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Journal

April 1964

STEWART L. UDALL

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ST LOUIS—1964
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Journal

APRIL 1964

VOLUME XLI, NO. 4

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April 1964

- 29 *Stewart L. Udall: Cities in Trouble*
- 33 *George Kassabaum AIA: Welcome to St Louis—The 1964 Convention City*
- 36 *Robert J. Kerr II: Historic Preservation—A Pragmatic Approach*
- 39 *Alfred Bendiner FAIA: Through the Martini Glass*
- 41 *Howard Ketchum: Human Needs Demand Effective Color*
- 43 *Robert E. Koehler: Women's Architectural League—In Praise of the Ladies*
- 46 *Constantinos Doxiadis: A Letter to the Editor*
- 47 *Gerald Aksen: Arbitration of Disputes—II*
- 50 *The Work of Alvar Aalto: An Exhibition at the Octagon*
- 51 *Raymond Ziegler AIA: The AIA Policy Statement on Codes and Regulations Relating to Building*
- 53 *Larry Smith: Relationships of Architects with Real Estate Consultants and Owners*
- 67 *Spokane Judge Says Freeways Are Not Sacrosanct*
- 68 *Campus Architecture: The Architect's View/The President's View*
- 73 *A Survey of Architecture and College Presidents by Nolen, Swinburne and Associates*
- 77 *Robert S. Runkle: Laboratory Animal Housing—Part II*
- 81 *Urban Design Series: Circulation and Urban Design*

- 6 *Editor's Page*
- 10 *Octagon Observer*
- 14 *Wolf Von Eckardt, HON AIA: Allied Arts*
- 63 *Library Page*
- 64 *Book Reviews*
- 100 *Calendar*
- 108 *Letters*
- 110 *Necrology*

COVER: This National Park Service photo sets the mood for Secretary Udall's statement on "the quiet crisis in conservation" (p 29)

*Coming in
the May
AIA Journal*

Pre-Convention Issue

BUFORD PICKENS AIA
GEORGE MC CUE, HON AIA
ROBERT ELKINGTON AIA

The above gentlemen will tell us about the historic architecture, the contemporary architecture, and what to see and where to eat—in that order, in St Louis, the Convention City. There will also be the usual list of Exhibitors and a plan of the Exhibit Area

Criticism and Response

J. ROY CARROLL JR, FAIA

An outstanding address by the outgoing AIA President, calling the architects of the nation to account for the ugliness for which many of them are directly or indirectly responsible

The Inter-Disciplinary and Inter-Faith Seminar

A brief report on a startling new venture by the AIA into the field of research, to be reported more fully in a later issue

Changing Roles in Architectural Education

LEONARD J. CURRIE AIA, Dean, College of Architecture & Art, University of Illinois, Chicago

Spanning the Gap Between Theory and Practice

WILLIAM W. CAUDILL FAIA, Chairman, Department of Architecture, Rice University, Houston

Educational Reforms in an Australian School

ROLF JENSEN FRIBA, FRAIA, Dean of the Faculty of Architecture and Town Planning, Adelaide University, South Australia

Three outstanding educators discuss the role of the education of architects and the directions it must take in the future

Current Practices in Planning and Building a Hospital

A study prepared by the AIA Committee on Hospital Architecture



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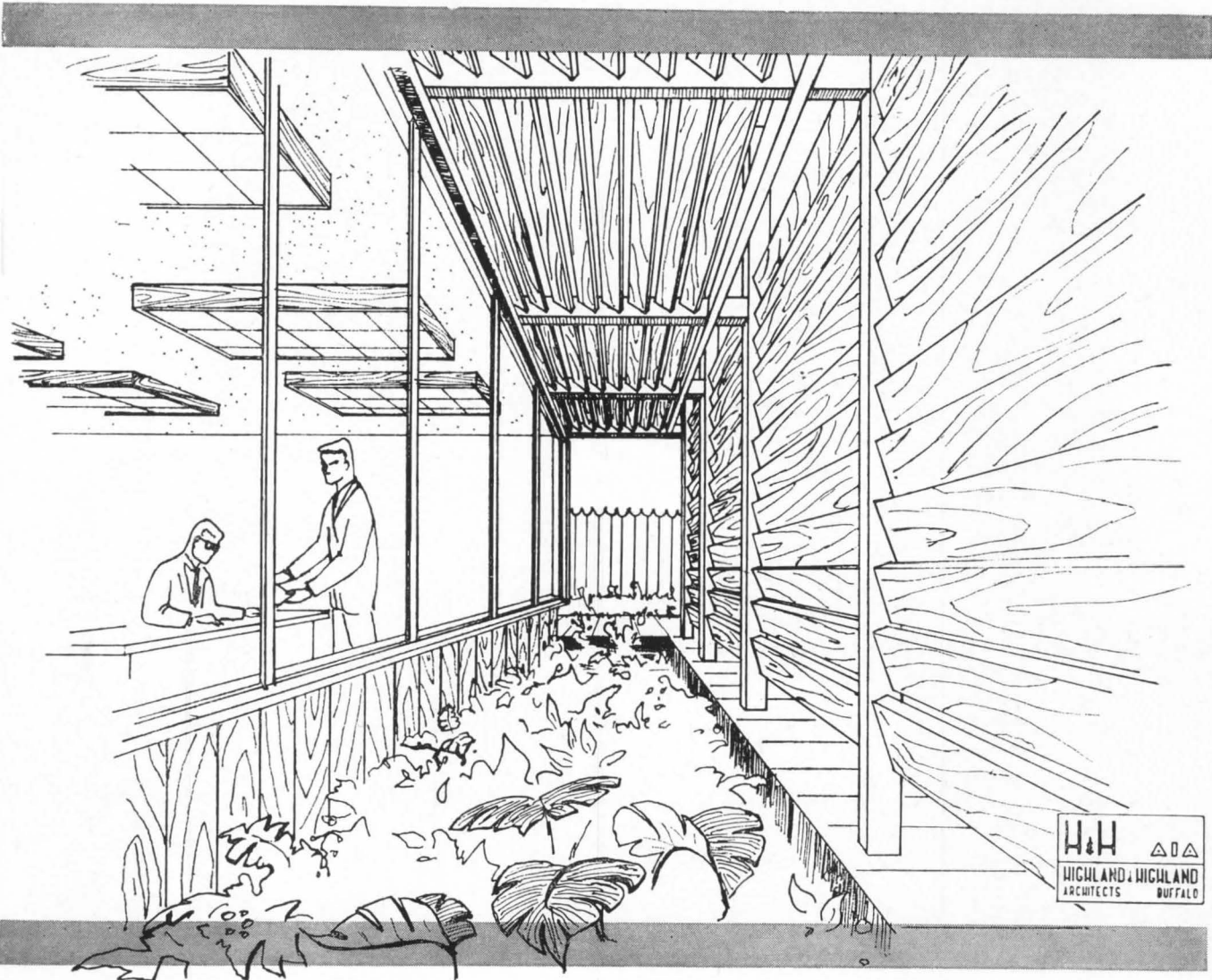
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The Editor's Page

. . . on which you will read only what the Editor currently thinks—not Institute opinions or policies

The Perversion of Standards

It seems to me that one of the basic things wrong today, perhaps a fundamental cause of the confusion and "ugliness" that surrounds us, is that we have developed a perverted set of standards. (I put the word "ugliness" in quotes because it's getting to be such an over-worked word today that one almost hesitates to use it. We're having "Ugliness Conferences" everywhere, and more power to them—but the term sounds almost as though we were promoting the disease instead of trying to cure it.) One can find so many instances where we, the people (which includes all ugliness-haters) seem to blandly accept that which is so obviously not only ugly, but downright bad by any man's standards, that one wonders if we have any standards at all. And if we have any standards, are they good?

Most of us have developed dual personalities. We are at one moment pedestrians, and at the next moment, drivers. There is a gulf between these two personalities—respectively, a Mr Hyde and a Dr Jekyll. So we are apt to blame the automobile, an inanimate, no matter how itinerant, object. But we have let this gleaming monster corrupt our standards.

I have before me a copy of an address which Paul Thiry FAIA delivered at one of the AIA's seminars, "The Press and the Building of Communities," at the University of Oregon in February. (It will be published in the *AIA Journal* later on.) Speaking of the new Seattle waterfront viaduct—an expressway—Paul says, "I have often wondered why we have zoning laws that establish rules for private property, such as setback from property lines and the centers of streets; the amount of land that can be covered; height control; rules that purport to use public welfare, safety, light and air as their criteria, and yet allow public works such as the Seattle waterfront viaduct to ignore every rule in the book.

"To speak of light and air seems almost ridiculous when public structures are built in the streets or along the right-of-way so close to abutting properties as to almost touch them." Zoning ordinances are indeed mocked when public works are built so as to obstruct access to private property with pillars or retaining walls "and when they place traffic directly outside the windows of buildings, thereby depriving private property outlook onto the very street its zoning was designed to protect. . . . Noise and grime become the inherited environment of those unfortunate enough to be situated behind such structures."

No private individual would be permitted to inflict such slum-producing conditions upon a city. Why should the state? Yet we drive swiftly over the expressway, thankful for the three minutes it has saved us, oblivious to the misery it has produced. There used to be a great to-do about the dirt, darkness and noise caused by New York's elevated railroads, espe-

cially downtown on Allen Street and the Bowery. Are the elevated expressways any better? They are worse, for the old el had ties laid directly on the steel structure and a little sunlight could flicker through. Not so on today's reinforced concrete structures. Anybody who saw "West Side Story," stage or movie, will remember that its moments of ugliest violence were staged in the dismal wasteland under an elevated highway.

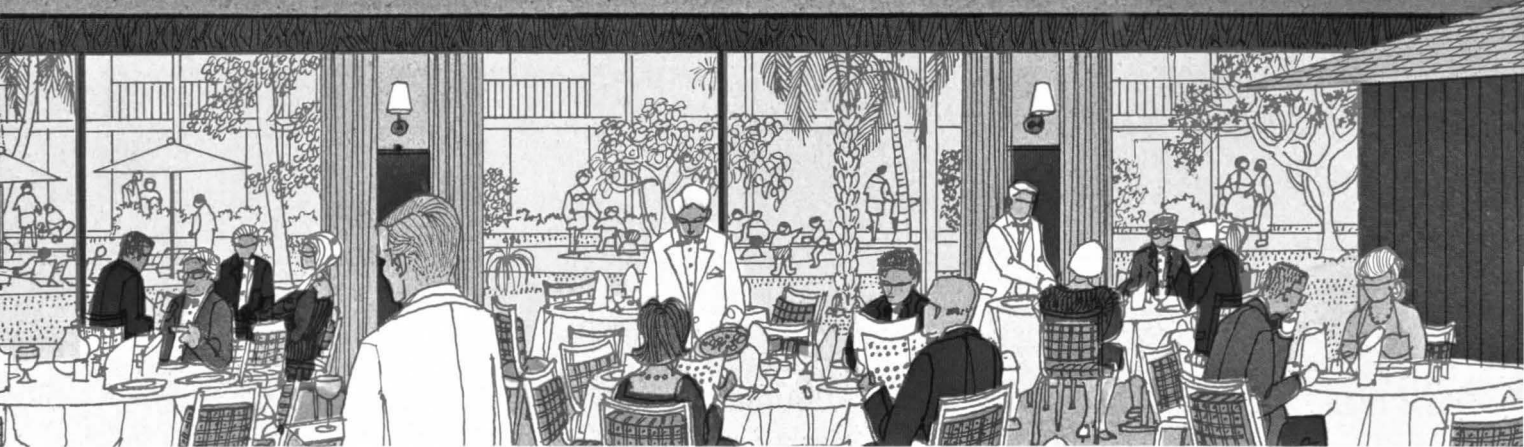
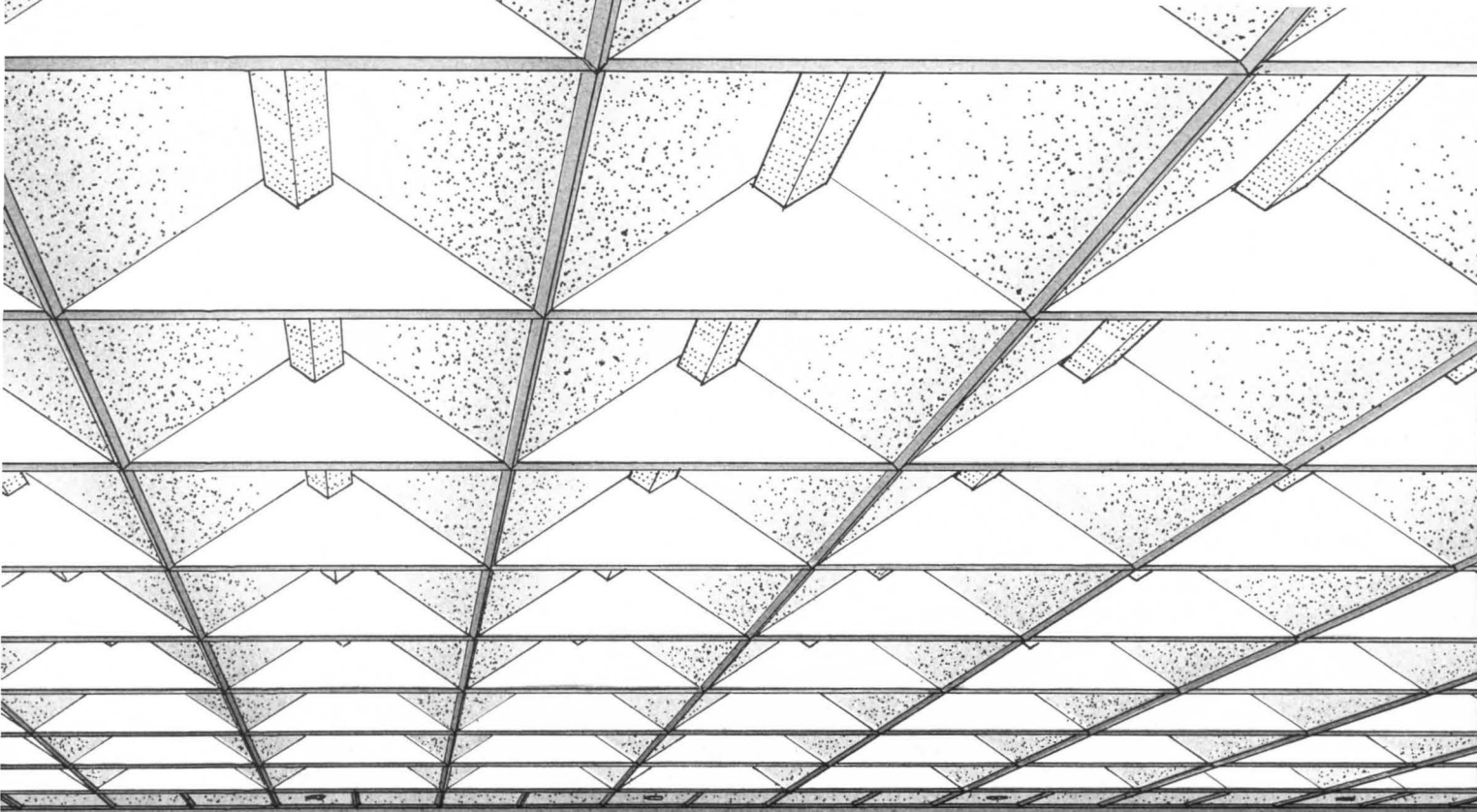
We have allowed our standards to be corrupted and few of us know any better. But there are *some* people who question them, and they're not all architects or planners by any means. At a recent seminar on "Designing the Urban Environment" one of the audience, a dean in the university sponsoring the program, asked the principal speaker, a noted architect, "What can you architects and planners do to keep the city from becoming overrun with automobiles and completely paved with concrete?" The "noted architect" loftily replied, "The automobile should be completely banned from the city"—and that was all he said. What a dusty answer to a soul hot for certainties—or at least to a perfectly fair and straightforward, even though a little naive, question. His standards were so perverted by his impossible ideals that he couldn't give a clean-cut reply.

So we let the convenience of the automobile, which means ourselves when behind the wheel, set our standards for planning. This is further evidenced by our placid acceptance of the noise and the stench generated by bus and truck traffic. Who or what, other than a diesel-powered bus, a public "convenience," would be permitted to pour out into the air of the community, the stinking blue fumes that scratch our throats, sour our lungs and bring tears to our eyes? Who or what, other than a diesel-powered truck, a twenty-ton monster snorting along at anywhere from forty to sixty miles an hour, would be permitted to split our ears and shatter our nerves with its soul-searing exhaust noise? No *man* would be permitted to so disturb and befoul the community. But it is the automobile: All hail; stink and snort as you wish!

For what else but the automobile would the sovereign state of California prepare to slash a gash through a mile of ancient redwoods, part of a forest purchased by contributions from people all over the country and given in trust to the state to form a living memorial to the dead of World War II? The destruction of the irreplaceable great trees is bad enough in itself, without being compounded by the breaking of a sacred trust and the violation of a war memorial. What kind of standards permit such acts of legal vandalism?

The dignity and privacy of a man is his most precious possession. Most men feel this deeply, as individuals. But collectively they forget it or wave it aside, or sell it for a mess of the pottage of convenience—and a mess is just what they get. Slipping, sloppy, sleazy standards are giving us a sloppy, sleazy environment in which it is becoming increasingly impossible to live in peace and dignity.





This visually exciting Armstrong Luminaire Ceiling gives new drama and comfort to the Cypress Room at the New Orleans Hilton Inn.



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Octagon Observer

News and commentary from headquarters and afield

Awards/Citing Collaboration

"It is an important milestone in the history of The American Institute of Architects to recognize collaborative achievement, and we, of the Seagram team, feel especially honored we should be the first chosen."

So commented Philip Johnson AIA upon learning that the firms and artists who participated in the creation of New York's Seagram Building, the Four Seasons Restaurant and the Plaza on which it rests collectively have been named to receive the initial Collaborative Achievement in Architecture Award. It is one of a number of honors, headed by the Gold



AIA's Gold Medalist for 1964 is Pier Luigi Nervi, Italy's "creative engineer" of concrete structures. Among his works: Port of New York Authority Bus Terminal at the George Washington Bridge



LOUIS REEMS

Medal, voted by the AIA Board for distinguished accomplishments in several fields.

Johnson, who was co-architect with Ludwig Mies van der Rohe FAIA for the Seagram Building and interior architect for the restaurant, went on to say:

"Collaboration, of course, has many meanings. In our case, the gamut ran all the way from Richard Lippold, a free and independent artist commissioned to do a free and independent work for the Four Seasons, to the General Bronze Company, whose talented staff of technicians made metal designs workable, practical and effective.

"All of those who worked on the building are collaborators in the broadest sense. The spirit of Mies van der Rohe, however, is nevertheless paramount in everything at Seagram's. Like the continuity of a great symphony, there are many individual players. Everything at Seagram's bears the stamp of Mies' leadership."



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"Total project (Seagram Building, above; Four Seasons Restaurant, left) demonstrates the collaborative achievement of the architect, the sculptor, the landscape architect, the industrial designer and the three basic engineering techniques—structure, airconditioning and lighting."—AIA's Collaborative Arts Committee

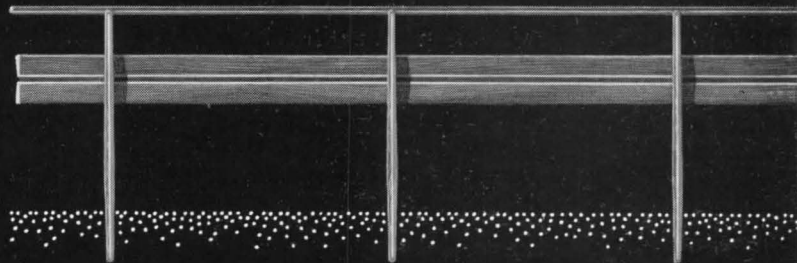
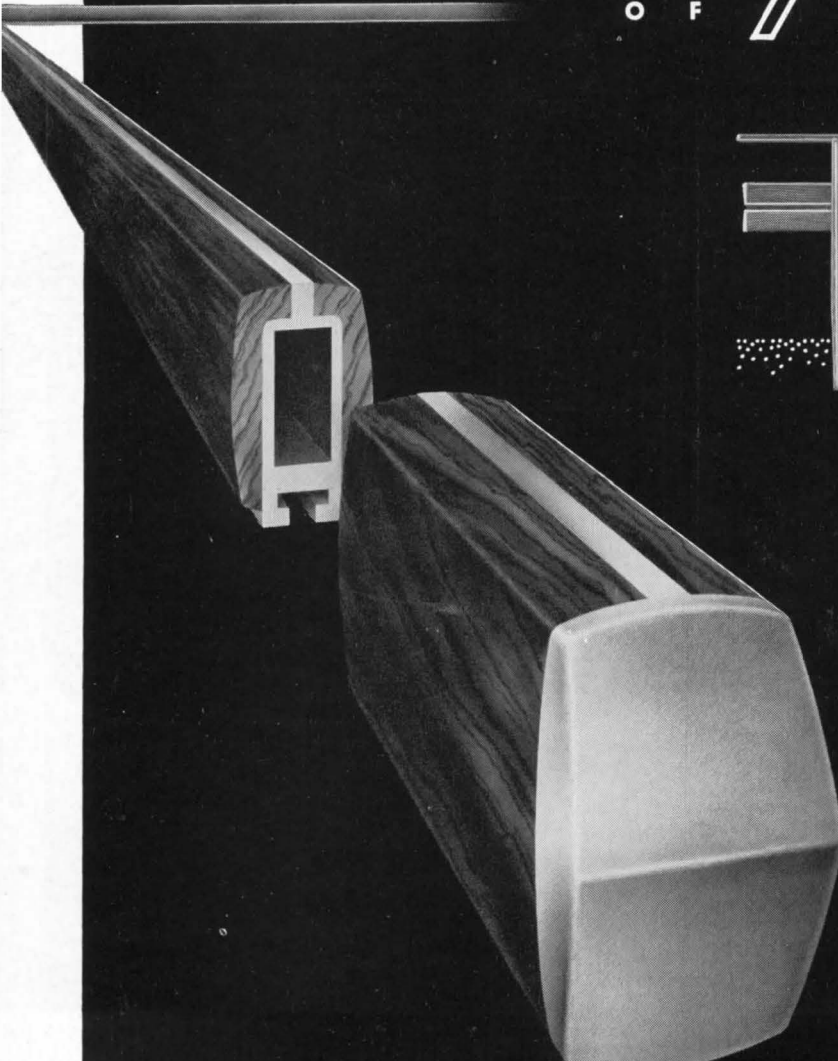
In addition to those already mentioned, the award goes to these participants: Seagram Building and Plaza—Kahn & Jacobs, associate architects; Severud-Elstad-Krueger, structural engineers; Jaros, Baum & Bolles, mechanical engineers; Clifton E. Smith, electrical engineer; Richard Kelly, lighting consultant; Philip Johnson Associates, J. Gordon Carr and Knoll Associates, office layout and furnishings; Karl Linn, landscape consultant; Bolt, Beranek & Newman, acoustical consultants; Elaine Lustig, typographical consultant; George A. Fuller Company, general contractor; and Phyllis B. Lambert, director of planning. Four Seasons Restaurant—William Pahlmann Associates, assistant design; Phyllis B. Lambert and Jerome Brody, president, Restaurant Associates, general planning; Richard Kelly (designer) and Edison Price (fixture designer), lighting; Karl Linn, interior landscaping; Marie Nichols, curtains; Emil Antonucci, graphic design; John F. McGowan Marble Company, marble wall design; Knoll Associates, furniture design; Edward Fields Inc, carpet design; John Langenbacher Co, Inc, woodwork design; Jaros,

Cont'd on p 12



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Octagon Observer *Cont'd*

Baum and Bolles, fountain effects; Garth and Ada Louise Huxtable, tableware.

Other awards to be presented during the AIA's annual convention in St Louis in June:

- Fine Arts Medal to Henry Moore, England's celebrated sculptor, whose series of reclining figures are among the world's best-known works of art.
- Allied Professions Medal to Lawrence Halprin, San Francisco landscape architect, who "brings to his original and basic profession of landscape architecture many other great and valuable gifts."
- Craftsmanship Medal to Jan de Swart, Los Angeles sculptor, "for his strangely beautiful objects made of wood and metal; the result of a combination of the work of the trained hand controlled by the enquiring mind."
- Industrial Arts Medal to George Nelson FAIA, New York City, who "has been outstanding over a period of many years in the sensitive designs of architectural interiors and their furnishings, as well as exteriors, and in the field of graphic and product design."
- Architectural Photography Medal to Baltazar Korab ("lens name" Balthazar), Detroit, whose work "in addition to showing technical excellence in strictly architectural photography, shows evidence extending the creative potentials of the camera through the projection of architectural models, as well as the use of various technical means to transform photographs into semi-abstract decorative murals."
- Architectural Firm Award to The Architects Collaborative, Cambridge, Mass. "This group of seven principals, all working together for a great number of years on widespread projects, best demonstrates the principles of shared responsibility to produce work of superior quality." TAC's seven: Jean B. and Norman C. Fletcher, Walter Gropius FAIA, John C. and Sarah P. Harkness, Louise A. McMillen and Benjamin Thompson.
- Edward C. Kemper Award to Daniel Schwartzman FAIA, New York City, for "significant contributions to the Institute and the profession."
- Citation of an Organization to the Educational Facilities Laboratory, Inc, a nonprofit corporation established in 1958 by the Ford Foundation.
- Honorary Memberships to these five men "for distinguished service to the profession": Dr Anthony G. Adinolfi, manager of planning for the New York State University Construction Fund; John L. Cameron, chief of the School Housing Section, Office of Education, Department of Health, Education and Welfare; S. C. Hollister, dean-emeritus of Cornell University College of Engineering; George McCue, art editor of the *St Louis Post-Dispatch*; and Henry Lee Willet, stained glass artist and proprietor of Willet Stained Glass Company.
- Honorary Fellowships to these seven distinguished architects of foreign countries: Eugene Beaudoin, France; Max Bill, Switzerland; E. Maxwell Fry, England; Luigi Moretti, Italy; Mario Pani, Mexico; Alfonso Eduardo Reidy, Brazil; and Sir Arthur Stephenson, Australia.

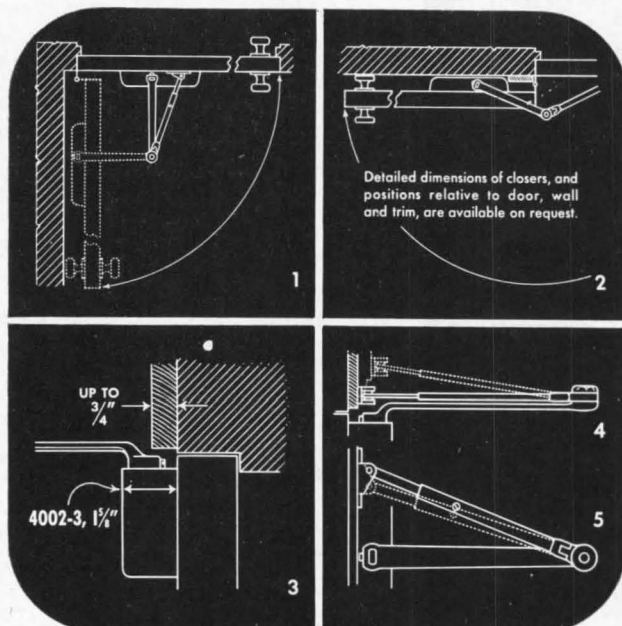
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Greek Furniture

WOLF VON ECKARDT, HON AIA

One Saturday afternoon, some thirty years ago, the interior and furniture designer T. H. Robsjohn-Gibbings was wandering around the British Museum.

He chanced to see a Greek bronze candelabrum supported by a seated girl.

Suddenly he noted the perfect form of her chair, or *klismos*, with its graceful, muscular legs sweeping upward from the floor. From that moment on he looked at painted Greek vases with new eyes, seeing chairs, couches, stools, chests and tables.

"It is difficult to describe my excitement," Robsjohn-Gibbings reports in his beautiful new book "Furniture of Classical Greece."* "I was familiar with all of the standard types and the fashionable periods of furniture. But they did not inspire me as a designer. I was beginning to see that time, status requirements, pomp and power had laid a heavy hand on furniture. Some of it was beautiful. Most of it, sagging with centuries of elaboration, was old and lifeless.

"On Greek vases I saw furniture that was young, untouched by time. *Klismos* chairs curved with the delicate grace of a new moon. Folding stools poised on deer legs. Lion claws of bronze supported tables. Vitality surging through the human figures on the vases, surged through this furniture. I had wandered unsuspectingly into a new world."

It wasn't long before Robsjohn-Gibbings had made some two hundred drawings of Greek furniture. He attempted to bring their timeless design to Grand Rapids. But ten years later he left its "greedy assembly lines and hungry home-furnishing floors to its own devices." He is now having authentic Greek designs made in Greece, having launched the effort with a dramatic exhibit of his recreations in Athens in the spring of 1961. His book shows us superb photographs of his sources for each reconstruction. It is just possible that it will start a new trend in residential furniture design. We need one.

We have, to be sure, some beautiful furniture of our own period. But there is a strange paradox: In our showrooms, offices and institutional lounges we find furniture and decor of such simple elegance and beauty that the word "classic" comes easily. The familiar repertoire of Knoll and Herman Miller—Mies' Barcelona chair, the designs of Charles Eames and Harry Bertoia, the pedestal furniture of Eero Saarinen and other pieces—has now stood up for so many years that it can scarcely be considered mere fashion. It constitutes an accepted and acceptable interior style as valid for our time as Chippendale was for his own.

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*Furniture of Classical Greece, by T. H. Robsjohn-Gibbings and Carlton W. Pullin, NY, Alfred Knopf, 1963

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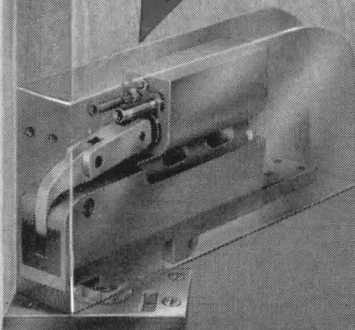
After many years of successful operation in their own installations, Ellison is now offering completely concealed, center pivoted door controls. These controls are to be known as No. 70 Double Acting and No. 71 Single Acting Door Closers and are compactly built for use in either wood or hollow metal doors without further need for external hinges or pivots.

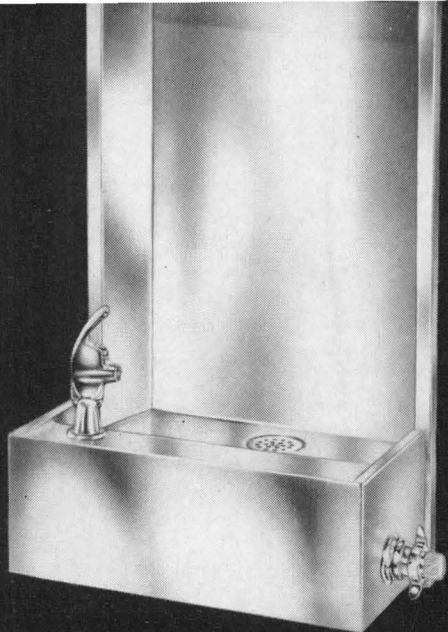
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The reason, I submit, is not that good modern is unpopular, but that the offices and institutions have preempted it. Who wants a living room that looks like the lobby of the Chase Manhattan Bank? At home we want to cease being organization men and express our individual personalities. We could do it in Danish, of course, and much of it is handsome, indeed. But that has been largely preempted by the Young Homemakers in their efficiency apartments. It somehow doesn't denote status. The intimation that one has arrived somewhere seems to call for more sumptuous interiors, for a hint of heirlooms and for a display of tradition, no matter whose tradition it is.

This may sound facetious, but isn't meant that way. There simply isn't any good, contemporary furniture or style that meets these legitimate residential needs. This is where some of the Greek designs Mr Robsjohn-Gibbings has re-created might fit in very nicely.

The first shadowy forms of this furniture, his book tells us, partly legendary, partly real, are described by Homer. The first actual forms found on vases of the ninth century BC are carved in replica four hundred years later on the frieze of the Parthenon. From about the sixth century BC Greek furniture stands revealed in seven basic models—throne-like chairs, stools, couches, footstools, tables, chests and the unique *klismos* chair. For the following three hundred years Greek craftsmen concentrated on their traditional forms and brought them to perfection.

Their authority and power transcend time. "In its highest development," says Robsjohn-Gibbings, "the furniture suggests the lean, sinewy modeling of an athlete, the grace of a wild animal in repose. Where constructional strength is increased at the intersection of vertical and horizontal members, the form assumes the frank beauty of a muscle in a shoulder or a thigh. Leather strapping instead of upholstery leaves the form bare. Never again would furniture be so joyous, so virile, so lucid. Never again would furniture forms reflect such total responsiveness to life."

To militant modernists the notion of recreating archeology may seem *abhorrent*. But the militants are dying out. Modern architecture has rediscovered history. Why shouldn't furniture? Classic Greek recreations are not the same as using Doric columns for modern, airconditioned bank buildings. It does not mean the adaptation of ancient temples to modern profane uses. Greek furniture still serves the same human body and the same concepts of simple beauty. And we could use new beauty and new life in the American living room. ■

Cities in Trouble

STEWART L. UDALL
Secretary of the Interior

Secretary Udall phoned the Editor the other day to thank him for the review of his current book, "The Quiet Crisis," and in the course of the conversation suggested that the AIA Journal might like to reprint this chapter from the book.

The urbanization of America has been a striking trend of the twentieth century. In Theodore Roosevelt's time we were still a predominately rural people; now we are predominately urban and we are become more so by the day.

Our cities have grown too fast to grow well, and today they are a focal point of the quiet crisis in conservation. The positive appeal of the modern city—the stimulating pageant of diversity, the opportunities for intellectual growth, the new freedom for individuality—have been increasingly offset by the social, economic and engineering problems that have been the by-product of poorly planned growth.

Under explosive pressures of expansion there has been an unprecedented assault on urban environments. In a great surge toward "progress," our congestion increasingly has befouled water and air and growth has created new problems on every hand. Schools, housing and roads are inadequate and ill-planned; noise and confusion have mounted with the rising tempo of technology; and as our cities have sprawled outward, new forms of abundance and new forms of blight have oftentimes marched hand in hand. Once-inviting countryside has been obliterated in a frenzy of development that has too often ignored essential human needs in its concentration on short-term profits. To the extent that some of our cities are wastelands which ignore and neglect the human requirements that permit the best in man to prosper, we betray the conservation ethic which measures the progress of any generation in terms of the heritage it bequeaths its successors. The citizens of our cities must demand conservation solutions based on the principle that space, beauty, order and privacy must be integral to its planning for living. As long as those designers and planners who might

lations increased by only 1.5 per cent, the population of our suburbs increased by 44 per cent. Even this flight to the suburbs—in part a protest against the erosion of the urban milieu—has had its element of irony, for the exodus has intensified our reliance on the automobile and the freeway as indispensable elements of modern life. More often than not, the suburbanite's quest for open space and serenity has been defeated by the processes of pell-mell growth.

Many mental health experts have offered evidence of the corrosive effects on the human psyche of the unrelieved tension, overcrowding and confusion that characterize city life. There is a real danger that the struggle with ugliness and disorder in the city will become so all-consuming that man's highest and most human attributes will be frustrated.

The prime business of those who would conserve city values is to affirm that such human erosion is unnecessary and wasteful; that cities can be made livable; that with proper planning the elements of beauty and serenity can be preserved.

Urban America has had, in Frederick Law Olmsted, its own conservation prophet and master planner. Lewis Mumford once called Olmsted "one of the vital artists of the nineteenth century"; he has had no peer in the US as a community designer.

Olmsted did his pioneering work in a period when the need for public playgrounds was not recognized and the art of city planning was largely ignored. In 1859, while Thoreau was noting in his journal that each town should have a miniature wilderness park ("a primitive forest of five hundred or a thousand acres where a stick should never be cut for fuel, a common possession forever"), Olmsted was already developing a design for a proposed "Central Park" in the heart of Manhattan Island, and thus began his career as a conservator of higher values in the city.

The key to Olmsted's genius was his insistence that all land planning had to look at least two generations into the future. His versatile talents found many outlets. For a time during the Civil War he headed up the United States Sanitary Commission, the forerunner of the American Red Cross. As a temporary resident of California, before John Muir arrived, Olmsted played a leading role in the enactment of the Yosemite park bill signed by President Lincoln in 1864—and some of his park-management ideas anticipated the subsequent standards of the national park system. He did land-use planning for San Francisco, Buffalo, Detroit, Chicago, Montreal and Boston. He was commissioned to landscape the grounds for the Capitol and the White House in Washington, and he designed the 1893 World's Columbian Exposition held in Chicago.

By orderly planning and provision for abundant natural areas, Olmsted believed cities could

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of God's handiwork that shall be to them, inexpensively, what a month or two in the White Mountains or the Adirondacks is, at great cost, to those in easier circumstances. The time will come when New York will be built up, when all the grading and filling will be done. . . . There will no suggestion left of its present varied surface, with the single exception of the few acres contained in the Park."

Central Park was a dreary stretch of rock and mud when Olmsted took charge. Working with nature, he tried to visualize and anticipate the growth patterns of a great metropolis. All effects in the park—trees, mounds, ponds, paths, meadows, groves—were carefully composed with an eye to creating life-promoting surroundings. Shrubbery screened out the works of man, and Central Park became an oasis where urban man could refresh his mind and soul.

Olmsted doggedly fought off the politicians and the well-meaning promoters who wanted to install on the grounds a stadium, a theater, a full-rigged ship, a street railway, a race track, a church, a permanent circus, a cathedral and a tomb for Ulysses S. Grant. In each victory he affirmed the primacy of park purposes and strengthened the idea that some parkland had to remain inviolate.

As his vision broadened, Olmsted became more than a mere planner of parks. He saw that urban design should include the whole city and provide diverse and continuous enclaves of open space, green gardens and public playgrounds. Had he been able to win support for his bold conceptions, the shape of many of our cities might be different today. His aim was to suit the city to the individual, and not vice versa, and perhaps his achievement of a healthy balance between the works of man and the works of nature in an urban setting is his most durable monument.

Despite the success of Central Park, the city fathers did not adopt Olmsted's most farsighted recommendations. Open space and elbow room cost money even then, and in a period of hectic growth the vision of a Frederick Law Olmsted was too advanced for the apostles of "progress."

The result was predictable. Like most of our large cities, New York fought a losing battle against congestion and blight, and Central Park today is a solitary symbol of what might have been. New York's failure to carry out Olmsted's plans meant that her second noted planner, the redoubtable Robert Moses (who began his public career in 1913) has had to concentrate largely on a costly and belated campaign to overcome earlier failures to plan. His beaches and parks have added immeasurably to the livability of New York, but inevitably they have been insufficient to keep up with the needs of the millions. His energies, of necessity, have involved bold efforts

that a paved road be built through the remaining narrow, unspoiled stretches of Fire Island.

Jones Beach—an imaginative solution to the mass outdoor recreation problem of a megalopolis—is perhaps Moses' supreme answer to the ever-present problem of overcrowding. However, the long delay in implementing Olmsted's ideas meant that New York City had passed up the opportunity to develop a whole series of Central Parks needed to provide an adequate outdoor environment.

Where, then, is the current battle line of conservation in our cities? What palliatives, what permanent remedies are available in the fight against congestion and decay?

It is significant that two of President John F. Kennedy's pieces of pioneering legislation have involved our cities: an act providing financial aid to urban areas for open-space acquisition and a proposal to assist cities in solving mass transit problems.

The Olmsted ideas are still applicable, and even today most American cities have unrecognized opportunities, both within their corporate limits and on their fringes, to save large and small Central Parks for the future. Every well-conceived urban redevelopment project offers an opportunity to create green spaces in the central city and avenues of action are open to conservationist city leaders and citizen groups who set store by civic beauty and are willing to levy sufficient taxes for environment preservation. They should invite the Olmsteds of our time to participate in the redesigning of our cities.

No attitude is more fatal today than the belief of some local leaders that economic salvation lies solely in getting new property on the tax rolls. Central Park cost something over \$5,000,000 in the 1850's. It is worth billions today, and much of its value lies in its ad valorem and esthetic enhancement of surrounding property. Money spent on a properly planned environment is an investment not only in future taxability, but in the physical and mental health of the residents.

If we are to create life-enhancing surroundings in both cities and suburbs, the first requirement is the power to plan and to implement programs which encompass the total problems of metropolitan regions. Air and water pollution, recreation and provision for adequate mass transit are regionwide problems, but in most areas action is hampered by legal impediments which actually prevent regional planning. As long as each city, county, township and district can obstruct or curtail, planning for the future cannot be effective. The cities and metropolitan areas that are devising new political institutions for regional planning are today's pioneers of urban conservation.

But local governments still hold the key to planning. Many zoning boards are as important as the courts. Zoning regulation should not

doze and presented an inviting target for developers working south from San Francisco. In the absence of adequate planning, checkerboard subdivisions made the remaining land difficult to farm and easy to exploit. Farmers were confronted by increasingly heavy taxes to finance the schools and services required by new residents.

Faced with the destruction of the valley's unique beauty, county planners and farmers evolved the idea of zoning the best orchard lands exclusively for agriculture. As they well realized, zoning is not a permanent answer to the problem, but it has saved many thousands of acres of farmland and provided breathing space for the subdivisions around them.

As the Santa Clara experience illustrates, an anachronistic structure which penalizes property owners who preserve open space or keep agricultural land in production is a serious impediment to sound land planning. The time has come for us to use the taxing powers of government as a creative force for conservation. Why not tax the owners of ugliness, the keepers of eyesores, and the polluters of air and water, instead of penalizing the proprietors of open space who are willing to keep the countryside beautiful? Open space and other socially beneficial land uses should be encouraged. The city of San Juan, Puerto Rico, has used novel tax laws to preserve the historic and picturesque "old city" by giving tax advantages to homeowners who remodel in conformance with the existing Spanish architecture.

Both zoning and tax incentives may be used to stimulate another method of saving open space: cluster development. By clustering homes and designing smaller yards immediately surrounding them, a developer can provide the customary number of dwellings per acre and yet preserve as much as one-third of a given area in its natural condition. This offers residents pleasant networks of wooded walks, stream-side parks and other recreation areas. This concept in a sense marks a return to the village greens and town commons of America's colonial period. Some communities in the United States and Canada have encouraged this kind of preservation of natural areas by requiring that a proportion of the total area in any new subdivision be dedicated to open space.

Another innovation in land planning is the conservation easement. In the seacoast county of Monterey in California aroused citizens secured the enactment of a state "open space" law in 1959, enabling cities and counties to purchase property, or easements on property, for the purpose of preserving pastoral landscapes. In purchasing an easement on open land, the public agency acquires a "right" from the owner, but otherwise leaves him full ownership and the property remains on the tax rolls. The "right" might be simply that the land remain in its natural state, as in the case of scenic easements. Usually an

Measures similar to the California open-space law have been adopted by several other states, including New York, Massachusetts, Maryland, Connecticut and Wisconsin. The last-named state, for example, has purchased scenic easements at very low cost to preserve countryside along the Great River Road down the Mississippi. In New York State a different kind of easement provides access rights for fishermen along many miles of privately owned trout streams.

There are other useful tools for land planning. Agricultural land, for example, can be purchased by a public agency and leased back to the former owner with the proviso that its pastoral character be maintained. Ottawa, the Canadian capital, has pioneered in the use of this technique. In order to control its growth pattern the National Capital Commission of Canada purchased a semicircular belt of farmland and open space to the south of Ottawa. The inner margin of this green belt is about six miles from the center of the city and the belt itself is two and one-half miles deep and embraces some 37,000 acres. Most of the original farming and open-space uses continue as before.

The city is bounded on the north by the Ottawa River, beyond which a wedge-shaped extension of Gatineau Park eventually will comprise 75,000 acres. Although some phases of Ottawa's park and open-space program date from the turn of the century, the greater part of the master plan was developed by the French designer, Jacques Greber, after World War II. Ottawa today is a metropolitan area that would be regarded as a model by Olmsted himself. About 300,000 people live next door to more than 100,000 acres of superb parkland and green space that provide a permanent corridor of natural beauty for the capital city of Canada.

As the result of a more recent master plan, the county which surrounds Phoenix, Arizona, has laid out, as a land bank for the future, a peripheral group of regional parks embracing some 75,000 acres.

Pioneer open-space legislation has been enacted in Connecticut, which encourages communities to lower taxes on open land, to buy land or purchase interest in it, and to lease back purchased land subject to restrictions—all backed up by financial help and by the power of condemnation. As in Massachusetts, community conservation commissions have been established and given broad powers to protect and enhance their environments.

Vital as parks and open spaces are, they alone will not save our urban areas. Inevitably, cities will continue to be predominately man-made, and urban conservation must include the artificial as well as the natural. The most beautiful American cities are notable not only for their natural landscapes but also for the design and organization of the buildings

buildings should blend with landscapes, and not vice versa; and Madison, his state's capital city, located among beautiful lakes and moraine hills, has made the most of its unusual terrain. Were he alive, Thoreau would have equal admiration for the 1,200-acre arboretum on Madison's outskirts, and a recently acquired 700-acre marsh within its city limits.

Such cities as Santa Fe, New Orleans and Boston have been set apart by the distinctive way in which their historical sections have been preserved; and the renewal of downtown Philadelphia is an exciting example of both urban rebuilding and the conservation of historical landmarks.

Thanks to L'Enfant's grand design of 1791, Washington is one of the few large American cities planned from its inception. It also is one of the few large cities that has avoided skyscraper blight; in order that the Capitol, the Washington Monument, and other Federal buildings should not be overwhelmed by taller structures, the height of buildings has been rigidly controlled. As a result Washington has retained a green and spacious appearance, and its physical scale puts a premium on human values. The city's skyline and its vistas are dominated by the domes, monuments, and cathedrals that declare the aspirations of the American people.

City planning should put people first. Autos, freeways, airports and buildings should not be allowed to dominate a city; each must take its own place in a balanced environment along with trees and parks, playgrounds and fountains. Just as there are certain areas from which skyscrapers should be excluded, so there should be more places where the automobile is off limits. Well-placed malls, plazas, promenades and gardens can become oases inviting delight and giving a sense of order to living.

The crowding of our urban regions has caused us to look with new interest on such "useless" natural areas as marshes and swamps. A few years ago the suggestion that swamps might help save our cities would not have been taken seriously; but residents of Washington, DC, Philadelphia, Madison and some New Jersey communities have established large areas of swamp and marshland as permanent nature sanctuaries. It takes a perceptive eye to see the miracles of life in the woodlands and bogs where our forefathers would have seen only another opportunity to subjugate nature.

In all phases of city development we need to give free rein to imaginative designers like Eero Saarinen, whose Dulles International Airport near Washington is attracting worldwide acclaim; or Nathaniel Owings, the main architect of San Francisco's glass-clad Crown-Zellerbach Building, located in its own park in downtown San Francisco. Public buildings, which are too often the scenes of shallow triumphs of penny-pinching officials, should set the

Long before universal double-decking and the overuse of vertical space make congestion intolerable, we must give more attention to the only practical alternative: the creation of new cities. The best of our "industrial parks" may point the way. Tax allowances and other incentives now encourage industries to locate in new areas in accordance with a master plan for land use.

Borrowing from the Ottawa pattern, some planners have visualized large urban constellations involving industrial parks, clustered housing, plentiful recreation areas and extensive green belts. These new cities should have a community life of their own and become creative centers of commerce and culture that would give priority to community living.

Innovations in technology are sure to provide opportunities for new kinds of urban planning: the development of nuclear reactors as a safe, cheap source of power; advances in air transportation; and the perfection of high-voltage, long-distance power transmission lines which will enable us to transmit electrical energy economically anywhere in the country will all aid the planners of tomorrow's cities. Together, these techniques will reverse the age-old process of locating cities only near waterways or along main arteries of commerce. Many planners are convinced that the principal hope for accommodating a much larger population in this country without impossible crowding lies in the development of new cities ranging from 30,000 to 300,000 people.

E. M. Forster once offered his countrymen words we might heed:

"If you desire to save the countryside there is only one way: through good laws rightly applied. . . . That is your only hope. A little has already been done: much more can be done in the future. It needs men of good will who can continue and work together lest destruction spread and cover the fields and the hills with its senseless squalor. Now is the moment. Soon it will be too late."

There is an unmistakable note of urgency in the quiet crisis of American cities. We must act decisively—and soon—if we are to assert the people's right to clean air and water, to open space, to well-designed urban areas, to mental and physical health. In every part of the nation we need men and women who will fight *for* man-made masterpieces and against senseless squalor and urban decay.

Like the mythical Antaeus, who was invincible as long as he was able to touch the earth, the urban American, if he keeps alive a saving reverence for the land, may accomplish a work of social engineering that will encourage the full participation of the best designers and artists and scientists and enlightened men of business in the building and recreation of cities in which the finest human instincts can flourish. ■



ST LOUIS—1964 CONVENTION CITY

Greetings from GEORGE KASSABAUM, *President, St Louis Chapter*

be your host for the 96th AIA convention while the rest of the citizens of our community will be celebrating our city's 200th birthday. As President of the Chapter, I am particularly happy to invite you to visit us in June, and help us make the most of both these events. Others will tell you about our program and our attractions—either of which should be enough to encourage you to make your plans immediately—and I will content myself with trying to hint at the intangibles that you might not know about.

Every major city has its reasons for bragging that it is historically, geographically and culturally significant. To some degree, of course, this is always true. It is just that we feel we are more so than the rest. Some of our problems, and most of our vitality, stem from the unique condition that makes us the East to

the West, the West to the East, the South to the North and the North to the South. Therefore, regardless of what you might be looking for, we have it, and we welcome you to any part of it with a hospitality that is exclusively earmarked St Louis.

We are what we are mostly because of the role the Mississippi River has played in our growth. It has been the source of our strength and of some of our problems. It remains so today. It made us strong because of the trade it carried and last year it carried more traffic than ever before. But it divided us, and the Illinois and Missouri parts were first linked in 1874 by Captain James Eads' remarkable and beautiful bridge. Now, we are being more closely tied together by a new Bi-State Development Agency which is beginning to coordinate the planning and thinking that have been divided so long.

Our past and our future are best symbolized by Eero Saarinen's 630-foot stainless steel arch that is in the process of rising at the point on the river bank that was chosen by Pierre Laclede in 1764 as the site for the city. But the river has given us more than exciting structures to see—it has given us a broad base of jazz that is today best expressed in a very fine form of Dixieland that can fill your evenings with fun and enthusiasm.

And for those of you that are still not tempted, our solid French background has given us strong cultural elements that will satisfy your desires as well. However, I am beginning to encroach upon the areas that others want to cover in this and future issues of the *Journal* as they, too, extend their invitations to come see us. Let me say that to some, St Louis is a slow, lumbering giant, but to others, a new awareness of the strengths and weaknesses that come from the conflicts and contradictions of our geography, background and traditions seem to be pouring together in a way that is creating a new city. It is for this reason that a theme which explores the forces that shape such a city are so appropriate to 1964 and to St Louis.

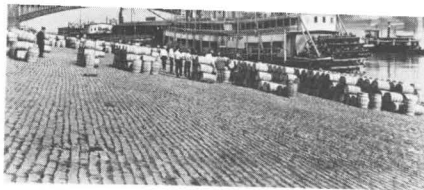
Come help us explore these forces. Come discover the new "Spirit of Saint Louis." Come and enjoy yourself.



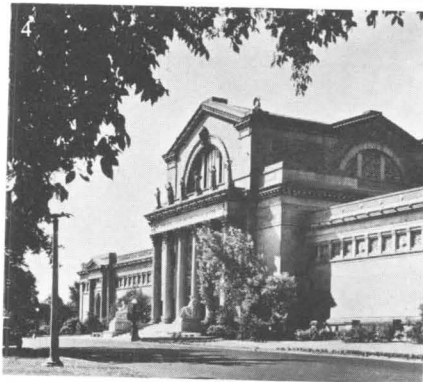
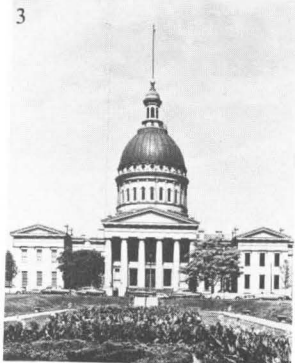
St Louis—the City Visible

In December 1763 a small group of men led by Pierre Laclede Liguist, came up the Mississippi “to form a settlement which might become one of the finest cities in America.” The settlement was established on February 15, 1764, at approximately the site of Saarinen’s great arch, the Jefferson National Expansion Memorial, which is now under construction.

Twice before has St Louis been host to an AIA convention: in 1895, when George B. Post of New York was President; and again in 1928, when Charles Herrick Hammond of Chicago was President. Now, in 1964, two hundred years after the founding of the city, St Louis proudly again welcomes the members of the Institute from coast to coast. ■



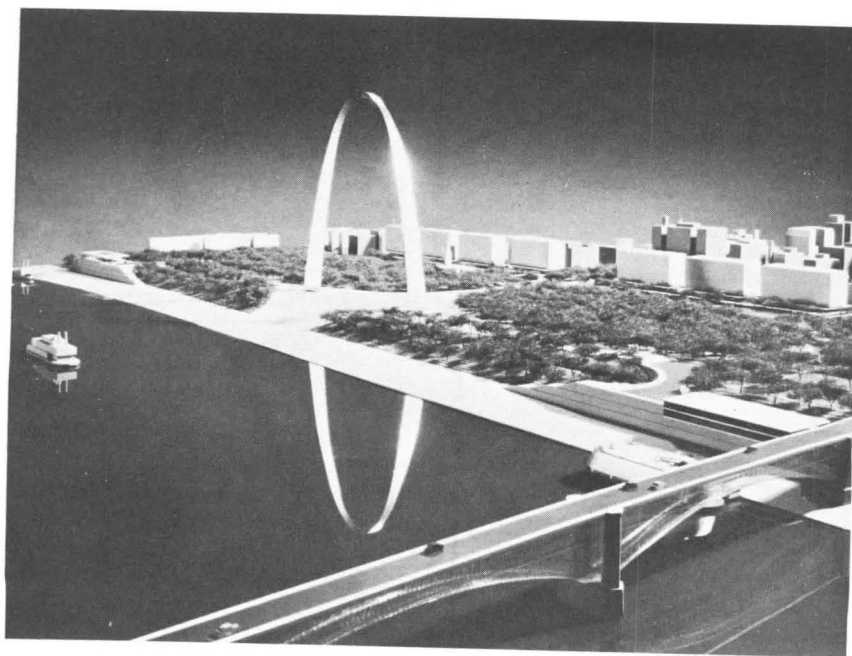
Gaslight Square, three blocks of restored Victorian shops and cafes, where all St Louis wines, dines and parades every night



- 1 Old cathedral, designed by Norton and Laveille, 1834*
2 Levee on the Mississippi River
3 Old Court House, 1840 (?)
4 Art Museum, designed by Cass Gilbert, 1940
5 Home of Eugene Field, now a museum
6 A 20th century riverboat—the SS Admiral, scene of the AIA Riverboat Party Tuesday evening of convention week



Jefferson National Expansion Memorial, designed by Eero Saarinen





HISTORIC PRESERVATION—A Pragmatic

ROBERT J. KERR II

Mr Kerr, formerly Executive Director of Historic Annapolis, Inc, is now Vice President of the Corinthian Conservation Company, Inc, of Annapolis, a firm concerned with renewal and development programs in small urban areas of distinctive character. This article is based upon an address he gave before the AIA Committee on Preservation of Historic Buildings

Everybody is familiar with the early efforts of the Mount Vernon Ladies' Association of the Union in their historic battle to preserve Washington's home and plantation from oblivion. In a sense I think that this early struggle set the tone and the technique of later efforts at what we might call "monument" preservation. Here an architectural feature had been directly related to a great historic figure. As time went on, architects and historians identified and promoted interest in structures which were either linked with great historic figures or were in themselves great moments in the history of architecture in America.

In the meantime, Europeans were concerning themselves with much the same problem, but were arriving at much different solutions. For instance in Paris during the nineteenth century it had already been recognized that the appearance of the city was not simply based on a collection of isolated monuments, associated with great figures or great moments in human or architectural history. Whole street-scapes were recognized as valuable and as a consequence were "frozen" in appearance as it were—an anti-progressive beginning for the concept of "area," rather than single-unit, preservation, but nonetheless a beginning.

However, in America our historians and architects still continued the process of "monument" identification. In particular, we concerned ourselves with single units and hoped to map the course of American architectural development through recourse to

identification of national or regional "greats." In all of this we were caught up in the process of stylistic identification and even more, the concept of the value of "antiquities." Unfortunately, such a process tends to equate mere age with esthetic value. Out of this has come what I call the "cult of the colonial." At first, anything built in the colonial period was deemed worthy of preservation. (Technically the "colonial period" is that time before 1775, but in the lay mind the term colonial seems often to encompass the Federal style and period, as well as the later Greek Revival style.) Even today we have Historic District Ordinances such as the Annapolis ordinance, that define, as architecturally and historically valuable, structures which date prior to 1800. This affection for early American architecture was responsible for beginning attention to the problem of historic preservation. And this was a great contribution. But in our own day, as historic preservation has become popular and socially acceptable, we find too often that love of antiquities becomes an excuse to avoid the problem of making esthetic judgments about not only what our own age is producing, but what has been the supposed "dark ages" from 1800 to the advent of Frank Lloyd Wright.

Probably the most horrible aspect of the "age-value" equation is our current fear of judging the production of our own time and age. Existing criteria for evaluation of preservable qualities, including the National Park Service and National Trust criteria, generally evade evaluation of anything created within the past fifty years. What cowards we are to fear the judgment which future generations may pass on our own esthetic evaluations. To err in judgment is certainly human. But let us hope that future generations will have the divine quality of forgiving our errors, if indeed we are brave enough to make them.

As I see the preservationist in the 1960's, he is fearless in the face of a highway or thoroughfare which might threaten an isolated, but locally signifi-



Approach

cant country house. But he becomes timid at the thought of demanding the conservation of structures of indigenous architectural character faced with demolition in the path of an urban renewal project. (Witness the total loss of the Old Oak Street section of New Haven.) For every country house which the DAR, Colonial Dames or Junior League (bless them) may save, we daily stand to lose literally hundreds of characteristic urban dwellings and shops. For example, in New London, Connecticut, an old and historic seacoast town, the local renewal authority identified nineteen units in a ninety-acre project in the historic district as worthy of preservation. (And the majority of these were public buildings or churches.)

If we can begin to recognize that we must find viable contemporary *uses* for preservable structures as a part of the urban problem-solving process, we will soon find that our cities are not losing their characteristics of environment and setting for human enjoyment and profit. But we must make historic preservation something more than an antiquarian's plaything.

I have been encouraged recently by the attention being given to architecture of regional importance. The San Franciscan is as much concerned with the preservation of what happened after the earthquake as is the *Easterner* with what happened before the American Revolution. If we can just educate the *Easterner* to the values which the San Franciscan sees in the architecture of the "teens," we will have made a long step forward toward a true retention of the continuum of architectural styles and historic periods which makes up not only the total process of architectural development in America, but the intrinsic characteristics of American cities.

Let us assume that we can bring about this millennia, what of contemporary design? Just as we argue for retention of the past (even in some cases for the totality of the past), we must work to en-

patible scale, materials, colors, textures, fenestration. These are often *elusive* elements of the architect's design vocabulary, but they are easier to capture than is often argued.

The architect and the urban designer have much to learn from the past. For example in Annapolis, as in many other early American cities, it was never a sin to design multiple uses into a building, nor was it a crime to make a market house, a public necessary or a tobacco prize house beautiful. The older Georgian and Federal houses along our antique commercial streets were traditionally used as shops on the street floor and residences on the second and third floors. In spite of the fact that shop shutters were put up at dusk in eighteenth century Annapolis, there must have been more night-time activity in the "CBD" than today when our zoning code frowns on secondary residential use for structures in a commercial area.

Again, the characteristic siting of buildings in eighteenth century Annapolis placed the facade on the line of the public way, reserving the screened interior of the lot for gardens, dependencies and other housekeeping necessities. What a handsome arrangement of space! Beauty, utility, privacy, human scale, contrast of open and closed spaces, diversity of uses—exactly the desirable aspects of urban character which we hear the urban design theorist urging on the contemporary designer as the key to creating humanly responsive urban environment.

And what of that twentieth century monster, the automobile? I would hate to hazard a guess at the number of preservation projects which have "come a cropper" in conflict with the parking lot or parking garage. In earlier, characteristically pedestrian days, roads and highways were utilized to move men and their loads from place to place, generally by the shortest, most direct route. For example, if you walk in Annapolis, your course is made easy by the city's seventeenth century radial street pattern and the lateral alleys and pedestrian ways which cut across the various radii, separating pedestrian and vehicular traffic in a very simple but effective way. Try to drive through this same radial system. Your passage is controlled by an intricate and confusing series of one-way streets and your progress is impeded by curb parking on both sides of a fifty-foot (or smaller) roadway. But certainly the scale of our older historic precincts is such that large areas can be given back to the pedestrian by the simple expedient of fringe parking and insistence on pedestrian circulation.

I think that I can safely say that the preservationist is in grave danger of being knocked off his present precarious perch near the top of the heap if he doesn't face up to the facts of contemporary urban life and its attendant problems. As our British friends would say, he's got to "put himself in the

for subjective reactions to specific buildings, areas or objects. Perhaps the greatest contribution the preservationist can make to the history of man and his progress (if you accept that nineteenth-century materialistic thesis) is to educate our own age in the heightened sensitivity necessary to arrive at subjective esthetic evaluations. It has always seemed to me manifestly ridiculous to try to make the preservation decision on the basis of a numerical "point score" arrived at by weighting certain objective criteria. The *reductio ad absurdum* of this attitude is, "What happens to the highest flunk—what happens to the building with a raw score of 64, when 65 is passing?"

Further and perhaps most important, let us realize that at base, the effort toward historic preservation in urban areas is a design problem and a design asset to the architect and planner.

To paraphrase the late President Kennedy, the preservationist, the planner and the urban designer should "think not what urban renewal can do for preservation, but rather what preservation can do for urban renewal." Too many preservationists look on urban renewal, city planning and public housing programs as tools for accomplishment of preservation ends. My charge to these people is to reverse this attitude. Let's begin thinking positively of what historic preservation and architectural conservation can do to accomplish the goal of the elimination of decline, deterioration, blight and urban ugliness.

Even the July 1962 revision of the Urban Renewal Manual notes that preservation of historic *areas* may well be a consequence of the application of techniques of conservation and rehabilitation in urban problem solving. Why not a more positive statement that historic preservation and architectural conservation are solutions in and by themselves?

But if the architect and the planner are going to make the best use of the essence of this historic fabric of the city, they must know whereof they speak. There is no substitute for knowledge of the existing qualities in a given area. As Charles Peterson FAIA has well said, thousands of dollars are spent for fancy, four-color renderings of the new urban utopia, but rarely is an official penny spent for preliminary study and investigation of existing qualities and character.

Even if the designer knows what he has to work with, "colonial millwork" is not the design solution. Out of his knowledge of the historic fabric of his project area, the designer must apply his creative talents to reinforce the existing image and moreover provide a compatible contemporary embellishment to the essential fabric. By combination, re-combination and new composition he must arrive at a contemporary design solution which gives due respect to the larger and enduring qualities of his project area.

the world to know.

1) The preservationist must recognize the timeless quality of architectural innovations. Although these innovations are of the ages individually, they are for all ages to know. We must insist on preservation of the architectural continuum, up to and including our own production.

2) We must cast away the crutch of pat, objective criteria for the judgment of preservable quality. We must judge a building in terms of its local sentimental attachments, its intrinsic esthetic qualities, its functional or economic utility and its greater relation to the environment within which it exists.

3) We must work for compatible contemporary solutions to modern-day problems with due recognition of the role which historic preservation, and architectural and environment conservation may play as design foci.

4) We must press for adequate mandatory study of architectural and spatial qualities, design elements, pictorial groupings and vistas and other related elements as a regular part of any urban renewal survey and planning process.

5) We must work to educate the layman to recognize the integrity of the effort toward preservation of the true essence of the historic or architectural fabric with which we are dealing.

6) We must push for professional recognition of the fact that every preservation problem is unique and as such requires an individual solution. Much as we can learn from the experience of others, there is no substitute for imaginative and creative analysis and solution on an individual basis.

7) Preservation of structures and areas of intrinsic architectural, historic and environmental value should be made a national policy, not only of the AIA, but of all Federal agencies which offer assistance to local efforts to combat blight, decay and obsolescence.

8) The AIA should initiate an educational series, perhaps as a part of the current urban design series which the *AIA Journal* is now carrying, to promulgate historic preservation and architectural conservation as viable design solutions for urban problems.

In closing I would like to recall a statement made by Cornell's Barclay Jones at a recent Annapolis Roundtable Conference, "The Growth of Historic Towns." After two days of discussion (and I might say heated debate) Professor Jones summarized a major aspect of the Conference discussion by noting that the architect seemed to be the "bogeyman" who had most often inhibited the preservation movement. Let us hope that in some future conference the architect will be acclaimed as the great innovator and contributor to preservation progress. ■



in Bend Sin

THROUGH THE MARTINI GLASS

Mr Bendiner has recovered nicely, thank you—the Editor had dinner with him and his Betty last week. So here he is again—needless to say, what Bendiner says he says on his own!

THE BIG CLICHÉ today is picking on America and Americans, just because we are slobs, and eat out of tin cans and refrigerators and throw stuff around and have billboards, car dumps and junk heaps.

Curiously, the leaders of the crusade to save Americans from themselves are a couple of English architectural magazine critics who have flown over, flown around and flown back and saw nothing but mess. Of course anything an Englishman says is Gospel to the New York newspaper and magazine authorities so the slicks carry the message to the teacup and handkerchief-in-the-sleeve set who can read. They form committees, parade and picket and are generally annoying with high-pitched voices on television and radio.

Being raised as a careful, considerate and courteous boy, because my family was immigrant and scared of their European shadows, I now react and throw papers into the fireplace and don't always take my hat off when a lady enters the elevator. It is very sad and I believe that my generation is responsible for the crummy situation in which we find ourselves.

But taking a lot of lip from the Limeys is more than I can bear. I have recently visited London and

ness and are aping us at our worst. Hyde Park on a Monday is as paper-strewn and sloppy as Central Park after a parade. Their car junkyards are smaller only because they have fewer and smaller cars. The countryside has irritating signs and they are getting more speedways, and London and the suburbs are a hopeless mess of traffic. The war-scarred areas around Saint Paul's are now rebuilt with as unimaginative and dull skyscrapers as ours and in most ways you can't tell London from anywhere else except for the Bobbies and the buses and the human-sized taxis, thank goodness.

So, I guess, you can't tell anybody to go back where they came from because where they come from is now as junky as where they are at.

The scum which we live in is our own making and what with American ingenuity we'll work it out. We now throw all garbage into the sink grinder and all paper, whisky bottles and tin cans into the incinerator. Of course automobile and truck bodies, planes and corset stays don't melt so easily and they have salvage value so it's harder to stash them. But the kings of the junkies, the top slovenly dogs, are the State, Local and National planning boys—you know the type.

Take the locality around Independence Hall in Philadelphia and the other National Shrines, for example. The whole section was bulldozed flat, leveling a considerable portion of the old colonial city, so that a hundred years from now it will all be restored. But having leveled the place, without bombing, the area is now rotting under the junk of destruction, and the added mess of papers, bottles and rubbish. It's one of those "Progress" deals where the visiting firemen are taken around like a Russian Intourist program and skirt the mess which is available only to journalists. If the Authorities flatten something they should clean up and plant the eyesore.

The Critics scorn suburbia, gasoline stations, "Hamburger Heavens" and "googie" architecture. Architectural critics manufactured the term and I guess it means anything which they don't like. So you can hang it onto anything from a hot dog stand to the Pan Am building and the knowitalls will understand and ruffle their refined septums. I can understand the English critics' low opinion of American architecture every time they have to get a visa from the American Embassy in London. That is king-size googie architecture, and while you may be able to clean up automobile dumps and eradicate road signs

tarnished enough and is not the most bombastic note. The interior is even worse since the beloved privacy of the English office is gone and the place is as intimate as Grand Central Station. In all fairness we should let the English drop a googie Embassy right opposite the White House.

The googie haters are the ones who gave us googie in the first place, ballyhooing loudly for everything Bauhausian and glassy and concrete and modular—and certainly, no more swags and garlands and Ionic capitals. Well, here we are, a horrible mess, and pray what do the critics extoll as beautiful examples of pride and character which we should go back to? Jefferson's Monticello, with its quiet classic dignity, Boston's Louisburg Square and Beacon Hill, with their charm and elegance? It is to laugh. No architectural magazine today would publish anything with classic dignity, charm or elegance.

Of course, all this wrath, indignation and trouble in the tribes about the acceptance of Modern Architecture stems from the fact that it hasn't fully made the grade, even yet, and there is a lot of jealousy because just everything isn't designed by the latter-day Saints. But what is most surprising is the dead silence with which the profession has met the savage onslaught of the critics of the new House of Representatives Office Building—Harbeson, Hough, Livingston and Larson, architects.

It seems that "every time I come to town the dogs start kicking my boys around." It is fair game for Congressmen, newspaper columnists and publicity hacks to blat-off about anything which has controversial publicity value, but when architects start bleating about the other fellow's style and eclectic inspiration it is time for me to step in.

Any architect knows that a building is something which is not easily designed, what with a client at your elbow; nor is it easily built with public funds what with everybody guarding the loopholes; nor is it readily accepted what with the "goodies" trying to get jobs for their favorite style specialists.

A good building should represent the spirit of the times in which it was conceived and the HROB by H2L2 is a good example of what I mean. The architects were selected for this job way back in 1955 AD because the firm had fine accomplishments in the classic style. In 1955 the country was under the conservative spell of that great President Mr Dwight David Eisenhower (my Boy) and one thing you can say for Mr Eisenhower, he didn't butt in on Architecture and design on the backs of envelopes, or impose his office on the Profession. (All you liberals and advanced thinkers, lie down.)

Bud Livingston of the firm of H2L2, tells me that when they went into consultation with the Committee from Congress the orders were "Don't come

That was nine years ago and the Congressional Committee was dead right. When the building is finished and the trees and shrubs are planted and the fountains are playing it will look swell and everybody, well almost everybody, will be perfectly happy. From the level of the Capitol Plaza the building looks right in scale and is in keeping with the surroundings. For Capitol Hill is "derivitive classic" and should remain so.

Suppose the advanced boys had won out. What would we get? Another elongated British Embassy or miles of Arab grilles, a bubble gum blowup, a lot of San Gimignano towers, or worst of all, one of these Bauhaus concrete fortifications which take too much translating and explaining. I believe that the solution of a "no runs, no hits, no errors," job is a much better solution. And I guess that the "long-hairs" will have enough of a problem being content with the new "supermarket Cultural Center" which will soon vie for honors with the staid Lincoln Memorial.

I am one of the few dopes who doesn't care about politics. I have been told often enough, by my betters, that I should care. But usually the goodie who is badgering me about "our awful Congress" is somebody who couldn't even get put on a parent-teacher committee.

I have great respect for constituted authority and all other professionals and I don't envy them their jobs. I feel that they should be surrounded, architecturally, with the dignity befitting the office, particularly on Capitol Hill in Washington.

For Washington is something special and should be off-limits to anything which has not been tried out successfully elsewhere. Washington is mostly kid-stuff and designed to impress school kids and a lot of oldsters who never have gotten very far past childhood, and being able to impress school children is, in itself, an achievement.

My first and most lasting impression of Washington was when I went with my High School class in 1916. We were taken to the Capitol office of our district Representative William Ditter. So I guess the big office and the aura surrounding Mr Ditter and the big scheme of the Capitol and all Washington gave me my first feeling for the impressiveness of Rome's grandeur. If you want Greek glory and simplicity you may put on *your fillet* and stand in reverence in front of the Lincoln Memorial and if you want Modern you may enjoy the Teamster's Union Building. There's room for everything in Washington, but Capitol Hill should stay Roman.



ED NOTE: Word has been received at press time that Al Bendiner died March 19, ending a full, fruitful life.

Howard Ketcham, Inc, is a color-design-illuminating engineering firm in New York, which has served as consultant to many architects and to many corporations. "Take that new Pan-Am Building," Mr Ketcham says. "Think how it would look in a Venetian bronze color with the sides done in sun-bright gold or in agate green." We are using more color in our buildings, but are we using it effectively?

ADVANCES IN TECHNOLOGY, aided by the pressures of urban dwellers, alert politicians, ambitious planners and a number of architects, have signaled the end of the Age of Soot. But unfortunately, as the air clears in our crowded metropolitan centers, another problem comes into the light: ours is the Age of Drab.

It is sadly apparent that imaginative use of color, so long avoided as an economic risk by architects, builders, mortgage lenders and industrial tenants, is not being employed to make the dramatic reappearance of our cities "a thing of beauty." One type of gloom is being replaced by another, and the people who work and live in the cities will be the ones to suffer from it for years to come.

In every city in America, the human need for a clean living environment is bringing about effective air-pollution laws, slum-clearance projects and urban-renewal programs. Cities as infamously smoke-bound as Pittsburgh and St Louis have emerged into a newly-cleaned atmosphere with old buildings scrubbed and new ones erected in record time. But the beautiful dreams of the city planners and the city dwellers are being realized without the most important human elements of warmth, friendliness and graciousness. The cities we are building for the rest of the twentieth century are almost totally devoid of the color planning that would make them pleasant, inviting places to live and work.

The basic human need for the psychological benefits of color is obvious and undeniable. The smart clothes we select, the cheerful furnishings of our homes and our response to flowers, trees and sky are just some of the indications that color brightens and refreshes, soothes and stimulates. But architects, builders and manufacturers of building materials have generally ignored this need, or have attempted to cater to it with surprising lack of knowledge, taste and training for the appropriate application of color.

New buildings rising everywhere in urban centers are examples of almost indiscriminate use of colors and materials, without regard for the total effect they give, and with precious little understanding of the impact of the colors used on the people who will be seeing them.

The architects cannot be held fully responsible. They are not color authorities. They have not been

trained to utilize the chromatic scale with the same dexterity with which they employ the T-square. If any architect devoted as much research to the impact of architectural color as he does to new structural concepts and design trends, then we could expect buildings, areas and whole cities to be color-planned as integral units. This would assure that each building would have pleasing and effective uses of color, and in turn, each would be harmoniously blended with neighboring structures through skillful color choices. But this is the job of the color engineer with his specialized knowledge and skills.

Admittedly some architects are well aware of the limitations of their own competency. Konrad Gatz and Wilhelm O. Wallenfang in their book, "Color in Architecture," state that "the most important aspect of architectural design is color. Buildings depend on color for a distinguished and attractive appearance." They go on to add, "Architects, builders, craftsmen, artists, designers and manufacturers of building materials have been striving to find color solutions which are permanently pleasing to the eye and technically sound. However, uncertainty in matters of color expression and inadequacies in material and execution have led to unsatisfactory results in most cases." They are realistically calling for the services of the professional color-engineer, when they add that "architects are held back by a lack of reliable knowledge and experienced understanding of color."

At a time when much lip service is being offered to the improvement of the total community picture, the architect and builder who select colors and materials are peculiarly limited in the results they can achieve. The architecture we see all around us is damning evidence that the manufacturers of building materials have avoided any serious attempt to improve color standards or color coordination. They have been followers, not leaders. They take the line of least resistance rather than assuming the leading role in setting new standards for their own industries. The limits that they impose on the economic possibilities of building design and appearance are all too visible in every vista. The total city scene, as viewed by twentieth century sightseers, from the air, or from a high vantage point anywhere, is dull and uninspiring, blotched by the colorless masses of raw new structures. Whether due to cautious conservatism, timidity or flat disinterest, the prevalence of such monotony is the most compelling argument for coordinated color planning as an essential step in creation of the spirited modern city.

Until the camera was made practical, in Lincoln's time, and released a flood of black-and-white pictures of the world's personalities, treasures, distant scenes and architecture, it was generally understood

produced in black or a mournful brown until their discrimination atrophied. In our century, tolerance has been accorded to pallid, aseptic structures that are no more appetizing than unbaked bread.

Just last summer, Americans who succumbed to the annual temptation to revisit Paris shared a delightful surprise. Without disturbing the true patina of the ancient architecture, the accumulated grime from those smoking chimneys beloved of garret painters is being gently washed from the monuments of the City of Light. Many of these had, of course, already been floodlighted for night display, much as prized landmarks have been illuminated in New York. The result is that all can now enjoy, for the first time, the full impact by daylight or floodlight of the glorious original tones of gold and other colors on old buildings. Color is also used on many new structures which are gaining a foothold in the Paris scene. A large note of thanks must go to the New York architect, Lathrop Douglas, working in association with Paris architect, Pierre Graber. Their design for the new Esso Standard S. A. F. office building in the Place de la Defense specified a distinctive and attractive cobalt blue. Other colorful Paris structures include the new airport buildings in green accented with bright yellow awnings, and the Saint Gobain Glass Company's buildings in metal and glass. The regilded domes of the Sorbonne and the Invalides, and the newly touched-up flèche of the Sainte Chapelle look particularly effective upon the newly-cleaned appearance of the structures themselves. The Luxor Obelisk in the Place de la Concorde, twin of ours in Central Park, now glows as richly rose-hued as though it had never left the undefiling atmosphere of Egypt. National treasures that have been long loved in ghostly monochrome can now be admired in all their glory by new generations. Color has resumed its rightful role.

In other parts of the world, too, color in buildings is an accepted tradition. Mexico City offers a great number of functional examples of the imaginative use of color in architecture. One of the most outstanding is Juan O'Gorman's library of the university, resplendent with bold, brilliant ceramic murals decorating its exterior walls. Many modern buildings in this old country wear bright colors that blend, in the best of taste, with the traditional Spanish stone and adobe structures. These intense colors are well adapted to a climate where dazzling sunlight tends to obliterate more delicate shadings. In most parts of our own country, these same colors would not be appropriate, of course, but there is no reason why the principles of good color planning for architectural beauty should not be applied to American towns and cities. Francis Keally has skillfully transplanted the glorious faience tile colorings of Iran in that country's new embassy in Washington.

be controlled in manufacturing processes to the subtlest degree, therefore the acceptance of the man-made materials and products opens new fields of choice, matching, blending, etc. for the skilled color consultant. The range of effective color standards can be correspondingly widened.

Our new buildings should be colorful, as well as exciting and imaginative. Color is a powerful agent in the creation of attractive structures, as well as in the vitalization of the urban scene. The developers and builders of new structures and neighborhoods should have the assistance of qualified consultants in implementing the highest standards of color selection and styling. When color is skillfully handled, a building can be multi-hued: the choices of application and architectural enhancement are without number. When costs must be closely watched, there should be in building materials and products an acceptable range of colors (even color co-ordination plans) offered for the architect and his consultant.

The colors to bring our architecture alive will come from manufacturers to architect to the completed buildings.

Effective color-engineering offers architects, builders and materials manufacturers important benefits. Some of the specific advantages that the proper use of color provides in architectural application include:

- To accent a building by the use of alternating colors
- To translate the scale of a large building to more normal dimensions, especially in relationship to its surroundings, by division of areas with color
- To accentuate window areas through the use of color
- To effect a better visual emphasis (or suppression) of such elements as doors, shutters, shades, railings, eaves, etc. through expert allocation of color
- To provide a more appropriate contrast of different building materials via color

Color is a property of form, and it is through color that all forms first reach the eye, and through it, the emotions of the beholder. Color is also the language of forms, and good color articulation can provide a structural form with a characteristic and pleasing "personality." The impact of color in our total environment enormously influences us for better or worse, emotionally, and even physically. Whether employed for its esthetic values or for its functional uses, color must be correctly chosen and co-ordinated. It should create interest without distraction; a change of pace without jarring contradictions, unity without recourse to simple uniformity. These are some of the contributions of the trained color engineer who uses color skillfully to articulate and enhance today's architecture in terms that human eyes, human minds and human emotions can understand, respond to and live with. ■

In Praise of the Ladies

ROBERT E. KOEHLER

takes a look at the Institute's helpmates



New Orleans: This is a dancing city indeed—and not only during the Mardi Gras! One night each year, generally in mid-November, the citizens dress up and dance at the auxiliary's Beaux Arts ball to aid an architectural student at Tulane

*T*he women's auxiliaries of The American Institute of Architects, fifty chapters strong from coast to coast at the last official count, got their start in 1941—thanks to the men of California. It was in the preceding year that members of what was then known as the State Association of California Architects invited their wives to attend the Monterey convention, during which a delegate suggested that the ladies, like their counterparts in the other professions, might do well to consider some kind of organization.

As a result, the San Francisco and East Bay auxiliaries were formed simultaneously “to promote unification and advance the profession of architecture.” A review of the activities of a number of these groups, generally known as the Women's Architectural League of the corresponding AIA chapter, reveals they are doing just that—so well, in fact, they now are traditionally scheduled on the national AIA convention program, beginning with the Dallas meeting in 1962, for the purpose of exchanging organizational ideas.



TER Mrs J. A. Thompson, Mrs Gerhardt Kramer, Mrs. Donald L. Freeman and Mrs H. Kingsland Graf makes final plans for a tour of six projects to bolster scholarship fund

St Louis: Hostess for '64

When the architects' wives, plus a sprinkling of women graduates of accredited schools of architecture, meet for their third auxiliaries meeting (Chairman: Mrs. Frederick Sternberg) during the St Louis sessions June 14-18 in the Chase-Plaza Hotel, they will be in capable hands. For the hostess auxiliary, although it has been in existence for less than four years, got off on solid ground when it keyed its program to this major goal: to stimulate and promote art in architecture.

One of its initial projects, financed by more than \$1,800 raised through an arts and crafts exchange, was the compilation of an illustrated directory listing fifty-five artists and craftsmen, whose work was exhibited at a reception when the publication made its debut. Upon seeing the directory, George McCue, art critic of the *St Louis Post-Dispatch*, was prompted to write in his column:

"Architects have been making increasing cause with artists in St Louis buildings, but the two have heretofore lacked a point of contact. The directory is intended to open up new possibilities of enrichment of building surfaces and spaces, and to statements in scale in the artists' means. The WAL has thus proved itself to be more than an mere social auxiliary to the St Louis Chapter AIA and to be interested in tangible service."

To continue the art-in-architecture theme, the St Louis women sponsored an exhibit of AIA-designed buildings, along with models and photographs of works of art to demonstrate what a successful marriage between architect and artist can produce. Again, the subject was introduced at a membership meeting—three are held each year—through a panel discussion by the Director of the St Louis Art Museum, a school art superintendent and two AIA members (one was the moderator).

The auxiliary's projects go on and on: arranging TV-radio appearances and speaking engagements (example: a library lecture series) for AIA members, promoting the profession on high school career days, sponsoring an essay contest among Washington University architectural students.

Elsewhere: Public Service

While every chapter has an activity of which it is particularly proud, a few of the more significant ones are singled out here or shown in the accompanying photographs. In Portland, Oregon, a public forum on "Let's Build a House" made such a hit that it has become an annual affair. The four sessions of each series emphasize the value of professional services through panelists who include architects, a landscape architect, a decorator, a builder and a financier.

The Utah auxiliary set up an extensive exhibit in the lobby of Salt Lake City's Hotel Utah last fall, illustrating the



Orange County: Students and their instructor display winning models in an architectural design and drawing competition co-sponsored by the auxiliary and the Orange County Chapter AIA. Awards were made at a dinner meeting; models went on exhibit at a gas company gallery

DON BUSH



handiwork: oils, water colors, block prints, ceramics, wood carvings, seed mosaics, etc.

The Pasadena chapter has donated a continuing collection of slides on award-winning structures and other noteworthy work, believed to be the only one of its kind in the area, to the Pasadena Art Museum. About twenty-five slides are added each year to the collection, which is available on loan.

Another California auxiliary, Central Valley, has among its critics a successful two-day seminar entitled "Sacramento Living—Decade '60" in the city-owned Garden and Art Center. The discussions were complemented by models and drawings of AIA members as well as arrangements by landscape architects and interior decorators.

Across the Land: Help for Students

One of the most popular, and most deserving, activities among the auxiliaries is the raising of scholarship monies for architectural students or supporting an educational project on the high school level. Especially noteworthy is the New York chapter which in a single year presented \$5,000 in scholarships to Columbia University, Cooper Union and Pratt Institute through such fund-raising events as the annual Doric Debutante Cotillion; tours of architects' homes, museums, churches; fashion shows, teas and related programs.

The Dallas wives count their annual contribution to the Texas Architectural Foundation as one of their major accomplishments and turned over the \$1,500 netted last year from a home tour. By coincidence, this is the same amount raised by the Southern California chapter for its scholarship fund at the University of Southern California. The 1963 seven-house tour included that of author Irving Stone.

In Baton Rouge the auxiliary aids a fifth-year student at Louisiana State University; and in Seattle the ladies sponsored a dinner-dance to beef up their education fund, from which they purchased a film strip on architecture to be used at the junior high school level.

The Austin auxiliary has used part of its sinking fund to purchase books—at least twenty titles—and the AIA-produced guidance film, "Designing a Better Tomorrow," for high school libraries. The ladies screened a list of suggested books from such sources as the University of Texas College of Architecture, AIA members, public school art and guidance supervisors.

Finally, the East Bay women, prime movers in the auxiliary movement, initiated a high school design competition in 1954, open to second- and third-year students in four counties. The design problem is written and judged by the Awards and Scholarship Committee of the East Bay Chapter AIA, with the WAL scholarship chairman serving as an additional juror. In addition to three cash prizes (\$50, \$35, \$20) and ten merit awards, all winners receive certificates plus a year's subscription to an architectural publication.

The AIA and the profession, as well as the ladies, apparently owe a debt of thanks to the men of California who, after all, got this whole thing going! ■

April 1964



Santa Barbara: This WAL can claim an AIA Fellow, Lulah Maria Riggs (far right), as its advisor. She stands at the staircase of the Fernald house with Mrs J. F. Strickland, Mrs Williams C. Hall and Mrs Robert Ingle Hoyt, hostesses for the "casa tour" of the Santa Barbara Historical Society

San Joaquin: A prestressed concrete sculpture created by Carroll Barnes now stands in the forecourt of the Fresno Arts Centre because of the chapter's \$500 gift, the result of three years of fund raising



I was impressed by the spirit in which you are discussing our efforts, and I feel the obligation, along with my thanks, to send you some remarks which may be of some interest.

You are right in stating that I am not interested in buildings if they are isolated from their environment. I do believe that on the surface of the earth we have five elements to reckon with: nature, man, society, functions and finally human settlements which are serving the four previous elements. If we had only man we could speak of isolated buildings, but we have now to deal with society, as we cannot live without it, and therefore, we cannot isolate the building from its environment just as we cannot isolate man from society.

You are right in assuming that the failure of the architect coincides with the era in which he has been produced by schools. I think that the tradition of the Ecole des Beaux Arts, which in a peculiar way tried to make the architect an artist by teaching him design and not construction, has been quite responsible for this. The very fact that today many of our schools are called Schools of Architectural Design shows that we are paying too much attention to the aspect of design which is just one technique of expressing what is important, ie, architecture itself. I think that it is quite dangerous to continue to educate architects at the top of the pyramid; we certainly have to educate them. There is no time any more to learn our craft from the lower level up without passing through schools; we have to pass through schools since it is only then that we can receive the accumulated experience of the past and the present in the best possible way. Yet, the spirit in the schools should not be the spirit of training the master builders of the future, the people who have been trained to create the big monument, the big impressive building; it should be the spirit of training the people who will serve man in all his architectural needs from the smallest, cheapest house to the largest and most expensive buildings. We have to learn to build from the bottom up. In the past we learned it on the site, we were "tectons" and gradually we could have turned into "architectons" or master masons. Now we have to learn how to rise from the lower level up in schools, but the schools have to be oriented to that in the same way in which military schools do not train generals, they train the lower officers who can fight. The best among them are going to turn into generals some day.

I think that your remark that the bulk of my experience has been with the needs and problems of Eastern and African peoples is right, if you refer

but also large metropolitan areas which are quite international in their character. Greece lies between East and West, between North and South, in the crossroads between developed and underdeveloped countries; it is a country where several types or areas of civilizations and phases of development meet together. This was my first big school. The fact that I was able to live for long periods in the West and to travel for long periods in the East has helped me to understand better the over-all problems. From the time I was able to conceive the problem of human settlements as a universal one and not as one related to a certain area and locality, my eyes have begun to open.

You are right to say that when I speak of the architecture existing in the countryside of many, if not of all, countries, I actually refer to what is called indigenous architecture. The message I want to transmit, however, is that this indigenous architecture which most people believe is expressing local traits, has also very sound ecumenic characteristics. This is proved by the fact that we find the same expressions in the indigenous architecture of areas as far apart as the Himalayas, the Mediterranean, Africa or South America. I am becoming more and more convinced about it. The pre-architectural, indigenous expressions have many more ecumenic, universal characteristics than we thought.

And now on Clayton's article. I think it is a very good one, it does justice to the effort and I don't have anything to add, with only one exception: I was impressed by his remark that "one could argue that the Symposium participants were carefully selected by Doxiadis." Although Clayton himself dismisses this assumption, I thought it was my obligation to you and to myself to check on my list and this I did for the first time, although certainly subconsciously I may have done so in the past. These are the conclusions, which may be of some interest to you: Out of the thirty-three participants, I have worked at times in the same organization with only two. I have also collaborated with four more, and I had met or cooperated in international meetings with sixteen more, and I had never met eleven. Thus, apart from the high intellectual level of the participants which guarantees, I think, our conclusions, I think that we could say that out of thirty-three people only two had personal interests which could coincide with mine while the other thirty-one had either opposite professional interests or no professional interests at all. May I also add that some people had already expressed publicly strong doubts about my ideas and a few accepted to join only after receiving some assurance that there was no commitment of any one to agree in advance with any ideas of the others or to reach an agreement with the other participants. ■

ARBITRATION OF DISPUTES—II

Arising from Architectural, Engineering and Construction Contracts

GERALD AKSEN

This concludes the article commenced in our February issue by the Vice President and General Counsel of the American Arbitration Association

THE ARCHITECT'S POSITION with an owner may assume as many as three different postures. Primarily his task requires advising the owner on any and all problems concerned with the construction itself. Second, an agency relationship is created in dealings with other persons on behalf of the owner. The third and most unique role is revealed by the AIA practice of making the architect the interpreter of contract conditions and the judge of its performance. In this latter capacity prescribed by the standard "General Conditions of the Contract for the Construction of Buildings," Article 39, the architect renders decisions analogous to those of an arbitrator. However, these decisions by the architect are subject to further arbitration (except matters relating to artistic effect). For the purposes of this paper any comments concerning arbitration assume that we are beyond the architect's decision realm of Article 39. This entire discussion is based on the type of arbitration covered by Article 40 of the General Conditions.

Every form contract recommended by The American Institute of Architects contains a clause for arbitration of disputes. This fact should indicate the importance that is attached to arbitration by the architectural profession. Essentially, the recommended arbitration provision allows the initiating party to commence the arbitration under the standard form of arbitration procedure of the Institute, or of the rules of The American Arbitration Association. Although the arbitration clause, in its present form, is widely used, there are certain problems that the attorney representing an architect should realize before he commences an arbitration.

One of the main advantages of arbitration is the speed with which it can be concluded. This quick

adjudication can only be achieved through the use of well-established arbitration machinery. Delays can be prevented only when there is some administrative tribunal to oversee the routine problems that may occur.

For instance, initiating an arbitration under the procedures of the AIA requires that the two disputants jointly designate either a single arbitrator or three arbitrators. This submission to a third party, in theory, should work perfectly. In practice, however, it is the unusual circumstance where both parties willingly, quickly and efficiently cooperate to name and appoint their arbiters. Indeed, it would be a rare occurrence for an owner to take such affirmative action when an architect is seeking his fee for the construction and supervision of a building with which the former is completely dissatisfied. As a result, haggling and delay are created, not over attempts to negotiate or settle the dispute, but merely over the names of the persons who may possibly sit as the arbitrator.

This dilemma can easily be overcome by resort to the arbitration procedures of the AAA. These rules provide a standard procedure under which impartial arbitrators are selected with or without the cooperation of the disputing parties. Under AAA procedures the party may name an arbitrator or specify a method by which the arbitrator is to be appointed. If for any other reason the appointment cannot be made from the submitted lists, the Association will appoint an arbitrator from among its national panel members. Under these procedures, opportunities to delay the hearings are cut to a minimum.

Judge Bernard Tomson, author of the book, "It's the Law," stated that a properly formulated arbitration clause must contain four essential items:

- 1) A provision that "any agreement arising out of this contract or from the breach thereof shall be submitted to arbitration."

Resort to the standard arbitration clause recommended by the AAA accomplishes all four needs in a recommended sentence which reads as follows:

Any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be settled by arbitration in accordance with the Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

Point 3 is taken care of in AAA Rule VII, Section 39, which provides that all notices may be served by mail, addressed to the party or his attorney, at his last-known address. Obviously, such service by mail offers a great convenience as it affords an easy method of acquiring jurisdiction over a respondent. This section of the rules has often been upheld by the courts as providing sufficient notice to comply with the various requirements of due process. Contractual consent is the foundation for the validity of the rule. In *Bradford Woolen Corp v. Freedman*, 71 N.Y.S. 2d 257 (1947), all notices under AAA rules were served by mail outside of New York State. The place of arbitration was set in New York by the Arbitration Association, as administrator. On a subsequent motion to confirm the award, notice of which was also mailed, the respondent claimed lack of jurisdiction. The court, after stating that AAA rules were incorporated by reference to the contract said ". . . service of the papers by mail gave sufficient notice to respondents, both at the arbitration proceedings proper and on this application, to bring forth objections from them as to jurisdiction."

The beneficial results flowing from such a rule when attorneys are faced with the problem of execution in another state are quite clear. A sister state judgment based upon an award rendered in an arbitration proceeding initiated by a notice served by mail pursuant to AAA rules is entitled to enforcement under the general principles of full faith and credit. See, for example, *Mulcahy v. Whitehill*, 48 F. Supp. 917 (D. Mass. 1943).

Failure to designate a state wherein the arbitration will be conducted is amply cured by Section 10 of the Commercial Arbitration Rules which permits the administrator to determine the locality where the arbitration shall be held in the event that the parties cannot agree on an appropriate locale.

Usually, the place where the arbitration is to be held is not specifically designated in the arbitration agreement because the parties desire such matters to be determined by the agency administering the arbitration. Provision is then made for such an exigency by referring to the rules of the arbitral agency mentioned in the contract.

Proper selection of the arbitration locale is important not only because of the convenience of wit-

Often, however, in contracts between parties in different states, there is either no provision for possible future locale problems, or in the alternative, it is impossible to ascertain in advance of the dispute where the most suitable place would be to conduct the arbitration. Where the arbitration agreement provides that the hearings shall be conducted in a certain place, any such provision naturally prevails and will be honored by the arbitrators, *Corpus Juris Secundum* 2d, Arbitration & Award sec 22, p 164.

The authority of the AAA to provide for determination of the locale where the parties cannot agree was upheld in *Staklinski v. Pyramid Electric Co*, 172 N.Y.S. 2d 224, aff'd 6 App. Div. 2d 565. 180 N.Y.S. 2d 20 (1st Dept. 1958), aff'd 6 N.Y. 2d 159, 188 N.Y.S. 2d 541 (1959). Here the court said:

Respondent agreed to arbitrate pursuant to the rules of the American Arbitration Association. Those rules (III, section 10) provide that if the locale of the arbitration is not designated in the contract or submission, or agreed upon by the parties, "the administrator shall have power to determine the locality and its decision shall be final and binding." Respondent thus voluntarily permitted the fixing of New York as the place of arbitration.

All arbitrations under the AIA form documents, when administered by the AAA, are conducted pursuant to the Commercial Arbitration Rules. Copies of these rules are available at the main office of the AAA which is located at 477 Madison Avenue, New York 22, New York, or at any one of its regional branch offices. The regional offices are located in: Atlanta, Boston, Charlotte, NC, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Hartford, Los Angeles, Philadelphia, Pittsburgh, San Francisco, Seattle, Syracuse, Washington, DC.

The arbitration is initiated by either party to the contract. For instance, if there is a dispute between an owner and an architect, either party may initiate proceedings by serving notice on the other of a demand for arbitration. The Association has forms available for such purposes. Information in this demand should include the nature of the claim, the type of relief that is being sought, and the applicable arbitration provision of the contract. One copy should be sent to the other party and two copies forwarded to the nearest regional office of the Arbitration Association, together with the appropriate fee called for in Section 47 of the Commercial Rules. Once the above has been accomplished, all further administration will be handled by a tribunal clerk of the Arbitration Association.

Should you represent a party upon whom the demand is served, the rules allow you seven days within which to make an answering statement. Should no answering statement be received by the Association, it is assumed that all claims will be denied.

the Association to submit the names of the prospective arbitrators to the parties to enable them to make a mutual selection.

One of the key advantages for using AAA services rather than AIA procedures is in this very area. The standard arbitration procedure of the AIA provides that the parties to the dispute agree upon and jointly designate the arbitrator. If, however, the parties fail to agree, then the American Arbitration Association will designate the arbitrator and the proceedings shall be administered by the Association. As a practical matter, this AIA procedure is unrealistic and ineffective. Once a dispute has arisen, parties will rarely agree to anything and will certainly have difficulty arriving at so important a decision as the selection of the individual whom they both consider impartial enough to decide their dispute. Although adequate safeguard is provided by having the Arbitration Association take over the proceedings once there is a deadlock as to the person chosen to arbitrate the dispute, the delay in arriving at this point often causes difficulties in the general administration of any further arbitration proceedings.

To give parties to an AIA contract the most acceptable arbitrators, the Association maintains a Panels Department with the sole task of thoroughly reviewing each panel member before he may be used as an arbitrator. No one may serve as an arbitrator who has any interest in the outcome of the proceedings, either financial or personal. Even after the appointment has been made by the Association, either party may offer a factual objection which, after consideration by the administrators, may result in the removal of this arbitrator from the case.

The parties are given at least five days' notice of a scheduled hearing. Attorneys, particularly, favor AAA procedures which allow them to indicate their preferences for the time of the hearing on a calendar which they receive when the case is initiated. This enables the attorney to schedule the arbitration at a time when it is convenient for both his client and himself to attend the hearings. Attorneys may obtain adjournments or continuations from the tribunal clerk whenever necessary.

The place where the hearings will be conducted is also at the disposal of all parties concerned. If the hearings are to be held in a city where the AAA maintains an office, it has comfortable, convenient hearing rooms readily available for use.

The hearing itself is conducted in very much the same manner as a hearing before a court referee. However, strict rules of evidence do not apply and a stenographic record is not kept, unless mutually agreed to by the parties.

The arbitrators, not being bound by strict rules of evidence or procedure, are usually quite liberal

neers and contractors will do well to bear this in mind, for it will undoubtedly relieve anxiety and obviate needless argument. The best technique in cases of this type is to be well prepared with visual aids, if possible, such as working drawings of the particular building or fixture therein which is the cause of the dispute.

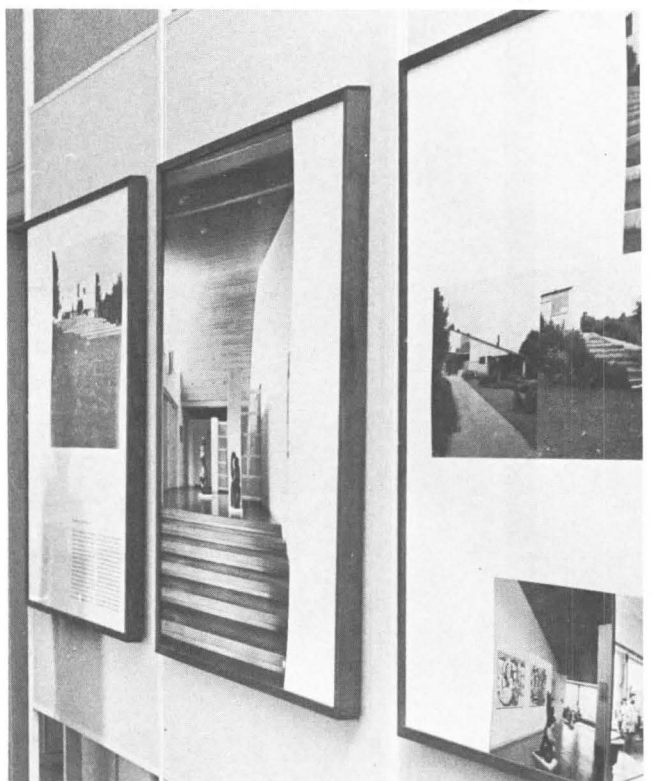
Normally the complaining party or his counsel presents his claim and proofs and his witnesses, who are then subject to question and other cross-examination. Thereafter, the defending party, or respondent, or his counsel presents his defense and proofs and his witnesses who then submit to questions and examination. The arbitrator may, however, at his discretion, vary this procedure, but he must afford full opportunity to all parties and their counsel for the presentation of material or relevant proofs. The making of opening and closing statements and the submission of briefs and memoranda are also within the discretion of the arbitrator.

Unless the parties have agreed otherwise, the arbitrators may not conduct an ex-parte investigation of the building site under dispute. This is extremely important to remember because in many controversies arising out of AIA construction contracts, both the parties and their attorneys desire that the arbitrator view the premises to better understand the claims and counter-claims being made. In order for the arbitrator to make this visual inspection, he must do it either in the presence of the parties or must have their express permission to visit the area independently. In the event that the parties, or any of them, are not present at the inspection or investigation, the arbitrator shall make a verbal or written report to the parties and afford an opportunity for the receipt of comment and/or testimony in relation thereto.

After the hearings are closed it is usual for the arbitrators to reserve decision. Under the AAA rules, however, the award must be rendered within thirty days from the close of hearings.

If the parties happen to settle the dispute during the course of the arbitration, the arbitrator may, upon mutual request, set forth the terms of the settlement in an award.

An attorney representing either an architect or engineer or contractor at an arbitration will discover that there is no conflict between arbitration and the law. Rather, he will have available another form similar to, but more informal than, hearings conducted before an administrative agency. Architects have proven their interest in and desire for arbitration by the inclusion of the arbitration clause in all the form contracts of the AIA. Attorneys handling these cases must become familiar with these procedures so as to acquire another tool for rendering a service to their architectural clients. ■



AIA First Vice President A. G. Odell Jr, FAIA; Second-floor exhibition area displays works of Aalto, also noted Richard Neutra FAIA; G. E. Kidder Smith FAIA for his furniture design and as an industrial architect

AN EXHIBIT of photographs of the principal works of Alvar Aalto, 1963 AIA Gold Medalist, was opened by a reception in the Octagon House on December 10. Since the guest of honor was unable to be present, the exhibit was opened by His Excellency Richard Rafael Seppala, Ambassador from Finland to the United States. After expressing his gratitude to the AIA and to the Smithsonian Institution, which will circulate the exhibit nationally, the Ambassador said:

“In city planning, Aalto had a free hand when the capital of Lapland, Rovaniemi, was completely destroyed in the last war. He planned and made this city, which now is rebuilt, a beautiful and modern community. Recently, a new city plan by Aalto was adopted for our capital, Helsinki. Some of the buildings of this plan are already under construction but it will take years for it to be completed. Once this work is fulfilled, Helsinki will be one of the most monumental capitals of the world, where Aalto’s works will stand side by side with those of the late Eliel Saarinen.

“Aalto derives his genius, in my opinion, from two main sources. He has his roots deeply in the Finnish nature and a sharp and unfailing eye for its beauty. Therefore, even the factories he has designed are like monuments raised in the right surroundings. The second source is his love for wood, which is our national material. Aalto uses wood in the most ingenious way, not only in furniture but also in the buildings. You will find other of his abilities exemplified in this outstanding exhibition.”



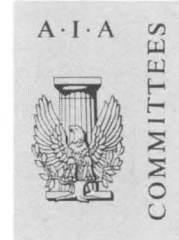
Ambassador Seppala addresses the reception from the Octagon’s staircase

Most of the photographs in the exhibit were taken by G. E. Kidder Smith FAIA, winner of the AIA 1963 Medal for Architectural Photography. Smith also designed the layout of the exhibit panels and wrote the introductory text and captions

THE AIA POLICY STATEMENT ON CODES AND REGULATIONS RELATING TO BUILDING

—Where Do We Go From Here?

RAYMOND ZIEGLER AIA



Commission on Professional Practice
William W. Eshbach AIA, Chairman
Committee on Building Codes and Disaster Studies
Ralph O. Mott AIA, Chairman

THE AIA BOARD OF DIRECTORS at its September 1963 meeting adopted as an Institute policy a Statement on Codes and Regulations Relating to Buildings. A policy is "a definite course of action adopted and pursued." The Board has done its part; the chapters and members must now pursue this statement to make it effective as a policy of the profession.

The statement was prepared by the Institute Committee on Building Codes and Disaster Studies after several years of observation.

Historically, too few architects have participated in code writing activities, often maintaining an aloof or detached attitude. Meanwhile engineers, building officials, insurance companies, trade associations and special interest groups have been busy formulating laws, codes, ordinances, rules and regulations at every level of government.

More architects in recent years have become interested in the code problem through a desire for preservation of their professional integrity and their practice of architecture. Their practices were being circumscribed by a maze of overly restrictive and conflicting laws, and of overlapping jurisdictions. Hence it became the policy of the Committee on Building Codes and Disaster Studies as well as its predecessor committees to attend meetings of code formulating groups such as the Southern Building Code Congress, the Building Officials Conference of

America and the International Conference of Building Officials. These committee representatives only observed and could not comment or contribute, because the AIA had no policy except to observe and report. It was these observations and reports that led to the formulation of the statement.

The statement reads as follows:

The AIA believes that codes and regulations relating to buildings must provide for reasonable protection to life, health, property and the general welfare while permitting the exercise of individual initiative on the part of the architect in selecting and improving design, materials, equipment and methods of construction in buildings. The AIA believes that codes and regulations relating to buildings should:

- 1) be based on proven needs and be so written that adequate performance for the use intended is the test of acceptability
- 2) be written by competent professionals representing broad experience and balanced viewpoints in order to prevent such codes and regulations from becoming overly lengthy, unnecessarily restrictive, subservient to special interests or dictated by administrative convenience
- 3) be administered by a single agency on the local level in order to prevent overlapping jurisdiction
- 4) provide remedies, for all who might be aggrieved, through an appeal board including competent profes-

The word "reasonable" in the opening paragraph of the statement is purposefully included. A most expressive statement illustrating this point, but related to automobiles, was made by John F. Gordon, President of General Motors, while addressing the National Safety Congress in Chicago and appeared in *Time Magazine*, October 27, 1961: "In terms of safety the ideal car for today's superhighways is very likely an eight-wheeled box lined with foam rubber and plated with several feet of armor; the driver should be strapped in like an astronaut in a space capsule. . . . It is completely unrealistic even to talk about a foolproof and crashproof car. . . . An automobile must still be something that people will want to buy and use. . . . Safety, in any environment from a bathtub to a bomb shelter, is a relative term, not an absolute. We can only design to the greatest degree of safety that is consistent with other essential functional characteristics. . . . we must depend on intelligent use.

Safety and Reason

The AIA urges its members to have regard for human safety in planning of structures to the point of recommending, where deemed essential, measures beyond the minimum of building codes, laws and ordinances.—FROM AIA DOCUMENT I-101-B, AIA POLICY STATEMENTS, 1960 EDITION.

Are our present codes really good safety guides? All codes and regulations, even those that specify products, justify their existence for reasons of safety. In fact, however, the building codes have become a handbook for design whereby unqualified persons can, by following the book produce a *safe* structure that will be forever ugly and useless, but so strong it will not have the grace to quietly disintegrate and blow away.

The architect looks to a building code as a guide to safety in buildings. But as Senator Goldwater has stated, apropos of our expanding building codes "In every instance the increase of governmental power—with its companion use of the force of government to control—works to limit the variabilities of human beings and to create a society of conforming stereotypes whose standards of accomplishment are being gradually leveled."

Design and Reason

The *Readers Digest*, January 1960, states, "The building office will give you specifications, may even send an inspector to size up your problem," and ". . . the Uniform Building Codes is one of the most comprehensive do-it-yourself manuals ever compiled. It spells out specifically what kinds of materials should go into your house, how its foundations should be laid. . . ." Should your city provide do-it-yourself instruction? Does the health department specify how to remove the appendix and then indeed

property, administrative convenience and Parkinson's law; the engineers by safety to life and property and design convenience; the insurance companies by safety and the special interests by sales potentials. Our participation in the preparation or revision of codes and regulations relating to building is imperative. Building officials and code-writing groups are put under tremendous pressure by special interest groups and will appreciate help from practicing architects in evaluating code changes, providing we maintain an objective viewpoint.

Costs and Reason

It has been estimated * that a minimum of one per cent of all building costs can be attributed to overlapping building regulations. This estimate has been indicated to be deliberately conservative,** especially so when conflicting and overly restrictive limitations are added to "overlapping." Building construction in the US for 1963 is variously estimated between \$40 and \$85 billion dollars. Using one per cent as an ultra conservative figure \$400,000,000 to \$850,000,000 is being wasted annually because of our present codes. Architects share a portion of responsibility for this waste, but they also know that this sum wisely spent would contribute greatly to a better environment in our communities.

Local Action

It remains the policy of the Building Code and Disaster Studies Committee to have a member or corresponding member attend the national annual meetings of SBCC, BOCA and ICBO. With this policy statement as a guide the committee representative may now participate in and contribute to the improvement of building codes. But attendance at national code meetings is not, in itself, enough to effectively pursue this policy. Implementation is required at the local level.

The policy statement is applicable to all city, county, state and Federal regulatory measures relating to buildings. It was written by a five-man committee with corresponding members from across the nation. It was reviewed by various AIA chapter and regional code committees. Consideration was given to all current policy statements of the Institute. This statement should be the guide in each region and every chapter for participation in the formulation of codes and regulations relating to building. Your Institute committee is now working on suggestions for implementation of this policy. We urge you to participate. ■

* Louis J. Kroeger, for the State of California Assembly Committee on Government Efficiency and Economy of Building Laws and Regulations

** Max Strauss, Head of Dept of Building & Planning, City of Beverly Hills, California, and member of California State Building Standards Commission

Relationships of Architects with Real Estate Consultants and Owners

LARRY SMITH *

The interlocked and interdependent functions of the architect, the owner and the real estate consultant in the development of projects for investment must be correctly defined and efficiently performed with close cooperation if such projects are to result in acceptable financial returns to the owners

**The author, head of the real estate consulting firm that bears his name, continues his discussion of the principles of real estate development.*

Not covered in this article is the fact that comprehensive services actually include site selection, land assembly and the engagement of real estate experts by the architect as the agent of the owner

Objectives of owners

In the development of real estate, one of the significant relationships is that of the architect to the owner, or his real estate advisers, with respect to the real estate aspects of the problem.

There are situations in which the architect should adopt the position of leadership in the development process, but identification of these situations will depend largely on the objectives of the owner. However, architects must avoid taking the responsibility for advice or decisions with respect to real estate matters in which they have had neither experience nor the opportunity to maintain up-to-date contact with rapidly developing and changing real estate situations.

When real estate is being developed for use by the owner, whether that use is for industrial occupancy, a retail store, an office building or otherwise, quite likely the position of leadership should be assumed by the architect.

Under these circumstances, the amount of land required for building, service, parking and traffic purposes, and its location with reference to the adjoining street or arterial pattern, will be a function of the requirements of the owner. These requirements can be most accurately determined and fulfilled by an architectural office working directly with the operating departments or the engineering departments of the owner-occupant and with specialists such as traffic consultants. Locations of departments or functions within the building and all of the factors of space and its arrangement will be related to the owner's needs and to an appraisal of the relative value of the available alternatives. When real estate is being developed for use by the owner, the function of the real estate consultant is to advise on the availability and costs of other alternatives with respect to the main site, on any necessary additions to the site and on the possible use or disposition of surplus property.

However, when a building is being developed for investment purposes—for production of income—it is likely that real estate leadership should come from the owner or from someone in the owner's employ who has a high degree of economic "know-how" in real estate matters. This is true whether the investment is

| | Total Cost | \$ 7,400,000 | \$ 7,600,000 | \$ 7,800,000 |
|--|------------|--------------|--------------|--------------|
| Income and Capitalized Value | | | | |
| Income from Rents @ \$2.65 | | \$ 1,060,000 | \$ 1,060,000 | \$ 1,060,000 |
| Less Expenses—Taxes @ 40c per sq ft | \$160,000 | | | |
| Insurance; vacancy; management; promotion. @ 25c per sq ft | \$100,000 | \$ 260,000 | \$ 260,000 | \$ 260,000 |
| Net Income before Depreciation | | \$ 800,000 | \$ 800,000 | \$ 800,000 |
| Less Depreciation 2½% | | 160,000 | 165,000 | 170,000 |
| Net Income after Depreciation | | \$ 640,000 | \$ 635,000 | \$ 630,000 |
| Capitalized at 6% | | \$10,666,660 | \$10,583,333 | \$10,500,000 |
| Mortgage at 66⅔% | | \$ 7,111,111 | \$ 7,055,555 | \$ 7,000,000 |
| Cash Equity Required | | 288,880 | 544,445 | 800,000 |
| Total Investment | | \$ 7,400,000 | \$ 7,600,000 | \$ 7,800,000 |
| Equity as % of Total Cost | | 3.9% | 7.2% | 10.2% |
| Equity per sq ft | | \$.72 | \$1.36 | \$2.00 |
| Profit Potential between Cost and above Valuation | | \$ 3,266,666 | \$ 2,983,333 | \$ 2,700,000 |
| Leverage—Capital Profit Ratio | | 11.3 | 5.4 | 3.4 |

The objective of the typical developer—particularly the professional developer of real estate for income—is to develop property with the maximum earning power and the minimum equity investment. The entrepreneurial capital represented by the equity investment must earn an average rate of between 15 and 25 per cent before taxes in order to be competitively profitable. Furthermore, the probability under present tax regulations is that the property will be sold within a period of ten years, in which case the capital profit in relation to the equity becomes a key ratio in determining the quality of the investment to the developer. The above table indicates the very great swings in investment merit which will characteristically proceed from a variation of only \$2.00 per sq ft increase in construction cost.

The following table indicates the earned profit before income taxes expressed as a percentage of the equity and calculated after allowing for the first year's interest on the first mortgage expressed above.

Profit—First Year Interest

| | | | |
|-------------------------------|------------|------------|------------|
| Net Income after Depreciation | \$ 640,000 | \$ 635,000 | \$ 630,000 |
| Interest on Mortgage at 6% | \$ 426,666 | \$ 423,333 | \$ 420,000 |
| Net Profit | \$ 213,333 | \$ 211,667 | \$ 210,000 |

| | | | |
|-----------------------|-------|-------|-------|
| Profit as % of Equity | 73.7% | 38.7% | 26.3% |
|-----------------------|-------|-------|-------|

The following table expresses the relationship between cash flow on the project after providing for constant payments on the mortgage at eight per cent per annum.

Cash Flow

| | | | |
|--------------------------------|------------|------------|------------|
| Net Income before Depreciation | \$ 800,000 | \$ 800,000 | \$ 800,000 |
| Payments on Mortgage at 8% | \$ 568,888 | \$ 564,444 | \$ 560,000 |
| | \$ 231,111 | \$ 235,555 | \$ 240,000 |

| | | | |
|--------------------------|-----|-------|-----|
| Cash Flow as % of Equity | 80% | 43.2% | 30% |
|--------------------------|-----|-------|-----|

It will be observed that the annual rate on the equity investment expressed either as a profit figure after depreciation, or as a cash flow after mortgage payments will decline by more than 75 per cent in the event of an increase of even \$2.00 per sq ft in the capital cost.

This critical relationship between capital cost of a real estate revenue-producing project and the developer's profit is based directly upon the typically low gross income from revenue-producing real estate (generally 15 per cent per annum gross rate on the capital investment or less) and the typical high debt structure negotiated for financing in order to provide a reasonable entrepreneurial rate of profit for the development effort. The ratio of capital cost to income is sufficiently important so that every possible cooperative effort must be devoted to its realization; and the necessity for maintaining this ratio at the lowest possible figure justifies a significant expenditure of time and money—including even the postponement of construction within substantial limits.

\$ 8,200,000

\$ 1,060,000

\$ 260,000

\$ 800,000
180,000

\$ 620,000

\$10,333,333

\$ 6,888,888
1,211,112

\$ 8,200,000

16%
\$3.28
\$ 2,133,333
1.6

Costs vs time

\$ 620,000
\$ 413,333

\$ 206,666

15.7%

\$ 800,000
\$ 551,111

\$ 248,888

19%

The income tax considerations which apply, both during the period of ownership and at a time of sale, demand the intimate knowledge of a real estate expert working with a tax expert. The relationship between the cost of building and land, the relationship between the cost of the total project and income and the levels of marketability at the location and for the particular project being planned—all of these are important considerations in both taxation and real estate investment policy; thus, all may materially affect the development of the project design and specifications.

Furthermore, the market for the proposed rental space in the project, both in terms of the most efficient usable areas and in terms of rental specifications (including the allocation of work between landlord and tenant), and the precise relationships between individual tenants in terms of their interdependability in traffic are matters in which up-to-date knowledge of real estate matters is essential in the planning stages of the project. Many architects, through specialization in certain types of improvements, develop substantial knowledge of certain of these factors, particularly locational relationships and typical division of work between landlord and tenant. However, local usage in these matters, as well as changing rental terms and tenant practices on both the national and regional basis, necessitates the application of the most recent information available to any problem involving building construction for income-producing purposes. One of the most critical problems in this respect is the determination of the total cost structure, including the extent to which outlay of time and redesign money is justified in an attempt to reduce the capital cost.

In property developed by the owner for his own use, it is likely that prompt delivery and the most effective design for operational purposes will be of greater importance than the savings in capital cost, except where such costs are very large.

However, in income-producing property, the available margin of profit is so narrow that even a variation in capital cost of the project, as small as \$.05 to \$.10 per sq ft, will probably justify suspension of the work for as much as thirty days and justify a significant amount of redesign costs as long as the saving in total costs, after allowing for such redesign fees, is as great as the margin indicated.

In order to demonstrate the principles involved in such cost analyses, a hypothetical regional shopping center is analyzed on these pages; in this chart may be seen the effect of cost increases in a project on the investment result.

In many cases, regardless of the breadth of his experience, a developer will employ a real estate consultant or other experienced real estate adviser to assist him and his organization in making the various real estate decisions that are involved as the project moves forward.

In the case of the inexperienced developer who wishes to create a successful income-producing piece of real estate, experienced real estate advice is essential. The working team should consist of at least three permanent members: the developer, the real estate consultant and the architect. The developer will pro-

real estate consultant will provide the market report and the economic analysis upon which the project will be based and will advise on the cost structure, rental space and terms and similar matters; the architect will create the concept from which the project will take its physical shape and form. Each member of the planning team will be supported by his own organization and will have complete knowledge in respect to some phase of the operation. In addition, each should have sufficient knowledge about all three phases to provide a basis for working harmony.

For emphasis, it should be repeated that the developer who has had broad experience in real estate improvement will, depending on the scope of the project and his past experience, ordinarily have little, if any, need for the services of a real estate consultant. This fact should be kept in mind in the discussion which follows. Under such circumstances, however, the owner will function as his own real estate expert and will provide the detailed knowledge and decisions upon which the project must depend if it is to be an investment success.

*Architect-real estate
consultant-owner team*

The architect who understands the economic aspects of real estate development, the real estate consultant who has cooperated in the past with architectural offices and who understands the problems and planning of architecture and the owner who understands and gives careful consideration to the activities of both will make satisfactory teammates and, accordingly, their cooperative effort should be fruitful.

The size and complexity of income-producing real estate projects are increasing steadily with the rapid increase in population and with the increase in both privately sponsored and government sponsored urban renewal. Many projects in both suburban areas and in central business districts now contain, in a single development, many building types such as office buildings, hotels, public buildings, medical and dental buildings, department stores and other retail and service businesses, transportation terminals, central power plants, restaurants, theaters and other amusement facilities and residential structures of every variety. The qualifications demanded of the architect and of all other organizations participating in the project are dependent upon the size and complexity of the project under consideration. The larger the size and complexity of the project, the higher must be the qualifications.

The architect must understand—and coordinate his work with—the many specialists who will participate in the planning of the large and complex projects. The architectural organization should have trained and experienced staff members in every necessary branch of planning, design and *engineering* so that suitable concepts may be developed and the work with the various specialists coordinated smoothly.

Similarly, the real estate consultant's organization, or that of the owner, must be of wide scope and experience. It must include a research staff, market analysts, financing and leasing specialists and men experienced in real estate negotiation and management. In some of these fields, specialist organizations may be called in; however, people with basic broad experience must be part

of the project and should work together continuously throughout the planning and construction period. However, the first steps toward creating the project may be taken by one or another member of the team, depending upon the objectives of the owner.

The final determination of the economic feasibility of a project must be based on a specific plan of development from which basic costs—at least—can be estimated, and upon which income can be predicated on the specific locational relationships of the various income-producing elements. On the other hand, an experienced real estate owner, or his advisers, should have had sufficient previous experience so that their preliminary consideration of the economic soundness of the project can be predicated on assumed costs and on assumed income and expense relationships based upon experience in similar projects.

In such cases, the assumed capital costs, modified to whatever extent appears advisable after development of the full feasibility report, will become cost specifications for the project. Therefore, these costs can be used as specifications upon which the architect can base his development of the physical plan, as well as the general concept of the project.

It is probable that the architect should begin work on the development of a project in advance of the real estate expert in all projects where the development is to be used by the owner. It is also probable that the real estate expert should undertake work somewhat in advance of the architect on projects that are being developed for revenue-producing purposes.

In both cases, however, it would seem desirable for the two offices to be brought into the project at approximately the same time—during the preliminary stage of the examination—and that they should work in the closest harmony while the preliminary program and plans are being developed for the investment decision.

Coordinators needed

Since each of the participants in the planning activity will probably represent a sizeable organization, it would be well for each—the owner, the architect and the real estate consultant—to nominate a coordinator within his organization who will be responsible for the particular project. Such coordinators should be in almost constant touch with each other. Regular meetings should be held at least monthly and in times of great activity at shorter intervals. All significant decisions and reports should be recorded.

During the period of cooperative effort, the committee members should state their individual and independent viewpoints strongly, because it is only in an atmosphere of mutual respect that the proper development of judgment and review can develop.

Relationships with the owner

In the past, in a limited number of cases, the real estate expert has been retained by the architect; in an even more limited number of cases, the architect has been retained by the real estate consultant. Neither of these relationships is likely to be satisfactory to either party or to the owner as any lack of experience on the part of the architect or the real estate consultant, with respect to the type of work being done by the other, is likely to result in a subordination of the recommendations of one party to the convictions and interests of the other.

Such joint relationships have usually resulted in an attempt to provide a compromise report and recommendation to the owner. The effect of such compromise reports is to deny the owner, throughout the planning process, the opportunity of making, with wisdom, the significant decisions which will have a permanent bearing on the investment quality of the development. Many of these judgments are so related to the specific position and interests of the owner that it is unlikely that a joint resolution by an architect and a real estate consultant will produce the most effective solution for the owner. Frequently an owner will request such a joint operation and a single recommendation, but such a request by the owner should be resisted—in the best interest of the owner himself. When, after separate deliberation, the architect and real estate consultant do find themselves in complete harmony with respect to their recommendations to the owner, there is every opportunity for each to concur in the other's report. Obviously, each should have the opportunity of examining the other's report prior to any presentation so that, in the event of disagreement, each will be able to present the nature of the disagreement in the most direct form possible. Then the owner will be in the best position to make a selection from the various alternatives.

It would seem best for the architect and consultant to be employed separately and for each to have a direct relationship to the owner. They should, of course, work in close harmony; and each should be in a position to present the various investment alternatives clearly so that the owner will have the greatest possible opportunity to make a sound investment decision.

Coordination of the work

It is of the utmost importance that the work of the various offices should be closely coordinated. Therefore, one of the functions typically performed by the architectural office is to work out, with the real estate expert, a schedule of development activities. In this way, the allocation of the responsibilities for all of the functions together with their time schedules, will be efficiently developed so that the closest possible coordination will be achieved and the most effective solution found for the total project.

An example of such a schedule, developed for a hypothetical regional shopping center, is shown on pages 60-61. From this schedule, a bar chart may be drawn for use in the actual coordination of the project work.

Efficiency of design

One of the truisms that applies to real estate is that no two parcels are identical; therefore, the value of one parcel, even one immediately adjoining another, may be totally different from the other. For retail purposes in central business districts or suburban shopping areas, the value of an *inside lot* will be significantly different from that of a corner property. In fact, in the development of all real estate for income purposes, location is the most significant, critical factor. This is true not only for the location of a complete development, but for individual locations within the development.

Locations within shopping centers

For example, in the design of shopping centers, a process of review and rearrangement of building areas and of the location of individual retail units within the buildings will frequently raise

Washington, DC, indicates an \$.80 per sq ft variation of average rentals in shopping centers of the same size. (Rentals ranged from a minimum of \$1.40 to a maximum of \$2.20 for centers of the same size.) Such a variation is caused by a composite of several factors including the rental rates typical in various parts of the country, the effectiveness of the leasing organization and the extent to which space was actually finished for the tenants' use, among other things. However, a significant factor in many cases was the efficiency of the design and the locational arrangements.

Tenant attitudes

Business philosophy varies widely from one tenant to another. While many tenants who are strong creators of pedestrian traffic recognize the importance of locating their stores in such a way that all tenants in the project are successful, other traffic-producing tenants insist upon premium locations for themselves. Tenants adopting the first attitude believe that they are most successful when located in a successful project even though they may not have the 100 per cent location. The second tenant uses his bargaining power to negotiate for the best location for his own store, believing that by doing so he gets the most profitable location for himself.

Tenant and owner

It is not the purpose here to demonstrate which attitude is correct, either from the standpoint of the individual tenant or from the standpoint of the project. However, it is important to recognize that the best interests of the project owner under these circumstances are at variance with those of the traffic-producing tenants. Architectural offices are rarely in a position, at any particular moment, to determine the extent to which this attitude on the part of the traffic-producing tenants is subject to negotiation. Furthermore, the most profitable use of the traffic created by these traffic generators depends upon the location of the satellite tenants and the particular rental terms which can be negotiated for the satellite space.

Therefore, the possible locations for the traffic-producing tenants, as well as for the satellite tenants, is closely related to real estate judgment and negotiation. It follows that the closest possible coordination between the architect and the real estate expert in terms of building shape, dimensions and the size and location of the individual stores is required if the project is to be economically sound.

The same factors apply, to a greater or lesser extent, to all classes of revenue producing real estate, especially those of multiple occupancy.

Effects of local conditions

The extent to which the maximum income can be derived from any type of revenue-producing real estate will depend upon the specific local market for the classes and quality of space being produced in the project.

Rental rates and space preferences vary significantly from one part of the country to another. In the case of a relatively unimportant new project it probably will not be possible to change the rental pattern from existing usage, but in major projects where a new standard of design—or where a dramatic location—is being developed it may be possible to establish new rental patterns

| | | | | | | |
|----|---|--|---|---|---|---|
| | | number of dept stores | X | X | X | |
| 5 | 4 | Preliminary analysis of road conditions, access, ingress and egress | | | | X |
| 6 | 8 | Site analysis; development of preliminary alternate land use plans | | | X | |
| 8 | 4 | Review alternate land use plans; determine most satisfactory | X | X | X | |
| | 4 | Merchandise plan; general location, size of stores by type | X | | | |
| 9 | 2 | Refine site plan; incorporate merchandising plan | | | X | |
| | 4 | Utility analysis; metering proposal | | | X | |
| | | Report on project traffic, parking requirements | | | X | |
| | 8 | Traffic analysis; report on parking, traffic; recommendations | | | | X |
| | | Begin negotiations, as necessary, with local, state officials on access, road improvements, alteration of municipal traffic plan | X | X | | |
| | 4 | Prepare sales brochure for use in contacting department store | X | | | |
| | 2 | Recommendations regarding dept store lease provisions, terms | X | | | |
| | 2 | Recommendations regarding prospective dept store tenants | X | | | |
| 9 | | Initial contact with prospective dept store tenant | | X | | |
| | 8 | Preparation of dept store lease | | | | X |
| 10 | 2 | Review utility analysis; make recommendation to owner on utilities | X | | | |
| | | Review utility analysis; recommendations; make utilities decision | | X | | |
| | | Begin dept store negotiations | X | X | | |
| | 2 | Determine owner-tenant work, allowances | | | X | |
| | 2 | Recommendations on provisions of general tenant lease form | X | | | |
| | | Review owner-tenant work | X | | | |
| | | Review specifications, allowances, recommendations regarding general tenant lease form; instruct legal | | X | | |
| | 4 | Prepare general tenant lease form | | | | X |
| | 4 | Refine merchandising plan | X | | | |
| | 6 | Coordinate structural, mechanical, electrical, etc, with architectural; incorporate refined merchandising plan | | | X | |
| | 6 | Preliminary capital cost estimate | | | X | |

All managerial duties have been listed under the owner function. However, the owner may hire a manager at any time that he wishes to be relieved of managerial duties. Though not included in this time schedule, some promotional activity should be under way throughout the development program.

if existing rents are inadequate for investment support. In this area of judgment, the experience and intimate knowledge of a thoroughly competent owner or real estate adviser can be of great importance.

This principle applies to multi-family residential real estate in which the quantity of space in an apartment building must be correlated with the market in terms of the floor area of the units being created, the location within the building and the specifications or amenities to be developed.

The floor areas of typical rental apartments of the same general quality and rental may vary 100 sq ft or more between two cities in different parts of the country. This difference in floor

| | | | | | | |
|----------|----|---|---|---|---|---|
| | | Review traffic analysis | X | X | X | |
| | | Review cost estimates, recommendations; cost decisions | | X | | |
| 6 | | Prepare model, drawings for leasing program | | | X | |
| 4 | | Financial analysis of project | X | | | |
| 4 | | Review general tenant lease and dept store lease forms; recommendations to owner | X | | | |
| 12 | 4 | Mortgage application brochure | X | | | |
| | 2 | Recommendations regarding prospective mortgagees | X | | | |
| | | Sales brochures as required for use in leasing program | X | | | |
| | | Execute preliminary building agreement or lease with dept store | | X | | |
| | | Review and approve general tenant and dept store lease forms | | X | | |
| 13 | | Review, approve mortgage application, sales brochure | | X | | |
| | | Begin mortgage negotiations | X | X | | |
| 28-36(1) | | Begin major tenant leasing program | | X | | |
| | | Assist in leasing program | | | | |
| | | Revisions of architectural necessitated by leasing | | | | X |
| 15 | | Secure mortgage commitment (2) | X | X | | |
| 16 | | Authorize working drawings | | X | | |
| | 32 | Prepare working drawings | | | | X |
| | | Consideration of tax situation and contact with local authorities | X | X | | |
| 17 | | Review, revise financial analysis; changes necessitated by leasing, revised cost estimates, etc | X | | | |
| | 28 | Management training program | X | X | | |
| | | Occasional review by owner and advisors on leasing program, other phases of project | | X | | |
| | 4 | Revision of merchandising plan necessitated by requirements of dept store, major tenants | X | | | |
| 22 | 8 | Prepare construction contract | | X | | X |
| 24 | | Review, approve working drawings, specifications | | X | | |
| | 52 | Construction | | | | X |
| | | Supervise construction | | | | X |
| | | Prepare tenant working drawings | | | | X |
| | | Approve tenant work | | X | | |
| | | Periodic financial analysis | X | | | |
| 28 | | Arrange for consumer survey | | X | | |
| 36 | | Opening of center | | X | | |

(1) Leasing may be handled by the owner, project manager or broker. (2) A typical requirement of mortgagee is that a specified amount and type of tenant space be signed prior to its commitment of funds; this may necessitate a rearrangement in the leasing schedule.

area and its relation to the local competitive rental situation may spell the difference between profit and loss to the owner.

Sometimes, in buildings designed by competent architects, both higher and lower rental apartments fail to rent within a reasonable period after the project is ready for occupancy. In some cases the operating losses due to the creation of such unmarketable space run into very substantial figures before sufficient space is rented to permit a break-even position. In extreme cases a condition is created in which the project is totally uneconomic.

Unmarketable space may be due to a fundamental misjudgment of the market by the owner, but in many cases it is due to a lack of correlation of the cost of the space as designed by the

The rental market for office building space may range from \$2.50 per sq ft to as much as \$8.00 per sq ft, or more, depending, in part, on the type of building structure, but more importantly, in all probability, upon the rental negotiations and the location of the building, on the location of particular space within the building, and especially on the local conditions in the city in which the project is located. Furthermore, the division of costs between the owner and tenant in these buildings may be of controlling importance in determining the economic return to the owner; and this may be dependent upon competitive conditions or local practice.

Therefore, the architect must work in the closest possible harmony with a real estate expert who is familiar with the local market and the possibility of improving it. And the architect and real estate consultant must be aware of the combination of individual tenant location, size of unit and specifications, and division of work between landlord and tenant which will provide the greatest net economic return.

Perhaps the modern shopping center provides the best illustration of the opportunities for cooperation between the architect and real estate expert—whether the expert is the owner himself, a man in his employ or an independent consultant. Rental conditions in shopping centers are particularly sensitive to the classes of tenants; and they vary widely from one part of the country to another. Efficient store sizes for various classes of tenants vary not only from one part of the country to another but between specific tenants operating in the same field and market.

The wishes of the tenant can rarely be taken as a guide to efficient planning from the landlord's standpoint. It is almost characteristic of shopping center experience that certain tenants will ask for larger space than they can economically use, provided they can bargain with the owner for a low enough rent per sq ft to maintain a reserve capacity at the owner's expense. The percentage rent characteristic of present-day shopping center leases is not the answer to this situation because many lines of retail business can operate profitably at a level of productivity per sq ft at which the landlord will experience loss; and the estimate of percentage rent is effective only to a limited extent in providing a basis for satisfactory mortgage loans. A proper balance in area and location of traffic-producing tenants and higher rent-paying tenants who thrive on induced traffic is essential to the economic health of a shopping center project. The relative rent which can be accepted from each class of tenant and the locational arrangements which will provide the most effective compromise between capital cost and income can best be worked out through cooperation between architect and real estate expert.

Therefore, it appears that the architect can best assure the development of economically sound projects for his clients through close cooperation with the owner and his real estate department or advisers, especially in structures which are designed for the production of income as opposed to those designed for the use of the owner.

St Louis has a variety of architecture which may well attract the attention of the architect visiting the city during its bicentennial year. From the old Cathedral of Saint Louis of France to the rising Saarinen arch of the Jefferson National Expansion Memorial is more than a century in time but only a short distance in space. Within blocks is a veritable landmark of architectural history—Sullivan's Wainwright Building. Other names from the city's architectural past are those of George I. Barnett, William B. Ittner, William S. Eames, John L. Mauran and Ernest J. Russell, the latter three all AIA Presidents.

The following list of references notes a few separate publications dealing with the city's architecture, followed by articles on recent structures in the architectural press. The list is not intended as a guide to what to see, but as an introduction to some of the materials in print. We hope it may be helpful.

General

American Institute of Architects, St Louis Chapter. *Progress through Architecture*, 1959

American Institute of Architects, St Louis Chapter. *Architecture in St Louis*, 1961

John A. Bryan. *Lafayette Square: the Most Significant Old Neighborhood in Saint Louis*. Priv Print, 1962

John A. Bryan. *Missouri's Contribution to American Architecture*. St Louis Architectural Club, 1928

Louis LaBeaume. *The Way We Came: a Reminiscence about Architects and Architecture in Saint Louis and Other Places*. St Louis, 1957

Apartments

Hellmuth, Obata & Kassabaum, architects:

Four Apartments. *Architectural Record* 129: 195-99 Mar 1961

Leinweber, Yamasaki and Hellmuth, Inc., architects:

High Rise Buildings and Balconies: John J. Cochran Garden Apartments. *Architectural Record* 115:184-7 June 1954

Church of the Resurrection

Murphy and Mackey, architects:

Church of the Resurrection. *Architectural Forum* 101:124-7 Dec 1954

Resurrection Church. *Architectural Record* 110:132-5 Aug 1951

City Planning

Mall for Downtown St Louis. E. J. Thias. *AIA Journal* 34:46-7 July 1960

New Face for a Large Area in Downtown St Louis. *Architectural Record* 124:188-9 July 1958

Rival St Louis Redevelopment Plans Pose Economic and Esthetic Choices for Officials. *Architectural Forum* 112:9-11 Mar 1960

April 1964

Tempio e Centro Comunitario a St Louis, Missouri. *Architettura* 9:412-13 Sept 1963

Faith Hospital

J. D. Murphy and A. G. Corrubia, architects:
St Louis, Private General Hospital. *Progressive Architecture* 35:82-6 July 1954

Jefferson National Expansion Memorial

Eero Saarinen and Associates, architects

Engineering of Saarinen's Arch: Jefferson National Expansion Memorial. *Architectural Record* 133:188-91 May 1963

Final Report of the Jury of Award: Remarks on the Competition by George Howe. *Progressive Architecture* 29:51-73 May 1948

Structural Study: Jefferson Memorial Arch. F. N. Severud. *Architectural Record* 110:151-3, July 1951

Lambert Airport

Yamasaki, Leinweber and Associates, architects:
Grand Central of the Air. *Architectural Forum* 104:106-15 May 1956

Terminal Building, Lambert-St Louis Airport. B. L. Pickens. *Architectural Record* 119:195-202+ Apr 1956

Missouri Botanical Gardens

Murphy and Mackay, architects:

And Suddenly Last Summer: World's First Air-Conditioned Greenhouse, the St Louis Climatron. *Progressive Architecture* 42:174-8 Aug 1961

Climatron, Missouri Botanical Gardens, St Louis. *AIA Journal* 35:27-32 May 1961

Planetarium

Hellmuth, Obata & Kassabaum, architects:

Planetarium, St Louis, USA. *Architectural Review* 133:406-9+ June 1963

Spool-Shaped Planetarium for St Louis. *Architectural Forum* 119:94-7 Aug 1963

St Louis and St Mary Priory and School

Hellmuth, Obata & Kassabaum, architects:

Planning a Monastery and Monastic School, Saint Louis Priory, Crève Coeur. *Liturgical Arts* 26:48-53+ Feb 1958

Reality of a Dream. *Liturgical Arts* 31:4-7, 12-25 Nov 1962

School in Praise of God. *Architectural Forum* 107: 122-7 Nov 1957

St. Louis University, David Wohl Health Institute

Hellmuth, Obata & Kassabaum, architects:

Pleasant and Open Plan for Psychiatric Patients. *Architectural Record* 126:231-36 Oct 1959

Washington University Library

Murphy & Mackay, architects:

Skillful Harmonies in an Integrated Building: John M. Olin Library, Washington University, St Louis. *Architectural Record* 122:162-3 Aug 1957 ■

Lawrence Halprin is both a landscape architect and a lover of cities; his new book is evidence that the two characterizations are not mutually exclusive. Perhaps the combination of attributes is also the reason the book has both strengths and weaknesses. The strong approach of the landscapist is apparent in the author's first words. "This book is about the landscape of cities . . . the open spaces, and what goes on in them. We will concentrate on the interstices of cities." There is thus no attempt at the all-inclusiveness suggested by the book's title. The text bypasses many urban problems, social and administrative as well as physical, and does not even pause to consider the viability of cities as we know them. Rather we see cities through the eyes of one primarily sensitive to and concerned about external spaces. The author is not unaware of other aspects, and of the bleak nature of much of the city, but he chooses to emphasize the bright side of the picture.

There are unquestionably many ways of looking at cities; Halprin's is as open to praise or criticism as any. But as illustrations and text in this handsome volume unfold, revealing Halprin's awareness of, enthusiasm for, sensitivity to and creativity in cities—in short his love—one ultimately grants him both his title and his attitude, for does not all the world love a lover? Considering Halprin in these terms we need not expect reasoned arguments, for such is not a lover's forte. Nonetheless, the varied collection of visual delights is worth having; if we do not go away convinced we will no doubt return to renew the pleasure.

The first impression of the book will unquestionably remind architects of the excellent monographs published abroad, notably those of Swiss and German origin. Size, binding, paper, layout and typeface all show close resemblances. Mr Halprin's publisher, perhaps taking a clue from the copious visual material, has provided a handsome format. For the mutual effort obviously involved, all deserve congratulations.

The graphic material is gathered and organized with a recognizable point of view. Mr Halprin believes that our times do not permit an ideal form for cities; the designer's task, therefore, is to provide an environment which allows maximum individual creativity. Before he explicitly states this thesis the author shows how such creativity occurs in familiar though often overlooked aspects of cities. First he groups his material to suggest the "physiognomy" of cities: streets, parks and places; the furnishings augmenting these; and then the floors, steps, walls, fences which aid in defining those urban spaces. Water and trees are part of the face of a city and

they do not add up to any irrefutable conclusion.

Throughout the exposition the text is brief, serving largely as an introduction to the captions accompanying the illustrations. In addition to photographs there are plans, sections, diagrams, sketches and old engravings. All help illuminate certain points. A diagram for programming a fountain display is a notable example. Material available elsewhere, such as that on city trees, is well summarized with excellent sketches. The important factor linking all this material is Halprin's obvious delight and enthusiasm. He has enjoyed visiting cities, sketching and photographing intimate details. The challenges in his own practice, gardens and shopping centers, garage and building roofs, commons and parks, many of which are illustrated, evoke a similar reaction. "Cities" has an infectious quality, for Halprin conveys his feeling and induces sympathetic echoes of delight and enthusiasm in the reader.

It is difficult, as a result, to pick out sections of the work for either praise or criticism, though the net impression is favorable. For architects, the section on "Furnishing the Street" is perhaps the most interesting, containing varied information on light fixtures, benches, pots, signs and symbols, kiosks, bicycles, doors and entrances, clocks and sculpture. The compilation may act as a source book of urban design ideas. However, this raises an inevitable question, for the information is not detailed enough to serve as a professional reference. Yet, if designed for the intelligent layman, the book is at times contradictory—too precise on some points and uninformative on others.

The difficulty, perhaps, is the inherent complexity of the city. To convey a point of view any writer on the subject must make choices. Mr Halprin chose to range widely, which meant he also ranged thin. What he lost in one direction he gained in another. His awareness of the complexity has convinced him, wisely, to adopt a flexible approach in designing to meet the needs of cities. He is explicit on this point, writing:

"The static conception of society and its image in the city has given way to a conception of fluidity, of constant change. Our great mission is, I believe, to deal with change, to recognize it as an essential element in our time and accept its implications. Since our ideal form for the city is *uncertain*, what we need to strive for is an environment designed for the process of creative living. In the search for this environment, the acceptance of the process of change as the essential basis for civic design will signify our understanding of the problems and uncertainties of our technological future."

This brief statement hardly begins to consider the problems and implications that accompany recognition of the constancy of change. Such was not

of interest may appear anywhere, out of apparent context. Despite this, Halprin shows a direction and gives a glimpse of the long path ahead. Thus far it has been the path not taken.

We are so constantly subject to the evils and problems of the city, to calls for its dismemberment and reminders of its discomfort, that the overflowing words of a lover are an almost welcome antidote. So long as we remember that the lover matures in his love, for change is as constant for love as for cities, we can smile indulgently at the initial simplifications, rush of emotions, tendency toward rose-colored viewing, and enjoy Halprin as he would undoubtedly like to be enjoyed. He has a sensitive eye and stimulating mind and has used both in giving us a handsome and worthwhile book.

New York Landmarks. Alan Burnham AIA. Middletown, Conn. Wesleyan University Press, 1963. 430 pp illus 8½" x 11" \$12.50

Reviewed for the AIA Journal by Alfred Bendiner FAIA

This is a book which should be bought by everybody who loves New York and that covers a lot of New Yorkers, Americans, Europeans, Asians, Africans and me.

I have been to New York a couple of hundred times in sixty-four years and every time I go I have to look at it. My father took me there as a kid and walked my feet off and swiveled my head and made me look up at the cornices and he passed me on to my loving wife who continued where the old man left off. It has all been worthwhile, for New York has everything and the architecture is an interesting, ever-changing backdrop for the big show.

They should keep on tearing it down and building it up so that every generation has a chance to show off. For architecture is the art of building usefully and beautifully and when a building becomes useless it should go. But somebody with intelligence and love and respect for things old and new should stay the hand of the wreckers, until all the possibilities have been looked into, and should have the control over "landmarks."

This idea of preserving our heritage is something we are slow to grasp, "we're such a young country, you know." And I believe that this book, "New York Landmarks," serves that function, not only for New York but as an inspiration to other cities. The "control" over landmarks is the Committee on Historic Architecture of the Municipal Art Society of New York, which gets all the credit for this volume which takes us up to 1930, a nice year to stop and allow the next generation to argue about our monuments. The Committee has catalogued, surveyed, recorded and marked with plaques

looking at the photographs, noting the locations, reading the historic significance and the names of the architects, so the next time you go to New York you may enjoy visiting a few antiques and checking them off. It's as much fun as seeing a prothonotary warbler, and just as educational, especially to architects, who haven't thought about the historic significance of the Flat Iron building for years.

I never knew until the other day that Eiffel designed the structural work for the Statue of Liberty, and while my grandchildren will never see the Baths of Caracalla on Thirty-Second Street, I can remember the "Giralda" tower of the original Madison Square Garden and I saw the exact spot where Stanford White was shot by Harry Thaw.

So you all better have this gem around to prove that without the lovely mixture of styles, periods and personalities, New York would be a dreary stretch of only concrete and steel.

The greatest accolade should go to Alan Burnham AIA who edited this "monument," not only because it is a beautiful and useful job but because he is very generous in crediting all architects, painters, sculptors and everybody who helped make New York the most wonderful city in the world.

An Album of Maya Architecture. Tatiana Proskouriakoff. Norman, Univ of Oklahoma Press, 1963. 142 pp illus 10¼" x 8" \$7.95.

Reviewed for the AIA Journal by the late Walter A. Taylor FAIA

This valuable book consists primarily of thirty-six full-page perspective restorations with twenty-nine marginal illustrations of details.

For one site there are shown restorations of eight stages of eighteen presumed phases of successive additions. "That we can trace at all the development of building practices and architectural design is largely due to the fact that the Maya seldom razed to the ground a building fallen into disuse, but found it easier, it seems, to bury it completely under masonry which would serve as a foundation for new construction."

For each of the twenty-eight groups or structures shown in restoration there is a smaller corresponding line drawing showing actual remains with conjectural restoration in dotted lines, a valuable device which could well be used more frequently in the reporting of archeology. The structures shown are at twelve locations in the parts of the Yucatan Peninsula now known as Guatemala, Honduras and two Provinces of Mexico.

"The attempt to base all restorations on sufficient and reasonably valid evidence has rigidly restricted the choice of subject and, as a result, this

short compass provides so good an over-all picture of the architecture of the American Egypt.

The author holds a degree in architecture and has written two other books on Central America. The present publication is a new edition of a work first published in 1946 by the Carnegie Institution.

The Italian Townscape. Ivor de Wolfe. London, Architectural Press, 1963. 280 pp illus 7½" x 9½" 56 shillings

This is really two books in one. Superficially, it is visual delight for the lover of Italy; to flip through its 461 excellent illustrations is a vicarious trip through some sixty Italian towns and villages—one closes it with a sigh. The other book is also a trip through Italy, but with a clever guide who can open one's eyes to tricks and treats in townscape such as one might miss completely—a quickie education in *seeing* the city.

"Italy has three faces, two of which need to be tactfully demolished before we can catch up with the one we want. Face A is the brand-image or Facade Touristique which, like the moon, presents always the same striking but stagey mask to the world—sumptuous photography of celebrated subjects, S. Peter's, S. Mark's, the Capitol, the Piazza Signoria at Florence. Grand but long ago milked dry of meaning, and also a bit of a fraud in the sense that they are largely used by photographers as fig-leaves to conceal less savoury matters lying beneath. The second face is cautionary. In certain sectors already a dread reality, and everywhere a potential threat but not yet engulfing (as it does in England) the whole civilization, industrial blight throws its shadow over the scene, dark already in the least expected places. The approaches to Venice, for instance, some of which suggest the dead-cat-filled sewers of the Black Country, rather than the Adriatic's pride. . . . We turn with gratitude . . . to the third, the natural smiling face, innocent of make-up and not as yet the victim of developer's rash if occasionally visited by a slight attack of acne or impetigo. These expressive features portray the real Italy whose genius has done so much to lighten our darkness by demonstrating . . . the deeper felicities of *towniness*, a property which involves no rejection of economic progress or modern building and engineering. It merely encourages the developers to see the world of the past as a living inheritance rather than a hand-over. And invites them, too, to use the new techniques and machines—excavator, bulldozer, hydraulic shovel—as instruments of evolution rather than weapons of destruction."

A long quote, perhaps, but it serves well to illustrate the brilliant, brittle, and often flippant and irreverent style of the author. He is sometimes a bit difficult to follow, because of his quick quips and

Salem, Massachusetts: Historic Area Study. Compiled by Blair Associates. Providence, College Hill Press, Inc, 1963. 53 pp illus \$3.50

A study of the areas of Salem containing buildings of historical and architectural significance and the considerations that must be taken into account in planning for the protection of these areas. Appendices containing preliminary drafts for special bills and ordinances to carry out the proposals are also presented.

Community and Privacy. Serge Chermayeff and Christopher Alexander. Garden City, NY, Doubleday and Co, 1963. 236 pp illus 7" x 10¼" \$5.95 *
Reviewed for the AIA Journal by Daniel Perry AIA

This is a well planned and nicely designed book—a pleasure to touch, look through and read. Its subtitle, "Toward a New Architecture of Humanism," indicates that its main argument is the essential human need for privacy. Its design is unusual and strikingly effective, and the use of black-and-white illustrations—all drawings, some of them by Saul Steinberg—is noteworthy.

Part I, entitled Mass Culture, is a statement of the present state of urban architecture, including many quotations from contemporary commentators. Part II, The Urban Dwelling, examines the specific human problem of the need for privacy, the boundary between the public and the private parts of both the community and the individual house plan. The authors seem to confuse the concepts of planning and design—the words are not synonymous, but this does not detract from the value of the book.

The authors divide urban space into six hierarchies of privacy and indicate a method of determining the relationships between them:

- 1) Urban—Public Roads, parks, etc
- 2) Urban—Semi-Public Schools, parking lots, theaters
- 3) Group—Public Mail delivery, garbage collection
- 4) Group—Private Reception, playground, laundry
- 5) Family—Private Home
- 6) Individual—Private A room of one's own

Serge Chermayeff has practiced architecture on both the east and the west coasts of the US, and is at present a professor at Yale University. Christopher Alexander graduated in architecture from Trinity College, Cambridge, and received a PhD in Architecture from Harvard. He is a fellow of the Society of Fellows of Harvard University. ■

* Winner of a National Book Award in the newly established category of "science, philosophy or religion."



THE HIGHWAYMAN ISN'T ALWAYS RIGHT!

Spokane Judge Says Freeways Are Not Sacrosanct

A DECISION which may have far-reaching effects was made recently by Superior Court Judge Ralph P. Edgerton of Spokane, Washington, in the case of Deaconess Hospital vs the Washington State Highway Commission. The hospital filed suit because Interstate Highway 90, cutting through downtown Spokane, was planned to come within 300 feet of the hospital building. It was contended that "the noise and noxious fumes would interfere with the comfort and repose of its patients." The judge's decision, restraining the Commission from proceeding with the plan, blasted the defendant's contention that "in all major public projects, private rights must give way," and concluded that the choice of this routing was "made on a fundamentally wrong basis, and in that sense is arbitrary and capricious."

In his opinion, the judge drew freely upon the report of the "Hershey Conference" of 1962, sponsored by the US Bureau of Public Roads, the HHFA and the AIA. He said, in part, "It might be pointed out that the freeway is not sacrosanct. It needs to be kept in proper perspective. As the Hershey Report points out, the construction of freeways can have a massive impact for good or bad upon the structure of a city and upon that modern life which it is designed to serve. Like an airport or an urban renewal project, it can irrevocably damage the basic city pattern and can be needlessly unattractive and offensive to other land uses.

"In its recommendations, the Report holds that basic city planning is a prerequisite to the development of a sound freeway system. The democratic city, it says, need not be a formless one. It points to the necessity of teamwork in freeway planning and design . . . among highway engineers, architects, city planners, landscape architects and other specialists." Judge Edgerton quoted Kenneth W. Brooks AIA, a member of the State Arts Commission, who testified for the hospital. The judge said Brooks' conclusion was that the state's route was not good urban design, which was amply supported by evidence. Noting that

four alternate routes had been proposed, he said "Each route is high in price—high enough that the disparity between them is negligible if the extra cost makes the difference between a right and a wrong choice." The decision will undoubtedly be appealed, and if upheld by the State Supreme Court, it should have influence across the entire country.

Argus, a weekly published in Seattle, featured the following editorial in its issue of February 14, 1964:

"The historic decision handed down by Judge Ralph P. Edgerton in Spokane banning the proposed freeway route in Spokane may well become a Bill of Rights for those who have fought for more in highways than ill-conceived masses of concrete running through both cities and countryside, designed with no thought except that a straight line is the shortest distance between two points.

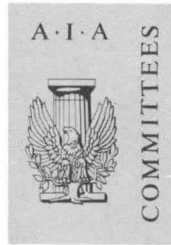
"It clearly points up that engineers alone are not qualified by training or experience to choose the route for design of freeways. As Judge Edgerton says in his opinion, the selection of this particular route was 'fundamentally wrong; it was not the best way, the least expensive way, and in this case not even the shortest way.'

"The judge notes that many skills are required for the proper design of freeways and other public projects that affect the whole community. Not only are engineers, architects and landscape architects needed, but sociologists, historians and psychologists may be used advantageously.

"The decision in Spokane will cause delay and additional expense, as rights-of-way had been partly acquired, but this may be more than compensated by bringing to heel a Highway Commission lacking the broad philosophical approach required for best results. . . . The Commission is now put on notice that such tactics will not be tolerated in the future, and the whole state will benefit from better design, better planning, and a more pleasant community in which to live." ■

The Architect's View The President's View

*Commission on
Architectural Design*
Robert L. Durham FAIA, Chairman
*Committee on School and
College Architecture*
Mario C. Celli AIA, Chairman



The AIA Committee on School and College Architecture invited a group of college administrators to meet with them in October 1963 to discuss mutual problems and possible solutions. The discussion, considerably condensed, follows

GUESTS ATTENDING CSCA MEETING IN OCTOBER, 1963

Dr Nils G. Sahlin, *President
Quinnipiac College
Hamden, Connecticut*
Dr John Brown, *Vice President
George Washington University*
Dr John Tyler Caldwell, *President
North Carolina State
Raleigh, North Carolina*
Dr Louis T. Benezet, *President
Claremont Graduate School and University Center
Claremont, California*
Dr J. C. Warner, *President
Carnegie Institute of Technology
Pittsburgh, Pennsylvania*
Dr Allan M. Cartter, *Vice-President
Director Commission of Plans
and Objectives for Higher Education
American Council on Education*
Dr Grayson Kirk, *President
Columbia University*
Dr Edmund Gleazer, *Executive Director
The American Association of Junior Colleges*
Dr Logan Wilson, *President
American Council on Education*
John Cameron, *Chief, School Housing Section
US Office of Education*
The Honorable Francis Keppel
The United States Commissioner of Education
James J. Morisseau
Educational Facilities Laboratories, Inc.

university officials in an interchange between educators and architects in Washington last October.

The discussion at the Octagon, sponsored by AIA's Committee on Schools and Educational Facilities, covered many areas of agreement—and a few of disagreement—between the architect and his university client. It is hopefully seen as the first exploratory session in a series of dialogues between the architect and the specialist in the field of higher education.

F. Lamar Kelsey AIA, chairman of the meeting, told the educators, "This Committee has moved its interests and emphasis toward higher education, realizing that there are now serious crises in the area—the impact of increasing enrollments means more buildings, while building construction requirements constantly change.

"We don't have any agenda. These sessions are going to be very free-wheeling. But I would like to discuss, first, the desirability, from your standpoint and ours, of establishing a series of relationships between higher education and the architects who serve as co-workers in development of the campus environment. Secondly, we should discuss channels of liaison, and an effective liaison program.

"For a long time, this Committee has had a very effective relationship with the American Association of School Administrators, in the area of kindergarten through twelfth grade. We attend and participate in their annual meeting in Atlantic City.

"In higher education, means of liaison are difficult to find. Thus, the idea came to us to ask a selected group of university presidents to come together with us for this discussion."

Mr Kelsey then asked Morris Ketchum Jr, FAIA, a Director of the Institute and Chairman of its Commission on Architectural Design, to moderate the discussion.

MR KETCHUM: Neither the architect nor the college president can work in a vacuum. There must be much discussion between the architect and the university president before anything can be designed. Otherwise, we are drawing pretty pictures which mean little to you or to us.

We hope to explore the environment, not the techniques, of architecture. And now I think it's time to transfer the discussion to your end of the table. Are there any volunteers to tell us some of the problems you have?

DR LOUIS T. BENEZET (*President, Claremont College*): I'm going to take a leaf from the book of Marshal Foch, of whom it was once said that his capacity to lead came from his ability to ask one question at the right time—the question, "What is the problem?"

Aside from the fact that you don't have a ready-made group of administrators at the college level—and you do have the American Council on Education,



Sketches by Edwin B. Cromwell AIA

represented here by Logan Wilson and Allan Carter—I'm not sure just what the problem is.

The problems, it seemed, were manifold. One of the toughest concerned the pros and cons of a master plan for the college campus.

MR KETCHUM: Architects are less useful when somebody else has written the program, planned the site, decided whether the buildings should be made of brick.

DR J. C. WARNER (*President, Carnegie Tech*): There is a certain amount of the planning job you [architects] can't do. Goals must be decided by the administration and the faculty. If you came in before the physical planning was done, but after the university knew its course, you should be able to function well.

There are always difficult problems, even if you do have a master plan. One generation of architects develops the master plan . . . then there is a new spurt of growth and new architects are brought in—and suddenly you find that, according to the new architects, the master plan you started out with ten years ago isn't worth anything!

MR KETCHUM: No master plan should stay on the shelf ten years. It should be revised and revived. Enrollments change, budgets change, and the master plan has to be updated. But without a plan, it's hard to stop people from putting up a building just any old place.

Here Dr Warner pointed out a problem which may be unique to the campus situation. Much of a university's money comes with strings attached, and the strings frequently tie a building to a specified spot on the campus.

DR WARNER: I haven't yet met a college president who will turn down five million dollars, [even] if the donor who wants to give the five million also wants to dictate where the building shall be put!

DR GRAYSON KIRK (*President, Columbia University*): Is it desirable, in your experience, to try to stay with one firm of architects? In the last ten years, we have used ten different architects. Would it have been better to establish a working relationship with one?

MR KETCHUM: You have [at Columbia] an excellent consulting architect. I do not believe he has ever had the means or the authority to create a master plan. If you had a master plan you could use as many firms as you liked, within limits.

DR EDMUND GLEAZER (*American Association of Junior Colleges*): I've been told that one problem is that architects find it difficult to get representatives of universities to come up with a program. Is this true?

ALONZO J. HARRIMAN FAIA (*Committee Chairman*): A good program is one of the most important things—and we are not getting good programs! Maybe somebody needs to set up a format . . . a way of setting down an educational program for the architect.

DR BENEZET: A ten-year projection makes some wild assumptions that can't usually be substantiated. I am not saying that you can't have an over-all plan; however, a large amount of university planning is hand-to-mouth because we don't know what enrollments are going to be, what gifts are going to be, and so on. This makes for hectic improvisation. You just can't be sure what is going to happen *next* year.

DR JOHN A. BROWN (*Vice President, George Washington University*): Colleges often force themselves

on a science center, and we would like to have someone develop some new building materials that we could take in our hands and twist around into different shapes and arrangements. Perhaps we have reached the stage where the hundred-year building is a curse.

MR KELSEY: A building is often obsolete educationally before it is obsolete structurally.

DR BROWN: And if we build a good—an advanced—a really challenging building, we will attract an advanced faculty who will in turn require a still more advanced type of building!

DR LOGAN WILSON (*President, American Council on Education*): Nevertheless, planning is a necessity now. The growth rate is so rapid that we cannot grow by the slow process of accretion that has characterized other eras. The future must come out of the past. I am inclined to doubt this ten- or fifteen-year [obsolescence] prediction. Graduate education, for instance, isn't too different from what it was ten years ago.

DR JOHN T. CALDWELL (*President, North Carolina State College*): It is one thing to predict undergraduate enrollment on a linear basis—and quite another to read crystal balls and try to see what you are going to need in the way of, say, research space, and what kinds of research space. We may be contemplating computer centers, physical science areas—but what kind?

DR WILSON: That is where you use the “jerry-built” —war-surplus buildings, etc.

MARIO CELLI AIA: But don't forget that the external shell represents only a very small part of the cost of a building. The main cost is inside. Jerry-building can go just so far—you still have to have enough structural steel to support the equipment which will go inside. For a science building, certain services will still be required.

DR CALDWELL: We very often convert older buildings to other uses. We have outgrown a chemistry lab; we are going to convert it to office space.

DR WARNER: We have to adjust ourselves to the idea of spending money on renovation.

MR KETCHUM: And even if the problem is one of alteration, we [architects] can still be useful.

The Role of the Architect

MR KELSEY: I'd like to go back a minute and try to answer Dr Benezet's first question—why this meeting? What is the problem? I think this meeting represents a search for understanding. The needs of the design team—the educators and the architects on the campus—are not simple. The architect must understand his client. And a university is not an easy client to understand. It is an exploding field. All campuses are growing.

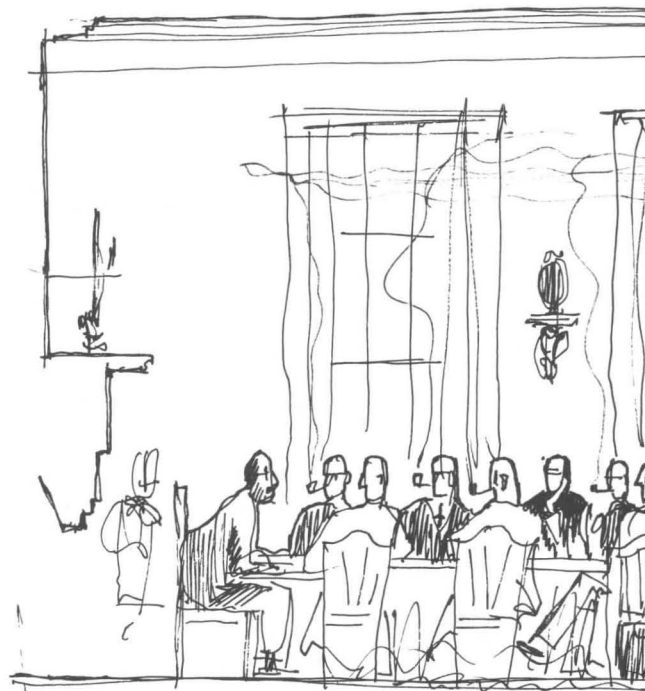
most complicated clients you have—certainly more complicated than a school-system. We have campus demonstrations over the quality of the college architecture. If you have an architectural school on campus, you are in for real trouble!

DR ALLAN CARTER (*Vice President, American Council on Education*): This is one area where the architect's job is to add possibly ten per cent to the ninety per cent that is already there. He inherits all the mistakes of the past.

DR BENEZET: Someone used the word “philosophy” which conveys to me the first purposes of the institution; what it is trying to do. This raises a question. I can't think of any boards of trustees with architects on them. Possibly your profession should be represented on a university's board. Of course, the architect would have to disqualify himself from practice on that campus. But I submit that most administrators don't consider architects in that light. Trustees are usually lawyers or financial men. Should you be represented in order to help persuade others that planning is an architect's function?

MR KETCHUM: I think so. We often say that architecture has a triple personality—it is an art, a science, and a business. An ideal architect combines all three. If he were on a board or planning commission, he could help you hold a mirror up to the university and find out what your assets are and how to develop those assets internally and externally.

DR GLEAZER: I don't think the architect should develop the philosophy, but certain questions can and



DR CALDWELL: An educational philosophy is a very elusive thing. Each one is different. And it isn't practical for the architect to be in on all planning from its inception. We have seven firms working at once—they couldn't all be in on the master plan; we have to orient them to it. But the question is, whether we have the ability to think adequately about the future. Many campuses represent inadequate thinking. At our college, the planners thought it was going to be just a little college, and now we have already had to cross a railroad track and a four-lane highway! We must prod the trustees and ask "Is your planning adequate?" Generally, it isn't. But surely institutions should use a profession whose job is planning, and hold onto him as long as possible. Even so, the architect can only be the servant of a wise administration who is willing to hold an adequate vision of the future.

MR KETCHUM: Your seven architects may each be doing a good job on their individual buildings, but we must still think of future economics, future enrollments, transportation—the very railroad and highway your campus had to cross.

MR CELLI: I would like to suggest that the university retain an architect to do a preliminary project analysis, set up a program for the particular project, before you assign him to go ahead—before you even get an appropriation. It will cost money, but the cost will not be significant if it prevents mistakes from being made. In Pennsylvania we are seeking to get the state administration to agree to retain archi-

record. Many approach us as if they had built half of the science buildings in the country. I have made some errors in gambling on architects who have done well in one area. They don't perform as well in others.

Where do we get this kind of information? Should we read your journals? What we need, perhaps, is a sort of clearinghouse where we could get information on, say, the last twenty college unions, or the last ten physics buildings in the country: who designed them, where they are.

MR KELSEY: As has been mentioned before, we have had for some time a very valuable relationship with the American Association of School Administrators. We participate in their conventions, and their convention always features an architectural exhibit. This could be done with higher education, also.

We do publish a series of "School Plant Studies," on various facets of school design. The next meeting of this Committee will be devoted to discussion of the relationships of building types on college campuses. The discussion will be brought to our membership through publication in the *AIA Journal*.

MR KETCHUM: Architecture is an ever-changing field. I am afraid we are moving toward a situation in which everyone will know more and more about less and less. A fresh approach will often give you the best answer. It would be very dangerous for the AIA to set up a list of architects who have worked in a particular area or building type—the result would be a small monopoly of architects doing schools, for instance, or hospitals, and you would not be able to do a hospital unless you had already *done* a hospital.

DR CALDWELL: There are building types that don't require advance experience, but there are special buildings, in terms of services, etc, and we do need to build up a reservoir of knowledge in these areas.

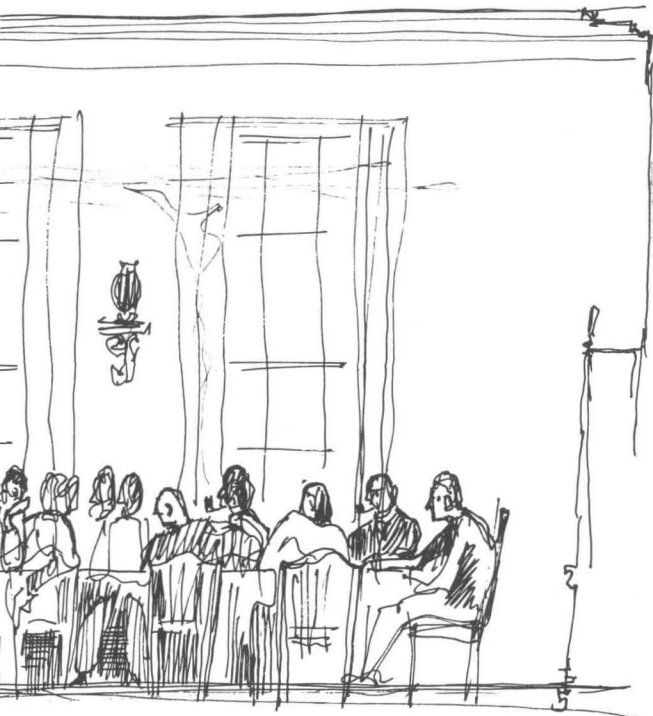
JAMES J. MORISSEAU (*Educational Facilities Laboratories, Inc*): EFL just prepared and will publish "Bricks and Mortarboards," one chapter of which is on teaching laboratories. As editor of that book, I feel that possibly the best lab we found was done by someone who had never done a lab before! He forced the faculty to define what they really needed in that building. He made them spend three days defining "flexibility."

DR WARNER: Any suggestions on how a university should select an architect?

MR KETCHUM: We absolutely cannot give you a list—but we might advise the appointment of a rotating advisory committee, not eligible themselves, to help you in evaluating the "glowing" qualifications submitted by architects.

As one president remarked, "Come to us and ask what school to send your child to, and we won't tell you either!"

DR BROWN: We should insist that firms bring to us somebody who has done such a building and made



Here one of the presidents mentioned that many hospitals have "tissue committees," consisting of the medical staff, to review periodically the number and histories of operations performed in the hospital with an eye to policing surgeons who operate badly or unnecessarily. Why, he wanted to know, can't architects police each other's work in a like manner?

The architects pointed out that medicine is perhaps more a highly specialized collection of skills than an "art"; that because of the nature of architecture a subjective evaluation is easy, but an objective one fairly difficult. As someone remarked, "You don't want the surgeon who takes out your appendix to get too creative!"

MR KETCHUM: Maybe we should try to provide the knowledge and then let the individual architect be free to provide the imagination. That is what we are trying to do—provide guides and documents and instructional materials.

DR WILSON: Is there a book on unions, for example? There should be, with photographs, criticism, etc. of existing unions. ACE can help get information of this kind into the hands of presidents (but don't expect them to read a lot; they need it in capsule form).

DONALD HARDISON AIA: On the subject of union buildings—there are so many facets of a union that depend on the program of the university! Some people will say that the food service facilities should be larger, or the ballroom smaller—and each campus must determine these things for itself.

The analogy with medicine died hard. As Dr Benezet put it, "When do you call in the doctor?"

DR BENEZET: Should the architect be called in early? I sense that you are telling us "We ask you to employ an architect at the earliest possible stage in the planning process; if you do that, these questions about kinds of buildings and so on will be answered better." At the risk of offending your feelings, I must state that most college people don't put architects at this level of planning. I don't know why—I think you are right. But how do you get them to think this way?

DR WILSON: Presidents need [education in] principles of design and planning. I can't believe that there aren't some that would be valid everywhere.

DR CALDWELL: I disagree that there can be one authoritative body of knowledge always available—every college union, for instance, is different from every other; you might suggest some things that you would like to see included, but no more than this.

MR CELLI: And don't forget about regional characteristics. Different types of financing, different topography, different student body—the architect who did a great job in New York City might not do equally well on a rural campus in Arkansas.

DR CALDWELL: The size of the campus affects the president's degree of involvement with the architectural planning. AIA chapters could help undertake

chitects in turn had a few burrs under their collective saddle:

MR HARRIMAN: We aren't given enough time to develop a plan—submit it to departments—if we could have a building a year before it's going to be needed, you would get a vast improvement.

DR BROWN: A year later, we wouldn't have enough money to build it!

JOHN MC LEOD AIA: Once our firm was given a chance to design some new spaces for teaching math. These were going to be very exciting classrooms and the people who were going to be using them were quite excited about planning them. It finally turned out that the only things they really wanted were four walls, a chalkboard, and a sink to wash off the chalk. We suggested a round room, with chalkboards all around which could be operated by pushbuttons. They were crazy about the idea, but scared to suggest it. Too many people are afraid of innovation. They need a man with imagination to sit down with them and do the necessary research.

Esthetics, or Who Cares?

DR BENEZET: I think a book needs to be written, entitled "Does Architecture Make a Difference on the College Campus?" I am not sure that neo-Georgian architecture doesn't provide just as good education as the most modern campus.

MR MORISSEAU: The new book to which I referred earlier—"Bricks and Mortarboards"—talks about things happening to the educational process and the things that result from imagination and creativity in campus architecture. It is addressed to trustees and others who make decisions on money to put up new buildings.

What does it take to make boards, educators, legislators and voters aware of campus planning and college building design, good or bad?

MR KELSEY: It takes a crisis—like the current enrollment explosion.

DR WILSON: But in a time of crisis, buildings will be quick cheap stuff to meet emergency needs. You can make a better case of lavishing extra money and attention on a college campus than you can on anything else—it's hard to get the esthetic message across to the people who supply the money.

DR CALDWELL: Many people don't think it makes any difference. We all have to be made aware of the importance of quality in our architecture. A lovely environment is important—beauty is important—art is important—and these things are not said enough! Most people don't think about the importance of quality to the lives of the people who live in a particular environment.

As one of the architects remarked rather wistfully, "That statement should have come from an architect!" ■

ARCHITECTURE AND COLLEGE PRESIDENTS

A survey by NOLEN, SWINBURNE AND ASSOCIATES

Commission on Education,
Donald Q. Faragher FAIA, Chairman
Committee on Research for Architecture,
Herbert H. Swinburne FAIA, Chairman



The following is a report on a survey to determine the attitudes and opinions of college and university administrators toward their campus architecture. The survey was conducted early in 1962, but as related to this month's Journal article concerning the meeting of university presidents, it takes on special significance.

Too often architects and university administrators do not understand each other's proper function in the joint adventure of planning a campus building. The administrator doesn't understand the training and capabilities of the architect nor the latent values of his services, and the architects do not understand the educational philosophy and the many complexities of financing, maintenance, programming for changing curricula and satisfying governing boards.

This survey, then, was an attempt to gain insight into the attitudes of university administrators so that these problems of misunderstanding might be overcome and eliminated. —Ben H. Evans

Because of the absence of significant literature on the real influence of architecture on the higher education process, a nationwide sampling was undertaken of opinions of college and university presidents. Specifically, the sampling attempted to determine attitudes toward 1) the purposes for college buildings, 2) the esthetic expression most often sought, 3) the image of the architect in the minds of the educators, 4) preferred importance of various elements of design in educational facilities, and 5) building types in most demand during the next ten years.

Looking ahead to the next ten- and twenty-year periods, the importance of this material becomes evident. According to the Census Bureau, the population of the United States increased from 151 million in 1950 to 179 million in 1960, a gain of 20 per cent. In the same decade, the number of college students increased from 2.2 million to 3.6 million, a gain of more than 60 per cent. It is expected that the college population will swell to seven million by 1970, and to a substantially higher level by 1980.

Questionnaires were sent to the administrative heads of 547 institutions of higher education in the United States, the Canal Zone, Guam and Puerto Rico. Of this group, which represents slightly more than one-quarter of the 2,028 institutions in the survey area, a total of 191, or nearly 35 per cent of the sample, responded. The statistical data reflects the opinions of 182 respondents, as nine responded but did not complete the questionnaire.

Responses to the questionnaire reflect the diverse opinions of many colleges, including institutions both large and small, private and state controlled, located in urban and rural environments. It is difficult to reach any clear-cut conclusions from this brief sampling.

However, the range of opinion is important in that it shows the philosophies of the educators. Though a few major areas of agreement may be discerned, it is most evident that each institution is a unique and positive force in its own community. Each defines its own role in higher education. The architect cannot find any hard and fast pattern of

tional process and displays a willingness to shape his buildings in recognition of the educators' role in the design process.

One point is certain. An enormous amount of construction is contemplated within the next ten years. Further attempts should be made to analyze the diverse opinions of college and university administrators, including all groups concerned with higher education.

Summary of Responses:

The presentation of each of the six questions asked in the survey follows this pattern: a) statement of the question; b) statistical data (where applicable); c) verbatim comments (assigned to source where permitted); d) interpretation.

Verbatim comments have been used to fill in the various shadings of opinion in each question. It was felt that the inclusion of these quotes would add a broader dimension to the revealing, yet essentially bare statistics. No attempt is being made here to arrive at a positive conclusion. The purpose of the project was to arrive at a sample that would express a range of opinion.

Question No 1:

What do you want most in a college building?

What do you want least?

In answering this question most of the respondents expressed their preferences for functional effectiveness, utility, low maintenance costs and attractiveness in outlining the elements which they considered to be most desirable in college buildings. They stated emphatically that the least wanted elements were high cost materials, luxury and highly specialized space. The following comments reflect a broader sampling of opinion:

"Most of all we want the building to house the function for which it is designed. Least of all we want fancy decorations and non-functional appurtenances. This does not mean ugly buildings of poor design."—Eugene G. Wilkins, President, Newark State College, Union, NJ.

"What we seek most in a college building is one that is as economical as possible, while at the same time serving the educational need for which the building is being designed. What we want least in a building is extravagance, which serves only as a monument to the designer and which does not efficiently serve the educational purpose."—Clarence Scheps, Vice President and Comptroller, Tulane University, New Orleans.

"I look upon a building as basically a machine, therefore, function as related to purpose is most important. Least important are gadgets which have little values."—Lawrence L. Jarvie, President, New

avoided."—Clyde E. Blocker, Dean, Flint Junior College, Flint, Mich.

Nothing really new is stated in these responses. Universities want the best building they can get for their money, provided it furthers the educational process. They are not interested, primarily, in appearance as much as in functional educational space. Only a few of the respondents showed an increasing concern for flexibility of interior space, summer cooling and the complexities of mechanical equipment.

Of particular interest here is the dilemma presented to the growing institutions which have physical plant needs that outstrip available funds. For these schools, interest is centered on buildings which provide a maximum amount of usable, educational space within budget considerations. However, this does not mean that minimum costs are the most important considerations.

Question No 2:

What esthetic expression would you prefer for the exterior of your university buildings? ___Traditional; ___contemporary; ___match existing buildings; ___follow architect's recommendations.

The respondents indicated their preferences in esthetic expression for the exterior of university buildings as follows:

| <i>Expression</i> | First | Second | Third | Fourth (place) |
|-------------------|-------|--------|-------|----------------|
| Traditional | 14 | 3 | 1 | 4 |
| Contemporary | 60 | 3 | 1 | 1 |
| Matching | 69 | 5 | 5 | 0 |
| Recom'dations | 52 | 2 | 5 | 4 |

Specific comments included:

"Our buildings are generally contemporary in style. Certainly contemporary programs and contemporary materials do not lend themselves well to artificially reproducing the modes of other periods. We try to give our architects the optimum of freedom in design. It is our belief here, as it is of most university administrators, that the capsule history of architecture provided on the university campus has real virtues."—James E. Green, Vice President, Eastern Michigan University, Ypsilanti.

"It would appear that the style which would best serve college buildings would be of consequence and response to the function, *climatic* considerations, orientation and budget of the building, as well as the standards of its owners and the competence of its architects."—Buell G. Gallagher, Chancellor, Trustees of the California State Colleges, Sacramento.

"I feel that each building, as it is built, should be the best expression of that type of structure that it is possible to execute. Eventually, I would like our campus to be composed of fine examples of the architecture of the time when each building was con-

President—Business and Finance, Fordham University, New York.

A majority of the respondents, who expanded their answer to question 2 reported their esthetic preferences in terms to fit the circumstances of their particular institutions. Favorable comments were advanced for the campus which displayed several different types of architecture, as well as for the campus with homogeneous structures. It was in answering this question that a number of the respondents indicated they gave the architect a certain amount of freedom. The feeling, apparently, was if they trusted the architect to handle the assignment, the architect was capable of delivering a building which would not clash with the college's total atmosphere.

Question No 3:

What is your frank opinion about the architect's effectiveness in creating structures that help further the educational process?

A breakdown of the responses to question 3 showed six major categories under which most of the respondents could be grouped. The number of replies in each category was as follows:

| | |
|---|----|
| The architect is generally effective | 75 |
| The architect is of little or no help | 12 |
| The architect should work closely with educators | 45 |
| The architect should specialize in school projects | 12 |
| The architect needs more experience in educational work | 12 |
| The architect is not realizing his full potential | 9 |

Comments of specific interest included:

"An architect can be most effective provided he is acquainted with educational processes in general and with the problems of an individual institution in particular. He must have an understanding and appreciation of the institution's needs."—Henry B. Abbett, Director of Development Planning, Purdue University, Lafayette, Ind.

"An architect can be extremely helpful and effective in general campus planning and in taking the oral demands of various specialists and translating them into schematics."—Robert B. Mautz, Dean of Academic Affairs, University of Florida, Gainesville.

"The average architect is not effective in creating structures that help the educational process because of their lack of understanding of the fundamental problems of the modern educational process. It would be very fortunate if architects who design educational buildings could also have some practical experience and training in the field of educational administration."—Jacob L. Reddix, President Jackson State College, Jackson, Miss.

"We certainly cannot do without them even though many times they are inept. An experienced educational administrator will mark up their esti-

of college administrators, the right architect for any given college building is the one who is well versed in the physical plant needs for education and who can also work with the educators to express the aims of the particular institution in designing its buildings.

He must know his role on the educator-architect-administrator team. His efforts must augment the educational process, not hinder it. Strong, dominant visual statements may seem to be a personal expression of good architecture, but this does not mean that they are necessarily good for the educational environment.

Question No 4:

In what numerical order of importance would you list the following elements in your university buildings? —utility; —beauty; —economy; —functional arrangement. Please assign the most important factor number 1 on through to number 4 for the least important factor.

The four elements were ranked as follows:

| Element | First | Second | Third | Fourth (place) |
|-------------|-------|--------|-------|----------------|
| Utility | 93 | 53 | 18 | 6 |
| Functional | | | | |
| Arrangement | 91 | 57 | 23 | 4 |
| Economy | 10 | 36 | 65 | 61 |
| Beauty | 9 | 19 | 59 | 87 |

Specific responses included:

"A good architect should accomplish all four factors in a good design. The question implies that if one has utility, for example, one sacrifices beauty, economy and functional arrangement. The type of building and use of the building will change the arrangement of priority considerably, so that it is impossible to rate these factors in the way requested. For example, functional arrangement will inevitably contribute to economy and utility. Utility alone may or may not provide beauty, but beauty, economy and functional arrangement can be provided just as well in a building that provides utility as one that does not."—James A. McCain, President, Kansas State University, Manhattan.

"We want utility most, I believe, with emphasis on the maximum use of space. Esthetic values and consistency with existing buildings runs a close second. We just happen to have little regard for extreme modernistic architecture."—A small Southern school.

"Esthetic crimes have been committed under the guise of 'utility' just as a lack of beauty has sometimes been excused by the spurious claim of economy. Assigning a rank order of importance to these terms assumes a dichotomy which should not exist. That fact that countless specific choices must be made in which one consideration may conflict with another is understood, but this does not lessen the obligation of the architect to achieve an over-all balance with-

and economy. We would expect the architect to retain the basic Georgian Colonial patterns in developing the functional arrangement."—Brother Augustine Philip, President, Manhattan College, NY.

According to the numerical ranking, the elements would be listed as follows in order of their importance:

- 1) utility, 2) functional arrangement, 3) economy, 4) beauty.

It is a little surprising to see that only ten institutions considered economy as the most important element. The terms utility and functional arrangement, although they seem to be competitive, were carefully chosen for this project. They represent the semantics involved in expressing desirable elements in college buildings.

Question No 5:

What types of new buildings will you require most in the next five to ten years? What will they cost?

One hundred and twenty-two respondents specified the types of buildings they planned to erect in the next five to ten years and mentioned estimated costs totaling \$1,622,167,000. These respondents represented colleges in which some 515,887 students are enrolled in undergraduate and graduate programs of study. Based on current forecasts, this student population could double by 1970. The principal categories of building types are listed:

| | | | |
|-----------------|-----|----------------|----|
| Men's Dorm | 118 | Student Union | 32 |
| Women's Dorm | 111 | Science Bldg | 30 |
| Classroom Units | 101 | Gymnasium | 16 |
| Library | 40 | Auditorium | 15 |
| Laboratory | 37 | Fine Arts Bldg | 11 |
| Admin. Bldg | 31 | | |

Question No 6:

Are there any additional comments you wish to make?

Fortunately, a number of the respondents took advantage of the space which was offered for an essay type answer to question 6. They used this space to elaborate their replies to one or more of the preceding short-answer questions, and, in some instances, attached additional sheets to express their opinions.

A sampling of these "additional comments" follows:

"Esthetic expression should be compatible with the campus as a whole and particularly with adjacent buildings. The function of the building should not be sacrificed to the design."—George L. Horner, Superintendent of Architecture, State University of Iowa, Iowa City.

"Some latitude should be allowed the architect for creativity and expression after the general theme has been established."—Kenneth R. Widdall, Dean

dent, University of Washington, Seattle.

"In my opinion all university campus developments should be carefully master planned by qualified architect-engineers working with the academic and executive departmental heads instead of the procedures which have usually been followed in the past, that is, just considering each individual building as the need for it developed."—B. T. Schuerman, SJ, Chairman, Campus Planning Committee, St Louis University, St Louis.

"It is of increasing importance that colleges and universities have some sort of a master plan. Frankly, I question the advisability of some of the ornate master plan projections which I have reviewed. One of the best master plans which I have ever seen consisted entirely of typewritten pages and a very small sketch which indicated in outline form only the land which would be required for future buildings. The typewritten pages, however, contained statements which were quite specific in outlining the objectives of the university, its educational philosophy, the size which would be attained (and not exceeded) over a period of the next fifteen years, a projected growth of the faculty, the student body, and finally the small plan which included a list and description of the buildings and their approximate locations."—L. C. White, Business Manager, Texas Christian University, Fort Worth.

"Here in Hawaii, our situation must indeed be according to our climatic conditions and to guard against termites, our number one problem."—L. M. Barrett, President, Jackson College, Honolulu.

"One of the most difficult problems with architects is failure to accept the responsibility of designing the building within the funds which are initially made available for the structure. Some also question the lack of acceptance of responsibility by architects for identified failure in design . . . such as locating the door of an elevator in such a manner that loading was impossible."—A medium-size school in the Northwest.

"Requested appropriations are always reduced by the state legislature, so economy becomes the most important factor on this campus."—Tom Jenkins, President, State Teachers College, Mayville, ND.

"We doubt the wisdom in planning any building to last longer than fifty years. The idea that a building will last 'forever' is *ridiculous*. We have no buildings on our campus which have been adequate after the first forty years of use. If we could design a building which would fall down at the end of forty years, it would be a great boon to the educational system of the country."—A large Eastern university.

"We seek an architect who is in private practice, and who appreciates the concepts of beauty, utility, and economy. We deplore a 'state' architect concept."—A large school in the Northwest. ■

Housing—Part II

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Illustrated by WILLIAM W. MCMASTER AIA

(Part I of this article appeared in the March Journal)

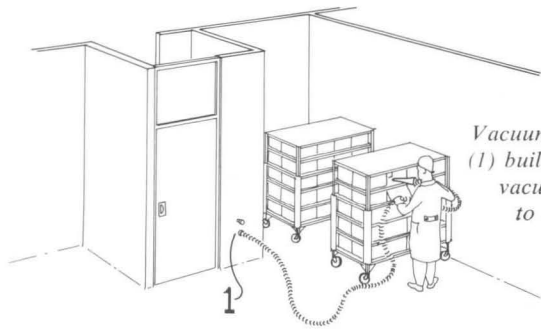


Figure 12
Vacuum extractor
(1) built-in central
vacuum system
to incinerator

AFTER THE INFORMATION has been assembled concerning the function of the animal facilities and the design of the major areas, the following factors should be evaluated for each area: architectural; lighting and electrical; mechanical; and automation.

The interior of the animal room must be easily cleanable and have many of the same properties as the laboratory. The floor and wall surfaces must be more durable than the laboratory finishes because stronger detergents are used to remove the dirt which collects in animal rooms. Cage and equipment traffic is also more severe than personnel traffic.

The floor is one of the most important aspects of animal room sanitation, both because of construction and maintenance considerations. Bacteria, which attach themselves to dust particles and settle to the floor, will incubate if a suitable medium is present.

Perhaps one of the most widely used flooring materials in animal rooms is concrete. It is a very satisfactory material if it is troweled smooth and treated with a surface hardener and sealer. Construction specifications should be very exacting about surface designation and workmanship. Terrazzo is somewhat more durable. However, it is also more costly to install and repair. In corridors where traffic is very heavy, consideration should be given to the installation of terrazzo. Quarry tile, used in many installations, is resistant to organic acids and salts in animal wastes. Two disadvantages are the difficulty in cleaning because of the joints and noise as

application. Membrane waterproofing should be used whenever animal facilities are housed on a supported slab.

The wall surface should be smooth, hard, impact-resistant, free from joints, and resistant to urine and cleaning compounds. Many materials provide these qualities, but compromises usually have to be made. Glazed tile has been used for many years in areas where a high degree of cleanability is required. It is durable but will fracture if subjected to impact from vehicles. The use of an epoxy grout will render the joints impervious.

Film materials which are applied with adhesives and overlapped to form a tight joint give an impervious surface. These materials are flexible so that the danger of cracking or joint separation is reduced. Many of the new synthetic coatings, designed to be applied over concrete or cinder blocks, produce a durable surface at a moderate cost. Care must be exercised in the selection of a product since there is considerable variation in their properties. The concrete block and mortar should be free of any unstable compounds which might cause a separation of the synthetic coating. Cement plaster on cinder or concrete block wall will result in a fairly durable, smooth wall. Any type of hung or false ceiling presents a location for harborage of objectionable organisms. This can be overcome by using a flat concrete ceiling with an application of a sealer or paint. A finishing operation may be required to produce a smooth surface. With this type of ceiling, air ducts may be surface-mounted and caulked at the ceiling, to reduce dirt-collecting surfaces. However, it is best if ducts can be eliminated from the room and placed in the corridor ceiling for easy access without disturbing the animal population.

Doors should be at least 3 feet, 6 inches wide by 7 feet high to accommodate cage racks and service carts. Push plates and recessed door pulls should be used rather than door knobs because of the problem of their becoming damaged or broken. In planning corridor widths, consideration should be given to cage and rack dimensions. An investigation should be made as to the feasibility of using sliding doors. The use of sliding doors, suspended from a track, mounted either on the corridor side or the room side of the wall, would allow elimination of the area required for swing of normal door and would reduce damage to door hardware from moving carts.

Doors in corridors and supply aisles may be equipped with photo-electric mechanisms for automatic operation. Gaskets should be installed at bottom of doors to prevent entry of wild rodents or pests. Since gaskets will render the door airtight, exhaust louvers in corridor doors or walls will facilitate accurate balancing of air pressure, which is

of wheeled vehicles could be installed in animal rooms and corridors of buildings specifically designed for animal housing. A curb 6 inches high and projecting 4 inches from the wall with a sloped top to eliminate dust-catching surfaces should be sufficient. If desired, a large radius cove may be used instead of curbing. A curbing or cage bumper should always be used with plaster walls.

An important consideration is control of noise. This is especially important when animal facilities are located in the same building as laboratories or office space.

Noises in an animal facility generally originate from two sources: the animal itself and transportation of the cages and racks from one area to another. The main problem is encountered with the barking of dogs or chattering of primates. Where animal noise would create a problem, an attempt should be made to isolate the animals in rooms. Some laboratories practice debarking as a temporary measure; however, this is not a permanent solution to noise control. Keeping doors closed reduces noise transmission. The use of rubber tires and a smooth resilient surface in heavy traffic areas will reduce a good percentage of the noise. The architect and engineer should realize, however, that probably the most effective means of handling noise transmission is to separate the animal quarters physically from any area which would be disturbed by noises.

Lighting and Electrical Factors

Adequate electrical outlets should be provided, preferably of the grounded, waterproof type. All rooms should be provided with normal 110 V service, and 220 V service should be available in areas that use heavy-duty equipment.

Light fixtures of the fluorescent type are preferred and should be watertight to permit hosing. They should be either surface-mounted and caulked or recessed to eliminate a horizontal, dust-catching surface. The light intensity design range should be 60 to 100 foot-candles. The use of multiple switching in each room will allow the change in intensity for different functions. A cycling device for the lighting system in the interior breeding room is very useful. Switches should be located outside of the animal room for convenient access and protection from moisture. Sunlight is not required for small animal breeding rooms and is undesirable from the standpoint of the added heat load. Direct sunlight on small animals confined in cages may cause temperatures to rise above a safe level.

A generator should be provided as an auxiliary supply if a power failure occurs. This should be connected to automatically energize the circuits handling the mechanical equipment for all the pro-

facility. Hot and cold water will be required for all facilities; however, many institutions will have additional needs for demineralized water, steams for sterilization, compressed air, gas and vacuum piping, and special sewerage provisions.

Use of floor drains in small animal rooms will depend on whether it is desired to hose down the rooms regularly or to sweep and damp-mop them with a disinfectant. However, it is cheaper to install floor drains during initial construction than to add them at a later date if the room's function is changed. Rooms with floor drains are more flexible in that they can be used for small and large animals or for procedures where larger volumes of water may be required in cleaning.

If drains are installed but not needed immediately, a removable gasketed cover should be placed over the drain. If drains are likely to become clogged with waste feed and bedding, a flushing floor drain or a garbage disposal unit in connection with the drain is advisable. Even when floor drains are omitted, materials which are easily washed should be provided, since damp-mopping of floors and walls with hot water and detergent or wet vacuuming is necessary for adequate germicidal protection. In rooms where fixed cage racks are used in conjunction with flush-type waste pans, a drain line must be used to dispose of waste water. Use of a closed drain system, coupled with membrane waterproofing, will greatly reduce the possibility of leakage between floors when animals are housed over other research functions. Adequate provision should be made for clean-outs in a closed drain system.

Floor drains are usually essential in rooms in which cages are hosed down. This type of cage sanitation is very efficient and dependable, and the animal house must be designed to accommodate such operations. All solid wastes may be flushed from the cage into an open gutter and then into a drain. It is suggested that the drains in monkey and dog rooms should be 6 inches in diameter of the flushing type with special hair traps to avoid clogging.⁴ Adequate and easily accessible cleanouts should be provided.

Although climatic conditions generally determine whether to provide cooling systems for human occupants, facilities for rodents should be provided with complete *airconditioning* regardless of the geographic location of the facility.

The size and type of airconditioning system will depend on the locality, the available utilities, and the heating and cooling requirements of the

⁴ US Public Health Service, Medical School Facilities, Planning Considerations and Architectural Guide. Washington, DC, Government Printing Office, 1961, p 75

humidity are very susceptible to change. If a power failure occurs and is not corrected in a short period of time, the breeding cycle of the animals will be upset or the whole colony may be lost.

Table 1 summarizes the recommendations of a few reliable sources for the *optimum* ranges of relative humidity and temperature. It is recognized that the stated ranges are more critical for the small animals and the monkey than for the cat and dog. The relative humidity in the larger animal areas is usually higher because of the frequent hosing rather than through the mechanical air-handling system. However, in an ideal design, the relative humidity should be mechanically controlled in the larger animal areas.

The architect and engineer should assure themselves that the scientific personnel who will use the facility have evaluated their criteria and selected optimum temperature and humidity range for each area. Since the figures in Table 1 are averages, specific applications may need different ranges. How-

Table 1

Summary of Ranges of Temperature and Relative Humidity

| Species | °F | % RH |
|------------|-------|-------|
| Rat | 65-73 | 45-55 |
| Mouse | 68-75 | 50-60 |
| Guinea pig | 65-75 | 45-55 |
| Rabbit | 60-75 | 40-45 |
| Hamster | 68-75 | 40-55 |
| Dog | 65-75 | 45-55 |
| Cat | 70-75 | 40-45 |
| Monkey | 62-85 | 40-75 |

ever, there is sufficient evidence to suspect that when temperature and/or humidity vary outside the stated ranges, the animals will be more susceptible to disease and will have a lower breeding rate.

In choosing the equipment to aircondition an animal facility, the architect/engineer should consider not only the BTU's generated by the animals, but also the CFM required to keep the odor below an objectionable level. Table 2 summarizes useful design criteria.

It must be realized, however, that the figures given in Table 2 are based on frequent cage-washing procedures and normal animal-holding densities. These procedures contribute to the reduction of objectionable odors, the control of enzootic conditions and a reduction in required rate of air change. If the cages are to be washed more or less than the one-and-a-half to two times per week that Table 2

Table 2

Criteria for Design of Mechanical Systems

| Animal | Weight (lbs) ¹ | CFM/Animal ² | Total BTU/hour/Animal ³ |
|------------|---------------------------|-------------------------|------------------------------------|
| Mouse | .0484 | .147 | .6 |
| Hamster | .2640 | .406 | 2.5 |
| Rat | .5500 | .8150 | 4.3 |
| Guinea pig | .7700 | 1.1550 | 5.6 |
| Chicken | up to 7 lbs | 10.5 | 30.0 |
| Rabbit | up to 8 lbs | 12.0 | 34.0 |
| Cat | up to 8 lbs | 12.0 | 34.0 |
| Monkey | up to 12 lbs | 18.0 | 43.0 |
| Dog | up to 60 lbs | 90.0 | 150.0 |

¹ Recommended average weights as reported by California University, statewide Animal Care Committee.

² Computed by multiplying average weights times CFM/lb (from *Heating, Piping and Airconditioning* 10:289-291, Apr 1938, and

US National Institutes of Health, Environmental Services Branch, Survey of animal rooms, Clinical Center, unpublished report, March 1956).

³ See graph, page 1-163, paragraph—Heat Emission of Animals in "Handbook of Airconditioning, Heating and Ventilating," New York, Industrial Press, 1959.

Supply air for animal rooms should ideally be 100 per cent fresh air, not recirculated. If air is recirculated, more efficient filtration for removal of odors and contaminants will be required. The fresh air does not need sterilization, but will generally need filtering; however, provision should be made, if possible, to add high efficiency filters at a later date when the required experimental conditions are revised. If the animal quarters are contiguous with the other research activities, the air supply system should be separate from other parts of the building. The air should, if possible, be introduced into the rooms near the ceiling and exhausted near the floor to remove the heavier-than-air ammonia fumes. The supply of air to the animal rooms should be introduced into the rooms in as low a velocity as possible, since higher-velocity air tends to increase the chance of the animals' catching disease.

In some installations, the exhaust ducts from animal rooms in which there is loose hair present have no grills over the exhaust duct. This allows hair to be drawn up the duct and blown out. If conditions of the surrounding area do not allow hair to be exhausted, then a filter or incinerator should be used at the room exhaust register inside the exhaust duct. If this is not originally installed, space should be provided for installation at a later date. The exhaust from the animal portion of the building should definitely be separate from the main exhaust header to

side from any animal to prevent possibility of con-
taminated air.

Mechanization

Much of the cost in caring for animals is the labor and delay in cleaning or repairing cages, etc. Industrial engineering methods can be used to study present or proposed operating procedures and determine the areas in which it would be most advantageous to automate equipment and material movement. The architect and engineer, when designing an animal facility, should attempt to incorporate as many labor-saving devices as are economically and practically feasible.

One of the newer innovations for the above-mentioned operations, illustrated in figure 12, is the vacuum extractor used for removing waste material from cages. This system may be used in several types of facilities and at different points in the equipment processing procedure. In conventional colonies, dirty cages may be removed from the animal room and brought to the cage-washing area. The vacuum system can then be used as a means of removing waste from the cages and transporting it from the cage washing area to a storage bin or incinerator where it is destroyed. The vacuum system may also be

Table 3¹

| Species | Animals/ month (average) | Lbs Bedding/ month (average) | Lbs/Animal/ month (average) |
|------------|--------------------------------|------------------------------------|-----------------------------------|
| Mouse | 109,000 | 20,800 | .19 |
| Rat | 38,300 | 25,900 | .67 |
| Guinea pig | 10,350 | 46,200 | 4.46 |
| Rabbit | 3,400 | 15,800 | 4.65 |
| Hamster | 4,850 | 4,000 | .824 |
| Dog | 700 | none | none |
| Cat | 160 | 1,000 | 6.25 |
| Monkey | 1,100 | 4,000 | 3.63 |

¹ from production records, Animal Production and Animal Hospital Sections, Laboratory Aids Branch, DRS, NIH

Table 4² Approximate Feed Consumption

| Species | Daily (grams) | Monthly (lbs) |
|------------|---------------|---------------|
| Mouse | 5 | 0.4 |
| Rat | 15 | 1 |
| Guinea pig | 30 | 2 |
| Rabbit | 150 | 10 |
| Hamster | 10 | 0.7 |
| Dog | 500 | 33 |
| Cat | 150 | 10 |
| Monkey | 300 | 21 |

² Ralston Purina Co, St Louis, "Purina Laboratory Animal." 1962 (-), p. 32

bedding removal, cage washing, water bottle-washing and refilling, bedding replacement and fresh food supply can be integrated so that all functions are carried out progressively with a minimum of manual labor. Automatic cage and rack-washers can operate at much higher water temperatures than human hands can stand; and, therefore, can kill a much larger percentage of the microorganisms at these high temperatures. The cages and racks are also washed faster; and, since the machines are automatic, there is no question of variation from the set standard of cleanliness. By using the vacuum extractor at the beginning of the assembly line to remove soiled bedding and an automatic bedding dispenser at the clean end, the cage would be handled a minimum number of times. Machines have been developed to perform the complete process of water bottle cleaning and filling. The automatic washers clean and sterilize the bottles more thoroughly because they are designed specifically for this operation. An important consideration in the design of washing facilities is provision of adequate space for spare cages, both clean and dirty.

The addition of an efficient incinerator to the animal facility would eliminate the cost of removing waste material. There would be less chance of spreading contamination outside the reservation if the diseased material is destroyed in the incinerator. Handling of infected material can be eliminated if a vacuum extractor is used to transfer the material directly into the incinerator.

In any operation the equipment-handling and service area should be centralized in the animal colony. If expansion is planned or is possible, a location should be selected for the central services so that the area will not be isolated or inconvenient if expansion or extension does take place.

Other areas in which automation has either been used or is thought to be feasible are: automatic watering devices for animal cages, automatic flush pan to catch droppings, overhead storage of bedding for automatic dispensing, specially treated corrugated paper as a cage liner and automatic weight sorter for separating animals in different weight ranges. As more experience is gained in the field of animal care, many different labor-saving devices will be developed. Although the architect/engineer cannot be expected to develop these devices, he should check with groups who have had experience in these areas. (A list of such groups is available upon request from the Research Facilities Planning Branch, NIH.)

Average food and bedding requirements for various species of laboratory animals may be useful as a planning aid. Although scientifically and statistically valid information is difficult to obtain, Tables 3 and 4 may serve as guidelines. ■

NINTH IN A SERIES OF ARTICLES

THE PRACTICE OF URBAN DESIGN

Circulation and Urban Design

Few aspects of contemporary city life arouse the interest of the general public as much as circulation. Conversations about where to live, about going downtown, about the city's appearance, about relocation problems—all lead quickly to discussion of circulation.

Few elements of city life have had more influence on the growth and form of modern cities than circulation. The development of trade centers, of residential areas, of industrial areas—all are intermeshed with circulation between and within cities.

Few means of improving our cities have greater potential than circulation. The building of new factories and new housing, the rebuilding of worn-out urban sectors, the creation of open space, ultimately the clarification of the total form of the metropolis, all depend upon our wisdom in designing our circulation network.

The architect's interest in circulation stems from the fact that architecture, in its broadest sense, is the art of building for full human life. Circulation is now the backbone of urban form so it deeply affects the well-being or malaise of a city and its people.

The architect's interest in circulation cannot be limited to the superficial aspects of a circulation system—such as its outward appearance. Of course, its appearance is very important, but it is only the visual manifestation of a larger principle, which must be sound lest appearance be merely a thin disguise. The architect's participation must begin with the thought of a circulation system as a total urban concept. The magnitude of the task now confronting our cities calls for our examination and participation.

In this, the ninth in our twelve-article series, we will explore the relation between circulation and urban design. Our advisor for this article was Edward H. Holmes, Director of Planning of the Bureau of Public Roads in Washington, DC. We also acknowledge, most gratefully, the writings of Hans Blumenfeld of Toronto, the dean of theorists on city form.

Joseph Watterson FAIA edits the Urban Design articles which are financed by the Institute's supplemental dues. The papers are written and illustrated by the AIA's Urban Design Project Head, Paul D. Spreiregen AIA.

CHARLES A. BLESSING FAIA, AIP, *Chairman, Urban Design Committee*

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Transportation and the Formation of the Modern City

The story of the modern city and its complex circulation network begins two hundred years ago with the industrial revolution. The main effect of the industrial revolution was to accelerate production and bring it from its traditional seat in the country into the city. In this change circulation played the first of its many roles. The cities that grew most rapidly were those most favored by long-distance routes of trade, distribution or the collection of raw materials. These long-distance routes were over land and over water. Usually, they were gifts of nature. Occasionally, they were created by men.

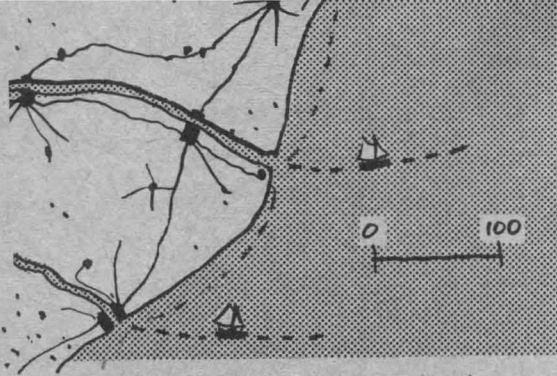
By the middle of the nineteenth century effective means of long-distance travel between cities were developed: the steamboat, railroad and canal. The telegraph served for long-distance communication. The scientific methods of the industrial revolution accelerated production and caused the division and specialization of labor. Dependence on the exchange of goods and services caused the dense clustering of people in the central urban cores.

Originally, the long-distance routes facilitated movement from city to surrounding countryside. Specialization prompted the connections from city to city so that trade could flourish. The overland routes were usually in existence long before they were adapted to the transportation requirements of the new industrial cities. The present New York State throughway, for example, was originally an Indian trail along the Mohawk River, then a settler's route, then a canal route and later a rail route. Now an air route follows it also. Thus the transportation routes developed according to the purpose they served.

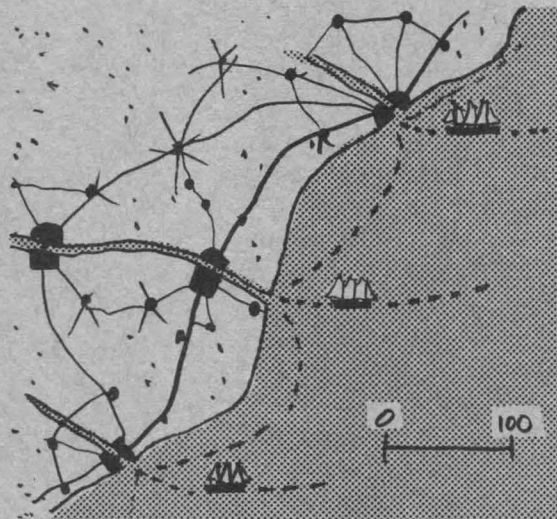
Whereas routes *between* cities were the first to be consciously developed, the improvement of routes *inside* the cities was a later development. The demands upon the internal city routes had to appear before they could be properly developed. This lag between external and internal circulation was and still is one of the outstanding characteristics of the modern city. Redevelopment expert Knox Banner once remarked that we will probably have earth-to-moon transportation before we solve our inner-city transportation problems.

By the end of the nineteenth century, however, means were developed to facilitate movement *within* cities, just as a half-century before means were developed to circulate *between* them. The inner-city vehicles were the horsecar, the streetcar, the street railway and the early trucks and cars. Thus, transportation technology eventually extended to passenger movement inside the city. Inner-city communication was handled by telephone.

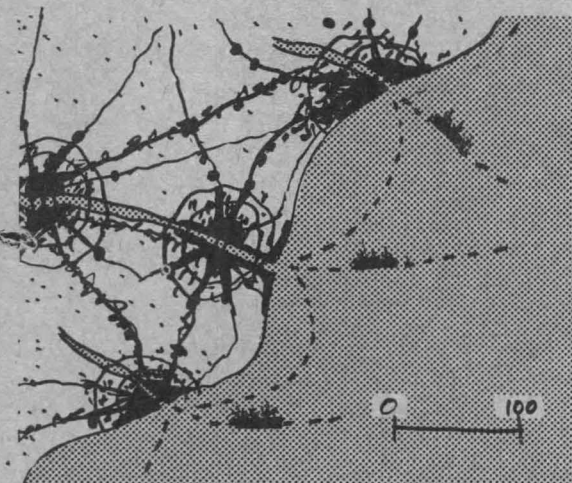
Prior to these innovations the new industrial city was very compact. It had to be, for the movement of its working masses was by foot and horsecar. This limited the size of the early industrial city to a three- or four-mile radius. The conditions of crowding which this produced are only too well known. They also planted



Individual settlements developed as small centers for their local areas



Topography and major routes favored the emergence of advantaged settlements as regional centers



Depending on their own energies and resources these centers became major cities and the routes were then made to accommodate them

occur on a large scale.

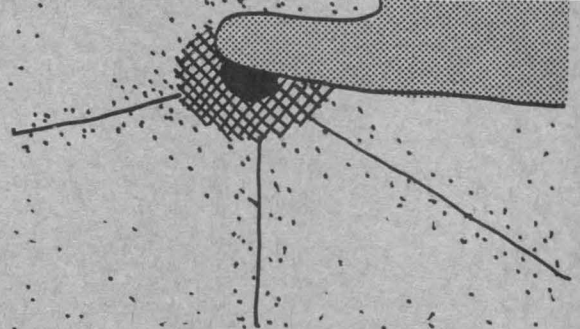
The new modern city was unlike any city before it in function and form. It was both the seat of production and the seat of decision, and it offered a variety of employment opportunities. The internal makeup of the city evolved quickly. The port was the original center of exchange around which warehouses and factories grew. Clustered around them were the houses of banking and commerce. The very poor lived in shacks and hovels as close to the places of work as possible, in order to be near a variety of jobs. The poor lived on land not suitable for anything else, or else in enormously overcrowded tenements. The value of usable land soared in the city centers. In some cities marshy land was filled in to create "real estate." The wealthy established their own residential areas, insulated from the general ugliness of the surrounding city. The skilled and semi-skilled middle class could afford decent dwelling only at the edges. So began their long history as commuters.

As the various urban functions found their most suitable locations they set up movement patterns from one to another. The rights-of-way for public movement began to emerge. The "planned" cities, usually gridirons like Manhattan, had a clear geometric pattern to follow. The "unplanned" ones, like Boston, evolved a spiderweb pattern. Certain areas in the city became dominant for one use or another. Many planned cities grew beyond their planned grids to add surrounding spiderwebs. As congestion increased, problems of sewage disposal, water distribution and the dangers of fire necessitated sewer and water lines and rudimentary fireproof construction. These improvements were made along the principal circulation routes. Distinction between the public way and the private lot became clear—indeed, a matter of law. Thus the early circulation arteries hardened.

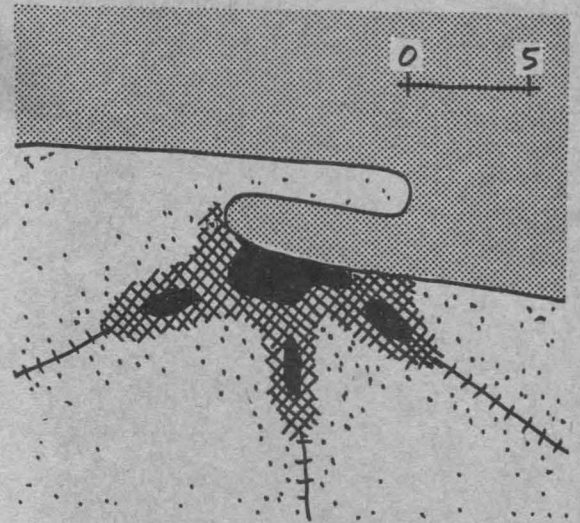
By the time the railroad came to the city, the central core was so ossified that the railroad could not penetrate it. It had to terminate at the edge of the core. Larger cities built peripheral rail terminals at their edges. In the pre-railroad era canals were brought right through the city to act as linear distributors. In some cities, Washington, DC, for example, it was also possible to do this with the railroad, since industry had not hardened the city's form. But in most cases the railroads ended at terminals which became new nuclei. Around these nuclei grew factories, warehouses and hotels. Wholesaling companies located there, as did manufacturers of furniture and clothing who could display their wares to incoming buyers. The central core thus expanded, and traffic between the new terminals increased.

The railroad also made possible the first moves toward decentralization. Certain factories could be located in the country or along the radial railway spokes. Generally, they were of a noxious nature and required amounts of land not available in the central city—steel mills and abattoirs, for example, moved out. Their workers lived in settlements around them. The upper and middle classes began to use the railroads for commuting to work. But the central city remained the preferred location for almost all activities.

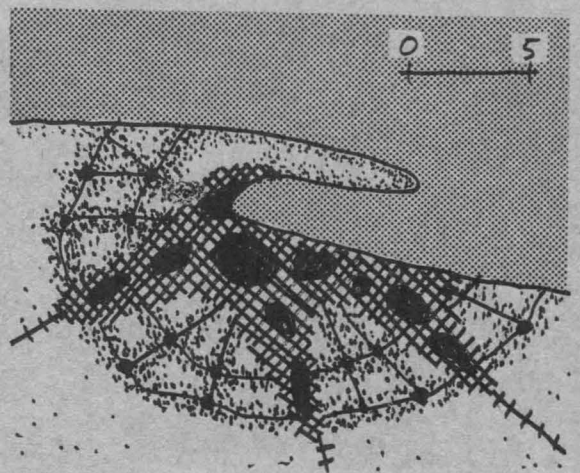
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The city as a central hub was dependent on foot and horsecar transportation



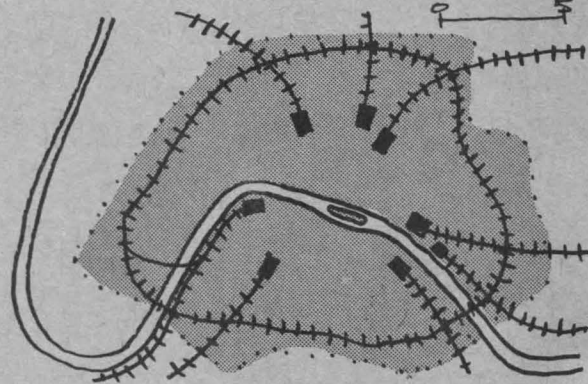
Subsequent growth due to the railroad created a spider-leg form and new outlying hubs



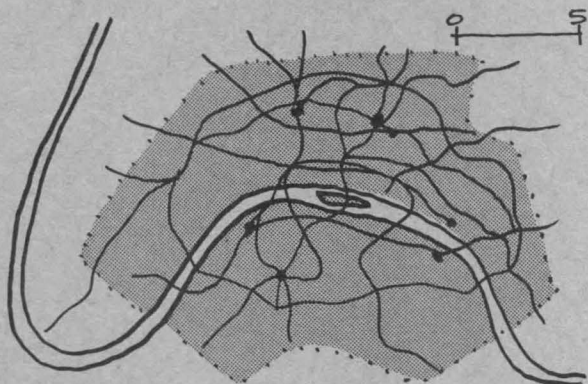
Pre-automobile growth due to the electric streetcar and subway created a spider-web form



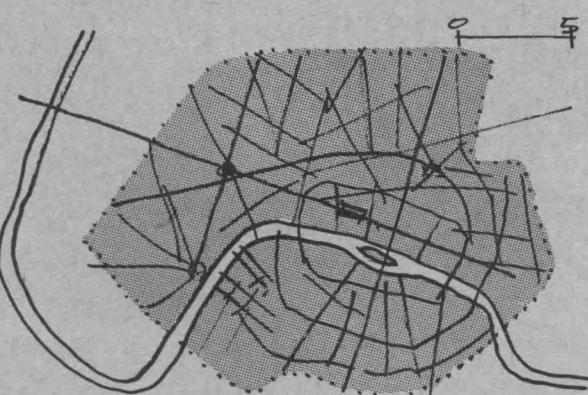
Overland routes converged at a river crossing; Paris was a walled medieval city with a dense maze of streets



Railroads penetrated as radials to the edge of the central core; a railroad loop connected the radials; the city expanded



The underground subway net provided speedy internal circulation, connecting major hubs



Haussman's avenues formed a network of surface arteries

A map of a typical industrial city at the end of the nineteenth century shows a pattern of radial spoke routes emanating from the city's center and projecting far out into the countryside. The radial spokes were a combination of vehicular and railway routes. Within the city a maze of roads developed a spiderweb. Streetcars ran on the main streets. Often they had "created" these streets. Later, rail rapid transit amplified the streetcar routes, first as elevated railways and later as subways. Horse-drawn wagons along with early trucks and streetcars created incredible congestion.

Two European cities, Paris and London, reveal the formalistic aspects of these developments very clearly. In Paris, Baron Haussman had cut wide avenues through the city fabric, connecting the peripheral railway terminals to his new avenue pattern. Throughout the history of Paris, growth had been constrained by a series of enclosing city walls. Paris was thus a dense city with a spiderweb of surface streets connected to a number of peripheral rail terminals. Underground, a subway system created another spiderweb circulation pattern, also related to the peripheral terminals. A peripheral rail loop connected the rail terminals.

London, in contrast, was subject to similar forces of urban growth, but it differed from Paris in two ways. It was not constrained and it never had a grand pattern of monumental streets imposed upon it. Thus, it spread far out into the countryside as a huge star pattern while its center became exceedingly congested.

The key points of both systems were: railroad terminals abutting the central core; an outer rail loop connecting these terminals; and an inner loop subway which connected the rail terminals for passenger movement and which, of course, served the core. The first subway lines thus formed inner loops and crosstown connections. The patterns of London and Paris represent whole systems which are more clear in form than those of our own cities, and so they represent easily understood models.

Thus, the early subways were related to existing urban hubs—sometimes well, sometimes poorly, to be sure—but they were related. They were well woven into the urban fabric. In addition, it was a matter of time before it was realized that circulation innovations were as much *creators of urban form* as they were servants. They created land use and land values.

Few cities in the United States developed as clear a geometric pattern as did London or Paris, largely because our cities were not so clearly circular in form and because our cities were not ringed so geometrically with peripheral rail terminals. Of course, there are instances of near-ring trolley lines, but the principles of adaptation and development are the same—first movement between cities, then within cities, the innovations of technology being applied from the outside in. While we did not produce such clear geometry in our systems, we followed the same rules of location and connection. Obviously we tried to connect what needed connection and, in so doing, we created location by creating accessibility. We also added a most significant twist of our own.

The early developers of our trolley lines recognized very early the value of extending the lines out into the countryside. In this way vast amounts of land could be opened up for speculative development. Significantly, it was an American who persuaded the builders of the London subway to extend their lines out into the countryside around London. He had become a millionaire by doing this with trolley lines in the United States. We were quick to develop our streetcar suburbs in America because our middle class gained sooner from our industrial development than the middle class of Europe. We could afford it before they could.

To attract potential trolley suburbanites to the suburbs, amusement parks were often built at the ends of the lines out in the country. Sunday excursions on a trolley whetted the appetites of the city folks for country living, just as Sunday auto excursions were to do a generation or two later.

The streetcar lines produced a limited star-shaped city with a spiderweb center. The spiderweb center was further intensified by the addition of the peripheral rail terminals. With the development of commuter railroads the over-all form was a giant star with a central spiderweb of movement. The outreaching radials often incorporated an outlying village or major route crossing. Such places were destined to become the later suburban centers.

Still another interesting contrast between our own cities and Paris or London is that the centers of our cities decay while the outer peripheries flourish. In Paris and London the situation is quite the reverse. Perhaps the forced attention to the center of Paris over the centuries established institutions there which became so well-established that they insured the center's prevalence. Certainly in both Paris and London, the pattern of established and highly workable circulation routes had an important effect. Perhaps, too, the automobile is a force that challenges the best of other transportation means to the limit.

Before we turn to the automobile we must pay homage to the great era before it. There are many lessons to be learned from it.

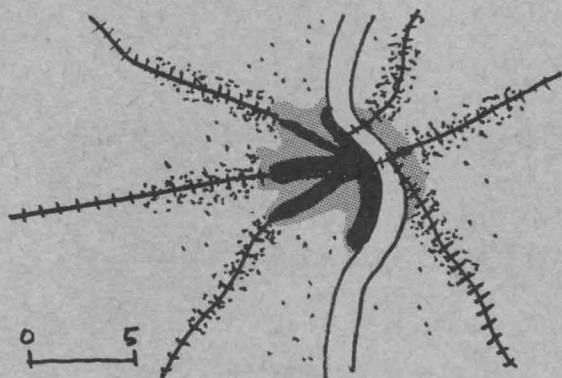
The whole history of pre-auto-era transportation is full of invention. Its leaders were bursting with imagination. Very early, George Washington envisioned our capital city as the trade emporium to the West. That was during the canal era. Baltimore was to eclipse Washington when it developed its port and western railroad. During Jefferson's presidency a public works plan was drawn up for the whole of the what was then the United States—a plan for major canals and roads to connect the states.

The developers of our streetcar systems had more than simply a transportation system in mind. They were aware of the development opportunities they were creating and took full advantage of them, usually by speculating on suburban land. We can criticize their sometimes haphazard building, but not their lack of imagination. We learn from these past developments as we look to the future, and now we must look closely at the automobile to see what it has done.

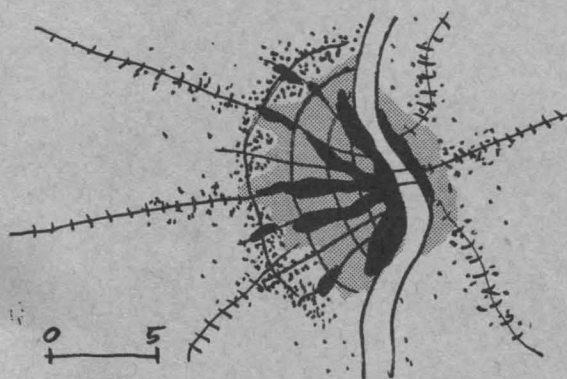
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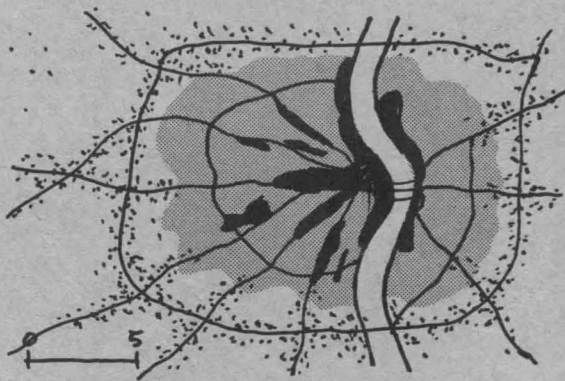
Overland routes converged at a river crossing; the original settlement was a trading center



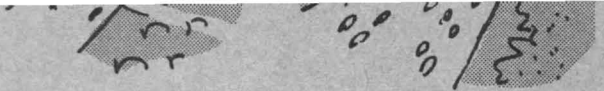
Railroads converged and a transcontinental route passed through; a spider-leg form developed



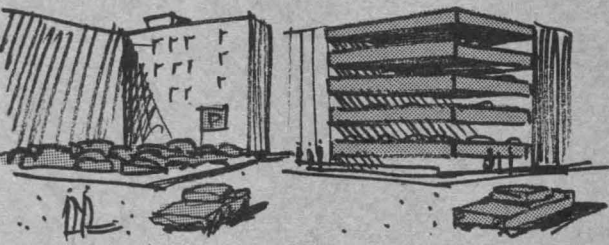
Streetcars allowed dispersal and the formation of a spiderweb pattern



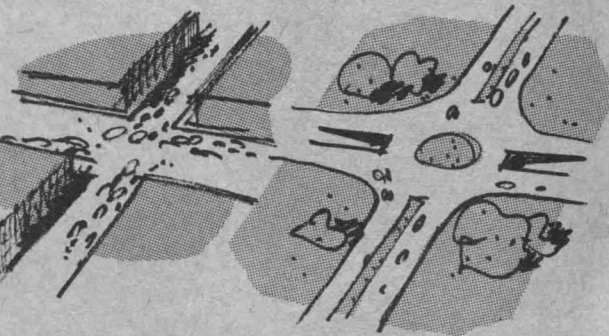
The automobile allowed further dispersal and infilling between radial corridors; the core created the radials, the circumferentials will relieve the radial movement



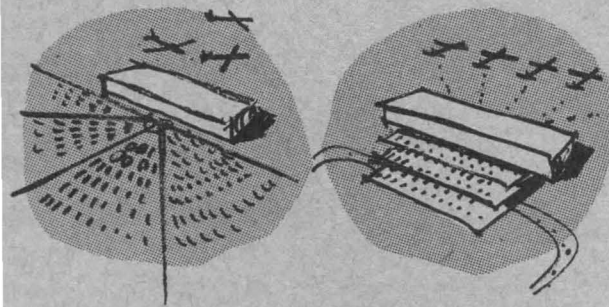
*The automobile forces its way through the city . . .
... requiring clear paths of flow*



*The automobile raises problems of parking . . .
... requiring new forms of storage*



*The automobile creates problems of intersection . . .
... which require new systems of movement*



*The automobile has problems of interchange . . .
... which require new systems of transfer*

form a job set up by the needs of the modern city. True, the automobile is the most apparent cause of central-city congestion and peripheral dispersal, but equally accountable is our attitude toward the use of land together with the rocky history of public transportation.

The trolley, subway and commuter railroad produced the star and spiderweb forms of the metropolis. The automobile allowed the infilling of the space between the out-reaching star radials at a low-development density. The automobile started as a novelty, but quickly took hold as a very useful means of transport. It furnished the answer to a desire for low-density living and high freedom of access, to which we were barely awakened. We must remember that we have been a nation of prodigious inventors. Most of the possible forms of the airplane, for example, were patented before 1920. We call upon our inventions as we need them and then develop them. So it was with the automobile.

Public transportation, on the other hand, started as a necessity, flourished as a profit-making enterprise and became victim to a host of intertwining circumstances. Public transportation—streetcars and rail rapid transit lines—was built and developed as a profit-making enterprise, operating under public franchise. There was profit in its operation, particularly in crowding (the strap-hangers paid the dividends), and there was profit in the development of peripheral land for residence. The public franchise to operate was eventually accompanied by public regulation of fares. In time, the companies were assessed for street maintenance and improvement. In many cases they had to carry school children at reduced fares. Equipment had to be replaced. Maintenance and operating costs went up. Fares remained the same or increased very little. The companies went into the red.

Meanwhile, the automobile habit was taking hold and spreading. After World War II, when production turned from defense to private consumption, the full effect was seen. Fare restrictions were lifted and fares went up. Many people turned to their cars for their journeys to work. Their choice of private car versus public transit was based on convenience and cost—but mostly on convenience. Many studies have been made of the cost of getting to work by car as opposed to bus or subway, considering a host of factors. The private car, considered from all points of view, is by far preferred—although still the more expensive.

Thus, automobile usage hurt public transportation. It deprived it of passengers, it congested surface streets so as to slow down public surface conveyances and created a low-density residential pattern which was difficult to serve.

The result, in terms of city form, was the infilling between the legs of the star-form of the metropolis. Where trolley and rail allowed people and jobs to go to the city's periphery—along the radial routes—the auto allowed them to fill in the areas between the radials. Thus the outlying lands were developed into what many critics feel has been one of the most socially and physically unimaginative land developments in history, but which also represents the crude beginning of a new relation of man to land.

periphery: what changes have occurred in their roles.

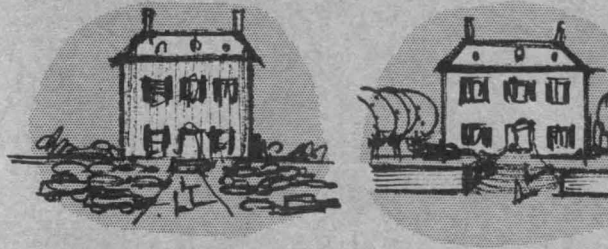
We find that the central areas of our cities have not gained very much in employment. Although white collar workers have increased in number, less of the city's blue collar jobs are in the center. Rush-hour inflow and outflow in the center have increased very little. (The number of people who enter Manhattan to work every day is about the same as it was in 1930.) Rush-hour congestion has increased because more people drive to work than take a bus or subway, and the routes are overloaded. While central-city population increased ten per cent in the last decade suburban population increase has been about fifty per cent. By 1980 the centers of our cities will hold less than half of the population of the large metropolitan areas. Jobs in the centers of the city will also decrease to about half of the total jobs in the metropolis. This amounts to the continuous process of finding the most propitious places for conducting the city's work. The role of the central core has changed from being the preferred location for all activities as it was in the last century, to being the location of administration and personal services as it is now. It also functions for consumer services to a lesser extent. This present administrative role of the city center is more characteristic of the modern metropolis than is manufacturing, which is done now outside the city. Architect Kenzo Tange points out that the administrative role of the city center is also responsible for much traffic congestion. (Decision-makers move around very much in the center during the day.)

The statistics on the switch from public to private transportation show that public transportation patronage has declined two-thirds over-all in the decade following World War II. From 1954 to 1959 transit riders decreased sixty per cent in big cities and seventy per cent in cities of 100,000 or less population. Statistics on other modes of public transport show similar drops.

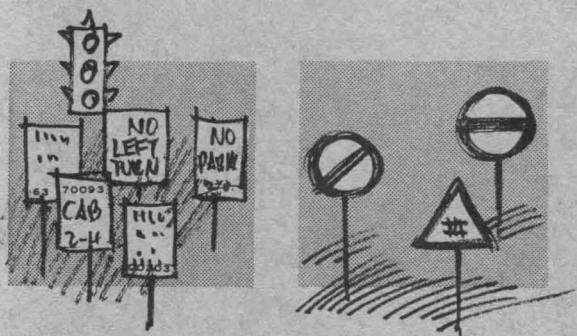
We have also made changes in the way we move goods. This has largely been a switch from rail to truck. Where railroads are limited to their trade routes and terminals, trucks are free to go wherever there is a paved street. One out of every six vehicles in the US is a truck, totaling eleven million trucks today. Half a million of them are long-distance vans. Trucks carry half the ton-miles of freight in our country. Trucking more than eclipses rail-roading in dollar-volume of business and carries one-fifth of all inter-city freight, and all inner-city freight.

The facts of our land-use practices are also revealing. In general, we have been increasing the amount of new land we stake out for any particular use. New factories occupy much more land than they would have ten or twenty years ago, due to horizontal production and the practice of holding land in reserve. Schools are now almost always horizontal. Our urban population density decreased from about 5,500 persons per square mile to about 3,800 persons per square mile between 1950 and 1960. This lowering of density operates hand-in-hand with the increasing use of automobiles and truck transport. By way of example, metropolitan New York grew seventy square miles for every million people it gained between 1900 and 1940. By 1985 it is expected to grow by

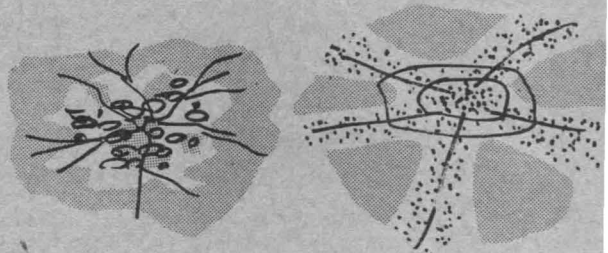
*The automobile can corrode a city . . .
... or stimulate new building forms*



*The automobile can destroy old architecture . . .
... or be made subservient to it*



*The automobile requires many directional devices . . .
... which require simplified design*



*The automobile causes confusion of urban form . . .
... but can create a whole new order of form*

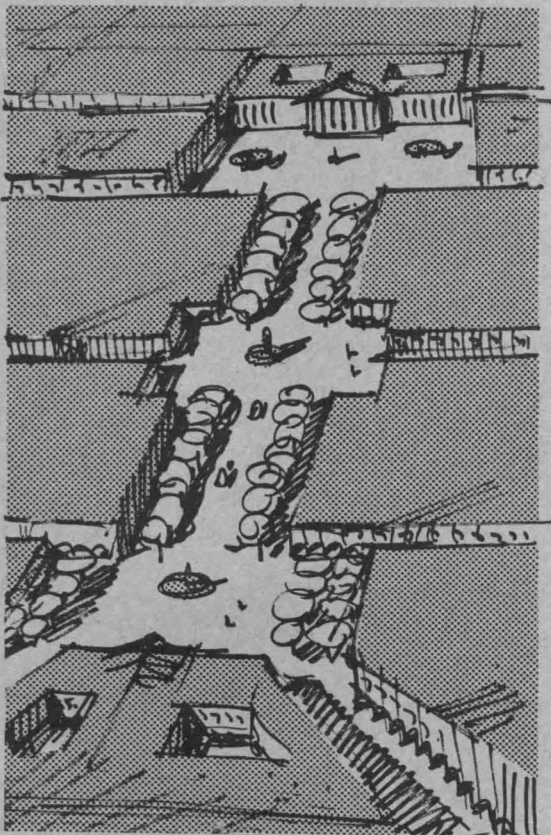


seven hundred square miles for another 3.8 million people. The radiocentric growth of our cities occurs as a gradual progression of rings of lower and lower density.

The over-all effects of these developments are the increasing role of the periphery and the changing role of the old core—we have already noted the further adjustment of city form and function which spans the growth of the city into a metropolis. Where the central core started as an all-purpose center, where later it flowed out into the countryside, where later still there was an exodus of many of the functions of the center—we now find that many of the peripheral functions are taking a position of dominance, functioning as a low-density but high-activity peripheral ring. Statistics clearly reveal this. Radial highway movements in and out of our major cities will increase only about ten per cent on the average in the next thirty years, while circumferential highway movements will increase from 60 to 135 per cent in various cities.

Wider recognition of this fact is essential lest we overlook the possibilities for designing our peripheral area development. The problems of rush-hour traffic in and out of the center occupy our minds to an inordinate degree. All of us have been caught in such jams, and they are easily captured on film, in cartoons or in a text on urban problems. It is true that they are severe, but for many cities they will be largely corrected by a combination of improved radials, inner ring bypass roads and public transportation. Because radials develop before ring bypasses, much of the traffic in the central cores is through traffic. Three-fourths of the traffic in the central city is unnecessary traffic—it has neither origin nor destination in the central core. It passes through because no bypass exists. But the inner loops will act as traffic bypasses. In cities where inner loops are partially in operation, local surface traffic has been measurably reduced. The outer rings are quicker to be built since there are fewer obstacles in their paths. These conveyors of circumferential traffic are often jammed at rush times, but the jams seem tolerable in comparison to those on the old radials. The history of radial and loop routes seems to have repeated itself, from the railroad era to the highway era—first the radials, then the circumferentials.

The trend cited here, reinforced by carefully considered statistics, indicates that the automobile is now the predominant means of passenger transportation. Although it is dominant, it cannot possibly handle all of our circulation problems. The evidence for this goes beyond the compilation of circulation facts. It forces us to consider all means of transportation together and, what is more, our social values.



The Renaissance and late Baroque city was designed to be seen and comprehended on foot and in motion, at the speed of the pedestrian and the carriage. Wheeled movement did not cancel design based on foot movement; it added to it

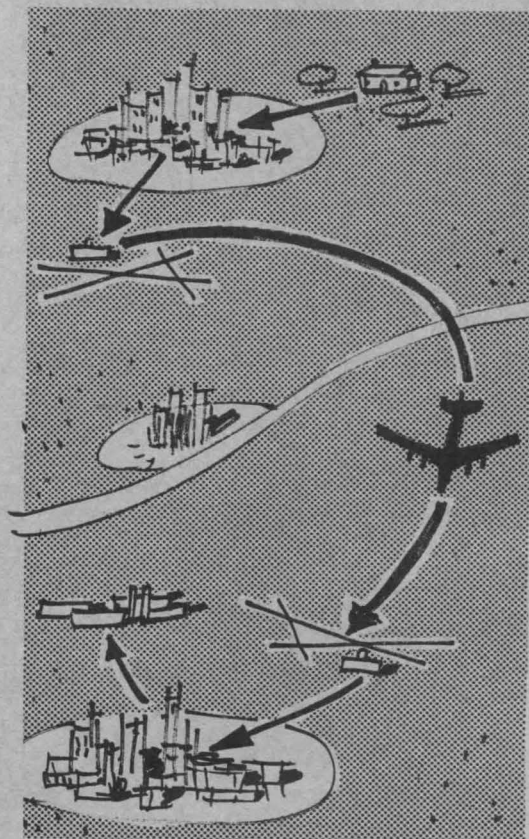
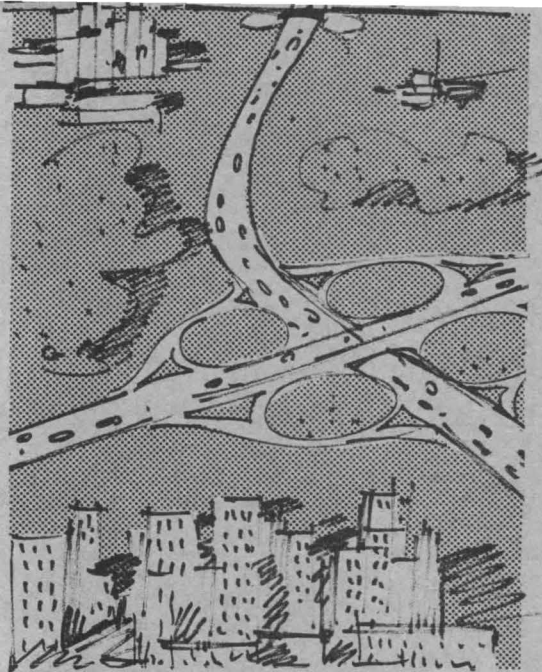
The changing role of the central core is not a decline but a readjustment. Many people could not care less about it, but the fact is that the core is there and it contains many of the vital institutions of our society which everyone depends upon, directly or indirectly. It remains the best place for the exchange of ideas, for night schools, for the meetings of the principal decision-makers, for the best theaters. Major hotels and office buildings are still being built in the central cores. If it is a mistake to condemn the core for its decline and general unpopularity, it is equally a mistake not to recognize its vital importance in the whole metropolis. It is also a mistake to overlook the rest of the expanding metropolis when considering the core. All must be examined together.

We must consider this problem because there is a pressing question as to just how central-area circulation will be achieved. If one were to make a careful study of a typical downtown, serving its fullest possible role, one would have to delve into the changing uses and types of buildings in the downtown. Assuming that some kind of public transportation system was in operation, workers would come to the center by a combination of public transit and private cars. Basing the study on the economy, role and nature of a particular city, one could determine within plausible and therefore useful limits the number of new buildings to be built, existing buildings to remain in use, old buildings to be demolished or remodeled—and of key importance—the volume of parking structures. The volume of garages necessary, as sheer bulk, could prove to be disconcerting. Assuming that local streets could handle the inrush and outrush of all of these cars, the question of their occupying so much space horizontally and vertically is formidable.

Conceivably large parking structures could ring the city, as Louis Kahn has proposed, picturing them as great storage turrets. Or they could be buried visually—surrounded on the exterior with some active function, such as offices. In actual fact we know that the central part of a city is not easily changed and that alterations in the core necessarily emerge as patchwork, a less than neat cut-and-fill in the urban fabric.

The point is that we have raised a question of social values—one that begins to supersede the hard facts of circulation. Our approach in this moment of our urban evolution must be to understand our tools while formulating a spectrum of social ideas. The tools lie in understanding the facts of movement. These are the facts of density, the different means of circulation for different densities and the knowledge of which of the various modes of transportation work best in different parts of the city. Let us now consider them.

The ultimate world of scale which our new means of motion create extends far beyond an individual city. It links city to city and city to countryside. Travel is measured in time rather than distance. This scale, too, must be added to our older established scales of motion



2½ mph

... medium or high density areas



... areas of intense activity. Walking is limited by practical walking distance, a quarter to a half mile

The PRIVATE AUTOMOBILE is best for trips ...



... in low density areas



... in medium density areas

15-75 mph

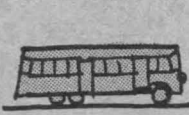


... at odd times



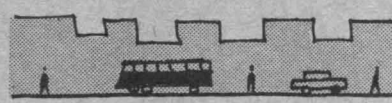
... to odd places

The LOCAL BUS is best for trips ...



... in medium density areas

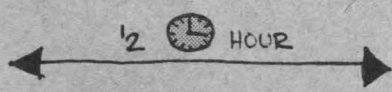
15-30mph



... in high density areas for short distances



... from medium to high density areas



... if travel time is not too long

draws about thirty per cent of all traffic to its center. This is traffic that brings people to the center for work, meetings or recreation. It has a purpose in going to the center. Much, however, of the general traffic of the city has to pass through the center because bypass routes are inadequate. This amounts to about three-quarters of the total traffic in the center, as we mentioned earlier. Thus, the most severe jams on the radials occur during rush hours, when through and local traffic mix. In the core itself random movements and through traffic cause jams at midday. The smaller a city, the more important its core.

Most urban trips originate from the home. Nearly half of these trips are to and from work. Other trips from the home, in descending order of frequency, are for recreation, shopping, business transactions, school and medical appointments. This is so during the working week; on weekends most trips are for recreation and shopping.

Statistics of this type disclose the sources of traffic generation. Examination reveals that different types of land-use generate different types of trips. An acre of residential suburban land, for example, generates about thirty trips a day, whereas an acre of suburban commercial land generates about three hundred.

The position of an acre of land in relation to the city center has an important effect too. An acre in the core of a large metropolis, for example, generates about fifteen hundred trips a day. Its immediate periphery generates about two hundred or more trips a day per acre; the three-mile zone, about one hundred; and the twelve-mile zone, about twenty.

Figures of this kind must always be derived by careful survey of a particular community. They furnish knowledge as to how much traffic can be expected, where it comes from and why. Once known, the next question is how are all these trips made?

The private car, first of all, is the best means of making trips in low-density areas. The auto also works best in medium-density areas (7,000-25,000 persons per square mile), at unusual times or for unusual directions such as weekend travel, which is very high, or for an evening out. To a certain extent it also works well for unusual trips at odd times in the high-density core. The private car is the most natural substitute for poor public transportation.

Public surface transportation (bus or streetcar) works well within medium-density areas where many people are going to the same place—to work, for example. It also works well for feeder operations to a subway or rail terminal. It works well for short trips from a medium- to high-density area and for short trips within a high-density core, such as the center of the city.

Rapid transit (express buses) works well for long and medium trips in medium-density areas and for making trips from medium- and low-density areas to downtown and within downtown. Stops must be limited and the buses must operate on their own roadway.

Rail rapid transit (in a subway, elevated or on the surface in its own right-of-way) is best for long trips from low- and medium-density areas to the central core, providing access to stations is good.

ing rush hour. Suburban commuter lines can operate on a ten-minute to an hour headway.

—Another way to look at all this is to consider it from the point of view of the user: walking is the best way to get around in a high-density center, providing there are not too many cross street interruptions where vehicular traffic hampers the pedestrian. This is the way a shopping center or an air terminal operates. The effective radius of a pedestrian area is about a quarter of a mile, which is somewhat limiting. Shuttle buses, as are now in operation in downtown Washington, DC, can extend this distance.

Driving is the best means of circulation for the myriad of special trips anywhere at odd times—in the absence of other convenient means and up to the point where congestion becomes an inconvenience itself. In the suburbs and in low-density areas roads can handle the random movements. In the crowded center we must have supplementary means to attract as many people away from their cars as we can so as to reduce congestion. Driving to suburban mass-transit stations is also quite workable, again largely dependent on convenience and good public transportation. The private car best serves weekend and leisure trips, from which commuter railroads once drew large amounts of revenue.

Public transportation works where there are concentrations of passengers in space and time. People living at low density justify a mass-transit line and stations if enough come to use it at the same time. A high-density area justifies mass-transit facilities even though people use it at all different times of the day.

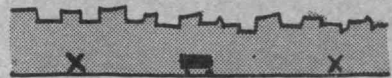
Finally, the passenger elevator permits high concentrations of people, and works well for them. We are apt to take it for granted, as a means of public transportation, because it is privately owned, but it is free to the public. So the elevator *is* a kind of public service facility. It allows a large building to function. The building owner accepts its costs as part of the costs of operation of the building.

It would be very well to think of the cost of all public transportation this way. In its development stages public transport was a profit-making operation. Now it must be thought of as a necessary public utility—like a sewer or a water system or the fire department. Its costs must be measured not in terms of profit, as a business venture, but as part of the cost of operation of a social venture—the city. The city once required concentration because means of circulation were highly limited. The apparent potential urban limitlessness created by our modern means of circulation does not imply the dissolution of the city, but the creation of the metropolis—and that still needs a concentrated center.

Downtown “survival,” depending so much on public transportation, brings up a major point of discussion currently being waged in transportation planning circles. The question amounts to what would be, in a given city, the optimum balance between private and mass transportation. The proportion is called the “modal split.” The question of the modal split cannot be answered by considering urban transportation in isolation. In part, size is a

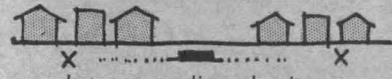
... between high density areas

40-60 mph



... at specially planned and convenient terminals in high density areas

RAIL RAPID transit is best ...



... between medium density areas



... between high density areas

40-70 mph

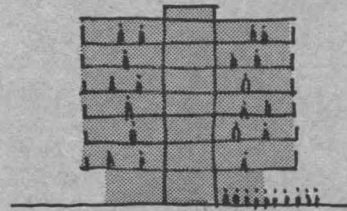


... for short trips within high density areas



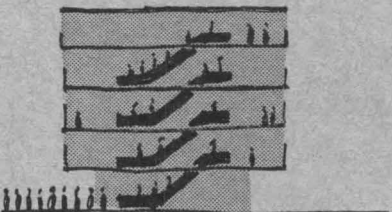
... for concentrations of people in time or place

VERTICAL TRANSPORTATION is best for ...

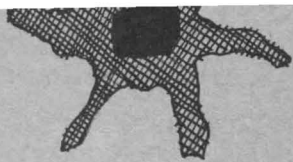


... vertical concentrations in time or place

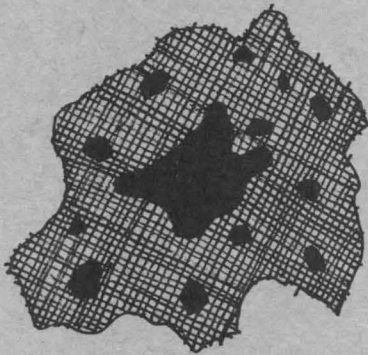
100-800 fpm



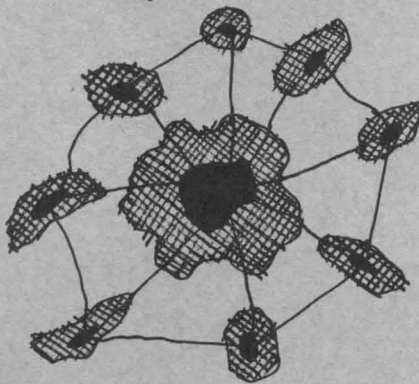
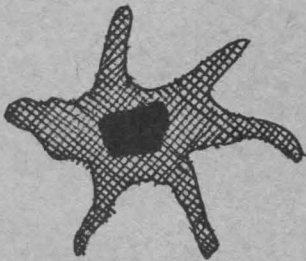
... mass vertical movements over short distances



Circulation patterns which serve only to continue the pattern of enlargement of a city may be shortsighted



CIRCULATION AS CREATOR OF LAND-USE:



Circulation patterns should be regarded as major instruments for achieving better urban forms—forms which are discernible, flexible, amenable, in key with their landscapes and feeding a variety of urban sectors

based on the larger purpose and social values which a city aims to achieve. Urban transportation experts have recognized another two-sided question, which is often discussed independently of the question of modal split, but which is part of the same problem.

That is the very great question of whether a transportation system should be designed to accommodate existing conditions or whether the proposed transportation system should be employed as a creative tool to develop new urban form. The question is usually posed thus: Should circulation *serve* or *create* land-use?

In its recent special issue on transportation *Architectural Forum* mentioned two major studies which are based on these two opposite views. A transportation plan for Chicago (CATS) was based on the propagation of the presently existing pattern—circulation would serve existing and likely land-use. A transportation plan, still being developed, for the Pennsylvania-New Jersey-Delaware (Penjerdel) region is premised on the idea that the placement and design of the circulation system will create new urban forms, and thus desired land-use.

The idea of the former concept is an extension of the familiar origin-and-destination concept of transportation planning. Certainly, it is important to improve the means of circulation for those areas of the city that are in need of improvement. The magnitude of the job for most cities, however, is so great that the very act of improving an existing origin-and-destination situation is decisively creative. The problem of this approach is that an existing city-form and its likely extension may not be good at all. It may be that a better pattern is possible than the one which enlarges upon an existing pattern. Frequently, this problem occurs in times of change, as, for example, when plumbing came into general use.

Many old buildings without original plumbing and other utilities can now be found with plumbing stacks on the outside, fastened to an exterior wall with a myriad of branch connections. To erect a building today in such a manner would be unthinkable. Plumbing is now completely integrated into the design. One cannot help but see a parallel in new transportation systems we are tacking onto our old cities.

The central question we must respond to, in remodeling our cities on so vast a scale, is how and to what extent can our remodeling become positive creation? To what extent *do* we owe allegiance to a past form when we are rebuilding so large a proportion of our cities? Should we not be thinking of a best possible new form, even though we arrive at it piece by piece over the years and even though we do not have all the answers now? This question lies at the heart of transportation planning because transportation routes are major determining elements. As we build them we largely fix the form of the city for a long time, even though we build piece by piece. In short, should we not discard the attitude of remodeling and adopt instead an approach of new creation—this in recognition of the task as an unprecedented opportunity?

It is clear that any design for the future city must be based on an idea of the way we want to live in the future, a picture that has not yet been painted. Here, architects and urban design come in.

patterns. Two recent plans illustrate the summation of current thinking. The first of these is a plan for the greater metropolitan area of Copenhagen; the second is a plan in its initial stages for the Twin Cities area of Minnesota.

The Copenhagen plan was developed in two stages: the first is called the "finger" plan; the second, the "open space" plan. The first part of the Copenhagen plan is to be an extension of the city into the countryside in the form of five "finger" corridors. Copenhagen is a seacoast city and, therefore, the direction for growth is fixed. The five fingers are to extend inland in the most advantageous directions. All five fingers will be centered on rail rapid transit lines. The numbers of people in these finger corridors, their development and the distance between house and station were carefully calculated to insure the workability of the transportation system. In addition to the rail rapid transit system, a public surface transportation system and a new road system were planned. The Danes recognized fully the upswing in car use in their country. The land between the five fingers will be left open as recreational space.

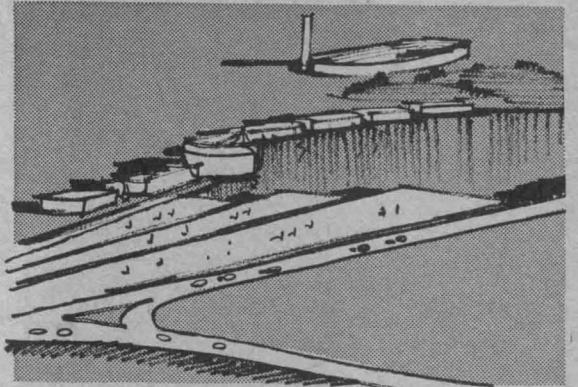
The second part of the Copenhagen plan encompassed a much larger area. It considered the entire peninsula of which Copenhagen is the center, and indicated two giant corridors for the city's development even beyond the five fingers. This plan considered all the possibilities for growth, land-use and circulation in the entire peninsula. The corridors will extend from the edge of metropolitan Copenhagen southwestward. One of these corridors will follow the coast; a new harbor is proposed for its center. Two large corridors will extend some thirty miles out from the center of downtown Copenhagen. These corridors will be mainly industrial sites and places of residence for workers. Commuter railroads and highways will connect them to central Copenhagen. Internal circulation will be by car, bus and foot. The Copenhagen metropolitan plan sums up our knowledge of travel habits and transportation means and applies it to a positive and creative plan.

The plan for the Twin Cities area of Minnesota is very much in an embryonic stage. It amounts to a series of studies that look far beyond the problems and the developments of the Twin Cities themselves. These studies were largely the work of Norman Day on the staff of the Twin Cities Metropolitan Planning Commission. The major cities of the world were studied to discern their patterns of growth. Day's studies suggest the forms that the Twin Cities area might take through the adoption of various transportation concepts. This kind of investigation gives insight to the citizens and officials who will make decisions about them. The studies also show that transportation can be used as a positive tool in creating urban form. Such studies could well be made for all our cities.

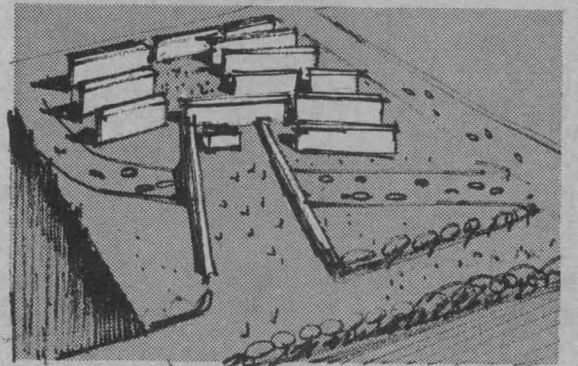
How do the architect's talents fit into such endeavors? The architect's participation can start with detailed consideration of a transportation plan and proceed to understanding the transportation system as a whole and its total effects on the metropolis. Ultimately, the architect's role is to furnish ideas and goals for urban life, thus to give transportation planning a sound direction.



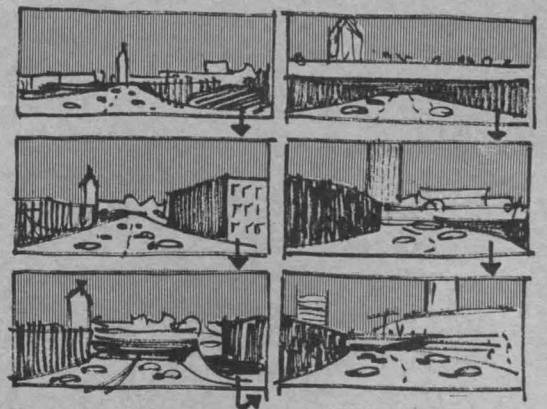
Lawrence Halprin's suggestion for integrating architecture and an urban expressway



Alvar Aalto's three-terraced parking garage for cultural facilities on Töölö Bay in central Helsinki



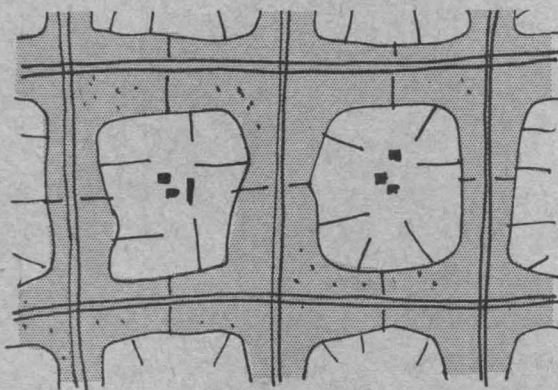
Aalto's concept for a group of government buildings in Gothenburg, Sweden: roadway and parking are under the entrance ramp



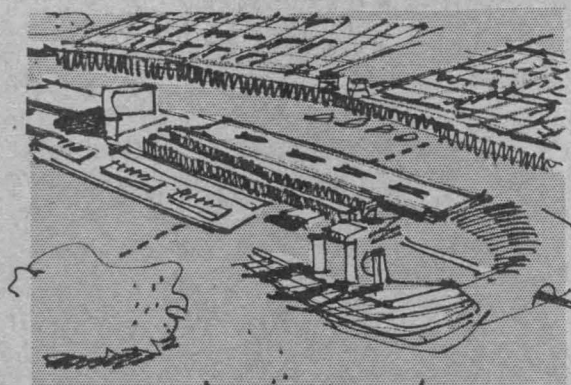
Sequence of views of the city from an urban expressway as envisioned by Appleyard, Lynch and Myer (from "A View from the Road")



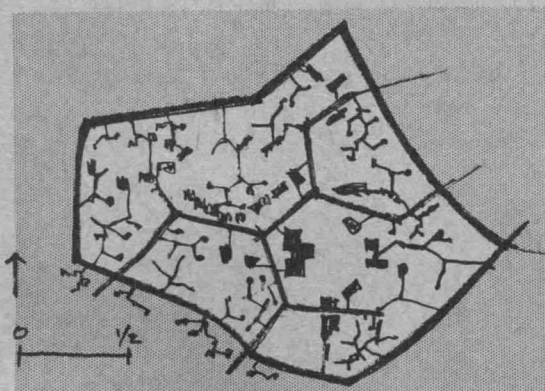
Concept of a circulation pattern as branching arteries of varying function



Concept of a circulation pattern as a series of integral precincts



The center of Cumbernauld, a multi-level vehicular-pedestrian separation design for a new town in Scotland



Road plan of Le Mirail, a new town for 100,000 people near Toulouse, France; basically a concept of branching arteries and precincts

greater imagination. Too often it is treated as a rural expressway which finds its way into the city. The urban expressway is quite different from the rural expressway. Halprin's sketches show how the expressway can be designed in conjunction with a variety of urban buildings. The valuable space which the expressway occupies can be more fully used and the expressway can be better woven into the city fabric. Kevin Lynch has pointed out that the urban expressway can be designed to fit the city far more advantageously from a visual standpoint. He proposes that the views of the various parts of the city which one sees from the expressway should be taken into account in the process of expressway design. The pattern and form of the city can be unfolded to the driver. This would not only be esthetically pleasing, it would also be very practical. At expressway speed it is difficult to know where to turn off; a visually oriented urban expressway can tell the speeding driver where he is, and so improve the functioning of the system.

We have much to do to improve the design of the traffic signs which line our highways and streets. We may be forced to adopt a purely graphic system of signs simply because the verbal signs cannot easily be read. The architect can help design them. He can also be instrumental in open space design. The access to open countryside afforded by highways carries responsibility for the countryside's proper development. Architects can clarify the various roles of open space. The understanding of open space pervades the history of our profession and now needs fresh presentation. These problems of design are important, but there are much larger problems that we must face.

A recent revision of the Highway Act specified that all Federally financed roads shall be developed along with "planning processes" by July 1965. In effect, this means that our major road systems have to become part of a general community plan. This is a major step forward. At this time, however, there are few communities which have developed any ideas of community goals—ideas which should lead transportation planning. This recent amendment of the Highway Act should promote better community planning. It will compel communities to think about what they want. The architect must help in this. It may be one of the open doors to better urban design.

We must always remember that the leaders of our profession have thought deeply on the larger concept of community design. Frank Lloyd Wright's architecture must always be understood in the context of his large-scale thinking. So with the architecture of Le Corbusier and Alvar Aalto. Basic to the planning of all of these men has been the concept of circulation.

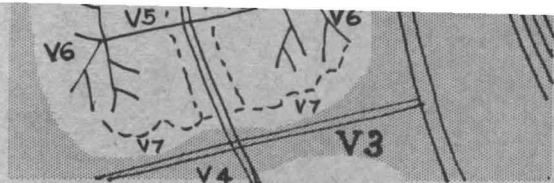
Frank Lloyd Wright, in his Broadacres plan, foresaw the adoption of the automobile on an almost universal scale in this country. Alvar Aalto makes careful distinction between the various kinds of routes in his community plans. Aalto has also been very imaginative in the design of particular details of transportation systems. His proposals for a cultural center for Helsinki built along the city's lake include a parking garage with several levels, forming a three-terraced "fan." The arriving driver will be able

pedestrians and motorists emerging from their cars would meet, to proceed through this grand entrance court to the various government buildings.

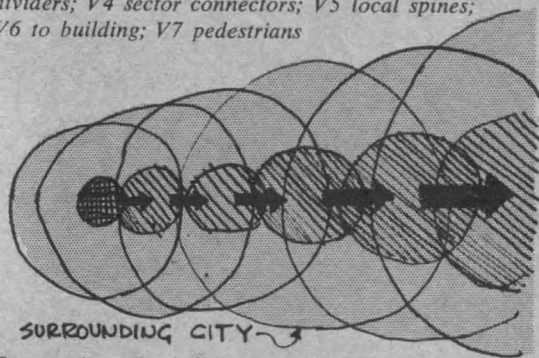
Certainly, the architect with the greatest vision in modern times is Le Corbusier. His earliest plans for the modern city were based on new modes of circulation. His plan for Paris, published in the twenties, was sponsored by one of the major automobile interests of France. Le Corbusier early recognized the advantages of the linear city, which derived from transportation, perhaps taking his cue from the work of Soria y Mata. Le Corbusier is also noted for his principle of the "Seven Routes," a refinement of a system long in existence in France. The seven routes are the types of surface circulation paths. They are designated V1, V2, V3, etc. The V1 route, for example, connects city to city. It is the equivalent of our interstate system. The progress of routes leads ultimately to the V7, a pedestrian pathway. A clear expression of the seven routes of Le Corbusier is found in his plan for Chandigarh. Somewhat less known in Le Corbusier's thinking for transportation is his plan for the development of the whole of France. He was also quick to notice the potential of the route system developing in the United States when he visited this country in the thirties. Le Corbusier showed that circulation planning cannot be done without broad vision.

These leading thinkers in our profession necessarily based many of their concepts on intuition. Today we have a large body of knowledge derived from careful observation. The intuition of our great architects has often been prophetic. The scientific observations which have since been made and digested for us should be taken as further points of departure for our thinking, to supplement the keen intuition of a Le Corbusier, Wright or Aalto. Among the observations which have been made are the number of forms which the modern city is taking. Kevin Lynch described several of these.

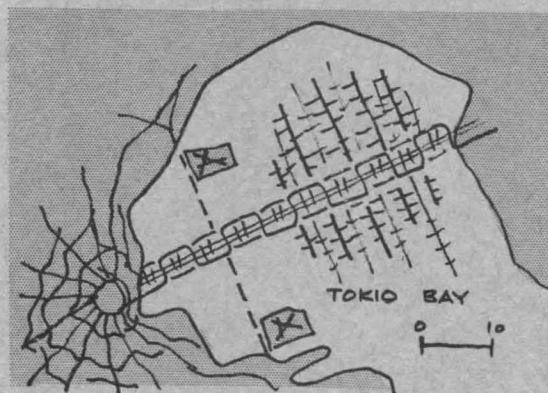
The first of these is the sheet form, akin to our spreading suburbs—like the form of Los Angeles. The sheet form is a spread of undifferentiated growth without focal centers, without major routes or particular relief in form. A second form is the core—a city as a dense and vital center with surrounding development. Most of our cities of a million population are such forms. The galaxy, a third form, amounts to a series of cores arrayed in the landscape at functional distances from one another. The urbanized areas of our country delineated by the census are made up of such galaxies. The satellite form is a variation of the galaxy—a galaxy with a predominant central core. Most of our older cities that are spreading out and enveloping what were independent townships are satellite forms. A variation of the satellite is the linear form. Megalopolis is a linear form as are the cities from Springfield, Massachusetts, southward along the Connecticut River and the cities of the east coast of Florida. The ring is a linear form which closes on itself. The cities of the San Francisco Bay area and the principal cities of Holland form rings. The star is a core city with linear radials. Boston, St. Louis and San Antonio are, or have



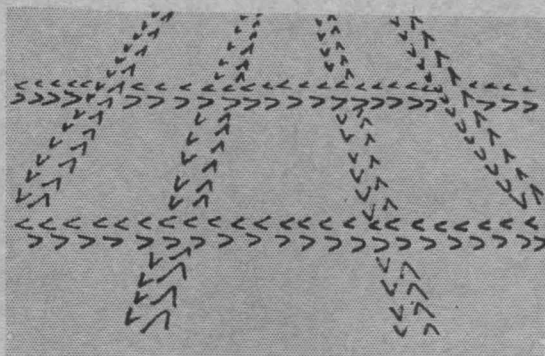
Le Corbusier's road classification: V1 cross country; V2 branch to city; V3 sector dividers; V4 sector connectors; V5 local spines; V6 to building; V7 pedestrians



Constantinus Doxiadis's concept of the expanding city: the center becomes overburdened unless allowed to expand linearly



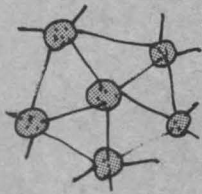
Kenzo Tange's visionary plan for Tokyo depends on a unique automobile circulation system operating along a linear spine



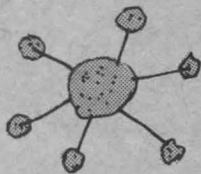
Louis Kahn's method of showing a traffic plan: circulation conceived as an architecture of motion



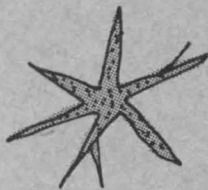
The CORE form
Dallas
Tulsa



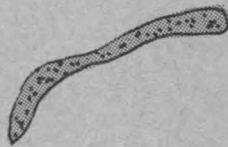
The GALAXY form
Cities of North Germany
Cities of Ohio



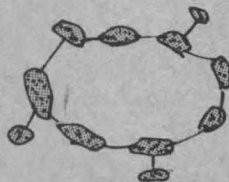
The SATELLITE form
Stockholm
Plan for Baku, Russia



The STAR form
Copenhagen
Washington, DC



The LINEAR form
Megalopolis
Stalingrad



The RING form
Cities of Holland
San Francisco Bay



The POLYCENTERED NET
Detroit
New Orleans

it can support public circulation. The galaxy and satellite have cores, open space and can support public transit. The linear city can have open space close at hand, it can easily be expanded in any part by adding lateral arms and it can support public transit. The star can enjoy the same amenities—it is a combination of several linear cities intersecting at a core. The ring has a large open space in its center. The polycentered net can have all these advantages plus the major advantage of being most adaptable to changing functions and varying landscapes.

With all of these forms we must recognize the new scale of design with which we are working. We are no longer dealing with the streetscape or cityscape, but with the *metroscape*—an enormous urban environment which we experience through time and motion. We should recognize the problems of visual design which this represents.

The over-all population density of the United States is now about sixty persons per square mile. We could continue our present practices of urban sprawl for some time, despite the increasing problems of congestion that would result. The population density of Japan is over six hundred persons per acre and in Holland it is even higher—some nine hundred persons per square mile. By Dutch standards our land could hold 2.6 billion people. Clearly, the problem is not one of capacity. It is a problem of the quality of life which our increasing population will have. The ultimate role of architects concerned with circulation is to help formulate the concepts of life which we can realize in the years to come. Our new circulation systems have the potential to give us a greater freedom of access to land than we have ever had before. They can enable us to use more facilities, to visit more places and to enjoy more of the opportunities that this country presents. There is no doubt that we will have to mature somewhat as a people in our understanding and appreciation of our landscape in order to do this properly. The increasing concern for open space and for the preservation of our natural land gives promise that we are awakening to the problem. The pressing task for architects is, therefore, to help develop the means by which our increasing population—150 million more people in our professional lifetimes—will come to live, using our new circulation techniques properly. ◀

For further reading:

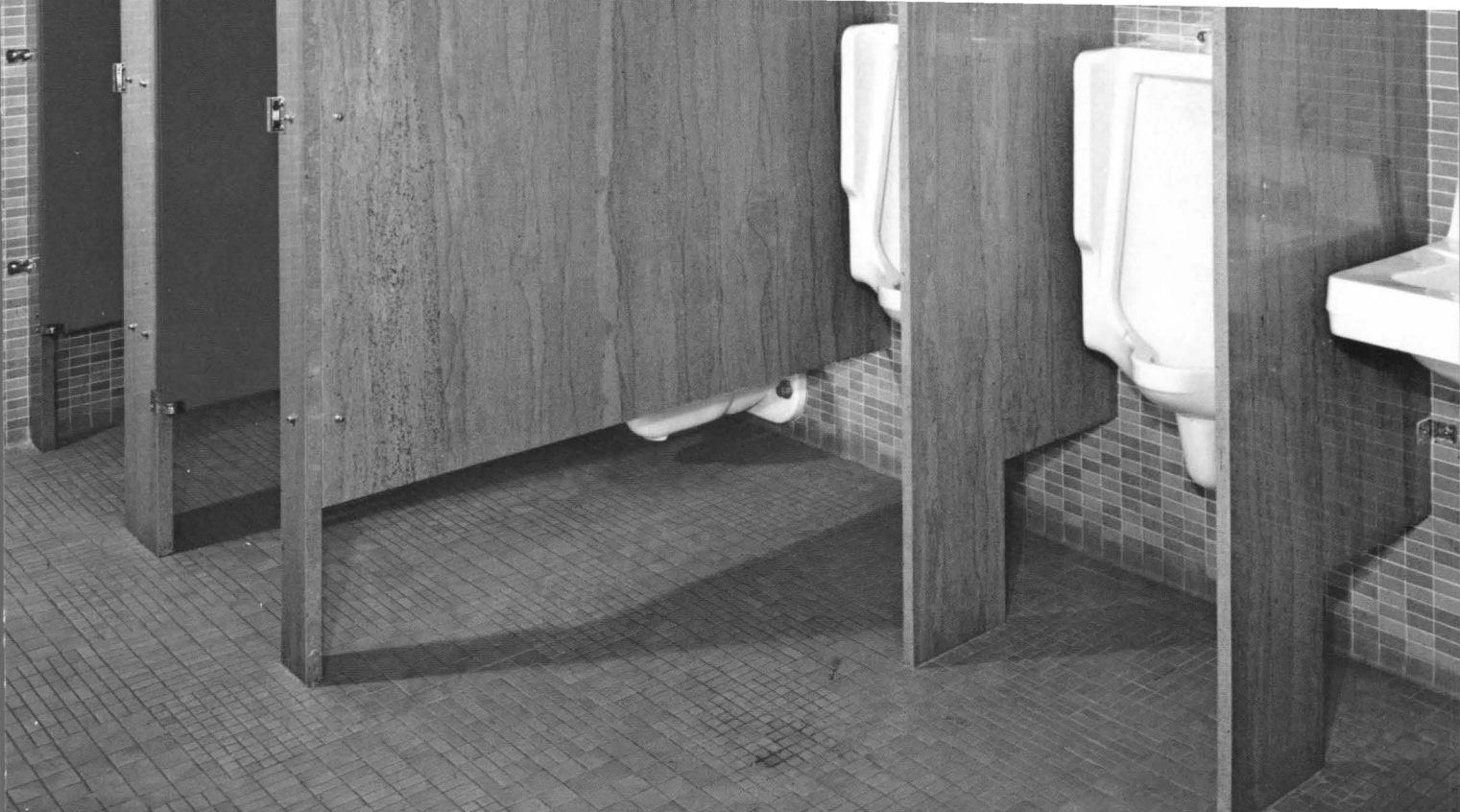
“Theory of City Form, Past and Present,” Hans Blumenfeld, *Journal, Society of Architectural Historians*, July-December 1949

“On The Concentric Circle Theory of Urban Growth,” Hans Blumenfeld, *Land Economics*, May 1949

“The View From the Road,” Lynch, Myers, Appleyard (To be released)

“Man-Made America—Chaos or Control?” Tunnard & Pushharev, 1963

“Cities in the Motor Age,” Wilfred Owen, 1959



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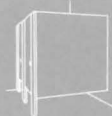
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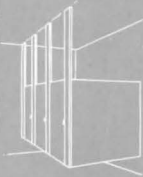
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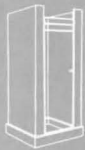
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Phil Will Too: Another AIA Past President, Philip Will Jr, FAIA, Chicago, has been named as one of three citizen members to a governor's committee to arrange Chicago's 1976 World's Fair.

Jaycee Award: A 1952 graduate of the University of Minnesota School of Architecture, R. Randall Vosbeck AIA, Alexandria, is the newest recipient of the Distinguished Service Award of the Virginia Chamber of Commerce. The 33-year-old architect currently is a vice president of the State Jaycees.

Columbia Alumnus. Osvaldo Luis Toro, San Juan, Puerto Rico, received the the 1964 President's Award given by the Alumni Association of the Columbia University of School of Architecture in a recent presentation made by Vincent Kling FAIA, who heads the alumni group.

Tours/Middle East Excursions

Three unusually interesting tours of the Middle East and Europe have been arranged in conjunction with the World Congress of International Federation of Housing and Planning in Jerusalem, Israel, June 21-27. Garber's Travel Service, 1406 Beacon St, Brookline, Mass, official US agency to coordinate and execute travel arrangements for the 27th conference, will offer two itineraries, both leaving New York June 14 and returning July 6. One will include Tel Aviv, Haifa, Herzlia, Rome and Paris; the other, Tel Aviv, Beirut, Haifa, Rome and Paris.

National Association of Housing and Redevelopment Officials will provide its members with a tour

Cont'd on p 104

Imperial Stellante

designed by RAYMOND LOEWY/WILLIAM SNAITH, inc.

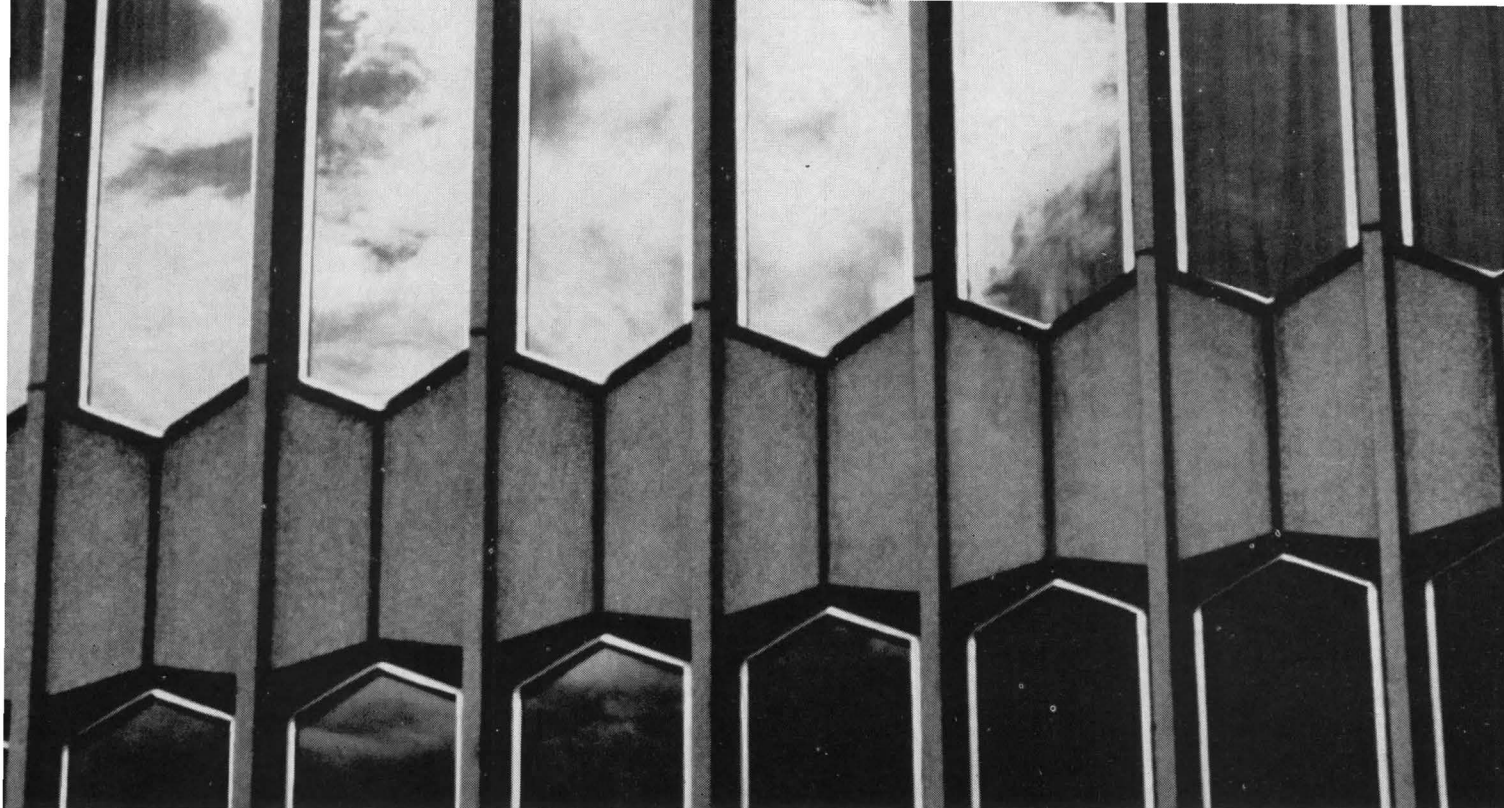
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For further information on the many design advantages of nickel stainless steel and a list of fabricators, write for Inco's "Suggested Guide Specifications for Stainless Steel Windows."

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New York 5, New York

Education/Retirement for Youtz

After serving as dean of the University of Michigan's College of Architecture and Design for the past seven years, Philip N. Youtz FAIA will retire from the faculty in June. He came to UM in the fall of 1957 from a New York architectural practice, during which he invented Youtz-Slick Lift-Slab method for constructing buildings.

New College: The University of Arizona will form a College of Architecture (now a department in the College of Fine Arts) on its 110-acre campus in the heart of Tucson's residential area effective July 1. Sidney W. Little FAIA will continue as dean.

Summer Session: MIT will offer a special summer program on noise and vibration reduction August 17-28 under the direction of Dr Leo L. Beranek. Contact: Director of the Summer Session, MIT, Cambridge, Mass, 02139.

tive association, at least one principal must meet that qualification. Ten cash prizes will be topped by a \$12,500 award. The jurors: I. M. Pei AIA and Paul M. Rudolph AIA; Jacques Lipchitz and Theodore Roszak, sculptors; and Philip Price, president of the Fairmount Park Art Association (competition sponsor) and member of the Art Commission of the City of Philadelphia. Address inquiries to Norman N. Rice AIA, Professional Advisor, Fountain Competition, Box 8366, Philadelphia, Pa, 19101.

Boston Center: Winner of \$5,000 and a commission for the design of the Boston Architectural Center, hailed as the first structure in the US to be built "from the ground up" for general architectural uses, is the Lexington, Mass, firm of Ashley & Myer, whose design team members included Fletcher Ashley AIA, Robert O'Neil, Richard Krauss, Robert Goodman, John Myer AIA and William Hall. The 90 entrants in the competition came from several countries.

Cont'd on p 106

**Wittenberg University
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Lethly, Schreiber & Associates,
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E. M. Redington & Associates,
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being waged by the Junior League of San Francisco, which has appropriated \$7,000 for a survey of historically and architecturally significant buildings in San Francisco, San Mateo and Marin Counties. More than 100 League interviewers will make a door-to-door and telephone canvas in seeking out pre-1920 residences, churches, lighthouses, office buildings and bridges that symbolize the area's cultural heritage.

Positions/Draftsmen for Illinois

Architectural draftsmen are needed by the Illinois Department of Public Health as a result of approved hospital and medical-care facility expansion programs that will number some 90 projects throughout the state. Among their duties: review plans and specifications, consult with project sponsors and their architects, make field inspections, process change orders, carry out administrative procedures. Requirements consist of a B Arch degree and five years' experience in the field. Contact George A. Lindsley, Department of Public Health, 518 State Office Building, Springfield, Ill.

Deaths/Mr Lowe

John T. Carr Lowe, who served the Institute as legal counsel for one-third of a century (1923-59), died last July 10 in Saratoga Springs, NY, after five years of ill health. He was made an Honorary Member in 1961.

Esthetics/Lower Manhattan

New Yorkers can add another set of initials to their architectural-planning vocabulary: NYCCE. An organization of architects, planners and civic leaders, New Yorkers for a Civic Center of Excellence "was formed to advance the cause of a comprehensive professional master plan for lower Manhattan that will bring together in a cohesive and imaginative whole the many fragmented schemes now being proposed for the area below Houston

application to architecture was described by Herbert Berman in the February *Journal*, resulted in what a spokesman called a "building speed record" on the new International Hotel at the Los Angeles Airport. The project is one of the first nondefense computerized construction jobs in the world. Welton Becket and Associates, Los Angeles, were the architects-engineers; Fred Howland Co, Miami, general contractor.

Further evidence of the growing interest in this technique throughout the construction industry is found in the scheduling of a CPM workshop as part of the BRI spring conferences at the Shoreham Hotel in Washington, DC, April 21. Gustave R. Keane AIA, New York City, will be chairman.

More about Computers: Among the researchers chiefly responsible for the newly released study "Planning for Hospitals: A Systems Approach Using Computer Aided Techniques" were James J. Souder AIA and Welden E. Clark, who collaborated on the article "Computer Technology: New Tool for Planning" in the October *Journal*. The study was co-sponsored by the American Hospital Association and the AIA and financed by the US Public Health Service.

Plaudits for Udall: "Leading contender" for a nonfiction prize in the 15th annual National Book Awards was Secretary of Interior Stewart Udall for "The Quiet Crisis," a chapter from which leads off this month's *Journal*.

Correction: A footnote inadvertently omitted from the article "Comprehensive Architectural Practice: Human Factors Analysis," by Lawrence Wheeler PH D and Ewing H. Miller AIA, appearing in the December *Journal*, should have read: "The authors acknowledge their debt to Ernest J. McCormick, upon whose discussion of methodology in 'Human Engineering' (McGraw-Hill Book Co, Inc, 1957) much of the present material is based."