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Sound Absorption Coefficients

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<th>500 CPS</th>
<th>Noise Level</th>
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<tr>
<td>6T</td>
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<td>.60</td>
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<td>8W</td>
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September 1980

Progressive Architecture

Editorial: Exploring abroad with Pencil Points

Interior design

Introduction: Shifting continents

P/A explores interior design beyond our national edges.

Imponderable substance

Luis Barragán’s Casa Gilardi in Mexico. By Emilio Ambasz.

History ajar

Robert and Trix Haussmann’s elegant shop and café in Zurich.

Immaculate distillation

The Central Pharmacy in Karlsruhe, Germany, by Heinz Mohl.

Hommage à Adolf Loos

Viennese Luigi Blau’s remodelings include his own house.

Reflection houses

Hiroshi Hara’s house and museum in Japan. By Hiroshi Watanabe.

À nous la liberté

Poetic License transforms the U.S. Consulate entry in Paris.

Clouds of concrete

Jøn Utzon’s Bagsvaerd Church in Copenhagen. By Marc Treib.

Fabbrica Fantoni

Gino Valle’s design for a furniture plant in Udine, Italy.

High-fashion tech


Custom crafted

A hair salon in Toronto by Francesco & Aldo Piccaluga.

The inside of out

Günther Domenig’s branch bank in Vienna, with commentary by Friedrich Achleitner.

Thick, rough, malleable

IBM Center in Mexico by Ricardo Legorreta. By Wayne Attoe.

Artful parts

Warehouse in England by Duffy, Eley, Giffone, Worthington.

Technics

Specifications clinic: Barrier-free specification

Access today

The new ANSI Standard opens up areas to the handicapped.

Interior technics: The down side of up

The many factors involved in designing suspended ceilings.

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Cover: An abstraction of Hiroshi Hara’s Shokyo Museum. Design by Marc Treib, commissioned by P/A.
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FORMS + SURFACES
In the 1930s, under its original name, this magazine published a perceptive series on European design by a student commentator, George Nelson.

We believe that it is important to understand why architecture in Europe is taking the forms that it is, for with understanding the American practitioner can profit from the good and reject the bad, avoiding the unintelligent copying of mannerisms that is unfortunately sometimes done for the sake of being "smart."

With these words of severe caution, Pencil Points introduced one of a series of 12 articles published in 1935 and 1936 by George Nelson, then a Fellow of the American Academy in Rome—a professional about to embark on a career of writing, architecture, and industrial design for which he is now internationally known. Apparently, the intent was as much to guard American readers against the contagious influence of European Modernists as to inform them—or at least the editors appeared devotees of its portfolios of Georgian details by suggesting as much.

In case readers were too readily seduced, Nelson articles were generally followed by the vituperative attacks of the elderly H. Van Buren Magonigle on the evils of Modernism, delivered mainly in biting words. Nelson devoted most of his six- to eight-page allotments to photos that look enticing even today, accompanied by reports on interviews with the architects, which make intriguing reading today.

His report on Mies, then 49 years old and still in Germany, skillfully depicts his reticence and near motionlessness, paradoxically combined with a fierce temper and the force of will to have newly designed steel chairs manufactured and in place within an incredible four days. There was also his apparent indifference to politics, which left him at that time "the only one among Germany's great modern architects who has anything like a sure position in the country at this time."

Gropius, when interviewed, was already in England. "Whether Gropius' future work will be done in England or Germany is a matter of conjecture," reported Nelson. The article summarizes Gropius' career to that date and stresses with some foresight his importance as a teacher over his example as an architect. "Through the Bauhaus he has had the greatest influence of any living artist, with the possible exception of Le Corbusier"—a rather provocative assertion for 1935.

As for Le Corbusier, Nelson found him a most engaging and voluble subject, once his Swiss reserve had been softened by the atmosphere of the Italian café where they met—and some beer. He talked mainly of practical things—of communal dwellings vs scattered houses, of top-lighted exhibition spaces, of air conditioning. This installment is illustrated not with photos, but with Corbu's on-the-spot sketches from the café.

Of considerable interest, of course, is which architects Nelson reported on, in addition to these three who seem, in retrospect, virtually inevitable. They were Marcello Piacentini, Gio Ponti, and Giuseppe Vaccaro of Italy, Eugene Beaudouin of France, the brothers Luckhardt of Germany, Raymond McGrath and the Tecton partners of England, Helweg-Moeller of Denmark, and Ivar Tengbom of Sweden. Absent were Alvar Aalto and the Dutch Modernists, among others. Given the economic and political upheavals even then taking place in Europe, the choices and comments of Nelson seem remarkably valid 45 years later.

In casting our net around the world for this 1980 issue on interiors, we have not sought, as Nelson did, to identify the most influential figures. But we have sought to raise our readers' consciousness, as he did, of promising design approaches that may be better represented outside the United States than inside. It should go without saying that our readers are not expected to copy any of the design devices presented here, merely for the sake of seeming "smart."
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Beauty is not skin deep

In recent issues I have read a criticism of Doug Kelbaugh’s recent work (P/A, April 1980, p. 162) and the reply made in the July issue by Mr. Kelbaugh. I have to reinforce Mr. Kelbaugh’s criticism of Nory Miller’s article, for I believe he is doing a great deal for the future of architecture. I perceive the criticism of Mr. Kelbaugh as necessary to emulate the inherent problems with our current “formal vocabulary” and its respect to the environment. As one deeply concerned with environmental issues and searching for appropriate responses to existing conditions, I must join Doug in questioning the logic of our present-day formalisms.

By responding to the machine, Modern architecture left human needs and history behind. In reaction to Modern architecture, Post-Modernism neglects the most important elements of history and retains only the formal aesthetic vocabulary as its foundation of thought. This single gesture precludes the issues of “commodity” and “firmness” for the sake of pure “delight.” Even with my brief experience with architectural history, I know that the architecture of the past was a response to the conditions of the time, and the personages whose work we emulate with our Post-Modernist tributes dealt with their age and the needs of their age... the architecture was responsible. In our anachronistic forays we are manipulating the classical orders in metaphorical disorder and calling it “art.” Worse yet, we are neglecting the essential elements of architecture: environment, structure, and technology; merely adding a “skin” to Modernistic bones and “jazzing it up” with high-tech “schmaltz.” (Please excuse the jargon, but it is what we are being taught in the schools.) Essentially, our “architecture,” if you will, is missing the essential stuff that any architecture, of any period, is made of... it is lacking in spirit. We have lived through the brunt of the machine age, our architecture reflecting society’s attitude of dominance of the natural environment. As Post-Modernism shows, we are now searching for something different.

The intentions of some Post-Modernist thought are based upon sincere desires to understand the architecture of the past, and bring human qualities to an architecture often devoid of anything remotely identifiable as human in detail or scale. Yet for all of its success in those areas, it still fails miserably as “the sign of the times” that architecture should and must be.

I for one believe that it is necessary to understand the environmental, political, and economic structures of the ages that produced the architecture that we now so fervently wish to call our own. As visual people, architects tend to see the beauty of ancient ruins and neglect the conditions which led to their reaching that state. The orders of the ancient Greeks and Romans are the substance of Post-Modernist thought, and as such reflect our ignorance of the fate of those civilizations. Contributing to the fall of Rome and Athens were severe ecological disasters: pollution and deforestation resulting in the loss of wood resources and erosion of crop land. Essentially they had an energy crisis and were unable to overcome it. This is the real lesson to be learned from our past.

Our built environment and thus our architecture must be responsive to the ways of nature, it must be energy-efficient, and it must fit more closely into the cycles of the ecosystem. This is the challenge of today, it is the architecture that our environment is demanding.

As we seem to be caught in the tradition of classifying architectural periods, “Post-Modern” just will not do for ours. As Doug Kelbaugh has said, “this new architecture needs a clear and compelling name.”

But I sincerely wonder if a new banner is enough, for what we really need is an ideal... an ideal that will bring our architecture to respond to today’s needs. If we can do this, then future generations will be able to say, “that is truly beautiful.”

Richard Lee Hawksley
Graduate Student of Architecture
Kent State University
Kent, Oh

[Granted we really need an ideal, but the right ones don’t necessarily emerge when you need them. As crucial as ecological sensitivity may be, we cannot expect that to form the basis for an architecture. There must be some seemingly irrational component involving imagery, which is implicitly recognized in work such as Kelbaugh’s (P/A, April 1980, p. 162). The architecture that accommodates these needs—and undoubtedly others—is not apparently at hand.—Editors]
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Portland Square competition winner announced

On July 24, the jury for the Pioneer Courthouse Square Design competition premiated the only local team among the five finalists. Headed by William K. Martin, the team comprised Douglas Macy, Lee Kelly, Terence O'Donnell, Spencer Gill, and Robert Reynolds. The other finalists were Eisenman/Robertson; Geddes, Brecher, Qualls, Cunningham; Lawrence Halprin and Charles Moore; and Machado/Silvetti with Schwartz/Silver. This is the second major civic competition held in Portland this year (P/A, May 1980, p. 25).

This key block was the site of the first public school, replaced in 1883 by the Portland Hotel designed by Stanford White. In 1951 the grand hotel was replaced by a graceless two-level parking garage. Since then the decrepit Pioneer Court house has presided over this banal structure that, because of the lack of open space in the area, cried out to be a public square. Commitment to this goal came in the late 1960s and contributed to a retail renaissance in the 1970s that continues and is expected to accelerate when the area's centerpiece is completed, as is now planned, in 1982.

After the first submission deadline in March, 1980, the jury selected 10 out of the 162 entrants for interviews. Five finalists were chosen to submit designs in July 3, based on the program approved by the City Council and an April interview with the Professional Advisor, Ronald J. Stastney, and the jury. Jury members were Pauline Anderson of the square's Citizen Advisory Committee, Norman Sharpe from the Square's Design Advisory Committee, John Rian representing the downtown community, George McMath, the Courthouse restoration architect, and M. Paul Friedberg from New York.

The program stated that the square should have "a single, predominant concept that will serve as a strong, positive attractor to the downtown" by day and night. The solution must mitigate two negative environmental factors, a tiny climate and street noise generated by the transit mall on 5th Avenue.

Stressing spatial variety and flexibility, the program called for an unenclosed partial cover or shell for art/music/performance, a public information center, and revenue-producing support facilities. A separate section declared a Citizen Advisory Committee recommendation for a "glass conservatory-type structure" for seasonal and permanent botanical exhibits.

Schemes from the diverse group of finalists ranged from a highly picturesque, insular composition of a water garden, a clock tower, an arcade, and a multiuse structure that created a crescendo of forms at one corner, by Halprin and Moore, to the winning scheme, a terraced open space lightly encumbered by a series of low, glazed pavilions. In between were more strongly geometric solutions that tightly organized the space either with a grid, as in the Eisenman/Robertson and the Machado/Silvetti/Schwartz/Silver schemes, or a trellised arcade, as in the GBQC scheme. All of these took seriously the program recommendation...
either for a conservatory, or for support structures and the need to buffer the square against rain and noise.

Now comes the Catch-22. In spite of the strong recommendation for a conservatory-type structure and the implication of other needs for covered areas, a key piece of the square financing is a $1.24-million grant from the U.S. Dept. of Parks and Recreation conditional on the square's being an outdoor, open space. Though city officials warned that substantial enclosed structures might cause loss of the grant, the nonlocal designers appear not to have understood the seriousness of this concern. The jury comments about the winning scheme praised its "grand open space suitable for city-wide celebration" and noted that the adjacent buildings were used to frame and create the square's edges. Other crucial attributes appear to have been modest scale and informality plus an orientation of access to the 100 percent corner at 6th and Morrison.

[Sally Woodbridge and Larry Boozer]

INTELSAT winner is John Andrews

John Andrews International, the Australian architectural firm, was proclaimed the winner over five other firms in an invited competition to design a new headquarters complex for the International Telecommunications Satellite organization (INTELSAT) in Washington, DC. Other finalists were Arthur Erickson Architects, Canada; Hellmuth Obata & Kassabaum, USA; Hentrich, Petschnigg und Partner, W. Germany; Holabird-Root, USA; and Raili & Reima Pietilä, Finland. Finalists were paid $30,000 each to prepare their proposals.

In addition to five senior management representatives of INTELSAT, the jury also comprised architects Pietro Belluschi, John Michael Austin-Smith, and Marco Zanuso, of the U.S., Great Britain, and Italy respectively. The professional advisor was Paul Spreiregen, chairman of the AIA's Committee on Competitions. A separate panel made the initial selection of the six finalists from a list of 100 expressing interest in entering.

After a full week of technical briefings for both jury and participants in Washington in October 1979, the six teams went into design, with presentations targeted for the end of January 1980. The Andrews scheme was declared the unanimous winner after six half-day presentation sessions and two days of deliberations. Independent evaluations of cost, energy efficiency, and program compliance were part of the input the jury received from outside experts.

INTELSAT's new facility will be built in three phases, the project is expected to use only 8 of the 12 acres, the rest to remain unbuilt upon, a park. Exceptional care will be taken to preserve existing trees. In the first phase, construction will include offices, operations center, satellite control center, conference and other facilities totaling 300,000 sq ft of floor area. Phase II would contain 150,000 sq ft of additional administrative and technical space; Phase III is 250,000 to 300,000 sq ft, including space for INTELSAT, foreign missions, or international organizations.

INTELSAT headquarters design of John Andrews International was the winner. Five other firms were finalists: 2 Arthur Erickson; 3 Hellmuth, Obata & Kassabaum; 4 Hentrich, Petschnigg; 5 Holabird & Root; 6 Raili & Reima Pietilä.

Building siting takes into account blocking of cold winter winds and the collection of cooling summer breezes. Basic to the winning design is a pod and atrium combination, the pod element being 85 ft square. Perimeter office functions constituting 70 percent of the pod floor area will benefit from daylighting, since the façades will either face out to the site or into atriums. Linked at their diagonal corners, the pods are stepped with the terrain along the entry axis in a direct line from the Metro subway station.

Major exterior materials will be stainless steel and acrylic sunshades in front of floor-to-ceiling glazing. The architects project that, with cooling pools and many natural—but carefully orchestrated—effects, the building will have strikingly reduced energy use levels. Their figures call for 24,500 Btu/sq ft/year as opposed to the "norm" of 65,000. INTELSAT hopes for completion of the project by 1983.

[News report continued on page 36]
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Interiors systems move into the factory

The interiors systems characteristic of open office design have been adapted to light industry in a new product line introduced this summer by Herman Miller. The assembly of work stations with standard components, pioneered by the company's Action Office system in the 1960s, was extended in the early 1970s with the Co/Struc system for hospitals and other uses requiring storage and transport cart systems. The newly introduced Action Factory system combines principles and elements of both previous systems to encompass work stations, material handling, and storage for industries such as electronics and office equipment.

Like the systems that led up to it, this industrial version was developed under the direction of designer-inventor Robert Propst, head of the Herman Miller Research Corporation. During the research and development phase, Propst and his associates worked closely with the Texas Instruments Corporation and with Hewlett-Packard, generating program requirements with them and making pilot installations at their factories.

These test installations are reported to have offered impressive advantages: reduction of space requirements by as much as 50 percent in some areas (through efficient use of space above and below the work plane), easier transfer of components between carts and stations, speedier identification and counting of items, faster and simpler rearrangement of work stations. Of crucial importance was the improved appearance and orderliness of the work place, which the participating companies found to be assets in attracting qualified personnel.

Art with architecture

In her recent show "Linens" at the Acquavella Gallery in New York (June 11 to August 28), artist Maureen Connor created an environment that commented quite compellingly on the relationship of art to several other disciplines: architecture, interior design, interior decoration, and crafts. Working with cream white organdy and using linen napkin folding techniques typical of the 19th-Century domestic life, Connor formed elegant three-dimensional constructions for the interior of the French Neoclassical townhouse. The house, designed in 1908 by Ogden Codman, coauthor with Edith Wharton of The Decoration of Houses, is well served by this specially created art installation. The works throughout the three ground-floor rooms delicately echo Codman's intricacy of detail for moldings and other ornament, as well as the subtlety of his scaling and proportion.

The most successful part of the installation, spatially, is the middle room where four freestanding organdy constructions—elaborated and enlarged evocations of folded napkins—are positioned. These diaphanous works interact stunningly with the interior space in color, mood, and material, as if they were sort of plant life that had naturally bloomed in this setting. [SS]

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News report continued from page 36

Report from the Venice Biennale

The architecture section of the Venice Biennale opened in July with a bang . . . literally. During the press preview on the 26th and up to minutes before the formal opening on the 27th, hammers and staple guns were much more visible than the exhibits. The reasons for this were: A customs strike, exhibitors sending material late, and the fact that, as a number of people said, "This is, after all, Italy." That, however, was a condition impossible to ignore, since it was hard to imagine that many other countries would have provided the means or would have had the interest to mount such an ambitious, massive, and truly spectacular show as this one.

The major part of the exposition is in the Corderia (the rope factory designed by Da Ponte in 1579), part of Venice's beautiful Arsenale (shipyards) where other 16th-Century works by Sanmicheli and Sansovino can also be seen. On a purely historical level, this show is important because it marks the first time the Navy has ever opened any of the huge Arsenale, parts of which date back to the 12th Century, to the public. On another level, the show is also of historical interest because it represents the first major international exposition to deal with the phenomenon of the revival of historicist tendencies in architecture.

Organized by Paolo Portoghesi and an international consulting committee that included Robert A.M. Stern in the U.S., plus a critics section including Charles Jencks, Christian Norberg-Schulz, and Vincent Scully, all seven of the shows in the Corderia deal with a particular aspect of history and architecture under the general title of "The Presence of the Past." The particular mode of historicism represented by the exhibits of contemporary work is exclusively Post-Modernist, and as such marks the acceptance of its tenets on a wide, international scale.

In chronological order, the exposition, which will run through Oct. 1, opens with a historical appreciation of the Arsenale itself. Following that, it includes the first major retrospective of the work of Ernesto Basile (1857-1936), the Sicilian, who is regarded by many as Italy's greatest Liberty-style architect. He realized a huge body of work in Palermo and Catania, but he is perhaps best known for the enlargement of the Senate Building in Rome. His large production of furniture, which was clear
influenced by that of Mackintosh, is also presented in Venice.

Another section, entitled "Banal Objects," sets out everyday, middle-class objects, which are neither kitsch nor high-style, in a museumlike display where the objects are highlighted with a-tone on day-glow paper and are illuminated by rising and falling black light. The walls are of plastic-covered plywood covered with cardboard. The showroom gives a complete "period" setting, which is not explained but which seems to be from Italy of the 1950s. The whole section is nevertheless quite wonderful, ring to mind Gina Lolobrigida's ingless.

Where the exhibition comes heavily to the Post-Modernist phase is in the maggior section where separate displays pay homage to three important masters seen today as major precursors of Post-Modernism. Perhaps because he is American among two Italians, Philip Johnson occupies the central position, at the end wall, where a gantitine silhouette of the top of his Woolworth Bldg is set against a backdrop of its model and drawings of other projects. Anking this display and in front of it are the works of Ignazio gardella, who best known here for his Gothic revival "as Cicona of 1957 on the Zattere in Venice, and the iconoclastic Mario Dolfi, who is little known here but who wittingly reduces his work for ito.

On a mezzanine running around the perimeter of the 317-meter-long Corraria are displayed the works of 55 "young" architects considered to be working in the Post-Modernist tradition. With Americans and Italians each accounting for 20 percent of these, not much space was left for other countries. ut as Bob Stern explained the American situation, we were actually underrepresented if the participants had been selected according to proportionate numbers of architects in each country. Because of our size," he said, "it's very hard to appear to dominate, so we have been careful about this. It makes the election process of the Americans extremely difficult, because we have to be much more rigorous than other countries." This paid off, because the overall result of the work is very high, with some objects of superlative quality.

The "neo-primitive" projects of Andrew Niew of California and Mark Mack in Californi seem to achieve a vision of utopian radia through the means of both nationalism and Classicism, suggesting a synthesis between an Asplund and Barragan. John Blatteau's purely academic drawings for the Bayonne, NJ, spital (P/A, Jan. 1980, p. 124) and for the Long Branch, NJ, 410, beach (P/A, April 1980, p. 90) are anything as ever came out of the 'ole. Machado-Silvetti's RISD project continues to rivet the viewer months after its first publication (P/A, Jan. 1980, 90).

The most important, largest, and most interesting part of the Corderia exhibit is the "Strada Novissima" in which a street of façades has been created through the middle of the building along its two central rows of columns. Here, ten architects on each side of the "street" have been given a bay for exhibition for which each also had to design a façade on the street. This concept came about mainly through the combination of two ideas—one of Portoghesi's and one of Stern's. Portoghesi had been in a German town where a carnival could be seen and where the traditional roles of the boardwalk and by their opposites in the town. From one position, he said, you could see clearly what was wrong with Modern architecture and why the traditional urban forms were so much better. Could the Biennale also somehow express this notion, he wondered, so that it could attempt to make a positive contribution to architecture rather than be just another show similar to the past ones. Stern had the same wish; he came to the first consultants meeting equipped with the proposal that a number of architects were asked to make a façade on the boardwalk of Venice to redo the Vaporetto (water bus) stations along the canals. These are the major transportation nodes in the city, they are extremely visible, and in all of Venice they are about the only poorly designed objects. When the Corderia became available to the Biennale, the idea of Portoghesi and Stern were eventually transformed into the concept of the street.

Strada Novissima

The 20 invited architects were sent dimensions and descriptions of the space, and working from these, they were to submit the façade drawings to the committee. Once accepted, the drawings were sent to Cincotta in Rome where they were built as film set by the film contractors. Then they were sent to Venice for installation. In the meantime, though, the committee in Venice had been supplied with models that could be moved around for determining the ultimate arrangement of the façades.

With this concept of the street, the organizers of the show state one of the most crucial Post-Modernist precepts, which is the idea of the sanctity of the street. In this regard, the exhibition could be described as a Modernists' notion of the building as a freestanding object, which in practice is often related to little or nothing around it. Equally, however, the show also protests the current notion of the building as a container of space, as exemplified by some recent Dutch cultural and residential projects (see P/A, Jan. 1980, pp. 82-89) where the components of urbanism are collected within a single monolithic structure. Instead, the show glorifies the idea of the street by returning architecture to one of its most important traditional roles, which is as the primary definer of urban space. Post-Modernist tendencies are further reflected through the façades' attention to human scale, use of decoration, allusion to past design traditions, and through the expression of symbolic content. It is hard to imagine a more fitting venue for such an exhibition than Venice, where all of these concepts are everywhere visible and coalesced into one urban masterpiece.

If the Americans don't dominate the entire show, they do on the Strada (out of 20), and in a way, this is unfortunate. Part of the problem stems from the fact that most of the architects are representing offices rather than individual works. The most representative of each architect's work during the 1970s, the decade the entire Biennale is honoring in retrospect. As wonderful as most of the work is, much of it nevertheless seemed just too familiar. Venturi, Rauch, & Scott Brown's exhibit, for example, was dominated by the Chestnut Hill house (of 1962) and other very well known projects. Robert Stern's façade was a collage of motifs from his Best Products project and the elegant Lang House, which seemed uncomfortable in each other's company. Charles Moore hung a series of uninspiring "flats" from the ceiling. The most perverse façade was Stanley Tigerman's, which had two architects are asked not to work with the existing columns of the Corderia, and in fact to cover them.

"They're too good," Stern said, "and would just make things too easy." So Tigerman designed his façade as a one-point perspective stage set of rows of those very columns. Frank Gehry's unklikch and ordinary materials and Michael Graves's extreme refinement looked awful next to each other. However, Thomas Gordon Smith's and Alan Greenberg's variations on Classicism fared better across the street from each other.

As for the Europeans, Hans Hollein's columned entry was especially effective at the symbolic and historic levels, representing both the nature of the column and the history, he said, of Vienna. Ricardo Bofill painted the façade of his new housing project for the French new town Marne-la-Valle, and then directed you through it by its courtyard surrounding a fake square, not a real ground. Studio Grau parodied the famous fascist-era Palace of Culture at the EUR in Rome by changing its color to red and filling its windows with funeral objects. In taking a very different direction, Paolo Portoghesi made a handsomely interpreted Borromini's Quattro Fontane.

Not every façade on the Strada Novissima is a masterpiece. But, one of the most important ideas of Post-Modernism is that not every piece of architecture needs to be in order to create a good urban environment, one of human scale and delight. That is what has been most surely understood by Portoghesi both agree that Post-Modernism is still in its infancy, and they will not predict where they feel it may eventually lead. If it leads to a greater appreciation and understanding of the urban environment, as this show seems to suggest is possible, that could be one of its most lasting contributions.
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Bunker Hill
architects announced

Arthur Erickson Associates, Kannitzer Cotton Vreeland, and Gruen Associates will be the design team for the redevelopment of the largest land parcel remaining in Bunker Hill, in the heart of Downtown Los Angeles. The choice of architects is the result of a design competition sponsored and judged by the board of the Los Angeles Community Redevelopment Agency. The architects represent the development team of Bunker Hill Associates (Cadillac Fairview/California, Goldrich Kest and Associates, and Shapell Government Housing).

The scope of the project is very large: the three-phase development of an 11.21-acre site. This will accommodate 4 million sq ft of new building, including offices, residential development, commercial, hotel, recreational, and cultural facilities. It must also include a central urban park and a downtown people mover. The re-created Victorian funicular, Angel's flight, will climb the sloping site, linking Hill Street at the bottom with Olive Street and Grand Avenue above. The centerpiece will be a new Museum of Contemporary Art.

For over ten years, Bunker Hill has been a no man's land, a patch of the city shaved bald by the redevelopment. The CRA was charged with planning. The site in question is in the center of the hill. To the north is the Music Center; to the northwest and west are the towers of the financial district. New housing faces the site on the southeast side of Olive; and adjacent to the lowest side, Hill Street, is a Mexican district, with the lively street life of Eastern cities. The site must span from tower to taco stand, and create an integrated transition.

One of the major factors the developer had to consider was the 1½ percent allocated to art, because here the CRA proposed a truly innovative notion. Instead of allowing the developer to simply spend this money on the standard Calder in the forecourt, the board required an entire contemporary art museum. This museum will provide not only the 100,000-sq-ft building, but some proportion of the endowment or running costs as well. Sights are set on a museum of international stature: a ready several major Los Angeles art collectors have pledged a multi-million dollar endowment in the form of both cash, and Pontus Hulten, director of the Centre Pompidou in Paris, reported to have accepted the job of museum director. In its setting, surrounded by a major urban plaza, the museum will certainly be a cultural focal point on the hill.

Over the last few months, there has been a great deal of discussion in the architectural community over the selection procedure in this competition. Architects, naturally, felt that architect should be the major deciding factor and that the selection should have been made by a distinguished architecture panel. However, the decision was made by the CRA board, on the recommendation of a specially appointed three-person task force, who received advice and information from the agency staff.

There are no architects on the board. In making the decision in this way, the CRA was taking a "democratic" approach, positing that common people were the best judges of their own environment, and that other factors, such as the developer's financial capability should be of equal importance. They set out their criteria for selection as: quality of conceptual design, integration of building types with cultural and recreational uses, awareness of pedestrian needs, approach to housing, parking, affirmative action, energy conservation. So in the final analysis, this was not an architectural competition, but one in which design played a decisive role. After a review of the five schemes submitted, two developer teams were left in the running: Bunker Hill Associates and the Magui Partnership. Each had strengths and weaknesses, and in the combined forces of Barton Myers, Harvey Perloff, Edgardo Conti, Charles Moore, Lawrence Halprin, Cesar Pelli, Hardy Holzman Pfeiffer Associates, Gehry & Krueger, Inc., Robennard/KDG, and Ricardo Legorret.

No one has any real doubts that A Time to Build, the scheme designed by the combined forces of Barton Myers, Harvey Perloff, Edgardo Conti, Charles Moore, Lawrence Halprin, Cesar Pelli, Hardy Holzman Pfeiffer Associates, Gehry & Krueger, Inc., Robennard/KDG, and Ricardo Legorret.

In a proven track record as designer of large spectacular buildings that make their mark on the landscape, however, many in the local architectural community felt an emotional commitment to the other scheme. Tl

[News report continued on page 46]
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Sportsman Park, Chicago, Illinois—Franciscan's design team worked with noted artist Leroy Neiman to translate his original oil on canvas into a ceramic mural on 12" x 12" tile.

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was for at least two reasons: it was a far more detailed architectural proposal, and it represented the efforts of celebrated designers familiar with, and connected to, Los Angeles. Based on the architectural and urban design rather than the overall package, all the critics agreed that the Maguire proposal was better. Even CRA Director Edward Helfeld officially recommended the selection of this scheme. However, the board's choice was based not so much on specific architectural design as on "conceptual approach" and "proven ability." Another decisive factor in the selection was BHA's presumed financial ability to finance the scheme within their own companies rather than seeking outside investors.

Aside from politics, it is interesting to examine the planning problem of Bunker Hill and the way the two contenders approached it. The differences engendered in the schemes indicate entirely different attitudes towards the hill, neither of which is perfect. In fact, in formal planning terms, the strongest scheme was one that was never really in the running—a scheme by A.C. Martin, with a strong, formal staircase forming the transition from Hill to Olive Street, and a procession level of pedes-
trian promenades along Grand and Olive and in between. The junction between the two axes formed a clearcut public place—the museum park.

The Maguire and BHA proposals took fundamentally different planning approaches. The Maguire scheme was a Post-Modern approach, maintaining the old street levels and implied city grid, and orienting itself from the northwest to the southeast. It included open space, but this was of a highly differentiated nature. The Erickson scheme took a standard Modernist approach, creating large open spaces by placing towers in a park, with a linear scheme by A.C. Martin, recognizing the larger state of the art. [Barbara Goldstein] Martine approach, creating large open spaces by placing towers in a park, with a linear scheme by A.C. Martin, recognizing the larger state of the art. [Barbara Goldstein]

Hill Street and the top of the site. Promenades along Grand Avenue and the sculpture pave ment have high walls around them and are basically inward-looking. Prominent walkways between housing blocks and a stronger link from Olive Street to podium level would help considerably.

The final problem faced by the Erickson scheme is the placement of the museum, itself more firmly on design issues by selecting the developer first, then sponsoring a more traditional architectural competition. In that way, each scheme is that it tries to create a place.

Los Angeles is a city where there is literally, no real place. There is no real gathering place in Los Angeles—no place to celebrate New Year's Eve or the Fourth of July. The most encouraging aspect of Bunker Hill Associates' scheme is that it tries to create a place.

The nature of this place needs much further thought; and the architects deserve both public support and criticism in order to develop their scheme into something truly wonderful.

In the future, the CRA might consider itself more firmly on design issues by selecting the developer first, then sponsoring a more traditional architectural competition. In that way, each scheme will be developed to a similar level. In the case of the Museum of Contemporary Art, a true architectural competition would have been a much more reliable way of commissioning an original building, reflecting the contemporary state of the art. [Barbara Goldstein] [News report continued on page 50]
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News feature continued from page 46

Report from Washington

Washington, DC, has many faces. As the nation’s capital, it is a place of grandeur and procession, but it must also serve as the seat of the federal government. On a local level, it is a city with locally elected officials responding to the needs of their constituents, interested in the development of the non-federal area, and trying to promote the city as a tourist and convention spot. Four building projects, either imminent or underway, illustrate these varying faces.

Ever since Kennedy’s presidency, there has been talk of revitalizing Pennsylvania Avenue, and at long last “America’s Main Street” is now getting a facelift. The Pennsylvania Avenue Development Corporation received a broad mandate to prepare an overall plan and to interest developers in acquiring and building on available sites.

This spring, PADC approved the best looking new structure to date—a block-square, 1 million-sq-ft office and retail complex that incorporates a number of existing historic structures. Designed by Hartman-Cox/Smith Segreti Tepper Associated Architects, 1001 Pennsylvania Avenue reaches 15 stories (the height limit along the Avenue was raised recently to 160 ft to encourage new development), with offices above 30-40 retail shops on the lower levels. An atrium, lit by 40-ft clerestory windows, runs through the center of the building. 1001 Pennsylvania Avenue is surrounded by monumentality and responds superbly to that trait without being monumental itself. Across the Avenue are the Internal Revenue Service building and the Old Post Office—both important to the Federal Triangle. On the other side of 10th Street is the old Evening Star Building, a significant landmark. Its neighboring across 10th Street, unfortunately, is the FBI, but this new building holds its own against that behemoth. Among existing buildings on the site are several pleasant, small-scale brick structures of varying styles from around the turn of the century and the magnificent, eight-floor U.S. Storage Building, which has a pair of six-story arches into which have been placed an early curtainwall.

It is in this context that the architect designed what George E. Hartman likes to call “Chinese puzzle boxes,” a series of three successive layers, each stepped back further from the street and higher. Walls meander around the existing structures, and the delightful result looks not unlike a series of building blocks, one stacked upon the other.

The façades become simpler and lighter as they progress inward and upward. The outside wall, with its columns and deeply recessed windows, is to be buff brick with limestone trim; the next is brick and less complex, while the innermost will be smooth-finished concrete with punched windows.

But each street façade on the building is different. On Pennsylvania Avenue there is a fairly straightforward face that steps back at a height of 105 ft to match the cornice lines of its neighbors. The 10th Street façade retains this height but offers a symmetrical center cutout section to set off the U.S. Storage façade (that 95-ft-deep building will be partially enclosed within the new structure).

The E Street and 11th Street façades are perhaps the most interesting because they are so varied. In both cases the building along the street steps down abruptly from 105 ft to approximately 40 ft, the height of an existing building on the corner.

The second layer of “Chinese puzzle boxes” is stepped back 25 ft from the outer layer and the innermost box is stepped back 25 ft more, giving this third box an appearance of shooting up through the middle of the complex.

One of the problems was to differentiate the boxes, said Hartman. He has done this with texture, making each layer progressively smoother. In addition, the bays on the three boxes do not necessarily align, giving them some movement.

This project shows that with some imagination by an architect, a city can become a facelift. The Pennsylvania Avenue reconstruction spot. Four building projects, either imminent or underway, illustrate these varying faces.

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treated as a continuum with old and new buildings working together to create a new face for a downtown that the public can respond to and understand. It is also interesting to note that much of the work on Pennsylvania Avenue, starting with the earliest planning, has been and continues to be done by non-Washingtonians. This new project, designed by a local firm (architects Hartman & Cox are among the city's best), is the most respectful of Pennsylvania Avenue and its qualities to date.

Across the street from 1001 Pennsylvania Avenue stands the Old Post Office, a Romanesque structure that never fit in with the Federal Triangle, which was built around it during the Depression and that, as a result, almost succumbed to the wrecking ball. One of its long-time champions, Washington architect Arthur Cotton Moore, eventually won a U.S. General Services Administration competition (with associated firms McGaughy, Marshall & McMillan and Stewart Daniel Hohan) to return the building to federal use with a couple of levels of shops on the lower floors.

The $16-million project is well underway (budget restrictions have forced some cutbacks from the original plans) and should be finished by summer 1981. The most exciting news is the uncovering of the skylighted inner court, a nine-story-high space surrounded by arcaded balconies that is perhaps the most dramatic in Washington.

The skylight was covered over 50 years ago because it leaked. That covering has now been removed, and a new $500,000 Lord & Burnham skylight installed over the old frame. Sunlight pours into the atrium and creates marvelous patterns along the balcony-lined walls. One can peer up through the skylight and see the clock tower, the third highest spot in the city.

GSA announced this spring that as part of its "art in architecture" program, it had commissioned a work by California environmental artist Robert Irwin for the atrium. It is to be a sculpture with approximately 150 7' x 9' rectangles of translucent nylon scrim hung from a 140-ft-long tube. Irwin says the panels will mimic the pattern of openings around the atrium.

Architect Moore has also devised a new plan for the Georgetown waterfront, long a problem area that the city would like to see resolved (the site currently includes a cement plant and storage facilities). This one has received preliminary approval from the Commission of Fine Arts.

An earlier scheme for the same developer, Western Development Corp., by another architect had been rejected earlier this year by the commission (some thought it resembled a "beach whale").

Moore's design for the $70-million commercial and residential complex (which will have approximately 350 apartments) makes use of the waterfront along the Potomac River, a novelty in this rivered city, and, he says, it combines Washington's monumentality with the small-scale neighborhood feeling of Georgetown. There is a small elliptic boat harbor in the center of the project, surrounded by several levels of shops and apartments. A tree-lined walkway along the river preserves its green edge and links the complex to a park the developer has agreed to help fund with the National Park Service.

The plan would extend existing

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north-south Georgetown streets down rough the project (one would end at the boat basin with a set of steps down to the water). Thus the buildings will cease the streets, Moore says, giving the project a rowhouse image on that axis, and successfully breaking the project up to understandable units. The east axis along the river, on the other hand, is more formal and responds to Enfant's plan for Washington and the classical look of its major buildings. Moore has used a number of his recent post-Modern trademarks—domes, pediments, moldings, columns, and the like—resulting in a somewhat overembellished façade.

The rear of the project is defined by the Whitehurst Freeway, an unfortunate 1950s addition to the waterfront at is unlikely to go away. Moore, however, is experimenting with ways to make it less ugly and is considering the erection of a series of inexpensive shed vaults on the underside.

Moore indicates that this development, which will take two to three years build, is expected to break ground by the end of this year.

After years of delay, ground was finally broken in April for the city's massive new convention center (the building was 10 acres). It had been held up for a variety of reasons, despite the fact that the city government, aided by development and commerce interests, had been pushing its construction for years. They intend that the additional numbers of people the center will draw (estimated at 300,000 to 400,000 annually) will bring in additional tax revenue and that the center will pay for itself.

Opponents disagreed, questioning whether the city could stand such a sizable influx of tourists. They also debated the future of the low-scale Chinatown, where the center is located, and the development pressures that are certain to follow there, the value of several old buildings on the site, and the center's financing (after Congress examined the cost of the project and raised doubts, it was reduced slightly, to $98 million). The opponents even threatened a city referendum on the issue.

All that failed, however, and work has now begun. It is expected to open in summer 1982.

The 800,000-sq-ft building was designed by a joint venture of Welton Becket Associates, Gray & West Architects, and H.D. Nottingham & Associates. Described by its architects as "inherently monumental," the 75-ft-high structure is to be covered with buff-colored precast concrete panels and glass. Beneath the roof are four flexible halls ranging in size from 150,000 sq ft down to 26,000 sq ft—to accommodate all kinds of expositions, conventions, trade shows, banquets, and other events. In addition, there is 10,000 sq ft of retail space—a concession to the community.

Robert L. Henry, AIA, of the joint venture said that one unique aspect of the design was a two-way Vierendeel truss—it is the first time this has been used on the East Coast—that will provide 100,000 sq ft of column-free exhibit space. The 14-ft-deep truss will be exposed on the interior.

Several historic structures, including Washington's first nickelodeon, a magnificently detailed brick apartment building, and an Elks lodge with two huge elk heads at the cornice were demolished for the convention center. It seems unfortunate that the architects for this project were not able to incorporate some of these existing buildings, or even the façades, into their design—as the architects for 1001 Pennsylvania Avenue were able to do only three blocks to the south. If they had, it might have helped make the center a more welcome neighbor.

[Carleton Knight, III]

Glass block production to be maintained

In late July, the Pittsburgh Corning Corporation announced that it would, after all, continue production of glass block. The company had served notice earlier in the year that it would discontinue the only U.S. production of this unique material.

That previous announcement had prompted architects from all over the nation to write to Pittsburgh Corning and call on colleagues to do the same. Noting a strong revival in a material that once seemed relegated to the history of...
Early Modernism, professionals urged the company to reconsider.

In assuring the building industry and design professions of a steady supply of glass block, the producer committed itself to completing a capital improvement plan for its Port Allegany plant by mid-1981. Once that is done, Pittsburgh Corning plans to expand its current line of glass block by reintroducing Solar Reflective Glass Block.

The future looks a little better for those who are looking for rare combinations of structure, insulation, texture, refraction, and translucency. What is more, the voice of the architect seems to have had a more direct effect than usual on the availability of building materials.

AcsA/AIA Teachers Seminar
“The Beginning Student”

About 90 teachers of architecture convened at the Cranbrook Academy of Art June 21-26 for the annual ACSA/AIA Teachers Seminar. This year’s theme, “The Beginning Student,” provided both sufficient meat and difference of opinion to maintain a lively pace through the hectic five days of the conference. Chaired and nudged by Tim McGinty of the University of Wisconsin at Milwaukee, the various workshops, presentations, and excursions flowed without a hitch. Interspersed with the workshop sessions, in which participants presented their own ideas/courses concerning beginning studies, were more formal presentations: J.B. Jackson on teaching the American landscape; Marc Treib on the work of Eliel Saarinen (architect of the three Cranbrook schools); David Macaulay on the conceptualization and development of his books (including a sneak preview of his smashing Debuilding, which pictures the demolition of the Empire State Building); and a wrap-up by Juan Pablo Bonta.

The main issues came forward in short order. Primary among them was the question of preliminary abstract studies versus immediate architectural design. On one side was the “basic design” group: i.e., compositional, abstract, Bauhaus-and-beyond courses in which the principles of perception, composition, etc., are presented free of an environmental context. In the other camp were those who believed in “real world” (read architectural) problems, with educational generalization coming after and via the study of specific architectural instances. Somewhat in the middle were a few who believed that their students believed in “real world” (read architectural) problems, with educational generalization coming after and via the study of specific architectural instances. The discussions were lively, at times even heated, causing one student participant to characterize the sessions as “parking lots for personal monologues.” Naturally, there was no consensus as to what should be taught when. As Juan Bonta remarked in his closing talk, what is right for each design course depends on the context in which it exists: the constituents and the thrust of the school; the courses which precede and those which follow. But Bonta was careful to add that some philosophical stance was indeed critical to architectural education: we may differ on theory or interpretation, but having a theory was crucial. Any real developments in education, he continued, will probably develop within a specific school which shares a common view rather than from a dispersed group of teachers involved with beginning studies.

The teaching of beginning design is not a neutral activity: in the formulation of the problems we are implicitly validating an area of concern merely by studying it. Basic Design (in the Bauhaus sense), says Bonta, thus shifts the student’s involvement to geometric and compositional principles, areas of inquiry thus deemed valid which must reappear as important concerns in succeeding coursework and professional practice. He summarized a number of models of architectural study that have been presented in the previous few days and concluded that “if we cannot teach them all, the choice [of which one we teach] must not be whimsical, but determined by how we see architecture—not by what the studio master wants us to teach.” Few left Cranbrook unaffected by the seminar, the issues raised, or the lack of universal solutions.

[News report continued on page 58]
A dash of dazzle in a shopping center.

ELEVATOR BY DOVER

It's quite a trip for shoppers when they move from the main level to the promenade level of the Rolling Acres Mall in West Akron. Designer James B. Heller of Keeva J. Kekst Associates combined glass, chrome, and incandescent lamps to create a "vista" elevator that dazzles and delights. At the heart of these glamorous trappings is a Dover IVO Elevator, the high quality, pre-engineered Oilraulic® elevator made for add-on or new construction of three stories or less. For more information on the complete Dover line of traction and hydraulic elevators, write Dover Corporation, Elevator Division, P.O. Box 2177, Dept. B, Memphis, Tenn. 38101.

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Report from
*Environs de Paris*

It is particularly difficult for the American observer to reconcile the unparalleled physical order of Paris with the monstrous agglomerations that have been rising around its periphery. It is as if there are deep reservoirs of bad taste, banned by law in the city itself (except for a few odious eruptions). But the official plan for the development of suburban "new towns" around Paris seems to have provided the perfect medium for what Ada Louise Huxtable had dubbed "monumental superkitsch" (*New York Times Magazine*, Nov. 19, 1978).

A kind of demonic humor breaks out in La Défense, the skyscraper cluster at the city's west gateway that seems to compress all the high-rise sins of North and South America in one fantastic square mile. But the "new towns" dispersed in a more distant circuit—more or less 20 miles from the center—fail even at shock or parody, though they certainly seem to try for both. Although there is undoubtedly solid French logic behind the planning for these new towns, they have turned out to be chaotic. Given the constraints on building in the city itself, it is understandable that official policy encouraged individuality in the development of separate parcels, and that architects overreacted to this unaccustomed freedom. And since these new settlements play a role quite different from American suburbs—as refuges for less affluent citizens priced out of decent in-city housing—their straining after uniqueness can be seen as offering residents visual distinction to compensate for their banishment.

There seems no justification at all, however, for the haphazard way these developments occupy the land. Lacking the cohesiveness we associate with the term "new town," they hopscotch across the once-bucolic countryside with the same apparent indifference as speculative development on our suburban fringes. Their commercial-administrative centers do not seem really central. They are too dispersed for efficient public transport and obviously encourage dependence on cars—but drivers won't find it easy to master the meandering street plans (another overreaction against the rationality of Paris itself, one assumes).

Studded among the multicolored zigzugs and vermiform châteaux that compose most of the Paris new towns are a few housing developments that are architecturally notable—either for their restraint or for the sophistication of their imagery. Three of these, in particular, which seem to have implications for housing design worldwide, are described briefly here.

**At Evry: white cubes**
A 98-unit complex designed by architect Rolland Simounet is an island of calm among the novelties of Evry new town. Its dense massing of white-stuccoed cubic forms, stepping up to three stories in height, has a Casbah character. Narrow vehicular passages penetrate its clusters spanned for much of their length by upper-floor units. Individual covered parking stalls open directly off these access drives, thus minimizing the area and cost of paving for cars. The density of the complex itself is offset by a park area with artificial lake to the south and a handsome allée of plane trees to the west, along a roadbed closed to traffic by Evry's planners and remaining as a paved promenade playground. Units vary considerably in layout but typically have a split-level organization, with an eat-in kitchen at the landing between living and sleeping levels; private outdoor spaces include generous ground-level yards or upper-level terraces. Simple, incised treatment of openings, extensive plain walls, and direct, repetitive detailing of such elements as railings, downspouts, and roof top vents reinforce an image of ageless simplicity.

**At Marne-la-Vallée: formal bravura**
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tect Henri Ciriani has created an oasis of urbanity that contrasts with the prevailing object-in-the-landscape approach. To the visitor approaching by road, a phalanx of seven-story buildings (above one story of garage) presents a monumental wall, the sculptured forms of which are seen at closer range to have apartment-scale details. The complex is actually organized around a pedestrian walk, which bridges the road on its way from a nearby railroad station, then passes through an urban-scaled "gate" into a sheltered plaza and on along a promenade lined with tiered balconies.

Ciriani has treated his sculptural building forms with ornamental surfaces that are far removed from the pastel-tinted stucco that adorns neighboring complexes. A modular pattern is established by precast panels of brick-red industrial tile, in ½-meter squares, articulating the principal exterior planes, from which other planes recede or project. The same modular squares are repeated in relief on some concrete walls, in some punched openings, and in the lattices that screen stacks of balconies. From the inside, these lattices give deep balconies private, room-like qualities; from the outside, they mask diverse furnishings with a lively rhythm. Vertical bands of projecting windows and other trim are painted the dark green of Parisian street furniture and storefronts.

These frankly ornamental walls retain their visual interest in sun or shade and provide an urbane backdrop for the plaza and the areas of greenery that the complex embraces. Their materials, colors, and patterns make allusions to urban settings out of the French past—without evoking any obvious precedents—and they deserve attention from those planning the residential future.

At St.-Quentin-en-Yveline: Classicism

The most unexpected work in progress in the new towns around Paris—the severest challenge to one's critical faculties—is by the Taller de Arquitectura of Barcelona, the Bofill atelier. These architects have made previous controversial proposals for the Paris region—including a scheme for the Les Halles site that was demolished after construction started—but the housing...

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The technology of precast concrete panels—the customary material for all these new town projects—has been boldly adapted to the cause of Classicism; precise moldings in low relief outline panels of darker tan aggregate and brown tile in the off-white matrix. Bands of repetitive windows form emphatic friezes at the roofline, and at key points aluminum window frames bend obediently to urban-scale arched openings. The Classical axes of the plan turn out to work ideally, it appears, for the tall rolling cranes that are ubiquitous in these new towns; they can ride along its axes and place their cargoes of concrete panels along streets of uniform width or arcs of constant radius with a theoretical minimum of maneuvering. The brilliant, unpredictable designers from Catalonia are combining 18th-Century formalism with 20th-Century technique to give the Paris new towns one of their few truly precedent-shattering landmarks. [JMD]

Aalto celebration at Mt. Angel Abbey

The library at Mt. Angel Abbey in Oregon is one of the two buildings in the U.S. designed by Alvar Aalto, and the abbey was the site on June 28 of a one-day symposium of the work of the Finnish master. The meeting was held in connection with the opening at Mt. Angel of the Alvar Aalto exhibition that had appeared previously in New York (P/A, Sept. 1979, p. 33), Chicago, Ar-

[News report continued on page 70]
Restoring this grandiloquent courthouse to its former glory meant preserving stately exterior mouldings and matching splendid dark wood interior paneling.

Only a Pella package makes it so simple to retain the grandeur of yesteryear.

The architect specified Pella contemporary double-hung windows with minimum-maintenance dark brown cladding because they closely resembled the appearance of the original windows and blended unobtrusively with the facade. On the first floor, Pella xed glass units with curved metal panels custom-fabricated to fit the arch of the original windows were mounted above the operable windows. This made it simple to remove existing sash and install new ones into unusual-sized openings without disturbing ornate exterior mouldings. Ease of installation saved considerable construction time and trouble. Because preservation of impressive interior decor received equal attention, staining natural wood inside frames and sash to match distinguished dark paneling proved to be another major benefit of using Pella windows. Effective sun control, once the province of heavy, hard-to-maintain draperies, is now provided by Pella’s exclusive Slimshade, narrow-slat blinds in a dust-free, tamper-proof space between panes of the Double Glass Insulation System. Maintenance reduction is especially important in a public building like a courthouse.

All in all, a Pella package offers an efficient, modern method of maintaining prestigious historic buildings in the style to which they once were accustomed.

Pella’s Contemporary Double-Hung Window pivots for quick, easy washing of outside glass from inside the building. This feature also makes sash removal for re-glazing easy and economical.

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For more detailed information, use this coupon to send for your free copy of our 32-page, full color catalog on Pella Clad Windows & Sliding Glass Doors. Call Sweet’s BUYLINE number or see us in Sweet’s General Building File. Or look in the Yellow Pages under “windows”, for the phone number of your Pella Distributor.
News report continued from page 67

Wilton, TX, and Houston.

Invitations distributed to West Coast chapters of the AIA drew about 800 architects to the symposium, which was attended by Mrs. Aalto and a number of recognized authorities on Aalto. Special events were held on days preceding and following for architecture students and for interior designers. Video tapes of the symposium are to be kept at the abbey library for viewing by visitors.

The exhibition, displayed from June 29 through August 24, was housed in a 6300-sq-ft temporary pavilion, designed by S.O.M., Portland, under the direction of David Pugh, FAIA. The form of this pavilion and its gold and white stripe motif were meant to underscore the festive nature of the occasion and evoke the ancient origins of the Benedictine order, whose patronage of the arts is demonstrated in Aalto's library and in their sponsorship of these events.

Calendar

**Competition deadlines**


**Calendar**

| Oct. 15 | Helios Tension Products competition for design of a tension membrane covering for an outdoor theater. Write Helios Tension Products, Inc., 1602 Tacoma Way, Redwood City, CA 94063. |

| Dec. 1 | Plywood Design Awards for outstanding aesthetic and structural applications of softwood plywood in projects completed after June 1, 1979. Write Plywood Design Awards, American Plywood Association, P.O. Box 11700, Tacoma, WA 98411. |

**Exhibitions**

- Sept. 4-Oct. 4, "Current Works" of Michael Graves, Max Protetch, 37 W. 57 St., New York, NY.
- Sept. 9-Oct. 2, "Art in Architecture" photographic exhibit exploring the role of art in buildings and public spaces. Gallery At The Old Post Office, 120 W 3rd St., Dayton, OH.
- Oct. 18, Opening of "Architecture II Houses for Sale," exhibition of origina designs for family houses by eight inter nationally known architects. Leo Cas telli, 420 West Broadway, New York.

**Meetings and conferences**

- Oct. 4-5, Designer's Saturday, New York.

[News report continued on page 75]
Weathering for sale...

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Engineering, Inc.,
Bellevue, WA
The new 25-story Fourth & Blanchard Building in the Denny Regrade district is the most ambitious project conceived by Seattle office-space developer Martin Selig—a name synonymous with first-class planning design.

It was decided that steel design would provide the freedom to incorporate all the proposed architectural features. Several designs were presented, the final choice being a parallelogram floor plan with angled upper stories. The steel design also helped keep the weight of the structure to a minimum. This was important for the design in seismic Zone 3. A glass curtain wall as dictated by the form of the building demanded a clean, smooth, flush, nonolithic surface—in no way competing with the upper lines.

**Maximum usable space**

The $33-million building has two interconnected towers with 45-degree angled roofs. The roofs—a striking design feature—offer prime office space with spectacular views. A minimum of interior columns help maximize use of the 531,000 sq. ft. of floor space, including the 3-level garage.

Conservation of energy was a key consideration, and an electric-hydronic heat pump system connected to a main circulating water pipe provides heating and cooling which is both energy efficient and economical to install. In addition, the roofs were designed to accommodate solar panels in the future.

**Steel speeds construction**

The new building was erected on a narrow site—just half-a-block—and over 2,650 tons of A-36 and A-572 grade 50 steels were supplied by U.S. Steel. The fabricated steel was trucked from Portland at night and erected during the day using a single truck crane having a 280 ft. tower topped by a 170 ft. boom. This eliminated traffic congestion in a busy downtown area with a minimum of storage space. And the structural framing was completed one month ahead of schedule!

This handsome structure, incorporating the latest in building systems technology, is one more example of the design flexibility and practical economy of using structural steel.

To find out more about this building, and for information regarding the many applications for structural steel, contact a USS Construction Representative through your nearest U.S. Steel Sales Office. Or write for the USS Building Report (ADUSS 27-7642-01) to P.O. Box 86 (C-1212), Pittsburgh, PA 15230.
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York. Student day, Oct. 2 (see p. 89).


Oct. 15-17. Producers’ Council Convention, Marco Beach Hotel, Marco Island, Fl. Contact D. Seline, Producers’ Council, 1717 Massachusetts Ave., Rm. 3601, Washington, DC 20036.

Nov. 2-4. Designing with Systems, Rapids Rally ’80, national student interior design conference, Grand Rapids, Mi. Write Cath McGlynn, 1BD, Rapids Rally ’80, P.O. Box 2383, Grand Rapids, Mi 49501.


Personalities

Max Bond, associate professor at the Columbia University Graduate School of Architecture and Planning, has been named chairman of the School’s Division of Architecture. Bond, who was recently named to the New York City Planning Commission, is a partner of Bond Ryder Associates, New York.

Richard E. McCommons has been named executive director of the Association of Collegiate Schools of Architecture, Washington, DC. McCommons was formerly associate professor of architecture and coordinator of graduate studies, Department of Architecture, Miami University, Oxford, Ohio. Roger L. Schluntz, former ACSA executive director, has been appointed chairman of architecture, Arizona State University, Tempe.

John Q. Hejduk, AIA, has been selected by the New York Chapter AIA to receive the Arnold W. Brunner Scholarship, enabling him to prepare a comprehensive recording of his work from 1947-80. Hejduk is dean of the School of Architecture at The Cooper Union for the Advancement of Science and Art, New York.

Bill N. Lacy has been appointed president of The Cooper Union for Advancement of Science and Art, New York.

M. Rosaria Piomelli has been named dean of the School of Architecture and Environmental Studies, The City College, New York. She is the first woman to head a school of architecture in the United States.

Jacquelin Taylor Robertson, FAIA, has been named dean of the University of Virginia School of Architecture. Robertson has recently established a New York-based architectural and planning firm with Peter Eisenman, Eisenman/Robertson.
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Designer’s Saturday, when hundreds of architects, designers, and students pour into a select number of New York showrooms, is scheduled this year for Friday, Oct. 3, and Saturday, Oct. 4. As for the past 12 years, showrooms will be open from 9 a.m., many offering buffet fare along with the latest in furniture, lighting, and fabric design. Jack Lenor Larson will join the other 29 participants for the first time.

The popular reception that traditionally ends the event will be held at the Metropolitan Museum of Art, from 7 to 9 p.m., Oct. 4, during which guests will have the opportunity to view Kevin Roche/John Dinkeloo & Associates’ new American Wing. Tickets can be purchased from the museum, Special Events: Designer’s Saturday, 5th Ave. at 82nd, New York, NY 10028, at $10 apiece; funds to be donated to the museum.

For the third year, in conjunction with the professional activities, the Institute of Business Designers is hosting a student rally. Designer’s Saturday opens its showrooms to students Thursday, Oct. 2. That evening, IBD will host a banquet in Chinatown. Friday, IBD will sponsor bus trips to local workshops and factories, and IBD trade member showrooms will offer special presentations. There will be seminars on Saturday. Activities are by pre-paid reservation. For more information, contact Student Rally ’80, Institute of Business Designers, Box 86, New York, NY 10022.
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B & B America: Afra and Tobia Scarpa's Piedeferro series tables in three heights have square, round, or oval marble or felt tops. Circle 102 on reader service card

Atelier International: Frisho pendant lamp, by Achille Castiglioni provides direct, diffused, and reflected light. Circle 100 on reader service card

Arconas Corp.: Primula seating by Andre Vandenberg includes high-level tilt, swivel, side, and lounge chairs, and settees. Circle 101 on reader service card
Castelli Furniture: Summit tables have segmented base and a variety of shapes and sizes of tops in wood veneers and plastic laminate. Circle 106 on reader service card

Beylerian: Bent Tube lounge chair, side chair, and adjustable swivel chair, by Paul Tuttle, offer a choice of upholstery and frame color. Circle 103 on reader service card

Brickel Associates: The Low Chair, designed by Ward Bennett, with casters for mobility, is suitable for a dining or lounge chair. Circle 104 on reader service card

CI Designs: #135 chair with bent oak frame and upholstered seat and back can be stacked; #355 tables have leather or glass tops. Both were designed by Frank Emery. Circle 105 on reader service card
The JG/62-63 with its minimum side profile facilitated this continental layout. Concealed double articulating tablet arms blend with standard arms. Removable front rows add versatility.

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Harter: Harter/Wall System has Powerwall II prewired components. Circle 109 on reader service card

Dunbar: Adagio lounge chair, part of series that includes long or short sofa, has comfortable seat height, rounded soft arms. Circle 108 on reader service card

Cumberland Furniture: #2620 chair has solid oak or walnut frame with hand-rubbed oil finish; for conference room or visitors. Circle 107 on reader service card

Haworth: UniGroup office interior includes TriCircuit ERA-I panels that interface electrically with TriAmbient lighting. Circle 110 on reader service card
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Helikon Furniture: Veneer Ring series includes 22 desks, bookcases, and credenzas in four woods, designed by Bob Becker. Circle 111 on reader service card

Intrex: Designer Paul Mayén has created the Katonah desk, four-drawer file cabinet, and three-door credenza; 13 colors available. Circle 113 on reader service card

ICF: Among old designs back in production is the Adjustable Rocking Chair designed by Josef Hoffmann in 1905. Seat flips over to become adjustable footrest; back position adjusts, too. Circle 112 on reader service card
Design Notes from No. 2

JACK LENOR LARSEN

All of the double woven TURNCOATS reverse to provide coordinates that really match. Turncoat upholsteries—from the new Premises collection.

Here in Campari, the velvety color grid of PROMENADE matches the brilliance of Royal Box. Both are engineered for heavy traffic.

Whether Cane-backed or fully upholstered, the trim lines and solid comfort of Ben Baldwin's new WARWICK CHAIR ingratiate. See all the new Larsen Furniture at Designer's Saturday.

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Circle No. 371 on Reader Service Card
Knoll International: Low rolling tables, 22 in., 27 in., and 44 in. square, available in two heights, are Joe D'Urso designs. Circle 115 on reader service card

JG Furniture: Tom Janics' Sofdesk line includes desks and credenzas in three mahogany finishes, with self-skin urethane foam edges and drawer fronts. Circle 114 on reader service card

Jack Lenor Larsen: Ben Baldwin's Ritz caneback chair is solid maple, or can be ordered in walnut, red oak, cherry, or ash. Circle 116 on reader service card

Lehigh-Leopold: Sculptures in Wood oak table desk and credenza, designed by Warren Platner, now come with rounded edges. Circle 117 on reader service card
A number of architects and designers have asked us how we can produce an upholstered chair like Leonardo at its surprisingly low price.

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Series 9000. 65" high units provide executive privacy without walls.

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Harvey Probber: Turkish Seating consists of corner units, armless center units, and ottomans with wood or chrome bases. Circle 121 on reader service card

Metropolitan Furniture: Jay Heumann's #9300 conference tables, with durable resin surfaces, come in 18 satin or glossy colors. Circle 118 on reader service card

The Pace Collection: Fiam Lametta Valet #9985, by Enrico Tonucci, is formed of ¾-in. bent plate glass. Line includes benches, tables, and a desk. Circle 120 on reader service card
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Sunar: New collection by Don Petitt includes executive chair with sculptured base, lounge, and secretarial chairs. Circle 129 on reader service card

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Vecta Contract: Echelon swivel-tilt chair, one of a series of ten, has concealed height adjustment. It is fully upholstered. Circle 128 on reader service card

Thonet: #1318 Peter Danko molded plywood armchair (also available as an armless side chair) is formed from one piece of laminated wood. Chairs stack four high for storage. Circle 126 on reader service card

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Shifting continents

Interiors concepts do not remain the same year after year, decade after decade, any more than any other architectural concerns. Isolated as we are by distance and language, it is easy to consider the current rethinking as a condition of a few academically oriented architects and designers at the coastal edges of our own country.

In this issue, our fourth annual issue devoted entirely to interiors, P/A explores challenging work beyond those national edges: work from central Europe, Scandinavia, the Far East, Latin America, the British Isles, and elsewhere. Some is exotic, some is disarmingly matter-of-fact. One project is no larger than a hallway in an American embassy. Others are factories. Another is a multibuilding office complex.

There is variety here, and purposely so, but certain qualities reappear. The organizing principles of cities with public boulevards, piazzas, and interior lamp posts underlie projects as intimate as a house, a private woodblock print museum, and a hair salon.

The sleights-of-hand of architectural magic provide illusion in a number of projects where actual space is constricted. Blau, Mohl, and the Haussmanns use mirrors extensively to change the size, shape, and static nature of the rooms in their care. Poetic License uses an all-dominating trompe-l'œil mural toward the same end. Trompe l'œil is used by the Haussmanns to change the nature not of space but of material.

These techniques are consciously derived from architecture as far back as ancient Rome and as recent as the early decades of this century. Coming to terms with architectural tradition is a concern that involves almost all the work. The contemporary Japanese, Hiroshi Hara, is involved in a round-robin fascination with Viennese Sezession, the turn-of-the-century work that was so influenced by traditional Japanese architecture in the first place. Blau consciously emulates Adolf Loos and Otto Wagner: Foster's boutique owes much to La Maison de Verre. And Domenig weaves historical allusions with exaggerated technology and anatomical and landscape imagery in his Surrealist mélange of exploded scale, unexpected juxtapositions, and melted, tangled, and abstracted shapes.

Mexican vernacular tradition is invoked by Barragán and his protégé Legorreta, and Scandinavian folkcraft is important to the interior of Utzon's church. In contrast is the exacting rationalism of Valle, Mohl, or the Piccalugas. Brilliant color, an attention to surface pattern and texture, and an interest in the sensuousness of materials are shared by projects of however otherwise differing sensibilities.

For this issue, as in all P/A editorial, "interior design" is considered as the formation and characterization of space. We are not concerned with which degrees the makers of spaces might hold, which exams he or she has taken, which licenses he or she is entitled to. Nor are we concerned with the distinction between the spaces that occur within preexisting buildings and spaces that take shape in the construction of a new building, as one gesture, by one hand.

These are boundary lines P/A is dedicated to transcending, as it is determined to transcend the borders of isolationism. [Nory Miller]
Emilio Ambasz

A new house by Luis Barragán, Mexico’s renowned poetic architect whose most recent honors include this year’s $100,000 Pritzker Architectural Prize.

Barragán’s architecture, writes Ambasz, “results from a redemptive commitment to beauty.” This house for a businessman is constructed, as in all Barragán’s work, from a few carefully selected elements imbued with brilliant color.

The interior courtyard (right). The galleria (facing page), with a glimpse of the pool towards which it leads.

Emilio Ambasz, award-winning architect, industrial and graphic designer, is the author of The Architecture of Luis Barragán.
We are honoring Luis Barragán for his commitment to architecture as a sublime act of the poetic imagination. He has created gardens, plazas and foundations of haunting beauty—metaphysical landscapes for meditation and companionship. A stoical acceptance of solitude as man’s fate permeates Barragán’s work. His solitude is cosmic, with Mexico as the temporal bode he lovingly accepts. It is to the greater glory of this earthly house that he has

Luis Barragán is one of architecture’s most refined and poetic practitioners. In his work the wall is the supreme entity and the inhabitant of a larger metaphysical landscape. In de Chirico-like settings he creates, it is a screen for revealing the colors of Mexico’s almost white sun, and a shield to suggest unseen presences. Barragán’s magnificent gardens and carefully constructed plazas seem to stand either as great architectural stages for the promenade of horses or echo chambers for the constant cascade of water. While his design approach is classical and atemporal, the elements of his architecture are deeply rooted in his country’s cultural and religious traditions. Through the haunting beauty of his hieratic constructions we have come to conceive of the passions of Mexico’s architecture.

The extraordinary emotional effect of Barragán’s compositions and the strong sensual qualities of his materials and colors are the more impressive if we consider that the architectural richness of his dramatically sober architecture is based on a few constructive elements bound together by a mystical feeling; an austerity exalted by the glory of his brilliant colors. They pervade all interstices of space, at once binding and separating artifact and nature.

—Emilio Ambasz, extracted from the citation of the Pritzker Architectural Prize, presented to Luis Barragán June 3, 1980.
Casa Gilardi, Mexico City

In the pool area (below), natural phenomena are given increased presence through color. The walls under the skylight turn blue as if the sky itself had been pulled in. The column base is "discolored" in emphatic recognition of the water.

Barragán's architecture results from a redemptive commitment to beauty. Since he does not follow theoretical rules or generalized systems, each project is an entity in itself, whose inner principles must be revealed. This procedure demands emotional sensibility and selective intuition. Like Mies van der Rohe, Barragán deals only with the inner tensions of each element. This has led him to concise and profound creations.

This house is one of Barragán's latest works and is quite small. Built in the Tacubaya section of Mexico City, not far from his own house, it occupies a 30' x 100' plot, on a site flanked on three sides by other houses.

It was built for a businessman who uses the house also to receive business acquaintances, usually in the covered dining/seating area next to the pool.

The magic quality of the light and the emotional effect of profound serenity achieved when moving through the house cannot be guessed from its façade or plans. The ground floor houses the garage, the servants' quarters, and the kitchen as well as an enclosed patio and dining/swimming area. Sleeping quarters are on the third floor, while the intermediate level contains a studio and a living/parlor room where guests may be received more formally.
Off the street is a vestibule and, further a larger hall. From this hall there are ris that ascend to those quarters of the use having to do with the different aspects the owner's domestic life, and a corridor at progresses in a horizontal line to the ning/pool area.

The hall where the journey starts is illuminated by a soft crepuscular light descending on above. The wide corridor, or galleria, moving back, moves first through a dark passage where the dampened rumor of pots and pans from behind the wall brings to mind images of dark smoky kitchens in the corner of a hacienda courtyard.

Further along, the wall becomes a curtain of vertical slots separating corridor from patio. On the patio side, the wall is painted creamy white. The corridor wall and sides of the openings are painted bright yellow so that, even on cloudy days, the gray light coming through throw a pattern of sunlike light into the corridor. The counterpoint of bright openings and backlit vertical members marks the rhythm of the passage—sun and shadow, sun and shadow—like a metaphor for day and night. Throughout, sun is the ineffable presence. The corridor ends in two doors which, when swung open, reveal a luminous sky blue. This is the pool area, covered by a flat roof which doubles as a terrace. In a corner of the space, precisely on axis with the corridor, the roof has a square cutout through which light descends. In correspondence, the wall corner is painted bright sky blue so that, though unseen, the sky is a permanent presence.

Off center, a bright red column blade supports the roof. At the bottom it is embedded in the pool as if in a solid crystal base. The column bottom, deep in the pool, has been painted yellowish pink, as if it had been decolored by the water. The heavy mass of water, broken only by swimming, upon the owner's absence returns imperturbably to its original dense quietude. But there remains a sense of the echo of silent waves still resounding against the walls.

The Gilardi house is like an anthology of Barragan's creations. With extraordinary discipline and very few elements he has here recreated, in a highly condensed manner, all those ungraspable emotional elements which constitute the imponderable substance of his work: sky, sun, water, and color. Present in the house are also Barragan's metaphysical concerns, stoically reconciled with his acceptance of man's daily pursuits.

The ascents and descents within the house have mainly to do with the business of domestic life, those rituals and ceremonies forming the short cycles we measure in 24-hour spans.

The linear horizontal movement along the corridor may be seen as a symbolic surrogate for life's voyage, the long journey made up of many 24-hour segments, that can only be measured as an image projected onto an ideal future and only fully possessed at its end. Movement along the corridor becomes a processional liturgy, shadows follow light rhythmically to culminate in a heavenly ascent.

As water corrodes the proudest of columns, so light redeems matter. At the end of this dwelling of indifferent plans, at that point where night and day are one, where sky joyfully melts into water, resides the quintessence of Barragan's longings. Nature is immortal just for that perfect instant when desires and actions, reconciled, render an eternally brief moment of peace.

Data
Project: Casa Francisco Gilardi, Mexico City.
Architects: Luis Barragan and Raul Ferrera, Mexico City.
Program: house on an infill site of 30' x 100' for a businessman who keeps business appointments by the pool and swims each day.
Major materials: natural stone and carpeted floors; brick walls with whitewashed cement plaster finish; reinforced concrete slabs.
Photography: Armando Salas Portugal.
interiors in Downtown
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ment.

Perhaps it is partly because Zürich is a dig­
ified city fortunate in streets lined with archi­
tectural heritage, and partly because the com­missions happened to call for work within its elegant landmarks. And perhaps partly too be­cause they simply wanted a greater choice of tools to work with, the Haussmanns have spent the past several years rescuing and rein­terpreting techniques that had fallen into ob­lision since the rise of Modernism.

The techniques have been extricated from a wide range of centuries, styles, and coun­tries. The common thread is that each is a direct challenge to the patent nature of size or shape or material, a characteristic often—if less than studiously—referred to as man­nerist. Among the formal techniques investi­gated in their recent projects, including the two illustrated here, are:

1) The painting of surfaces so that they seem to be made of something other than the actual material. Marbling is the most common and the one used by the Haussmanns in the Lanvin boutique. The cocktail lounge of the railway station, on the other hand, has walls painted to look like ashlar ma­sonry. Even further removed is the “fabric curtain” of Lanvin’s storefront rendered in

stained glass. Historically, marbling was used for financial as well as artistic reasons, when the real thing could not be afforded. The Haussmanns call it “alienation of material.”

2) The use of mirrors to suggest endless rooms, dissolved rooms, illusory symmetries, and other modifications of actual space. The Haussmanns cite Cuvilliés’ Amalienburg in Munich and Adolf Loos’s Kärntner Bar in Vienna but, given the use of mirror strips in their Lanvin boutique, they clearly owe a debt to Soane as well.

3) Modifying the perception of a given space by pictorial devices such as juxtaposi­tions of bright against dark or foreground against background, commonly called trompe l’oeil. Historical examples are available from ancient Rome to 19th-Century France. This is added to the textural rendering of the walls at the da Capo cocktail lounge to give them the three-dimensional character of stone blocks, especially on the doorway, where Latin in­scriptions and numerals may be presumed to

elegant shop in the grand
y Hotel is dressed in painted ble,” mixed deceptively with marble (left), and an­nered by a stage curtain exe­l in leaded glass (study for front, right). The original ne included deforming the red ceiling with artificial ks (drawing below). These also intended to have a role r-conditioning.
This page: Slivered mirrors in the doorway echo the spatial configuration of the full shop. To either side, the stained glass “curtain.”

Facing page: The painted “masonry” of the da Capo bar’s door (top) and walls (bottom) makes an ironic connection to the train station’s façade.

have been etched into the surface.

4) The introduction of elements of destruction and disturbance—for instance, a slipped keystone or split gable—intended as an ironic comment on the nature of conventional form. Among the Haussmanns’ interpretations is the original scheme of the Lanvin boutique’s ceiling with cracks which, though intended for use in the air-conditioning system, would have appeared as if the ceiling were crumbling and unsafe. The mirrored—hence missing—keystones at the da Capo lounge are another example.

5) Aiming the messages of the design in several directions simultaneously (multencode). In the da Capo lounge, for instance, there is the very simple message this bar is inside a historic masonry façade and that the historic and landmark quality of the building is of importance. There is a variety of ironic messages about the nature of historical continuity and artistic integration: the painted gypsum, mirrored keystones, refusal to acknowledge the distinction between inside and outside. Similarly in
nvin boutique, the simplest messages might evolve the marble as suggesting the exclusiveness and high quality of the goods for sale, the shop, while the mirrors add a certain activity in their glittering reflections and a more luxurious spaciousness than really exists. The more complicated geometrical and art historical references are there for those to whom they are of interest.

**Shop at the Savoy**

The 19th-Century Hotel Savoy, in the heart of Zürich's most popular shopping district, the architects were given a small ground-floor montage in which to design a shop for Lanvin. On the street façade, the architects turned the show window into a striped side-glass curtain partially raised as if the party were just about to begin.

Inside, the shop is divided into a double-height cuboid core, with sales counters and stacks of clothes, and surrounding this on both levels are single-height changing cubicles, offices, and storage rooms.

The cube is articulated and modified in several ways. The ceiling is coffered. The walls are inset with niches on three sides, the fourth being open to the display window and entrance. This is echoed above by a U-shaped balcony. In front of the doorway, two columns with mirrored edges at 45-degree angles to the room act as a dislocated, out-of-scale counterpart to the balcony. Mirror-faced sliding doors cover half of each niche, giving the impression of infinite extensions of ceiling and floor fragments.

Walls, balcony, niches, and coffered ceiling are painted to look like Norwegian rose marmor (a salmon color with a grayish-green pat-
The octagonal center floor, however, is inlaid with genuine marble of the same type.

**Railroad revival**
The Haussmanns’ latest project, finished earlier this year in Zürich’s landmark 1870 Central Station, called for the restoration/renovation of the elegant dining floor, the provision of an up-to-date kitchen, and the addition of a new cocktail lounge under the arcade at mezzanine level.

The station had recently been recognized as a monument, and its exterior restored. This became the theme for the “new” interior—the lounge. Its walls and ceiling are painted illusionistically to recall the façade. To underscore the irony of interior walls made interchangeable with exterior ones, not only are the keystones mirrored as if the sides of the arches are soon to collapse, but the mirror strip is carried up and over the ceiling, making inexplicable breaks in the stone container. On one side the arches are open and look down onto the restaurant; on the other, they are mirrored in implied symmetry. The recessed lights create another ambiguity.

Unlike the Mannerist work of a post-Renaissance architect like Giulio Romano, which took form from the desire to challenge the good taste and the established order of the preceding period, the ironies of the Haussmanns’ work are more challenges to the future. They are less interested in arguing about Modernism than in probing the problematic nature of current historicist theory, practice, and preservation. [Nory Miller]
Facing page: The isometric (top) shows the relationship of renovated restaurant, added bar (below), and existing façade. This page: A view from the bar down to the restaurant below (left), one of the restaurant's ornate elevations (bottom), and a section of the bar's elevation (above).

Data
Project: Boutique Lanvin, Zürich.
Architects: Robert and Trix Haussmann, Zürich; Benno Weber, Matthias Buser.
Program: high-fashion shop in ground floor of 19th-Century Hotel Savoy; 430-sq-ft two-story salesroom and 320-sq-ft one-story ancillary rooms surrounding.
Major materials: marbled wood and gypsum; real marble floor (both the real stone and its painted version are of Norwegian rose marble); stained-glass front window; mirror; silk cushion seat covers.
Photography: A. Waldvogel, Andrea Schmid.

Data
Project: Zürich Central Station da Capo restaurant and cocktail lounge.
Architects: Robert and Trix Haussmann, Zürich; Stefan Zwicky.
Program: restoration of 1800-sq-ft ground floor restaurant and addition of new 600-sq-ft cocktail lounge under the arcades on the mezzanine level of an 1870 railroad station in Downtown Zürich.
Major materials: illusionistically painted gypsum; blue, clear, and stained mirrors; beige wool carpet; marble tables and blue leather banquetttes.
Photography: Stefan Zwicky.
A modern apothecary shop by Germany's Heinz Mohl makes a lithe and elegant virtue out of antiseptic necessity.

The chemist's trademark, an arrow, is used both as signage and as a heating element in the front window (above right). Inside, the shop is organized in ladderlike fashion with laboratory in the rear (right).

Facing page: View facing front, showing worktables, metal tube light fixtures, and one of the mirrored columns.

The technique is an exacting selection and intersection of materials. The result is silken sophistication in a busy, off-the-street chemist shop.

Most of the drugs are stored in narrow, drawered, floor-to-ceiling cabinetry that lines both walls. The material of the cabinets and all other furniture, such as the counter, work tables, and freestanding cupboards, is gleaming pale blue plastic laminate with shiny spare tubular hardware.

Every vacant surface has been lined in mirror—parts of walls, sides and tops of columns, and an entire clerestory above the cabinetry down each wall. The mirror adds illusionary width, especially at the sales counter area where customers enter. And the reflections animate a room so hospitable and clean, it has become wary of sterilization.

The mirrors also detach and lift the luminous eggcrate ceiling. As the ceiling optically raised, the floor is simultaneously
lowered, simply by its matte finish and dark brown color. Minimal bent aluminum pipes of light provide table lamps and a special glow above the sales counter. Each element is hard-edged and precise. It is the constant play of pattern—from embossed rubber floor to drawer handles to gridded ceiling—that knits them together.

**Tubelike plan**
The layout is serial, enforced by the deep narrow space approximately 17 ft wide by 78 ft long. The sales counter is at the front, turned on the diagonal to make a roomier, fluid impression. Behind are the walls of medicine drawers, organized alphabetically, and three work tables. In the rear, there is a sliding door that can turn one area into a night workroom. At the very back is the laboratory and prescription archive.

A staircase to one side leads down to basement storage and up to administrative offices, supply, dressing room, and tea kitchen. In the show window in front is a sign of painted steel tubing in the shape of an arrow. It serves both as advertising symbol and as a heating element. [Nory Miller]

**Data**
*Project:* Central Pharmacy Karlsruhe, Germany.  
*Client:* Dr. Walter Boerger  
*Program:* 1200-sq-ft pharmacy, with basement storage and administrative supply functions located upstairs. The long, narrow space required rooms to be arranged one behind the other, with sales counter front and lab in back. Major materials: brown embossed rubber floor; sky blue plastic laminate cabin; white luminous screening; painted steel tubing.

*Photography:* Ulf Beckert.
Hommage à Adolf Loos

ig Blau's house for himself in Vienna is arranged in interpenetrating horizontal layers, a remodeling of an 18th-Century rowhouse in one of Vienna's den districts.
In the particularly active architectural climate of contemporary Vienna, that city's historical range of aesthetic intent and crisscrossing aesthetic predilections remain characteristic. If Günther Domenig's work (p. 180) is surreal, exuberant, and subjective, Luigi Blau's is recognizable, restrained, and rationalist. Domenig creates montages of evocative quotations; Blau molds complex, interpenetrating volumes. Yet it is Domenig who is interested in the fantasy of modern technology and Blau who is mining history for spatial and decorative effect.

Blau's crafting of space and material is self-consciously reminiscent of Loos's ordered rooms. Space is made more interesting through illusion and intersection, and materials more vivid through textural juxtaposition. Color and pattern are sometimes added. Underlying the impression is logic.

His own house is a remodeling of an 18th-Century two-story rowhouse in Vienna that had already been remodeled in the intervening century. Blau opened the space to a 16½-ft square, 23 ft-4 in. in height, in which he arranged a series of platforms. Entrance, dining, and bath are on the first. Fourteen steps lead to the second—bed—level. There is a dressing room behind glass screens. Eight more steps lead to the lower library. The fourth level, an upper library or study, is reached only by stepladder, which the architect likens to a drawbridge.

In addition to the frugal husbanding of space, there is an attentive disposition of materials. The stairs and platforms are raw concrete. The walls are plaster painted white. Earth-toned carpet and honey-colored wood insets provide warmth. Striated glass screens and dark strips of tile in the bath provide slight syncopations of pattern. [Nory Miller]
A triad of bathrooms from other Blau projects in Vienna illustrates the architect’s penchant for three-dimensionally sculptured rooms, his fascination with the decorative possibilities available within two dimensions, and his conscious immersion in the work of the Viennese master, Adolf Loos.

A small bath (right) in a house Blau designed for the poet André Heller. Large expanses of mirror, set in opposition, give the impression of spaciousness. Both fixtures and surfaces are of light marble set off by black granite.

In his apartment for stage manager Peter Hauser (below), Blau used blue and white glass mosaic checkerboards in the bath for moldings and tub frame.

A bath for the singer Marianne Mendt (right), patterned in blue and white tile. The bath itself is inside the bedroom. Only wc and bidet are separated by a sliding door.
In the past decade, Hiroshi Hara and Atelier O have designed a series of remarkable projects which he calls *reflection houses*. It would not be farfetched to say that these were all interiors; their exterior forms are simple volumes that have been further "effaced" by slate-black paint. Topped and with limited window area, they represent almost autonomous environments. They get their name in part from their most obvious common characteristic, their axial symmetry; i.e., one half of any interior reflects the other. There is nearly always a streetlike central space, lit from above, which may step down on a hilly site. Rooms are arranged to either side, with the central space also providing a secondary source of light.

Although many of the projects are in quiet wooded areas, Hara maintains he is developing a housing prototype for high-density situations with which conventional types are ill equipped to deal. Anyone familiar with the crowded conditions that prevail in major Japanese cities can appreciate the need for an endeavor of that kind, but the justification falls so short of explaining their extraordinary expressive quality as to seem ingenuous. Among younger Japanese architects there is a tendency to reject the present urban context entirely and to build self-contained structures. To some extent, Hara's "aloof" houses have set the trend.

Hara has in the past expressed his antipathy to the universal space of Modern architecture. In the 1960s, he designed what he called *foramen* (porous) forms, in which each individual element asserted itself aggressively. As late as 1968, he designed the Shimoshizu Elementary School and the Keisho Kindergarten in this exuberant style. Then in the 1970s, his work went through a marked transformation.

**Antecedents**

This series began with the Awazu House (1972) which was built on a hillside outside Tokyo. The entrance was from the roof, and one descended into a narrow passageway covered by a transparent vault as if into some futuristic crypt.

His own house (1974) elaborated on this idea. The outer envelope was even simpler, with a gabled roof mounted by a skylight. Windows were kept to a minimum, even though the site was, by Japanese standards, relatively secluded. A new feature was the second roof, here acrylic forms cascading
down either side of the passageway and drawing light from the central corridor into individual rooms. (Acoustical privacy, as might be expected, is minimal.) These frozen cataracts or outcroppings—for they recall natural forms—create a narrow chasm down which one descends. Hara himself mentions the possible effect his childhood in the mountainous area of Nagano had in shaping his spatial predilections. Even stronger than the suggestion of natural forms, however, is that of a necropolis; one has the feeling of having come upon a space-age catacomb lined with caskets.

**Niramu house**

The Niramu House, completed in 1978, is located in Torami in Chiba prefecture, 1 1/2 hours by train from Tokyo. The husband of the couple that own the house is a biologist and writer, and the wife operates a beauty salon. There are no neighboring houses in sight. The house is L-shaped in plan, with public areas forming one leg and private residential areas forming the other. Steps lead from the gate up a sharply inclined lawn to the entrance level.

At the entrance there is a small rock garden. It halts all forward movement and forces a choice between going to the left or to the right. This wing houses the beauty salon and a Japanese-style *tatami* room. The rooms have low ceilings and are lit from the side, and all the wood surfaces have been painted black. All lines are rectilinear except for a few details.

Moving to the residential wing is like emerging from a cave into a snowy landscape. It is dazzling antithesis. The walls of the central passageway undulate, varying its width from three to nine feet. Whether these sinuous white walls were suggested by biological forms or a permanent wave, they are topped by octagonal skylights. Between the walls and the skylights are horizontal bands of acrylic which transmit light into individual rooms, much as the acrylic in the Hara house does. The rooms themselves are a little cramped, sandwiched as they are against the unyielding outer frame. The effect is only partially offset by the light from the acrylic bands. Hara himself recognizes that individual rooms have played a largely passive role in his design and believes they will be given more of a role in the future.

Inside the central spine, the sense of isolation, bolstered by actual seclusion, is great. Having lost our normal visual and acoustical bearings, we go where the building takes us. The only report we get from the outside
world is the sky overhead, which begets a feeling of extreme vulnerability. (Hara has commented with regard to his own house that it would be unbearable for someone afraid of thunderstorms.) Urged along by the peristalsis of the walls, we move straight ahead, though vaguely aware of doors to both sides. Steps lead down to the living room where there is contact again through the windows onto the hillside.

The repetitive unfolding of spaces and axial symmetry lend a ritual quality to the act of moving through the house. And although we may argue that a hill can be ascended as well as descended, unidirectional movement is implied. It is downward that we go in the Niramu House (as in the Awazu and Hara houses), into and past a dreamlike and disquieting space where we are seemingly given a glimpse of our true isolation and mortality. Going further downstairs into the living room is an awakening, a return to the safe, mundane world, but we have learned not to regard it with too much complacency.

Shokyodo Museum
Wakabayashi, where the Shokyodo Museum stands, is located outside Nagoya in a gray area of agriculture and light industries. The main street is one house deep; beyond that are rice paddies and scattered warehouses and small factories. In this inhospitable environment, just behind their own factory, the Kobayashis decided to establish a small private museum for woodblock prints. The pro-
The octagonal light pillars at the eastern end of the exhibition space (this page) and the cylindrical light pillars at the western end (facing page).

The octagonal light pillars at the eastern end of the exhibition space (this page) and the cylindrical light pillars at the western end (facing page).
Each other, although the curved corners of the residential block imply its containment within the larger volume. There are small windows for ventilation, and frosted glass permits some light to enter from the exhibition space. The tall cylinders of light, one pair round, the other octagonal, in effect imposes beyond which uninvited visitors may find it psychologically difficult to pass. These cylinders also activate the high ceiling, for unlike the Niramu house, we do not actually move vertically through this major space. The lights serve to draw the eye upward to gauge the vertical dimension. The walls themselves indicate different strata of space.

Shokyodo does not compel us to move forward, it merely suggests. Neither does the museum create the sense of total enclosure and disorientation that the house does. All seems calm here; the object, after all, is the leisurely viewing of small pictures. There are, however, several disturbing things about the building. We have the feeling that the building encodes some message that we are on the verge of unraveling. The specificity of the enigmatic forms—triangles paired with semicircles, octagonal prisms and patterns that resemble TV screens—seems to promise some rationale. Furthermore, we come to notice the small discrepancies and displacements that destroy the symmetry of the spaces. In the Niramu House, the "reflection" was straightforward, but here it is, in the architect’s words, "diffuse." For example, the alcoves on the north side of the skylit exhibition space are only partly reproduced on the south side; the upper portions are only suggested in outline. And why do round col-
The frosted glass window that looks from a second-floor residential room onto the exhibition hall (top). Bottom: A view upward, of the exhibition area's ceiling and enigmatic clerestory windows and light niches.

columns of light become octagonal when we pass from the western to the eastern part of the exhibition space? These discrepancies or alternations can occur not only in moving from one side of an axis to the other but in going from one side of the wall to the other: the north exterior elevation suggests that there are three successive alcoves with similar profiles, but inside we find that the third alcove is for some reason different from the other two.

The museum is designed as a series of six pieces at right angles to each other. Because of its modest size, we have hardly taken space in before being confronted by another. It is like encountering some stranger on the street who makes a striking but Delphic comment. Just as we are about to ask him to explain himself, another figure comes around the corner and delivers an equally fascinating but equally cryptic message. We have scarcely heard him when from around the next corner comes still another personage. Perhaps Hara has overloaded what is, after all, a small building, but ultimately the intent here, as in the Niramu House, seems to be not the conveying of a message but the disturbance of our equanimity. In this, the reflection house succeed. And that is perhaps the more profound reason for the name given this remarkable series of buildings.
The exterior is treated as industrial skin (west elevation, above). Inside, the exhibition area for prints is skylit and organized like a street (left).

Data
Project: Niramu house, Torami, Chiba prefecture, Japan.
Architect: Hiroshi Hara + Atelier 0, Tokyo.
Program: 2720-sq-ft house.
Client: Shigemitsu Fujita.
Contractor: Wada Kenchiku Co.
Major materials: plywood, porcelain tile, paint.
Photography: Syujo Yamada, Hiroshi Watanabe.

Data
Project: Shokyodo Museum and house, Toyota City, Japan.
Architect: Hiroshi Hara + Atelier 0, Tokyo.
Program: two-story wood, 1630-sq-ft minimum museum for woodblock prints and living quarters.
Client: Wataru Kobayashi.
Contractor: Taniyasu Timber Dealer Co.
Major materials: plywood, natural fiber wall cloth, porcelain tile, paint.
Photography: Tomio Ohashi, Hiroshi Watanabe, Japan Architect.
An anteroom that welcomes would-be visitors to the U.S. has been transfigured from meanness to expansiveness with trompe-l'oeil paintings and low-budget alterations.

From just inside the public entrance (plan above), visitors see a trompe-l'oeil panorama of architectural elements (right, extending across facing page). The door at center leads to an actual room, the one at left is pure illusion—along with the stairs and adjoining portions of wall and ceiling. Dark vertical near center is pole that supports security barriers. Marine guard is a consistent part of the design.
In Paris, applicants for United States visas are directed to the consulate in the Talleyrand Building, a handsome 18th-Century mansion, designed by Chalgrin and Gabriel, near the U.S. Embassy. Entering an elegantly proportioned courtyard, they are immediately shunted through a small doorway to one side, and into a space that is incredibly cramped—considering the amleness of the building, the importance of the United States, and the vast numbers of people who apply for visas at this location.

This space is rendered even more confining by barriers that direct visitors through an airport-style metal detector and past a U.S. Marine guard. Until last year, the walls here were painted white, trim was dull green, and counters were clad in imitation-wood laminate.

Recognizing the poor impression such an introduction to the U.S. was bound to make, our ambassador to France, Arthur A. Hartman, endorsed a scheme to overcome the image of drab officialdom, using what a homemakers' magazine might call “a little money and a lot of imagination.” The budget was a mere $3000, and none of the functioning elements (except for one wall-mounted writing counter) were to be moved.

The project was entrusted to an organization of young "architects, architectural designers, artists, sculptors, poets, and construction workers" from Poland, France, and the U.S., operating in Paris under the name Poetic License. The most striking step they took was to install a set of wall-size trompe-l’oeil canvases, but the integration of these paintings with other surface treatments, lighting, etc., constitutes an architectural effort.

Along with its almost demoralizing constraints, the space had a few assets. The French doors leading to the courtyard had graceful proportions and were sources of pleasant diffused light. Another asset the designers recognized was the uniform of the Marine guard, whose outfit had a certain rapport with the sober Classicism of the build-
Entry area, U.S. Consulate, Paris

His red, white, and blue accessories, set off against a tan uniform, became the basis of the room's colors. Another asset, ironically, was the constricted vision of the visitor's path by barriers; the limited vantage point—particularly on entering—set up an ideal situation for convincing trompe-l'oeil perspective.

As a context for their paintings, the designers have established a painted-on Neo-classical vocabulary—in, for instance, the warm tan "stone" behind the counter, with its bright white “mortar joints,” the pattern of which continues right across some glazed openings into the office beyond. In the door frames, Mannerist details and unconventional uses of color burst forth. Painted shadows imply lighting from the direction of the courtyard doors. Along one wall, a view opens quite improbably—even for trompe l'oeil—into an arcade of more or less Pre-Renaissance style.

Seen through all these illusionistic openings are areas of blue sky occupied only by white clouds that gently spoof illusionistic painting. This infinity of sky where landscape belongs is hardly Classical, but reinforces a suggestion of 20th-Century Surrealism—which is also evident in the forced perspective of the “arcade.” Yet the ominousness one expects of Surrealism is counteracted by the fresh, optimistic colors.

Other features of the interior design reinforce the transformation that starts with these wall paintings. The high ceiling is made to recede further with a dark, muted purple, which draws the other colors together effectively and somehow does not have the gloominess it might have in another context. Painted moldings at the ceiling are modeled after some in the nearby U.S. Embassy but executed here in bands of red and green. Replacement of the original fluorescent ceiling lighting with track lighting directs light on the walls and on the staff—and distracts from the suspended television security cameras by looking like them.

The effect of the whole design is to counteract the constricted vision of space with intimations of openings into unbounded space, psychologically effective even though patently unreal. Colors are vivid without being garish—rather like those of Renaissance paintings, though the palette is a limited one more characteristic of interior design. Colors and images manage to look sunny during the Parisian winter and refreshing during the summer—even when glimpsed through the doors from the courtyard.

Some officials have found all this too frivolous for this U.S. official building (which was once Hitler's Paris headquarters). One elderly visitor tried to walk through the unreal door as she left. The staff that actually uses the space realizes they have something very special but are not quite prepared to interpret it.

At any rate, the lively little anteroom will have a limited life span; plans are being drawn up even now by architect Hugh Newell Jacobsen of Washington for restoration and renovation of the Talleyrand Building. One result, of course, will be to house the visa application process in more adequate facilities. Until that happens, foreign visitors can get a foretaste in Paris of the humor, daring, and sophistication they may find—with a rare bit of luck—on this side of the Atlantic.

[John Morris Dixon]
The geometry of the actuary juxtaposes organic curves of the concrete vaults with the dramatic rectilinearity of the choir screen along one side (right) and the organ along the other.
A few minutes' walk from the station, along this suburb's main street, brings you to the northeast corner of the Bagsvaerd church. Backlit, its silhouette steps toward you, growing out of the ground almost like a natural land form. It has a distinct profile, but a profile that matches no preconception of church type. It is simple, quiet—perhaps even austere—but there is a quality to the feeling it evokes that solicits further exploration.

As you walk around the east end, where the youth area is set convincingly into the earth, the church's full form slides into view. Logic is the structure's strongest visual aspect, a logic that articulates and ranks the sanctuary and auxiliary spaces in a clearly stated hierarchy. The connotation of the forms, however, is curious—more a school or light industrial building than a religious building in its iconography of concrete frame with panel infill. And yet the sense of calm, dignity, and being that the building possesses does create a religious aura that more than compensates for the lack of any overt formal precedent.

Bagsvaerd Church invites comparison to Grundtvig Church, another of Copenhagen's architectural monuments of this century. Built 1920–40 by P.V. Jensen Klint, Grundtvig is an enormous, romantic edifice, an extension and expansion of the medieval country church to metropolitan scale. Its form derives from precedent and tradition, as does its material—brick—which is used incessantly throughout interior and exterior. The orientation of its nave is narrow and focused, framed by arched bays of beige brick crafted with impeccable care. Grundt-
vig is a monument to the romantic interpretation of a building tradition, a familiar form brought into this century only through size and siting.

At Bagsvaerd, on the other hand, Jørn Utzon has created a double-walled structure which articulates exterior and interior in two distinct formal codes. The exterior is mundane, the daily; the form of today. Constructed with quasi-industrial techniques and materials, the building's exterior relates to the noise of main street, Denmark's severe winters, and the exigencies of construction economics. The interior, to the contrary, moves toward something curvilinear and soft and dissolved. Utzon, in an interview with Per Jensen, states: "I am inspired by the clouds and have created a space that fades upward."

Three aspects dominate the interior of the church: the soft undulation of the vaults; the whiteness of the spaces; and the tempered, yet pronounced, presence of light. The sanctuary is broad and shallow, atypical of Danish churches, and in direct contrast to the axial nave of Grundtvig Church. The intent was to bring more people into direct contact with the altar, to shorten the distance between priest and congregation. In describing the plan, Utzon has explained that he desired a place that would contain "many people, good acoustics and a certain peace which is not theatrical; not a dark room facing a stage of a high altar, but something you are in together and sharing... We chose a certain broad angle
toward a place which is not so stagelike, but where what’s going on happens lengthwise.” The thin shells of concrete span the nave lengthwise, modulating the interior of the sanctuary, emphasizing its breadth, creating a soft lining within the harder outer box. The entry corridor is lined with white-stained wood and glass, one side serving as a screen wall opening onto the sanctuary. Inside the sanctuary, the roundness of the vaults above is washed by abundant light from the skylights. Light defines the contours of the vaults and dissolves their edges. Light defines the sides, the skin, of the sanctuary. Light creates the place. Pale wood is used throughout: the trim, the doors, the pews. This color scheme of white paint, light gray concrete, and the soft, warming tint of the blond wood creates an interior that articulates each element without destroying the continuity. This color range, as might be expected, is quite common in modern Scandinavian building; it is a reasonable approach toward brightening interior spaces in countries where light becomes a precious commodity during almost half the year.

The auxiliary spaces are organized with the same architectural logic as the sanctuary. Two corridors, and the ladderlike circulation system they imply, link the rooms and courts. These corridors are among the most beautiful spaces in the church. For once, the architect seems to have realized how much time people spend getting to and from places in the building, and acknowledged the act of procession. The hallways are flooded with light from above, soft in color and structured by the ever-present concrete frame and the large sliding doors. The feel is one of equilibrium. Circulation is commodified during almost half the year.

Yet despite certain formal inadequacies, Bagsvaerd Church is a successful and uncompromising attempt to create a new religious vocabulary. Though its exterior is restrained—even somewhat severe—its interior softens the box and gives form to the formless, dissolving perimeters through curvilinear and light in a manner that conjures a Modernist Johann Balthasar Neumann. Utzon’s mastery of color (or its lack) and light are best displayed in this building as his sense of site is best exemplified in the early studies for the Sydney Opera House or the Kingo housing. The Bagsvaerd Church is made where the mundane meets the holy; the defined meets the boundless; the rectangle meets the curve—in a place where clouds and concrete meet.
There is a story in Udine, Italy, that an earthquake will strike there every 400 years. One came in the 1100s, another in the 1500s, but by 1976 none had made an appearance... until May. The people felt lucky, though, because the damage was slight, and they would be free of worry for another 400 years. They were wrong. In September it hit again, that time causing extensive damage.

Near Udine, in Rivoli di Osoppo, Gino Valle's new 50,000-sq-ft service center for the Fantoni furniture manufacturers was nearing completion. After the quake, a great many of the reinforced concrete building's columns and beams were broken or cracked, and most of them were out of kilter. The factory, which stood at the northwest corner of the service building, was completely destroyed. This meant the company would move to press ahead with a large factory addition previously planned for the east of the service center, and at the same time put the center itself back into shape.

The reconstruction of the service center was noteworthy because it required not just the mending and patching of cracked and broken concrete, but the installation of a new iron tie-rod system of earthquake resistant strutting. What is interesting about this is the way the architect has incorporated it into the building design in a bold and forceful manner, with no attempt to conceal the elements or to give them the appearance of anything other than exactly what they are. The tie-rods continue the uncompromising industrial aesthetic of the design and, if anything, make the building much more visually stimulating, both inside and out, than it would have been otherwise.

As originally planned, the service center was to join the old and new factory complex through an east-west pedestrian spine connecting all three facilities at an underground level. Until the original factory is replaced however, the spine at the west side will lead only to a parking area. At the east, though, now connects the new service building and factory structures. In the service center, second spine runs north-south through the long, rectangular building at its western edge. This two-level spine accommodates service functions at the basement level and becomes the major pedestrian axis at the main level. East of the pedestrian spine, the three-level service center is divided functionally into four basic areas of offices, showrooms, cafeterias, and locker/bathrooms (workers shower an change at the plant). In addition to these areas, two gardens are dropped into the long building, and a bocce-ball court is included in its northeast corner.

The gardens and ball court begin to explain a lot about this complex of building and about the service center in particular. A though one is struck by its industrial aesthetic, its humanistic qualities—not so readily apparent—reflect an attitude usually not associated with the hard-edge approach. This building is made of exposed concrete, glass set into unpainted galvanized metal mullions, and massive tie-rods everywhere. It is painted white inside with black rubber floors and dark gray industrial carpeting. The only color is sparingly used blue and the orange-red of the cafeteria chairs.

One might rightly wonder just what could be considered even remotely inviting about such a combination. The answer lies not in the materials, but in the organization of the spaces, their openness, and their correspondence and relationships to each other. In anything, this building proves that the so-called industrial aesthetic, which is often characterized as cold and inhume, can produce an inviting and pleasant surroundings, even in a factory, as any other approach.

In the service building, all of the space flow either into each other or into one of the gardens. The central spines connect every thing together, and they are open and wide and seem to flow into the office and office.
The Fantoni furniture factory is near the Venetian Alps; service building (left) needed tie rods after 1976 earthquake. Color is used sparingly, but when used is bold, as in cafeteria (middle). Factories are behind service building (below left). Main pedestrian spine (below right) is highlighted by galvanized metal mullions, rubber floors.
Fantoni furniture factory

mezannine areas, into the cafeteria, and even into the washrooms, with little sense of confinement or restriction. In the huge manufacturing areas, yellow bicycles are provided for the workers or anyone else to get around on. What pervades the entire complex, then, is a sense of fluidness and openness. This came about by clients who knew what they wanted and got it.

There is almost no hierarchical division of spaces within the complex; boss's area leads into secretary's area as easily as foreman's runs into laborer's. On first seeing the complex, one's immediate reaction is that the workers must have had a considerable influence during the design phase. But in fact, they did not. When asked about this, architect Valle says, "The Fantonis are one of the biggest furniture manufacturers in Italy, and they didn't get that way by not knowing what is right." [David Morton]

Data
Project: Fantoni offices and service building, Rivoli-Osoppo, Italy.
Architect: Gino Valle, Udi Italy.
Site: industrial park in a j an plain near the foothills of Venetian Alps.
Program: a 50,000-sq-ft off. showour, and cafeteria addit to the factory of a furni­ manu facturer.
Structure: reinforced pre­ concrete columns, beams, c plinths; precast concrete bear­ panels on west side of spine with precast con­ T-beams for covering; ear quake-resistant tie rods.
Major materials: mezzan­ level of steel structure s rund by white wood pan­ adjustable metal ceiling syst­ client's own open office syst­ and furniture; industrial car­ ing and rubber floor tile.
Mechanical system: central conditioning; heating syst­ supplemented with waste w­ from manufacturing.
Consultants: Gino Valle, in­ riors; Fantoni, Allan Pre­ bricati, general consultant­ Carlo Filipuzzi, structur­ Helmut Klein and Ferdinar­ Rosset, mechanical.
Client: Fantoni Arredame­ S.p.A.
Costs: about $1,220,000, $24.40 per sq ft.
Photography: courtesy of­ architect except bottom left, 171; bottom, p. 172; top left, middle, and bottom right, p. 177; D. Morton.

Design studio (above left) and­ passageway to factory, at lower­ level, show how spaces flow to­ gether, even through washroom.
In office area (facing page), me­ zannine is seen from rear of build­ ing (top left), from above spine­ (top right), from spine (middle from near a garden (bottom left) and­ from showroom underneath (bottom right).
Both Norman Foster, the architect, and Joseph, his client, share an enthusiasm for the pure industrial aesthetic of Pierre Chareau's Maison de Verre, the steel bolt and glass block landmark built in Paris at the beginning of the 1930s.

Foster's design for the Joseph shop is a cool, studied, understated image, with a technological perfectionism that matches Joseph's clothes and brings a breath of freshness into what must be London's tweediest and stuffiest shopping street. It occupies the ground floor and basement of an Edwardian building at the corner of Sloane and Basil Streets. The plan is triangular with the entrance, a handsome portico and pediment, on the diagonal. The Joseph sign inscribed is fluorescent pink painted metal.

The big shop windows are raised above street level and set back between attached columns giving a full preview of the rows of rainbow-colored clothes, displays of de rigueur accessories, and miniature Perspex cases with pink and green neon strips. From time to time, small exhibitions are held in the shop. The premises had belonged to a well-known chain of shoe stores of the gilt chair and chandelier variety. The architects stripped away the false ceiling and removed the dummy columns cluttering the interior, restoring the Edwardian generosity of the original and creating a light and airy double-height void.

Within this space, they have added a gray steel gallery and racking at mezzanine level that runs around the perimeter. It is this structure, with its thin columns, fine balustrading, and open metal stairways that, in the atmosphere of transparency and lightness, recalls the exquisite ship technology aesthetic of La Maison de Verre. The structure appears as a freestanding kit of parts, but in reality turns out to be both firmly fixed and custom made. For safety reasons, the public is barred from the gallery, which simply provides visible storage space. More stock is contained in the basement.

To the rear of the shop is a mirrored changing area with individual changing cubicles of perforated metal screens. The ceiling is louvered to indicate a break with the main show space and also masks the ventilating plant. The cash desk is strategically placed where the break occurs so that staff can survey customers without appearing to do so.

The walls are painted white and the floor are of studded gray rubber. Three easy chairs by Le Corbusier have been placed in the center of the shop, and a Rietveld chair pushed casually to one side of the basemen stairs. The remaining furniture, including welded steel tables with glass cantilevered tops, screens, coffee table, and shopping bar trolley, was specially designed by the Foster office.

Penny McGuire

Foster Associates' design and Joseph's imported French clothes share an aesthetic whose seeming informality is as knowing and precise as the Neoclassicism of the building they occupy.

Joseph's entrance (above) on a tweedy London shopping street. Inside, the aesthetic is industrial, from the metal screens of the changing cubicles (above right) to the gridded steel gallery along the edges of the showroom (facing page).

The design corresponds to the clothes. The functional appearance of the Joseph retail has the general air of having been discarded off the backs of French matelots or plucked from stray parachutists, but clothes are the whole designed and manufactured inance and range from expensive to very.

In the same way, the design of the cantilevered tables is based on the aluminum web structures of Barnes Wallis' World War II Ellington bombers. The steel structure may look like large-scale industrial production, but the fact is that the parts were made by small aft firms. "We considered using a proprietary system," Foster says, "but they were all so nasty and slick. We wanted something that was positive in its own right but would act at the same time as a foil and would not dominate."

Certainly the shop, with its freshness and clarity, is likely to wear well, and there is reassuring accord between the tastes of architect and client. So the question of whether such technological perfection is appropriate hardly seems to matter. The principle is more akin to Oscar Wilde's maxim. "I have very simple tastes," he said, "I am always satisfied with the best."
A sophisticated insertion into speculative retail surroundings in Downtown Toronto by Italian-born designers, brothers Francesco and Aldo Piccaluga.

The salon presents a see-through glazed wall to the drab corridor of the shopping concourse, the glass interrupted only at railing height by a continuous horizontal illuminated sign (bottom photo). Inside, a cross-axial symmetry governs with entry on axis into the centrally placed reception area (top photo).

There are three principles underlying the Piccalugas’ design for The Cut Above hairdressing salon. First, it is organized along urban design principles with intersecting open-ended grids dividing the space into the equivalent of streets, buildings, and a piazza. Second, everything is custom-designed—from chairs and lamps to floor and ceiling. Third, an elegant savoir-faire is achieved by limiting the number of design variables and then elaborating each one for an effect that is intricate but tautly controlled.

The salon is located on the second level of the shopping mall concourse of First Canadian Center, a mixed-use but predominantly office complex in Downtown Toronto. “Our first design decision,” says Aldo Piccaluga, “was to avoid any major spatial intervention by maintaining the premise’s boxlike configuration. The perimeter space envelope vanishes while the focus is on systematic, articulated, and extroverted stations.”

Urban design
The aisles are treated as streets, emphasized by a floor tile pattern that changes both color and material. The tile underneath the stations is black and solid. Down each aisle, it is gray with narrow strips of white marble inserted at various intervals. The strips reinforce the sense of movement in their linearity and the sense of the grid in their cross-weave at each intersection. Remaining areas are tiled in white.

Placed on the grid, like buildings divided by streets and alleys, are fixtures containing three work stations and one drying station each. The fixtures are self-contained, anchored on steel columns through which electric power is provided. They are cross-shaped and rotated 45 degrees on the grid, forming a second, diagonal grid. This device confers both a sense of more space through its suggestion of illusionistic depth and a sense of more active space through its relationship to the rectilinear grid. It also turns each station full-face onto the circulation aisles.

At each corner is a pilot light, more to identify each station than to provide illumination. Beneath each is a similarly sized table, and together they act as lamp posts, punctuating the position and sequence of these interior buildings.
The Cut Above, Toronto

age and somewhat less depth. The architect took full advantage of the frontage by segmenting ancillary spaces such as shampoo rooms in the rear and leaving the whole the shallow “front parlor.” in view through glazed façade interrupted only at rail height by the continuous, backlit sign.

Special order
Every project by the Piccalugas represents not just the organization of spaces but the design of special furniture, lighting, and equipment “ex nova,” as they put it. They maintain a small office and do their own working drawings. “We don’t want a draftsman solving detailing problems in whatever way he already knows,” they explain.

The station fixtures form the crux of the furnishings here, with built-in mirrors, cabinetry, lighting, heat lamps in Modern cages, dryers, magazine racks, chairs, etc. The corner lights are shielded by a slit met housing with the real illumination coming from the inverted pyramid in the center of each fixture. This focuses four 150-watt spotlamps on the ceiling above. And the ceiling at those points is designed to have molded plaster squares divided into quadrants, each quadrant corrugated in different direction. The light is thus dispersed and softened as it falls back into the room. “It is the opposite of the usual recessed lights in the ceiling,” says Aldo Piccaluga. “We don’t create spots of light on the floor but a gentle light all over.” The only direct lighting is over the reception area and even these bulbs are coated in chrome for an indirect effect. These lights, the element designed by the Piccalugas for a previous commission, are in production by an Italian firm.

The various elements of seating—station chairs, shampoo chairs, banquets—are a variation on a theme. The frames are flat planes finished in lacquerlike black polyester. Separate cushions, covered in real leather, are attached on top. The small station chairs have split cushions with an aisle down the center of each back and seat, which makes a kind of reference to the spatial aesthetic. The banquette cushions are continuous, but as each provides two sitting places the effect is similar.

The perimeter walls have been lined with white glossy plastic laminate, as are the station fixture partitions. Smaller details are finished in matte black epoxy or gray hammer finishes on metals.

Convoluted restraint
The whole is crisp and abstemious, but not simple. It is a minimalism of category, not of detail. The use of color is a good illustration. There is only one color—bright lipstick red—and it only appears in the cushions of the chairs. It appears, however, in a variety of sizes and rectilinear shapes in various seating for various purposes.
The rest of the palette is neutral. But it runs a large gamut of whites, grays, and blacks in the changes from one material to another. Similarly, there is one texture: glossy. But much is made of the variations among marble, ceramic tile, metal, plastic laminate, and high-gloss polyester finish.

Geometry is exploited even more. The salon and its furnishings are almost uniformly rectilinear. Primary is the grid. It is the basis of organization for the room. The stations are part of the grid. The corrugated sections of the ceilings are part of the grid. The floor pattern is part of the grid. Complicating this geometric skeleton are a series of elaborations and contradictions that nonetheless remain unquestionably subservient.

First there is the secondary diagonal grid established by the rotated work stations. Second, the grid is subdivided into smaller but congruent grids—in the floor tile, ceiling reflectors, modular storage, backlit photo display, and an array of other details.

Among the squares are inserted rectangles. The piazza is distinguished from work areas not only by its central location, but by its distinctive, rectangular shape. Furniture, accessories, and floor pattern are pieced together with both squares and rectangles. More gingerly, a few items—the light bulbs over reception and the heat lamps with their swirling metal cages—are round.

Stripe patterns infiltreate the grids. The pilot-light shields are slitted. The marble insertions in the floor are long, thin strips. The lamps over reception are arranged in lines, and the corrugations in the ceiling are linear. Then there are the long, illuminated façade sign and a host of small shelves and chrome edges.

It is the way the Piccalugas work. This may be only 2100 sq ft and only a place to have hair cut, but each detail is carefully considered and fabricated and aligned with the others. The result is minimalism, but it is not minimalism by abdication.

[Nory Miller]
According to architect Günther Domenig, he designed the Central Bank in Vienna to combat the "functional" or institutional image of the bank. Since this branch bank is meant to include a cultural center for the community (specifically the fourth and fifth floors), the bank wanted to show its commitment to "culture" by its choice of a creative architectural concept.

With this project, Domenig intends to question the role of the architect in the entire process of building. He is trying specifically to address constraints that affect the role of design such as budget, time, and systems analysis and planning. Arguing that the artificially imposed specializations of economics, technology, and function forbid the architect designing in a totality, Domenig feels strongly that the architect must analyze these constraints and from them develop a statement about the relationship of architecture to the fine arts and to the public.

By taking apart and controverting the normal processes involved in planning and building, he hopes to bridge the gaps between the various stages of design and construction, between what occurs on the board and what is actually realized. Team design—the organized cooperation between architects, community groups, and public officials—he reasons, is responsible for the standardization and conformity endemic to industrialized mass production. This building, reflecting creative forces working as a unity, thus protests normal ways of seeking and making architecture.

The design reflects specific principles involved in the investigation. For example, the contours and angles from the surrounding urban context are echoed in the external and internal formal treatment of the branch. The cascading roofscape is seen as a highly sculpted mountain range, whose outlines continually shift with the viewer's vantage point. The organization of space means that the plan of the interior can be read from the outside. In fact the separation of programmatic functions is expressed by the segmentation of the façade. Half-floors of space converge in a single room, where a "snout" protrudes to the outside, pushing the interior visibly to the exterior. Lounges and corridors function as unified communal space—again another kind of architectural fusion.

The architect also pushes the fusion of form and construction through his use of concrete, steel, and sheet metal. Structural and mechanical elements are exposed. Fast-drying concrete is used for framing elements or applied over structural reinforced concrete, or employed for purely plastic self-supporting components. Thus one notices five different types of sculptured concrete parapets (modeled on both sides); "head" (casings for the anchor bars); "trees" (as structural elements); the "hand" (to disguise the water drain); and the "water" (concrete waterways).

Structural steel was explored for its variable, not uniform, qualities, its visual, not scientific, properties. Using structural steel, Domenig created a "yard-roof" of lacework formed from spherically buckled triangles and the "snout" formed from three-dimensional quadrangle lacing.

Sheet metal was molded into a rigid, self-supporting body for the buckled exterior skin. Sheet metal is also used for the flowing surfaces inside, to smooth out angles and spaces and sheath the ventilation supply and return ducts.
This page: Details of the customer floors—the oversize hand creeping up the staircase, purple waterfall, ganglia of pipes, gritty textures juxtaposed with lacquer-like finishes, high wire technology juxtaposed with folk craft crudeness.

Facing page: The “snout” façade (left), glassy spreadfoot rear elevation (middle), and accretive entry (right).
Commentary

The following passages have been translated, excerpted, and freely paraphrased from Friedrich Achleitner’s “Built into Emptiness?” published in Um-Bau 2, July 1980, by the Austrian Society for Architecture, Vienna.

In the Central Bank in Vienna by Günther Domenig, the spatial conception, planning of the interior levels, and the organization of rest and activity zones is extremely functional. Although the building is not specifically related to bank activities, it still demonstrates economic use of space. Domenig makes the first qualitative jump into a different direction of perceptual connections, which he calls the “higher artistic principle.” Thus we arrive at the hard-to-define, difficult-to-pinpoint, localized expression of the building.

The realm of associations pertains to the animal world: bones, rampantly growing cell structures, muscles, and viscera. The building seems to possess an inherent biological energy—a growth process that could only be stopped with difficulty. This “bursting out of its seams” signals a vitality expressed in both structure and skin. Yet while it provokes many associations, the design inevitably brings one back to the thing at hand.

Domenig succeeds in heightening the evolving, growing quality of his forms to such a degree that he lets them tip the scales in the final stages of their development. The undefinable animalistic quality of the building is seen by the introduction of The Hand. It seems as if the hand wanted to stop the whole growth propensity of the structure through one unequivocal, irretrievable gesture.

Another subjective act to shift meanings occurs in a totally different form, where the filigree netlike support of steel for the glazed area metamorphoses into lancelike points. The sudden burst of aggressiveness has been seen in Gaudi where wrought-iron fences and gates are garnished with daggerlike spikes for protection. Gaudi’s own traversable roofs and gates are garnished with daggerlike spikes for protection. Another form of protection. Gaudi’s own traversable roofs and gates are garnished with daggerlike spikes for protection. Gaudi’s own traversable roofs and gates are garnished with daggerlike spikes for protection.

Domenig comes from the rural city of Graz. Such cities can either compete with Vienna or cultivate a regional position. Only in the last 20 years, with the vitality of Graz’s technical university in the 1960s, has the town found its own direction. During the 1950s and 1960s Graz was able to take a different architectural course from that of Vienna. Architects look more to international movements, including New Brutalism, plus other fields of inspiration such as mathematics (planning model) and linguistics (semiotics).

Domenig’s work is located within the German Expressionist tradition of the 1920s. Like the Expressionists, his work eschews the rational geometrical and positivistic spirit in search for a new relationship between the individual and the community. Of course the connection to Gaudi is striking—particularly in the similarities shown in the attitude to the process of conception and execution, albeit using industrial materials rather than handcrafted ones.

The fact that the building does not have much to do with Vienna’s own architecture tradition has been noted. Yet in another way this bank branch could not have been executed elsewhere. Vienna has that extraordinary architectural residue, a multiplicity of historical deposits, an archeology of layers of thinking that continuously allows it to create something new on its own. Domenig has not only irritated the system of Vienna’s bureaucracy, but has also shaken what is perceived as a matter of course in architecture.

His work does not allude to or reflect anything, nor does his work build bridges, establish connections, or make compromises. His design shows the naive impertinence of taking itself seriously. The work does not try to mediate or comment. It is not literary, has neither surrealistic nor fantastic ambition, does not burst with meaning. It is not about the history of place. The structure does not do anything else but represent itself: it is open, unconditional, vulnerable. This type of architecture has the potential of having a strong influence on the consciousness of architecture. But it also contains the danger of creating superficial effects, for this expressive form enters the paradoxical situation of strengthening communication and speechlessness at the same time.
Domenig's combination of Surrealist imagery, sophisticated hardware, and the occasional historical suggestion is concentrated around the grand staircases (right and bottom). Nearby are the more business-as-usual banking counters (below). Design page: Domenig's layering of space, including the organic masses supporting the glass skin and his reinterpretation of the classical orders.

**Data**

**Project:** Central Savings Bank, Vienna.
**Architect:** Günther Domenig, Vienna. Emanuel Anders and Volker Giencke, collaborators.
**Program:** six-story bank with two floors of customer services, a floor of banking offices, two floors for community cultural events, and a caretaker's apartment at the top.
**Major materials:** sculptured concrete, supporting steel, modeled tin, plastic.
**Consultants:** Stefan Novotny and Wolfgang Bauer, structure.
**Photography:** Peter Hermann, Martha Hübli, Karl Kofler.
Thick, rough, malleable

Wayne Attoe

Ricardo Legorreta employs the essential textures and forms of traditional Mexican vernacular to create a distinguished interior for a company staked out on modern technology's leading edge, IBM.

In the beginning was the Wall, which could do and say many things. And there was the absence of wall, called Void, which could be either bright with light or deeply dark. From these, architecture was made and continues to be made.

Legorreta Arquitectos of Mexico City freely and gratefully acknowledges its debt to the vernacular building traditions of Mexico. In project after project—whether deluxe hotel, factory, or office building—these architects are inspired, informed, and guided by what has gone before and what continues to be built in villages throughout Mexico.

The central element of their borrowing is the Mexican wall: thick, plain, rough, malleable. It is thick for structural and climatic reasons, alternately sheltering against and storing heat from the sun. Its thickness is evident when a window or doorway is sliced through, leaving a deep reveal, and when a wing wall is extended beyond an intersecting wall plane. Changing wall planes and deep reveals in conjunction with varied interior light sources create multiple gradations of light and shade that are—to say the least—sculptural. The traditional wall is plain and rough because it is made of plaster-covered adobe, or plaster on basic brick. In their own version of the plain, rough wall the Legorreta group intensifies the irregularities and turns crude plastering into a universal decorative texture more primitive looking even than its vernacular antecedent.

The essential brick and stucco wall is malleable, too, able to tolerate voids almost at the whim of builder or architect. Voids are either bright with sunlight when they are windows or skylights, or bright from recessed incandescent lamps; or they are dark alcoves, cool and private places.

The wall is sometimes a bright sheet of color. It is a signal of something going on nearby. Or a change of mood. Or a subtle distinction between outside and inside. The use of color in Mexican vernacular is light-hearted, even humorous. In the work of Ricardo Legorreta's group, it is free-spirited and often, like everything else in their vocabulary, exaggerated for vivid effect.

Sometimes the wall retires, stops asserting itself, becomes a background for the dramatics of an ornamental metal grille, a plaster confection, or a crafted wooden screen. When features like these appear, they act as focal points, centers of attention with the wall acting as foil.

The wall is sometimes reproduced as multiple layers, layers typically expressing changing degrees of privacy or penetrability. The innermost version of the wall is an arcade, post-and-beam incarnation of the wall, which opens freely onto the inner, private patio. Another is the arcade again, this time traditional Mexican building. What distinguishes the Legorreta group's use of this vocabulary from its use in vernacular is a tendency to intensify the features or qualities that they have borrowed. The irregular surface of the essential brick and stucco wall is made rougher. Edges are treated more crisply. Colors are brighter. Additional sources of light make a wider range of tonalities on intersecting surfaces. Ornaments are designed and chosen to be sculptural objects. This intensification results in a wonderful marriage of low and high art.

IBM turns inward

The IBM Technical Center in Mexico City is the most recent major building by the Legorreta office. Its program is somewhat different from the buildings which preceded it in that it is less public than hotels or corporate headquarters. The chief purpose of the building is storage for IBM equipment and production of computer cards.

Like traditional Mexican houses and other patio-focused buildings, the IBM Center faces inward, turns its back to the street and neighborhood, which includes a school, an apartment complex, and a very busy highway. It shares with them only the grayness of Mexico City. In this case, the grayness takes the form of a long, gray wall. This is not a building that enhances the cityscape. It is a building about interiors.

Beyond its first gray incarnation, the wall loosens up, becoming more accommodating and versatile. For example, in the small public
reception area, the gray wall suddenly becomes tall, white, and bright. A gush of yellow adds warmth and announces the nearby stairway leading to administrative offices. A tall, mirrored construction reflects the lightness, roughness, and warmth.

The office area, workshop, and storage facilities, which are restricted areas, are quieter and more businesslike than the reception area. Colors are deep and rich, but subdued. Ornamentation is less dramatic, limited to the bright pattern of skylights and recessed illumination that cut through the ceiling plane; or to grilles that shade windows from direct sunlight. The principal texture is the omnipresent roughness of the surface.

The employees’ cafeteria is also bright and warm. In a sense, it is an ornament for the whole building, for it is the social focus. It is starkly furnished with severe, though elegant, wooden chairs, tables, and cupboards, reminiscent of a monastic refectory. But it is also like a restaurant overlooking the zócalo—a table with a view of the park (which here is a protected lawn area). There is even an allusion to the innermost, private part of a traditional house with table set in the shelter of an arcade that surrounds the sunny patio.

Surrealist humor
The transition from workplace to social place is handled with restrained good humor. Giant stucco fruit set in a niche along the wall simultaneously announces the immanence of food and the ever-present wall. The architects designed this tableau to relate to the scale and serenity of the building, while at the same time modulating the transition from the familiar rounded forms and their gradations of light and shade found nowhere else in the building.

Legorreta Arquitectos has fashioned a delightful and reasonable place to work. These are interiors with markedly different qualities: pragmatic, efficient, exuberant, warm. What is remarkable is that this expressiveness has been accomplished within an elemental and indigenous vocabulary.
Project: IBM Technical Center, Mexico City.
Architect: Legorreta Arquitectos; Mexico City; Ricardo Legoretta, Noé Castro, Carlos Vargas, Lio Guerrero.
Program: 86,000-sq-ft center with blocks. One is for vertical storage with a clear height of 46', the other has two levels. The first level contains employees' rest areas, manufacture of computer cards, and entrance. The second level is offices and work areas for computer repair.
Materials: brick, plaster, asbestos tile, carpet, marble, pinewood furniture, leather and fabric upholstery.

Contractors: CYP of the group ICA.
Consultants: BIPSA; DPSA; DYS.
Cost: $48.50 per sq ft not including furniture.
Photography: Manuel Lopez Campos.
Cognizant of the fact that people as well as stock occupy warehouses, the architects of an auto parts facility make users into design team members.

At the mention of an automobile parts warehouse, an image of long, dark, sometimes greasy aisles comes to mind. Not very appealing as an interior design commission, surely. But a new Coventry facility for Unipart, the components division of BL (British Leyland), dispels the image. Architects Duffy Eley Giffone Worthington did not simply design a fine space in the isolation of their office, however. In part because of European concern with industrial management-employee relations, the project took on extra implications at the beginning.

Working with social scientist Peter Ellis, the architects started their design process with an intensive series of employee meetings to encourage user input. Of the roughly 2,200 people employed at the warehouse, nearly 200 were involved in preconstruction sessions, around ten persons to a session. Following slide presentations of early design ideas, discussions were held, modifications performed, and new presentations developed. The groups concentrated on three broad aspects of the proposed facility. On one hand they investigated elements of how to get work done, including orientation, signs, and color coding.
On another level was the study of how to promote a general feeling of well-being; areas rest breaks, overall cleanliness, and ambience were discussed. Break areas were, in the final result, indicated as permanent by the architects. Also explored were ways to capitalize the internal communication between the company and its employees, using the building as a medium. Key areas were selected for the installation of major notice boards to share information with the users about happenings and developments in the company. Unipart Managing Director John Neill comes in for the architects’ praise for being willing to stretch the horizons of what could be a dull program. We add our congratulations, and extend them to the architects as well. [Jim Murphy]

Coffee break areas (below and left) are located in several highlighted spots around the warehouse, graphics and special treatment underscoring the importance and permanence of the amenities. Brightly lighted and immaculate, the storage area uses narrow aisle, high racking systems with crisp signage and color.

Data
Program: within a given building enclosure, design an automotive parts warehouse with support functions.
Client: Unipart Components Division, BL.
Photography: Richard Bryant.
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Photo No. 1: TSIB Building, Walnut Creek, California. Architect: Howard Johnson and Associates, San Francisco, California.
Circle No. 319
Barrier-free specifications

Only recently have specifiers begun to realize some of the far-reaching implications of making buildings more accessible to the physically handicapped. Though ANSI A-117.1 has been in existence over two decades (revised again in 1980) and forms the basis of efforts to standardize architectural approaches to such problems, it is only within the last few years that federal and state governments have begun to respond with new code requirements which affect both private and public buildings. In any case, the need to alter existing buildings and to change our thinking about new buildings, often in subtle ways, to provide barrier-free access and use is now clearly established in law and practice.

While the specifier will follow the architect's lead in code compliance, as indicated on the contract drawings, many essentials can only be handled in the specifications. Though the drawings show locations, delineate details, and indicate quantities (or schedule them), the sources and characteristics of materials and most performance requirements can best be described in the project manual.

For example, not only the height and locations of grab bars in toilet rooms is needed ("see drawings"), but also their diameter, surface texture, and security attachment ("to be specified"). A type of mirror mounting that tilts downward for wheelchair-bound users may be necessary. Out-swinging toilet compartment doors will need unconventional hardware. Such items are more economically specified rather than illustrated and noted in great detail.

The examples above are taken from only one division of the project manual, but meeting requirements for barrier-free buildings is not limited to one division nor is it a single section or division itself. Rather, it requires a series of items and changes in a large number of trade sections spread throughout the contract documents. In fact, almost every division is affected by some code or construction provision.

While a list of items in each division (from drain grates which do not trap wheelchairs in Division 2, through lever handles or blades on faucets in Division 15) can be compiled, the majority of items are concentrated in three general categories: travel, convenience facilities, and communication.

"Travel" is the broadest group, since access is a prime goal. It includes textured, non-slip ramp surfaces; substantial hand and guardrails; automatic door openers; door closers not requiring excessive pull to operate; hardware with lever handles; knurled door knobs at hazardous areas; low thresholds and saddles for minimum obstruction; and substantial kickplates to protect door finishes.

Also included in the "travel" category are: low-pile carpet which won't impede wheelchair progress; nonslip floor coverings; non-trip stairs without projecting nosings; flush edges where floor finishes change or terminate; platform lifts and elevators with proper features; braille or raised numbers at car and hall stations; self-leveling elevators and adequate door-open time. Audible arrival gongs help the visually impaired.

In addition to the toilet items already cited, "convenience facilities" include: secure attachment for towel bars which may become emergency grab bars; omission of curbs and steps at showers; kitchen ranges with door swings that don't obstruct the wheelchair user from reaching into the oven without danger; front controls on drinking fountains; insulation of exposed hot undersink pipes; and hand showers with flexible hoses.

"Communication" means adequate indication of facilities such as special wide parking spaces; building signs and graphics to show ramp and other access locations; oversize lettering and color coding of areas; audible signals (as at the elevator); and doorless, acoustically treated telephone booths, some at wheelchair height, with special equipment for the hearing impaired.

Review of the typical items mentioned above will show that Sitework, Concrete, Masonry, Miscellaneous Metals, Carpentry, Doors and Hardware, Finishes, Specialties, Equipment, Conveying Systems, and Mechanical work are all affected. Furnishings and Special Construction may also be involved in a particular project. If we add to Division 1 a general statement of intent to provide accessibility (sometimes required by a funding agency), very few divisions of the project manual remain untouched.

It may be surprising at first to realize the extensive effect of these new requirements on specifications work and the wide variety of handicaps intended to be accommodated. The barrier-free specification, however, is not merely an exercise in code compliance. It is an attempt to make available to disadvantaged groups the conveniences and experiences that the rest of the population routinely enjoys. As such, it calls for the special human sympathy and conscientious effort.
Access today

Technics:
Barrier-free requirements

Michael Jones

Activities of the barrier-free access movement of the 1970s are reflected in the newly adopted specifications for making buildings and facilities accessible to and usable by physically handicapped people—ANSI A117.1-1980. The new standard and its implications are examined here.

Michael A. Jones, AIA, RIBA, is project architect and research architect with Kramer, Chin & Mayo of Seattle. He was the author of "Design for Access" (P/A, April 1978) and of the Illinois Accessibility Standards. He is currently developing a manual for HUD on accessible housing.

After several years of development and revision, the American National Standards Institute has finally adopted specifications for making buildings and facilities accessible to and usable by physically handicapped people. The document that embodies them, ANSI A117.1-1980, has been awaited with a mixture of hope and trepidation.

Its publication is the culmination of a decade of activity endeavoring to further the rights of disabled people, to enable them to have the same opportunities that able-bodied Americans take without so much as a second thought. These include a choice of housing, education, employment, recreation, and transportation. It should be clear to anyone that environmental barriers to the handicapped are with us today, in today's building stock, transportation modes, and city thoroughfares. No matter how many accessible buildings are constructed in the future, the problems for the disabled will not dissipate unless changes and modifications are made to the existing facilities as well.

The original ANSI Standard, adopted in 1961 and reaffirmed in 1971, contained ambiguous language, often of a recommendatory nature, which made the requirements very difficult to implement. With the Easter Seal Society and the President's Committee on Employment of the Handicapped, the U.S. Department of Housing and Urban Development sponsored research and development to revise the standard. This process took six years, a period too long for advocacy groups who despaired of the quality of the existing standards being adopted in their own states. North Carolina pioneered in the early 1970s, producing better requirements in a well-illustrated book. Several other states adopted the North Carolina model, while others developed requirements of their own.

It must be remembered that the problems of daily living that confront disabled people were only beginning to be identified systematically in the early 1970s. Earlier requirements mainly addressed the needs of people in wheelchairs, with secondary attention paid to the blind and deaf. The problems of others had not been addressed at all in any depth. Thus, as each succeeding state developed its handicapped requirements, it had the benefit of more and better research being carried out in this country and abroad.

There is a philosophic difference that concerns the population under study. The 1970 census figures claimed that in 11 adult Americans in the employable age range was disabled. But normal age-related conditions are acknowledged to modify the ease with which one can negotiate the physical environment. Thus the percentage of "handicapped people in the United States is significantly higher than the 1970 census figure. Accessibility standards emphasize the needs of all people, including those severely disabled as well as those who are often handicapped by the environment, such as children and pregnant women. Though desperately needed by disabled people, the requirements help everyone.

Not all states have a statewide building code, and thus the development of the Barrier-Free Rules and Regulations in the State of Washington, which adopted the 1973 edition of the Uniform Building Code as the state building code, is bound to be different from that in Illinois, where a state building code does not exist. The one can reference the more comprehensive Building Code; the other has to include more requirements.

For the above reasons, the decade seen a proliferation of standards facing the building industry. A respected national standard would remedy the situation if it proves to be acceptable.

New building standards were developed against a background of legislative requirements. Among the seven major pieces of handicapped legislation that were enacted into federal law in late 1960s and early 1970s, the Architectural Barrier Act of 1968 requires that any building constructed in whole or in part with federal funds must be made accessible and usable by the physically handicapped. Provisions in 1973 Vocational Rehabilitation Act up compliance mechanisms of the 1
 disagreements were strongly lobbying to access America is not only the American Public Transit Authority or library be expected to spend in removing the inconveniences of the elderly and handicapped at an unavoidable cost to others . . . " . . . an expenditure of $7 billion over the next 30 years to give fewer than 15,000 wheelchair users access to buses and some 2000 to subways . . . " . . . I have never seen them (curb ramps) used by those for whom they are intended . . . " . . . if a society can afford ramps for the handicapped, it ought to be able to offer ramps and lanes for the bicyclist, so that the fit may stop using their cars . . . "

One has to resort to the usual rebuttals and hope that they will be listened to more carefully. The issue is not one of "inconveniences," things that are troublesome or awkward; it is one of segregation or isolation caused by a total inability of some people to overcome obstacles in the path of travel to many facilities. Access America is not only the goal for those confined to wheelchairs, but the goal for anyone with mobility impairment in any form, which affects, in varying degrees, over half the population of the United States at any time. For many of these people, the route might only be inconvenient or occasionally dangerous, but with better access for the severely physically handicapped, everyone benefits from safer and easier environments. The excessive cost of special equipment will remain excessive while it is special or new or add-on, but costs come down as volume and acceptance increase. Society continually replaces its buildings, transportation modes, etc., and updates in the process. Many transit stations in Chicago or New York, for instance, are in need of modernization for many reasons. The cost of access is a small percentage of what will be spent on public transportation over the next 30 years.

Be assured that on any one day in Chicago, Seattle, or Miami, curb ramps are being used by many people for whom they were intended. One always provides fire stairs as alternate means of egress from buildings, and fortunately, they are almost never used for the reason intended, yet no one is protesting their inclusion in building requirements. They are an acceptable standard. Finally, with the energy crisis looming stronger every year, we have made a start at providing alternative environments for all people. Minneapolis can stand proudly alongside many European counterparts in developing pedestrian centers. To a degree, almost all major cities in this country have pedestrianized at least one major street, and the more farsighted are providing bicycle routes separated from vehicular traffic. The quality of life is being improved for all people, including the "fit."

The more serious backlash is in the form of legislation that has been introduced to overturn earlier laws aimed at improving the lot of disabled people. In Illinois, House Bill 1917 was introduced in an effort to remove the requirement of access for disabled people from private-sector buildings. This bill was sent to subcommittee. Other states were considering similar legislation. The APTA and other critics of Department of Transportation regulation under Section 504 of the federal Vocational Rehabilitation Act want an amendment to the fiscal 1981-85 mass transit authorities bill (HR 6417) that would allow exemptions for transit systems that provided equivalent special services for the disabled. The nondiscrimination requirement of Section 504 does not allow "separate but equal" systems reserved solely for the handicapped. Transit authorities claim that there is too little ridership of disabled people on portions of systems that have been made accessible. But it is a chicken-and-egg situation. The more accessible the overall environment becomes, the greater the use of all public transportation systems by disabled and elderly people.

On the other hand, overzealous handicapped advocates are demanding that present nonaccessible situations be remedied immediately; the laws are on the books and should be enforced. Naturally this upsets administrations, many of which are doing their best in difficult times. Although the Section 504 set a 1980 deadline—an extremely ambitious goal in view of the lack of funding to accompany the law—a fantastic start has been made. Moderates know that the process will take years to make a significant impact, but that is no reason for holding back. More and more people are acknowledging that changes are necessary, and no amount of shouting is going to force the handicapped with their hard-won gains back into institutions or homes.

It is at this point that the eagerly awaited revision to the Handicapped Standard, ANSI A117.1-1980 appears.

The revised ANSI Standard In the revisions to ANSI A117.1, there has been a considerable expansion of material included. The earlier document relied very heavily on the information contained under General Principles and Considerations for interpretation of the specifics. It stated, for example, that an appropriate number of public telephones should be made accessible to and usable by handicapped persons. The requirements for elevators were stated in the same words. A complete understanding of what was accessible and usable by handicapped people was
Barrier-free requirements

thus required before the item could be drawn or specified. No wonder little accessible design was carried out. ANSI A117.1-1980 details how barrier-free environments shall be achieved, as can be seen in the requirements for telephones, contained in 8 separate items, or for elevators, in 14.

The scope of ANSI A117.1 has also been expanded to include accessible housing elements and curb ramps. Most of the recommendatory language has been removed. The populations whose needs are being addressed now include those who find it difficult or are unable to walk, those with sight, hearing, reaching, and manipulation difficulties, incoordination, lack of stamina, extremes of size, and those who find it difficult to interpret or react to sensory information. The following is a brief synopsis of the requirements contained in ANSI A117.1-1980:

Accessible sites are required to have at least one accessible route connecting all accessible buildings, facilities, and elements. This route shall be provided from public transportation stops, public streets, and sidewalks, as well as accessible parking lots or passenger loading zones, if they are provided.

A reasonable number of entrances, but at least one, to a building or facility shall be served from an accessible route. It is not clear whether that one entrance can also double as the emergency egress, for the wording for that is similar, requiring a reasonable number, but at least one. If the able-bodied population is given alternative routes of travel for egress, the same should be provided for those with impaired mobility. The minimum width of accessible paths has been reduced from 48 in. to 36 in. 1 Maneuvering space at doorways and passing spaces are required to be wider, and located at reasonable intervals not to exceed 200 ft. The item that deals with ground and floor surfaces is questionable. It requires a relatively nonslip surface under all weather conditions for all accessible routes, floors, ramps, stairs, etc. How will this requirement be enforced? What material is nonslip under all weather conditions?

A section on curb ramps has been needed in view of the many poorly designed curb ramps that have proliferated in this country. A 36-in.-wide curb ramp, exclusive of flared sides, is the standard. Various alternative solutions are illustrated to cover many of the situations that are likely to occur in the built environment. Uncurbed intersections are required to have a continuous tactile warning texture 36 in. wide along the boundary. Curbed traffic islands must have the pedestrian crossing route cut level with the road surface to enable people in wheelchairs to cross.

The maximum slope of ramps for new construction has not varied and will continue to be 1:12. The maximum rise for any ramp segment is 30 in. However, when curb ramps or other ramps are constructed in existing situations, it is possible to use a steeper slope under certain conditions. A 1:10 slope may be used to overcome a rise of up to 6 in. and a 1:8 slope for a rise of not greater than 3 in. It must be pointed out that ramps require a great deal of effort to push a wheelchair independently up the slope; the more gradual the slope, the greater will be the appreciation of those who must use them. Also, as the steepness increases, there is a decrease in the number of people who can use them. Semi-ambulant people will often prefer to use steps or a curb if the ramp provided in either situation is too steep.

A range of solutions is given to protect people from falling off the edge of ramps. Handrails are required on both sides of a ramp, except curb ramps. These handrails are to extend at least 12 in. beyond the bottom and top of the ramps, parallel with the ground surface. The illustrated use of a guard rail with pickets at 6 in. or so on center is the least attractive solution from the wheelchair user's point of view, for should he lose control or direction, his knuckles, which are at the farthest extremity on a wheelchair driving rim, are likely to be injured as they make contact with the pickets. The problem is greatly reduced, though not entirely removed, by the example illustrating continuous horizontal rails supported on posts at 6 centers approximately.

Stairs are included in the revised standard. The minimum tread depth from riser to riser shall be no less than 11 in., but no mention is made of rise, height, despite recent research on the subject. Handrails are required at both sides of the stair, with the inside rail installed continuously on switchback and dogleg stairs. If handrails are not continuous, the handrail shall extend at least 12 in. beyond the top riser, and 1 in. plus the width of the tread beyond the bottom riser. Square nosings have been outlawed, and rounded or angled nosings or sloping flush risers required.

The elevator section was developed with the elevator industry. With laboring through all items, the following should be noted. Visible and audible cues are required to indicate which car is answering a call and also when the car passes a floor. A verbal communicator may be substituted for the sound at each floor. Recent developments in electronics will see the satisfactory solution of this type of redundant cuing for blind and visually impaired people. Raised indented characters indicating the floor number must be provided 2 in. high and centered 60 in. above the floor on both jambs of all elevators 2. This will enable the blind person to check the floor number, should he have miscounted the number of sounds heard during ascent or descent. The control panel must have all buttons located between 35 in. and 56 in. above the floor 3. Emergency buttons of special shapes must be located at the bottom of the panel. The floor indication characters must be raised or indented, and located to the left of the button. A raised or indented star located alongside the main entry/exit floor button is also required. Recessed characters are not as useful as raised characters, since they are much more difficult for visually impaired people to read, particularly elderly people whose loss of vision may be attributed to diabetes, since one of the effects of this disease is impairment of the sense of touch.

Platform lifts may be used as part of an accessible route if no other alternative is possible, but there is still no accepted national safety standard governing their manufacture and installation. The development of such a standard must be completed as soon as possible.

A section on automatic doors and power-assisted doors has been added. The American National Standard for Power-Operated Doors, ANSI A156.1-1975, has not been revised since its introduction, and it is generally considered obsolete.
are much safer. There is an increasing range of control devices available, though the electronic switching mat or carpet remains the industry's mainstay.

A short section deals with emergency alarms, and this much-needed section should ensure that the blind and deaf receive the same emergency warnings as the rest of society, for if they are provided, these alarms shall be both audible and visual.

Textured levers or door handles are required on doors to hazardous areas such as loading platforms, but the identification of fire doors leading to places of refuge, fire stairs, or egress routes has been ignored. Some device or system must be developed to enable blind people to locate the path to safety during a fire. In a smoke-filled corridor, all people might be aided by a system identifying the fire exit. The subject should receive much greater attention and research, as should the whole emergency evacuation requirements of buildings and facilities.

**Accessible dwellings**

One of the most useful aspects of the revised ANSI A117.1 is the section pertaining to dwelling units. Requirements are developed to ensure full accessibility for disabled people and their housing needs. As yet, HUD has not adopted the revised standard for the construction and remodeling of federally funded projects under its jurisdiction, but this is expected to occur in the near future.

The concept of adaptable housing contained in the revised A117.1 is a very sound one. It allows for modifications to be made to a dwelling to suit the individual needs of the occupant. While serving the disabled, these provisions will also enable a dwelling to be modified to meet the need of the occupants as they become elderly and their physical abilities become limited. Changes can be accommodated without expensive remodeling, which often forces people out of their neighborhood to more accessible and safer abodes.

The dwelling unit must be served by an accessible route of travel, and all accessible rooms must be off accessible corridors with sufficient maneuvering space. In order to turn 90 degrees through a 2'8" clear door opening, a 3'6" corridor width is required. The adaptable kitchen provides for the work surface, including kitchen sink, to be adjustable to three heights above floor level: 28, 32, and 36 in. Base cabinets are to be removable to allow at least 30 in. clear space for wheelchair access. At least one sink bowl shall be no deeper than 6½ in., and faucets shall be operable by imprecise manipulation. Levers or push-type mechanisms will accommodate this.

Ranges, cooktops, and ovens are also covered, and provisions are included for space to use and clean the appliances. Perhaps it is here that one should illustrate one of the troublesome features of this standard—the amount of cross-referencing that has to be done. For example, under item 4.34.6.6 it states that ranges and cooktops shall comply with items 4.34.1.2 and 4.34.6.3. On checking item 4.34.6.3 it states that controls in kitchens shall comply with Section 4.27. Among other things, the latter section requires further references to items 4.2.5 and 4.2.6 for reach limits. It would be much better if the requirements for all elements relating to one area could be found in one place, even if the countercharge is one of duplication or repetition. Enough of this already occurs, anyway, to set a precedent.

Adaptable bathrooms are dimensioned to enable a variety of design configurations. The inclusion of structural reinforcement in the walls during construction to receive grab bars at a future date will ensure that they more nearly meet the needs of the occupant, and without too much difficulty. The reinforcement is required around bathtubs, showers, and toilets.

Information regarding the location and instructions for modifying the dwelling unit are also required for the occupant's knowledge and use.

It is hoped that the private sector will be influenced by these new requirements, but with interest rates at all time highs and housing starts down, it is not too cynical to imagine that these changes will be perceived only as costly, unwarranted extras. This need not be the case, as some builders can testify. To have a
Barrier-free requirements

choice of adaptable housing would make such a difference to the lives of many families with disabled members. Government-subsidized or -financed dwelling units should not be the only option available.

Remodeling

By and large, the building industry has accepted the need and most of the requirements for accessibility in new construction, although there cannot be total agreement on every requirement. The remodeling aspect of accessibility standards is a totally different matter. The need to expend unwarranted amounts of money for so few potential users is the main fear expressed nationwide. The revised ANSI A117.1 requires the administrative authority which adopts the standard to specify the extent to which the specifications cover remodeling, alteration, or rehabilitation. Most states require buildings to be brought up to current standards when remodeling, but the manner and extent of such requirements is not uniform. Sometimes replacement cost is the criterion used, while percentage of area to be remodeled is another. The Illinois Accessibility Standards undergoing revision, including modification to the remodeling section. The proposed changes relate the extent of accessible features to the building area and remodeling cost. The building area is separated into three categories: less than 3000 sq ft; 3000 to 10,000 sq ft; and over 10,000 sq ft. The requirements for each vary with the amount of the remodeling cost in proportion to the cost of reproducing the building: 0-25 percent; 25-50 percent; and above 50 percent. Whatever method is used will have its advocates and detractors, but the extent must be spelled out to enable compliance.

Not all buildings can be made accessible, for a variety of reasons: lack of space; short life expectancy of the building; and hardship cases, among others. A waiver/compliance mechanism must be developed to arbitrate in such cases.

While blind and deaf people may be able to use most buildings and facilities with varying degrees of difficulty, access by those in wheelchairs and by some semi-ambulant people is much more frequently denied, and thus their needs must be considered of primary importance in remodeling schemes. This is basic accessibility, the minimum of changes needed to make the building accessible to these people. If water fountains, elevators, or other items in the building are to be replaced, then it is at this time that fully usable water fountains or accessible elevator panels should be installed.

To deal with existing doorways, offset hinges on openings with less than 32 in. clear width might provide an opening that is only an inch or so narrower than required. Though maneuvering may be more difficult, only the widest wheelchair will be prevented from gaining passage. Thus this should be allowable.

In many existing toilet rooms it is possible only to increase the width of a toilet stall to 36 in. The length must be 66 in. minimum for wall-mounted water closets and 69 in. for floor-mounted models. Such stalls are not as usable as the 5-ft-square version, but at least they provide sanitary accommodations previously denied. Suggestions have been made to require fully accessible toilets on every fourth floor in high-rise buildings. People using these would be only a maximum of one floor away from a fully accessible toilet. Another suggestion requires a unisex hand-capped toilet on each floor. While these suggestions smack of discrimination, they nevertheless represent a giant step forward in that owners, builders, and architects are talking about providing for the handi-

capped. These alternatives must be analyzed and tested. The type of building may also determine the type and numbers of fixtures to be used.

It cannot be said too clearly that inaccessibility is found in today's buildings. Changes must be made to rectify this situation. Otherwise, no matter how many new accessible buildings are constructed, they will not greatly reduce the impact of the current inaccessible situation. A change can be made, by degree, if most remodeled buildings are made basically accessible. Public sector buildings alone are not enough; the private sector must share in this effort.

As accessibility becomes more common, it is inevitable that the fear behind some of the requirements will disappear, and that bad standards will be rejected or replaced. In time, such requirements become second nature. Everyone will benefit—sooner or later.

The future

It has taken nearly 20 years to thoroughly revise ANSI A117.1 (6). The amount of effort that has gone into this endeavor is heroic, and all concerned must be commended for these efforts in finally bringing the need for basic accessibility into the light of day. Developing a consensus document, as is a American National Standard, is a mean feat. However, the publication of ANSI A117.1-1980 is not the end of the effort. No standard is cast in stone, any changes will be inevitable. In the development of most standards of this type, compromises have to be made, some affecting owners and manufacturers adversely, others, disabled people.

The ranges of human abilities a needs are incredibly broad and divergent. Minimum standards of access automatically preclude their benefits to some people, some people will continue to find the problems unresolved. New technology may provide better solutions. Recent examples are the solid-state ver communicators for elevators, or the second generation of electronic control devices for automatic door openers. Regular revision to the document will be necessary, but should not entail such arduous process as this last revision.

On a subject that invites easy criticism from all interest groups, there are usually at least two valid opposing arguments warranting attention, as the lowing two examples will indicate. A standard dealing with door-open forces requires that 8.5 lbf shall be the maximum force for opening exterior doors, and 5 lbf for interior doors. (If doors are treated separately, require the minimum opening force allowed by the administrative authority having jurisdiction.) Hardware manufacturer claim that these requirements are c
...dent to meet. Wind forces and interior pressures found in high-rise buildings greatly affect the door operation, and 15 lb and 8 lb have been proposed by the industry as minimum door-opening forces for exterior and interior doors, respectively. On the other hand, many people find that even 8 lb and 5 lb are too great a force for them to overcome. The number of people who open doors independently increases as the force to be overcome decreases.

The earlier ANSI standard called for 10 lb and 5 lb for exterior and interior door opening as long ago as 1961, one wonders why the matter was not considered resolved much earlier—perhaps because the building industry as a whole is not able to ignore handicapped standards or reasons previously stated. Recently, automatic assists which reduce the opening force to a much more acceptable level have been appearing on the market. Some state codes include the industry recommendations, maintaining that lower forces cannot be enforced satisfactorily, and have adopted 15 lb and 8 lb as their requirements. The ANSI requirement in this case has favored the user, but this is not always the outcome.

The earlier ANSI standard required a tile stall with water closet to be 4 ft-8 in. deep by 3 ft wide, with grab bars, etc. Criticism from those in wheelchairs has been fierce for years, for the toilet transfer is the most advantageous position. The vast majority of wheelchair users would be able to negotiate the stall much more successfully, as they could maneuver their wheelchairs into the most advantageous position. The objections from building owners and management are heard from one state to another, as they react to the dilution of design criteria, and desire the removal of architectural restrictions by those with manual dexterity problems.

• Requirement for platform lifts.

There also needs to be further expansion of knowledge of the disabilities of disabled people, especially in their use of the environment. We still have a lot to learn about mobility of blind people, communication needs and options available for deaf and hard-of-hearing people and between them and hearing people, the perception and comprehension of the built environment by those who are retarded, confused, and disoriented, and the abilities of people confined to wheelchairs.

A base knowledge exists, but sometimes this has come about through studying small groups of people, often in closed or select populations, rehabilitation institutions, or university campuses. It is also safe to say that knowledge concerning the use of the environment by able-bodied people needs to be addressed.

Solutions to problems must be tested in real-world situations. Such a process would have reduced the numbers of badly designed, poorly located curb ramps in this country. A quick-and-dirty mockup of an element, tested with participants who more or less know what is expected of them, will not produce the results expected under the constraint of real buildings or cities.

Federal guidelines

Congress mandated the Architectural and Transportation Barriers Compliance Board to develop guidelines of accessibility for federal agencies. The National Bureau of Standards has been providing the research background. These guidelines will be based on the technical data contained in ANSI A117.1-1980.

The board's document will contain detailed scope provisions, particularly as they relate to new construction, remodeling and alteration, and leased properties. Exact numbers of accessible elements will be spelled out, in place of the vague "a reasonable number but at least one" provision.

Early drafts indicate that there will be some minor changes, which might improve the document. The amount of cross referencing is being reduced, where possible, so that the requirements for all elements relating to one subject can be found together. Some of the gray areas may be omitted, subject to further studies. Tactile cues at the top of stairs may be one such item.

By the time this article is published, these guidelines should be available for public comment. This is an opportunity for every architect, engineer, designer, and builder to input into a document which may affect his professional activities and may be truly setting us on the path to one nationally accepted document. Everyone is urged to secure a copy of ANSI A117.1-1980 and the draft of the Architectural and Transportation Barriers Compliance Board's Accessibility Guidelines, read and evaluate both, and make his voice heard.

Today, the building profession is more aware of the needs of disabled people than ever before. The last few years have seen a dissemination of material on the handicapped to all professionals and at all levels. Change in attitude is sometimes difficult for people set in their ways, but by and large, the acceptance of new and better standards—with the more careful compliance that would result—will pave the way for better environments for all people, particularly those previously isolated and alone.

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The knowledge business
The complexity of these restraints in a building where first cost is the controlling design criterion often produces the familiar 2' x 4' light fixtures in an anonymous lay-in grid of acoustical panels. The result is what Wallace Jonason, president of the American Society of Interior Designers, calls "fairly clean and humble space." In the rental environment, of course, the tenant sets the tone with the fixtures and furniture. Where space marketability and universality do not play a role, a custom design can eliminate the need for a conventional suspended ceiling completely. Or as Jonason asks: "Who wrote the rule that there has to be a suspended ceiling?" If what goes on above the ceiling were well planned, "we wouldn't need to cover our sins."

Of course the more specific the use of the space and the task being accomplished, the more important is the role that the ceiling plays. The ceiling plane allows for the effective control of sound (P/A, Sept. 1979, p. 198) as well as the positioning and repositioning of the lighting. Edison Price has been designing lights for suspended ceilings for 30 years. Says Price: "The purpose of a suspended ceiling is much more comprehensive than masking." As important as its function is, however, Price does not see the ceiling as a focus for a space. He explains: "It is better to have the ceiling not be the brightest thing in the room. The brightest thing in almost any room should be not only the task but also the people and everything that occurs down at the people plane. I don't believe a ceiling should be beautiful; it should be unobtrusive."

Claude Engle has done the lighting design for such monuments as the East Building of the National Gallery, Centre Pompidou, and Avery Fisher Hall as well as office and work space. Engle agrees with Price that the prime task in lighting is the people but he is not shy with ceiling detailing. "I think the ceiling disappears when it is detailed correctly," Engle explains. First he eliminates "horribly glary fixtures." Then he concentrates on lighting the people, and finally deals with the "ambiance" of the whole space. "How you feel in a space" and the importance of "setting a mood" are as much keys to the success of a work space as the numbers associated with the lighting performance.

Architect William Kessler of Detroit has in recent years led the way towards more distinctive ceilings. In both the Detroit Science Museum and the Detroit General Hospital, he has destroyed the ceiling plane itself and molded walls and ceiling into one colorful curved plane. Instead of disappearing, the ceiling defines the entire space. He sees only the broadest restraints on the choice of ceiling. Says Kessler, "It depends on the nature of the space."

As a function of the spatial needs, the spectrum of ceiling systems runs the gamut from a totally unique, primarily visual solution to a totally performance oriented where, as suggested, the ceiling "disappears" from view. A casino, hotel lobby, restaurant, or similar commercial enterprise may seek to call attention to itself with its unique ceiling. Its flash, texture, color, or shape can serve such a purpose. Like any flashy jewel, the expense of the solution nearly always restricts its use to prominent focal places.

In the middle of the system spectrum there are a number which have helped to foster the use of flash and color in a more systematic and economical fashion. The growth of the linear metal ceiling has provided the airport, subway, hospital, natatorium, and prime entry spaces in other buildings with the special material properties of such metal ceilings.

For the space where cost, lighting and acoustics are most critical, the acoustical ceiling and "integrated ceiling" are the most common choices. The vast majority of the 1.5 billion sq ft of ceiling sold each year in America is of this type. An increasingly likely application for such systems today is of course the open office.
When the needs of the space call for a unique and daring solution, there is a wide variety of possibilities. 1) Architect William Kessler attempts to take the sting out of long underground corridors in the new Detroit General Hospital. 2 & 3) Fabric can be either ruched or hung to add color and softness to space while dampening hard acoustics. 4) ally's Park Place Casino Hotel in Atlantic City demanded good acoustics and visual delight from its mirrored acoustical ceiling tiles. Skidmore, Owings & Merrill is the architect. 5) Color and flash are also available using linear metal ceilings. 6) Adding texture to the ceiling is accomplished in aluminum or 7) heavy-gauge vacuum-formed polyvinyl chloride. 8) Suspended ceilings are also available in wood to provide a warm glow to a confined space.
The linear ceiling

The metallic linear ceiling has been manufactured in this country for less than a decade. It came to the U.S. from Northern Europe and was spliced neatly into the repertoire of companies that were already forming sheet metal for such uses as awnings or window blinds. Some of the support systems, for example, for the pioneering efforts by Alcan were taken directly from the awning technology. Today, each manufacturer has its own unique set of available sections and detailing. There are dozens of colors in aluminum, steel, and stainless steel. Each new shape and support system must be carefully coordinated to accommodate the possibility of integral lights, diffusers, additional sound absorption, fire protection, or other hazard loading.

Why use linear ceilings: Here are five distinct advantages to the linear metal ceiling. First, it can be formed easily to both concave and convex curves. Only plaster and gypsum board can be as cleanly shaped. Only wood can yield similar spatial dynamics. Second, it can be colored. Levolor Lorentzen, for example, transferred its entire 100-color window blind capability to its new aluminum ceiling effort. A third advantage is that the same ceiling appearance can be maintained inside and outside the building. Dornn Corp., for example, makes both steel and aluminum sections. The steel section can be used on the interior, and the aluminum section can be maintained through to the exterior soffit. A corollary of such corrosion resistance is the material's suitability for use over swimming pools or in hospitals where it can be antiseptically cleaned. The fourth advantage is strength. With the aid of locking clips, soffit material or the ceiling of a subway station can be reinforced to resist considerable suction. Fifth, in rehabilitation situations, a linear ceiling can be installed with the metal slats either parallel to the original ceiling or spaced vertically as a baffle. When the latter option is taken, the lights, sprinkler system, etc., from the original ceiling can continue in use.

Five difficulties: There are some distinct difficulties with the metallic linear ceiling which must be carefully addressed in the ceiling design. First, it is a costly material, and therefore waste must be minimized. One result is that the joints where butting sections meet are visible and must be juggled carefully to avoid notice. If the finish is polished, such irregularities of surface are emphasized. Second, with the advantage of the curve, there is a strong tendency to carry the material down an adjacent wall. If lightweight aluminum sections are used, the surface is vulnerable to accidental dents or vandalism. In the new Detroit General Hospital, William Kessler doubled the metal sections used on the walls. The inside section was, of course, the cheapest possible grade of product. Other high-impact variations are common in the industry. Third, penetrating the surface with lights, diffusers, and sprinkler heads needs to be well thought out in concert with the installers. Penetrating metal ceilings in nonstandard ways is not easy. Fourth, a highly polished metallic surface is quite a flashy solution when associated with a skylight, but glare can definitely be a problem. Fifth, the metallic systems must be augmented to have either acoustical absorption or fire protection capability. The ceiling sections in many of the systems can be perforated to increase the sound absorptive characteristics. Only Dornn Corp. has so far achieved a UL rating with its linear ceiling system. The lights and diffusers are included and provide a two-hour rating.
There is a variety of considerations affecting the selection of the metal system. The choice depends upon the geometry of the panel section and the stringer system used. The strength, accessibility, lighting, air handling, and fire protection may follow.

The linear metal ceiling is used effectively above by Detroit Architect John Stevens to renovate his building's atrium. The "V" shape section allows a very tight curve and bright faceted reflective surfaces. The Donn Corp. fire-rated ceiling system (below) accommodates both light fixtures and air diffusers. The unique splice design (bottom left) enables the adjoining panels to expand with the heat.
The open-office ceiling

The biggest challenge in ceilings today is the design of a ceiling over an open-office plan. From its inception, the idea to remove full-height partitions was an economic principle. It is no surprise that as the idea matures, the emphasis is still on efficiency and performance.

Edison Price summarizes his experience designing light fixtures for the open plan office: “I have always attempted to know as much as possible about ceilings—how they are built and installed—and to design lights in such a way that they can be installed quickly and easily.” Integration in the ceiling design means for Price: “a ceiling in which all parts are designed to interact harmoniously.” The ceiling industry would probably agree and add that such harmony is most probable when a single manufacturer supplies all of the parts and therefore adds the important characteristic of predictability to the ceiling ensemble.

An integrated ceiling is more than rote utilization of the same parts put together in the same way each time. The fullest utilization is to have the manufacturer assemble a new combination of ceiling elements particular to the use out of already existing parts. As long as the manufacturer does the integration and the subsequent testing, he will vouch for meeting specified standards. Such ceiling systems usually involve the ceiling material itself as well as the lights, acoustical properties, air diffusers, and ceiling support system.

Unfortunately, supplying the parts and installing them is not always coordinated with equal thought. A ceiling system contractor could be responsible for the whole ceiling installation. More often, however, the mechanical contractor installs the ductwork, the ceiling contractor places the ceiling board, the electrician does the wiring, etc. Says Claude Engle: “There are more trades mucking around in the ceiling than anywhere else in the building.”

Integration of design of course has a much broader connotation as well. Says Engle: “To design the lighting we must control the source as well as the material it bounces from.”

Warren Johnson criticizes a limited performance notion of the integrated ceiling. “Designers feel,” he says, “that the problem is solved if the numbers look right.” The ceiling is mechanically and physically integrated without being totally visually integrated.

Whether the integration is an entirely conscious activity or not, every function-containing space must eventually have a coordination of parts which could loosely be called an integrated situation. Architects who are comfortable with their past experiences and confident of future performance of their designs will either specify them piece by piece, or choose an existing system. The highest level of predictability in performance and the lowest cost may in fact result from allowing the ceiling manufacturer free rein to suggest a hybrid solution based upon a performance specification.

Performance specifications: The ceiling industry has been working under the limitation of performance specifications for over a decade. In the early 1960s, the Ehrenkrantz Group used an integrated systems approach in a California school building program called School Construction Systems Development (SCSD). Thirteen schools were built under SCSD in California. The program used performance specifications which were later further developed in school building programs in other states as well as Canada. Further work on performance specification was done in the 1960s at the National Bureau of Standards which eventually led to the creation in the early 1970s of the “Peach Book,” now in its third edition. It is more formally known as the “PBS Building Systems Program and Performance Specifications for Office Buildings.” The necessity of avoiding specific product names and systems makes performance specifications a government necessity. Also in the early 1970s, an international symposium was held at NBS to discuss the “Performance Concept in Buildings.” In the mid 1970s, the Construction Research Council was formed in the private sector and has considered extending the application of the performance mode.

Several government buildings have been built in the last decade using the Peach Book. The first building encompassing the Construction Research Council performance specification guidelines is now nearing completion, the 3M building in St. Paul.

How it works: What is a performance specification for a ceiling and how does it work to produce a ceiling design? A performance specification ideally describes only the performance of the ceiling system with respect to an explicit set of standards. With the CRC and GSA specs, for example, the acoustics, illumination, and conditioned air performances are specified as well as stability and durability, health and safety characteristics, maintenance, and planning requirements. Specific demands on the performance leave the solution open ended. A consortium of manufacturers is formed to put together a package that they prove can solve the problem. Several such teams then compete for the job. The architect consults relatively with each team in confidence.

The rules are simple. Each consortium must assemble its solution from available product lines. Each solution must have parity of performance and appearance. The chosen contractor offers a set of prospective contractors then bid each system as a whole. The design budget must be met, and the owner then makes the final decision. The whole competition process can be phased to permit unprofitable solutions to be eliminated early. After the winning selection is made, changes are permitted in cooperation with all concerned.

The architect, through his specification and cooperation with the teams theoretically able to maintain precise control but benefit from the knowledge and experience of each consortium, as well as the owner and contractor. The owner benefits from his additional input and the result, which is usually a less expensive ceiling. The manufacturer benefits from the brainstorming of product ideas which inevitably occur even if the bid is not in his favor. The contractor is able to express his preference for entire systems with his bid rather than just the parts. Ideally everybody wins.

It may not work: GSA’s James Parker has been directly involved with the government buildings which have resulted from the Peach Book. An authority on such procedures, he points out: “There is no such thing as a purely performative or prescriptive specification. You cannot always specify everything you want in terms of performance.” The carpenter, for example, in the GSA specification prescriptive. He continues: “The performance specification relies upon quantifiable criteria and a good test to see that the assembly meets the criteria.”

In some controversy, the GSA abandoned the use of ESI for lighting specifications and went to raw footcandles. The GSA buildings were, according to Parker, “ending up with more luminaires than were needed.”

For Parker, a critical mistake in understanding often occurs with the use...
The selection of the suspension system for a suspended ceiling is complex even without the considerations of lighting and acoustics. The restrictions of a particular locality may preclude certain solutions or the installation sequence, servicing, and maintenance may have a profound design influence. The choice allowing the grid to be seen must then entail how much emphasis is desired. The material chosen for the panels reflects the surface properties of the panel material as well as its ability to span from support to support. Single panels can span five to seven feet in certain materials. They also can be thickened to add thermal insulation, or the whole ceiling can be used as a plenum for air-conditioning purposes. Another solution shown bottom is an air-distribution duct integrated into the support system itself. Most applications do not require the ceiling to be a fire barrier, but many ceilings also must permit penetration by sprinkler heads (see above).
the performance spec. "If you are going to specify in a performance mode, you had better understand what you are specifying." The performance mentioned is not necessarily the performance in the final use area. It is a performance in a prescribed environmental condition, which only approximates the real installation.

In spite of his reservations, Parker has confidence in the ultimate results of a performance specification. He believes the building performance will be improved by it and the building cost will be lower. His confidence is based upon the new role of the manufacturer. Says Parker, himself an architect: "I don't care how good an architect is, when a manufacturer introduces a new product, no one knows more about it than the manufacturer." The worst situation is an architect with maximum control and little knowledge and a manufacturer with maximum knowledge and little control.

Edison Price has been involved with many of the successful teams for the GSA buildings using the Peach Book specifications. Says Price of the performance spec: "I am totally in favor of it as a conception. If the specification is logically conceived, precisely expressed, and meticulously enforced, it should be the most effective procurement procedure. Unfortunately, GSA's Peach lighting spec was not well conceived, and quite often other attempts at performance specs have been carelessly handled. Most orders are still placed for reasons of politics rather than merit."

**A force for the good:** So why talk about it? One reason is that from the GSA buildings the ceiling industry has become experienced with the consortium approach, and they like it. It has paid off for them in ideas and has helped to create standards of performance where there were none before. The performance mode has also produced solutions that were cheaper than the conventional ones, and most industry people believe it yields a better overall performance.

Another, more "political" reason is the Construction Research Council itself. The chairman of the board is Clair Larson, executive director of Central Engineering for the 3M Company. He has proven the value of the performance approach in his own building. The new 3M building was designed by SOM architects and built by 3M contractors. He is convinced that he achieved a more economical solution for his ceiling and is satisfied with its performance. Larson concludes: "We are very enthusiastic about performance specifications."

Another member of the CRC is Skidmore, Owings & Merrill represented by Leon Moed of the New York office. SOM has been a strong advocate of performance standards and an innovator in the principle over the years. Twenty years ago, the Chicago offices ran a lighting competition for the first coffered lighting system and ceiling for the Upjohn building in Kalamazoo, Mich. SOM has also found the performance specification very effective in the design of curtain walls. Says Moed: "Performance specifications try to take advantage of the current state of the art." He continues: "It gives the marketplace an opportunity to respond in its own most effective way."

**Preconsiderations:** The complexity and interrelationship of the various parts of a ceiling system are easy to demonstrate. The suspension system, for example, cannot be chosen without knowing the choice of: building module (large span panels are available), partitions (height or not), lighting (will the light have their own support?), mechanical system (will air supply or return diffusers be incorporated into the panel supports, or is the ceiling a plenum?), fire protection (are there sprinklers?), seismic protection (if necessary), ceiling installation sequence (what comes first and final appearance (will the ceiling support be hidden or expressed?).

Another example is wiring. The electrical wiring in the ceiling can be either conventional or modular. In recent years, more and more modular wiring has been used. The economy of such wiring is tied to the potential for movement of the light fixtures. It is also related to the economy of using a single two-lamp ballast for two one-lamp fluorescent fixtures. The choice of one lamp or two of course relates to the frequency of fixtures, the height of the ceiling, the height of the partitions, the decision to use a reflector, louvers, or lens, and whether the ceiling is coffered or not. All of these choices of course affect the acoustics.
Two-lamp fixture  
(prismatic lens)  

A. 1.84  
B. 78  
C. 26  
D. 14.1  

One-lamp fixture  
(8-cell parabolic louver)  

A. 1.84  
B. 88  
C. 41  
D. 22.3  

Equal lumen results were supplied by independent laboratories. All tests were conducted under a standard set of conditions.

<table>
<thead>
<tr>
<th>Room length</th>
<th>Room width</th>
<th>Room height</th>
<th>Work plane height</th>
<th>Ceiling reflectance</th>
<th>Floor reflectance</th>
<th>Light loss factor</th>
<th>Relative light output</th>
<th>Viewing angle</th>
<th>Task</th>
</tr>
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<tbody>
<tr>
<td>30'</td>
<td>30'</td>
<td>4'</td>
<td>2.9</td>
<td>50%</td>
<td>20%</td>
<td>100%</td>
<td>1.00</td>
<td>25°</td>
<td>IES Pencil</td>
</tr>
</tbody>
</table>

A. Watts per sq ft  
B. Standard footcandles — initial  
C. ESI (80% area covered)  
D. ESI per watt per sq ft (80% area covered)

Note: All lighting fixture layouts are shown in the chart and were designed to provide at least 70 footcandles as standard initial position.

Suspended ceilings are utilized as a partial reflector of Canada Square, Calgary, Canada, by Cooper, Chief Architect. The flat ceiling can be designed with a hidden suspension and fixtures aligned or 4) they can be staggered pattern with the support exposed. 3) The 3M building (see text) is tried to optimize its performance through a performance specification. The lighting demands of a space have a vast role in the lighting system selection. The wiring, installation, and energy usage must all be coordinated. Even with the same energy consumption, the lighting level varies with each item.

Conclusion

All of these considerations should illustrate the fact that a ceiling is easy to do but hard to do well. The design of a good ceiling is not a solo performance. Coordination of experiences, ideas, and products goes into it so that the same kind of valuable occupation will be enhanced beneath it. [Richard Rush]

Acknowledgments

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For suspended ceilings product and literature information see p. 284.
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Under the form A.I.A. Construction Contract commonly in use, the architect is, in the first instance, the arbiter of disputes between owner and contractor relating to the performance of both, and his decisions are subject to arbitration. It is not unusual, however, for a contract to provide that the provisions for a determination of questions or disputes that may arise between owner and contractor shall be final, binding, and conclusive. The enforceability of such a provision may vary depending upon the law of the jurisdiction to which the construction contract is subject.

It is a general rule that unless the contract clearly and explicitly specifies that the architect’s decision is final, the contract will be interpreted as subjecting his decision to appeal, whether it be to arbitration or to the courts.

The reluctance to interpret a contract as granting the architect the power to determine a dispute conclusively may be based upon the feeling of many courts that the architect or engineer is primarily concerned with his client’s interest, and therefore cannot be a truly impartial arbiter. Despite the imperative contained in many construction contracts that the architect shall favor neither the owner nor the contractor but shall judge all questions or disputes impartially, some courts feel that this is not a realistic or achievable goal.

Other courts, however, are of the opinion that the architect or engineer, being intimately involved in the construction process, is eminently qualified to resolve questions or disputes which arise on the project and that his status as a licensed professional charged with the duty of protecting the interests of the public qualifies him to exercise his judgment without favor.

In a middle position are the decisions of some courts which, although holding that a provision of a construction contract that makes the architect’s decisions final and binding is valid, permit such a decision to be attacked if the aggrieved party can establish that the architect was dishonest, fraudulent, or acted in bad faith. In the absence of such proof, however, the decision binds the parties even if the architect’s decisions were incorrect or negligently made. The critical question, from this viewpoint, is the honesty of the architect and not the propriety or astuteness of his decision.

Illustrative of this middle position is a recent decision (Ardsley Construction Co., Inc. vs Port Authority of New York and New Jersey, Vol. 183 NYLJ No. 95, p. 10), which involved a contract between a general contractor and the Port Authority of New York and New Jersey for the construction of structural roadway repairs. The general contractor had entered into a subcontract to replace steel expansion joints in a bridge, known as expansion dams. This contract incorporated all of the terms and conditions of the general contract.

The subcontractor asserted a claim against the general contractor for extra compensation based upon the premise that field conditions had differed from those represented by the construction contract, resulting in cost overruns. The general contractor thereafter asserted such claim against the owner.

The claim of the subcontractor arose from a requirement to “field fabricate” the expansion joints. As the work progressed, however, the subcontractor received permission from the owner to “shop fabricate” these units. This procedure proved impractical, and the subcontractor was compelled to revert to the original method called for.

In response to the contractor’s contention that the claim for extra compensation was invalid because field conditions differed from those reflected in the contract documents, the owner asserted that the conditions encountered may have occurred during welding operations and that the problem resulting in cost overruns was due to inadequate field measurements. The dispute was submitted to the chief engineer under a provision of the construction contract, which provided as follows:

“... the Engineer ... shall interpret the Contract Drawings, Specifications, and any Extra Orders, and shall decide all other questions in connection with the Contract.”

The engineer eventually rendered his decision rejecting the claim and concluding that the conditions encountered could have been reasonably expected and anticipated and that the “problem found its germination in plaintiff’s failure to conduct accurate measurements.” The general contractor instituted a legal action, and despite the engineer’s decision, obtained a judgment against the owner which judgment was appealed by the owner.

In support of his position on such appeal the general contractor asserted that the owner had fraudulently failed to disclose the accurate conditions of the roadway. The appellate court, however, reversed the judgment, holding that the engineer’s decision was binding in the absence of proof of bad faith or fraud. The court said:

“Plaintiffs have failed to consider the ramifications of the findings of defendant’s Chief Engineer. In the absence of fraud, bad faith or palpable mistake on the part of the Chief Engineer, his decision was final as a matter of law. Other courts throughout the state have considered this question and are unanimous in their determination that the decision of the engineer/arbiter is conclusive and binding upon the plaintiffs. ... Prior to any determination on the merits, plaintiffs must overcome the threshold problem. The pleadings before us, however, are devoid of any allegation of bad faith, fraud or palpable error in the Engineer’s determination. Thus, no triable issue was presented. Nor does plaintiffs’ mere disagreement with the conclusion reached rise to a level of bad faith.” ☐
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Christian F. Otto's book *Space into Light* certainly is the mostplete and thorough study on Neumann's churches so far. Unfortunately the author does not include hissecrets. He excuses this obvious lack, saying: "Palaces . . .
de minimal demands on his (i.e., Neumann's) creative

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continued from page 261

...s the point of view of documentation, *Space into Light* presents an impressive achievement. From 1967 on, Otto arrived through an exhaustive investigation of all possible contexts, as well as the monuments themselves. The collected material is utilized in detailed descriptions of all the ecclesiastical works of Neumann. An extensive apparatus of notes and indexes completes the presentation. The book is therefore gold mine for future students of Neumann’s churches.

A general “Introduction,” where the author offers an overall view of the abbey church at Neresheim and a sketchy survey of the historical background, he proceeds to Neumann’s plan (fig. 25) rather than von Welsch’s (fig. 24), and I also think that it is fair to say that it shows Neumann’s hand.

In general, however, Otto’s descriptions rarely reach the depth of true structural analyses, not to say interpretations. They appear as an adding up of detail, without grasping “space composition” which, according to Otto himself, is Neumann’s main concern. We certainly learn that his works are composed of squares, circles, and ovals, but the how is sufficiently explained. After all, most church planes are composed of squares and circles, and Baroque ones of ovals as Neumann’s interest in space, thus, was anything but a linear way he did it deserves attention. Otto’s statement: “To align his works into a chronologically determined linear development eliminates their individuality, variety and vitality for the us gain of abstract order. Accordingly, each building is viewed here on its own terms... From these individual graphs, a synthetic view of Neumann’s architecture can come into focus” (p. 57). Let us agree that a “linear” concept may be too “abstract,” but an analysis of themes, ions, principles of spatial composition and formal action, as well as developments, does not necessarily have to mean the same. Are not the terms necessarily generalizations? Otto’s statement in fact proves that a study “on its own terms” is possible. He also has to use cross references, comparisons, al concepts, and look for influences, although he states... it is impossible to pinpoint specific influences in his work” (p. 27). On page 152, however, he writes: “... anding columns, a notion that... he derived from...”

The Renaissance and Baroque architecture (and sacred building itself) is to a very high extent based on common principles and typologies which were developed by successive actions (sometimes even “linearly”), and it blocks our access to the individual works if that is not properly understood. Not only does Otto fail in his analyses of Neumann’s interests, but his occasional references to other examples are unsatisfactory.

... continued on page 266]
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Books continued from page 263

When he discusses the Hagia Sophia in the introductory chapter, he does not mention either its "double-shell" dome limitation (Krautheimer), or its "baldachin" structure (Sedlmayer), two "themes" which were of constituent importance to Late Baroque architecture. When referring to Gothic architecture, he shows the cathedral in Chartres, rather than to a Central European Hallenkirchen, which was the norm of Neumann's "background." And when he illustrates the Late Baroque "space composition in Paris, Piedmont, London, South Germany, Bohemia and Austria," he uses as an example Christoph Dientzenhofer's chapel in Teplá, a modest and quite unknown work, whose only interest (overlooked by Otto) consists in the use of "Gothic" wall-piers. When in the concluding chapter Neumann's relation to Bohemian Baroque architecture is discussed, he states: "The exact correspondence between vault, elevation and plan that characterizes Neumann's interiors is not pursued in Bohemian work." But where do we find a closer correspondence than the churches of Kilian Ignaz Dientzenhofer?

In the same chapter it is asserted that Hildebrandt "...retained a sense of Roman severity." I should rather say that Hildebrandt, if any, was an innovator who indeed left Roman design traditions behind, and even approached the world of the Rococo.

The lack of an adequate architectural understanding also comes forth in Otto's discussions of the relationship between client and architect. Here we read: "Facade design ... was little discussed: this remained the architect's realm of creative responsibility" (p. 33). From the context we understand that the author implies that the plan more or less was decided for the client! Any architect, however, knows that it is not easy to make a plan, and that it indeed demands "creative responsibility" from the architect. (Art historians often seem to underrate what it means to set an idea into work!) We could add that façade design is something else than an afterthought to the plan. In this connection it may also be pointed out that Baroque "spatial composition" demands "constructed plans" rather than sketches. Otto seems to have some difficulty understanding the different use of the two. The "geometrical and proportional systems" employed in the constructed plan were also something more than mere "factual and common sense" aids.

In the concluding chapter, Otto pretends to offer more general interpretation and evaluation of Neumann's churches. Thus he says: "Previous scholars have searched for the sources of Neumann's projects, but most of what they provide is not very informative, much less convincing reflections about the meaning of Neumann's architecture: nonexistent! To cope with this double-edge dilemma, a known range of Neumann's architectural experiences, contacts with various personalities and places, and the nature of his involvement with architectural theory will be considered" (p. 130). Unfortunately, however, the author fails in his endeavor. After a few sketchy references to Bohemia, Austria, and France (5 pages) and a survey of the books contained in Neumann's library to show his "involvement with architectural theory" (4 pages), he dedicates one and a half pages (!) to an "explanation" of the main philosophical and religious ideas of the epoch, and to tell the reader that Neumann's churches "record and express the religious sensibility that inspired them." That could just as well have been said about a work from the history of ecclesiastical architecture! No word about the "synthetic view" promised at the outset is offered, nor anything substantial and conclusive about the "space composition" which was Neumann's main conce.

The artistic quality of his works as well as his historical position thus remain obscure. In general we may conclude that Space into Light does not throw much light on the spaces question.

P.S. The layout of the book is old-fashioned and may reading heavy. With the fine paper used, an integration text and illustrations would have been possible without increasing the cost. The color photographs are poor and the black-and-white ones of varying quality. The map on page 266 is misleading as it does not specify which sites have built by Neumann. □
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Two recent interiors, both for universities, by the young New York firm of Voor­sanger & Mills combine the arts of painting and sculpture with architecture to create spaces that are symbolic and rather elegant.

Technics: Fire Protection

Modern technology and rigorous legal codes have not yet eradicated the age-old threat of fire to buildings and their occupants. There are many answers to the questions of fire protection, but no universal solutions. New hazards develop, and new rules evolve to counter them. P/A Technics Editor Richard Rush brings us up to date on the struggle against fire in buildings.

P/A in November

P/A's annual special issue on Preservation and Remodeling will concentrate this year on preservation for commercial purposes; examples from all over the country will be critically scrutinized.
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Vola deck-mounted faucet, with single control mixing valve, has a double-walled spout that directs water to the back or sides of the sink without using a hand-held spray. Designed by Arne Jacobsen, it is part of a collection that is available in 10 epoxy colors, polished chromium, or brass. The system complies with American plumbing standards. Architectural Complements. Circle 130 on reader service card

Soft Shelves, replacing a conventional chest of drawers, consists of 12 canvas compartments supported on a steel frame. A laundry bag hangs at one side, a shoebag hangs at the other, and a curtain slides across the front. Canvas sections of the easily assembled unit are washable. Up & Company. Circle 131 on reader service card

The Wilkhahn 400 series consists of tables and chairs with upholstered seats and backs. Both have laminated hardwood plywood frames molded into compound curves and are said to be lighter and stronger than similar products of solid wood. Krueger. Circle 132 on reader service card

Swedish Linen and Natural Burlap wallcoverings are additions to the company's product line. Swedish Linen comes in 70 natural tones in a range of patterns including textures, boulées, verticals, plaids, and embroideries. Natural Burlap is paper-backed, vinylized for heavy traffic areas or prepared with paint for structural integrity. There are 49 clear bright and soft neutral colors. Reed Wallcoverings. Circle 133 on reader service card

Pyramid, a seminar stacking chair, has contoured styling and seat cushioning for comfort. The frame is available in either oak or walnut, with or without arms, and upholstered in a wide choice of colors. The chairs can be stacked 12 deep on dollies for easy transportation. Monarch Furniture. Circle 134 on reader service card

K/D Series contract seating is made up of lounge chairs, tandem seating, sofas, benches and tables. Woods are natural dark oak or walnut. Frames and cushions are shipped unassembled in stackable cartons less than one cubic yard in size, to be assembled on site by means of factory-positioned bolts using simple tools. Shipping costs are less than for uncrated furniture, and cartons can be stored easily until needed. Marden Manufacturing, Inc. Circle 135 on reader service card

Clouds collection berber type carpet is suitable for residential and contract interior use. It is 12 ft wide and comes in four neutral colors: white, bone, beige, and flannel gray. Because it is all wool, it is resilient, durable, and has good soil release properties, says the manufacturer. Weave-Tuft Carpet Corp. Circle 136 on reader service card

Libretto broadloom carpet is woven of 100 percent wool in berber loop texture. It comes in natural color in four designs. The carpet is suitable for residential use, but just as appropriate for contract applications in office buildings, hotel public and guest rooms, reception areas, banks, and similar installations. Rober-tex Associates, Inc. Circle 137 on reader service card

Contract furniture data retrieval system uses micrographics to provide over 40,000 pages of information in less space than that of one catalog. Manufacturers' information is grouped by product—furniture, lamps, accessories. The service includes a microfiche reader, microfiche catalogs of over 400 contract manufacturers, monthly updates, and a completely new set of [Products continued on page 277]
Up...and on time
Your Sargent hardware comes in... delivered right on time, just as your Sargent distributor promised. Up it goes, swiftly installed. And you appreciate, once again, the way Sargent helps get the job done right.

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It makes good sense to specify Sargent everywhere. From door closers to exit devices: from bored-in and mortise locks to auxiliary dead bolts. Not to forget the dependable Sargent Keso Security System.
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The Sabra floor lamp, designed by Joram Alroy, is a 5-in.-diameter, 44-in.-high column. The top section can be opened up or down to vary the amount of light through the glass section, which frosted to diffuse glare. It is finished polished aluminum, polished brass, hite, or black lacquer. Koch & Lowy.

desk office furniture produced in Brazil is a collection of executive and credentaria desks, tables, credenzas, and obile cabinets in wood, and various types of office seating. Woods are douro, similar to oak, and Pau-Ferro, similar to rosewood. Office chairs are upholstered in leather, synthetic fiber, or fabric and have metal five-

prong bases, adjustable seats, and adjustable backs. There are also side chairs, ganged seating with tables, and lounge area sofas. Brazilian Securit, Inc.

Marble design wallpapers include Carrara and Lugano, each in seven colors, and Pompeian in six colors. All are on heavy paper stock with a lacquered, waterproof finish; the back is prepared for application. There are five sheets to the roll, each 25" x 39". The papers are also appropriate for applications on furniture and accessories. Patterson-Piazza, Decorators Walk.

office literature

Office furniture brochure describes and illustrates some of the more than 600 casegoods and seating products available. It discusses construction of the elements, such as drawers and pedestals, and the finishes and fabrics. Casegoods include credenzas, lateral files, desks, and tables. Seating offered includes swivel posture chairs, stools, side chairs

[Literature continued on page 278]

The Men's Room—For Office Buildings

WASHROOM DIRECTIONS are reference manuals designed to guide specifiers in selecting the right Parker equipment for use in each of a wide variety of washroom categories. The stainless steel units in this washroom were taken from a WASHROOM DIRECTIONS checklist of essential and optional recessed units for use in a men's washroom in an office building. They include:

- WASTE RECEPTACLE & PAPER TOWEL DISPENSER — No. 654
- MIRROR — No. 3020
- SHELF & SOAP DISPENSER — No. 634

If recessed units are not desired, WASHROOM DIRECTIONS also provides checklists for surface mounted, space-saving, barrier-free and concealall washroom designs. Send for your WASHROOM DIRECTION and find out how easy specifying Parker units can be, whatever direction your washroom plans are taking.
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Telephone: 804-355-4351

An elevator operating panel with raised Braille characters and raised floor numbers is an aid to the blind who must operate elevators. The panels can be installed in public buildings or where visually handicapped people must move. U.S. Elevator.
Circle 201 on reader service card

A panic bar door opener for vertical stallation can be operated by foot, hand, or by being pushed by a wheelchair. Originally designed for operation at floor level in the event of a fire, it is also suitable for hospitals, hotels, restaurants, and other public buildings. Peterik Corp.
Circle 202 on reader service card

Wheelchair level water coolers with dual, side-mounted hand valves as standard features, extend 18 1/2 in. from the wall to provide access at wheelchair level. Mounted 35 in. from the floor, the coolers can accommodate all users. The water cooler has a 7 gph rated capacity and is available with beige vinyl finish standard or all stainless steel as an extra-charge option. White-Westonhouse Corp., Commercial Products.
Circle 203 on reader service card

Bradpack preassembled wash center Model 1128 has sufficient clearance below to accommodate a wheelchair. Faucets have wristblade handles for easier use. All accessories are located more than 40 in. above the floor to accessible to all users. The unit is stainless steel with chromium-plated brass fittings. It has a fluorescent light fixture, electric outlet, storage cabinet, paper towel dispenser, and optional cup and soap dispensers. Bradley Corp.
Circle 204 on reader service card

A water cooler for public areas operates by means of a self-closing push bar that requires only a very light touch. It has a nonpressurized cooling tank, which is subject to line pressure only when it is being operated. The cooler has a one piece stainless steel basin and backsplash, with vinyl cabinet in a choice of colors. Elkay Manufacturing Co.
Circle 205 on reader service card
Introducing the world's only non-stop pencil.

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The natural motion of your hand triggers a patented pump-action advance, constantly feeding extra-fine 0.5mm lead to the tip. So instead of stopping again and again to push a button, you keep going.

It's a brilliant system inside a simple, elegant barrel executed in the satin-finished metal shown, or in black with brushed metal accents.

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Now Scamp sound masking gives your “closed” office the privacy you deserve.

Just because you don’t have an open office doesn’t mean you’re not affected by noise such as typewriters, copying machines and the chatter of people using them. Even with your office door closed these sounds can seep through and hamper your work. No more! One or more decorative Scamp units for wall or ceiling, placed strategically in your office, can mask these sounds and provide the atmosphere for optimum efficiency.

The Scamp system provides speech privacy in most offices by generating a unique sound spectrum which masks unwanted speech, noise and its directivity without being intrusive itself. Scamps install quickly and easily and have music and paging capability.

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Control Electronics Co., Inc.

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See 1980 Sweets Catalog Vol. #3.9.1 Acoustical Treatment

Circle No. 329 on Reader Service Card

**Oasis** drinking fountains designed to meet the needs of handicapped people include DF-140, Dial-A-Drink bubble, and DF-140A, Soft Touch with a lever on each side operable with light pressure up or down. The cabinet is mounted on brackets and extends 19% in. from the wall. Ebco Manufacturing Co.

Circle 209 on reader service card

**Stainless steel grab bars** with 1½-in. wall clearance conform with federal regulations for public facilities. Series 600 grab bars, in 1½-in. and 1½-in. diameters, have either satin finish or nonslip gripping area. They come in straight lengths and designs for special applications. The Charles Parker Co.

Circle 210 on reader service card

**Swing-clear hinges** permit doorways to be completely clear when the door is at 90-degree angle. They eliminate the approximately 2-in. obstruction of the door width that occurs when ordinary hinges are used. They come in standard wrought steel, brass, bronze, or stainless steel. H. Soss & Co.

Circle 211 on reader service card

**A pool lift for the handicapped** can be installed in new or existing pools. For public pools, it can be removed and stored when it is not needed. All imersible parts are made of corrosion resistant stainless steel. It meets a standard pool and tank requirements but systems can be constructed to meet specific needs. Mecanaids.

Circle 212 on reader service card

**A laminated plastic countertop**, Series 1098, provides 30 in. clear access for wheelchairs when the countertop is mounted 34 in. from the floor. The entire top is seamless and has a 4-in. skirt. It is available in lengths from 18 to 144 in., with basins, soap dispenser, and plumbing fixture trim as optional accessories. Bobrick Washroom Equipment

Circle 213 on reader service card

**Air doors** create a curtain of air in doorways, acting to keep outside air out and to maintain inside temperature, in addition to controlling insects. They are available heated to protect against cold drafts or unheated for use in areas such as freezer or refrigerator doorways. Air doors are suited for openings that must remain open and barrier-free at times of heavy traffic and yet can be closed. Because they eliminate the need to open and close doors, they are particularly useful in public and industrial areas. Interior and exterior wheelchair lifts, bathroom facilities, kitchen designs, stairway glides, small elevators and other aids are offered. R.J. Mobility Systems, Inc.

Circle 206 on reader service card

**Products continued from page 278**

**Mobility systems.** Consultants design products for private homes or public buildings, such as offices, schools, and industrial areas. Interior and exterior wheelchair lifts, bathroom facilities, kitchen designs, stairway glides, small elevators and other aids are offered. R.J. Mobility Systems, Inc.

Circle 207 on reader service card

**Auto-Slide doors,** 8000 series, provide easy access to buildings, especially important for the handicapped. In an emergency, however, the doors break out with only a slight push. The doors can also be opened fully to allow large objects to be moved through. Door operation can be by means of electric or pneumatic openers. The self-closing feature, which conserves energy, has a holding beam to prevent it from operating while the entrance is occupied. Stanley Magic-Door, Div. of Stanley Works.

Circle 208 on reader service card

**Telette 1331 open telephone booths** can be mounted at regular height or at a height suitable for use from wheelchairs. The booth has a one-piece aluminum housing and a stainless steel interior and exterior. The booth has a one-piece aluminum housing and a stainless steel inside wall cut out to accommodate a recessed telephone. The booth can be used in private or public areas of office buildings, terminals, hospitals, and similar locations. Accessory Specialties, Inc.

Circle 209 on reader service card

**Now Scamp sound masking gives your “closed” office the privacy you deserve.**

Just because you don’t have an open office doesn’t mean you’re not affected by noise such as typewriters, copying machines and the chatter of people using them. Even with your office door closed these sounds can seep through and hamper your work. No more! One or more decorative Scamp units for wall or ceiling, placed strategically in your office, can mask these sounds and provide the atmosphere for optimum efficiency.

The Scamp system provides speech privacy in most offices by generating a unique sound spectrum which masks unwanted speech, noise and its directivity without being intrusive itself. Scamps install quickly and easily and have music and paging capability.

Find out how Scamp can make a better working environment out of your office. Write or call us today. Also ask about Scamps for open office areas with dropped ceilings or high ceilings.

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For safe footing and good looks in high traffic interiors...

This unique new rubber floor tile is designed especially for interior floors where safe footing is required and handsome, easy to maintain appearance is desired. 1" diameter raised studs molded onto a special compound of tough, extra resilient rubber provides greater traction by allowing dirt and spilled liquids to drain off the walking surface. Extra resilience contributes substantially to safe footing.

Radial rubber tile is recommended especially for high traffic areas such as air terminals, shopping centers, ramps, elevator lobbies, stair landings and offices. It is made in two profile designs and in overall thicknesses of 1/8" and 3/16" with smooth back, and .210" and .235" with Acoustibak™.

Flexco also makes matching radial rubber stair treads as well as a complete line of rubber and vinyl treads, risers and stringers, rubber tile, conductive vinyl tile, cove base and vinyl carpet accessories.

For areas which require Class A fire rating, Flexco can supply on special order Radial Tile, Stair Treads and accessories which meet ASTM-E84-77A flame spread rating of 25 or less and smoke density of 75 or less.

For samples and information, write or call (toll free):
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Circle No. 445
Krueger plus Wilkhahn Program 400 equals new harmony in wood

Krueger has launched a new venture in conjunction with Wilkhahn of West Germany. You can now purchase Wilkhahn's classic Program 400 furniture in the United States or Canada and have it shipped from Krueger's Green Bay manufacturing facilities.

Program 400 is a landmark design. Honored with awards here and abroad, Program 400 was first introduced over a decade ago by Wilkhahn and has since been widely imitated. Its technical achievement of laminating plies of hardwood into multi-directional frame configurations provides a distinctive delicate linear appearance. Though lightly scaled, Program 400 frames are stronger than solid wood.

Program 400 is available in side and arm chairs as well as tables. Contact Krueger or showrooms for more information.

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Boston 617/893-2752 • New York 212/371-9595 • Philadelphia 215/666-9696 • Atlanta 404/231-0913
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Dallas 214/823-4183 • Houston 713/222-1408 • Denver 303/534-6060 • Los Angeles 213/659-2133

Circle No. 370 on Reader Service Card
ducts continued from page 280

ful for the handicapped. Mars Sales. Circle 214 on reader service card

rrier-free literature

uring Guide for Designing Washroom Facilities for the Physically Handicapped furnishes guidelines for selection of washroom equipment to meet requirements for barrier-free design. It lists recommended accessories, washing heights, and provides views of large and small washrooms, showers, bathtubs, and toilet apartments. Bobrick Washroom Equipment, Inc. Circle 215 on reader service card

itions to Barrier Free Door Controls is a 12-page brochure that describes the principles of barrier-free design related to door operation. It discusses controls that open doors and provide delayed closing. Included in the brochure is a control that automatically opens doors in the event of smoke or fire. A selector chart of manual and automatic door controls indicates suitabilities for various locations. Readie Door Closer Corp. Circle 216 on reader service card

or closer catalog provides information on codes and regulations applicable to barrier-free automatically open doors. A switch on the door activates a force-reduction mechanism to make the door easier to open. Series 800 openers are available with several standard entrance styles. Kawneer Architectural Products. Circle 221 on reader service card

Stainless steel grab bars and accessories are included in Catalog 795, which has a grab bar selector chart. Configurations of various styles of bathroom grab bars shown include those for toilets, lavatories, tubs, and showers. Among accessories are retractable

Barrier-free manual entrances, Series 800, have thresholds omitted to eliminate obstacles to the handicapped. A fixed glass adjacent to the lock jamb permits the user to see and be seen. The opening is 34 in. to allow width necessary for access by wheelchair users. A switch on the door activates a force-reduction mechanism to make the door easier to open. Series 800 openers are available with several standard entrance styles. Kawneer Architectural Products. Circle 221 on reader service card

Drinking fountains for the physically handicapped are described in an eight-page, full color catalog. Specifications and mounting requirements are included for each of the nine models shown. Sunroc Corp. Circle 219 on reader service card

“An Architectural Barrier Is” is a four-page brochure that shows some of the many barriers confronting the handicapped. It discusses two federal programs that offer direct funding for barrier removal projects and explains tax incentives encouraging the removal of barriers. Eastern Paralyzed Veterans Association. Circle 220 on reader service card

10 Distinctive BUILDING GRANITES

IN 12 DIFFERENT FINISHES – FROM ROCK OF AGES – GIVE YOU A BROADER CHOICE

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Send for full color brochure.

Circle No. 459 on Reader Service Card

Literature continued on page 284]
shower seats for wheelchair users and the elderly. Diagrams illustrate methods of attachment. Tubular Specialties Manufacturing, Inc. Circle 222 on reader service card

Wheelchair accessible drinking fountains are described and illustrated in a 16-page catalog. All models of the wall-mounted and pedestal styles are shown in color and have dimensional detailed drawings. Haws Drinking Faucet Co. Circle 223 on reader service card

Drinking fountains and water coolers, shown in a six-page brochure, are barrier-free for use by the handicapped. They include bilevel and wheelchair-height fountains and coolers having self-closing valves with lever handles. Complete descriptions are provided for each of the six models illustrated, and diagrams show dimensions for installing bilevel styles. Halsey Taylor Div., King-Seeley Thermos Co. Circle 224 on reader service card

Automatic sliding and swinging doors, described and illustrated in a 12-page brochure, provide barrier-free access to buildings. The complete door package includes doors, electric or pneumatic door operators, and actuating devices and accessories. Comprehensive product information and detail drawings are provided. Horton Automatics Div., Overhead Door Corp. Circle 225 on reader service card

The following items are related to the Interior Technics article on ceilings. They are grouped here for the convenience of the reader.

Ceiling products

Wocomo ceilings are made of oak and have oak moldings with mitered corners. The panels can be integrated with lighting and other types of pan and are also suitable for use on walls. They install easily and can be removed for cleaning and replaced quickly. Wocomo Innovative Ceiling Systems Circle 226 on reader service card

Nubby open-plan ceiling panels have textured glass fabric surface, a fiberglass sound-absorbent core, and a backing. According to the manufacturer, the backing improves sound absorption, improves sound transmission loss, and blocks passage of dirt-laden air through the panel, tending its life. The fabric surface which is not painted, does not chip or peel, and vacuuming removes loose particles. Standard color is white, with custom colors available on large order. Capaul Ceilings Div., Acoustiflex Co. Circle 227 on reader service card

Communi-Power Poles, which extend from floor to ceiling, are factory wired for electrical power distribution. Space is also provided for electronic communication on-site wiring. For new or existing buildings, the poles permit work stations to be changed quickly and inexpensively. They can be used alone or as part of the company's modular distribution system. Finishes are wood or leather grains or anodized aluminum. Electro-Products Div., 3M Co. Circle 228 on reader service card

Now, all the benefits of carpeting... with better static protection than tile.

Compu-Carpet™

COMPU-CARPET anti-static carpeting is a unique, high performance floor covering developed specifically for use in modern offices, computer rooms, terminal areas and other static-sensitive environments. Attractive and durable, Compu-Carpet has anti-static properties superior even to those of hard surface flooring.

Compu-Carpet meets IBM resistance recommendations. Since its anti-static properties are inherent in its construction, protection is assured for the life of the carpet. Compu-Carpet carries a 5-year static and wear warranty. Send for complete details.

See Sweet's Catalog 9.28/Un. Mfd. by
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Circle No. 420 on Reader Service Card

[Products continued on page 286]
Belgian linen wallcoverings. There's nothing like natural beauty.

Design a natural environment starting with the natural beauties from CrofterCraft. All are pure imported Belgian linen. All have a Class A Flame Spread Rating in accordance with the ASTM-E-84 Tunnel Test.

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15% to 25% on your purchases of DRAFTING ERASERS
2mm LEAD HOLDERS
DRAWING LEADS
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Circle No. 411 on Reader Service Card

A suspended ceiling, consisting of a metal pipe grid and fabric panels attached by springs to corner junctions, is available in 2-ft, 2½-ft, and 3-ft modules. The grid is finished in off-white, and the fabric panels of 100 percent cotton canvas come in 20 colors. The fabric, treated for flame retardance, has a flame spread rating of 10, smoke density of 15, and fuel contributed factor of 0 when tested in accordance with ASTM E-84 tunnel test. Integrated Ceilings. Circle 229 on reader service card

The Trimlok System is a versatile ceiling using a standard 2' x 2' module. It can accommodate either simple lay-in panels or an integrated system of lighting fixtures, air distribution hardware, and acoustical treatment. The grid is a white-painted aluminum frame having a narrow exposed portion. Framing in custom colors can also be provided. Armstrong World Industries, Inc. Circle 230 on reader service card

Luxalon® architectural ceiling panels of aluminum are available in a wide range of baked-on colors and in a choice of profiles. All components are non-combustible and resistant to corrosion. The panels are clipped to carriers, without screws, bolts, or rivets, and different types of carriers can be used in combination to produce varied patterns. Standard ventilation and lighting products can be used with the ceiling, and special air diffusers and lighting are also available. Hunter Douglas, Inc. Circle 231 on reader service card

ParalineTM linear metal ceilings of either steel for strength or aluminum for corrosion resistance have a two-hour fire rating. They come in a range of standard, factory-applied colors and polished aluminum. Also available are single-lamp or double-lamp light fixtures designed to blend with the ceiling, and air diffusers that can be incorporated into the ceiling. Donn Corp. Circle 232 on reader service card

Planar® and Plenum Mask® ceilings are made of aluminum strips, 4 in. to 5 in. wide, in a choice of profiles. Ceiling length and width are virtually unlimited because both carriers and panels can be

Products continued from page 284
We think the choice of brick as the obvious solution.

Joe Jarvis, AIA, Principal in Charge, Putty Jarvis, Inc., Dallas, Texas

"Brick is a recognized quality material appropriate for a public building such as a government center. And in the case of Collin County, proved to be cost effective and it also served as a structural component. We tried to be sensitive to high cost of energy; and the use of brick, in our opinion, was a good material choice. The thermal lag property of brick, due to its mass, contributes to long-term energy savings. Brick was also adaptable to forms consistent with the design, which helped shade the glass areas — another energy savings.

"With regard to aesthetics, brick provided the appearance of dignity and quality, which we were trying to achieve.

"We wanted to avoid materials which were faddish or temporary. Brick has stood the test of time for centuries, and was the ideal material to keep this job within our budget. For the Collin County project, we think the choice of brick was the obvious solution."

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For more details about brick technology call Acme Brick collect, 817-332-4101, ext. 365. Or write Acme Brick Technical Services, P.O. Box 425, Fort Worth, Texas 76107.

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There are eight rich shades to work with. All with subtle variations, and a surface that looks velvet-soft.

A surface that also withstands abuse because it's ceramic tile with an exceptionally hard glaze. So it outlasts synthetic walls and counters by a lifetime. See the splendor of Siena. Contact your American Olean sales representative. Or write American Olean Tile Company, 2794 Cannon Avenue, Lansdale, PA 19446.
Ceiling literature

Ceiling Systems, an eight-page brochure, provides technical information about several types of ceilings: wood eggcrate; wood or chromium-plated steel grilles; and Sculpturewood solid wood profiles. Detail drawings show the various profiles, and full-color illustrations show the ceilings in typical installations. Forms & Surfaces.

Circle 239 on reader service card

'Ceiling Systems Handbook.' Directed primarily to ceiling installers, this handbook is also useful for architects. It describes the many methods of installing cemented, exposed grid, exposed or concealed Z-bar, H and T, nailer channel, and metal pan ceilings. A section on [Literature continued on page 290]
Literature continued from page 289

special applications considers the installation of tiles in patterns, installations around lighting fixtures, access panels, and other specialized work. Information about integrated ceilings, luminous ceilings, and concealed grids is provided, along with a glossary of architectural terms and a list of safety procedures. The handbook is $10.25 a copy from: Ceilings & Interior Systems Contractors Association, 1800 Pickwick Ave., Glenview, Ill 60025.

Several types of commercial ceilings are included in a 24-page interior products brochure. A ceiling select chart provides dimensional data, insulating values, surface burning characteristics, and sound absorption coefficients of six ceiling panels. Surface textures are described and illustrated. Also in the brochure are insulation and noise barrier batts and acoustical wall products. Owens-Corning Fiberglas Corp., Interior Products Operating Division. Circle 240 on reader service card

Luminaire ceiling systems combine lighting, air distribution, acoustical control, and fire-rated protection. A 30-page brochure describes the various types of ceilings and shows several installations. Technical information is included about lighting effectiveness, air distribution, noise control, and fire protection. Guide specifications are provided for the ceilings described. Armstrong World Industries. Circle 241 on reader service card

Two types of ceiling system grids are Lok Steel Basic, a roll-formed steel tee grid and Drive Lok Basic, an extruded aluminum tee grid. Modules are 2' x 2' x 4' with custom adaptation. A six-page brochure illustrates grid options, typical modules, and examples of installations in color. It text discusses lighting, air handling, sprinklers, and coffers/panels. Gu specifications are included for the grids and components of the system. LOK Products Co. Circle 242 on reader service card

Rock Face ceilings have a hard mine surface that resembles plaster. They are offered in a choice of reveal panel or lay-in panels, or tiles. A six-page brochure describes the ceilings, illustrates typical installations, and includes a data summary chart for each type. Conwed Corp. Circle 243 on reader service card

Soft Look ceilings have fabric surface in six natural and six accent colors. Panels are 3/8 in. thick, made of perforated mineral fiberboard faced with fabric. They are described in a four-page four-color brochure that shows color available and provides physical data a specifications. Armstrong World Industries. Circle 244 on reader service card

Controlens fluorescent lenses are described in a six-page reference guide. Performance data are provided on variations, along with a lighting pattern for each. Photometric data tables, dimensions, specifications, and special features are included. Johns-Manville. Circle 245 on reader service card

Ceiling products catalog, 50 pages shows and describes designer ceiling systems. There is a ceiling panel and selector for standard and fire-rated products. Methods of suspension are shown and described. Specifications for both systems and components are included. Conwed Corp. Circle 246 on reader service card

Acoustical ceiling systems catalog lists characteristics and properties of several types of mineral fiber ceiling systems. An explanation of the tests used to determine fire resistance and sound absorption is provided. Panels and typical installations are illustrated in color, including a Mylar-coated panel for where a mirror effect is desired. They are also architectural specifications and a section on ceiling cleaning and maintenance. Celotex Corp. Circle 247 on reader service card

Walkerflex power systems consist of cable sets that connect to hardwired distribution systems. Each cable plugs into a receptacle which will accept another cable set. A series of up to 20 200-watt fixtures can be accommodated on standard 277-volt circuit. A six-page full-color brochure describes the power system and illustrates its elements. Walker Parkersburg Div. of Texttor Inc. Circle 248 on reader service card

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Circle B617 under Books.

18 Design Cost Analysis for Architects & Engineers
By Herbert Swimnour, 317 pp., Illus. . . $18.95
This first-of-its-kind book shows architects and engineers how to analyze and estimate the costs of building construction during the design stage when the potential for controlling costs is greatest.

Circle B618 under Books.

19 Architectural Stained Glass
Edited by Brian Clarke
294 pp., Illus. . . $29.95
The contributors to this book (through their stunning designs) emphasize stained glass as a constructive art form, taking it out of its medieval ecclesiastical context and putting it into a contemporary framework, both secular and architectural.

Circle B619 under Books.

20 The Earth Shelter Handbook
By Tri-Arch Associates.
244 pp., Illus. . . $12.95
This book provides over 200 pages of figures — in the most common and natural positions, activities, and types of wearing apparel, as well as dozens of drawings of boats and cars, all of which can be copied freely — by direct tracing, photodupes, or photocy-
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Architect: Ten person exciting design oriented office seeks technical and construction administration oriented architect with management skills to supervise projects from development through construction phases. Salary commensurate with skills. Minimum 5 years experience. Send resume to Szoc/Lubotsky Associates, Ltd., 200 E. Ontario, Chicago, IL 60611.

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Harvard Graduate School of Design: Academic ladder positions for persons to teach architectural design in studio and one area of curriculum as visual studies, design theory, architectural technology. Academic ladder positions also available in urban design, teaching studio design and one area of theory of urban design in either architecture or landscape architecture. Preference given candidates with advanced scholastic preparation experience in teaching, research or practice in areas of teaching specialty. Academic administration and scholarship are also obligations in academic ladder positions. Applications available—Graduate School of Design Appointments Committee, Harvard University, 48 Quincy Street, Cambridge, MA 02138.

Hospital Designer/Planner: Leading national architectural/engineering firm has an opportunity for a Designer/Planner in its health care division. Minimum of 5 years of hospital design experience required. Degree in architectural design desired but not required. Competitive salary, comprehensive fringe benefits, including profit sharing, pension and stock purchase plans, along with excellent growth opportunities. Please send complete resume, including earnings history, and letters of recommendation to: R.A. Laird, BBC Health Care Facilities, A Division of Bank Building Corporation, 1130 Hampton Avenue, St. Louis, Missouri 63159. An Equal Opportunity Employer M/F.

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Position Announcement: Applications and nominations are sought for position on the Environmental Design faculty available 16 January 1981 and 1 September 1981. Job Description: To instruct at the undergraduate level (beginning a advanced classes) in the subject areas of architectural and environmental design and graphics. Requirements: A Master's degree from an accredited school, professional license or intent to obtain, office experience. Salaries are commensurate with full-time, nine-month employment. Instructor, Assistant Professor or Associate Professor ranks. Applications should include a resume, academic credentials and letters of reference. A portfolio, or slides, should be available called for. These would be promptly returned. Applications or nominations should be sent to: John O. Greer, AIA, Head, Department of Environmental Design, College of Architecture and Environmental Design, Texas A&M University, College Station, TX 77843.

Preservation Position in Architectural History: Person to initiate program in Preservation, Department of Architecture, University of Illinois (Champaign). Associate Professor level, mostly graduate teaching. Should have had experience in the field and substantiate education in the discipline. Salary negotiable. In order to receive full consideration, applications should be received by October 15, 1980. Effective date of appointment, August 21, 1981. Write William C. Steere, Chairman, Search Committee, Department of Architecture, University of Illinois, Urbana, IL 61801, (217) 333-1300. Include vita. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.

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Architects, and a lot of other people appreciate beautiful ceilings.

That's why they look to Holophane for interior lighting/ceiling systems.

All the ceiling components are engineered by Johns-Manville. So our complete systems are not only beautiful on the outside, they have inner beauty, too.

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A Lighting Lens Material for Extra Toughness, Extra Protection and Extra Savings

When you choose a material for your lighting lenses and diffusers in such high-risk areas as subway stations, pedestrian walkways, parking garages and lots, and other public areas, you look for impact resistance. Plexiglas DR high impact acrylic provides the EXTRA TOUGHNESS you need to withstand accidental breakage or acts of vandalism.

But breakage shouldn't be your only lighting lens concern. You need long term durability and protection from damage caused by exposure to the elements and to ultraviolet degradation. Plexiglas DR, the only all acrylic, high-impact material, provides the EXTRA PROTECTION you need for long-term like-new appearance and utility.

Yet, Plexiglas DR acrylic pellets cost far less than polycarbonate resins, so you get EXTRA SAVINGS as well.

The combination of good impact resistance, and high resistance to yellowing and discoloration—both in a moderate cost material—gives you EXTRA VALUE for your money.

For the latest information on Plexiglas DR for lighting lens and diffusers, circle the reader service number or write to Rohm and Haas Company, Independence Mall West, Philadelphia, PA 19105, Attn: Marketing Services.

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A better way to stain wood.
A better way to save money.

Construction costs can be kept to a minimum with the help of Olympic Machine Staining: no weather delays, no painting scaffolds, no bare wood exposed by shrinkage.

Best of all, Olympic Machine Staining does a better job that lasts longer. More stain protection gets into the wood because it is applied uniformly on a horizontal surface, then forced deep into the fibers by rollers and brushes.

And it dries to a beautiful uniform finish. Choose any Olympic Oil Stain, semi-transparent or solid color. See your Olympic Machine Staining Dealer or write Olympic, Des Moines, P.O. Box 1497, Bellevue, WA 98009.

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