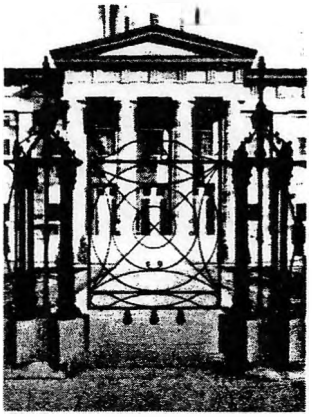
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Cover: Illinois State Capitol Building restored. Photo: Orlando Cabanban.

P/A THIS MONTH

Progressive Architecture® February 1970

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Restored National Monument Spa Urban Revitalization

Through intricate and painstaking demolition and reconstruction, the historic Illinois State Capitol Building in Springfield has been completely restored, at the same time revitalizing the surrounding central business area. The complex provides the community with a two-level underground parking garage as well as an area for performing arts and a research library. *Ferry & Henderson, Architects.* 52

Co-op City: Learning to Like It

Robert Venturi, one of this country's most original and controversial architects, and Denise Scott Brown discuss the aims, achievements, and significance of Co-op City, a low-cost project that will house over 60,000 people. The authors suggest that if carefully considered, Co-op City should shake up some newer planning and urban design theories. *Herman J. Jessor, Architect.* 64

Four Proposals: Rapid Economical Production of Mass Housing

Two Connecticut architects have developed an unusual series of solutions related to research in housing and urban development, that will also meet the challenge of HUD's "Operation Breakthrough." Solutions that will permit the use of different structural techniques with such basic materials as concrete, steel, plastics, as well as a combination of these, are illustrated. *Wojciech G. and Urszula Lesnikowski, Architects.* 74

Controlling Construction Pollution

This column concludes that due to its contribution to air pollution, asbestos-sprayed insulation must be eliminated in future construction. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York.

The hazards of air and water pollution are slowly being recognized as more statistical information on their effect on the human environment is coming to the attention of a concerned citizenry. Since the publication of *Silent Spring*, by Rachel Carson, people have begun to question the dangerous side effects that result from chemical pesticides, automobile fumes, and raw sewage dumped into our streams and rivers. Industrial and human wastes, carelessly or innocently disposed of into the atmosphere or into rivers, have an effect on nature's biological balance that governs the production of oxygen and the growth of marine and animal life. In addition, as architects, we should decry the despoilation of our environment resulting from the accumulation of physical mounds of garbage, junked cars, and industrial waste products.

We should also take a closer look at our construction practices to determine whether we are a party to this pollution as a by-product of our designs, and whether we can reduce or eliminate some of our own contributions to this problem area.

Certainly in demolition of existing structures in urban centers, we should restrict the amount of dust that develops. In some European cities, barriers consisting of plastic envelopes are utilized around demolition sites to confine the dust resulting from these operations. Perhaps our Building Departments and our Air Pollution Control Departments should institute stricter controls over such procedures.

A more striking example of how architects can reduce pollution that actually contributes to fatalities is in the selection of certain sprayed-on fire proofing and insulating products.

In 1900, a London physician, in performing an autopsy upon the body of an asbestos-textile worker found asbestos particles in the lungs and attributed this death to the worker's occupation. Several isolated instances occurred subsequently where an examination of the lung tissue of deceased asbestos workers indicated the presence of asbestos. In 1924 an English physician, Dr. Cooke, after an extensive autopsy and subsequent search of medical literature, concluded that the death of a patient resulted solely from the inhalation of asbestos fibers and assigned the name asbestosis to this disease.

An investigation of some 363 asbestos-textile workers in Great Britain in 1928 disclosed that 95, or about 25 per cent, showed evidence of asbestosis. As a result, legislation was enacted in Great Britain to require improvements in ventilation and exhaust systems in asbestos-textile plants and periodic examination of workers. Although this improvement in working conditions lengthened the life expectancy of these workers, it was learned in 1935 by Dr. Lynch in this country that asbestos workers were dying of cancer as a result of their association with asbestos. Independent investigators in many parts of the world were likewise coming to the same conclusion based on their studies of the association of workers with asbestos.

Dr. Selikoff, of New York's Mount Sinai Hospital, had an opoprtunity to examine the records of members of the Asbestos Workers Union. The study covered a total of 1522 insulation workers between 1942 and 1962. It was found that the death rate from cancer among these asbestos workers was about seven times greater than that of the general white male U. S. population. These observations are staggering. In addition, one must conclude that not only are people who actually work with asbestos exposing themselves to asbestosis and cancer, but also that allied tradesmen in the building construction industry, closely associated with this work, are subjected to this exposure. Steam fitters, electricians, carpenters, acoustical workers, masons, structural steel erectors, and others employed on projects using spray-asbestos insulation in the area of this contamination, and who inhale these asbestos particles, are exposing themselves and are likely candidates for this disease.

Equally disturbing is the fact that asbestos is practically indestructible; while it may disintegrate, it is an everlasting contaminant in the atmosphere. It has been estimated that during its application as fireproofing to structural steel members and metal decks, about 10 per cent overshoots and is projected into the atmosphere. On high-rise structures in urban areas, spray-asbestos fireproofing has been found three and four blocks from the construction site, so that the unsuspecting general public is likewise subjected to this hazard as well as the tradesman directly involved in its application. While this relationship between a casual encounter with asbestos and possible development of disease in the public has not been established, it behooves the architectural profession to consider other materials to perform the work of sprayed-on fireproofing and insulation.

Not only is there a clear and present danger in the initial application of asbestos on the health of the installers, but 30 or 40 years hence, when these buildings are torn down, the demolition operations, if not properly controlled, will add more asbestos fibers to the atmosphere. The time to use substitutes for asbestos-sprayed insulation is now.

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PPG Performance Glass enabled the architect for the new Cities Service Building in Atlanta to achieve the exact esthetic effect he desired.

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The result: "We were able to build a superior building at the same cost as with conventional materials."

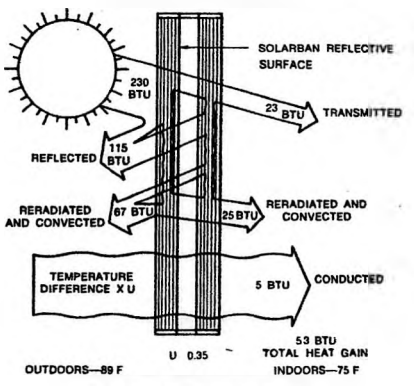
Significant mechanical system savings can be realized with *Solarban Twindow* Units because of the reflective coating which turns back much of the solar radiant energy, rather than permitting it to become a load on the cooling system. This same low-emissivity reflective film on the *Solarban Twindow* Units (normal insulating glass constructions with a ½" air space) enables them to perform like triple glazing in reducing conducted heat loss during the winter. In addition, chilly downdrafts and condensation are significantly reduced.

Put PPG Performance Glass to work in your next building. It can help realize significant savings in mechanical systems costs, reduce brightness, aid in temperature control or reflect to enhance the exterior design.

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Developer: Office Planning Associates, a Division of Cousins Properties Incorporated, Atlanta
Mechanical Engineer: Lazenby & Borum, Atlanta

SOLARBAN(2) TWINDOW INSULATING GLASS



This diagram is illustrative of relationships for a given specific set of conditions.

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Most people will remember the Denver Center Building for its reflections of blue skies.

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The architect for the new Denver Center Building chose a PPG Performance Glass for his building. *Solarban® Twindow®* insulating glass. The results were exactly what he had hoped to achieve: A shimmering facade that would reflect the beauty of the surrounding Denver environment; a surface that would harmonize with vertical columns of weathering steel; a masculine, earthy image for his oil company client; virtually maintenance-free building; and a building "people will remember they've seen."

In choosing *Solarban Twindow* Units, the architect saw a design medium that could make all this possible, and more. Working with the building's mechanical engineer, he found that the performance characteristics of the glass would offset its higher cost by contributing savings in HVAC equipment and capacity costs. The mechanical engineer states: "The use of these *Solarban Twindow* Units enabled us to eliminate approximately 50 tons of equipment out of our mechanical systems. All this, in spite of the demanding conditions here in Denver —we had to deal with the fact that the sun at this high altitude (5,000 feet) contributes to a lot of instantaneous, high heat gain. And the average number of days with sun in Denver is about 300. We still expect the glass to pay for itself in 3 to 5 years in the savings from mechanical system operating costs."

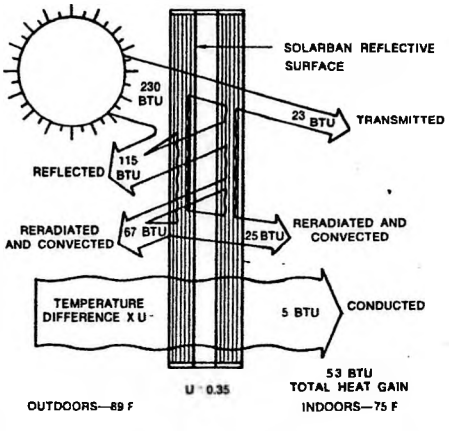
Mechanical system requirements and costs can be reduced when *Solarban Twindow* Units are used because of the reflective coating which turns back much of the solar radiant energy, rather than permitting it to become a load on the cooling system. This same low-emissivity reflective film on the *Solarban Twindow* Units (normal insulating glass constructions with a ½" air space) enables them to perform like triple glazing in reducing conducted heat loss during cold weather. And chilly downdrafts and condensation are significantly reduced.

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SOLARBAN(2) TWINDOW INSULATING GLASS



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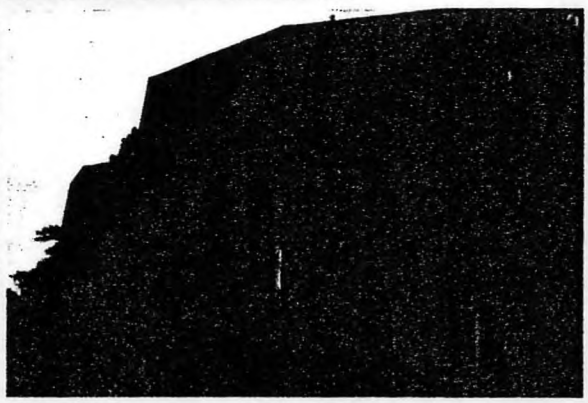
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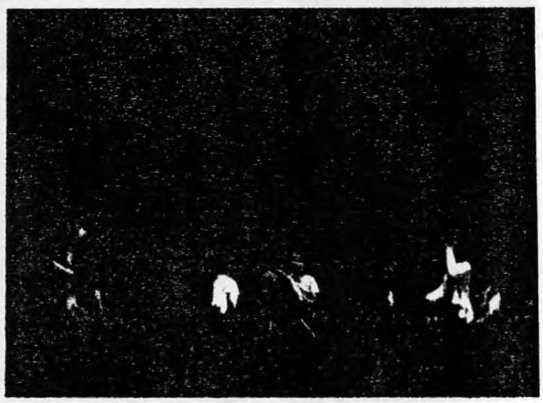












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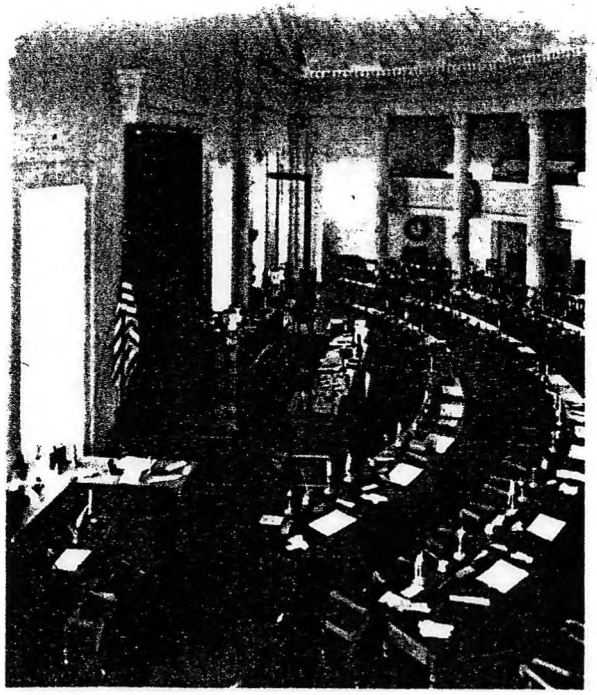
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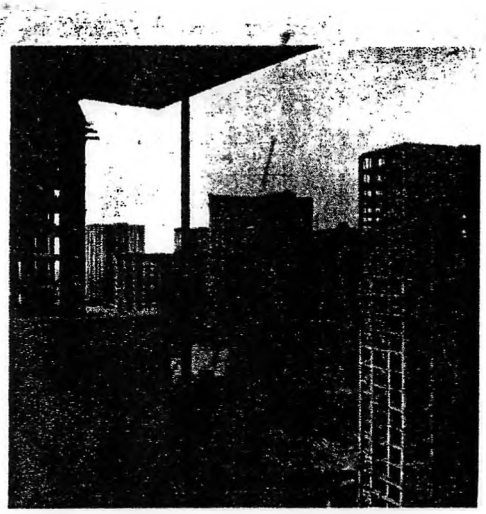
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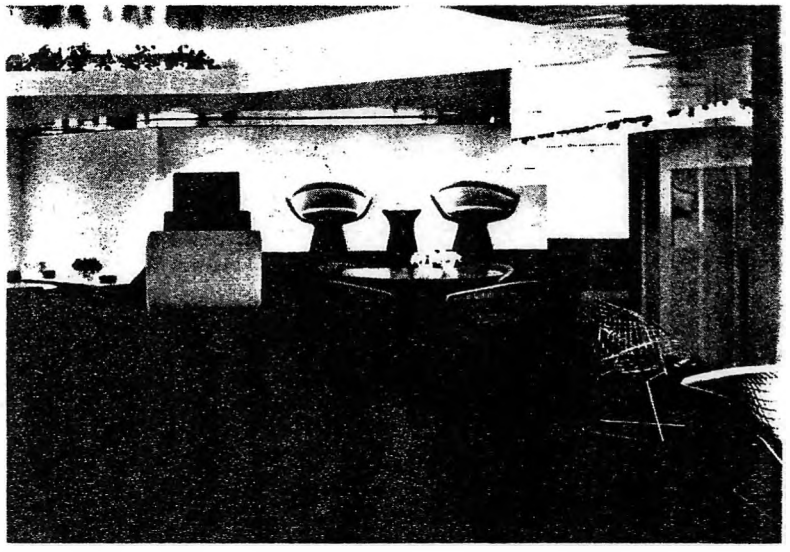






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nation Reveals the Familiar

Italian architect Gae Aulenti, the designer of Knoll International's new Boston showroom, brings to this country the Italian display technique of alienation. By placing the displayed items in a foreign, alien, and ambiguous context the Knoll furnishings are seen in a fresh new light. *Gae Aulenti, Architect.* **96**

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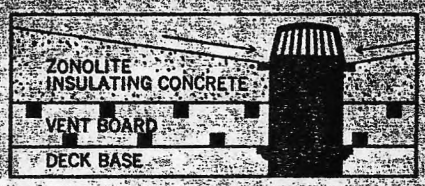
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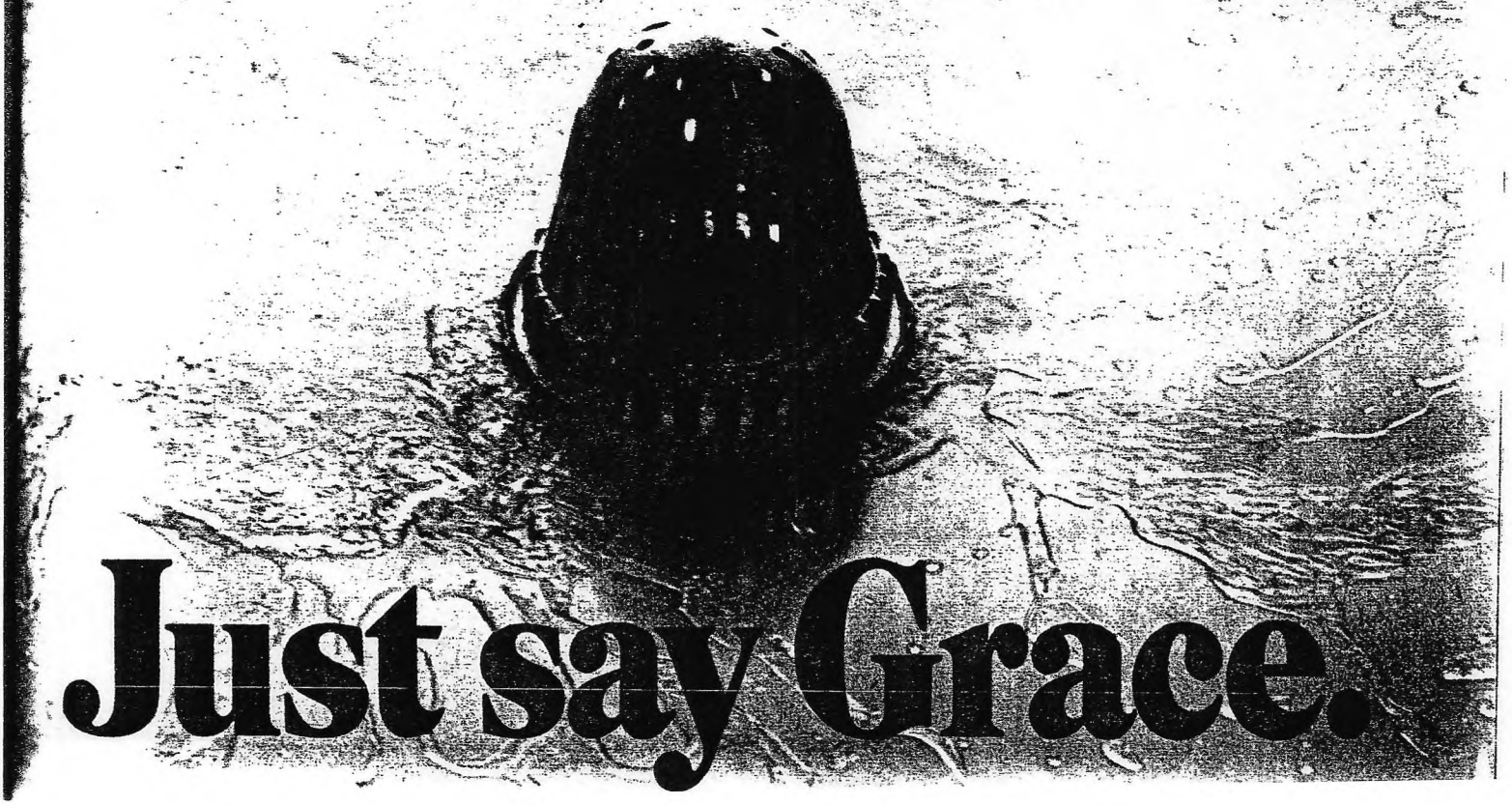
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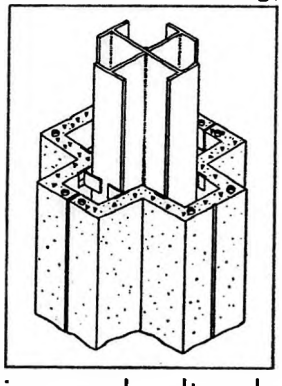


Credits
Owner: Mutual of Omaha
Architects: Houstoun, Albury, Baldwin and H. Maxwell Parish, Coral Gables, Florida
Design Consultants: Leo A. Daly Co., Architects-Engineers-Planners, Omaha, Nebraska
Structural Erector: Poston Bridge and Iron, Inc., Miami, Florida
Structural Engineers: Breiterman, Jurado and Associates, Coral Gables, Florida
General Contractor: M. R. Harrison Construction Corporation, Miami, Florida
Structural Fabricator: Musselman Steel Fabricators, Inc., Tampa, Florida

The original design of the Mutual of Omaha Regional office Building in Miami, Florida, was converted from concrete to an all-steel frame. Acceptance of the steel design was based on a structural study which indicated that a steel frame would be economically competitive and would more effectively satisfy the principal requirements of the owners. These prime requisites were early occupancy and flexibility in the layout of electrical and communication services in office areas. The steel design also provided Mutual of Omaha with an economically functional building which would be in keeping with the Company's policy of providing maximum benefit at minimum cost.

This eight-story structure has a moment resisting bolted steel frame which provides effective wind bracing against the high design loads required by the South Florida Building Code. The floor-to-floor height was kept to a minimum by allowing the passage of air conditioning ducts through fabricated holes in the beam webs. Thus, an additional floor was obtained. The owners reported that rentable floor space amounts to 80 percent of the building's gross floor square footage.

All structural steel members are A36 steel. Each of the 74-foot high free standing exterior columns consists ot two ST9WF25's welded to an 18WF50 to form a cruciform cross section, (see detail drawing).



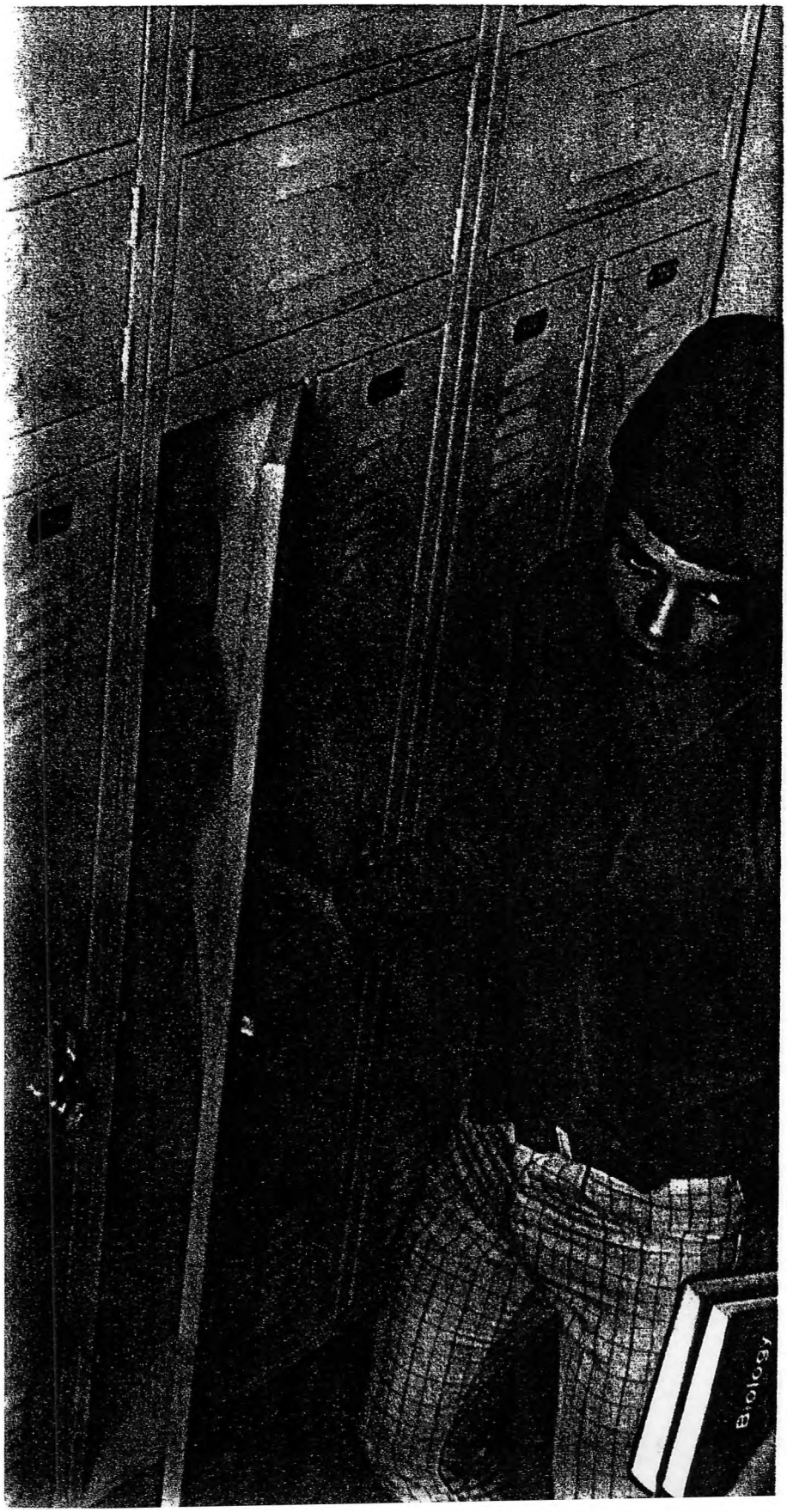
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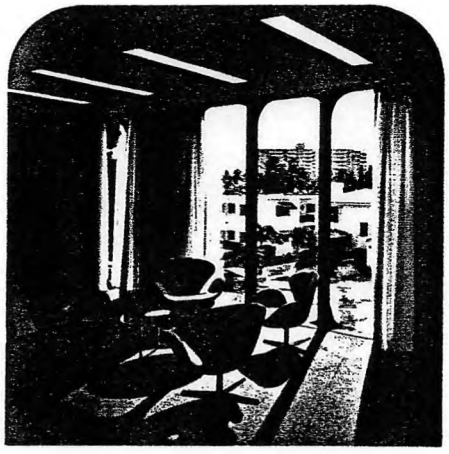
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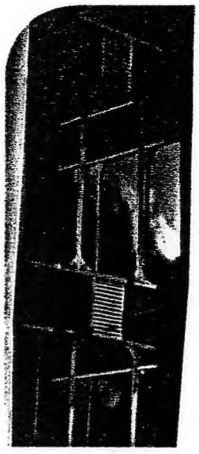
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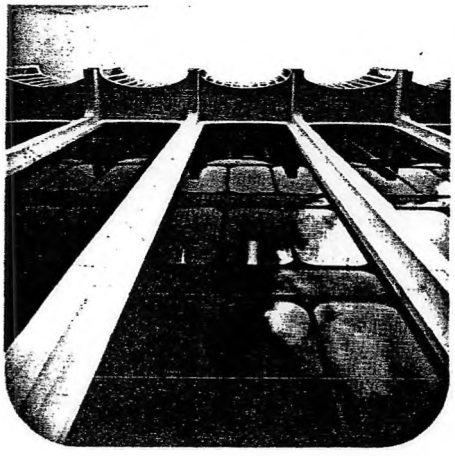
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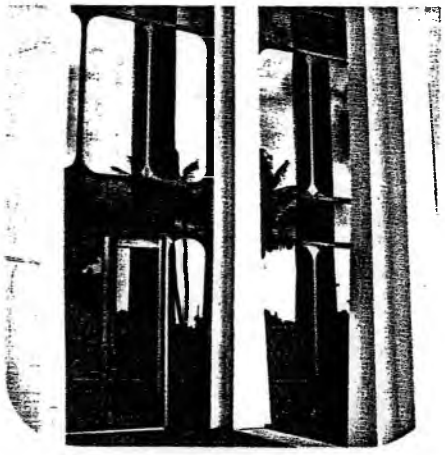








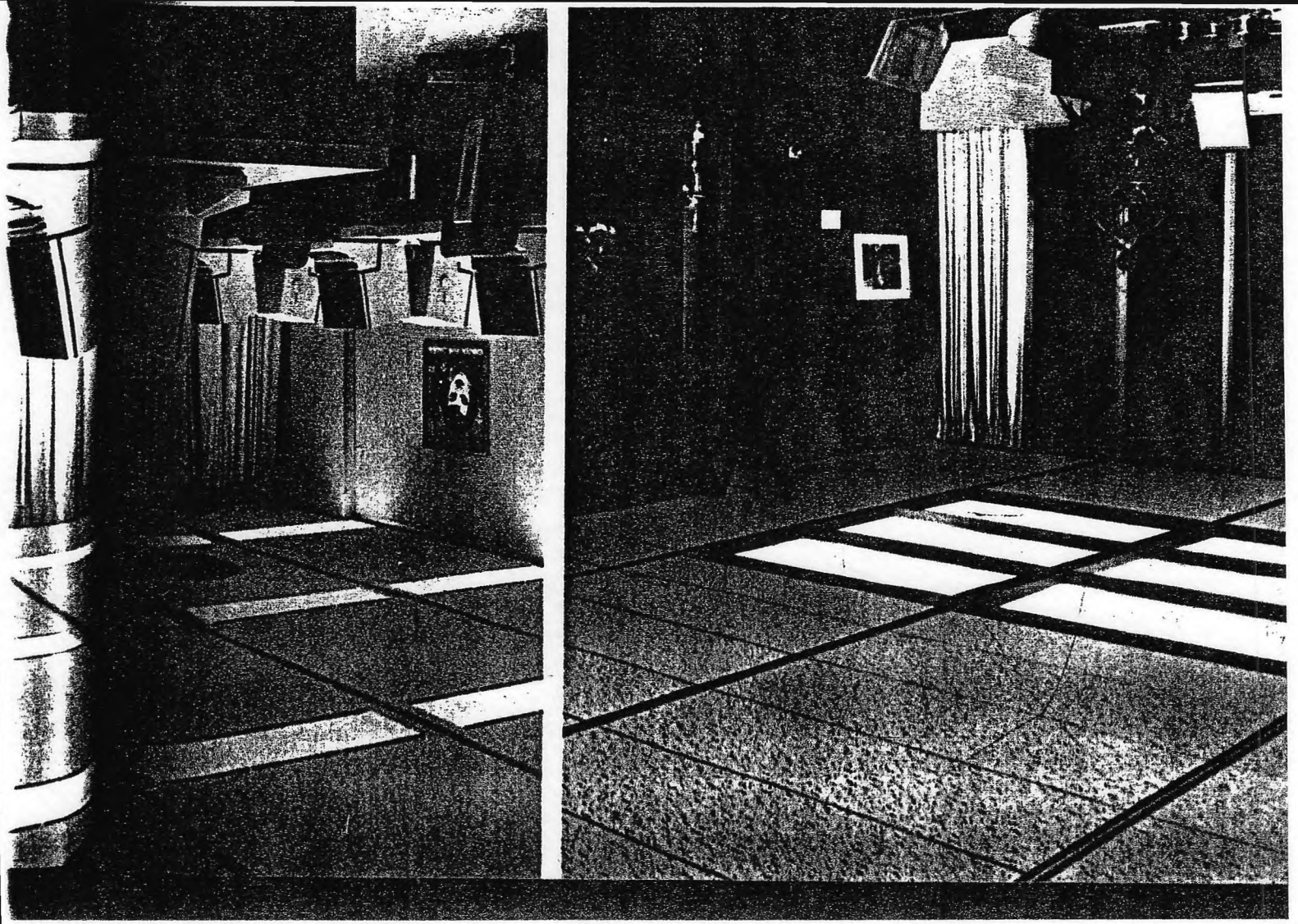


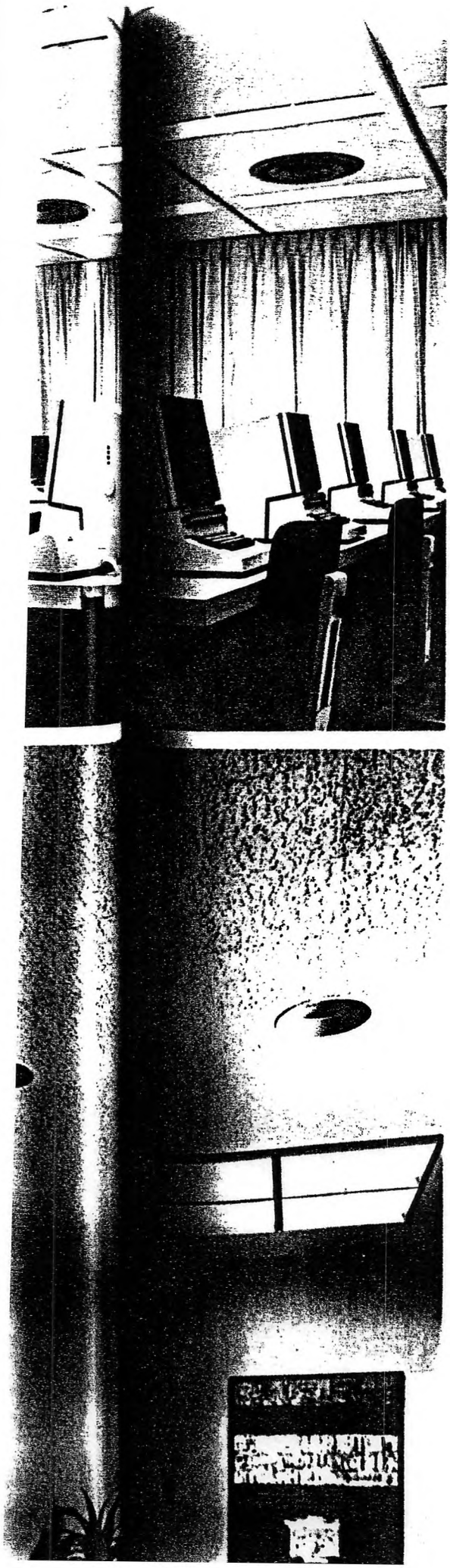




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In areas where walls are permanent, such as pictured at left, 12″x12″ Gold Bond Standard Fissured Travacoustic Tiles were used for travertine stone appearance plus NRC in the range of .60 to .70.

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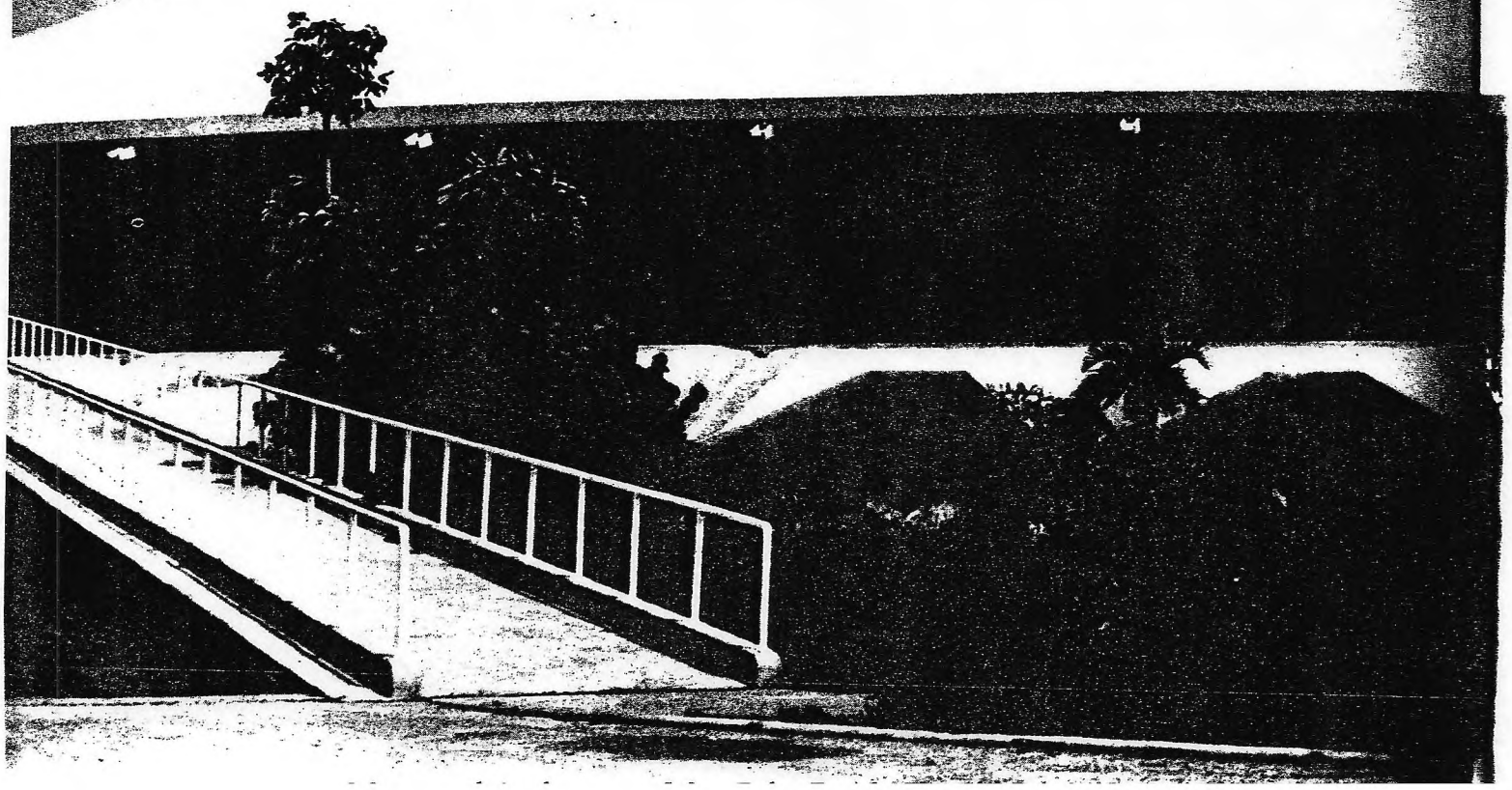
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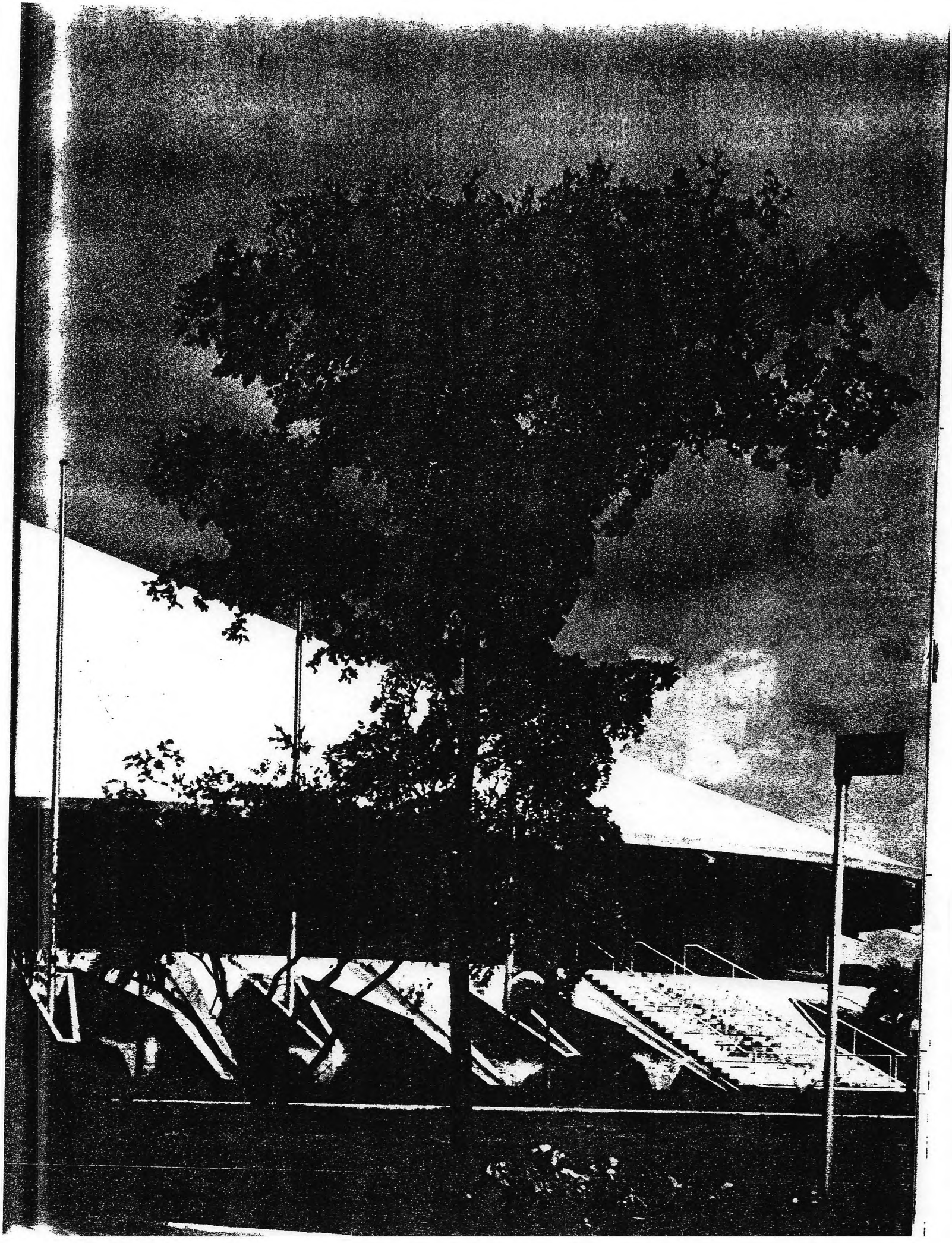
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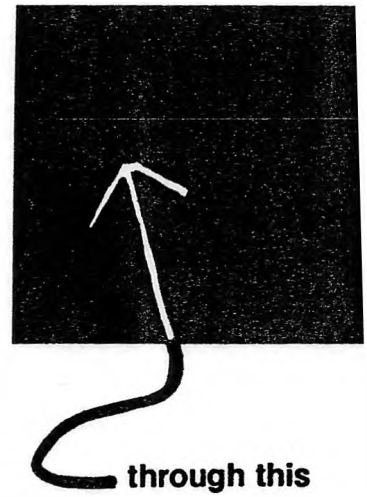
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