.

New waterwall module design
A new fiberglass waterwall module has been developed by One Design, Inc. of Winchester, Va. The glass-reinforced polyester modules, stacked behind a south-facing glass wall, are filled with water. The black, water-filled modules work like a "Trombe wall," absorbing solar heat. The glass contains the reradiated heat for space heating. Prior designs were tubular or cylindrical containers which can leave waste spaces when stacked or nested.

[News: Eleni Constantine except as noted.]
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Introduction: World Savings & Loan Association branch banks

The World on a string

In one of the most ambitious programs of architectural patronage in the U.S., a West Coast banking institution has commissioned branch banks by almost every young California firm of note.

The small branch bank might well be considered a representative American building type. For if the type did not actually originate in this country (there were, of course, local branches of the great national banks in provincial cities in Europe), then it must be conceded that the small bank achieved its highest expression here. Starting in the last century on the Eastern seaboard during the first years of the Republic, and reaching a dazzling culmination in the first years of this century in Louis Sullivan's remarkable sequence of banks in the Midwest, the development of the small American bank has been significant as much as the mere emergence of a typology.

In many communities in this country, even to this day, the bank remains the single most important public structure. People might go to this or that church on Sunday, but in some places during the week they all go to one bank. Frequently occupying a site of commanding presence, and often possessing architectural details of uncommon articulation, the small bank is often (architecturally speaking) the only game in town. Therefore, the traditional importance that banks have been accorded inevitably comes to mind as one surveys the current state of the building type. This is particularly true in California (especially Southern California), which seems to have about as many small banks as it does fast-food restaurants. The major boulevards of Los Angeles are lined with one branch bank after another. But rather than standing out from the other low-rise buildings, these banks vie with one another (and with the fast-food restau-

rants) in a cacophony of ersatz styles that ultimately deadens the visual sense.

Some banking institutions, however, have made serious attempts to enhance the quality of the built environment. The Home Savings & Loan Association, for example, has devised a program of applied art—mosaic, ceramic tile, stained glass, and sculpture—for the embellishment of its branch banks around Los Angeles. Though the results are often a bizarre mixture of WPA earnestness and greeting-card sentimentality, the Home Savings banks are in the end almost wonderful, saved by their obvious sincerity.

By far the most distinguished effort to sponsor first-rate bank architecture in the United States over the past few years has been that of the World Savings & Loan Association. One of the largest banking institutions on the West Coast, World Savings merged with Golden West Savings & Loan in 1975. There are now 101 World Savings branches in California (and another 30 in Colorado), many of which have been designed by the talented young architects who are at the heart of World Savings' unique program.

Under the guidance of architect William Turnbull, who serves as architectural advisor to World Savings, the bank has commissioned a large number of diversely talented young California architects. Rather than creating a unified "look" like so many other banks that are the same from San Diego to Eureka, the World Savings approach has brought forth designs that are similar only in their rather high level of quality. The benefits of that individualized method should be obvious to any architect, since the independent design of each branch allows for specialized responses to site, setting, and climate in a large and diverse state, where such conditions vary drastically. Yet how rarely has it actually been done in bank design there (or elsewhere), with the more usual mass-produced design schemes resulting in the gross incongruities that prevail not only in California, but all across the country, too.

The four World Savings banks discussed on the following dozen pages were chosen to represent a mixture of solutions to a variety of situations. The Santa Ana branch (p. 54) succeeds in establishing a strong sense of identity amidst the asphalt moonscape of a vast shopping center parking lot. The Santa Cruz branch (p. 58) no less successfully responds to the requirement for a contextual scheme on a highly sensitive site in a community deeply concerned about its visual environment. The Palo Alto branch (p. 62) was a temporary interior design solution, while the downtown San Francisco branch (p. 64) occupies part of a renovated landmark structure. Each bank shown here illustrates concerns facing architects working not just on banks, but in all building types. But in a more general sense still, the World Savings story is a heartening one: for the determination that institution has had in getting—and often receiving—some of the best design available today.

[Martin Filler]
Small wonder

A welcome sense of presence is created by Kamnitzer Cotton Vreeland's bank for a shopping center parking lot, which puts some much-needed "there" there.

The Los Angeles firm of Kamnitzer Cotton Vreeland had been commissioned to design a World Savings bank branch for a large shopping center parking lot in Santa Ana, quite close to the San Diego Freeway. The project's design principal, Thomas R. Vreeland, is no stranger to stringent contextual requirements. He can move with equal ease between projects as diverse as an addition for the Santa Barbara Museum of Art and a shopping arcade for Rodeo Drive in Beverly Hills, each with a diverse and fitting evocation and distillation of its place. His response to the Santa Ana commission was not so out of place as it might seem on the basis of the results.

Driving down the broad boulevard that connects with the freeway, one finds that the small striped box of the World Savings
bank comes as more than a small surprise to eyes inured to anything except another roadside grotesquerie. Topless Pizza Dog, yes. Disco Mortuary, 6 Months to Pay, yes. First Church of Transcendental Kung-fu, yes. But fine architectural design, never. But there it is, in clear and vivid counterpoint to the visual noise around it, piercing through the static not by volume but by pitch. For although this is not a self-effacing building, it is a small one, unable to compete with the sprawling, low-rise structures nearby in terms of size. Other assertive measures were needed, and the ones Vreeland came up with have proved to be especially effective.

First, the designer decided to maintain the strong orthogonal outline of the building's volume, a simple decision, but not all that common, as witness the mansards and parabolas and hipped roofs around it. The gray and white striped tile exterior further emphasizes the structure's form, and makes it legible from quite a surprising distance, without resort to neon. The striped exterior unnerve d a great many people at first, including the lessor of the site (the adjacent J.C. Penney store), who felt that the original tile color combination (stripes of beige and Prussian blue) were too garish. To put it mildly, this is architectural irony of the highest order. Not at any point did Vreeland's scheme ever approach the totally debased aesthetic of its surroundings, and in fact the use of contrasting horizontal striping is one of venerable architectural precedent.

The device stems from the Arabic tradition, whence it was transmitted to Spanish architecture during the Middle Ages, and thence at last to California. Closer to our own time, the striping suggests the famous unexecuted design the Viennese architect Adolf Loos proposed in 1928 for the house of Josephine Baker in Paris. But the use of the tile needs no historic rationale. It seems cool and inviting under the blazing
noonday sun, and works beautifully with the rest of the design to combine in a scheme of simplicity and coherence. All four façades of the building seem alike, but in reality are actually all different. Each wall plane is pierced at ground level with a large oblong opening, leading on the south and east sides to a staggered setback under the second floor that likewise holds the orthogonal geometry intact. The ground-level openings on the north and west elevations are filled with green plants, while in the shaded entrance vestibule, palm trees in square tubs recombine the geometric and tropic associations. Entering the bank through glass doors, one first notices the large square light well at the center of the space. (The second floor offices here surround, but do not look out into, this central well.) Beneath the skylight, on the ground floor is a circular fountain, which suffers by comparison to the rest of the building both in design and execution. It is understandable in geometric conception, but less so in position, sitting smack in the middle of a major circulation path, making it necessary to skirt it on one’s way to the tellers’ area. One wonders whether customers are encouraged to toss their spare change into it.
But the general impression of this main banking room is a very good one, especially as one looks out to the parking field surrounding it. The cool and open atmosphere of this interior—accentuated by the predominantly blue color scheme, the large window walls, and the gray and white tile brought in around the corners from the exterior—makes it feel like a desert oasis, a cool and restful encampment out of the reach of the relentless Southern California sun. The second floor of the building is not much to speak of: an external enfilade of offices that surrounds the blind central light well to the floor below. These upper offices are furnished in a sparse and utilitarian manner, and clearly the architect’s help in improving these rooms was not enlisted here. Although that seems a pity, one must be grateful for small things.

There are clues here, too, to Vreeland’s former association with the late Louis Kahn, with whom he studied at the University of Pennsylvania. Like any good Kahn disciple, Vreeland has separated “served” and “servant” spaces, pushing employee areas, elevator and stairway, and other functions into the “towers” at each corner of the building. In plan, too, this small bank shows some of Kahn’s influence: formal and conceptual, with a perceived symmetry that is played off against an asymmetrical reality. But whatever the resemblances, it is original enough and good enough to make such similarities explanatory, not derogatory.

Although small in size, this bank seems like no small accomplishment when viewed in contrast to its neighbors. To find a building of real architectural interest in this setting is about as astonishing as finding a three-star auberge amidst the plethora of junk-food vendors. Obviously, quality can be achieved in built work of any scale, and it is good to be reminded of that where one might least expect to find it.

[Martin Filler]

Data
Project: World Savings & Loan Association branch office, Santa Ana, Ca.
Architect: Kamnitzer Cotton Vreeland. Thomas R. Vreeland, partner in charge; Henry Thomas, job captain; Peter Stazicker, field supervisor.
Site: parking lot in suburban shopping center.
Program: two-story branch bank with 3400-sq-ft banking floor and 5400-sq-ft office floor.
Structural system: wood and steel frame.
Major materials: glazed ceramic tile exterior walls, tile and gypsum board interior walls, carpeted floors, skylight ceiling (see Building materials, p. 120).
Mechanical system: standard HVAC.
Consultants: Brian Cochran, structural; Miles N. Suda, HVAC; Kaz Horiuchi, plumbing; Ericksson, Peters & Thomas, landscape.
Costs: withheld at request of client.
Photography: Tim Street-Porter.
Esherick Homsey Dodge & Davis designs a thoughtful replacement for an old landmark structure, showing that good new architecture can well achieve what is feared might be lost with the old.

Landmark preservation is abroad in the land, not only in our big cities, but in our smaller ones as well. One of the major motivations behind this movement might well be rooted in the general public's antipathy to modern architecture. Although modern architecture has been widely accepted (beyond most people's recognition of that fact), some people fear that whatever is built today is almost certain to be worse than what it replaces. And they may be right—in most cases. For the destruction of a good old building almost always presupposes an attitude that places private profit ahead of the public good. In such instances, it is virtually certain that the design quality of the new building has been given less attention than its cost-efficient potential, almost guaranteeing results that justify the public's less-than-paranoid suspicions. But it need not always be that way.

In a small Northern California coastal city, it seemed to concerned citizens that such an architectural disaster was about to happen. A group of three wooden Victorian storefronts built in 1886–7—the last of their kind in town—had been bought by the World Savings & Loan Association for demolition to provide the site for its new Santa Cruz branch office. In recent years Santa Cruz has gone through a noteworthy physical transformation, anchored by the redevelopment of its main downtown shopping street into a pedestrian mall of considerable liveliness and charm. Though not a project of large scale or even of particular originality, the Pacific Garden Mall succeeds so well because people have been made the real focus of the planning. Thus to have the nostalgic buildings at one end of the mall destroyed—only to be replaced by Who Knows What—seemed to many people in Santa Cruz to be a wanton, even antisocial, act.

Forces were mobilized, petitions circulated, and legal proceedings initiated against the bank in an attempt to halt the demolition of the three structures. (Shortly before their purchase by the bank, they had been added to the National Register of Historic Places, only the second group of buildings in Santa Cruz to be so designated.) But the opponents of the bank's plan lost their court case, and could not afford the costly appeal procedure that was their only judicial recourse. However, their defeat was not abject: they had won an important concession from the bank, which agreed to scrap the original design scheme, and to build instead a structure more sympathetic to its surroundings and local traditions.

The original design, by the San Francisco firm of Esherick Homsey Dodge & Davis, was felt by many to be inappropriate to Santa Cruz: its high shed roof was seen as a break with the surrounding scale, and the projected glass façade along Pacific Ave. was likewise thought to be an insensitive intrusion on the wood and brick context created by most buildings along the mall. Interestingly enough, no one saw the snazzy little 1930s Streamlined Moderne storefront directly adjacent to the site, or the 1950s Horrendo Modern commercial structures further down the block, as part of the "context." Not unlike a number of other California communities, Santa Cruz has sought to remake itself in its own self-created image, in this case a kind of vaguely Counterculture Woodsy Eclectic. But be that as it may, the Esherick office devised a new proposal, and on August 20, 1974, the three landmark buildings were torn down, an emotional culmination to the three-year preservation struggle. (The whole story is told in concise and fascinating detail in The Sidewalk Companion to Santa Cruz Architecture, by John Chase, Paper Vision Press, Santa Cruz, 1979.)

Not surprisingly, the efforts to save the landmark structures left many people irrevocably soured on whatever was to be built on the corner of Pacific and Mission. Yet the truth of the matter is that the demolished Victorian stores were hardly high points in the history of architectural design. They were nice enough, but were worthy of
notice not so much for their inherent aesthetic quality, but more for the mere fact of their survival. Thus the challenge the new architects faced in replacing them with something of at least equal value was not so disproportionately stacked as it often is in so many similar redevelopment schemes. In reaction to the bank battle, the city of Santa Cruz enacted, and now enforces, new ordinances which rather closely delimit the exterior design of buildings, and therefore it is remarkable that the results were as good as they are.

Clearly, the architects of this new building meant for it to be visually recessive, and thus took care to reduce its impact on its obviously sensitive location. They had two main tasks: first, to cut the perceptual bulk of the relatively large structure, and second, to accommodate it to the oddly shaped corner lot. In accord with both aims, the designers angled the exterior walls to reduce the sense of one single structure, a stratagem aided by the use of several different materials. On the Pacific Ave. façade, a small separate rental unit adjacent to the main bank entrance is clad in brick, while a wooden latticework trellis wraps its way around the rest of the building. One story high, the trellises conceal large plate glass windows beneath banks of luxuriant vines. (The trellises are one rare area of public consensus, for even those who dislike the building like the greenery, hoping that someday the lush growth will entirely conceal the building.)

The concrete exterior walls of the World Savings bank are painted a rich, warm terra-cotta color, further linking it to Western American architectural traditions, though perhaps more to the pueblos of New Mexico than to the specific traditions of the contiguous Bay Area style. In any event the results are quite pleasing, though predictably the local reactions were not: the town newspaper epithetically characterized it as resembling a squashed

Exterior of Santa Cruz branch (above) attempts to blend in with scale of surrounding buildings.

Trellis—now covered with vines—frames main entry (above) and wraps around building (below).
pumpkin. But what were they expecting, Cinderella’s coach?

As one moves inside, a startling transformation occurs. One expects a low-ceilinged, warm and woody interior, but finds instead a space of soaring height, dazzling light, and crisp, hard-edged definition. Here the reductive tricks of the bank’s exterior are cast off, and the space is developed without apology or restraint. The Esherick firm’s well-known (and often imitated) way with skylights and clerestories adds significantly to the definition of the irregularly shaped, two-story-high space. Tapering fingers of sunlight stream down into the large, open banking room, intensifying the clear, bright tones of the carpet and upholstery, made all the more brilliant in contrast to the white walls.

Suspended, beam-shaped light fixtures reemphasize the angled perimeter of the space, and serve, baldachino-like, to create a more human sense of scale within the larger volume. A stairway leading to the second-floor loan department and private offices is likewise lit to underscore its sculptural qualities, and combines with the other aforementioned interior features to give the Santa Cruz World Savings branch a quiet grandeur not often seen in bank design today, let alone in a region which seems to require a certain studied informality. Esherick Homsey Dodge & Davis has provided that town with one of its better pieces of public architecture, and after all is done it might be said that a happy ending has been won at last. [Martin Filler]

Data

Project: Santa Cruz branch office, World Savings & Loan Association, Santa Cruz, Ca.
Architects: Esherick Homsey Dodge & Davis. George Homsey, principal in charge.
Site: corner at end of downtown shopping street mall in small Northern California city.
Program: branch bank plus rental space with separate access.
Structural system: four-hour concrete and block walls, structural steel frame supporting metal stud exterior walls.
Major materials: reinforced concrete pier and beam foundation, concrete and plywood walls, carpet and resilient tile floors, gypsum board ceilings (see Building materials, p. 120).
Mechanical system: duct heaters, air-conditioning system balancing.
Consultants: Miles Suda, mechanical; Rutherford & Chekene, structural; Thayer D. Hall, electrical; Richard Vignolo, landscape.
General contractor: Bogard Construction, Inc.
Costs: withheld at request of client.
Photography: Rob Super.

Main banking room (left and above left) is lit by skylights and clerestory windows, an Esherick trademark that creates dramatic effects on high wall planes (opposite page).
Short-term savings account

Daniel Solomon’s interior design for a temporary Bay Area bank shows how color and inexpensive materials can be used with skill and imagination.

Banks are meant, most people would agree, to convey a feeling of permanence and solidity. That such qualities can be in concert with modern design of the first order has been demonstrated for some time now: Howe & Lescaze’s landmark PSFS building of 1931–2 in Philadelphia and Skidmore, Owings & Merrill’s Manufacturer’s Hanover Trust Co. branch of 1954 in New York were only two of the important breaks with the tradition that had us believe that bank architecture must resemble an impenetrable, classicizing stone fortress in order to accord with people’s ideas of what a bank should be. But even if a branch bank is meant to exist for a limited span of time—as was the Palo Alto office of the World Savings & Loan Association—can it share in the attributes of quality and order that are desirable, if not essential, requirements in any banking institution’s public image?

Daniel Solomon’s scheme for World Savings was an excellent demonstration for the affirmative. It was known when he was hired to redesign the 10,000-sq-ft space in an existing office building that the non-renewable lease had a maximum limit of five years. Thus, the architect’s solution had to be a definitely low-budget one. Accordingly, Solomon decided not to touch the existing shell, but rather inserted a gypsum board layer into it in order to create at least the illusion of a strong design imposition. This he further underscored by means of a deeply saturated color scheme: the gypsum board walls and carpet a rich red, coupon booths covered with a bright yellow patent vinyl, and a forest green backdrop for a small waiting area. The color was cleverly employed to draw the eye into the L-shaped space, and to create a sense of spatial interest without recourse to the structural means the architect forswore in his original conception.

Now that the Palo Alto branch has already been dismantled, what is Solomon’s judgment on its success as a design? Refreshingly candid, the architect observes, “I think our branch as well as others that I have seen suffer from the same difficulty: too much space and too little program—not enough life to inhabit all that vacant Good Design.” To be sure, this is a large space relative to the volume of activity it was planned for: three tellers and several loan officers could have done their work in a much smaller area. But in a way the open, empty expanses seem appropriate to the color minimalism and the superscale application of pigment that seem even in retrospect to have been the best resolution of the design problem at hand.

No doubt there will be more demand in our increasingly mobile society for interiors such as this one, especially in building types where the aura of transience (once an unthinkable characteristic for a bank) might become even more acceptable. What Daniel Solomon’s interesting scheme for World Savings suggests is how such temporary schemes can be worked out with skill and simplicity, proving that to build well one need not necessarily build for the ages. [Martin Filler]

Data
Architect: Daniel Solomon, AIA. Phoebe Wall, project associate.
Program: temporary branch bank interior for 10,000-sq-ft shell in existing office building.
Major materials: gypsum board walls, carpeted floors (see Building materials, p. 120).
Contractor: C.M. Peletz Co.
Cost: Withheld at request of client.
Photography: Joshua Freiwald.

Gypsum board shell was inserted into perimeter of existing space (opposite page) to create visual interest at less expense than structural change would have incurred.
One of the few remaining old buildings on the lower eastern end of Market St. in downtown San Francisco is an eight-story masonry structure that was built sometime between the disastrous earthquake of 1906 and America's entry into World War I. When called upon to remodel the ground floor of this rather unspectacular commercial structure for a branch office of the World Savings & Loan Association, William Turnbull (who also acts as architectural advisor to the bank) found himself faced with a situation much easier to deal with than in those cases where a truly distinguished landmark is involved. But Turnbull still wanted to impose his architectural point of view on the project, within the limited budget and the structural constraints of the existing building. The physical limitations consisted primarily of the structural members that rather densely punctuated the gutted street-level space Turnbull began with, prohibiting the kind of freedom he characteristically takes with the manipulation of interior space in his start-from-scratch commissions. Remarkably, though, he has managed to suggest the layering of space in this project.

The architect's main design device here was to link the structural columns of the ground floor by means of a screen of his hallmark chamfered arches. Essentially a gypsum board construct around the columns, painted bright yellow in sharp contrast to the white exterior walls of the main banking area, this arcade screen becomes a strong lateral framing element in the space, the support members (and programmatic requirements) of which predicated against a more elaborate treatment. Furnishings at the Market St. office—as they invariably have been in all
World Savings branches—are simple and very well chosen, with a tendency toward familiar modern design classics. Here the reliable but almost never redundant Breuer Cesca chairs are used, along with simple white desks, set off by the charcoal gray carpeting. The overall effect is clean, businesslike, and refreshingly unstodgy. Though this was basically an interior design job, the exterior of the building was also transformed by Turnbull. He had it painted a soft yellow up to the cornice line, one story below the roof. That top floor, and the spandrels of the seven floors below it, were painted white. A jagged orange, blue, and white stripe zigzags up the side of the building and races along the cornice; a similar stripe at street level is used to inscribe an arc over the side entrance to the bank. By comparison, the staid, dark exterior of Skidmore, Owings & Merrill’s Metropolitan Life Insurance Co. building across the street looks hopelessly sobersided. The Market St. branch of World Savings is quite in the spirit of the older painted architecture of San Francisco, which underscores the city’s Mediterranean air and helps contribute to a much more enjoyable cityscape than prevails in most other American cities.

[Martin Filler]

Data
Program: renovation of 4900 sq ft on ground floor of office building for branch bank.
Site: corner in downtown business district.
Structural system: existing steel frame.
Major materials: gypsum board walls, carpeted and resilient floors, luminous panel ceiling (see Building materials, p. 120).
Consultants: Anderson & Culley, structural; Richard C. Peters, lighting; Glumac & Webster, mechanical. Graphics in conjunction with Skidmore, Owings & Merrill.
Costs: withheld at request of client.
Photography: Rob Super.
Introduction: English architecture

Imagery and integration

Two large-scale projects in England that could be termed "Post-Modern" draw on local sources and traditions with strengths and some weaknesses.

Some regard "Post-Modernism" as a convenient way to describe any recent work that doesn't look as if it might have been done by SOM or I.M. Pei. Others insist on the stricter ascription to "Post-Modern" attributes set forth by Robert Stern: historical allusion, contextualism, and ornament. Others just consult Charles Jencks on what is fully PM, what is halfway, and what is Late Modernist. One thing is clear. Post-Modernism is upon us, even though we may legitimately ask if it implies a new form of architecture.

These two large-scale schemes shown on the following pages—one, housing for Newcastle, England, the other a civic center outside London—bear marked similarities to the American situation. They also illustrate compellingly both the merits and drawbacks of efforts today that can be described as "Post-Modern."

Much of Post-Modern architectural design done so far really focuses on imagery and appearance. Because of this attention to the look of things, many efforts tend to combine bits and pieces of various architectural styles without reference to an underlying system that provided a formal framework for such images in the past. The result is what Berkeley architecture professor Marc Treib characterizes as "the Frankenstein effect," where the accumulation of images lacks integration. You can see the stitches between the parts.

In addition to the above affliction, some modern design efforts are being subjected
Hillingdon Civic Centre, Uxbridge, by Robert Matthews, Johnson-Marshall, was designed in 1973-79. In its massing detailing and use of materials, it recalls many picturesque 19th-Century English buildings of the Victorian era including Combe’s Abbey wing, 1863-65 (below), and the farm buildings at Shipley Hall, 1860-61 (right), by William Eden Nesfield.

from without to what could only be described as “semiotic backlash.” The culling of images from past architectural styles has been rationalized as offering the public an architecture that is meaningful because it is familiar and therefore accessible. However the images chosen and transformed by some architects are frequently criticized as being too cryptic and too esoteric for general appreciation. While this semiotic attack carries some validity, it ignores the fact that works of art (and architecture) have always been received on several levels of understanding ranging from the sensual to the cerebral. But there still remains the question of how accessible or how “grounded” these images should be.

The third shortcoming for which Post-Modern efforts are being called to account concerns the issue of whether a new imagery can ever constitute a “new architecture.” In the sense of providing an architectural language that can generate a mode for creating spaces, structure, or enclosing planes, Post-Modernism hasn’t gotten there yet. Not that there is anything wrong with imagery. After all it is the first thing one notices about a building and will determine to a large degree one’s response. But architects who deal with past images will encounter pitfalls in integrating them with the rest of the elements involved without resorting to cosmetic overlay.

Along this line of argument, Byker Redevelopment and Hillingdon Civic Centre in England deserve attention. Both draw on an imagery of a known familiar heritage. Byker housing, which falls squarely within the tradition of its architect Ralph Erskine’s previous work, also continues a strain of Modernism dating back to the 1940s. Dubbed “the New Empiricism” by the English, it implied an interest in historical overtones, attention to detail, and surface patterns. In addition, Byker adheres to the Modernist belief that a socially derived form can have a salubrious effect on society and the community.

Hillingdon Civic Centre draws on the high-art tradition of 19th-Century architecture, which looked to the vernacular or picturesque for inspiration. It also seeks to be monumental in the old manner—through its solid, substantial, and permanent qualities—while at the same time attempting to appear humanly scaled and familiar or folksy to the common man.

In their endeavors to appeal to the public on emotional and intellectual grounds, it should be noted that Erskine and Andrew Derbyshire (partner in charge for Robert Matthews, Johnson-Marshall at Hillingdon) manipulate these vernacular and picturesque images convincingly and thoughtfully. Because of their choice of images drawn from immediate local sources for traditional patterns of building, neither project suffers the worst excesses of the Frankenstein effect often seen in American solutions. Yet intriguingly enough they still indicate problems in integrating the images into a formal solution at more subtle levels. The choice of materials at Byker, with its wood, tin, and spindly posts, gives the project a charming but insubstantial tacky quality of much jerry-built housing. And in spite of Hillingdon’s photogenic massing on the south and east elevations, its difficult-to-detect entrances and disorienting interiors bring to the wanderer the sense of crazed confusion of Portman’s phantasmagoric interiors for Renaissance Center in Detroit or Bonaventure Hotel in L.A.

Although neither Byker nor Hillingdon diverges enough from Modern Architecture in the sense of coalescing images with a new formal substructure, the impulses are right: whether in terms of design process (Byker) or the architect’s own experiments (Hillingdon), the buildings are halfway steps. They represent serious attempts to come to grips with architecture’s cumulative role as it affects social and formal responses. [Suzanne Stephens]
Walled town

David Dunster

Rebuilding of a 19th-Century English industrial town continues a long tradition of architecture where style is subservient to expressive purpose.

The community of Byker has for some time seen itself as distinct from surrounding slums. East of the center of Newcastle, Byker sits on a south-facing hill sloping down towards the town and the river Tyne, where the banks are lined with industrial squalor. In 1968, when Ralph Erskine was commissioned to rebuild the 19th-Century industrial town of 18,000 inhabitants, almost a quarter of the population had already been forcibly moved from its two-story row-house, single-floor accommodations. Decanting 4000 people made way for a planned motorway, which was of dubious necessity and is still unbuilt; however, the Newcastle City Planners had recognized the need for a wall against noise between Byker and the proposed motorway.

Erskine adopted this strategy by devising a continuous housing block, at places eight stories high, for the entire northern edge of the site. But he began by building a pilot scheme to test the applicability of his ideas developed for housing in Sweden, where the English architect had settled in 1939. Janet Square, of 1971-1972, contained in embryo all the basic ideas for the housing behind the wall. An open-plan kitchen/dining room/living room was not much appreciated and was dropped from future dwellings. But the formula of pitched-roof row-housing arranged around ambiguously private/public courtyards was developed, as was the hallmark of the scheme, Erskine’s idiosyncratic additive timber “decoration.”

Author: David Dunster is an English architect who teaches history and theory at Kingston Polytechnic near London.

Highrise wall

Newcastle does not have the most hospitable climate in England, but Erskine’s wall does improve it. Its bends and form have produced a south-facing microclimate of dense summer vegetation and sun-trapping spaces. Here, the most substantial part of the scheme—80 percent—cascades down the slopes as two-storied, garden row-housing. The wall itself has two faces. To the north it is made of very large bricks (12” x 4” x 4”) with few, small openings except for the entrances. These are emphasized by patterning of multicolored brickwork, which will soon probably lose the subtlety of color as the renowned Northeastern atmosphere reduces the color variation to sludge. There seems, however, little metaphoric exploration of the idea of brick patterning other than to reduce and sometimes accentuate the length of the wall. But on the other side of the wall, a white south side sitting on a two-story brick base shows all the signs of habitation normal to rented accommodation, but suffused with a light touch of decoration that avoids the fairground by a hair’s-breadth. Timber balconies, access galleries, window boxes, and canted entrance lobbies sit where need or whim have dictated, breaking down the scale of the wall in ways attempted on the north side but not always achieved.

Low-rise housing

The decorative formula continues into the matrix of low-rise housing, which is supposed to be as varied between its parts as its whole is to the wall. Erskine has never allowed a systematic layout of houses to run for more than 250 dwellings. The resulting patchwork quilt follows land contours, aligns itself with the one remaining thoroughfare of old Byker, and engulfs pubs, schools, and churches on its way. At the center of the whole configuration sits an old corner shop, with what looks like a

The Byker “wall” was intended as both a noise and a wind barrier; its north side (below and facing page) is highly decorated, but is basically closed to the elements. The building incorporates some older structures (right), which continue in use for the 18,000 inhabitants.
Byker Redevelopment

Lean-to conservatory where an exposed flank wall is painted with a rising hot-air balloon. From this converted funeral parlor, Erskine’s dedicated team has designed and supervised construction of the scheme. The office has been instrumental in developing radical renting procedures and in demonstrating to this working-class community that the project belongs to them and is their responsibility. The office is open during normal working hours to all callers.

The ingenuity of Erskine’s team must be applauded. Not only have they dared to work on site throughout the construction, but they have also improved the method by which tenants are allocated dwellings by showing where they will go and giving them ten days to accept or refuse a house—a small point but one that shows someone cares. In fact, the whole administration is suffused with a spirit of carefulness, which began perhaps with Erskine’s insistence that tenants organize themselves into small community associations to look after their communal areas, play spaces, green space, and the like. In the building, Erskine managed to encourage this by including rooms within the matrix that are rentable either by interest groups or by individuals. Thus there has always been something for which the tenants could be responsible. Their immense relief of moving from cramped, dingy flats could only develop towards greater complicity; there are no criteria for stopping.

Timber decoration

The question is, then, how are the social and aesthetic ideas embodied in the architecture? In this scheme, the additive overlay attached to the low- and higher-rise building is a consistent veil of balcony, pergoliette, and general carpentry. This veil is sustained as a metaphor for human occupation. Its own primitive formlessness contrasts strongly with the scale and length of the wall; it is indeterminate without being floppy and there is an openness of detailing somewhere between Festival-of-Britain and backyard bricolage. As much as it can be read as a system of interventions, it is itself a fractured system that looks ad hoc. Its cheapness elicits two opposite responses, that of enjoying the crude effectiveness of off-the-shelf greenhousery, and that of feeling it is rubbing the poor’s noses into the blatant fact that their housing is not as well made as that for the better off.

Fabricated from timber, the decoration invites the amateur builder to add, though subtraction could be lethal. The paradox is that few tenants seem to have availed themselves of this potential. Erskine’s ornament for the garden housing decorates basic-looking building forms, although he has taken advantage of the sloping site to develop some relatively complex split-section volumes within each house. Since windows have been positioned in relation to function, the façade therefore contains two levels of representation: function denoted by window position and size, and “humanity” denoted by balconies, gate frames, window boxes, and seats.

This doubled representation of the life of the inhabitants veers towards whimsy, rather than order, the farther a house is from the wall, and one becomes aware that Erskine’s sense of order is in fact to set up a quasi-system and then deliberately break it. This is apparent from the site plan where no layout system is allowed an infinite run, and every opportunity for accepting the historical accident—the line of an old street, an existing church, or Neo-Classical remains from the now-demolished old town hall—is accentuated. It is complexity through disorder, not complexity through the interaction of intellectually substantiated design systems. Perhaps this could be paraphrased as the idea that humanity and individuality exist only through a pragmatic consideration of what is possible, when every chance for variety is seized. The whole colossal scheme could only develop towards greater complicity; there are no criteria for stopping.

Byker’s achievement

Before Byker, Erskine built a group of houses for sale at Newmarket. Their planning does not relate to one large defining edge, but is suburban. The houses are mostly the same color brick, built around kids’ play areas, parking lots, etc. The timber “ad-hocery” is kept to a minimum, while Erskine’s personal touches—tiny windows lighting attics at the apex of the roof, a triangular window lighting and expressing the position of the stair—just shift the banality of the houses into another order. The vernacular is extended; ordinary building is decorated in Ruskin’s sense. But Byker is an incredible achievement. Despite tight economic constraints, increasingly prescriptive building legislation, and a tradition of housing estates that was already growing tired by 1968, Erskine and his team worked, and in some cases lived, on their building site for ten years and maintained enthusiasm. It may be big, it may be bad, but it’s not evil, and that cannot be said of the tower blocks of the modern English city. The architectural lessons of Byker show just how far a consistent decorative aesthetic can go without becoming confusing. Byker is not architecture resplendent with historical allusions and perceptual illusions. Eschewing eclecticism means pushing social democratic architecture (that old Modern Movement maxim) somewhat further along the road than anyone had previously thought possible.

People’s architecture

The program and its moral and utopian implications are not reduced to some typological formula equally at home elsewhere. The design of the matrix, of the ordinary building, of background buildings’ relationship to the monuments, is the problem Erskine has tackled. Byker has conceptually changed from its earliest scheme as a Mediterranean hill village to a partly walled medieval town, encouraging the interaction of car and pedestrian, of public and private. It may not be stylistically classical in the way that, say, Stirling’s Runcorn is (P/A, March 1976, p. 42), but perhaps it belongs in that other category of architecture in which Gothic, Baroque, and vernacular might bed down together—an architecture pruning symbolism over geometry.

If Byker is not quite clever enough, not quite rich enough in symbolism, not quite able to kick over the traces of expressive functionalism, it holds out two ideas that must be cherished by an architect who has worked in housing. The first is that it has opened up the process by which housing is allocated and occupied, making bureaucracy more responsive to tenants’ needs, and giving tenants a sense of responsibility that had previously been thought possible only for owner-occupiers. The second is that Byker continues a tradition of people’s architecture where high style is subservient to expressive purpose. Erskine has catholic tastes. Whether that is a viable basis for cobbling together the basic modes of organization for housing remains a problem. Most English housing schemes have developed four ideas: the tower block and all its problems of comprehension of circulation, the grid with no substantial edge, the wall as a constant section extended to infinity, and the wall as edge with grid infill. Erskine uses all these forms, paradoxically leaving the consistency of the scheme in the hands of the additive timberwork. There is perhaps even a fifth idea: that of interweaving old and new so that the edge condition ceases to exist (acknowledging that patterns of land ownership make this usually impossible).

Erskine’s achievement

These five basic ordering devices may seem, to American eyes, simply a continuation of English Brutalism, or architecture as aesthetic or ethic. However, when the discussion of architecture has reached the
In contrast to the north side of Byker wall, the south side (above, below) opens to a warm microclimate created by the building's form, where signs of human habitation abound. The new low-rise housing behind the wall (right) does not totally ignore all patterns of Byker’s past, as the old town (bottom right) shows.
conceptual ether, wherein a lather of terms conceals the continuous process of experiment with planning, a scheme such as Erskine's cannot be shrugged off by a taste upholstered with fantasy projects. Most buildings have to be background to the foreground. Calls for plurality from the elder statesmen and younger diplomats of architecture hold out no guarantee whatsoever that they will not produce a cacophony.

Whatever one's reservations are about Byker, it does seem to be one example in England of an architectural response carefully considered and predicated upon the idea that architecture can improve people's lives. To some, the house plan has not changed since the days of Pompeii. To others, there is always the challenge of doing more with less, or at least of getting more out of less. The architectural discourse at Byker exists as part of a continuing discussion of this very problem in the realm of public architecture. If Byker teases the mind by being too big to be ordinary, it operates with the ordinary, and inside the ordinary plans take shape according to principles that may be as simple as the Smithsons' long-forgotten Criteria for Mass Housing.

Alongside the reevaluation of Modernism, which has been the great achievement of recent American architecture, there lies a tradition, though that may be too grand a word, of the discipline of the plan, which is specifically visible in the housing developments for the poor in Europe. Visually it is nowhere near as stunning as what America can offer. But it may be useful to remember the functionalist origins of Modern theory, and to observe its struggle to relate political and social reality to architectural form, which is Erskine's vital achievement.

Data

Architects: Ralph Erskine's Arkitektkontor AB, Drottningholm, Sweden; Byker office leaders: Vernon Gracie, Roger Tillotson; job architects/supervisors: Mike Drage, Trevor Harris, Dave Hill, Tony McGuirk, Ken McKay, Tony Smith, Peter Willis; Dunn Terrace phase: in association with Douglass Wise & Partners.
Site: 200 acres one mile east of Newcastle, with a southwesterly slope towards the banks of the Tyne River. New development to have maximum number of individual gardens, and 1.25 parking spaces per dwelling, with traffic segregated.
Program: rebuilding of 19th-Century industrial town of 18,000 inhabitants; new density of 100 persons per acre. Existing schools, churches, pubs, etc., to be retained or replaced. New community to be a complete and integrated environment for living in its widest sense, at lowest possible cost to residents, and developed in intimate contact and collaboration with them. Although 80 percent is low-rise garden units, a high-rise perimeter building forms a barrier against a proposed motorway and against northerly winds. Each group of houses to have "local" individuality.

Structural system: high-rise of poured-in-place concrete foundation and structure; low-rise units of concrete foundation, timber frame; timber frame, brick, and block cavity walls.

Major materials: high-rise: brick cladding of five colors on north side; brick, aluminum sheet, asbestos panels on south side; timber and aluminum window inserts. Low-rise: exterior a mixture of brick and timber cladding; windows of alloy sliders in timber subframes; timber doors; gypsum board partitions.

Mechanical system: gas/oil-fired central boilers, equipped for eventual changeover for refuse incineration.

Consultants: Ralph Erskine's Arkitektkontor, Arne Nilsson, Per Gustafsson, Gerry Kemp, Derek Smith, landscape; Ralph Erskine's Arkitektkontor, interiors; White-Young & Partners, structural; N.I.F.E.S. Ltd., mechanical; Gardiner & Teobald, quantity surveyors.

Client: City of Newcastle-upon-Tyne Housing Committee.

General contractor: Stanley Miller Ltd., Fairclough Building, Ltd.

Costs: $24.5 million for 1430 units presently completed.

Photography: Jeremy Preston except for top of p. 69, middle right and bottom right of p. 71, and top and middle on p. 73, Roger Tranick.
A borough hall outside London shows a concerted interest in bringing past picturesque images to the public domain. Robert Matthew, Johnson-Marshall are the architects for the provocative work.

The Civic Centre at Hillingdon, one of the new London boroughs formed during the reorganization of local government some ten years ago, has generated a good deal of controversy among English architects. The controversy arises entirely from its appearance. The organizational form is not at all exceptional, based as it is on the usual separation of civic and administrative offices. This basic organization no doubt could have been translated in a mainstream Modern notation, with the pyramidal office block contrasting with a separate group of facilities focusing on the council chamber. This functional distinction may form the basis of the plan, but not, in this case, the expression, of a genre unmistakably picturesque.

There have been precedents for civic buildings that remain modern in detail through the use of such normative features as strip windows and cantilevers, but produce a more or less picturesque mass reminiscent of vernacular architecture. Hillingdon not only is picturesque in its massing and grouping, but is plainly stylistic in its detailing. The rich red brick and the massive tiled roof are supplemented by a
The south and east elevations of the Civic Offices shown in photos (below) and from entrance porch (opposite) for the civic center illustrate a conscious assimilation of local vernacular brick and tile buildings along with the historical references to arts-and-crafts expression of the 19th Century and the pre-World War I architecture of Voysey, Mackintosh, Richard Norman Shaw, and Philip Webb. The level of brick detailing for dentils, recesses, and bullnose corners illustrates a conscious evocation of 19th-Century brick tradition.

The whole apparatus of projections, angles, setbacks—plus a general proliferation of local features. Finally, when we get to look at a straight bit of façade, it turns out to have windows set in brick recesses enriched by dentil courses. Reminiscent of the corbeled string courses of the 12th-Century Worms Cathedral, this German connection produced some facetious comment but has clearly contributed to the acceptance of the scheme by council members and community alike. The center in fact is already a popular success. Everyone can see that Hillingdon has character. It looks like the “real” buildings we come across on vacation: it is touristically valid.

Its success seems to depend on the reactivation of popular notions of European architecture, low-key suburban buildings, and a familiar English tradition of brick and tile. It seems to be characteristic of our epoch that the evidence for an architecture of our times is confusing. Atavistic (e.g., Hillingdon) and futuristic (e.g., Centre Pompidou) images compete for attention: each is as avidly consumed. The use of imagery that Robert Venturi sees as essential for the production of meaning in the visual arts has become foot-loose and fancy-free. And Charles Jencks can feel justified in accepting an unbridled eclecticism of images as the necessary price of pluralism, itself the natural corollary of a “free society.”

Images unleashed
Until recently architects have been unwilling to admit the presence of images within their buildings, preferring to present these as having derived from a strict system, whether a rationale of conceptualization or
Hillingdon Civic Centre

a technique of production. There are still architects who would prefer to close their minds to the varied associations that all forms evoke, and try to insist on a determination of forms if not by function, at least by a reductive typology of form-function combinations. Such a standpoint increasingly appears not to be so much a rational system of production as rather a closed code of reproduction, the characteristic of a professional elite whose judgments are not open to popular appraisal.

On the other hand, once we admit that the user’s perception of character, as based on his own nonprofessional modes of association, constitutes a potential response to be manipulated, what discipline can hold the mistress art together? Kitsch enters the field of judgment. Images can jostle for attention as they do in advertising, their aim being only to further consumption.

In Britain, architects have for the most part responded to this problem by adopting a sub-Modern, loosely functional, and vaguely picturesque style, homogeneous but full of variation. Aptly called “institutionalized nook-and-cranny,” it clings to function and a psychology of place while attempting to avoid image and meaning. It hopes to make modern building acceptable without the need to embark on the dangerous path of stylistic self-consciousness. From this viewpoint, the use of decorative brickwork, which reminds even laymen of German castles, would be seen as a provocation, a breaking of the bonds of technology and function that have held for the last 50 years. This exploration raises the specter of architecture that have held for the last 50 years.

Andrew Derbeyshire, the partner in the architectural firm of Robert Matthew, Johnson-Marshall Partners, who was chiefly responsible for the design, is disarming on this count: “In 1970, the Borough asked us to design their new offices, and we discovered to our mutual pleasure that we were both in the middle of a reappraisal of the state of modern architecture in Britain. . . . Our experience over the last 25 years of building in this country . . . had led both of us to dissatisfaction with the state of the art, and a wish to do better.”

Return to the past

For Derbeyshire, what had been lost in the post-war period of Modern Architecture was the native English tradition that had found its chief expression in the arts-and-crafts movement of William Morris and the Garden City movement of Ebenezer Howard and Raymond Unwin. In architects like Webb, Shaw, Voysey, and Mackintosh, Britain had a developing tradition of sensitive design that had already achieved a radical adjustment of architecture to daily life well before the Modern movement came into being.

After World War I, this tradition faded, and an eclectic Neo-Classicism took over, a fact Derbeyshire blames for the vacuum in the native tradition that allowed the new ideas of Le Corbusier and Walter Gropius to take hold.

Furthermore, Derbeyshire places a special emphasis on the role of the locality in influencing his thought as he began to prepare his plans. The area was combed for examples of traditional building: churches, schools, and the forms of suburban housing were given a new appraisal. The preponderance of a brick-and-tile vernacular suggested that these materials should be used in the Civic Centre so that it would appear as a native and not a foreign element in the environment.

One does not have to doubt the importance of these factors nor the popular success of the building, nor Andrew Derbeyshire’s sincerity, however, to feel that the result is architecturally unconvincing.

The adoption of a tradition is certainly some kind of a hedge against inflation in the world market in images. A tradition limits severely the models that can be used as a framework for design as well as providing a coherent set of ideas that cannot be arbitrarily extended or ignored without a struggle. To work within a tradition would seem to involve a close study and an understanding of the modes and techniques of that tradition, as well as a general sympathy with its aims and character. Derbeyshire is clearly in sympathy with the picturesque tradition and has identified with many of the aims and methods of Parker and Unwin in their creation of the garden suburbs (his practice offices are in Welwyn Garden City). He also has a strong commitment to finding a true social architecture. All these intentions without question entitle him to adopt a tradition, but do not guarantee that he can immediately perform as an architect within that tradition. His architecture would have to place itself within the tradition, not joining it, but extending it from within. Can we accept Hillingdon on this level?

New traditionalists

In Britain today there are few practitioners who could be confidently placed within a tradition opposed to the narrow functionalism of the Modern movement. Perhaps we have to go back to Lutyens to find our last great traditionalist. He was steeped not only in French Classicism, but in the local English vernacular. He could and did make surprising new combinations in which we can see rather grand
View from the south car park at Hillingdon Road shows the Civic Offices and Civic Suite ensemble.
classical concepts brought down to a vernacular scale of operations, a transformation that corresponded to the new class of clients whom he served.

By comparison, Derbyshire has come to this tradition from a background of successful practice within the mainstream of modern design. His first large undertaking—the layout and construction of York University—was an exercise in the application of the CLASP construction system. This vanguard effort attempted to demonstrate that building by system was equal to any civilized task in architecture. Most of the work with which he has been involved to date falls within the kind of design most people would tend to categorize as managerial, efficient, anonymous.

Separate characters
Derbyshire’s professional background is clearly evidenced in the organizational character of the Hillingdon Civic Centre. The complex’s size and bulk is broken down into two separate entities representing a division of function, and expressed curiously by a division in character. The borough offices are strictly segregated and treated with a systematic exactitude. They build up into a large square building with a square structural grid, subdivided, however, on the diagonal into four triangular quadrants at half-levels. These are defined by narrow, open wells that allow a glimpse of the adjoining spaces. Organizationally, this formation results simultaneously from the wish to break down the scale of the office requirement (the biggest single category in the program) while still maintaining the cooperative ends of the organization as a whole. The proliferation of dormers, eaves, nooks, and crannies around the elevation of this block establishes a set of references to the diagonal axes—the subdivision—as against the orthogonal structure—the whole.

The opposition of orthogonal and diagonal axes becomes a formal game whose aim is to produce visual variety out of a gross functional homogeneity. It results in some strong-arm tactics, like the porches in the southeast and southwest corners where the right-hand bay in each case is a blind alley.

To different degrees, exposed functional elements, such as staircase towers, vent openings in the roof, and vents to the basement car-parking areas, have been adjusted to fit in with the prevalent system of projecting angles, in order to successfully convey what can be regarded only as an ingenious fiction. But it would be fair to say that the difference in treatment of those elements that are functionally pro-

duced and those that result from the formal game alone reveals the fictional. Because of a surface treatment that appears to be generated by important divisions of the spaces behind it, modern bureaucracy has been given an acceptable face. The architect believes he is serving a tradition—but he is really serving the demands of management. From the point of view of the domestic tradition of brick-and-tile architecture, we end up with the feeling that this tradition has been used for limited ends, not consolidated and restated from within.

Civic suite
In the other half of the scheme, some half-hearted references by comparison to the diagonal/orthogonal play are made, but the system is relaxed (see plans). It is in these conditions that the more deliberately decorative aspects of the style are apparent. In the absence of the geometrical tour de force, a more conservative character emerges, and this allows an appreciation of the more traditional modes of linking forms and combining them. Here again, though, there is a certain ungainly obtrusiveness of functional elements, such as the well for the large circular staircase. These accents introduce a note of austerity reminiscent of industrial installations and destroy the geniality of the whole. We have an impression of awkwardness rather than grace, toughness rather than trust. The general effect of the two groupings denies both the loose-fit conventions of management and the loose-lap tradition of the picturesque. The building emerges as a hybrid with all the disturbing aspects of a multi-headed monster.

The dilemma of Post-Modernism (which is simply the dilemma of an architecture awakened to its own sentient qualities) will not be resolved by the free application of images, but by the growth of imagination. Derbyshire is right in believing that the only safe course for the sentient architect is to adopt a tradition and hope to be accepted within it. That will depend entirely on his imagination in working for that tradition. To grow into a tradition, to be capable eventually of extending it, is the only worthwhile task. Apprenticeship and a certain humility are perhaps the first step. We don’t see that yet at Hillingdon.

Data
Architects: Robert Matthew, Johnson-Marshall & Partners; Andrew Derbyshire, Alan Cawthorne, partners in charge; David Parkes, Terry Swales (offices); Bob Owston (car park); Alan Robinson, Peter Bishop (Civic Suite and building conversion); David Pit, David Dixon, Edwin Graves (engineering).
Program: borough offices (20,057 sq m) for 1300, a multistory parking garage for 584 cars, a Civic Suite totaling 2325 sq m net usable space, including council chamber for 70 members, offices and members' rooms, registry, restaurant. Existing building (1731 sq m), formerly used for Middlesex County Council, has been retained and converted to multipurpose hall, restaurant, and manager's apartment.

Site: 8.85 acres on polygon-shaped site bounded by city streets in a town of mid-rise brick buildings.

Structural system: reinforced concrete frame, pad foundations bearing on gravel layers, structural steel for main roof members; timber rafters. Mechanical system: gas-fired heating, central air handling with local fan-coil heating and cooling units; air extracted through lights for heat.

Major materials: brick, tile, concrete, steel, wood. Materials reused include cupola on Civic Suite; wrought-iron gate outside registry office (see Building materials, p. 120).

Consultants: Zisman Bowyer & Partners (mechanical); Young & Brown (quantity surveyors); Acoustical Investigation and Research Organization (acoustical).

General contractor: Higgs & Hill Building Ltd.

Cost: £18.6 million, overall cost.

View of Civic Suite from east gate (right); view from the northwest terrace near Civic Offices (left); garden court (right, bottom).
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Architects, designers, and owners are all viewing with new favor versatile plastic laminates, making them among the most popular interior surfacing materials specified today.

Among all synthetic interior design products, it might be said that the one which has most consistently met with architects’ acceptance and continued endorsement has been plastic laminates. Since plastic laminates were first introduced in the late 1920s, quality-conscious architects (who might have balked at using any number of other man-made finishing materials) have exempted plastic laminates from the catchall notion that natural products are in some ways always preferable to synthetics. In the 1930s, architects embraced this new material with the enthusiasm of those days of belief that the future was, almost by definition, going to be better (though in the midst of the Great Depression, it could scarcely be argued very convincingly otherwise).

Rare was the architect who did not specify plastic laminates for some application in interiors, from the more innovative designers who used it extensively to the more conservative architects who could at least be counted on to use some for a kitchen countertop or other functional surface. World War II brought an end to the production of war-essential plastics for home-front uses, but the post-war years saw an even greater acceptance of plastic laminates, which were especially popular in the vast quantities of housing that were constructed in the U.S. in the 1950s and

This model room by Joseph D’Urso (right) for Formica makes use of several plastic laminates, including the brushed “aluminum” doors, which complement the other High Tech elements of the design scheme.
Plastic laminates

1960s. Although during the 1950s—not exactly a golden age in the design of surfacing materials, including plastic laminates—some design-conscious architects abandoned the use of the material, by the 1960s there was a notable resurgence in architects’ specification of plastic laminates. Architects at all points along the design spectrum—from the New York Five to the designers of Beverly Hills pastiche extravaganzas—returned to the use of the versatile material.

This had a great deal to do with the improved design quality of plastic laminates during the 1960s. For one thing, they were available in a wide range of solid colors, and seemed to be a perfect material choice for those areas that received a great deal of physical contact and needed relatively easy maintenance. Architects, as is well known, have a preference for surfacing materials that do not interfere with the visual reading of interior space. Therefore, they have always shown a distinct preference for plastic laminates in solid colors or, where pattern is used, then pattern of a clear, geometric nature. During the 1960s, it became easier than ever for architects to find plastic laminates that met those requirements.

The 1970s saw a continuation of that trend, but also the increased acceptability of the patterned laminates that had long been taboo among architects. One factor behind that development was the steady inflationary trend that put many other favored surfacing materials out of reasonable price range for many commissions. Considering the growing consumer preference for those very materials—such as butcher block, planked woods, slate, etc.—that was part of the growth of interest in natural materials, many architects inevitably concluded that the best strategy was to use plastic laminates that looked like naturals. This was easier to achieve than it had been in the past: improved methods of reproduction and manufacturing gave results far exceeding previously pathetic simulacra of natural surfacing materials.

Maintenance, too, played its part. Some of the favored natural surfacing materials kept their appearance only through constant (and sometimes costly) maintenance, and the use of synthetics that were easier than naturals to keep looking good swayed a great many former nonbelievers. For the inflationary trend was also reflected in higher maintenance costs, and architects have been under greater pressure than ever before to hold down not only bottom-line costs, but life-of-product costs.

The old prejudice against materials that contrive to look like other materials has
faded to some degree among architects. That old tenet has been set aside by many young designers who prefer to work experimentally with new ideas, freed from the doctrinaire “mustn’ts” that typified architectural design in the 1950s. Plastic laminates have survived the great plastics rage of the 1960s perhaps better than any other material. Inflatable furniture has passed from the scene, molded plastic furniture has taken a more modest position in its market, but plastic laminates are not only still around, they are increasing in popularity as well.

The whys and wherefores

To gain an understanding of how to use plastic laminates, it is first necessary to understand what plastic laminates are. Quite simply, plastic laminates are made from melamine- (or other plastic) impregnated overlay paper sandwiched at high heat and pressure (around 1000 lb per sq ft of pressure at temperatures around 135 C or 275 F). The paper and plastic sandwiches are bonded to phenolic-impregnated kraft paper backings which can then be applied with adhesives to a variety of other core materials, such as plywood, particle board, flake board or metal sheet. For reasons that should be obvious, the methods of manufacturing plastic laminates limit the situations in which they can be used suitably—most notably in relation to temperature. Plastic laminates cannot be used in settings where the 135 C temperature threshold is likely to be exceeded, either as a matter of course or accidentally. Likewise, because of molecular contraction, plastic laminates are more difficult to handle at temperatures below 18 C (65 F), which lower threshold should be kept in mind by the potential specifier.

What these temperature guidelines should further indicate is that plastic laminates are really suitable only for interior installations in general, and those removed from the likelihood of extreme temperature range fluctuations. Also, this surfacing material is suitable for both horizontal and vertical installations, but it is not recommended for use underfoot, for example, or in those settings where an extreme amount of heavy weight is expected to be placed on it. The thickness of the plastic laminate is most intelligently selected with an eye...
Plastic laminates

toward the amount of pressure the material will receive. For example, while a .75-mm thickness might be acceptable for a vertical paneling application, a 1.50-mm laminate might be a better choice for a heavy-duty countertop. A wide range of options are made available by the major manufacturers of plastic laminates.

In addition, many plastic laminates are now fire-rated as well, extending their applicability to institutional settings where the maintenance factor has always been high, but where compliance with safety regulations in some cases in the past might have been wanting. Maintenance of plastic laminates is far easier now than it has ever been. By and large, cleaning is easily accomplished with ordinary household detergents or ammoniated cleansers, with a considerably better result than can be accomplished by similarly cleaning painted surfaces. Plastic laminates are among the few materials that show no appreciable deterioration in surface condition when so cleaned. (However, it is advisable to refrain from the use of abrasives, which break down the surface finish and cause wear problems similar to those of more porous surfaces.) Still, maintenance methods vary from product to product, and care information should be sought before specification in instances where maintenance is a prime consideration.

The best single reference for specification information guidelines is the National Electrical Manufacturers Associations' standards publication, *Application, Fabrication, and Installation of High-Pressure Decorative Laminates* (Pub. No. LD.3.1-1975), which gives a thorough survey of key areas of concern for the would-be specifier of this material. (The booklet, prepared under the guidance of the eight member companies of the Decorative Laminate Section of NEMA, is available from NEMA, 155 East 44 St., New York, NY 10017.) An informal poll of representatives of that group indicates that by far the most important single factor in achieving satisfactory results in the use of plastic laminates has to do with methods of installation. Among the major causes of product failure are not allowing enough drying time for the adhesive used to glue the laminate to the base material, not allowing equal and sufficient pressure to be applied during that drying process, and not allowing the laminate sufficient time to acclimate properly to the temperature conditions that prevail at the site of installation. Shrinkage, placement of seams, support of long spans of laminate, insufficiencies in substrate material, and exposure to excessive heat are other common—but easily avoidable—problems in the installation of plastic laminates. An almost worry-free material once it has been properly installed, plastic laminate is as dependent on good installation procedures as are other more expensive surfacing materials such as tile or marble. Thus it is especially important for quality control to be imposed early on to help avoid the costly possibility of resurfacing, which in the case of large plastic laminate areas can be a much more complicated effort than the mere replacement of a single defective tile or piece of stone.

Luckily, though, plastic laminate is being taken more seriously as the quality material it has increasingly become. It is used in all kinds of settings where it would never have been thought possible before—formal dining rooms, church interiors, civic spaces, to name only a diverse handful of settings—that are symbolic of the new imagination that architects and designers are implementing in the use of this versatile material. Its unique set of attributes—variety, ease of maintenance, cost efficiency—cut across several areas of concern among today's designers, and it could well be that the best piece of advice for the surface-material specifier might be that given to the bewildered hero of the movie *The Graduate*, who was told one single word: "Plastics!" [Martin Filler]

**Acknowledgements**

We wish to thank the following for their help in preparing this article: Consoweld Corp.; Nevamar Div., Exxon Chemical Co.; Fabricon Products, Div. Eagle-Picher Industries; Formica Corp.; Parkwood Laminates; Pioneer Plastics Corp.; Westinghouse Electric Corp.; Wilsonart, Div. of Ralph Wilson Plastics.

Dining room of designer Joan Regenbogen's own apartment in New York (below) has laminate table.
A stain in the pane

Before, during, and after construction, glass can weather or stain permanently. It is time to understand the chemistry and detail buildings to avoid surprises.

Glass is, no doubt, the result of a prehistoric attempt to capture the beauty and crystalline purity of frozen water. How ironic it is that float glass is fabricated today by literally floating molten glass on hot, molten tin, emulating the appearance of ice floating on a frozen lake. Glass in architecture visually provides buildings with sparkle and crystalline brilliance much as ice provides a balance to the mass, texture, and color of the rest of nature.

It is not the mere appearance of glass which makes it shine as an important element of our architectural vocabulary. Its ability to transmit and then trap heat and provide daylight without exposure to the other elements makes it a fundamental tool for energy conservation. The durability and strength of glass have made it an ingredient in fiberglass and glass-reinforced concrete. Its hardness and durability make it nearly impossible to scratch in normal use. As long as we have buildings, we will have glass.

Glass, like all building materials, can be attacked by weather. A hailstone the size of a grapefruit or a tornado whipping gravel at great speed can “weather” glass to the point of structural weakness or failure. The most common enemy of glass in nature however is water, the very material it seems to emulate. The battle between glass and water is invisible to the naked eye. If architects ignore this potential battleground, they can expect problems. These problems can range from annoyance to the costly replacement of a whole wall of insulating glass. We cannot eliminate this characteristic of glass, but we do hope to control it. We can control it only if we understand it.

Mechanisms of glass corrosion for a soda-silica glass

Current theory of glass corrosion is expressed by the formula above. For a complete discussion see Corrosion of Glass, by David E. Clark, Carlo Pantano, Jr., and Larry L. Hench, published by Magazines for Industry. Below the formula is a scanning electron micrograph of a severely weathered laboratory specimen of float glass under 30,000X magnification. Of two laboratory specimens above, the second has been used to “artificially” cause glass stain. Such extreme staining is practically impossible on a single pane of glass once it is installed.
Glass staining represents a particularly sophisticated problem in building chemistry. When it is properly detailed, stored, handled, placed, and maintained, glass can preserve a "factory fresh" appearance for the life of the building. Some precautions, however, are necessary and familiar to us from the glass industry, as follows:

"Glass may be damaged, etched or stained by a number of materials typically used at a job site. Surface damage may be caused by weld spatter and wind-blown debris. Alkaline materials such as concrete wash off and certain cleaning agents may chemically attack the glass surfaces. Rust (iron oxide) will not usually deteriorate the glass surface but may be very difficult to remove. Silicone concrete-sealing materials can discolor glass surfaces. It is good practice to protect glass surfaces whenever practical during construction of the building. Special attention should be paid to single-glazed reflecting glasses. These are not any more susceptible to damage than uncoated glasses. However, scratches and other damage to the coating are more noticeable."

"Glass should not be stored under conditions which allow its surfaces to be alternately wetted and dried. This will cause iridescence and etching." [Excerpted from Metal Curtain Wall, Window, Store Front and Entrance, Guide Specifications Manual, published in 1976 by Architectural Aluminum Manufacturers Association; see commentary section 1.09.]

The chemistry of glass staining
Staining or weathering of glass can be confusing to architects. The first problem is that nomenclature within the industry is not consistent. Dr. Joseph Minor at the University of Texas and studying the weathering of glass is investigating the structural deterioration of glass due to abrasion from severe weather. Glass chemists at the University of Florida under the guidance of Professor Larry L. Hench, head of the Ceramics Division, define weathering as the atmospheric interaction of various types of condensation with glass and the corrosive chemistry involved. These chemists refer to rain effects and other corrosion due to water as aqueous corrosion.

Chemists such as Professor Hench recognize two basic stages of glass corrosion due to contact with water. The first stage occurs when sodium ions in the glass are replaced by the hydrogen ions in the water. This chemical exchange leads to a high sodium concentrate on the glass which actually tends to increase visibility through the glass. The second stage of glass staining however destroys the chemical bonds between the complex silicon, sodium, oxygen tetrahedral network on the glass surface. When this structure falls apart, transparency of glass is impaired.

When fogging or permanent staining occurs on the inside surface of insulating glass, as shown above, it can be virtually impossible to remove. Moisture is normally prevented from remaining in the insulating space between the panes of glass by placing desiccant on the sides of the frame as shown in the cutaway view above. Prevention of moisture itself is the job of the sealants around the perimeter of the glass, as well as the effective drainage detailing of the window mullions. When the drains fail, they can permit water to gather at the seals. If the seals fail, water can be pulled into the dry cavity between the panes. If water condenses on the glass surface, there is a danger of staining.
Staining of glass

To understand glass chemistry, we must recall an aqueous solution is described on a pH scale roughly from about one to thirteen. A neutral solution has a pH of about seven. Below seven the solution is termed acidic. Above seven the solution is called alkaline or basic.

In adverse temperature and environmental conditions, water will eventually react with glass and leach sodium into the water, increasing its pH. If the water is merely a film on the glass, as with condensation, the surface area of the glass is large in comparison to the volume of water. In a glass bottle containing water, the glass surface area is small compared to the volume of water. As sodium is leached into a thin film of water, that liquid will increase in alkalinity at a much greater rate than the bottled water. Researchers tend to agree that over time, with hostile temperature, as the alkalinity of the solution reaches a pH greater than nine, the second destructive stage of glass corrosion begins to occur. If the corrosion is uniform it may take the appearance of a light blush haze or fog on the glass. Uniform staining, unless severe, usually goes unnoticed by the naked eye. If conditions prevail, however, that channel the corrosion, white iridescent streaks may occur on otherwise clear glass. The surface itself has been removed and simple cleaning usually will not restore its transparency.

Storage: A wet packing case stored in an unventilated basement or storage area can result in the surface of the glass being coated with moisture or condensation for long periods of time. Glass chemists have shown in the laboratory that at temperatures as low as 100°F to 120°F a fine layer of moisture slowly begins to chemically attack glass. In the laboratory, panes of glass stacked together in a cabinet that is heated and humidified continually for one week will become frosted and stained beyond reasonable repair.

Sodium is leached from the glass into the water and the solution becomes more and more alkaline, caustic, and damaging to the glass with time, causing stain. If the glass is dirty or left in contact with moistened, porous packing materials, the alkaline solution can be trapped next to the glass, accelerating the staining. Repeated wetting and drying cycles can also speed up this staining process. Each successive wetting becomes more and more alkaline. In the past, acidic-treated newsprint was used in packing glass. Modern glass factories, however, use inert packing fillers to control the problem. It is important to understand that glass is not hermetically sealed when it is shipped. Storing glass in a place that is dry and well-ventilated, however, can virtually eliminate the possibility of such staining.

Extensive frostlike staining, such as that produced by extreme humidity and temperature conditions in the laboratory, is rarely present even in packing situations. It is virtually never present in single lights of vertical glass in place.

Multiple glazing: Multiple glazing has become common in many of today’s energy efficient structures. Manufacturers and installers are careful to include effective desiccants on the edges of the glass frame to ensure that no moisture is trapped in the insulating void. If, however, the mullions have been detailed or installed without the proper attention to weep holes and drainage, water can gather and stand within the mullion, build up a head, and may eventually lead to the destruction of the glass seals. Attention should also be given to the chemistry of the reflective coated surface when reflective glass is one of the surfaces to be sealed. If the seal is ineffective or broken and water is present, moisture will be sucked into the space between the glass sheets. In winter it can condense on the cold inside surface of the exterior pane creating a problem similar to that which occurs in storage. In summer, the condensation can form on the cavity side of the innermost pane. Unchecked over a period of time, such a condition can result in fogging so extensive the glass must be replaced to restore vision through the window. The magnitude of the problem should not be underestimated. One East Coast building required replacement of 199 of 201 windows! (Fogging can also be caused by condensation of plasticizing oils used in sealants.)

Out of the pan: Once the glass is out of the case and in place, it must be protected from the rest of the construction procedure. Splatter and residue from other materials (and processes) and even the presence of signs or tape left on the glass can cause stains or differential aging marks in the glass that will be difficult or impossible to remove. Fresh concrete, mortar, and plaster are highly alkaline and can permanently stain the glass if they are allowed to remain in contact with it. Weathering steel is also likely to produce more oxidation in the early stages of construction and therefore runoff onto glass should be monitored and removed to avoid later difficulty in glass maintenance.

Temporary masking products can be used to cover the glass during construction or renovation to protect it from such ill effects. The masking is of course later stripped with no damage to the glass. Less sophisticated methods of protection should be used with caution to avoid tapping and contact with the glass that will provide conditions for the moisture problems already discussed.

Once the glass is in place

The staining of glass on finished buildings is a relatively uncommon problem. As one glass company expert put it: "Day in and day out there has been no problem." On a clean window the rain normally has neither
the time, temperature, nor pH to initiate staining. With the complexity of environmental chemistry in the state that it is, however, it is no surprise that there is an occasional annoying stain that just won't clean off. When such staining occurs, as one architect put it: "It is difficult to weed out what the real problem is." Part of the problem may rest with an owner who wants the glass clean without having to wash it. Part of the problem may also be a reaction with the environment.

**The rain:** The rain in major Eastern cities today is acidic. Much of the East Coast has rainfall with a pH somewhere between 4 and 5. Remember, the pH scale is logarithmic and each step on the scale represents a power of ten! Such acid rain will have little effect on glass, but may initiate a reaction in the adjacent building materials. Acid rain on glass might even be considered protection since the pH of the solution begins at a low level.

**Air pollution:** We need no reminder that the air itself is polluted with chemicals. The high sulphur content of some fuels burned in buildings, the exhaust from automobiles, and factory by-products leave their own dirt on the surface of our buildings. Studies done in Europe as well as this country have shown a large percentage of inorganic dirt accumulating on buildings containing deposits of CaSO₄ and also CaCO₃. Nitrogen used for fertilizer can also dissolve in the rainwater and eventually evaporate into the air for other complex chemical reactions.

**Runoff:** A raindrop is believed to be a very simple mechanism. Water molecules in the atmosphere, under the proper environmental conditions, stick to and coat other small particles. The molecules gather until the droplet becomes heavier than air and falls. Both gravity and wind then propel the rain toward our building. When water reaches a building, droplets can be either reflected, absorbed into the materials, or allowed to run down the facade.

The forces acting on a drop of water running on a building surface are not simple. In addition to gravity and wind, as in freefall, capillary action is possible as well as movement due to pressure differentials on the building skin. The direction and flow of the water are affected by the "wettability" of the materials as well as the surfaces' temperature, exposure, and geometry. Each building develops a pattern which it uses to shed its rain or snow. In spite of the diversity of winds, the overall pattern is as distinct as these forces which support the building load. The older and dirtier a building is, the more apparent the pattern becomes. The combination of the water, atmospheric dust and dirt, and building materials can clearly produce a chemical potpourri on the glass.

**Weathering steel:** Weathering steel is de-
Staining of glass

In April of 1979 an article appeared, this time in *Modern Concrete*, entitled “Glass Stains, Causes and Remedies.” Both the original publication and the second article were written by Sidney Freedman of PCI and Nathan R. Greening, then director of the Chemical/Physical Research Department of PCA. These articles take issue with concrete's traditional role as the cause of glass stains due to alkali runoff of cementitious products. The crux of the PCI explanation of glass staining is quoted verbatim as follows:

“The usual explanation for the etching of glass in concrete structures is that concrete contributes alkaline materials to the run-off water. Hydration of cement results in the formation of hydrated calcium silicates, Ca(OH)$_2$, and aluminates with the remaining internal water becoming highly alkaline. It is well known that alkali, meaning high pH material, will attack glass. What is not well known, is that atmospheric acids (NO$_x$, SO$_x$, and CO$_2$) can quickly neutralize these alkalies from concrete to produce neutral salts of calcium, sodium, or potassium. Of these salts, only the carbonates of sodium and potassium are truly alkaline. However, even these salts are quickly converted to the bicarbonates which are only very weakly alkaline. The atmosphere is usually very acid in the larger cities, therefore very little if any alkali material will be leached more than a few millimeters away from its source except in the case of very young concrete (less than 28 days). Rainfall can permeate concrete having high absorption and cause efflorescence. The efflorescing salts are usually neutralized by the carbon dioxide in the air before they can go very far. The leaching of concrete (efflorescence) ceases in one or two years because the surface lime is mostly carbonated in place and the interior lime cannot be reached.

“In addition, chemical reaction of the cement compounds with sulphur and nitro-
Misunderstanding glass staining: The original design did not contain a drip. The glass stained permanently. A drip was installed on the upper mullion to prevent further staining. At the time of the photograph the glass had not been cleaned for 1½ years. Has the real problem been solved?

within the film. If the ions that are absorbed are optically active, that is give rise to color, it is possible that the surface will show evidence of staining as a result. Thus if colorant ions are leached from cementitious materials, it seems quite possible that those species will be picked up by the glass surface."

The agreement

Although there might be disagreement as to the exact cause of staining on window glass, there is very little disagreement as to the method of prevention.

Cleaning: Dirt on the glass will not guarantee the presence of staining, but proper cleaning and maintenance schedules of glass can guarantee that staining will not occur. Most glass literature contains the word “frequently” to describe the suggested period for cleaning. One glass expert, however, made a common-sense suggestion: “Survey the buildings within a half-mile radius of your building and find the buildings with clean glass. Ask the maintenance supervisor for those buildings how often the cleaning is done and follow his schedule.”

The drip: If the uneven runoff from the building cannot reach the glass, there can be no blaming the runoff! A drip can be added to the upper window mullion itself, in the form of either an aluminum visorlike drip or a flexible drip, as part of the window gasket. In a concrete building where a ledge or cantilever projects above the window, a drip can be readily cast into the surface itself.

The seal: Most building materials can be sealed so that they are impervious to water penetration. Industry figures and architects alike, however, caution against possible sealant problems of discoloration which may dwarf the glass-staining problems. Sealing also involves the cost and bother of recurring periodic reapplication of the sealer.

Conclusion

The most frequent staining problem in glass occurs while it is in storage. Unmonitored and enclosed, the high surface area-to-water ratio present from dampness or condensation on stored panes can accelerate the staining process that might take months or years of the worst conditions on a building. Even when it does occur in buildings, its appearance could go unnoticed and represent no impairment or discomfort to building use. One might even argue that discussion of this infrequent problem has given undue attention to an insignificant annoyance in building maintenance and nothing more.

Success has many parents, failure is an orphan. Time and research will continue to wear away at the true causes and nature of glass staining. The proper environment for such research must be maintained by all materials manufacturers for the greater and more effective use of those materials. Ignorance will stain the face of our architecture just as surely as any ion or atom of glass which decides to bolt its tight crystalline home for a wet ride on a building. [Richard Rush]

Acknowledgments

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Costs in delay claims

It's the law

New York, principles in this connection. One of these is that the claimant has the compute accurately. The courts must deal with two general principles in this connection. One of these is that the claimant has the burden of establishing or proving his damages. The second is that the failure to establish damages with mathematical certainty should not deprive a claimant of relief if he has clearly been wronged.

It is common in a contractor's delay claim for the contention to be made that he has been subject to an increase in his home office overhead because of delays occasioned by the owner. To establish whether such overhead has in fact been increased and the amount of such increase is often a difficult problem in proof. In response to this difficulty, some courts have adopted a formula, known as the "Eichleay formula," for the calculation of damages in respect to a claimed increase in home office overhead. This formula consists of first calculating the allocable overhead for the project by dividing the contractor's total billings for the project by the contractor's total billings for all projects for the period in question, and multiplying that result by the contractor's total overhead for such period. This result (allocable overhead) is then divided by the number of days within which the project was to be constructed under the construction contract to arrive at the daily contract overhead. This daily overhead figure is then multiplied by the number of days of delay to calculate the increased costs to the claimant arising from increased office overhead. The issue raised by the use of this formula is whether it is artificial and unrelated to true damages or whether it produces at least a "rough" justice.

In a recent case in New York (Berley Industries, Inc. v. City of New York, 45 N.Y. 2d 683), the Court was called upon to deal with the Eichleay formula. The claimant in this case was the heating, ventilating, and air conditioning contractor for a police station and firehouse being constructed by the City of New York. The construction contract called for completion of the project within two years, but at the end of such two-year period, only 87 percent of the project had been completed. The balance of the project was completed over the period of an additional year. It was conceded that the delay to the contractor was attributable to the owner. The contractor sued the owner for damages including in such claim the sum of approximately $20,000 for an increase in home office overhead. In order to establish this part of its claim, the plaintiff sought to rely upon the Eichleay formula, and this was the only proof which the plaintiff presented to justify his position. The Court of Appeals reversed an award to the contractor for increased home office overhead on the ground that the contractor had failed to establish in fact that his office overhead had increased because of delay and that this was prerequisite before he could rely upon the Eichleay formula to ascertain the amount of such additional overhead.

The Court, in rejecting the contractor's claim, stated: "A contractor wrongfully delayed by its employer must establish the extent to which its costs were increased by the improper acts because its recovery will be limited to damages actually sustained. ... Speculation or conjecture will not suffice. ... However, when it is clear that some injury has been occasioned, recovery will not necessarily be denied a plaintiff when it is apparent that the quantum of damage is unavoidably uncertain, beset by complexity or difficult to ascertain. ... The law is realistic enough to bend to necessity in such cases. ... "In the case before us now, any increase in home office overhead was not merely hard to measure, but was lacking altogether. True, unlike job site overhead increases whose relationship to a particular job will usually be capable of direct proof, the connection between home office overhead increases and delay in a particular project will more often be indirect. But because proof is indirect does not mean it does not exist. ... The mathematical formula did not fill the void. ... And, insofar as it was offered as a substitute for direct evidence of overhead damage, there was no accompanying foundation from which it could be found that, because of the character of Berley's business, increased overhead attributable to delay was impossible of proof without the aid of the formula. Nor was there any attempt to prove that the formula was logically calculated to produce a fair estimate of actual damages."

Although recognizing that the formula has been applied in a series of cases, this Court challenged the mechanical imposition of a formula which could result in a harsh daily penalty when only compensatory damages are warranted. The Court pointed out that damages computed under the Eichleay formula would be the same in this particular case whether the plaintiff had completed 1 percent or 99 percent of the job as of the contract completion date. This result, said the Court, was caused by the fact that the formula focuses on the length of the delay to the exclusion of many other important factors bearing on actual damages. The formula, concluded the Court, may "produce a figure with at best a chance relationship to actual damages and at worst, no relationship at all."
Westminster seating in this continental layout features individual arm rests for user comfort and center pedestal riser mounts for easy maintenance.

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Natural patterns in plastic laminates total nine in five categories: cane, grass/raid, cork, tile, and onyx/marble. Each of the Series II—Naturals has the color and texture of the material from which it was reproduced. Formica Corp., Subs. of American Cyanamid Co. Circle 103 on reader service card

The following literature items are related to the interior technics article on plastic laminates beginning on page 89. They are grouped here for the reader's convenience.

Plastic laminates Products

Rustic Quartered Oak woodgrain laminate.

Natural finish woodgrain patterns on plastic laminates include Barrel Oak, Rustic Quartered Oak, and Hallmark Walnut. Both oaks are light colored with darker graining; walnut has dark, deep woodtone. The surface has the look and feel of wood, according to the manufacturer, because it is not glossy or shiny. Laminates can be waxed to add warmth, depth, and sheen. The three patterns are available in general-purpose and vertical grades. Nevamar Corp. Circle 100 on reader service card

Desert series plastic laminates have non-directional textured designs. Colors are gold, pale green, golden tan, and deep orange. The laminates are available in standard, postforming, and vertical grades, with matching edge trim. Consoweld Corp. Circle 101 on reader service card

Laminates in solid earthtones and neutrals coordinate with company's woodgrains. When these are added to existing shades, there are 25 in the group: three whites, four off-whites, four grays, six naturals, three browns, three rusts, and two blacks. Formica Corp., Subs. of American Cyanamid Co. Circle 102 on reader service card

The following literature items are related to the technics article on glass staining beginning on page 94. They are grouped here for the convenience of the reader.

Glass staining Literature

Design for Weathering of Buildings Using Architectural Precast Concrete. Twelve-page brochure discusses design considerations related to minimizing the effects of weathering. Architectural details discussed are water drips, parapet and roof edges, surface finish, joints, and window openings. Causes of glass staining or etching, cleaning of precast concrete, and clear surface coatings are also included. Copies of Brochure PR-19, at $2 each, may be ordered from Architectural Precast Concrete Services, Prestressed Concrete Institute, 20 N. Wacker Dr., Chicago, IL 60606.

Wind-Driven Rain and Buildings. A discussion, based on a literature search and observations of buildings in Ottawa by architecture students, deals with driving rain, how it is deposited on buildings, how water migrates over building surfaces and brings about changes in their appearance as a result of dirt marking. Suggestions are offered for controlling run-off from buildings and avoiding or masking dirt problems. Copies are available for 75 cents, prepaid, from: Publications Section, Division of Building Research, National Research Council of Canada, Ottawa, Ontario, K1A 0R6, Canada.

Metal Curtain Wall, Window, Store Front and Entrance. Specifications and technical data are provided for architects as an aid in designing and specifying curtain wall and related components. Specifications include general directions, product descriptions, and execution of the work. Technical information includes standards, publications, general, metals, glass, and sound. Copies of this approximately 120-page guide are $9 each. Order from: Architectural Aluminum Manufacturers Association, 35 E. Wacker Dr., Chicago, IL 60601.

Glazing Manual. Provides descriptions of types of glass, quality standards, surface finishes and labeling, general conditions governing glazing, and glazing specific types of glass. Also included is information about wind load, sound transmission, and plastics glazing. Copies are $3.50 for FGMA members, $5 for non-members. Order from: Flat Glass Marketing Association, White Lakes Professional Bldg., 3310 Harrison St., Topeka, KS 66611.

Other products

Spray-on insulation applied to exposed interiors provides thermal insulation, acoustic improvement, condensation control, and noise re-
Products continued from page 107

It is said to be a suitable substitute for asbestos and an effective system for sealing existing asbestos coatings. K-13 consists of hollow cellulose fibers, chemically treated to resist fire, mold, and mildew. Colors include white, gray, black, tan, off-white, and matched PMS colors. National Cellulose Corp.
Circle 104 on reader service card

Open office panels, with built-in power and communications distribution capabilities, offer receptacle plug-in flexibility and two circuits per panel. Receptacles connect to the terminal block on either side of the panel base to provide up to four convenience outlets. Unused terminals are protected by caps. There are two baseboard circuits, one for indirect ambient lighting and the other for office equipment and task lighting. Circuits can be attached to building power from floor or ceiling with a plug connector. Flexible connectors carry power between panels. Westinghouse Electric Corp.
Circle 105 on reader service card

Chain-link security closures are offered in a choice of mesh sizes: 7" x 9", 4½" x 4½", 2½" x 9", or 2½" x 7". Series 700 is straight openings up to 10 ft high and 30 ft wide, either single or bi-parting. Series 900 is designed for irregular or serpentine openings. Series 200 is for maximum 9' x 10' openings single, or 18' x 10' bi-parting. According to the manufacturer, they are less expensive than traditional types of security closures, easier to install, and offer see-through protection and ventilation. Roll-O-Matic Closures.
Circle 106 on reader service card

The Kinnebrew Shelter, originally designed for the transit industry to provide protection from the weather, also has other applications where shelter is required. Primarily of wood, it is available in several models to meet varying site and ridership needs. Other wooden site furnishings include benches, kiosk with benches, and litter containers. Scyma Div., Michigan Industrial Packaging.
Circle 107 on reader service card

Aut-O-Safe® elevator battery-power unit provides emergency power to bring passengers to the lowest landing at normal operating speed. The wall-mounted unit interfaces with the elevator controller and is activated within seconds of a power outage, according to the manufacturer. Otis Elevator Corp.
Circle 108 on reader service card

Vinyl films and fabrics in the "LT/LF Series," Edition 3, can be laminated to nonmetallic substrates, such as gypsum board, wood, and fiberboard. The materials, suitable for demountable or movable partitions, can be matched with fabric-backed wallcoverings in Wallex® and Guard® collections. There are several textures and solid colors 53 in. wide, with solids also available 33 in. wide. Borden Films, Columbus Coated Fabrics.
Circle 109 on reader service card

Decorative grilles, in copyrighted designs, are diamond series and rectangle series available in a variety of woods and clear acrylic. Unframed sizes are 24 or 36½ in. wide, 48, 72, or 96 in. high for wood; 24 in. wide, 48, 72, or 96 in. high for clear acrylic. Wood stains are walnut, fruitwood, ebony, rosewood, light amber, and dark amber, in a choice of finishes. Open area, depending on design, ranges from 3 percent to 27 percent. Customwood.
Circle 110 on reader service card

Floor-standing switchgear for standby and prime power, in nine amperage ratings, can be used with the company's Cat Generator sets in single-unit and multiple-unit installations. For safety, high-voltage power is isolated in the [Products continued on page 110]

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Circle No. 343, on Reader Service Card
lower compartment, away from the instrument and control compartment. The switchgear can be used with either manually or automatically started generator sets. Caterpillar Tractor Co., Engine Div. Circle 111 on reader service card

Watersaving plumbing fixtures can save up to 40 percent of water used daily. In commercial and apartment installations, substantial savings are possible. Units available are several styles of toilets, urinals, faucets, and showerheads. Costs of water and sewerage assessments can be reduced with fixtures designed to operate on less water without loss of efficiency. Eljer Plumb­ingware, Wallace Murray Corp. Circle 112 on reader service card

The Heat Battery® for thermal energy storage can be charged with solar energy, off-peak-load electricity, or waste heat from other processes according to the developer. Storage medium is sodium sulfate decahydrate (Glauber’s Salt). Current developments are in water-to-air pumps. OEM Products, Inc. Circle 113 on reader service card

Turbopak centrifugal liquid chillers are said to be 20 percent more energy efficient than other systems currently available. Improved heat exchanger design, matched chiller and motor, and solid-state controls contribute to the improved efficiency of the chillers. York Div., Borg-Warner Corp. Circle 114 on reader service card

A vacuum-tube solar collector, Model TC-100, is said to supply almost twice the amount of energy that can be provided by a conventional solar collector. Tests indicate that it can provide about 200,000 Btu per sq ft of collector annually in a typical application. A water/antifreeze solution circulating through the system is heated to temperatures in the range of 250 F, compared to flat-plate collectors which usually operate around 140 F. The higher operating temperature is said to make it suitable for air-conditioning applications. General Electric Co. Circle 116 on reader service card

A solar water heating system for residential use can be added to existing systems or installed in new ones. According to the manufacturer, it can supply from 50 to 80 percent of domestic hot water for the average family at a cost that compares favorably with electric hot water heaters. It consists of two collecting panels, air handler/heat exchange blower units, circulating pump, storage tank, control unit, and mixing valve. Solar Shelter Engineering. Circle 117 on reader service card

Energy management. An eight-page brochure describes how energy costs can be reduced by as much as 30 percent by means of a system for shedding and cycling loads. Specifications for the system are also provided. The company indicates that the Energy Saver can pay for itself within two years. Aegis Energy Systems, Inc. Circle 118 on reader service card

[Products continued on page 114]
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But how do you justify the initial cost of ceramic tile in logical, dollars-and-cents...
creativo person to ceramic Tile:

ns? When you could use any one of thezen or so other materials that, in the long run, would probably cost less? That's where I can offer you some advice. As one creative person to another. My clients have published the results of a totally independent life-cycle cost study comparing ceramic tile with the most commonly used alternatives.

And, over the selected life-cycle of 40 years, ceramic tile actually came out less expensive to install and maintain than any other floor or wall finish studied. That may surprise you. But it didn't surprise me. I've been seeing proof of the durability of ceramic tile for years.

Some ammunition to help you convince your clients.

Just write my clients, the Tile Council of America, for your free copy of "Ceramic Tile: Life Cycle Costs."

It states the economic case for ceramic tile in figures even your most skeptical clients will understand.

And I hope it convinces you to use real ceramic tile in your next job. Because my job may depend on it.

Tile Council of America, Inc.
Tile Council of America, Inc., P.O. Box 326, Princeton, New Jersey 08540
**Products continued from page 110**

**The Power Slasher** factory-installed option on rooftop air conditioners cuts electrical energy with savings up to 25 percent, according to the manufacturer. Fan speed is reduced when compressors are operating at low speed or when outside air is used for cooling. The fan also operates at slow speeds on the heating cycle when the heat exchanger is inactive. The option is available on 20-, 25-, and 30-ton models. The Trane Co.

Circle 119 on reader service card

**Sylvania 880-watt Unalux high-pressure sodium lamps**, designed to directly replace 1000-watt mercury vapor high-intensity discharge lamps reportedly deliver approximately 62 percent more light while consuming 12 percent less electrical energy. The company says the lamp can operate on most existing mercury lighting ballasts and equipment and has a rated life of 12,000 hours. It is suitable for industrial and commercial applications. General Telephone and Electronics.

Circle 120 on reader service card

**Water-Guard plumbing products** are said to reduce water usage from 25 to 75 percent. Lowered use cuts cost of water, energy required to heat it, and sewerage rates. Included in the group are toilets, urinals, showerheads, and faucets. Kohler Co., Water-Guard.

Circle 121 on reader service card

**Reflecto-Shield HS**, a microscopically thin deposit of metal sandwiched to film laminate, reportedly stops up to 79 percent of infrared solar rays from entering a building and prevents up to 40 percent of manmade rays from escaping through windows. Thus it reduces air-conditioning loads in summer and cuts fuel costs in winter. In addition, it provides shatter resistance to glass and reduces fading and glare. Colors are silver, smoke, and bronze. Madico, Van Leer USA.

Circle 122 on reader service card

**Heat recovery fans** redistribute hot air from ceilings 15 to 35 ft high, reducing heat loss through ceilings and cutting energy consumption by up to 30 percent, according to the company. The fans also can be used in summer for additional cooling. I-beam, ceiling, and wall mounts are available. Chelsea Fans & Blowers, Tuttle & Bailey Div., Allied Thermal Corp.

Circle 123 on reader service card

**Problem Wall? Flexi-Wall!**

Flexi-Wall® is the one-step process in covering walls for renovation or new construction. Goes up like wallcovering... over many surfaces... hiding blemishes, bridging gaps. Dries hard as plaster. Easy to put up, easy to clean, easy on the budget. In 23 colors. Problem wall? Flexi-Wall! Write for samples. Flexi-Wall Systems, P. O. Box 88, Liberty, SC 29657.

FLEXI-WALL® Plaster in a Roll™

- Approved for hospitals
- Class A flame spread rating
- GSA Contract #GS-005-64549
- HUD Contract #OA/COI-2613

Problem Wall?

Circle No. 324, on Reader Service Card

**Other literature**

**Concrete technology publications.** Catalog lists 170 publications on concrete technology, structural design, and concrete construction. Included are ACI Standards, codes, specifications, bibliographies, handbooks, symposium volumes, and special publications. American Concrete Institute.

Circle 202 on reader service card

**Exit signs catalog** describes and illustrates illuminated exit signs with either incandescent or fluorescent lamps, a choice of housings and mounting modes, and red or green lettering. Also included in the 16-page brochure are mercury-vapor recessed aisle lights and corridor lights. Prescolite.

Circle 203 on reader service card

**Drafting instruments** in three series totaling 11 sets, suitable for students and professionals, are shown and described in a six-page catalog. Also shown are instruments available individually, repair kit, and accessories. Dietzgen Corp.

Circle 204 on reader service card

(Literature continued on page 116)
TRICKS OF THE TRADE, EXPLAINED.

To be a blinding success, just use your imagination. And the Blind Imagination of Bali one-inch blinds.

When you specify Bali, you'll be giving your building a more uniform appearance. With none of the visual distractions so common with drapes.

That's only our outside story.

Our inside story is this: Bali Blinds do a better job controlling light than other types of window coverings. That saves energy. Even when they're wide open, Bali Blinds still work at 25% efficiency.

Bali saves time, too. Because when it's time to move walls as office arrangements change, inside and recessed or pocket-mount blinds don't have to be moved.

But there's one thing Bali won't leave to your imagination. That's our specifications. Bali Blinds have been specified in a simple CSI format to permit ready reference for procurement packages.

And we'll make these specs available to you, for you to write your requirements around them.

So, if you want to be a blinding success in business, build around Bali. And use the coupon below for a copy of our brochure, The Tricks of the Trade.

Bali Blinds
Show me The Tricks of the Trade, free.

Name ____________________________
Company ____________________________
Address ____________________________
City ___________ State ______ Zip ______
Telephone ____________________________

Bali Blinds
Bali IS BLIND IMAGINATION.

Circle No. 342, on Reader Service Card
Custom-designed cooling towers are described in a 16-page brochure. The towers, constructed of masonry or concrete for long life, use Permagrid tile fill, in a self-supporting pattern, that provides design performance for the life of the towers. Full-color photographs show the cooling towers in use on hospitals, office and public buildings, airports, and industrial plants. Ceramic Cooling Tower Co.

Circle 208 on reader service card

Wood flooring, ranging from planks and strips to parquet, herringbone, and custom designs, is described and illustrated in full color in a 10-page brochure. The flooring is available prefinished or unfinished. Also shown are natural cork, bonded between vinyl backing and acrylic-impregnated wood that requires minimum maintenance, for heavy traffic areas. Hoboken Wood Flooring Corp.

Circle 209 on reader service card

High-performance, thick-film coatings for walls, ceilings, and other vertical surfaces are described in a four-page brochure. The coatings have high-strength fibers mixed in to provide resistance to abrasion, impact, and thermal shock. Tables show properties, chemical resistance, and system to be used for specific conditions. Con/Chem, Inc.

Circle 210 on reader service card

Plumbing and drainage products code guide provides definitions, construction, and installation descriptions and available references for plumbing devices. Included are air gap fittings, backwater valves, cleanouts, fixture supports, floor drains, roof drains, and similar products. A glossary of general and specific terms and illustrations help to clarify terms and identify products. Code Guide 302 is $1.25 and can be ordered from Plumbing and Drainage Institute, 5342 Boulevard Pl., Indianapolis, IN 46206.

Chain-link fence. Basic components and types of chain-link fences and gates are shown and described in a 24-page brochure. Specifications are included for Permafused® vinyl-coated wire, PermaGreen® vinyl-coated fence, galvanized steel framework fence, and aluminum framework fence. Special fencing for tennis courts, wind screens, backstops, and picket fences is also available. Anchor Fence.

Circle 211 on reader service card

Air-moving equipment, including blowers and ventilators, is illustrated in a four-page folder. Of aluminum construction, the products carry a five-year warranty. Among the products described are roof, ceiling, and wall ventilators, direct- and belt-drive blowers. Loren Cook Co.

Circle 212 on reader service card

Insulation board of expanded polystyrene is described in a four-page catalog. Charts show physical properties, thermal conductive values, and recommended thicknesses. Available sizes and insulation details for walls, ceilings, floors, and roofs are included. Dyrelite Corp.

Circle 213 on reader service card

[Literature continued on page 119]
The idea: originality in color

Louis Tiffany (1848-1933) and Art Nouveau brought a new decorating style to the late 19th century. The flowing shapes and brilliant colors of Tiffany's glass creations are classics of the period—and have been inspirations for modern revivals. Tiffany was an artist who "painted" in glass and metal, and a designer who was inspired by the full possibilities for color blends and contrasts. You explore those same possibilities today—from a modern viewpoint, and helped by modern materials. Nevamar laminates are one source, with color a special strength. Led by the industry's most complete solid color collection, the Nevamar line can open up some new (and original) possibilities for you.
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Consider the bird nest. Functional perfection. Something you as an architect strive for along with the esthetics that give your design pleasing form. We're reminded of your goal each time we produce signage for you.

At Matthews, we've developed the technical expertise and production capability to make your ideas sing. We'll produce one sign or an entire signage system, and we'll do everything from fabrication to installation. Whatever it takes to bring your designs to signage. Interior or exterior.

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If you'd like more information on how we can help bring your designs to signage, call (800) 245-6574, toll free, or write Matthews, 1315 West Liberty Avenue, Pittsburgh, PA 15226.

Matthews

Circle No. 344, on Reader Service Card
Literature continued from page 116

'Energy Saver's Guide to Armco Building Systems' discusses Steelox roofs and Kor/Met and Steelox walls. Diagrams show construction of the Armco walls and roofs compared with other types, with the percentage of savings for each indicated. Armco Building Systems. Circle 214 on reader service card

Heating and cooling cost comparison analysis. A survey of seven cities around the U.S. compares heating and cooling costs of a 30,000-sq-ft building used for light manufacturing. Twelve-page summary analyzes energy costs of conventional construction versus Armco building systems. Armco Steel. Circle 215 on reader service card

Insulative merit of red cedar shingles and shakes relative to other roofing and siding products is shown in a table entitled 'Conductive, conductances, and resistances of building and insulating materials.' The four-page reprint is excerpted from the ASHRAE Handbook of Fundamentals (1972), with additional data from the California Energy Design Manual. Red Cedar Shingle & Handsplit Shake Bureau. Circle 216 on reader service card

A-Therm + thermal barrier on doors and window features triple glazing, a structural thermal break in the frame, and double weather striping. According to the company, heat loss can be reduced by as much as 37 percent over that of 1/4-in. sealed insulated glass. Tables compare thermal barrier and other glazing for savings in oil, gas, or electricity. Drawings show window and door construction details. Door and window styles available are also illustrated in this 12-page brochure. Acorn Building Components. Circle 217 on reader service card

Lexan® polycarbonate glazing sheet is said to have better insulating characteristics than the same thickness of glass, reducing costs of heating and air conditioning. Because of its impact resistance, window replacement costs are also reduced. Technical data, installation information, and glazing specifications are provided in a 20-page brochure on Lexan sheet products for architectural applications. General Electric Co., Plastics Div. Circle 218 on reader service card

Styrofoam® extruded polystyrene insulation products can be used in interior and exterior walls, foundations, and roofs. Technical data, design information, and specifications for the several types of insulation are offered in a 20-page brochure entitled Styrofoam Board Insulation. Dow Chemical U.S.A. Circle 219 on reader service card

Sun control devices that are both decorative and functional are included in this 12-page technical brochure. There are grilles, vertical and horizontal sun control louvers, demilns, and airfoils. Drawings show installation details. Technical assistance is also available. Construction Specialties, Inc. Circle 220 on reader service card

Direct gas-fired industrial air heating catalog explains the major application features of modular systems that are said to provide fuel savings of up to 40 percent. A detailed chart compares initial costs, operating costs, and performance of direct gas-fired heaters with other forms of space heating. Cambridge Engineering, Inc. Circle 221 on reader service card

The Energy Package for HVAC systems offers a wide range of gas, electric, oil, and hydronic units to meet energy conservation requirements. There are dual energy heat modules that can be converted to another fuel when the first is in short supply or the cost has skyrocketed. Information about these and other units and accessories, and company representatives, is in a four-page folder. ITT Reznor Environmental Products Div. Circle 222 on reader service card

'The Crunch' is a 20-page brochure that suggests ways to save energy by more efficient use of heating and cooling equipment. Energy-management services, humidity control, hot water heating, and lighting are all discussed. Honeywell, Inc. Circle 223 on reader service card

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Circle No. 362, on Reader Service Card

8-78 Progressive Architecture 119
The 17 year old vented radiant heating system that a lot of people don’t know about.

Co-Ray-Vac is a gas fired, fully vented, low intensity, infrared heating system.

Low Intensity Unlike glowing red “high intensity” infrared heaters, our system is a series of enclosed burners connected by radiant tubes or pipes. This unique design efficiently heats not only large areas like factories and airplane hangars but also offices, stores and restaurants.

Infrared Heats like the sun. Radiant heat is emitted from overhead tubes but not released until it strikes people or objects at floor level. Air temperature is raised when wasted at roof level. Comfort is dramatically increased because the system provides draft free heat. It bathes an entire area in warmth.

Gas-Fired Does not use oil. Operates on natural or LP gas. Extremely high combustion efficiency, in the range of 90%, coupled with infrared heating principals, slashes fuel consumption. Users report fuel savings up to 50% over conventional heating systems.

Fully Vented No fumes. Saves fuel because extra ventilation is not required to expel condensation caused by combustion.

Ask the Man Who Owns One Designed for new or retrofit installations in industrial or commercial buildings. Write or phone for information and names of users in your area.

Building materials

Major materials suppliers for buildings that are featured this month as they were furnished to P/A by the architects.


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Delta handles more over-the-counter shipments of 50 lbs. or less than any other certificated airline. And DASH (Delta Airlines Special Handling) serves 86 U.S. cities plus San Juan. Any package up to 90 inches, width + length + height, and up to 50 pounds is acceptable. DASH packages accepted at airport ticket counters up to 30 minutes before flight time, up to 60 minutes at cargo terminals.

Rate between any two of Delta's domestic cities is $30 ($25 between Dallas/Ft.Worth and Los Angeles or San Diego or San Francisco). Shipping charges prepaid. Pick-up and delivery available at extra charge. Call 800-638-7333, toll free. (In Baltimore, call 269-6393).

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DELTA IS READY WHEN YOU ARE.
Insulating glass can be a wise investment since it pays off in terms of heat savings, fuel savings and comfort. Now, carry your good idea a little further and consider the framing system.

**Kawneer's new Insulcast 450**

**Thermal Framing can make a big difference.**

By adding Kawneer's new Insulcast 450 Thermal Framing your total investment in the combined system will pay back even quicker. In fact, when compared to a non-thermally broken system with insulating glass, Insulcast 450 can reduce the payback period by as much as 15%.

The faster payback is made possible since the small additional investment in Insulcast 450 can provide an additional 20% reduction in total heat loss.

**Not all thermal framing systems are alike.**

Kawneer's Insulcast 450 features the exclusive IsoLock® thermal barrier. IsoLock positively interlocks the interior and exterior metal removing the potential danger of framing failure and glass breakage. It also reduces condensation and its damage since heat conduction is minimized to the point where the framing system stays warmer than the glass.

**Insulcast 450.**

**The designer's element.**

The clean, slim framing members of Insulcast 450 present a flush grid appearance which enhances reflective and tinted glass. Combined with seamless face members it's the perfect solution for designs that require the practicality of insulating glass and esthetics to satisfy the designer's eye.

For more information about Kawneer's new Insulcast 450 Framing System write Kawneer Architectural Products, 1105 N. Front Street, Niles, MI 49120 (616) 683-0200.

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Progressive Architecture

Job mart

Situations Open

Architect: Upstate New York A/E firm desires licensed architect to grow with firm. Must be self starting and make strong impression before clients, agencies, and review groups. Salary commensurate with background. Write in confidence to Box No. 1361-290, Progressive Architecture.

Architect/Department Head: Candidates should have demonstrated thorough professional and administrative-managerial experience. The successful candidate should be prepared to assume leadership position in the architectural work of a major multi-discipline Midwest A/E firm and continue its nationwide reputation for excellence. Our city provides outstanding opportunities for cultural and athletic activities and an environment for family-oriented activities. All qualified individuals are encouraged to reply in confidence for prompt consideration. Send resume, including discussible compensation range, to Box 1361-285, Progressive Architecture.


Architectural Job Captain: Position available with young and developing architectural firm in small mid-south town. Wide range of projects throughout the South. Three to five plus years experience desired in all phases of architectural production. Degree desired but not mandatory. Ledbetter Associates, Architects, 508 Main Street, Corinth, Ms 38834, (601) 286-9202.

Architectural Specifications Writer: New York office of prestige A/E firm seeks specifier with five or more years progressively responsible experience in all phases of contract document preparation. Applicants should have understanding of contractual relationships and recognized office practice, knowledge of construction products, materials and systems, and research ability. Field experience desirable. Equal opportunity employer. Submit resume detailing education, experience and salary history in confidence to Box 1361-291, Progressive Architecture.

County of Fairfax, Virginia, is soliciting expressions of interest from consultants having experience as professional advisors in conducting design competitions, in general Architects. Minimum 3 years experience in general architectural practice. Must have strong graphic, management and communicative skills. Saunders-Thaliden & Associates, Inc., 374 Lindell Blvd., St. Louis, Mo 63108, 314-534-399K.

Architectural Illustrator: candidates should have demonstrated thorough professional and administrative-managerial experience. The successful candidate should be prepared to assume leadership position in the architectural work of a major multi-discipline Midwest A/E firm and continue its nationwide reputation for excellence. Our city provides outstanding opportunities for cultural and athletic activities and an environment for family-oriented activities. All qualified individuals are encouraged to reply in confidence for prompt consideration. Send resume, including discussible compensation range, to Box 1361-285, Progressive Architecture.

Department Head: Department of Architecture at Tuskegee Institute. Appointment to begin May, 1980. Responsibilities include administration of educational program, teaching and program development. Tuskegee Institute is committed to continuing development of an innovative architectural program. Applicants should have prior teaching and professional practice experience. Prior administrative experience is desirable. Rank and salary commensurate with qualifications. Interested persons should send vita, letters of recommendation and other supporting information to: Professor W.T. Hooper, Chairman, Search Committee, Department of Architecture, Tuskegee Institute, Tuskegee Institute, Al 36086. Applications should be received by September 15, 1979. Tuskegee Institute is an Equal Opportunity Employer.

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Manager, Land Development, International (Israel): Position available with Real Estate Developer in the Northeast. M.A. in Architecture required to provide research, development, design, construction and real estate in the US and Israel. Must have knowledge of solar energy systems. Extensive travel to Israel to negotiate with real estate, business and industrial organizations to acquire and develop land. Candidate must speak and write Hebrew. Salary $20,000 to $25,000. Send Curriculum Vitae and list of publications to: Box 320-B, 15 E. 41 St., NY, NY 10017. Affirmative Action/Equal Opportunity Employer.

Project Architect: Design Oriented A-E firm in the Midwest has an opening for an architect experienced in the design of research laboratories, institutional, commercial, and industrial projects. Applicants must have architectural degree and registration, and must have demonstrated architectural competency and ability in planning, design, preparation of final documents, client relations, and project management. Qualified applicants should submit detailed resume and salary history in confidence to Box No. 1361-280, Progressive Architecture.

Visiting Professorship: Department of Architecture, Auburn University: Unique opportunity for a highly qualified nationally recognized senior design professional to participate in architectural education for the 1979-80 academic year. Attractive salary commensurate with qualifications. Active participation in all levels of the design process to explore innovative teaching approaches with course emphasis in the applicant's field of interest and expertise. The department has expanding programs in Architecture, Landscape Architecture, Interior Design, and Urban & Regional Planning. The School of Architecture and Fine Arts is multidisciplinary in its approach and includes Architecture, Building Science, Industrial Design, Art, Music, & Theatre. Design professionals interested in contributing to this program should contact Wayne Drummond, Head, Department of Architecture, Auburn University, Auburn, Al 36830. An Equal Opportunity Employer.


[continued on page 124]
PPG OFFERS A STUNNING ALTERNATIVE TO THE DRAB SLAB.

Discover a spectacular exterior wall treatment that puts new designs on all that it surrounds. Discover PPG's Solarcool® Spandrelite® wall cladding.

In addition to dramatic beauty, Solarcool Spandrelite wall cladding offers outstanding performance capabilities. In new or existing applications, and at a cost that's lower than the expected exterior wall treatments: masonry, aluminum, stone and polished stainless steel.

An advanced structural silicone glazing system with the mullions inside can make Solarcool Spandrelite wall cladding appear seamless.

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Since 1965, PPG has led the world in creative application of structural silicone glazing systems. And began to build more "oohs" and "ahs" into buildings.


PPG: a Concern for the Future

Circle No. 350
Job Mart continued from page 122

Situations Wanted

Mechanical Engineer: P.E., with ten years, plus, experience in plumbing, heating and cooling systems; management trained, including CPM. Will relocate. Box No. 1361-292. Progressive Architecture.

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From preliminary drawings to construction details, this book illustrates the entire process of designing building structures. It features examples of a two-story residential building, a one-story commercial building, and a six-story office building.
(1-04721-X) Aug. 1979
approx. 208 pp. $17.95

AIA Metric Building and Construction Guide
American Institute of Architects
Edited by Susan Braybrooke
Here’s a practical primer of essential, reliable information on the International System of Measurement (SI) as applied to building construction. Prepared with the active collaboration of the National Bureau of Standards Center for Building Technology and the American National Metric Council.
(1-03812-1) 1979
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(1-03813-X) $8.00 Paper

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3rd Ed.
The late Harry Parker
Prepared by Harold D. Haufler
This fully updated edition explains methods commonly used in determining proper timber sizes, providing a working knowledge of structural design for day-to-day problems and a background of working effectively on more complicated projects.
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Here’s practical, easy-to-use guidance on the complete range of architectural activities in building construction. This new work follows the basic National Council of Architectural Registration Boards (NCARB) examination outline and discusses each activity in relation to contemporary architecture. Includes examples from the U.S. and Canada.
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591 pp. $34.95

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(1-27569-7) Aug. 1979
approx. 384 pp. $31.50 (tent.)

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Edited by Ian C. Laurie
Examines society’s attitudes towards the concept of nature in cities, the historical background to these attitudes, resulting design problems, and shows how to achieve a balanced relationship between the built and natural environments.
(1-98605-X) 1979
428 pp. $43.75

Housing Problems in Developing Countries
Proceedings of International Association for Housing Science Conference, 1978
Vols. 1 & 2
Edited by Fadl H. Dakhil, Oktyar Ural, & Moneer E. Tewfik
International contributors provide the most comprehensive survey of the technical, economic, and social aspects of housing problems in developing nations.
Vol. 1: (1-27558-1) 1979
751 pp. $52.00
Vol. 2: (1-27559-X) 1979
812 pp. $52.00
2-vol. set: (1-27561-1) $104.00

Moving Up Quickly
How to Use Executive Job-Hunting Techniques to Land a Better Job
Thomas L. Weck
This practical work—one of “the most perceptive guides to job-hunting ever published specifically for the management market—shows how to fine-tune your skills and talents to meet the needs of the current job market. Includes all the necessary steps for securing and evaluating job offers. A special section deals with the problems of the unemployed executive.
(1-05842-4) Aug. 1979
approx. 175 pp. $12.95 (tent.)

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In Business, Government, the Sciences, & the Professions
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10:15-11:45 A.M. "Who Guarantees What To Whom?"
12:00-1:45 P.M. LUNCHON
F. Stuart Fitzpatrick Award
"Your New Office Of Construction" Chairman: Mr. Thomas F. Dailey
2:00-3:15 P.M. "Effective Methods of Contracting"
3:30-4:45 P.M. "The Changing Building Materials Market...Who's Buying What From Whom"
Exhibition Hrs. 9 A.M.—5 P.M.

**Architects Day**
(Wed., Oct. 17)
9:00-10:45 A.M. "Barrier-Free Design"
10:30-11:45 A.M. "Solar Energy Systems"
12:00-2:00 P.M. LUNCHON
Speaker: Elmer E. Botsai, FAIA
2:15-3:15 P.M. "Engineered Brick Masonry Development and New Innovations"
3:30-4:45 P.M. "Glass and Glazing Design"
Exhibition Hrs. 9 A.M.—5 P.M.

**Builders Day**
(Thurs., Oct. 18)
9:00-10:15 A.M. "What Builders Need to Know in Today's Market"
10:30-11:45 A.M. "How to Get Front-end Funds for Residential Development"
12:00-1:45 P.M. LUNCHON
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