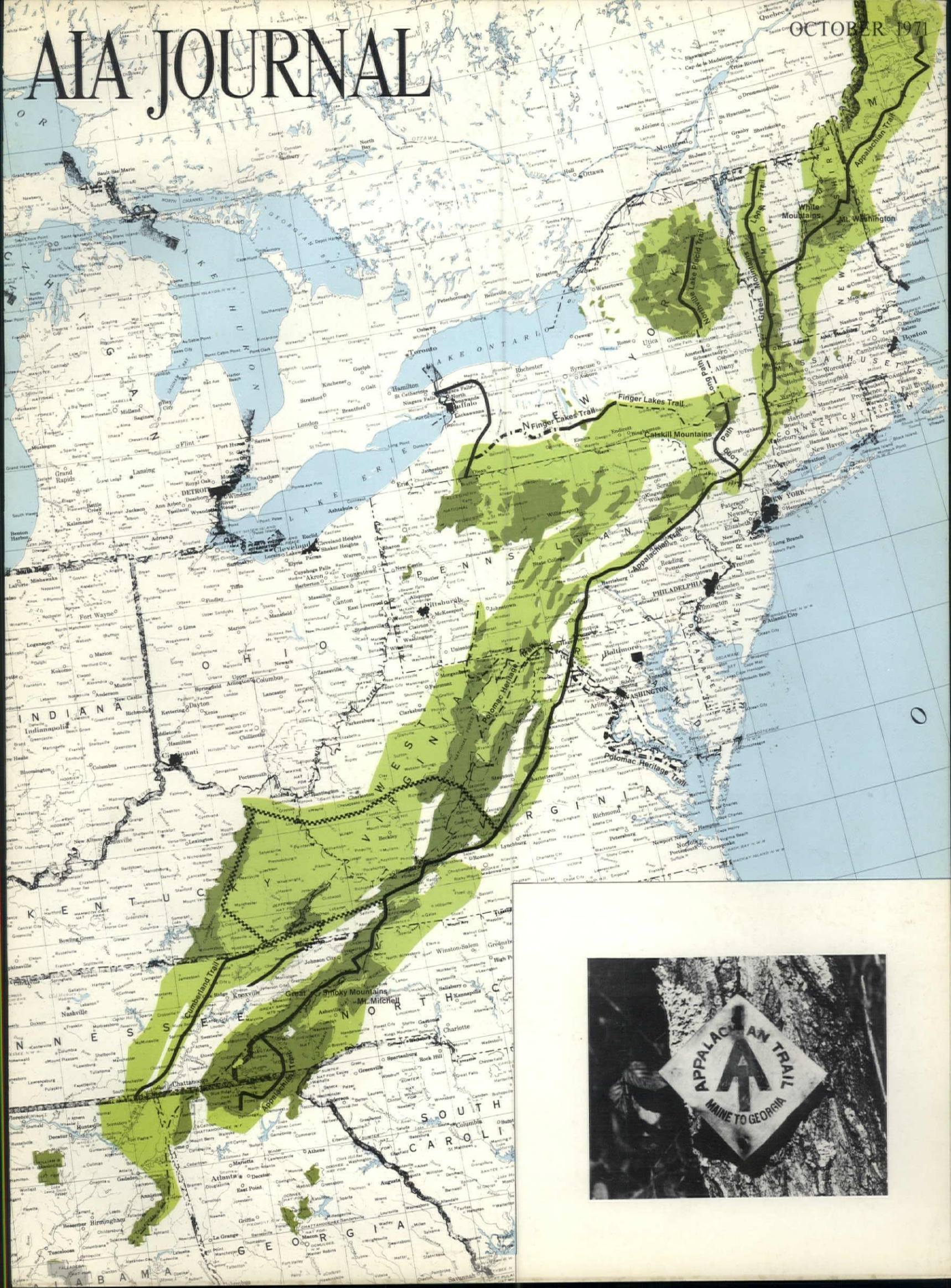


AIA JOURNAL

OCTOBER 1971





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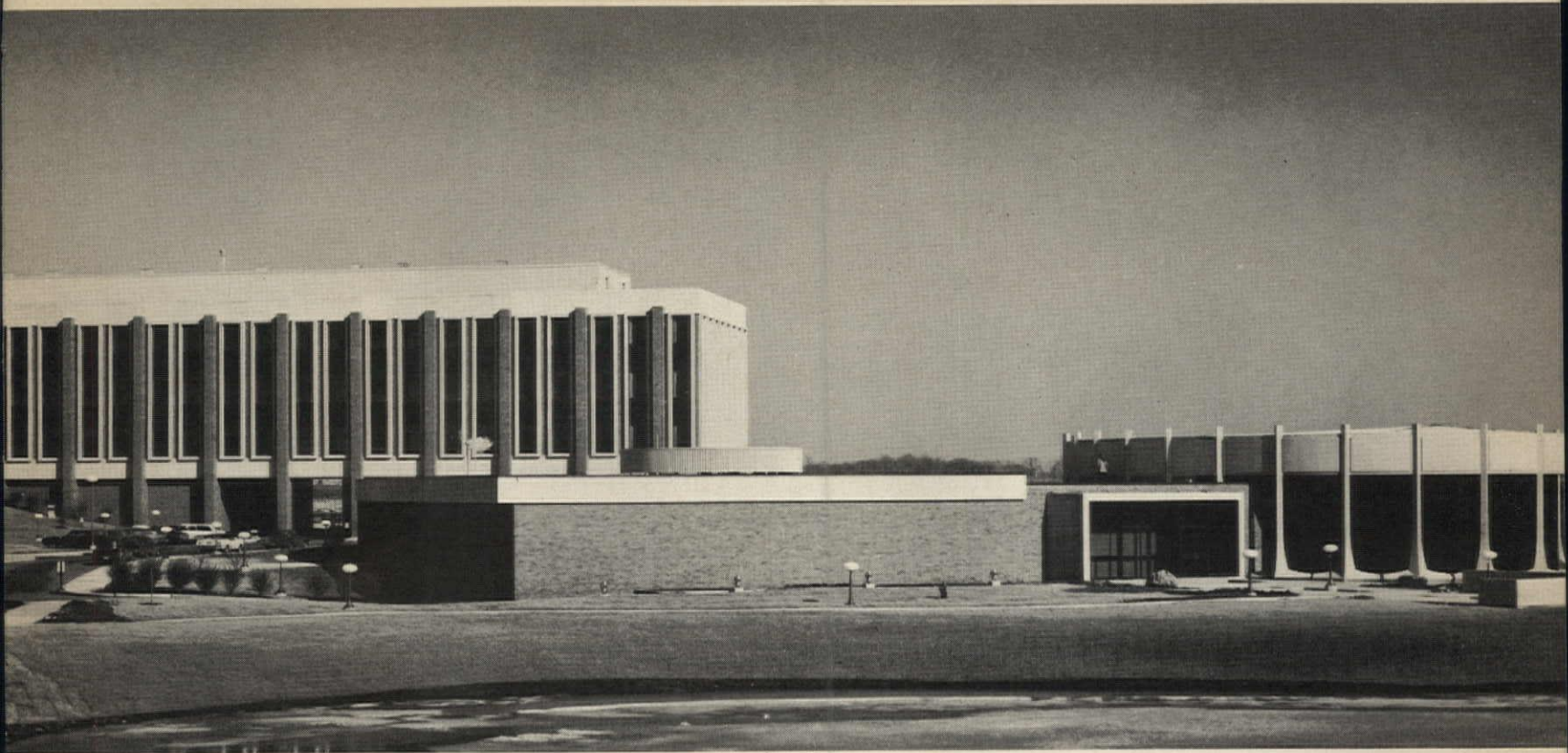
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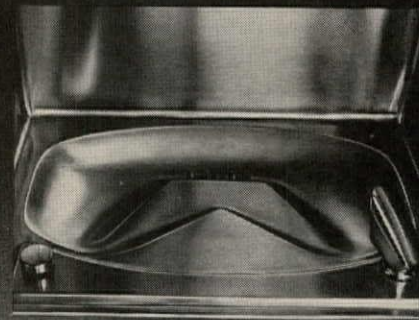
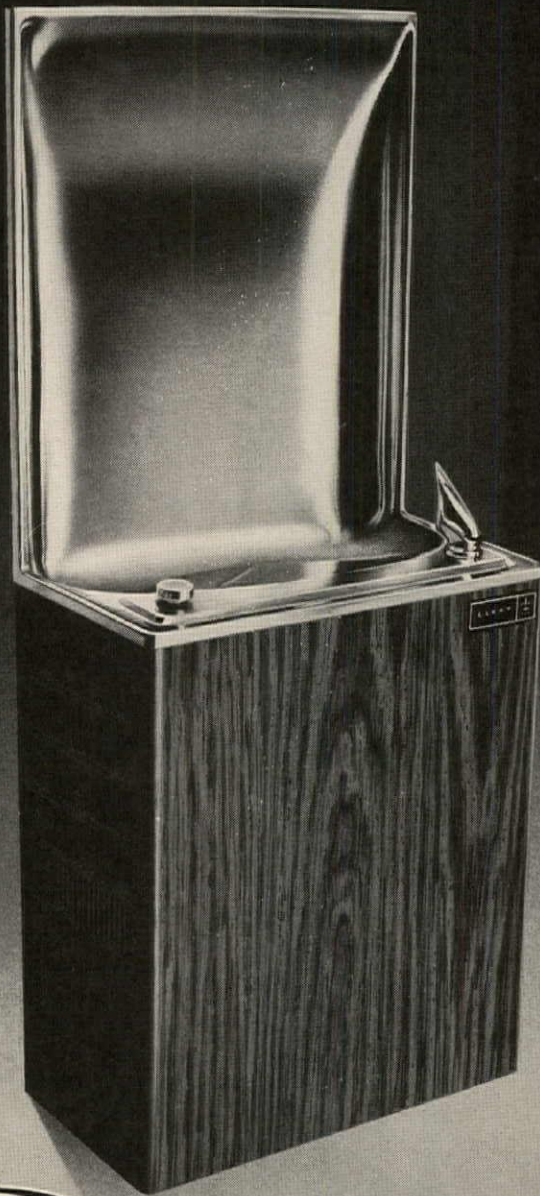
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AIA JOURNAL

OCTOBER 1971

REGIONAL DEVELOPMENT: THE ARCHITECT'S ROLE

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COVER: "Appalachian Mountain Areas in Need of Environmental Protection," (see legend on p. 25) as compiled by Hugh B. Johnson, AIA, based on a US Geological Survey map.

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VOL. 56, NO. 4

comment and opinion

THE ARCHITECT IN GOVERNMENT—and One in Particular: It was with more than passing interest that I learned that the Office of Architecture and Construction (OAC) of California's Department of General Services is turning out a record volume of work with fewer employees than ever before. In 1972, OAC expects to handle \$30 million of statewide construction contracts; and, in addition, the construction inspection services will deal with an estimated \$100 million in project value. The office is staffed with 250 full-time employees, a reduction of 98 positions from the previous year. Furthermore, the schoolhouse section of OAC, charged with supervision and plan checking, is now staffed with 61 positions. The estimated construction value of plans to be checked during the 1971-72 fiscal year is \$300 million. Fred Hummel, AIA, as state architect heads OAC.

In January 1967, more than 700 employees were on OAC's payroll. Hummel reported that a reduction in personnel was necessary because of highly overstaffed conditions and that the size and efficiency of his current staff still leave the office with ample production capabilities. The reductions, by the way, were handled over a period of months and all affected employees were relocated in other jobs.

This brings to mind for the practitioner an immediate question: Why is California, or any other state or agency for that matter, in the business of designing buildings in the first place? The American Institute of Architects has taken the position that, under normal circumstances, private architectural/engineering firms should be doing the work. And the California Council AIA has taken an even stronger stand in recent years. The legislative analyst for the State of California in his March 1971 report stated: "We suggest that any currently unforeseen workload addition can be handled efficiently and expeditiously by the assignment of such additional workload to qualified private architectural firms. Experience . . . would indicate that qualified private architectural firms are capable of producing the work as quickly and efficiently as OAC and at similar quality levels commensurate with budget limitations on each project."

The profession acknowledges the fact that there are specific, legitimate roles for architects to play in government—in such areas as agency programming and master planning, for example—but that the actual design of buildings is another matter.

Be that as it may, I am happy to know that there are architects of the caliber of Hummel in government who are attempting a job at the highest professional level. It is interesting to note that the twin State Office Buildings 8 and 9 in Sacramento, an OAC design, received an honor award from the Central Valley Chapter AIA and that the new central heating and cooling plant in the state's capital also won a merit award for the office. Hummel commented that it was the first time in history that the state has ever earned citations of this kind in competition with private architects. He lists steps which have been taken to overcome traditional barriers: 1) recognition of the unique place of government in encouraging environmental, sociological and technological progress; 2) streamlining of the bureaucracy to comply with the dictates of good business evident in veteran private firms; and 3) development of a sense of professionalism within a civil service situation.

Hummel has been active in CCAIA and chapter affairs and encourages his staff to participate actively in Institute programs. And so my feelings are ambivalent. I tip my hat to an architect who represents a new breed of the professional in government, but I hope at the same time that the volume of actual design work by governmental agencies will decline.

ROBERT E. KOEHLER

ACKNOWLEDGEMENTS

Cover—photo courtesy Appalachian Trail Conference
8—sketches, Johnson, Johnson & Roy, Inc.
8—below right, *Washington Post*
26—above center—Hugh B. Johnson, AIA

32—Henry and Catherine Matthews
33—above left, courtesy Bureau of Reclamation
35—Gerald Exline
50—courtesy TVA
58—Reynolds Metals Co.

NEXT MONTH

"The urban design study was undertaken in San Francisco because the environment of this city is magnificent and because it is threatened. Everyday residents and people throughout the world who consider San Francisco their second city are sounding the alarm over issues affecting the fragile physical makeup of this great urban space." So begins the introduction to the comprehensive plan prepared by the Department of City Planning—a plan that is stated in down-to-earth language that can be understood by the public and likewise can be appreciated by professionals for its overall clarity.

Two other articles deal with the urban design scene, although on different scales. The experimental city envisioned for Minnesota goes a step beyond today's new towns. And still on another plane is a report on the AIA's Urban Design Assistance Team's visit to Falls Church, Virginia, which already has evoked considerable public interest.

Also in November: a Practice Profile of a nine-member firm in Georgia; a look at walking behavior and its relation to architecture; a salute to Unesco for its work in the field of preservation and related activities on its 25th anniversary; No. 10 in the Practice Aids series, this one on preparing bidding documents for microfilming; and a Ministudy of a Project: a tissue manufacturing facility in California.

ASIDES

Preparing this issue of the JOURNAL has been an especially gratifying and pleasurable assignment for us editors because it provides an occasion to honor a grand old gentleman—Benton MacKaye, Hon. AIA, whose Appalachian Trail proposal originally appeared in this publication 50 years ago—along with a number of other pioneering men in the field of regional planning. We uncovered so much valuable material that we have saved some of the articles for later issues.

Of particular assistance has been our editorial consultant, Paul Spreiregen, AIA, whose name is known to Institute members in general and to readers of the JOURNAL in particular. He is author of *Urban Design: The Architecture of Towns and Cities*, a series which first appeared in this publication and which he wrote while on the AIA headquarters staff. As far as books of this type are concerned, it is definitely a "best seller," for already 14,600 copies have been sold and according to a spokesman for McGraw-Hill, the publisher, "is still going strong." For AIA members who do not have the urban design book in their library, it is available through the Publishing Department at the Institute for \$11 (regular price: \$13.75).

Spreiregen also was the author of another, shorter series in the JOURNAL entitled "Urban Design Worksheets." Unfortunately, neither these articles nor the original urban design series are available as individual pieces.

Spreiregen's most recent book, in collaboration with Heikki von Hertzen, is *Building a New Town: Finland's New Garden City, Tapiola* (MIT Press, 1971). □



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ALUMINUM

New Towns on the Move: Federal Lands Role Urged, AIA Conference Scheduled

President-elect of the AIA, Max O. Urbahn, FAIA, has recommended that Congress explore a policy that would stimulate the construction of new communities on federally owned land on a lease-hold basis. In testimony before the House Interior and Insular Affairs' subcommittee on environment on July 29, Urbahn summarized the advantages: the elimination of speculation which has long frustrated attempts to improve the urban environment; positive guidance to the location and direction of new growth; and the fostering of quality control on land development.

Urbahn urged the establishment of a National Growth Policy Board for the comprehensive planning and management of both public and private lands. He also underscored the AIA's concern about the lack of large-scale, multiuse public recreation areas close to large urban centers.

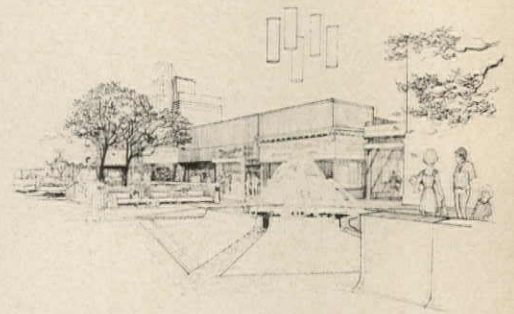
In addition to urging Congress to use federal lands as part of an overall national growth policy in directing creation of new communities and providing recreational areas for the nation's major cities, the Institute is further emphasizing new communities by convening an intensive three-day Conference on New Community Development to be held at the Washington Hilton Hotel in Washington, D.C., on November 3-6.

There is great demand for new design theories and methodologies in the evolution

of new communities, and it is hoped that the conference will better equip architects through a knowledge of community design. Attendees will be provided with course materials written by authorities in four major subject areas: project organization, economic and social programming, systems design and development control. A field trip to a nearby new town will be a feature of the conference. More complete information may be obtained by addressing requests to Michael B. Barker, conference director, at AIA headquarters.

Title VII of the 1970 Housing and Urban Development Act (*see AIA JOURNAL*, Aug., p. 41) will undoubtedly create further interest in the development of new communities. Just recently, the Department of Housing and Urban Development announced a \$24 million offer of guarantee assistance to finance the development of Cedar Riverside in Minneapolis. This is the first new-town-in-town to receive assistance under Title VII.

The new community will be coupled with the 340-acre Cedar Riverside Urban Renewal Project located on the west bank of the Mississippi River, one mile southeast of Minneapolis' central business district. Demolition of existing buildings and rehousing of families in the 940 dwelling units currently on the project site is underway. Plans call for an eventual population of 30,000 in 12,500 dwelling units to be constructed over two decades.



The traffic and clutter of the downtown core will be replaced with a variety of amenities to strengthen and upgrade the area's economy.

Day and Night Life Both Assured for Mall In Louisville, Beauty for Downtown Core

Louisville proposes to construct a "people place." Its Fourth Street Pedestrian Mall will turn three key blocks of the city's downtown core into an outdoor area where no automobiles will be allowed. Access to buildings will be through existing rear alleys which will be widened. Pedestrian transportation will be accommodated by minibuses or other "people movers."

The mall proposal calls for paving with brick and textured concrete and a curving path around trees, fountains, small gardens and playgrounds. It will run from Broadway, a principal east/west artery, north toward the Ohio River to Liberty Street. An "arrival garden" at Liberty will welcome pedestrians. A sculpture court is planned for the Broadway end of the mall.

The design team is headed by Ryan Associated Architects, Inc., of Louisville, which affiliated with Johnson, Johnson & Roy, landscape architects of Ann Arbor, Michigan, for the project.

The mall's cost is estimated at \$1.5 million. Various speculated about for 15 years, it is seen as a sure thing by its sponsor, the 186-member Louisville Central Area, Inc.

Use of Tubular Walls Feature of Winning Design in International Competition

The international competition sponsored by the French Government for a Center of Contemporary Arts to be built in the Plateau Beaubourg, Halles quarter, Paris, drew 681 entries, including 138 from the United States. Among the 30 competitive projects from which the final winner was selected were designs of 10 American firms.

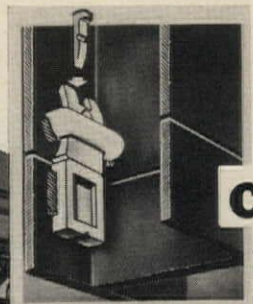
The winning plan was submitted by Renzo Piano of Genoa, Italy, and Richard and Su

Continued on page 12

Nation's Memorial to the Late President Combines Three Halls Under One Roof



Officially opened on September 8, the John F. Kennedy Center for the Performing Arts is located on the Potomac River in Washington, D.C. The nation's memorial to the assassinated leader contains an opera house, a concert hall and a theater under one roof. The marble-clad structure, designed by Edward Durell Stone, FAIA, is 100 feet high, 630 feet long and 300 feet wide. The spectacular premier, attended by celebrities from around the world, formally christened the opera house (right) when Leonard Bernstein's "Mass" was performed.



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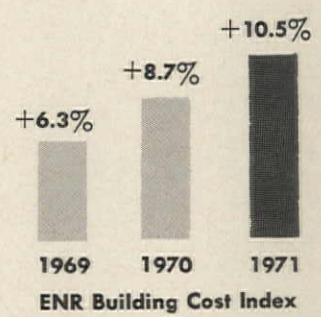
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PPG: a Concern for the Future

Shown at left, mullion detail of TVS installation at Dollar Savings Bank office, Pittsburgh, Pennsylvania.

Architect: Ingham Kaffka Marcu, Pittsburgh, Pennsylvania.

At right, Visitors' Information Pavilion in Founder's Square, Louisville, Kentucky. The architect employed a variation of PPG's Total Vision Systems to provide "see-throughability" or transparency in his design, as well as to provide a strong visual symbol visitors to this park could identify. Owner and operator: City of Louisville. Architect: Lawrence Meilillo, Louisville, Kentucky.



Rogers (husband and wife) of London. Associates in the winning design were Gianfranco Franchini of Genoa, John Young and Ove Arup & Partners of London.

The design of the English and Italians emphasizes flexibility in the interior spaces. The proposed building will have walls of steel tubes uniform in diameter but of different thicknesses. Water will circulate in the tubular system to prevent deformation in case of fire.

The jury was chaired by Jean Prouvé of France; Philip Johnson, FAIA, was one of its members.

Federal Policies and Programs Will Be Discussed at November A/E Conference

The second annual A/E Conference on Federal Agency Programs will be held in St. Louis, November 29-30. Sponsored by the AIA, the Consulting Engineers Council and the National Society of Professional Engineers, the conference will stress this year's \$2 billion Department of Defense Construction program.

Other topics on which attention will be focused include new directions and federal procurement of A/E services; federal programs to preserve the environment; A/E roles in the development of the national park program; the government's policy on grant-in-aid programs; progress reports from the General Services Administration; minority contracting requirements under federally assisted construction programs and minority employment by federal contractors and subcontractors; participation of architects and engineers in job-training programs; new activities of the Department of Transportation. Time will be allowed for participants to meet in small groups with agency officials.

Over 800 architects and engineers attended last year's initial conference. It is anticipated that a like number will gather for this year's meeting at the Chase-Park Plaza Hotel and the discussions will be equally provocative.

Complete information may be obtained from James C. Donald, director of Federal Agency Programs, at AIA headquarters.

London, Paris to Host Building Shows; Detroit Group Is Chartering Flight

Architects who are traveling abroad in November will have an opportunity to view two major building expositions, both of which will focus on technological developments.

The Olympia Hall in London will be the scene of the International Building Exposition, November 17-27. The Paris International Building Trade Show, Europe's largest of its kind bringing together 1,600 exhibitors from 20 nations, will be held at the Exhibition Center, Porte de Versailles, November 18-28. Visitors will have a chance to tour French plants and to see renovation projects in one of 10 scheduled visits.

The Greater Detroit Builders Association is chartering a flight to both events. Inquiries should be directed to Book Cousins Travel Service, 1 Northland Plaza, Southfield, Mich. 48075.

Columbia University's Oldest Alumnus, Architect, Benefactor, Water Colorist

Architecture, painting and philanthropy were the special interests of Julian Clarence Levi, FAIA, who was a graduate of Columbia University's class of 1896. This year, he received the university's Certificate of Distinction. A generous contributor to Columbia, he set up a \$150,000 Collection of Traditional and Liturgical Music in memory of his wife. After graduation from Columbia, he attended the Ecole des Beaux-Arts in Paris.

Levi died in New York City on August 23 at the age of 96. Upon his retirement in 1954, he was a partner in the New York City architectural firm of Taylor & Levi. During the Depression, he was the chief organizer of the Architects Emergency Committee.

In 1955, for his work in the restoration of a 12th century stained glass window in Chartres Cathedral, which was done as a gift of the AIA, Levi became the first foreigner to receive the medal of the Compagnie des Architectes en Chef des Monuments Historiques. He received decorations and honors from other countries besides France.

Levi served the New York Chapter AIA as its treasurer, secretary and vice president; he was chairman of the AIA Committee on Foreign Relations for many years.

New Jersey Leader, Educational Designer

A partner in the Somerville, N.J., architectural firm of Scrimenti, Swackhamer & Perantoni, James A. Swackhamer, FAIA, devoted primary time to the design of schools and colleges. Among his major projects are the Bridgewater Raritan High School East, dormitories for Douglass College, buildings for Newark State College and the Somerset County Vocational High School and Technical Institute.

Prior to his death on August 15 at the age of 47, Swackhamer was active in the affairs of the New Jersey Society of Architects, serving successively as secretary, treasurer, vice president and president, and on many committees and commissions. He was chairman of the Production Office Procedures Committee for the Institute. Active in civic and public affairs, the graduate of the Virginia Polytechnic Institute was a frequent contributor to *Architecture New Jersey* and the AIA JOURNAL.

Newslines

■ **Frank Lloyd Wright's first public building**, Unity Temple in Oak Park, Ill., has been declared a National Historic Landmark by the Department of the Interior.

■ **Robert W. Spangler** has been appointed editor of the *BRI Newsletter*, a publication of the Building Research Advisory Board, Building Research Institute.

■ **New standard widths** for glued laminated timber structural members have been endorsed by the American Institute of Timber Construction. For additional information write AITC at 333 W. Hampden Ave., Englewood, Colo. 80110.

■ **The New York Society of Architects** has issued the 58th annual edition of the Building Code Manual. It contains New York City's new building code, amended to August 1970, plus all other important city codes and ordinances. Cost of the manual is \$17.50 plus \$1.50 mailing charges. Copies may be obtained from the society at 101 Park Ave., New York, N.Y. 10017.

■ **A new periodical** is being issued by the Educational Facilities Laboratories. Called *Schoolhouse*, the newsletter disseminates a variety of information about financing, building, planning, equipping and renovating elementary and secondary schools. To be published four times a year, the newsletter is free from EFL, 477 Madison Ave., New York, N.Y. 10022.

■ **Bernard J. Frieden**, professor of urban studies at MIT, has been named new director of the Harvard-MIT Joint Center for Urban Studies which was established in 1959. The center will concentrate its future studies on specific urban problems instead of broad, general research.

■ **New safety and health regulations** for construction for all federal and federally assisted projects went into effect in April. The architect should be aware of the implications of the new regulations. Copies may be obtained from Occupational Safety and Health Administration, Department of Labor, 400 First St. N.W., Washington, D.C. 20001.

■ **Specifications information** for 68 heavy duty coatings systems for industrial plant operating conditions is contained in a booklet published by PPG Industries. For a copy of "1971 Specifications Information for Heavy Duty Coatings," write PPG Industries, 1 Gateway Center, Pittsburgh, Pa. 15222.

■ **Bernard B. Rothschild, FAIA**, of Atlanta has been named president of the board of directors, Construction Sciences Research Foundation, located in Washington, D.C.

Deaths

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Englishtown, N.J.

RICHARD N. JACKSON JR.
Baltimore

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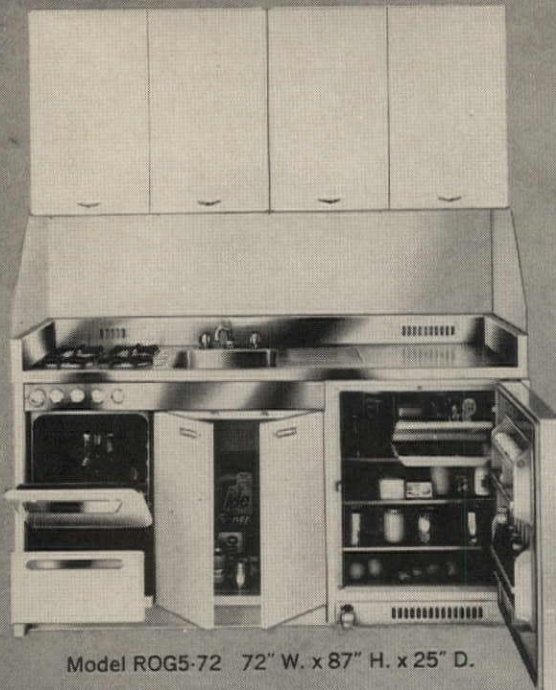
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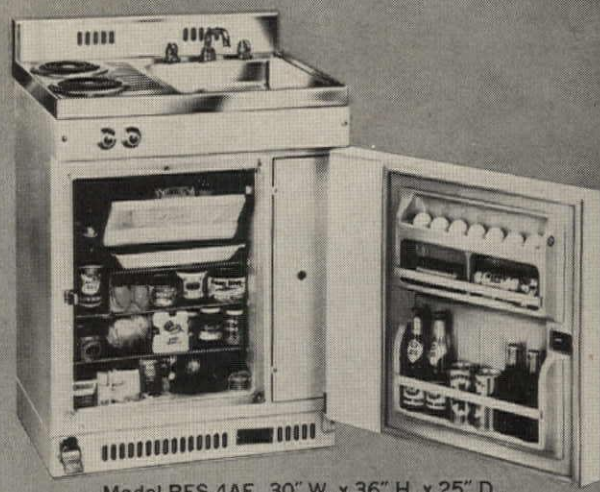
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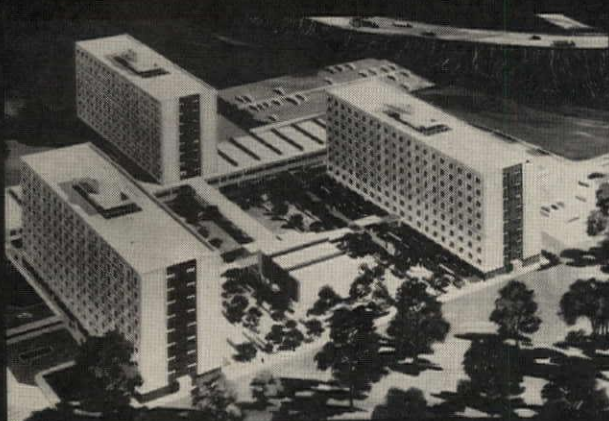


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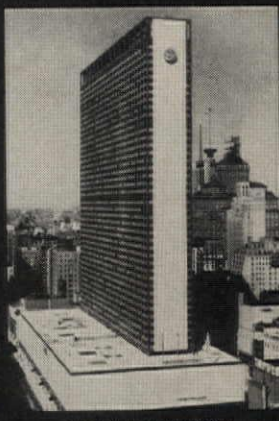
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A Second Year's Accounting

by ROBERT J. NASH, AIA
*Chairman, Task Force on Professional
Responsibility to Society*

This year's efforts of the Task Force on Professional Responsibility to Society have been directed at the development of programs in order to increase the numbers and roles of minorities in the profession and to address the pressing urban problems affecting all poor people in America as they relate to architecture, urban design and planning.

The Institute has consigned \$84,550 this year to programs and staffing in addition to the \$1 million combined commitment from the AIA and the Ford Foundation for scholarships to aid disadvantaged students. A Community Services Department with Grady Poulard as administrator has been established to offer full-time staff aid.

The task force came early to realize that in order to reach any significant level of impact that a broad coordinated effort was required from a cross section of both national and local support. Thus the Human Resources Council was formed.

A limitation, not yet resolved, is that many aspects of the task force's program fall under the purview of other AIA commissions and committees. To date, our efforts have been unsuccessful in influencing these programs so that they might reflect the concerns of the task force. In May, therefore, we presented to the AIA Planning Committee a proposal to move the task force to the level of an operating commission and to bring into the commission those entities which fall within the scope of professional responsibility to society and which can be operated more effectively under the umbrella of one commission. The proposal is still being deliberated.

The most significant of the past year's efforts were the formation of the HRC and the first meeting of over 100 HRC local representatives (more than half of the AIA chapters) at a two-day workshop in Omaha in February. The HRC is a vehicle for the mobilization of financial and manpower resources at local and national levels for the implementation of task force programs. An HRC executive committee has been appointed to give direction to its efforts. It is chaired by the task force chairman and Nathaniel Owings, FAIA.

In addition to the kickoff meeting in Omaha, major developments of HRC include the combined funding commitments of \$100,000 (\$400,000 over four years) from four large architectural firms and several beginning local and regional organizational efforts to bring about local action.

The task force has grouped its program components under two broad categories: community development and equal opportunities/education.

The more than 70 Community Development/Design Centers have compiled an impressive record in involving communities in the planning/decision-making process. The task force has rendered support to these CDCs by means of: 1) technical assistance: consultations and visits have been effected and a major publication will be completed soon; 2) information dissemination: *CDC News* has begun periodic publication, telling of funding, operational and other news; 3) fund development: federal and foundation sources have been assessed and new legislation introduced in Congress for possible future CDC funding; 4) manpower development: last year VISTA placed almost 100 architects and planners in 25 CDCs; 5) promotion: funding for a film was obtained from HUD to be completed this year and a slide show is available; various media and interest groups have been introduced to the CDC concept, including a seminar for federal agencies and institutions in November 1970 and presentations in March to major national publishers and editors and one in June to 700 US mayors. A National CDC Council was formed for unification of efforts.

Highest priority has been given to fund solutions to the constraints to quality and quantity building, particularly for the inner city environment. Investigation will include analysis of such factors as financing, local codes and the design profession itself. This year \$25,000 (\$100,000 for four years) has been committed from HRC funds.

The same amounts have been consigned to the program of creative economics which will investigate ways of making building, especially for the poor, more economically feasible by means of tax incentives, etc.

Due to substantial matching funds, 30 full scholarships under the AIA/Ford Foundation program were granted this year along with the 20 students continuing from last year. The Council of Black Architectural Schools has continued to meet through its second year of existence. A proposal for funding from a variety of sources for curriculum improvement for the seven schools is now being completed. An On-the-Job Training program, operated in cooperation with the National Urban League, is running solid programs in a few cities. □

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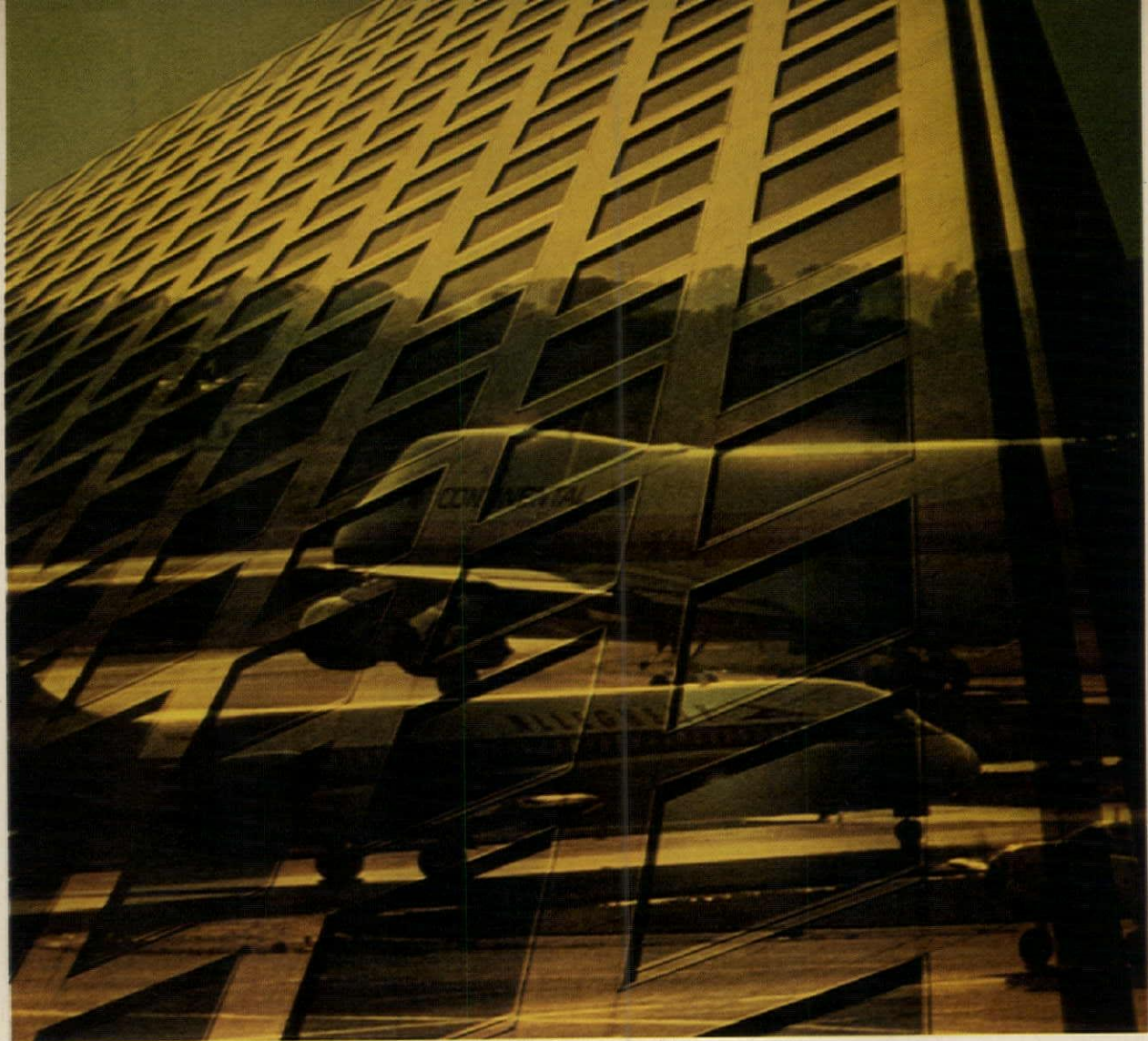
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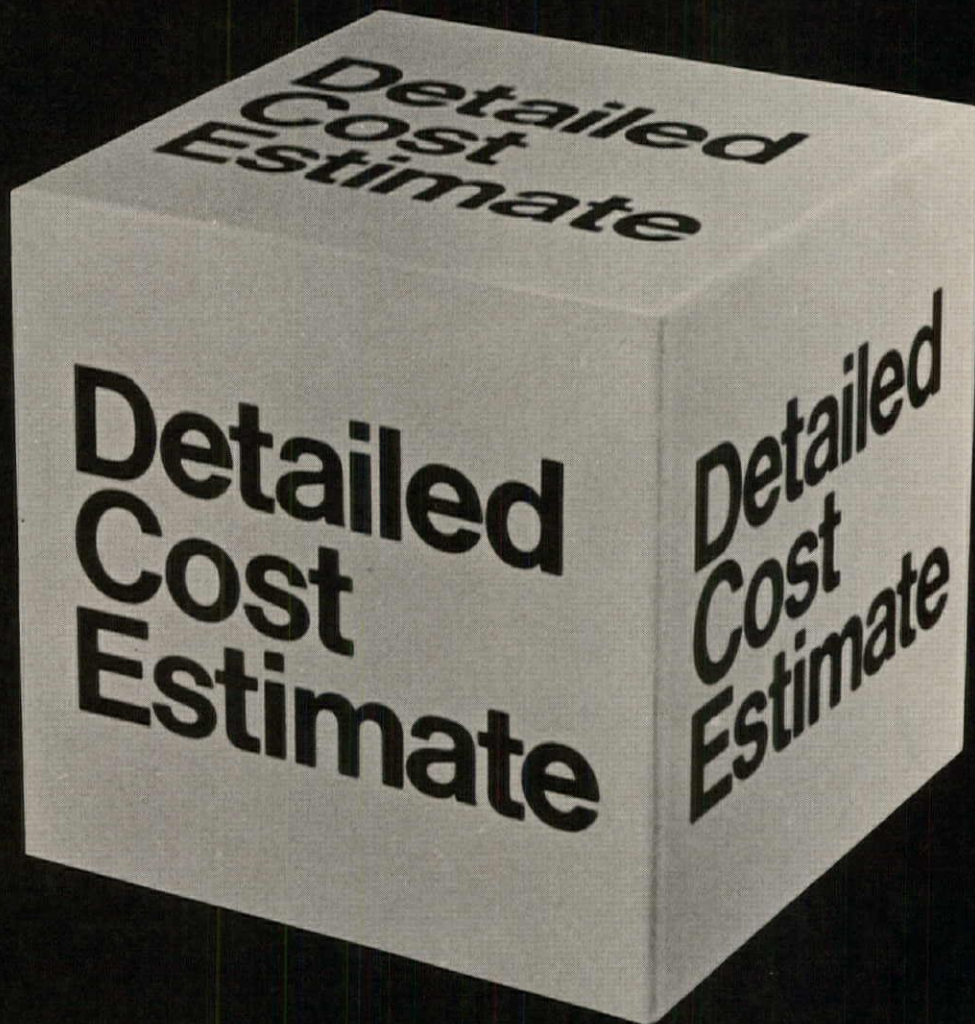
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WHAT IS REGIONALISM? It's both a continuum and a set of related entities, says a pioneering thinker, who bids architects to influence its quality.



by ALBERT MAYER, FAIA

From the title of this article, one might expect that a compact dictionary kind of definition will be forthcoming. But to pin down the subject of regionalism by an attempt at such definition seems to me, at this point in time, a futile exercise. The concept of "region" is valid, necessary, illuminating and useful. It is, however, a multiple concept of various possible scales and boundaries, depending upon the criterion or set of purposes principally sought to be served.

Some examples of this range of character may be cited. There is the metropolitan region or city/region that most of us, 80 percent of us, live and work in. In the United States, it generally is desperately fragmented in viewpoint and jurisdictions, operating far short of its potential. The symphony of common or complementary action or two-tier federation, such as has been working fruitfully for years in metropolitan Toronto and in the Greater London Council, waits to be brought to life in this country because of the fragmentation.

There are some partial cases here, in Miami and Nashville, for example. In most metropolitan areas, there are approaches more or less influential. There are the private/public Regional Plan Association of the New York City region, the Metropolitan Council of Governments in the Washington, D.C., area and the Northeast Illinois Planning Commission in Chicago. Fear and fears expressed in the form of suburban zoning and the slogan of home rule stand in the way of realization. The gut issue is admission of low cost housing. The only case I know of where this has been squarely and humanely dealt with is in the metropolitan area of Dayton, Ohio, where the regional body, with the concurrence of all the individual communities, has assigned equitable numbers to each. *Sursum corda.*

There is the natural resource region, most frequently the river valley area, which contains a whole watershed or drainage basin where navigation and power, erosion control, opportunities for conservation and ecologically harmonious development are the basic *raison d'être*. Sometimes, as in the Tennessee Valley region, it contains sizeable metropolitan areas within itself, e.g., the metropolitan areas of Nashville, Knoxville, Chattanooga.

Interstate river basin commissions mark regions with common problems and opportunities of water supply and distribution. The vast Appalachian region set up boldly by Congress in 1965 is the recognition of a relatively continuous community of economic and social depression and backwardness. Again, this is a very different kind of region, of which several more have been created since. Students of the subject predict that in a very

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few years there will be administrative regions, a new level of government intermediate from the remote federal zone, which will follow boundaries "based on unifying socioeconomic factors in a plausible geographic area."

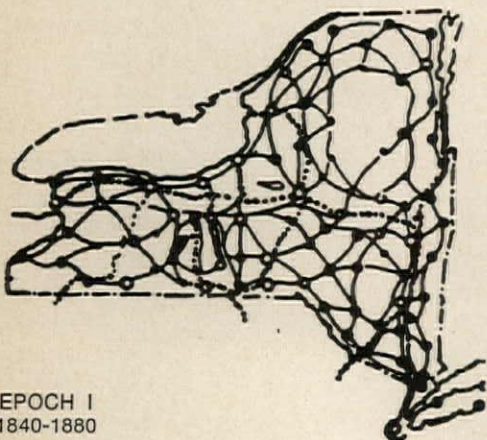
The New England region is unique in its consciousness, heritage, feeling of regionality and common destiny. Development of the Connecticut River Valley, now being earnestly adumbrated, would further flesh it out: a physiographic resource, economic and recreational spine and magnet. The feeling of identification in the New England region of common allegiance without aggressive provincialism is an intangible ingredient of great appeal and satisfaction. It might well be nurtured and grow in the Tennessee Valley area and in the Northwest.

Depending upon such different criteria, there are regional overlaps. Western Connecticut is part of New England and is also counted by the Regional Plan Association as part of the New York metropolitan area. Roughly two-thirds of the Tennessee Valley Authority has been included in the Appalachian region. Georgia and the Carolinas are members of two regions: Appalachia and the newly established Coastal Plains region.

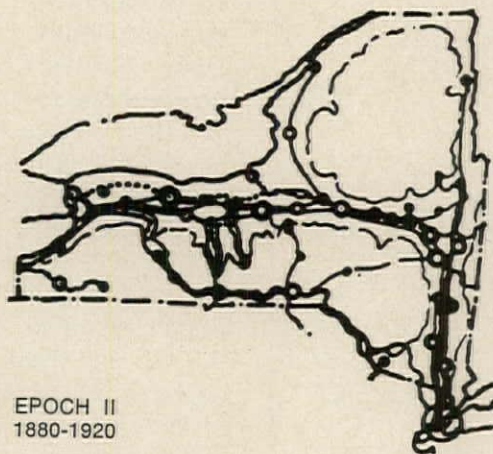
I have noted this multiplicity not to discredit regionalism but, to the contrary, to show that it is a powerful magnetic conception whose time has not yet fully come and which we must help bring to potent life. Also, I want to underline why I am steering clear of definition. In order to justify this view still further, I quote John Friedmann, an authority on regions and a prolific writer on the subject. He says, "Regional planning is a rather ill-defined combination of physical, economic human re-

underline and expand the personal habitual orbit of many or most of us to, say, a 100-mile or more radius. This means a personal region of home/work and recreational/cultural experiences of some 30,000 square miles. More recently, we are forced to be actively conscious of an enlarged daily or personal region or horizon by way of air, water and thermal pollution, of wastes which for control and for creative diminution, wherever we live and work, require regional view and extent and control. The Regional Plan Association places the New York region at 13,000 square miles. The orbit of TVA is 41,000 square miles.

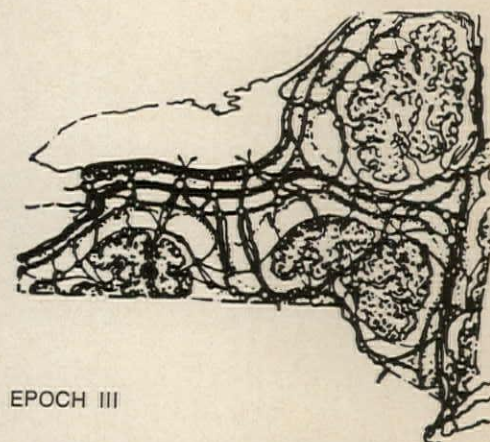
In the design of even a single building we have the solemn obligation to be sensitive to the waves and impulses we send into the region. This is not only a question of sensitivity and extended awareness, but it also has specific applications. Here is an example. The determination of design of the facades of an office building is no longer just a question of the architect's preference for materials such as all-glass, of relation to exposures and the degree of the client's willingness for whatever reasons, such as prestige, to pay an operational premium in airconditioning and heating load. It involves ecological/regional considerations in terms of the greater energy input required by higher airconditioning and heating requirements. The accepted curve-extrapolation for total energy requirements in this country is a 300 to 400 percent increase by the year 2,000! Not only will this finally be a question of exhausted fuel resources, and more immediately an increase in various forms of pollution, but it too may be impossible to find acceptable sites for the hundreds of large new plants that will be required, each one of which is a



EPOCH I
1840-1880



EPOCH II
1880-1920



EPOCH III

The possible state of the future in which each part serves its logical function in support of wholesome activity and good living.

Statewide activity and intercourse.

Concentration along mainline transportation.

source and natural resource concerns." And elsewhere he remarks that it is "the ordering of human activities in supra-urban space." Not very illuminating!

Question: What, then, with so much indeterminacy, has regionalism to say to us as individuals and as architects?

Answer: *Regionalism* is a way of thinking and of feeling and of looking at things.

Regionalism is a necessary and organic extension beyond daily reaction and observation, attachment and creative work. It is a sense of responsibility to something much larger. It is there pervasively, often in the background, underlying and affecting the obvious and the immediate.

It is trite, but quite valid, to attribute the conscious deepening of the feeling for and appreciation of the larger scale of regionalism, first to the railroad, and now to the automobile and the bus. Daily by way of commutation, or on weekends, they

casus belli and *casus* delay by conservationists who also emphasize thermal pollution and scenic impairment.

Meantime, too, there are occasional blackouts and brown-outs and sweaty standing in subways because of power failures. We are going to have to cut or bend down the upward energy curve. The energy input into buildings is, to an appreciable extent, controllable by means of materials, exposures and orientation. Perhaps one might say that the region and regional environmental quality are now also the invisible client, which should enter into and possibly modify the thinking and inspiration that produce the ultimate design. Building codes might even

Mr. Mayer, architect and environmental planner of New York City, is the author of *The Urgent Future: People, Housing, City, Region*, among numerous books and articles. He is a member of the AIA Regional Development and Natural Resources Committee, American Institute of Planners and American Society of Civil Engineers.

have something to say about allowable limits. Why, you ask, such a fuss about an office building? Answer: When you consider that in the New York City area alone it is predicted that there will be 50 million more square feet of office buildings, full-fledged regional scale is involved. To say nothing of luxury apartment houses, where builders can get the higher prestige rents or cooperative sales prices for ecological and regional transgressions.

I frankly do not know quantitatively what the total impact on the total energy demand would be of more effective consciousness in design of individual or groups of buildings. I use it as an illustration of a number of new and larger equations and total impacts that we must have in mind. In the ambit of its new enlarging outlook, The American Institute of Architects should consider undertaking research to assay these elements.

Let us consider a case on a different plane. In repeated conferences on transportation and in any discussion of the subject, the big talk is on the best means or combination of means of meeting what is considered to be, inevitably, a geometrically increasing demand. Should it be rapid transit, rail, bus, automobile, people movers, more roads and mechanized highways, or what ingenious combination can be devised of all these and others as well? But the real crux, being missed, is emphasis on fundamentals. We can minimize the *amount* of transportation expansion and expensive solutions required and bend the up-curve, drastically reducing the extrapolated need, by re-forming place relationships among residence, work, recreation and open space through a much closer degree of self-containment and less of commuting and intertravel. What we require are substantially self-contained new towns and cities and a restructuring within cities by the subcity concept, as for example, the new-town-in-town of Cedar Riverside in Minneapolis.

This last example leads into a way of thinking and feeling that should be peculiarly characteristic of the architect. His dominant impulse is toward the creation of form and order, and he should recognize that his maximum fulfillment is in form as created by him within the larger ambient regional form and order. Does his production contribute to and enhance the excellence-vitality-organic order of the larger form in which he works, or is it detrimental to it? Is it a part of a cumulative dissonance? Does the architect fail to recognize and to make impact? Can he assume or be granted a role that can directly influence the quality or destiny of the region? I am convinced that he can.

Let us now look briefly at some of the levels at which the architect and landscape architect play or should play a role in regional form and activity.

Frederick Law Olmsted and Charles Eliot are the two great figures of the 19th century who pioneered in regional scale with central city, suburb and outer metropolitan development. Recently, architects have become involved in regional planning by way of interdisciplinary design teams for interstate highways (see *AIA JOURNAL*, Feb. '69, p. 70). Back in 1926, Clarence Stein and Henry Wright developed a seminal plan for the New York State Commission of Housing and Regional Planning which was recently revived by Governor Nelson A. Rockefeller. I was heavily involved in formulating and mobilizing an interdisciplinary team and in working out the Delhi-New Delhi regional plan. Ian McHarg and David Wallace's Plan for the Valleys in the Baltimore metropolitan area is a brilliant marriage for meeting population pressure with sensitive and imaginative topographic and ecologic design, land use and control, economic and political analysis and new institutional recommendations for execution (see *Design with Nature*, Ian L. McHarg, Natural History Press,

1969, pp. 79-93: altogether a mind-stretching book).

There is another role for the architect as a member of the regional commission and of the body of staff professionals and technicians actually in charge of projects. Originally, large-scale planning was by architects, with a possible peak for that time in Daniel Burnham's Chicago plan. Since then, planning has rightly broadened its content to such major participants as the planner, of course, and the businessman, the sociologist, public health and education specialist, transportation specialist and ecologist. More than ever, with this multifarious and complex input and leadership the architectonic quality—the sense and form of dynamic order—needs to be distilled and expressed, and related closely with the ecological input.

The TVA is a striking and specific instance of a multi-purpose and multidisciplinary regional enterprise. The substance and constituent pieces were evolved, deployed and carried through by a group of men who had the necessary diverse qualifications and imagination. A gifted architect, Roland Wank, gave them moving visual synthesis, form and symbolism in terms of dams, spillways, locks, roads and powerhouses which challenged and enhanced nature. He joined the team and worked closely for years with it in order to absorb full understanding of the aims and means of his co-workers and to gain a feeling for the natural environment. His achievement is perhaps the most notable regional form-giving contribution and enhancement that has ever occurred in the US, or indeed the world. Note that he lived and conceived his plans on the site and in intimate contact with his co-workers and co-creators and not by occasional visits from his office in a distant city.

Emphasis in discussion of the region has been on extending the vision and concern of the citizen and of the professional. Senator Harrison Williams has described it, "from the edge of the lot to the edge of the horizon." But in regionalism the reverse is also true. One must think of "region" as not just the large continuum which it is, a magna as it were, but as a set of discrete related entities; a tapestry of many figures, each distinct with its own color and character but woven into a total inter-related excellence. The danger is of each running over and spilling into the other in a blurred noncrystalline mass, with no "open water" or green land between the entities. This has taken place and unfortunately is taking place acceleratingly in our old regional areas. There is danger in the newer ones, too, unless development with new towns and cities is alert to this two-faced character: the extent and scale of the region and the responsibility of the discrete constituents to regional meaning and fulfillment if the unit itself is to survive and, on the other side, the reciprocal importance of not ignoring or underestimating the significance and validity of the unit.

One final matter flows from what I have said. I have advocated and in design have contributed to what I call the "decentralization of excellence." Typically now, we have concentration of excellence (or pretentiousness) and expenditure in centers of larger cities where wealth and prestige compete to impress each other or to establish a coveted image. But there is little in the way of jeweled excellence in the districts or communities of the city or in the less obvious entities of the region. What we must value and create extends from making magnetic and significant, and with its own fresh character, the small scale close at hand—all the way to the most conspicuous regional complex. □

REGIONAL DEVELOPMENT • THE ARCHITECT'S ROLE

PERSPECTIVES ON REGIONAL DESIGN

Since its discovery, this country has grappled with the realities of regionalism with concepts, plans and programs reaching a zenith in the '30s. There have been successes in our history, but too often there have been failures and neglect. Today, there is new hope for regional development as a means of mounting programs that are ecologically, socially and financially responsible to the overall realization of the nation's potential. Basic units of planning are required to bring the wilderness, rural and urban domains into intelligent juxtaposition, assuring a rich diversity without the squandering of public wealth.

by PAUL D. SPREIREGEN, AIA

This nation's earliest environmental design experience was at regional scale. But for lapses in effort and objective, it is nearly a tradition. At present, it is possibly a salvation.

The first settlers, the Spanish, were regionalists out of necessity. Within half a century after Columbus' discovery of America, the "Law of the Indies" was in effect. This was a thorough set of rules for land development and management, and it operated at regional scale.

The scale was not arbitrary. Early settlements had to be self-sustaining social, economic, political and productive entities. All natural resources had to be husbanded to maintain a settlement, the critical one being water since the newly colonized areas were in arid climate. The Spanish were comprehensive land and water resource planners, as still can be seen in the original settlement system of San Antonio, Texas. A string of "missions," really small towns, tapped the river to form a basin-wide irrigation system of farm fields. Each mission was a defensive stronghold, each a productive unit and each furnished a surplus that enabled exploitative probes into unknown territories.

Whereas the Spanish came for gold, the French came for fur. Their view was regional too. They explored and charted most of the major river systems of America, these being the chief arteries of access. But it was the British colonists, no less exploitative than their rivals, who established the political, social and land planning institutions that designed the early United States. Their methods, derived from centuries of argument regarding land ownership and land use rights, resolved in various "Acts of Enclosure" from the 12th through the 17th centuries. Their American settlements, under "charters," were actually baronies for resource extraction and consumer marketing. The chartered regions became our 13 first states.

With somewhat greater shipping access and with a fair variety of exploitative items to be had, such as fur, timber, crops, the English colonies had a strong economic base. In specifying the geographic limits of operation for the charter companies, map-making being primitive, natural boundaries were often disregarded. Often arbitrary, the boundaries did not specify western terminations; the charter lands were to extend "from sea to sea." Settler migration across the Appalachians was forbidden,

however, for control and taxation, but after the Revolution, eastern population pressures burst.

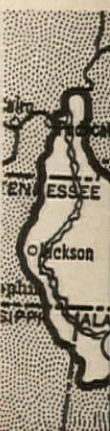
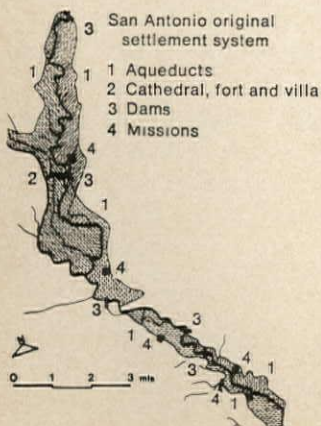
Four major regional actions resulted. First, out of years of controversy between states regarding overlapping western "reserves" came the decision that the federal government would take possession of the western lands. In return, the government assumed the war debts. It would pay them off by selling the western lands, a major strengthening of the federal government.

Second, a plan for the regional development of the western territories was adopted and was embodied in such actions as the Land Ordinances of 1785, 1787 and, later, the Homestead Act. This became the basis for settling the West, for the orderly creation of new states, cities and their social and cultural institutions. This action imprinted the ubiquitous grid pattern on the entire American landscape, except where mountains interfered or where a previous land pattern existed.

A third action occurred during Thomas Jefferson's presidency with the establishment of a national highway and canal plan to facilitate regional commerce and, thus, regional development. The fourth regional action was the Louisiana Purchase, also under Jefferson, to acquire the Mississippi Basin and the Port of New Orleans, thus securing free commerce on the Mississippi and the unhindered growth of the West. This was the nation's first land purchase.

And so the reality of regionalism in our own foundations is undeniable. Only some bias or oversight explains our neglect of regionalism in popular education and understanding. An explanation may lie in the advent of technology into our culture and a certain narrowing of view and purpose in subsequent undertakings. The Merrimac River is illuminating of the earliest regional developments in the era of industrial technology. The river had many rapids which were readily harnessed for water power. On this river America's earliest mills were erected in Manchester and Nashua, New Hampshire, in Lowell and Lawrence, Massa-

Mr. Spreiregen, now in private practice as an architect and urban planner in Washington, D.C., serves on the steering group of the Institute's Regional Development and Natural Resources Committee. A frequent contributor to the AIA JOURNAL and other magazines, he also is the author of a recently published book about Tapiola, Finland.



chusetts. Farm girls were enlisted to tend the machines and were housed in company dormitories.

As regional as the scheme was geographically, so was it narrow in purpose socially. The motive was production efficiency. While the mill "planners" housed and fed the girl laborers, their plan was little more than the name "mill town" connotes.

Even more narrow in intent, though far vaster in scale, was the building of the American rail net, the heir to Jefferson's road plan and the progenitor of current highway and air transport plans. Another chapter in regionalism is the role of the military in territorial occupation and development. Neither did the narrowness of purpose escape one area of special design pride in America: the park movement. Launched by Frederick Law Olmsted, it began in Manhattan with his design for Central Park, which was conceived as a relief to oppressive urban conditions.

Central Park was a safety valve and Sunday recovery ward for toiling workers as well, of course, as a place for the genteel. Visionary Olmsted was a realist. Although his view of nature-city was not separatist, he did in New York City what he could. He made a buffer. This attitude toward the function of an urban park, although not representative of Olmsted's larger views, nevertheless bespeaks a certain skepticism. Here is the city; there is the park—a refuge. To a significant although not exclusive extent, our parks still work in that way.

Expression of a wider view of man and nature was authored at the moment of the birth of the park movement by George Perkins Marsh, a founder of ecology, author of *Man and Nature* and a foreign minister under President Abraham Lincoln. If recompense for the slight to the American park movement is in order, let it be said that it inaugurated a major chapter in American regionalism for the industrial age. In Boston, a regional park system grew out of an extension of the old Common westward, creating a landfill real estate development program called Commonwealth Avenue—a splendid example of public/private development. This was extended at a vast scale to connect outlying reservoirs, scenic hills, stream parks and shoreline. All in all, it functioned as a regional green framework to arrest flooding, provide outdoor recreation, supply water and host public buildings. This concept was widely followed in various degrees in Cleveland, Kansas City, St. Louis, San Francisco, Dallas and Baltimore, to name a few cities.

The corollary to the publicly developed park was the privately developed garden suburb. They are frequently seen in just those cities that had park programs: the Country Club District in Kansas City, Roland Park in Baltimore, Turtle Creek in Dallas, Brookline and Newton in Boston. The city park programs had to go well beyond city borders to be effective, reaching to the sources of streams and the rims of drainage basins. Thus a new regionalism came into view, based on the city as a focus, its tributary hinterlands as setting.

In its larger portent no more perceptive writing on the philosophy, events and meaning of this experience—regionalism,

new towns, the human use of technology—is to be found than in the work of Lewis Mumford. And no finer design formulation of the possibilities is to be found than in the work of a small circle of Mumford's friends, a group that called itself the Regional Planning Association of America. Its members included Clarence Stein, Henry Wright and Benton MacKaye. Inspired by the success of the World War I public garden cities built for war shipyard workers, as well as the earlier private ones, the group pioneered the zenith decade of environmental design, the 1920s.

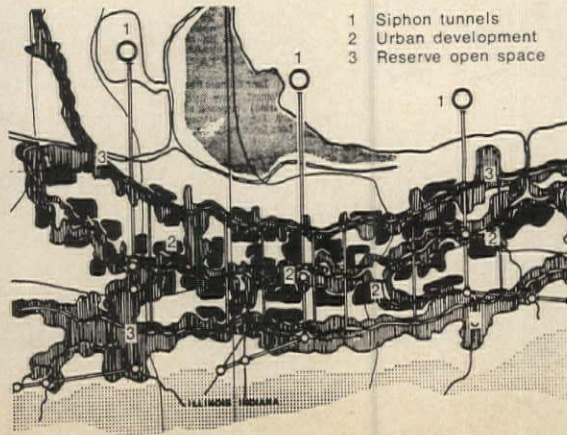
Their town planning experiments culminated in the Radburn, New Jersey, idea, in which vehicular and pedestrian traffic was properly separated and in which neighborhood groupings were articulated physically. They saw such new garden cities as components of a much larger regional design. They drafted the classic Regional Plan for the State of New York which stands almost without equal as a model of clarity, perception and vision.

Three drawings explain the thrust of this plan (see p.18). The first summarized the makeup of the preindustrial agricultural state with many small farm towns distributed throughout it. The second characterized effects of industrialization: the decline of farming and farm towns, the growth of manufacturing cities along the river valleys where transportation and water power were located. The third drawing showed the future in which anticipatory public action would improve statewide circulation so as to achieve an equitable, manageable and distributed urban pattern. In addition, upland forests would be cultivated to retain water, supply lumber, host wildlife and furnish outdoor recreation. Slopes would be grazed or planted as orchards.

In all, the pattern would interweave the three environmental domains: city, rural and wilderness. A myopic critical view assessed this approach as "back to nature" or "romantic," claiming that the city was the proper item of concentration. After all, that was where all the people were, were going or wanted to go. One had only to look to see all this, but not too deeply.

Regionalism has had its successes and its sorrows. It has also had its finer hours. Intellectually and, to an extent, politically, that occurred in the '30s and flowered under the banner of the National Resources Planning Board which existed from 1933 to 1943. No more thorough comprehension of America has been compiled. NRPB probed the condition of cities, farms, natural resources, climate, population migration, storm patterns, mapping progress, public works and public health. It saw these phenomena always in a regional context.

NRPB was a conceptual heir to the New York State regional plan. A practical embodiment of its principles was the Tennessee Valley Authority, studies for which preceded NRPB. At national level, NRPB was a data-gathering and interpretation operation; at state level, it operated through groups of citizens. A few years ago Ben Kizer of Spokane, a man rich in years and spirit, recalled how his group conceived the idea of his state's junior college system. It was one of the many products of NRPB. NRPB offered a new and more viable framework for the system



Tennessee Valley Authority (left); Little Calumet River plan (center and right).



- 1 Siphon tunnels
- 2 Urban development
- 3 Reserve open space

of free enterprise, one which would have avoided unnecessary public costs, such as floods, disease and urban decay, thus conserving wealth and energy for promoting real national wealth.

But World War II and its postwar rush obliterated the meaning of NRPB entirely. Instead, direct public (federal) effort narrowed to air and auto circulation, financed the creation of sprawled and segregated suburbs and attempted to remake the outworn and unloved central city. The net effect was to further overburden the city in its metropolitan form as the nearly sole receptacle of population growth and energy concentration. The small and middle-sized rural towns declined, save where they might serve as collection/distribution points for processing or for recreation or retirement. All this was done in the name of economics, no one questioning that the increasing Gross National Product might also be, in part, an index of growing inefficiency. Wide-scale metropolization occurred, confident that technology could get us through any problem.

Apparently there are limits to the ken of our "economics" and limits to the applications of technology. Human settlements are more than either mills or machines. They are institutions and phenomena that operate through influences well beyond their own physical edges.

Today there is a new and hopeful regional regeneration afoot. There are real examples and numerous new opportunities both practical and possible. There is also an increased technology for the analysis and synthesis of the complex variables, providing our human values are in order. There is a broader grasp too that no longer separates "city" from "country." Most of all, there is a surging unrest and a growing will represented in the lifestyle of the rural hippy commune and in the recent initiation of an environmental monitoring program by satellite.

The will needs greater leadership, and leadership needs clear examples to cite as well as lucid programs to offer. Now there are many. One example as evidence is the plan for the state of Wisconsin, now a decade old, which is a model of a combination of an ecological approach with a deep understanding of urbanization patterns and characteristics. The author, landscape architect Philip H. Lewis Jr., drafted the plan under then Governor Gaylord Nelson. He showed how the "nature systems" of Wisconsin related intimately to the "settlement systems." The former took the form of water corridors and their drainage basins. Protect them and one protects 80 percent of the major outdoor recreation places, the fish and wildlife and the water supply. They are now under state law protection and action through restriction, easement or acquisition. Carried a step further, one could discern the most propitious areas for new urbanization, possibly the retirement of outworn urban areas. One then imagines a public development/redevelopment instrumentality which could take interim possession of land, compensate and aid those displaced plans, set up public service infrastructures and then invite individual or consortium private developers to create the infilling urban pieces on the basis of performance specification programs. These "instrumentalities" could be financed through public savings and loan investment, insurance and pension funds and tax-favored bonds. Imagine, too, the market created for systematized building.

The Wisconsin plan did not go that far, but at a smaller scale these principles were applied in many proposals for developing new suburban lands. The principles are that one should start by studying the terrain from an ecological standpoint and out of that derive a building location pattern. The entrepreneurial mechanism suggested above would come next. One must have a mechanism that respects nature's needs, social objectives and

financial/development realities simultaneously. At present, several of the pioneer new towns in America show real promise of being able to do this—Reston, Virginia; Columbia, Maryland; Jonathan, Minnesota; and Litchfield Park, Arizona. They are counterparts to yesterday's Radburn, but like Radburn they need a regional context. Incidentally, a foremost example of an ecologically based suburban development plan is that for the Green Springs Worthington Valleys, near Baltimore. Its authors are Ian McHarg and David Wallace.

A special category of examples are the river basins. The Potomac River plan is one. A temporarily aborted effort for the entire basin of the Delaware River is another. The Delaware Basin is a potential laboratory for creating an alternative to megalopolis. The US Corps of Engineers is busy investigating other river basins for programs in waste treatment and water quality. The nationwide crisis in waste and water could be a major spark for regional design if it is fully appreciated as a regional phenomenon and if all implications are recognized.

A rather imaginative example of this is a concept drafted by a group of students working under professionals for the entire Little Calumet River Basin south of Chicago which spans Indiana and Illinois. In this plan, gigantic underground siphons would be used to evacuate excess water from the streams in times of flood. During draught, water flow in the siphons could be reversed to augment stream flow. In so doing, stream beds would have to be linked with reserve overflow basins, the effect being a regional stream/park system, a green armature to complement urban patterns. One can readily imagine a public/private development instrumentality for facilitating the creation of the new and remade urban components within this overall structure.

The rationale of a regional scale is that it is the one at which natural processes and human impacts—settlements—coincide in their most telling and comprehensive aspects. Our city, county and state boundaries are, in general, poorly related to our nature-based regional boundaries and even less to the fundamental river basins. Those should be the basic units of planning. Our development mechanisms are grossly negligent in social purpose. Our technology, as applied to cities, has been terribly misused. Instead of helping operate erroneously conceived designs, it should be employed to tell us where and how to build, and where not to build, depending on local climates, soils and land capabilities. Our land development financing systems should be reversed. The public sets policies that underwrite environmental spoilation and then pays for that spoilation. The public ought to institute ecologically, socially and financially responsible development systems as a starting point so that there are no ensuing public correction costs. The national wealth can be far better spent than it has been up to now.

A regional approach is an alternative for neither big nor little government. It is a combination of the best capabilities of both. At regional level the basic functional entities of nature would be taken into responsible account; local skill and talent would be enlisted; greater social and environmental diversity would result. The three domains—wilderness, rural and urban—would find their richest diversities and juxtapositions. Cities of all sizes would be recognized as interrelated components in a larger whole. Development and operational costs would be minimized. The nation's wealth would not be squandered in correcting errors that should never have occurred. Man and nature could be one in their richest forms. □

REGIONAL DEVELOPMENT • THE ARCHITECT'S ROLE

THE APPALACHIAN TRAIL AND BEYOND

"Spanning the climates of New England and the cotton belt," as Benton MacKaye wrote, is the Appalachian chain of mountains. Clarence Stein called MacKaye's vision for the protection of this vast area and for its use by all the people "perhaps the most far-seeing project in regional planning yet conceived in America." Fifty years after MacKaye and Stein wrote these words, there is still much to be done to protect our wilderness birthright. Wilderness areas of the country can be conserved through regional planning. Public support can be obtained. Here are suggestions to help point the way.

by HUGH B. JOHNSON, AIA

Mountains and wild lands as a cure for many of the ills of urban living were recommended by Benton MacKaye 50 years ago. He pointed out that the Appalachian Mountains are close enough to a third of the nation's urban population to be used for leisure time activities by thousands of workers. He further suggested the Appalachian Skyline as a strategic camping base because it overlooks "vast areas of secluded forest, pastoral lands and water courses, which, with proper facilities and protection, could be made to serve as a breath of a real life for the toilers in the beehive cities along the Atlantic Seaboard and elsewhere."

In his article "An Appalachian Trail: A Project in Regional Planning" published in the October 1921 *Journal of The American Institute of Architects* (now the AIA JOURNAL), MacKaye envisioned workers taking a two-week vacation in the mountains which "would be a little real living for thousands of people which they would be sure of getting before they died. They would get a little fun as they went along regardless of the problems being 'solved.' This would not damage the problems and would help the folks." He proposed that they use their leisure time in the mountains to operate cooperative farm camps to raise their own food; and he suggested that other camps provide small-scale lumber production within the national forests. The camps were to be planned as a series of recreational communities throughout the Appalachian Mountains from New England to Georgia, connected by a walking trail.

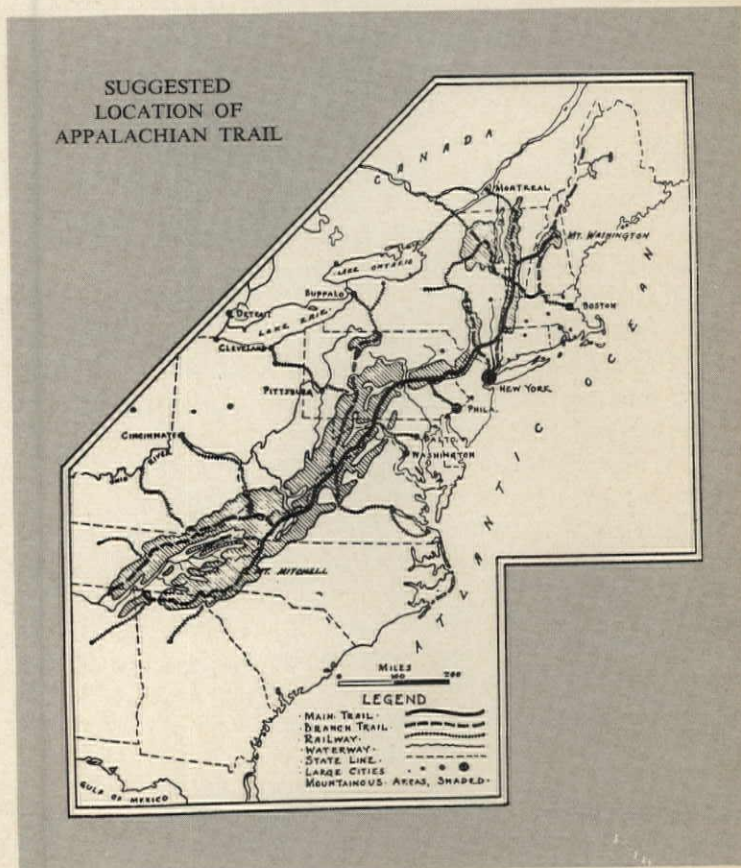
Many of the social thoughts of MacKaye have been forgotten but the idea of a walking trail along the mountaintops caught the imagination of people from all walks of life. They have made the Appalachian Trail a reality. A few hundred miles of the trail, complete with markers and shelters, had been completed in 1921 by the Appalachian Trail Club in New Hampshire and the Green Mountain Club in Vermont. Since then, the 2,000-mile-long Appalachian Trail has been finished. This enormous undertaking has been accomplished almost entirely by private trail clubs, as suggested by MacKaye, with a minimum of government help. The trail as constructed is longer than the basic one outlined by MacKaye. An extension which he recommended into the mountains of Alabama has not been built nor has the branch connecting the Adirondacks to the main trail been finished. MacKaye's map of the proposed Appalachian Trail is reproduced here as well as one showing the trail as it exists in 1971.

Much of the trail is constructed over private land on the basis of informal agreements between trail clubs and land owners. After years of successful operation, a few of the land owners have recently abrogated their agreements, placing the trail in jeopardy. Recognizing the need for protection of the trail, Congress in 1968 enacted the National Trail Systems Act which establishes a two-year period for the several states to buy land needed for the trail or to negotiate trail easements with the stipulation that if the states are unable to do so during the period, the

federal government will obtain a minimum right-of-way. Because of the need for surveys to locate the trail officially, the two-year period did not begin until February 1971.

There seemed little reason for concern as to the permanency of Appalachian wild lands in 1921. Since then, the onslaught of superhighways, industrial development and environmental pollution have brought the realization that the mountain/forest ecology will be destroyed if steps are not taken to save it. Mining operations alone threaten a large part of this heritage. In 1921, strip mining presented an ugly picture, but the mining effort of that time was puny indeed compared to the devastation caused each day by the monstrous machinery developed in recent years.

"Wilderness is a resource that can shrink but not grow," Aldo Leopold, one of the great naturalists, has said. And in an editorial in the February/March 1971 issue of *The Conserva-*



The original caption reads: "Main line from Mount Washington to Mount Mitchell. Large cities are tapped through branch lines and certain railways. Area shown contains more than half the population of the United States and over one-third the population of Canada. Cities shown comprise all metropolitan centers over 100,000, relative population being indicated by size of dot. Thirty-six of these centers, including a third of the area's population, are from one to eight hours' ride from the trail system. Centers named are those of more than 400,000."

tionist, published by the State of New York Department of Environmental Conservation, the question is asked: "The issue is a moral one: Have we the right to turn our backs while indifference and greed erode what cannot be replaced, especially when that erosion will surely take away one of man's last remaining opportunities to look backward to the origins of his cultural inheritance?" Again from Leopold: "Ability to see the cultural value of the wilderness boils down, in the last analysis, to a question of intellectual humility. . . . The raw wilderness gives definition and meaning to the human enterprise." Perhaps this is one of the reasons that people who most appreciate the wild and primitive areas often compare sojourns there to a religious experience.

MacKaye, in 1921, saw that people of the cities could obtain spiritual refreshment in the wilderness and proposed the foot trail as the means of getting to the source of this refreshment. In 1971, it seems that the paramount issue before us is to protect the wild lands themselves before they are irreparably damaged. The Appalachian Mountain forests extended from Alabama to Maine with large areas of West Virginia and Kentucky abutting on the west. This is the area of "wild lands" described by MacKaye. Most of it still exists, but in each of the 17 Appalachian states (the trail itself goes through 14), there is a vital need for zones of wild land protection. Ideally, each large area would have an inviolate wilderness core surrounded by larger areas of wild land with adequate land use controls to protect the scenic environment, direct lumbering and mining practices and eliminate air and water pollution.

An example of the kind of regional planning needed is provided by the monumental two-year study of the Adirondack region in New York State which was completed this year by the Temporary Study Commission on the Future of the Adirondacks. (An illustrated report of the commission, *The Future of the Adirondacks*, has been reprinted in two volumes by the Adirondack Museum, Blue Mountain Lake, New York, and may be obtained from that institution.) After a period of intensive debate and statewide hearings, the major recommendations of the commission were enacted into law in the closing days of the 1971 state legislative session.

A definition of the Adirondack State Park and a brief historical review appear necessary in order to explain the application of this legislation to the other areas. Legislative efforts to establish a state forest preserve in the Adirondack Mountains began in the 1880s and culminated, as far as the early period is concerned, with the establishment of the Adirondack Park in 1892 and the enactment in 1895 of a constitutional provision that state lands within the park remain "forever wild." Until this year, the park has been a legal entity only, consisting of a line drawn around a large area of land. Article XIV, the "forever wild" provision of the constitution, provides that there shall be no development and that no tree shall be cut on any state-owned land within the Adirondack State Park. While this did not in itself create a wilderness since many of the state-owned tracts of land were small and scattered, it has provided the foundation for wilderness protection as state land holdings have increased and the use of the state land has been further defined.

The Adirondack State Park consists of 5.8 million acres of land of which 39 percent is state owned. Another third, or nearly 2 million acres, is owned by large landholders and has been maintained for the most part in its wild condition, leaving only 28 percent of the total that has been subdivided for farms, mines, industry and villages. As in other areas, this condition cannot be expected to continue without planning and control. The danger

of uncontrolled development of large key tracts of private land is immediate. The 1971 New York State legislation incorporates the principal recommendations of the study commission, including the creation of an Adirondack Park Agency which will have policy-making responsibility for land use control of both public and private lands. The commission's report is summarized in 181 recommendations, many of which would be applicable to planning of this kind anywhere in the Appalachian Mountains.

According to the recommendations of the commission, approximately 1 million acres of public land will be placed in the "wilderness" category, using the federal government's definition from the Wilderness Act of 1964. With some modifications, the definition of the commission is: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man—where man himself is a visitor who does not remain. An area of wilderness is further defined to mean undeveloped forest preserve retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to protect its natural conditions and which 1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; 2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; 3) has at least 10,000 acres of land or is of sufficient size and character so as to make practicable its preservation and use in an unimpaired condition; and 4) may also contain ecological, geological or other features of scientific, educational, scenic or historical value."

The Adirondack Park Agency will carefully control wilderness use to prevent overuse, even to the extent of requiring permits to limit visitors in certain fragile areas. There will be no roads in the wilderness areas, no motorized vehicles of any kind will be permitted and the use of motor boats and airplanes will be restricted. Most of the High Peak area of the eastern Adirondacks will be within a wilderness zone. This area contains a network of trails where hikers may travel for a day or for weeks at a time without retracing steps. (Hikers who climb all 46 of the peaks over 4,000 feet in altitude in this area become members of the 46'ers Club.) Many of these peaks do not have trails, and it is intended that they remain trailless. Both trails and campsites will be diversified to relieve pressure on the most popular areas and to prevent overuse.

The classification of "primitive" will be given to forest preserve land with temporary nonconforming uses which will eventually receive "wilderness" status and also to some tracts which need wilderness protection but cannot be so called because of a permanent nonconforming use, such as a highway.

Lands in the "wild forest" category or zone will constitute 1,170,500 acres, slightly over 50 percent of the total forest preserve. This land is not to be given wilderness protection because of the size and location of tracts or because of its desirability for public uses not permitted in the wilderness areas. These include ranger cabins, maintenance buildings, fire truck trails, horse trails and some snowmobile trails. The wild forest will provide an essential cushion to absorb these uses and screen the wilderness.

A fourth category of land in the forest preserve is called "recreational," a small (less than 1 percent) but important segment. Campgrounds, boat launching sites, ski areas and other

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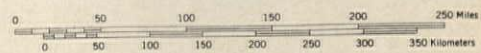


**APPALACHIAN MOUNTAIN AREAS
IN NEED OF ENVIRONMENTAL PROTECTION**

A study by HUGH B. JOHNSON, AIA

Scale 1: 3,168,000

1" = 50 miles



Albers equal-area projection based on parallels 29½° and 45½°

- National and state forests and parks
- Areas predominantly mountainous and forested where wild lands and scenic values should be protected
- Existing long-distance trails
- Trails under study or proposed by state or federal agencies
- Proposed extensions of the long-distance Appalachian Skyline trail system

An overlay on a US Geological Survey base map

concentrated recreational facilities will be in this zone. Further development of this type of intensive recreational use will be encouraged in fringe areas of the park, remote from wilderness areas. It is also assumed that much future recreational development will occur on privately owned land.

Rivers are classified as wild, scenic or recreational and, when appropriate, will be incorporated in the federal Wild Rivers System. The park agency will control development along classified rivers and streams that flow through private lands by zoning and by the purchase of scenic easements.

Appropriations have been requested for the purchase of additional land needed to protect wilderness areas or for specified recreational uses. It is not the intention that the proportion of public land within the park reach a much higher percentage of the total than at present. It would be neither desirable nor possible to make the park one huge tract of public land. Private land supports a much needed wood utilization industry and many other activities essential to the economy that do not conflict with park objectives. The park agency will establish environmental control over mining, paper production and other industrial activities to prevent destruction of scenic values and pollution of air and water. The agency will also negotiate easements with private land owners to protect scenery, to provide right-of-way for hiking trails, to insure canoe portages along waterways and to allow fishing access to lakes and streams. Much of the detailed planning recommended by the study commission's report has not yet been accomplished, but the framework for both planning and implementation is contained in the new legislation. The Adirondack State Park, with its new park agency, is unique in this country in providing complete environmental control over a large forest area with a minimum of public ownership.

This type of regional planning is applicable to many other areas of the United States and particularly to mountain sections of the Appalachian Mountain region. In most states, a wild land area can be created around existing national or state parks or forests. Those of significant size are indicated on the accompanying map of "Appalachian Mountain Areas in Need of Environmental Protection." This map also indicates the much larger areas of high forested Appalachian Mountain land that should be protected. State and interstate regional planning study should be given to this entire area to determine boundaries for wild land zones or "parks," as the word is used in connection with



Early morning is a zestful time of day on the trail (top). The pure streams of the wilderness are a delight to one's eye as well as taste.

the Adirondacks. The establishment of such a park area requires no immediate appropriation other than for planning and administration. It is suggested that such areas be established in each state with a wilderness core surrounded by zones of primitive and wild land classification.

Each park should have a network of trails providing access to peaks and other scenic highlights. Ideally, the trail network should reach into an area of the wilderness category, requiring



MacKaye

Upon the commemoration of the 50th anniversary of the publishing of Benton MacKaye's Appalachian Trail proposal, Philip W. Bourne, FAIA, asked its author the questions that follow.*

The Appalachian Trail is looked upon by many people as a trailway stretching from Maine to Georgia, like a spine. Is this as you see it?

The Appalachian Trail is a wilderness strip; it could be very wide—several miles wide—if possible. It is *not* a trailway. Actually, the trail itself could be a strip no wider than space for a fat man to get through. And that's the trouble: "Trailway" is a very unfor-

tunate word; it gives the impression of a Greyhound bus and a great cement, six-lane highway, which is just the opposite of what the trail is supposed to be. The idea is a foot trail, and if there is a wheel on it at all, there is no point in the Appalachian Trail. People should get that through their heads. That name "trailway" confuses them—too bad. Expect to have, ultimately, a long wilderness way, or call it a beltway. Recent legislation speaks of it as a trailway, which is wrong. There should be a belt several miles wide extending the entire length and connecting the national forests and parks.

Do you consider the Appalachian Trail a network of trails, grouped together and interconnected?

There is a federation of all of the outdoor clubs known as the Appalachian Trail Conference with Stanley A. Murray as chairman and Lester Holmes as executive director, headquartering at 1718 N Street N.W., Washington, D.C. The federation includes the Appalachian Mountain Club, the Green Mountain Club, the Smokey Mountain Hiking Club and others that are all interconnected and extend from Maine to Georgia—one long foot trail all the way!

Would you comment on the beginnings of your proposal creating the Appalachian Trail?

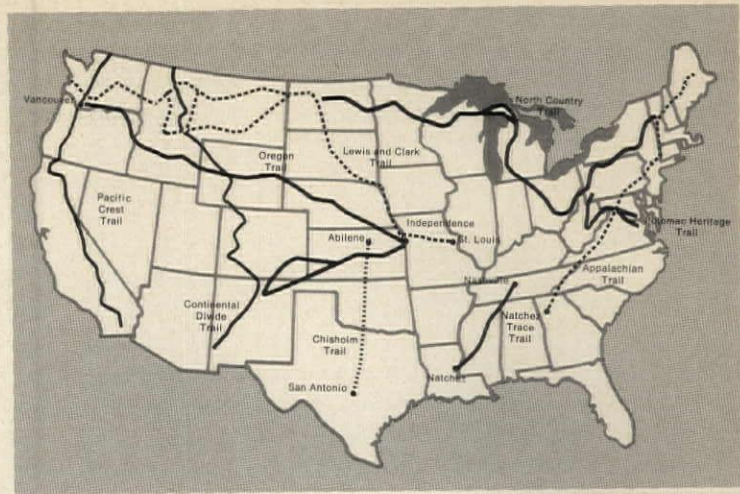
* Former director of the Institute's New England Region who presented the 92-year-old MacKaye with an honorary AIA membership at his home in Shirley Center, Mass., last year (see the December AIA JOURNAL, p. 8).

two or three days to traverse, remote from highways or any kind of vehicular transportation. Access by highway or jeep roads to several points around the perimeter is advantageous and adds scenic variety to the hiker's wilderness experience.

Trail networks should be connected with one another by an interstate system of long-distance trails. The map shows the extension of the Appalachian Trail into the Talladega Mountain area of Alabama as originally proposed by MacKaye and also his northern branch to the Adirondacks now partly constructed in the form of the Long Path and the Northville-Lake Placid Trail. A connection from the very fine Cumberland mountaintop trail in Tennessee northward through the Cumberland Gap to the Appalachian Trail in Virginia is proposed by the author. The Trail of the Lonesome Pine could also be joined to this system. Other long-distance trails are suggested on the map, tying the mountains of Kentucky and West Virginia into the Appalachian Trail system. The proper location of these trails can only be determined as regional plans are made for the vast area and as local trail networks are completed. The experience of the Appalachian Trail Conference with its 54 clubs proves the value of many groups working together for a common goal.

The 1968 National Trails Act, which placed a protective umbrella over the Appalachian Trail, also provides aid for the Pacific Crest Trail now under construction and authorizes detailed study by appropriate federal agencies of several other long-distance scenic and recreational trails which may be incorporated in a future national trails system. The major trails now under study are shown on the map here. The Pacific Crest Trail is a skyline route, similar to the Appalachian Trail with one important difference: It is intended for horses as well as people.

Most of the other national trails under study follow historic routes rather than mountain heights. The western part of one, the Potomac Heritage Trail, follows mountain ridges in Pennsylvania, Maryland and Virginia and will become an important part of the Appalachian Trail system. The Finger Lakes Trail, planned and partly constructed across New York's southern tier, is a cross-country rather than a mountaintop trail. As local trail networks are developed and regional plans are made for the large mountain forest area of northern Pennsylvania, it may be possible to build a parallel long-distance trail along the New York-Pennsylvania line joining with the Appalachian Trail via the Finger Lakes Trail through the Catskill Mountains.



These existing and potential long-distance routes are part of the proposed Nationwide System of Trails. Under study also are bicycle and horseback trails, metropolitan trails and historic trails. From the book *The Appalachian Trail* by Ann and Myron Sutton, © 1967 by the authors. The map on page 115 created by Jean Tremblay is redrawn by permission of the publishers, J. B. Lippincott Company.

There are now thousands of people who concentrate nearly all of their leisure time and even more of their total interest on activities that take them into the woods and mountains, and the number is growing every year. Many are organized in hiking clubs, rod and gun clubs and camping associations. Others simply enjoy camping, hunting, fishing and mountain climbing as individuals or families. These people can be enlisted as supporters of environmental conservation if plans for protection are brought before them. Unfortunately, many local residents of the mountain areas, who also love the forests, are too close to the scene to recognize that the current accelerating encroachment of forest areas will destroy their environment if it is not controlled. In spite of some mining and industry, the economic life of these people is almost completely related to recreation which, in turn, is dependent on pure air, clear water and untrammelled forests.

The Appalachian Mountains are the heritage and birthright of the 100 million people who live in the eastern states, as affirmed by Benton MacKaye. Public support for preservation of the mountain heritage can be obtained with good political leadership and the help of conservationists and regional planners. This movement should begin now in every state. □

There was a message published in the *Appalachian Trailway News*—that unfortunate word again—in its September 1970 issue, page 43, under the heading "Letter from Benton MacKaye." It refers to the era of forgotten men—men without whom there would be no Appalachian Trail. Two should especially be mentioned: Charles Harris Whitaker, editor of the *Journal of The American Institute of Architects* (now the *AIA JOURNAL*) in 1921, and Clarence S. Stein, FAIA (still living in New York City) who wrote the foreword to the article.

We three sat down together at Hudson Guild Farm in New Jersey on Sunday, July 10, 1921; then and there the seed of the trail was planted. The idea was that I write the article and that Whitaker would put it into the Institute's official publication. They are as much the founders as I am—and please emphasize that fact. It all started with the "Long Trail" in Vermont, and the suggestion followed that the trail be lengthened, extending south. The first article, published that October, was entitled "The Appalachian Trail: A Project in Regional Planning."

Then in 1932, another article appeared in the April issue of the *Scientific Monthly* of the American Association for the Advance-

ment of Science, which goes into some detail, complete with charts and maps and tells of the purpose.

Is the purpose of the trail mainly for its recreational value: hiking, climbing and camping? What of the future?

The ultimate purpose? There are three things: 1) to walk; 2) to see; 3) to see what you see. I had to wait about 35 years for the first real response to my article—a long time! Then an important book was written in 1967 called *The Appalachian Trail: Wilderness on the Doorstep* by Ann and Myron Sutton. They took their time; they did not rush; they saw what they saw. They did not make the trail a race course or a race track. Some people like to record how speedily they can traverse the length of the trail, but I would give a prize for the ones who took the longest time. Get hold of that book, for the authors saw what they saw.

There is a good future with the leadership of Murray and Holmes; they are pushing for legislation that will provide for the purchase or the acquisition of land for the protection of the trail and the enjoyment of people. □

REGIONAL DEVELOPMENT • THE ARCHITECT'S ROLE

THE NEW YORK STATE EXPERIENCE

Fifty years ago, textbook concepts of regional planning for New York State were proposed whereby changed settlement patterns would relieve New York City's congestion. So far, little discernible effect is evident. Recent efforts have taken place, however, whose results over the next decade will be of critical importance in any discussion of national growth policy.

by PETER D. PAUL, AIA

The concepts of regional planning in the United States have been tested for 50 years against the realities of New York State, and even today tangible results remain uncertain. As some discuss planning concepts in broad terms, others are faced with daily crises in which decisions must be made and actions taken which affect the region. They are civilized men, and their mutual impatience turns to dialogue with concept and action tested against each other. In the complexity radiating about Manhattan, problems and opportunities are raised to their highest power.

Adna Webber summarized the centralizing tendency of cities in his 1889 classic, *The Growth of Cities in the Nineteenth Century*, demonstrating that the attraction of places is, in general, proportional to their size and that rural areas and small towns cannot compete with cities for opportunities. Some regional planners have held that the centralizing tendency of cities should be offset by decentralizing their advantages to the areas of outmigration. Others emphasize a projection of inevitable trends and attempt to deal with them.

The decentralist outlook in New York State was articulated during the 1920s by the informal group called the Regional Planning Association of America, whose members included Clarence Stein, Henry Wright, Lewis Mumford and Benton MacKaye. They tended to see regional planning as a process of relating urban and rural areas, balancing the opportunities in each. They advocated Ebenezer Howard's English new town proposals and admired the work of Thomas Adams in Canada where the rural/urban linkage was stressed.

MacKaye describes the original regional planning group as a combination of architects and naturalists concerned with the ecological balance between man and nature. He coined the term "geotechnics" to describe the process of analyzing geographical form and then acting to affect settlement within its limitations. He uses the analogy of river valley management to describe how control of water and natural resources will impound upstream the forces of excess water bent on flood and disaster in downstream communities. When the natural environment is maintained, a reconstruction of the upstream settlements is called for. A backflow of population would be attracted from the overcrowded urban center. Economic greed of the city has created its unnatural congestion, depopulating rural areas. Regional planning set out to restore a balance.

A report issued by the New York State Commission on Housing and Regional Planning in 1926 showed how this could be done. The plan envisioned a regional grid of lines of communication stretching across the main corridors of the state and extending along the lightly settled St. Lawrence Valley. Highways and cities were separate, and settlement was accomplished in a series of interdependent communities much as Howard proposed. Chairman Stein, Wright and other members of the commission felt that regional planning required that New York State be released from the centralizing pressure of its major cities.

At the urging of Thomas Adams, the Russell Sage Founda-

tion made a grant which established a private planning group, the Regional Plan Association of New York (RPA). It was formed to prepare a framework to guide growth beyond the boundaries of the city in the three-state area of the metropolis: New York, Connecticut and New Jersey. RPA's proposals resulted in the first Regional Plan of New York and Its Environs in which detailed recommendations were set forth for areas within the city and its perimeter where massive urban growth had not yet occurred.

Conceptually, the plan moved far beyond the physical planning of the City Beautiful movement that had evolved from Daniel Burnham's Chicago plan. It anticipated the growth of the suburbs. More than that, it gave them direction as few planning efforts since have been able to do. For example, it saw the new Westchester County parkway system and showed how it might be extended and applied throughout the metropolitan area. Recreational facilities and permanent green spaces were incorporated. The plan went beyond general discussion and contained concrete proposals that could be debated and enacted.

The Depression of the '30s dampened the hopes of regional planning in New York State, but RPA remained in existence and today assumes an independent role as spokesman for the public interest in matters pertaining to the New York urban region. In its Second Regional Plan of the late '60s, RPA has projected the specter of a continuation of present trends which it calls "spread city" and suggested alternatives to it, such as a clear demarcation between urban and open spaces and a planned clustering of population and transportation with plenty of green space around; housing choices for a wide range of tastes and income levels; and genuine communities at two levels—local and metropolitan—clearly organized around centers of activity.

RPA acts as an advocate for planned concentration in creating alternatives to the present pattern of development. The principles of the Second Regional Plan have been related to many outlying counties and their local communities, such as Newburgh, Middletown and Goshen.

In the Second Regional Plan, RPA suggested the revitalization of some of the older outlying city centers to serve as metropolitan cores—places such as Poughkeepsie and White Plains in New York State and Stamford in Connecticut. The response of a business group led to the development of a prototype in Jamaica, a center in Queen's Borough. A Greater Jamaica Development Corporation was set up to carry out the plans. Gradually, city and state agencies have moved to begin the planned transportation improvements. A four-year liberal arts unit of the City University, York College, has located a 50-acre campus in Jamaica as a result of the plan. It is anticipated that 3,500 jobs will result from the private office space that is underway.

RPA has linked the credibility of its alternative patterns for growth on the development of a planned prototype, such as the Jamaica center. It has pointed to the concentration of activities which occur in downtown White Plains and has shown why the

POPULATION GROWTH VS. ANTICIPATED GROWTH: SELECTED COUNTIES IN NEW YORK STATE

	Orange (Newburgh)	Ulster (Kingston)	Dutchess (Poughkeepsie)	Cayuga (Auburn)	Chemung (Elmira)
Population					
1970 census (actual)	221,000	141,000	222,000	77,000	102,000
1970 projected (New York State, 1968)	268,000	149,000	240,000	78,000	108,000
1970 projected (Syracuse University, 1965)	300,000	165,000	290,000	83,000	113,000
1960 census	184,000	119,000	176,000	74,000	99,000
1950 census	152,000	93,000	137,000	70,000	87,000
1940 census	140,000	87,000	121,000	66,000	74,000
1930 census	130,000	80,000	105,000	65,000	75,000
Change 60-70	37,000	22,000	46,000	3,000	3,000
50-60	32,000	26,000	39,000	4,000	12,000
40-50	12,000	6,000	16,000	4,000	13,000
30-40	10,000	7,000	16,000	1,000	-1,000
1970 difference from projections (all deficits)					
New York State	47,000	8,000	18,000	1,000	6,000
Syracuse University	79,000	24,000	68,000	6,000	11,000

Figures rounded to nearest 1,000

- Sources: 1. *Demographic Projections for New York State Counties to 2020, June 1968, State of New York Office of Planning Coordination.*
 2. *New York State Atlas, Syracuse University Press, 1965.*

focussing of more activities in the satellite centers will create a desirable development pattern. If RPA can show how to achieve the satellite centers, the patterns of urban growth in such developing counties as those along the mid-Hudson can be substantially different. RPA has no power to carry out its proposals nor any immediate local constituency; it tries to affect the public concept of regional development.

Today, critical areas for the examination of regional development in the whole of New York State could be placed along the seven-county area following the Hudson corridor between New York City and Albany; suburbs; and in smaller cities along the main corridors, such as Elmira in the southern tier; Finger Lake cities, such as Auburn; and the Mohawk cities from Rome to Amsterdam. The mid-Hudson counties, moving from a period of dormancy, are beginning to feel the outward extension of the New York metropolitan area in the southern parts of Orange, Ulster and Dutchess Counties. Even the smaller cities along the growth corridors of most regional plans have experienced outmigration.

In the mid-Hudson counties there is a local, private, non-profit regional planning and development corporation, the Mid-Hudson Pattern for Progress. Together with RPA it has worked to show the choices which can be made to provide more beneficial development patterns in the urbanizing parts of Orange, Dutchess and Ulster Counties. The need for an alternative to spread city in housing is critical. The absence of housing for moderate income families restricts the labor force for employers in outlying suburbs. The high cost of new housing means that many workers cannot afford a satisfactory place to live in rapidly developing outlying areas. In a study published in 1969, *Housing Opportunities*, the RPA stated that "few households with incomes below

about \$12,000 can afford even the least costly of these houses" in the New York suburbs and "that means that 80 percent of the population can't even compete for the few \$30,000 houses." After two years, conditions are worse. Spread city has indeed become a factor in regional development.

Completion of the New York Thruway in the '50s cut driving time between New York City and Albany and brought rapid growth to the Newburgh area in Orange County, to Kingston in Ulster County and to Poughkeepsie in Dutchess County. Dormant for decades, the areas continued to grow well in the '60s but not at the pace of the '50s nor at the anticipated rate.

Edward J. Logue, President of the New York State Urban Development Corporation, says that "in the less developed areas beyond the suburban fringe with local fiscal problems of their own, there is consensus that both planned and unplanned development (except for high taxpaying 'clean' industry) is undesirable." Those ahead of the path of suburbanization look more critically at the influx of the costs and demands that come with new population. Impatient with the suburban patterns of the past 25 years, receptivity to *workable* alternatives may be emerging.

The growth potential of those counties on the fringe of the New York metropolitan area is missing from the smaller upstate cities which are along the corridors where urbanization has historically taken place. Except for the Rochester metropolitan area, most of the parts of upstate New York showed moderate outmigration during the '60s. Few counties showed a growth rate equivalent to the national one of about 14 percent. Because it is difficult to generalize about population growth, the table is included to show the actual and anticipated growth of the metropolitan perimeter and the corridor counties during the last decade. The projections show the change that would be anticipated on the basis of earlier decades; they are compared against actual results. While reasonable and accurate for many of the metropolitan New York State counties, these sets of projections have generally

Mr. Paul operates an architectural/environmental design firm under his own name in Baltimore.

underestimated the centralizing tendencies of New York City and its immediate suburbs during the '60s.

MacKaye's hopes of the '20s for population backflow have not materialized. Upstate communities have remained static. Older jobs have moved out and have been replaced very gradually. Once the center of the carpet industry, Amsterdam, for example, has seen its mills pull out to move south. New industries which started in the upstate towns are moving or carrying their major expansions to other areas. For example, Xerox is moving corporate headquarters from its original Rochester location nearer to Manhattan.

These small cities today no longer show their earlier vitality. The process of renewing their public infrastructure goes on in some places, and new industries gradually come in to replace dying segments of their economies. The upland region which stretches from New York State to Alabama between the eastern coast urban region and that along the Great Lakes have seen an absolute decline of towns and small cities and rural population. That upstate New York has been able to maintain a fairly level population with only moderate outmigration reflects favorably on the state and localities working together.

Responsibility for regional planning at the state level in New York was assigned to the Office of Planning Coordination by Governor Nelson A. Rockefeller in the early '60s. The job of regional planning involves the considerable task of coordinating the different directions of more than 8,000 local government units and the diverse federal programs which affect local government in the state. State functional agencies for such elements as education, transportation, natural resources and economic development operate the programs throughout the state. OPC attempted to relate their efforts, particularly where more than one function was involved. Getting all the agencies to use the same regional definitions in discussing the state was a considerable task to undertake.

OPC prepared a Physical Development Plan for New York State which was released in January 1971. It was based on a careful study of land forms and a projection of present urban development trends to 1990. Urban land uses are classified according to intensity, ranging from low intensity (200 to 1,000 persons per square mile) through medium intensity (1,000 to 10,000) to high intensity (over 10,000 persons). In the plan, eight existing urban areas continue to dominate the development of the state. They are connected along the traditional transportation corridors of the Hudson-Mohawk and Southern Tiers routes.

The plan states that "the greatest opportunity for shaping the state's settlement pattern over the next 20 years is near the edges of the metropolitan areas. It is these urban/rural fringes which require the greatest efforts to manage the state's natural resources wisely while accommodating the pressures of urban growth."

A variety of techniques from the acquisition of easements to land acquisition are proposed to maintain open space and preserve high quality farm land from urban pressures. Land development details would remain with local government, with development intensity conforming to the state plan. For population growth beyond these projected levels, new communities outside the defined urban areas are suggested.

The OPC plan is based on a sophisticated information system, one of the pillars of regional planning today, and the attempt to make a logical resolution of inherited administrative and functional boundaries. The anticipated impact on state land to accommodate 5 million more New Yorkers in the next 20 years is as follows:

1990 Settlement Pattern Projected for New York State

	Population (in 1,000s)			Area (square miles)
	Total	New York metropolitan	Balance of state	
High intensity	9,200	8,700	500	370
Medium intensity	9,700	6,100	3,600	2,890
Low intensity	2,300	700	1,600	5,150
Nonurban	2,100		2,100	39,400
	23,300	15,500	7,800	47,830

Two-thirds of the state's population will live in the New York City area which will cover 3,470 square miles or about 7 percent of the state. About 21 million people will live in the urban areas on about 17 percent of the land.

In the discussion of settlement pattern, no attempt is made to counter the centralizing tendencies of New York City—a policy which the Regional Plan Association of America had considered an essential part of regional planning. The OPC plan tends to represent the state of the art of regional planning today with its emphasis on land characteristics, trend projections and intergovernmental relations. It extends current techniques to their logical conclusion and perhaps a little beyond.

The 1971 legislature provided for a realignment of planning agencies in the state. OPC was abolished as was the Hudson River Valley and St. Lawrence-Eastern Ontario Commission and several other statewide planning commissions. Their functions were realigned under a new Office of Planning Services, responsible for general coordination of planning activities in New York State. Significant, too, is a legislative recognition of the interdependency of New York City with New Jersey and Connecticut through the Tri-State Transportation Commission and the Tri-State Planning Commission. OPS is still a branch of the governor's office, and staffing is from the discontinued agencies. State appropriations for OPS are \$2.7 million, against a total \$6 million request for all of the abolished agencies, even though its statutory responsibility for regional planning is now broader.

The New York State Urban Development Corporation, created in 1968, brings the state directly into the development process. The corporation was granted the power to develop housing, commercial, industrial, civic and land improvement projects. It can potentially affect the growth opportunities created by state action on transportation or state university projects. Such an enlargement of the fundamental functions and powers of an American state has evoked reaction and surveillance from a skeptical public.

Regional development cannot be separated from the political process. Without the forceful initiation and backing of Governor Rockefeller, UDC would never have come into existence nor been able to move forward on its programs. Elected overwhelmingly to his fourth term, Rockefeller ran on a strong program of action on domestic problems. Popular wrath was ventilated against specific actions, including UDC. With the governor, UDC survived the election, however, as well as its program for about 25,000 units of housing. By the end of 1970, the first spadeful of earth had been turned in Newburgh, and nearly 7,000 housing units were ready for construction around the state.

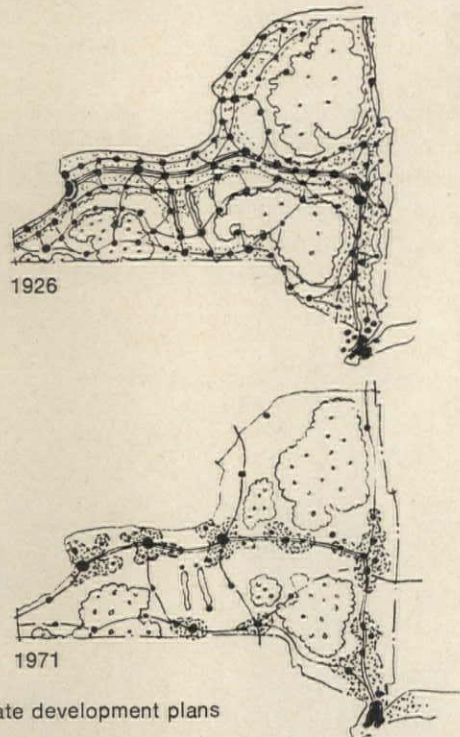
UDC has been an important contributor to the action taken by the administration against state urban problems. Logue has chosen to follow the policy of persuasion. In his long urban renewal experience in New Haven and Boston, he has developed a sense of the application and restraint of power which has guided UDC action. Condemnation power was included in the legislation which created UDC, but Logue has not yet had to use it. UDC has gone into cities where it was invited; satisfactory achievement of a project leads to other requests. This develop-

ment of mutual confidence is a necessary step in the realization of any larger plan.

Having survived an election, established an attractive action program and begun to develop a constituency, UDC now must try to carry out the first publicly developed new communities which it has proposed, hoping to gain public support for a larger new communities program. One of the proposed new communities is at Amherst, northeast of Buffalo and next to the new State University campus now under construction; another is at Lysander, 12 miles northwest of Syracuse. Both are in planning, and site acquisition is largely completed. The third, Welfare Island in New York City's East River, saw construction activity begin in the spring of 1971.

So far, the program has been a pragmatic one. UDC is not following any grand design for shaping the urban form of New York State. While others are engaged in envisioning future regional patterns, UDC concerns itself with the immediate problems of maintaining a cash flow through the sale of bonds to keep projects moving as promised and with trying to get its new communities program underway.

Discussion of future regional patterns that is presently occupying the attention of spokesmen for a national urbanization policy is concerned with many of the same premises and issues that have held the attention of regional planners in New York State for the past 50 years. The power to affect development in



New York state development plans

this country must be diffused to many sources as it has been in New York State. The results in the state in the next decade will be important to watch. Many questions must still be answered. How might the American state intervene to effect regional development over a longer period of time? While New York State does not have an answer after 50 years, its experience is showing some of the elements that a regional development policy will contain. Regional planning is still concerned with the broad subject of population distribution—where people will live. The long experience with regional planning in New York State does not seem to offer an effective way for relieving the pressures of people moving toward major cities.

Each employer decides between the merits of metropolitan New York and upstate Utica or Elmira as well as out of state areas. Population distribution represents the trend of these in-

dividual decisions. Advantages of nature, cost and amenities *might* at some time overcome the limitations of accessibility and opportunity that seem inherent in the smaller upstate cities. The state *might* intervene directly to shift balance of accessibility with transportation improvements, such as the Southern Tier Expressway between New York City and Binghamton-Elmira. This balance *might* be shifted by the activities of the state's public benefit corporations, such as UDC. There is a great distance to bridge between plan objectives and results obtained.

The 1971 Office of Planning Coordination's development plan for the state is a pragmatic analysis of land characteristics and trends compared to the more visionary 1926 plan with its regional grid of new communities. It admits the possibilities of some new communities, such as the one in planning at Lysander, but it does not commit the state to a policy of accommodating future population growth in new communities.

One of UDC's immediate problems seems to be the development of the ability, experience and techniques needed to affect urban growth. Will it be limited to building low income housing and confined primarily to renewal sites? Or can an American public agency develop a successful prototypical new town around a suburban state university campus or outside a medium sized upstate city? Can platform space over a rail yard be developed economically for housing in land-hungry New York City? Can transportation, housing for various income groups and commercial uses be focussed to develop suburban alternatives on the growing fringe of a major city? How can space for employment be generated and jobs attracted to a smaller upstate city? How can housing be improved and its cost reduced? Each successful prototype will enlarge the number of techniques that can be used to change the development pattern of the state.

How will the flow of funds to carry out the development be maintained? Housing needs for the state are estimated between 180,000 and 225,000 units annually, far in excess of present production levels. UDC will provide only a fraction of this level. As need for housing and other development activity exceeds available funds, rational criteria will have to be established to determine which projects receive priority. Explicitly or by implication, these criteria will reflect policies about regional growth.

For New York State this kind of implicit regional development policy is still in the future at best. At that time, economic criteria and popular acceptance will determine what the future growth pattern of the state and the role of UDC will be.

The interventions of theory and politics will be secondary to selections which attract people and thereby maintain the flow of funds into the state's development activities. Advocates of new communities and of alternatives to present suburban development patterns have maintained that, if offered, their alternative approaches would be more attractive and economical. New York State is trying to provide the choice.

Tomorrow New York State may offer one of the best arenas for testing workable concepts of regional development beyond the prevailing level of general speculation. After 50 years, geotechnics, or regional planning, is still in its infancy. The hopes which some have entertained of backflow to extended urban regions from major cities have not been realized. The need grows daily for better approaches to problems of regional settlement as there are greater numbers of people in more complex urban situations. Beyond daily crises and the law's delay rises the imperative that the need for an urban resolution be met. □

REGIONAL DEVELOPMENT : THE ARCHITECT'S ROLE

A TOTAL PLAN FOR THE GRAND COULEE

In the Columbia River region, two architectural firms have been given the opportunity by a public agency to embrace the environs with the same vigor and conviction that pioneering farmers, businessmen, statesmen and engineers have exhibited in this area for the past 70 years. The hoped-for result might be called an integrated environmental sanctuary.

by ELLIS L. ARMSTRONG

The environment of man and the environment of nature are inseparably linked in the great concrete monolith—Grand Coulee Dam—which blocks and controls the Columbia River in Washington State. And the Bureau of Reclamation, which built the dam and is now supervising construction of a \$435 million addition, is bending every effort to make certain that man may be proud of his contribution to the environment.

Chief among these efforts are contracts with two architectural firms: Marcel Breuer & Associates for designing the huge third power plant and Kenneth W. Brooks, FAIA, for developing a master environment plan for the total Grand Coulee area.

The dam is located in a great bend of the river through a canyon carved in a basaltic plateau and now known as the Big Bend Country of central Washington. Nature was the first to block the Columbia River at this point many thousands of years ago during the Ice Age. The river at that time turned south to etch out the Grand Coulee from which the dam takes its name.

Today man, by the construction of the dam, utilizes that coulee as a giant irrigation ditch and reservoir to supply water to a half-million acres of dry land. At the same time, he has harnessed the restless power of the river in one of the greatest hydropower installations known: 2.093 million kilowatts of presently installed generating capacity and with additional capac-

ity being installed or on the drawing boards which will bring the total to 9.78 million.

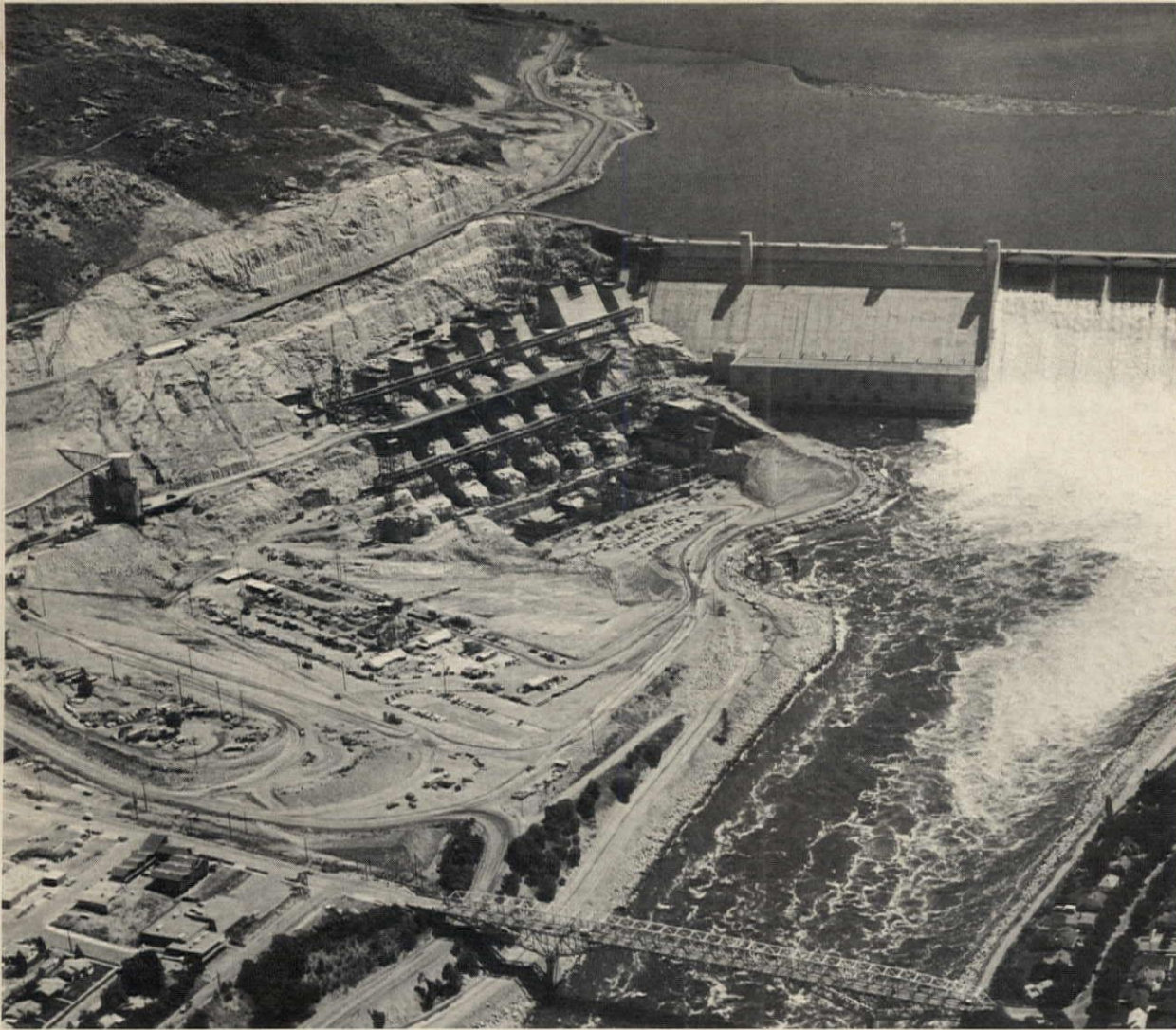
Grand Coulee Dam is also the key structure which has made possible the installation of 8 million kilowatts of capacity in other projects on the river system. This will be increased to 15.6 million kilowatts—an amazing supply of pollution-free energy—under terms of the Columbia River Treaty of the United States and Canada which provided for joint efforts to fully develop the river resources.

Since the dam with its two power plants is one of the great engineering accomplishments of all time, the Bureau of Reclamation, as it recently undertook the third one, desired to provide a proper setting and to enhance this work for man and for his enjoyment as well as for his economic well-being. To accomplish this, the Breuer firm delegated the task of architectural concepts to Hamilton Smith, AIA. The 1,128-foot-long structure will include such imaginative features as an exposed passenger elevator riding an inclined boom down the massive face of the forebay dam; a bold series of three-dimensional, V-shaped concrete columns forming walls of the powerhouse; a cantilevered observation deck suspended about 100 feet above the trailrace; and a cross-over bridge linking the forebay dam with the plant.

Concurrently, Brooks began development of a master envi-



Coulee, a strangely calm place when the violent stage of the erosion is over, surrounded by wild and barren, sage-covered hills.



Now under construction, the sculptural third power plant by Breuer's office will house six of the largest generators when completed in February 1974. The section seen through the restaurant is part of the total plan conceived by the Brooks firm.

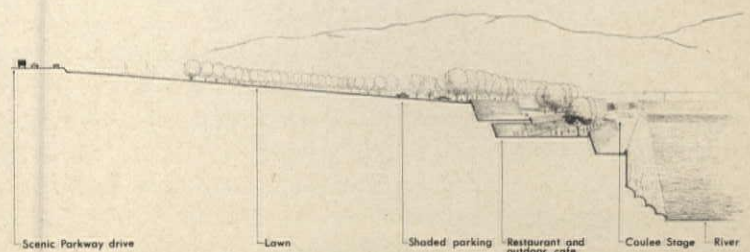
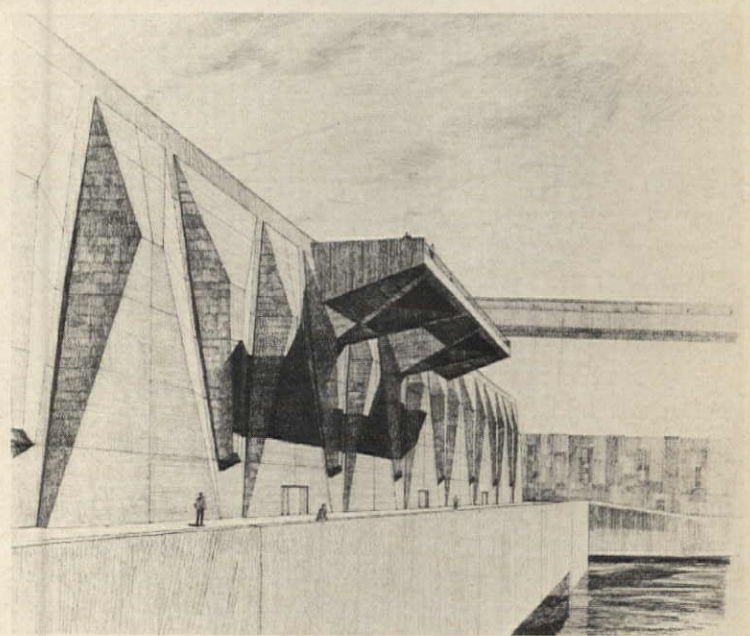
ronmental plan. Being from Spokane, only 85 miles from the dam, the architect was familiar with the site and its history.

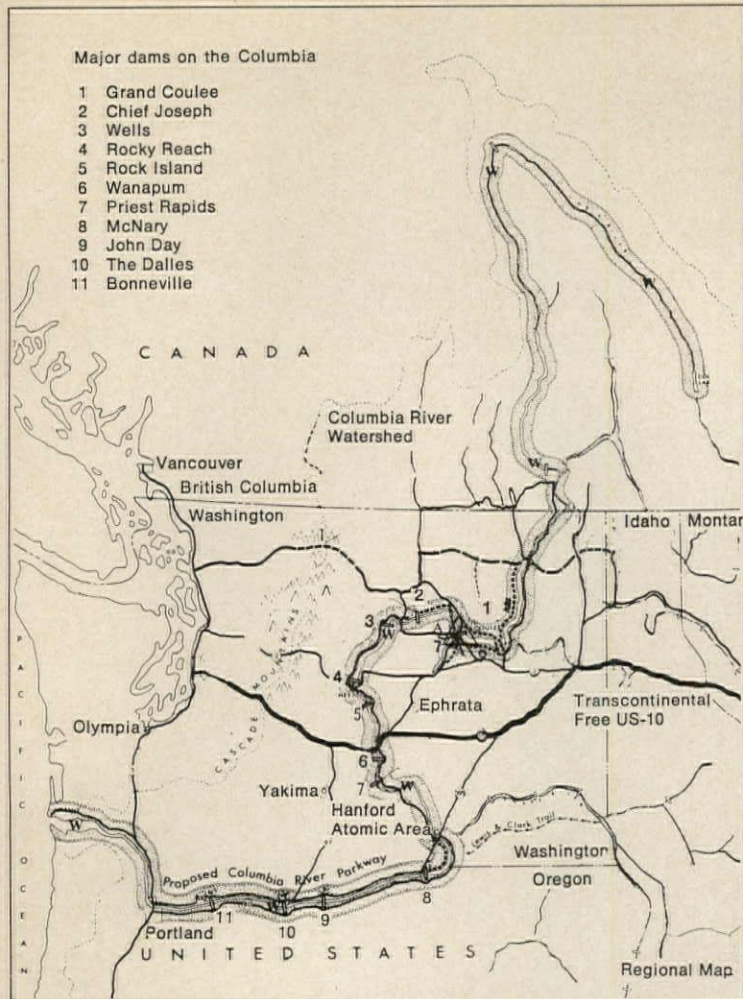
Grand Coulee Dam is situated in rugged, sagebrush-covered hills. Before the building of the original dam, the area surrounding it, with the Colville Indian Reservation on one side, was sparsely settled, but growth was rapid as the work force built up to some 8,000 people during the height of the construction. With the Depression in full sway, they were desperate for jobs and willing to accept any type of shelter possible. Tar-paper shacks and minimal housing were the order of the day.

Grand Coulee and Electric City became the two communities housing most of the workers. The scars and eyesores from the original construction days can still be seen. However, these are being gradually eliminated as a sense of civic pride has developed in the communities.

Franklin Delano Roosevelt Lake, formed behind the dam, extends 150 miles to the Canadian border with many miles of shoreline for recreational use. Its shores are providing space for summer homes and also many permanent dwellings. Banks Lake, created as a reservoir to supply irrigation water to the Columbia Basin, is 27 miles in length and greatly enhances the beauty of the surrounding rugged country.

The shear rock walls were formed during the Ice Age when the Columbia River was blocked and diverted across the top of a great basaltic plain. The mighty force of the river cut a gorge some 1,000 feet deep, providing an unusual and perfect setting for Banks Lake which was created when the Bureau of Reclamation built dams at both ends. Water is pumped into the reservoir from the Columbia River and routed south for irrigation pur-





"Relevant to the proposal for creating an international sanctuary in this region is word that the United Nations is turning its attention to the total environment. Grand Coulee is worthy of being discussed on this level of importance," says master planner Brooks.

poses. The excellent fishing in the lake attracts sportsmen from far and wide. Ducks and geese, mostly migratory but many nesting in the area, make the territory a hunter's paradise.

This was the site which Brooks found when he and his associates undertook their study and proposed recommendations for the future development of Grand Coulee Dam and its environs. His was the job of establishing goals and objectives, surveying and analyzing, and making a master plan. The adapting and carrying out of the plan is now the job of not only the bureau but also of other federal agencies and state, county, city and civic organizations which must unite to bring to fruition some of the forward-looking ideas presented.

One objective was to involve state, federal and local agencies in formulating and carrying out the comprehensive environmental planning for this area because it could not be accomplished by the bureau alone. Invitations to serve on an advisory committee were sent to the governor of the state of Washington, to state agencies which might be interested or play a part in the development of the overall plan, to officials in the four-area counties, the cities, chambers of commerce and irrigation districts. Also invited to serve on the council were the Corps of Engineers, the Atomic Energy Commission, National Park Service, Bonneville Power Administration, Bureau of Outdoor Recreation, Bureau of Indian Affairs, Water Pollution Control Administration and Fish and Wildlife Service.

It was envisioned that the environmental work would be developed with the cooperation of this advisory council and the steering committee set up within the Department of Interior

to be coordinated with Breuer's architectural design for the power plant. In addition, Brooks made use of the talents of a large number of consultants and critics in making his environmental study and developing the design. Among the 12 persons who made up the latter's design team were some architectural students who approached the problems with the vigor and enthusiasm of youth.

This was balanced by others with years of background and experience in the field. Henry and Catherine Matthews, then at Washington State University, were the historians providing environmental documentation. They spent most of the summer of 1968 studying and photographing the Coulee Dam area, making a comprehensive and illuminating statement which is included as a part of the report. Other consultants were Edward L. Falk, sociologist and planner; Donald Ray Carter, partner, and Robert LaRocca, associate of Lawrence Halprin & Associates, landscape architects; Tom Thorpe, ecologist and cultural geographer; and Joseph M. Doyle, lighting engineer.

Critics for the design included Charles A. Blessing, FAIA, planning director of the City of Detroit; Patrick Horsburgh, professor at the University of Notre Dame; and David Scott, AIA, chairman of the Department of Architecture, Washington State University. These men all spent reconnaissance time in the Grand Coulee area during the study. Their comments and suggestions form a vital part of the final report.

The study prepared by Brooks and his associates delves into the geological history and formations, the botanical features, the wildlife and agriculture of the area. At the site of the dam and to the north is the granite which underlies the region. To the south, lava flows have created a basaltic sheet several thousand feet in depth. The Columbia Basin project area, with varying soil cover, is the yellow pine/sagebrush biological zone. North of the Columbia, in the mountains, are found many game animals such as deer, elk and bear. The life zone in the plateau area supports rabbits, marmots, rattlesnakes, a few deer and other small animals. Agriculture in the immediate vicinity is confined to dryland farms and grazing of livestock.

The impressive grandeur of the landscape and the strength of the rugged sagebrush-covered hills offset any lack of extensive floral and animal life. Planner Blessing has made this comment:

"In a future America, Grand Coulee must surely emerge as one of the truly remarkable heritages of both the nation and the world. No less a vision is worth the time, energy or intellectual dedication of concerned citizens and leaders. One other feature which no national park in America and possibly no national park in the world can claim, is the unique juxtaposition in one locality of natural attractions of unparalleled grandeur on the one hand, with the heart of the greatest hydropower system in the world on the other, thus bringing into close conjunction two compelling facts of national and international significance."

Brooks suggests that the first distant view of the dam from the south be from a parkway. It should blend into natural landscape, taking advantage of the scenic vistas and topography. A study indicates that a high percentage of car traffic detours around the dam region due to a side-road orientation. With the building of the North Cascade scenic highway, which is scheduled in this decade, greatly stepped-up traffic can be expected in the Grand Coulee area.

Other proposals include a Columbia River parkway, a road up the San Poil River Valley, a scenic loop on the north precipice of Banks Lake and other highway improvements to do away with its now side-road orientation. Recommendations also are made for a new airfield and for developing waterways.

The plan proposes visitor facilities on a comprehensive scale. The arrival center, just below the dam on the left bank, calls for shaded parking areas and view terraces. From there the aerial funicular connects with an exhibition center on a high point which will give a 360-degree view of the dam; Lake Roosevelt which backs upstrea; Banks Lake which was created in the Grand Coulee to the south by the pumped storage water; and a downriver vista of the canyon. It is designed to show the breath-taking panorama of the entire area.

From the arrival center, an electric car loop carries visitors into the left power plant. When completed, the top of Grand Coulee Dam will be opened so that tourists might visit the new third power plant. A parking lot for 100 cars on the top of the forebay dam and shaded parking off the end are provided.

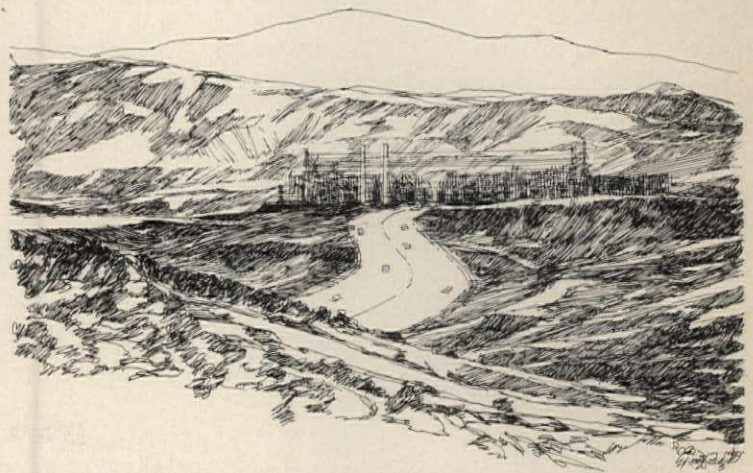
An inclined elevator from the top of the forebay dam down into the new third power plant will permit visitors to view the entire scene from a glass enclosure. The first stop will enable the tourist to cross the roof of the power plant to an overlook for a view into the trailrace. From there, one can reboard the elevator and visit the generator and turbine areas within the plant.

Since Grand Coulee is partially on the Colville Indian Reservation, a center has been proposed to reflect the red man's emotional attachment to his woods, valleys and prairies as the very essence of life. The plan envisions creation of the Colville Indian Center by enclosing the pumping plant reception building with a solar glass shell, which will house an art center. Indian artists of prominence will be brought in to teach native crafts and culture to members of the tribe, both young and old.

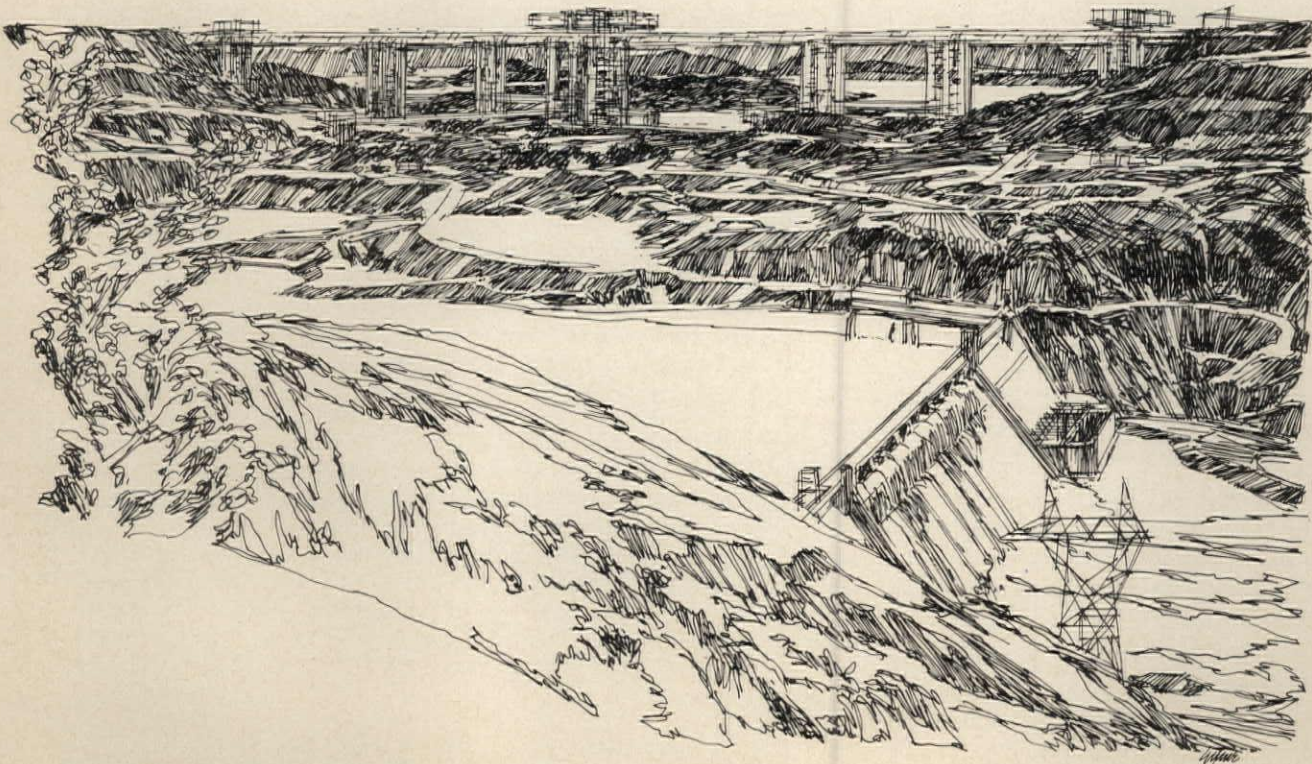
The plan also sees the entire state of Washington teaming up with the Colville Indians and others to design and build the Northwest's first model city.

Recreation plays an important part of the proposal. The report suggests development of Banks Lake as a "unique experience lake." Most of the 100 miles of remote dramatic canyon

Mr. Armstrong is Commissioner of the Bureau of Reclamation, Department of the Interior.



Chain of lakes downriver for recreation, with native growth fed by the canal, is seen at the top. Above is a climax point on the Columbia River Parkway proposed by Marvin B. Durning at the AIA Portland convention (see AIA JOURNAL, Sept. '68, p. 63).



Southerly gateway to the entrance of the dam is formed by a megastructure bridge and vertical dwelling.

shoreline and white sandy beaches are accessible only by boat. The plan calls for the development of a "camper water taxi" system to transport families to some of the campsites which will be inaccessible except by boat. The campers would be provided with rental tents, equipment packs, and a grocery boat to form a completely new camping concept. Roosevelt Lake, already in a national recreation area, could be developed to provide a variety of activities. Cruise boats could be operated from Grand Coulee Dam to the Canadian border.

One of the suggestions made is for "a week-in-ecouleegeia," a seven-day Colville Indian guided trek probably originating at Fort Spokane. It would include a visit to a logging camp and lumber mill, learning Indian lore in the Colville summer camp, water skiing, a study of some of the geology of the region, a round of golf and, ending the trip, a flight down the Columbia River by helicopter to the Hanford Atomic Works, then back through the irrigated agricultural region to the rendezvous point.

Immediately downstream from the dam a new park is suggested at Elmer City with camping facilities and swimming pool. In the construction of the third power plant, it was necessary to excavate about 15 million cubic yards of earth and rock which were hauled downstream a distance of six miles and used for a stabilizing river embankment fill.

It is proposed that this entire acreage be landscaped by creating a chain of small lakes and planting of field grasses, unharvested grain and lakeshore trees. The plan encompasses a wildlife refuge along with a chain of lakes.

A study and recommendation were made for the development of an area for clean industry. An initial one will be the high voltage test center with a possible graduate school for electrical engineers. The siting and development of towns and schools are also proposed in the plans.

One of the spectacular and unusual ideas presented was for a hydrolight show on an unequaled scale. Synchronized with a four-minute tape description of how hydroelectric power is created would be a 36-square-mile animated and illuminated diagram covering the entire project area.

To get the full impact, one must read the entire study itself. It is done with a great deal of insight and enthusiasm with ideas which project far into the future. The bureau hopes to incorporate the general philosophy and approach into the upgrading of the environs at Grand Coulee Dam.

Some ideas and plans are far out, to be sure. But there were those who felt that Grand Coulee Dam itself was a far out and impractical idea. Rufus Woods, Senator C. C. Dill and other pioneering spirits proved the dream of the dam could come true. It takes dreams and foresight to develop a world in which many may find a richer, fuller life. Ever since the inception of the Federal Reclamation program in 1902, it has been the bureau's intent to improve the quality of man's living with as little disturbance of nature as possible.

In announcing the release of the environmental study, James R. Smith, Assistant Secretary of the Interior for Water and Power Resources, said, "The Bureau of Reclamation is to be congratulated for its pioneering efforts in this undertaking. We will enlist the support of other government agencies in carrying out a program to make the Grand Coulee Dam complex a real showplace of man's ingenuity and skill in turning a great natural resource to his benefit." He cautioned, however, that the environmental planning report was only a start and in no sense a finished blueprint. The upgrading of the environment, he commented, must be a total effort with full participation by the state and several counties and communities in the area.

The bureau will continue to cooperate and to participate as far as it can within its limits of jurisdiction and authority. It is preparing plans for the first recommendation for a tourist center just below the dam. Plans are being made for a structure which will do justice to this greatest of all dams.

An Environmental Advisory Council will play a key role in involving the other entities in the development of this far-reaching program. The road system will to a great degree determine the amount of tourism and rapidity with which some of the other features of the plan can be accomplished. Highway planning is generally a long-range program, and a top priority should be given to the road system needed to make the Grand Coulee complex a showplace.

The environmental council must be active in establishing the goals and priorities to be given each aspect of the plan. Since communities are shaped by the forces from within, the need for planning is itself a test of people to function as social beings. Tax dollars are involved and long-term solutions usually accomplish more and cost less than short-term expediency. This council has a responsibility in spearheading planning and action. □

OBSERVATIONS BY THE ENVIRONMENTAL DESIGN ARCHITECT

Providing environmental compatibility with the vast engineering accomplishment in the Grand Coulee Dam area breaks cleanly into three separate and distinct tasks:

1. Make the assignment. The Bureau of Reclamation searched its soul, squared its shoulders and made the assignment — one of the firsts in the history of hydroprojects. The assignment said in essence, "We have our own property to improve and we know the total environment can be successful only if the environment of our neighbors is also improved; therefore, we will give them an assist in this design endeavor."

2. Make the Design. The design is now jointly underway among the bureau, the architects and 56 agencies.

3. Make the construction improvements. This is "something else" as the saying goes. The formula is yet to be written on how 56 agencies can combine their money and their attitudes to produce environmental success — positive clear-cut achievement in 20 years. It is our assignment to propose this formula. It will take ingenuity and creative thinking by all who are involved. It will, in all probability, require new policy, modified regulations, budgeting ingenuity and a near literal signing of the pact "in blood" to have any hope of accomplishment.

The formula: It is recommended that consideration be given to asking each advisory council member to select as a "deputy adviser" a responsible youth, either boy or girl, say, between the ages of 16 and 26. Such young people want to be involved today in the environmental decisions which will affect their lives and the lives of their children. Here is an appropriate project which can use their help. It is further recommended that the next meeting . . . be held with a degree of formality, with each council member and his deputy properly identified in carefully arranged groups. With this approach, the next step — that of establishing a "get-the-tasks-done" organization — may possibly be found. If there can be a teaming up of several generations, the action generations of today with the action generations of tomorrow, perhaps each will somehow feel honor bound to the others to expedite the tasks, set deadlines, set standards of integrity and imagination.

As an architect, I believe this basic approach, when combined with sufficient brainstorming and dedication, will produce success.

KENNETH W. BROOKS, FAIA

REGIONAL DEVELOPMENT • THE ARCHITECT'S ROLE

NEW TOOLS FOR REGIONAL PLANNING

Regional development, an evolving system, is so complex that more sophisticated tools and methods are required that can give the planner the capability of assessing the present and predicting the future. Although still costly and largely unproven, mathematical models have a tremendous potential as a regional planning tool. Work on the construction of a comprehensive model for a large region is being undertaken to help planners to answer the all important question, "What would happen if . . ."

by CHARLES R. MEYERS JR.

In practically every metropolitan center today political boundaries are fusing together, unable to contain overflowing populations and necessitating larger units of management and service districts. As better transportation and services are provided, people spread even faster, extending the influence of the core city to the surrounding areas.

Throughout the country we are seeing regional cooperation on services and policies, e.g., water, sewer, electricity, that make possible economies of scale. These associations have, in turn, spurred interest in political alignments such as councils of government and regional development districts. Yet another impetus to regional cooperation has been the proliferation of government supported programs which have forced the federal government to seek regional organizations to act as clearinghouses for vast sums of money.

The regional organizations born out of the processes must deal with many more complex interrelationships than the simpler specialized institutions which preceded them. It is this complexity which is the bane of regional planners today. The inherent limitations of current regional planning methods clearly indicate a need for more sophisticated tools and methods to understand and implement decisions which have taken into account the complex interactions.

When we seek to control any dynamic system, we must try to foresee how that system might naturally evolve, how it would develop if left alone and also what the outcomes of many different kinds of stimuli and intervention might be. Anyone who seeks to manage or plan a region *must* ask the question, "What would happen if . . .?"

One handle on this problem is the use of automated means for data selection and display. Regional information systems have been built; the future versions of such systems will be capable of user query, preferably from inexpensive computer terminals located throughout the region and ideally accessible to everyone from political decision maker to individual taxpayer. These systems will be designed for the reception of computer programs written by users, for statistical analyses and manipulation of the data and then for the production of processed results derived from the data.

Direct retrieval of information from the system will be flexible enough to aggregate data to many different areal units, such as county boundaries, enumeration districts, watersheds or specific point locations within the region. An important requirement of a regional information system is the capability of updating the data base at frequent intervals. The basic structure must also be flexible enough to provide for "nested" grid cells and for expansion of both types and description of the variables. The operation of such a system is the first in a series of evolutionary steps toward the development of a mathematical model of a region.

As planners and researchers begin to experiment with vari-

ables to detect relationships which are not readily apparent, they develop simple algorithms or "recipes" to describe the relationships among the different parameters. Hopefully, this process also results in defining the minimum set of the most important relationships which will produce the answers sought.

Even though equipped with the best information system, no architect, planner or decision maker, however adept, can anticipate or visualize the many relationships which must be considered in a comprehensive regional plan. Expressed in mathematical terms, however, changes that occur through time can be built into a set of equations; and the computer can, in a matter of minutes, enable us to simulate decades of regional growth.

Significant achievements have been made in the development and application of modeling techniques for urban transportation planning, and a number of research efforts have been directed toward the development of economic and land use models. Although progress is evident, such models are not sufficiently well developed for routine use. They have not yet played a decisive role in regional planning; however, models have been useful in shaping the judgment of persons responsible for planning and have served as guidelines for them.

Probably one of the most important contributions of these early planning models is their help in enabling us to understand the effects of planning decisions. When modeling complex regional phenomena, we are not dealing with such precisely defined measurable variables and scientific laws as the aerospace engineer uses in his orbital calculations model. We are attempting to explain, however, and to predict human behavior and its effect on the environment. In most past instances, planning models or series of submodels describe only one process in the total system and have not been put into a context that permits an integrated explanation of effects.

Ideally, a regional planner needs the capability to assess the present status of the regional system and then to predict the future status in the light of alternative plans, management practices, kinds and patterns of growth, etc. Thus the definition of "model" must be broad and general and yet embrace a myriad of specific factors that influence man and his environment or are influenced by them.

What are the necessary attributes of a holistic model?

1. The model must be *comprehensive*. Many diverse effects of planning, i. e., sociological, economic, ecological, political, demographic, etc., would be anticipated in many diverse fields. If the model does not embrace all these aspects, its focus is limited and it fails in delineating the significant interconnected relationships that comprise the system.
2. The model should be *easy to modify*. As new relationships become apparent, it should be possible to incorporate new or modified algorithms and to accept updated or modified data.
3. The model should be *exportable*. Each region has its own unique characteristics; however, general concepts and the struc-

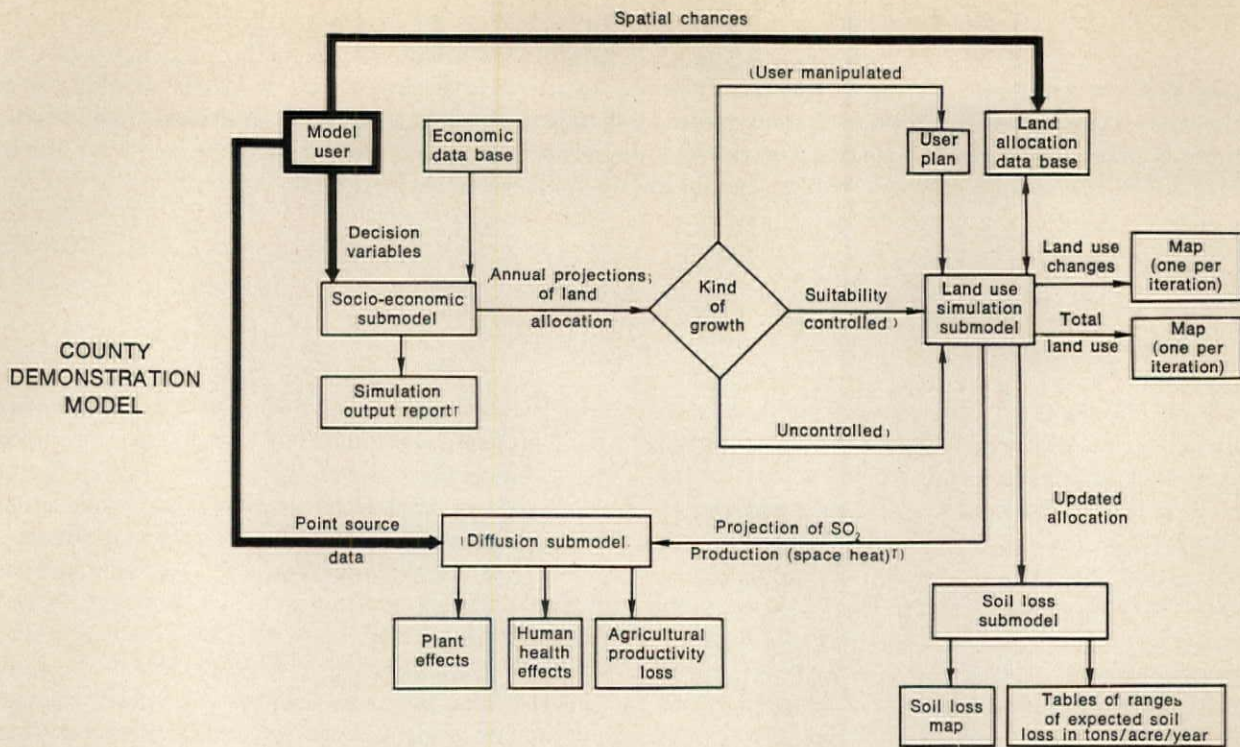


Figure 1

tural framework of the model should be applicable to other regions. Data and algorithms could be changed in the model, but the basic structure could be utilized for different regions.

4. The model should be *interactive*. The planner or model user should be able to test his schemes or plans and get results quickly. He should be able to interject his working knowledge into the system during the model runs. In the simple example of regional growth simulation, the planner should be able to stop and change a land use or increase the migration rates during a run or at any period of time in the future.

5. The model should have a *multipurpose data base*. The data base should serve as a regional information system as well as be usable to the model. Such a data base should provide rapid, accessible and inexpensive data to a large number of users.

6. The model should be *diverse*. The more use a model receives, the more heterogeneous the users become. Thus its elements should lend themselves to being organized easily to answer different questions or to handle different decision variables.

7. The model should be *reliable*. The reliability should be well established in order to reduce the amount of verification needed. Reliability is achieved by having the model track different events over time before projections are made into the future. If the model begins with historic data and produces results compatible with present events, there is a reasonable assumption that forecasts into the future may be accurate.

8. The model must have *comprehensible output*. The computer output results of the model run should answer the need of the user, i.e., the skilled professional who wants technical output as well as the nonskilled user who wants simplified graphic output.

There are many practical limitations involved in the construction and use of comprehensive models in the planning process. The most outstanding is the lack of knowledge about many interacting relationships which affect a region over time. Another important drawback is the unavailability of much basic information. In many cases, there are vast gaps or great inaccuracies in the data that do exist. In addition, computer capability is not always present in the regional organization. Possibly the greatest deterrents to widespread use of comprehensive models of this type is that they are costly, new, unproven and difficult to imple-

ment within present institutional structures. The complexity and scope of a comprehensive regional model is such that extensive development and testing are needed before usable models are available to planners.

A research effort to develop a modeling methodology and to build and test a comprehensive regional model is presently underway at the Oak Ridge National Laboratory (ORNL). Research in the International Biological Program (IBP) revealed the need to direct attention toward solving environmental problems which have resulted indirectly from man's changing his environment. IBP workshops were conducted in the winter of 1970 to create an analytical device in the form of a mathematical model which could forecast both environmental and social outcomes of such practices as alternative use of natural resources or electric power.

From this and similar concepts relating to the environment and technology assessment, the National Science Foundation supported ORNL in developing a regional modeling effort which began in the summer of 1970 as a component of the ORNL-NSF Environmental Program. It was recognized at the outset that much previous work had been done and considerable effort expended in the development of regional models. An assessment of these past and present activities was given a high priority to provide an essential background to ORNL work in regional modeling. Pertinent literature was reviewed, abstracted and keyworded for computer retrieval. (This review is available to other researchers or planners in the form of a published listing, "Regional Modeling Abstracts," C. R. Meyers Jr., Volume 1, ORNL-NSF-EP-7, 1971; Volume 2 will be available in December 1971.) In addition, a series of two-day seminars was conducted. The participants were researchers with experience in modeling and professionals involved in the design and planning process. These numerous personal contacts afforded a rapid and

Mr. Meyers, a landscape architect and regional planner, was previously associated with Wallace, McHarg, Roberts & Todd in Philadelphia and is presently a regional modeling consultant to the Oak Ridge National Laboratory in Oak Ridge, Tennessee. His research reported here is sponsored by the National Science Foundation under Union Carbide Corporation's contract with the US Atomic Energy Commission.

intensive education in the current state of the art of regional modeling.

As a result of this initial phase of work, an approach to the construction of a holistic regional model evolved. The total human ecosystem was separated into four general categories:

1. Physical: aspects of the air, land and water with the aim of predicting changes in land use and the effects of such changes on the physical environment, i.e., air and water quality, etc.
2. Biological/Ecological: effects of changes in the physical environment on the biological system such as, for example, the effects of pollutants on plants and animals.
3. Sociocultural: interaction of education, health, population, income, employment, housing, etc. Any useful effort toward improving the environment must incorporate these social and cultural contributions to the quality of life.
4. Economic: production, including, for example, consumption of raw materials or resources, as well as the output of products and the discharge of wastes. It may also encompass nonphysical production, such as services.

Clearly, these four segments of the human environment are not independent of one another, and major efforts were initiated to identify and quantify the important interrelationships. Alternately, the four categories may be viewed as an attempt to insure both reality and generality in the modeling work.

We concluded that the best way to proceed toward the construction of a comprehensive model for a large region was to build a simplified model, but one containing all the parts of the four subsections described above. We made an early decision to test simplified holistic modeling concepts and to develop team interaction rather than to build a model of a small region that could actually be used by a variety of decision makers. The effort was limited to eight weeks' work, from data collection to imple-

mentation of the algorithms. Basically the model that resulted from the initial effort was a county model made up of a series of linked submodels (Fig. 1).

First, there is a *socioeconomic submodel* which is a "point model" of the county (having no spatially distributed data) concerned primarily with employment, housing and the impact of different job categories on the county budget, markets and welfare rolls within the county. This submodel becomes the initial driver of the other submodels by projecting changes in numbers of people, etc.

Next we developed a *land use simulation model* which accepts projected land use demands from the economic submodel and spatially distributes the projected growth of activities within the county. For each land use—high density residence, low density residence, commerce, industry, coal mining, agriculture, open land and forest—the submodel calculates the square mile cell that has the highest probability to attract that land use.

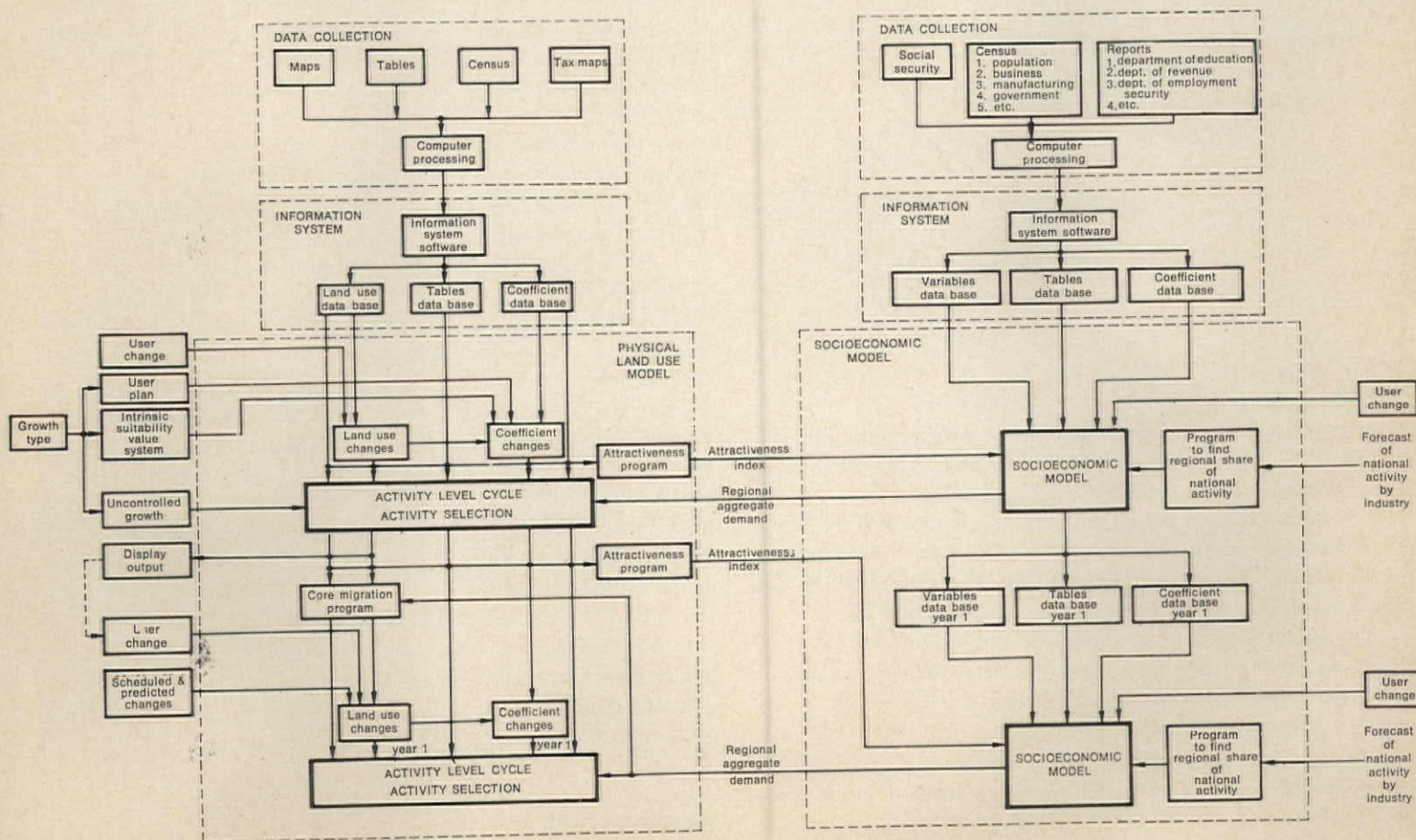
Using the principles of ecological planning developed by Ian McHarg (*Design with Nature*, Garden City, N.Y.: Natural History Press, 1969), we have constructed an *intrinsic land use suitability submodel*. Our approach deviates from McHarg's in that we allow for continuously variable weighting factors which are applied to the land characteristics for each contemplated land use. It is anticipated that each group of users will wish to apply its own weighting factors on suitability. Thus the model must be flexible enough to accommodate changing suitability values until a more systematic basis for the value system can be agreed upon.

An *air diffusion submodel* distributes the pollution from a combination of sources, such as space heating or new locations of industry, etc., that are simulated in the above model, or locations directly inserted for testing by a user.

A *soil loss prediction submodel* was developed that uses the

Figure 2

INFORMATION FLOW, COMPOSITE MODEL



US Department of Agriculture universal soil loss formula (US Department of Agriculture, Agriculture Research Service, "A Universal Equation for Predicting Rainfall-Erosion Losses," ARS 22-66, 1961). This formula was modified to accept categorized rather than continuous data. This loss equation calculates the average annual soil loss in tons per acre per year for each square mile as land use activities are simulated into the future.

From the biological/ecological sector of the total human environment we developed an *air pollution evaluation sector* that determines effects of air pollution upon different types of vegetation, both agricultural and natural.

As each of the submodels described above was completed, it became part of the interconnected model, linked to the user through an iterative loop. The user enters the model by specifying values in a set of spatially and temporally distributed decision variables in order to test for effects on growth patterns and associated environmental degradation. This permits the model user to study the implications of different alternatives in terms of both location and timing. Examples of decision variables whose effects could be tested are 1) development of a sewage system; 2) modification of zoning constraints; 3) construction of new transportation links; 4) new or expanded employment centers; 5) rate of construction of public housing units; 6) an extraction of tax on coal resources, etc. The user may work with this demonstration

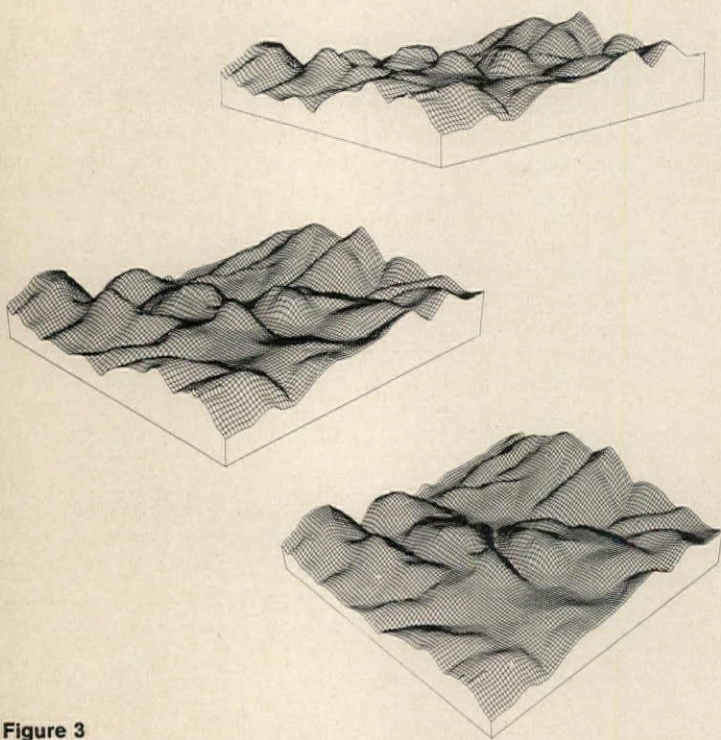


Figure 3

model to anticipate change under three simulated conditions of growth: 1) uncontrolled growth conditions, given the present state of events and no outside changes occurring; 2) growth controlled by the intrinsic suitability, i.e., the use to which the land is put has been established as most suitable for that particular parcel of land; 3) growth controlled by externally imposed conditions, such as a proposed land use plan or zoning plan.

After constructing a simplified holistic model, we have moved on, as originally intended, to a comprehensive model of a large geographic region and have selected the 16-county, 6,500-square-mile region surrounding Knoxville, Tennessee.

Basically the model has been divided into two interconnected but parallel subsections: the socioeconomic model and a physical land use model (Fig. 2). During a run, the two sections are de-

pendent upon each other, both in the form of data required and feedback effects for each iteration.

The model is presently undergoing several stages of development, the first of which is the construction of the data base. The available data needed for the early runs of the model have been collected and are now being digitized for entry into the information system. The spatial data which is being interpreted from maps and photographs are separated by spatial characteristics. These are then in turn photographed, scanned and digitized. A hierarchy of storage levels has been developed based on both the needs of the information in the model and the degree of accuracy found in the original data. It is anticipated that data interpreted from satellite imagery will be added to the system at frequent intervals both to help check reliability of the model and to serve as a means of updating the data base.

The development of the information system is also in progress. This system is primarily developed as a source of data handling for the model. It has been structured, however, to permit other users to extract and manipulate the data for other applications. Briefly, the system stores at three levels: 1) spatial characteristics for each cell at the land cover data base; 2) associated information at the tables data base; and 3) coefficients that reflect relationships which are used in the model and have been calculated in advance of the initial "0" year model run at the coefficient data base.

The practical use of such a model in the planning and design process can be illustrated in the following generalized example. When considering the siting of a new building such as a manufacturing industry, a shopping center or an individual house, specific sites could be searched for by supplying the model with the necessary criteria and priorities.

Once a site has been selected, or if alternative sites were preselected by the model user, the user can then simulate regional development into the future, both with and without the presence of the activity he contemplates locating and can see effects and interrelationships caused by this change. An interesting design feature enables the user to visually walk around or get a birdseye view (Fig. 3) of the site while sitting in front of the computer terminal. The typography data can be reconstructed using a perspective view of what the user would see as he looks around or walks through the potential site. This is viewed on a television screen (CRT) at the terminal and comes as a line of half-tone perspective.

Regional models have not yet begun to reveal their potential as planning tools; most of those available are limited, costly and inadequately reflective of reality. Reliable models for specific purposes are being utilized in many individual cases. For example, housing market models of small geographic areas are gaining rapid acceptance among developers and real estate speculators. Perhaps one of the most important implications of a regional model is that it may lead planners to a greater degree of humility. As we probe deeper and deeper into the complex system we are part of, we become increasingly aware of the labyrinth nature of human motivations, choices and actions that make up the system.

Models augment and amplify the planners' experience and intuition and can act as an early warning device, indicating needs for change or corrective action that may lie ahead. Most important, however, the models respond to second, third and fourth order effects when asked the question, "What if . . .?" □

REGIONAL DEVELOPMENT • THE ARCHITECT'S ROLE



The New Exam

by E.G. HAMILTON, FAIA

In a significant recognition of the broadened scope of architectural responsibilities, the NCARB at its 1971 convention approved a new examination process for licensing with radical changes from past procedures.

Why a new examination? Why any examination? Why, indeed, licensing? These are frequently asked questions, especially by students and recent graduates, and by those who seek registration through experience.

The new examination is part of the answer to the question of licensing, but only a part, for the fact is that licensing is a long-established legislative process, and because it has strong principles at its base, it will continue to exist for some time to come. All states and territories have legislation which regulates the practice of professions, notably those of architecture, medicine and the law, for two major reasons: to safeguard the public health, safety and general welfare; and to raise the standards and level of performance of these professions.

The question is not whether we should have licensing, but how to make licensing serve the needs of society. To achieve this objective, the states' boards of examiners are banded together in the National Council of Architectural Registration Boards. Protection of the public's health, safety and general welfare is too often interpreted as requiring only a structurally sound and sanitary building. NCARB believes that the general welfare of the public is a vitally important part of the quality of the environment to which people are entitled, and that to ignore it is to abrogate a major aspect of the architect's responsibility to the public and to his profession. Accordingly, NCARB, backed by a legal memorandum prepared for it by Boston attorney Carl M. Sapers, has determined that there is a firm legal basis for requiring that candidates for licensing demonstrate their capabilities in regard to the environmental quality of their professional work.

NCARB holds that the protection of the public's health, safety and general welfare means providing no less than a satisfactory environment, that such an environment means one which is clean and safe, as well as

functional and beautiful. To accomplish this is a complex endeavor; therefore, teams of competent professionals, specialists, para-professionals and technicians are needed to carry it out. Recognizing the varied backgrounds and training necessary to make up such teams is one of the basic reasons for NCARB's re-examination of its examination. Since the professional architect is one of the several types of professionals on such teams, and since he is frequently the team member with primary responsibility to the public, he must be licensed by the state, i.e., competent in the eyes of the law.

The new examination is the result of deep concern by NCARB members who were keenly aware of the far-reaching changes underway in education and in the practice of architecture and who felt that the current registration process took no note of these changes. They set out five years ago to develop a long-range policy for NCARB which would place the organization and its procedures in the mainstream of education and the profession.

Students in professional schools today receive very different training from that of past years. Curricula include courses in subjects not even thought of a score of years ago and have eliminated many no longer believed to be relevant to present needs. Training and curricula will change even more in the future and NCARB has to recognize this.

The practice of architecture has broadened its services and its field of responsibility. New specialties have developed because of the increased field of knowledge which architectural practice requires, and there will be further development of such specialties, essential to future practice. NCARB's examining process must constantly update itself to keep pace with these changes, and the new exam has been proposed and will be written

in response to them. It must incorporate both the generalist and the specialist.

The philosophy on which the new exam is premised goes beyond quantitative testing of skills. It seeks to ascertain how a candidate applies, in a simulated office situation, the knowledge he has gained by education and experience. It asks him to exercise judgment in regard to the choices that must be made in major projects which relate to the environment of a community or a neighborhood. It believes, and bases its examination in this belief, that what has been tested in school should not be retested on a professional examination.

But because it wished to recognize the variety of ways by which the profession of architecture can be entered and it wished to take advantage of the combinations of education and experience which it believed to be a great potential resource for architecture, it was faced with the problem of developing examinations to cover a multiplicity of fields. To produce the quality of examination which NCARB wanted would be an impossible task. Furthermore, the law does not call for specialty exams, but rather an examination of the fund of knowledge and capability in skills common to all architects by reason of training and/or experience. So it was decided to provide two examinations: one for those who hold no accredited professional degrees, the other for graduates of accredited schools.

The first is a qualifying or equivalency exam, designed to evaluate skills and knowledge comparable to that acquired in an accredited school of architecture. A passing grade in it is prerequisite to the professional exam for all who do not hold accredited degrees. The exam is similar to the present exam; in fact, some of its questions are taken directly from it. However, it will be briefer: two days in all, instead of the present 36 hours. Like the present exam, the equivalency exam will be machine graded and will consist (except for the design section) of multiple-choice questions. Each part will be individually graded, with no limit on the opportunities to take it.

The second is the professional examina-

tion, a completely new approach to a licensing exam. It assumes that graduates of accredited schools have been adequately tested during their school years and therefore do not need to be retested in the same areas. This frees the examination for focussing on other aspects of their training and experience. In particular, the exam seeks to test their ability to:

- make strategic decisions relative to a major environmental issue
- synthesize basic general knowledge
- exercise environmental value judgment
- show understanding of responsibility to the public, to the client and to the profession.

It will be machine graded, with a single grade for the entire test. Each of its four parts—environmental concept; programming; design and technology; construction—will take a half day.

Serious consideration was given to the idea of a single examination which would combine these two approaches, but it was decided that such an examination would be unduly long (four days) and would become more of an endurance test than a proper examination of the candidate. Since most of the candidates would have been previously tested on

half of the exam content, by virtue of their accredited degrees, it would also result in unnecessary expenditure of time and money for them. Separate exams, it was decided, were the best solution.

Contents and methods of the exams are, of course, of prime interest. The contents of the equivalency exam is broken down into three major divisions:

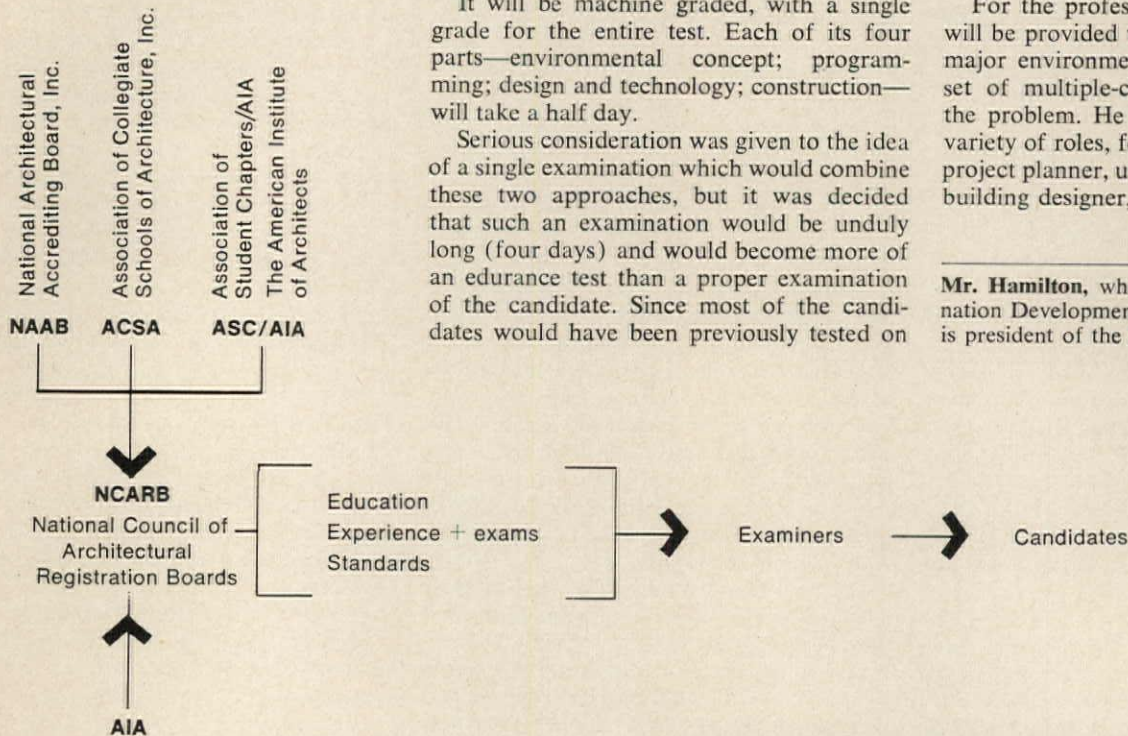
A. Construction Theory and Practice: Building equipment; building construction; structures; professional administration.

B. Architectural Theory: history; theory; planning.









C. Design: site planning; design.

For the professional exam, the candidate will be provided with resource material on a major environmental design problem and a set of multiple-choice questions related to the problem. He will be asked to assume a variety of roles, for example, as city planner, project planner, urban designer, programmer, building designer, technologist, project man-

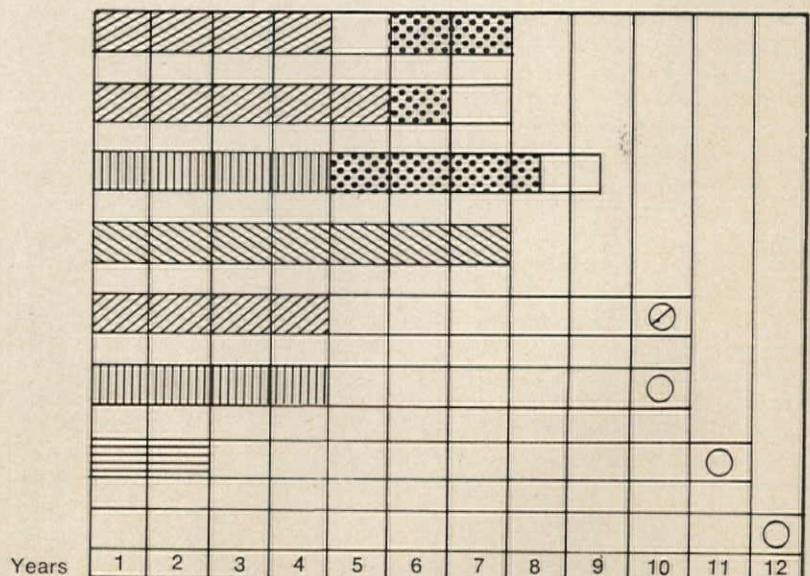
Mr. Hamilton, who is chairman of the Examination Development Committee of the NCARB, is president of the Dallas firm of Omniplan.



The process of competence identification.

-  Prearchitecture, BA or BS
-  Graduate architecture, BA or MA
-  Undergraduate architecture, BA
-  Non-prearchitecture, BA or BS
-  Technician training
-  Experience
-  Equivalency exam
-  Equivalency exam modified

The new path to licensing.



ager, contract administrator or private developer. He will be asked to select the most appropriate answer to specific issues involved in the problem. The first exam presents two cases, each of which will include consideration of many factors but not necessarily in the same order of priority or in the same context. The other three exams have one case each:

1. Environmental Context. CASE 1. Use/Need Identification: market analysis; economic analysis; user needs, physical requirements. Location Identification: transportation and utility analysis; physical constraints; political factors; economic considerations. CASE 2. Location Identification: transportation and utility analysis; physical constraints; political factors; economic considerations. Use/Need Identification: market analysis; economic analysis; user needs; physical requirements.

2. Programming. Data Collection: client goals; user goals; programmatic facts. Data Analysis: functional relationships; space, cost, time relationships; programmatic concepts. Program Statement: project goals; space, use, time, cost; quantities and relationships.

3. Design and Technology. Design: functional relationships; form alternatives; concept selection; concept development. Technology: systems analysis; materials and product selection.

4. Construction aspects. Contractual relationships; quality control; cost control; time control.

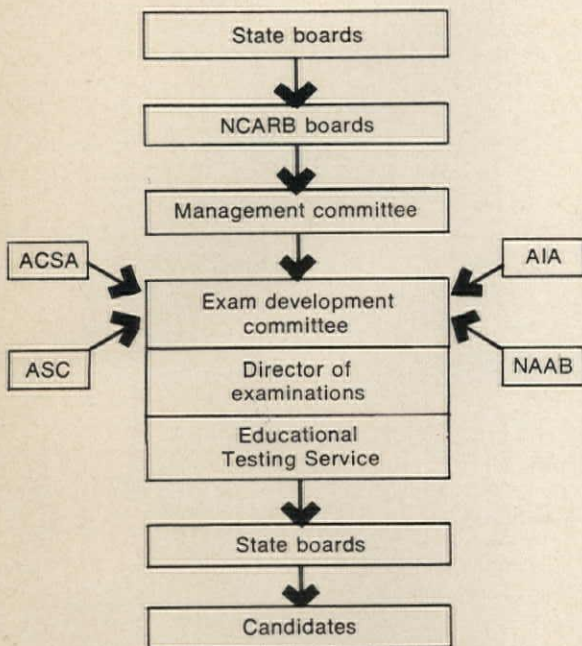
During the next few months the method for developing the actual examination will be under study. This is the most demanding phase of the whole new examination project and will require the thoughts and efforts of many people. The action group will be the NCARB Examination Development Committee, which will work to achieve the objectives set by the state boards and by NCARB management in conjunction with the director of examinations, an NCARB staff member and the Educational Testing Service.*

*Educational Testing Service is a nationally known company headquartered in Princeton, N.J. It constitutes an important resource for NCARB in developing the new exam, providing 1) examination development expertise; 2) secure resource reservoir; 3) continued background of experience; 4) continued evaluation of examination content; 5) continued equation of levels of examination discrimination; and 6) new examination techniques and methods.

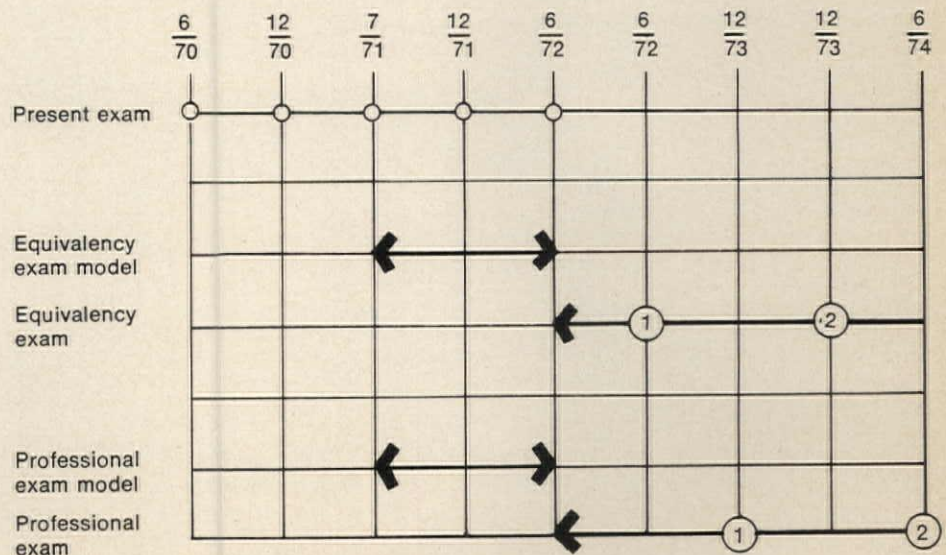
The present exam is to be given for the last time in June 1972. Candidates who have passed a substantial part of the present exam at that time will be given the opportunity to complete their examination requirements by passing comparable parts of the new equivalency exam, when it is given for the first time in December 1972. Candidates who have passed only a minor part of the present exam after its last offering will be required to take the equivalency exam or the professional exam, depending on their eligibility. The professional exam will be offered in 1973.

In the beginning, the new exams will be given once each year. Future frequency will be determined by the board of directors of the NCARB.

The member boards of NCARB approved this program with enthusiasm and in so doing prepared the way for the development of complete models for both new exams to be presented at the 1972 annual meeting in Seattle. Before that time, NCARB will produce a document which will describe the process in detail and will give examples of resource materials and of the kinds of questions to be asked on the examinations. □



The process of examination development.



The implementation schedule.

The Rise of a New

by DONALD D. EGBERT

L'École des Beaux-Arts isn't what it used to be. These times of ferment and upheaval have uprooted this—like to many other—tradition-ridden institutions. Here's what happened, and what is happening, in the school which so greatly has influenced architecture throughout the world.

In early May 1968 there broke out in Paris the violent revolt of alienated students which almost overturned the government of President Charles de Gaulle and, among other things, drastically changed the course of architectural education in France.

One of the centers of the revolt was the Ecole Nationale Supérieure des Beaux-Arts, where most of the students had come to regard their educational tradition, established in the 17th century under Louis XIV, as utterly anachronistic. Their revolt, which led them to pronounce the dissolution of the Ecole, also had a profound social and political import because its leaders were nearly all *gauchistes*, participants in a New Left representing a broad variety of political groups in which anarchist, utopian socialist, revisionist Marxist, Trotskyite, Castroite, Maoist and other highly radical points of view were combined in confusingly diverse yet overlapping ways.

The Ecole des Beaux-Arts revolt was led chiefly by the architectural students. This was true also of corresponding revolts among the 13 regional schools of fine arts which had

always been dominated by the school in Paris. The reason for this was that architectural students throughout France felt that their traditional academic training not only was much too centralized and hierarchical in its organization but also was inadequate in the face of modern technology and present social needs, and far too isolated from the main currents of modern higher education as represented by the universities.

While demanding fundamental reforms in their education, the alienated students also insisted on their own right to participate in determining the specific nature of the reforms. They especially called for the elimination of what they regarded as the thoroughly undemocratic system of closed, essentially autonomous *ateliers*, each with its prima donna *patron*. Here, they felt, architectural design was taught almost as an end in itself by means of competitions in which the individual student was unsocially pitted against his fellows, and atelier against atelier, to the greater personal glory of the winning patron because those whose pupils were most successful in the competitions had the best chance of being elected to the elite Académie des Beaux-Arts, provided they went along with the established system. The distinguished, but elderly and conservative, members of the Académie in effect controlled the teaching at the Ecole by controlling the programs and juries of the competitions for the Grand Prix de

Rome, since 1720 the annual culmination of French education in architecture.

Furthermore, to the disgust of the student rebels, the winners of the Grand Prix were expected to devote most of their time in Rome not to the problems involving contemporary architecture and planning but to making drawings of classical remains, including huge restorations of classical ruins.

The Ecole Is Seized

In addition to the special dissatisfaction with their training, architectural students shared with other French students in all fields of higher education a general discontent resulting especially from the overcrowding since World War II. Meanwhile, the most popular subject in the universities, particularly among those of Leftist bent, had become sociology. The interest in this subject had spread to the architectural students.

In March 1968, a group of anarchists—many of them students of sociology—at the newly and generally Leftist University of Nanterre in the outskirts of Paris decided to seize upon the dissatisfactions of their fellow students and led a sit-in strike there.

The disturbance rapidly spread to alienated students in Paris and, when violent riots broke out early in May, it was only to be expected that students at the Ecole des Beaux-Arts would join in. They promptly seized the buildings of the Ecole and valiantly defended them against police assault,



The French architectural students at l'Ecole des Beaux-Arts have outgrown the curriculum as well as the building.

Architectural Education in France

unfurling in the courtyard the red and the black flags (symbols respectively of revolutionary radicalism since the French Revolution and of anarchism everywhere).

It was not long before the continuing riots and street warfare of the French students turned public opinion against them. Hence in the elections of June 1968, only a matter of days after the Gaullist regime had so narrowly escaped being overturned, it won an absolute majority in the National Assembly. Soon the government forcibly liberated the buildings of the Ecole and of other educational institutions, but for months it had to keep strong police guard around them.

The Ecole Is Closed

Meanwhile, however, the students of the Ecole had prevented the competition for the Grand Prix d'Architecture from being held and in fact, as it turned out, had permanently put an end to competitions for the Grand Prix de Rome in all subjects. They also made it impossible for the Ecole and its ateliers to reopen for the new academic year.

De Gaulle's Minister of Cultural Affairs André Malraux, responsible for education in the arts, was by no means entirely unsympathetic to student demands for a thorough revision of the field. A noted radical before World War II, he had then been sympathetic to Marxism, although in a revisionist way which had kept him from actually joining the Communist Party. Furthermore, his views about the arts were avant-garde and therefore artistically radical and antiacademic. But because of residual turmoil from the student rebellion he was slow to act.

By October, when the Ecole des Beaux-Arts was supposed to have reopened, a few groups of students and teachers, formed during the riots according to their respective political and artistic views, had each developed the beginnings of their own new architectural curriculum and had independently resumed work to some degree.

Apart from such scattered and informal attempts, however, education in architecture languished until a decree was issued in December calling for the reorganization of architectural education. It was signed by de Gaulle, his Prime Minister and Malraux and was accompanied by a report from the last explaining its official lingo. The report emphasized the need for decentralizing the teaching of architecture, for broadening architectural education by giving the students access to courses in the universities and other institutions and for reorganizing the schools of architecture themselves.

The reorganization would divide the architectural students of Paris into *unités pédagogiques* (pedagogical units, thereafter popularly known as UPs), each of which was to have from 400 to 700 students, its own teaching and administrative staff and its own,

essentially independent, facilities. Similar educational autonomy was to be given to the regional schools, each of which was also to be organized as a UP in an effort to end the dominance of Paris. Students and teachers of each UP were to manage it and to decide upon its educational structure. Furthermore, they would select, on an equal basis, a management council as well as delegates to a general conference representing all the UPs. By such means, Malraux declared, an eminently practical training for architects could be achieved, one that would now be oriented toward modern architecture.

The decree specified that there were to be five UPs in the Paris region; that the management council of each was not to be a permanent body (in sharp contrast to the old Ecole and to the patron's permanent control in his atelier); that it was to be made up of the director of the UP together with elected representatives consisting of an equal number of teachers and students. Each of the 13 provincial UPs was to have a student and a teacher representative at the general conference, to which the UPs in Paris were to send an equal number of such representatives.

Shortly before the decree and report were published, Malraux had issued a statement declaring: "We should replace the Prix de Rome with traveling fellowships to the countries where modern architecture is being created—Finland, the United States, Brazil and perhaps Japan." He thus paved the way for denationalizing and modernizing what had traditionally been a French national education in architecture, oriented toward Roman and Renaissance classicism.

The Ecole Is Reopened

On the basis of the December decree, the Ecole des Beaux-Arts was at last reopened in January 1969. Many students and teachers were, however, unwilling to accept parts of the decree, especially because they felt that in establishing five UPs, it was merely making official certain groups of students and teachers brought together during the student revolt primarily by ideological and political rather than educational views. The objectors, who nonetheless included the most politically and socially radical students, launched an appeal with the aim of regrouping all who rejected the decree and forthwith collected the signatures of 1,200 students and 80 teachers. The Ministry of Cultural Affairs decided that the objectors would constitute UP No. 6, but such a solution was rejected by the signers. Instead, two additional Parisian UPs were established, for a total of eight.

The first (and to date only) general conference of all existing UPs, called by the Ministry of Cultural Affairs, was held significantly not in Paris but at Marseille-Luminy in the south of France in April 1969. It prepared numerous proposals for submission

to the ministry, among them one calling for a certain number of core, or trunk, courses to be taught in common by all UPs, and another demanding that a common nationwide diploma be established in architecture.

The proposals were not destined to receive the approval of the Minister of Cultural Affairs, primarily because of political developments. Late in April, only a week or so after the conference, de Gaulle resigned from power. Although he was succeeded by a Gaullist, Georges Pompidou, Malraux was unwilling to serve again as Minister of Cultural Affairs and was replaced by Edmond Michelet. The latter died in September 1970 and was eventually succeeded by Jacques Duhamel. Unlike Malraux, Michelet had no special knowledge of any of the arts and so necessarily had to feel his way cautiously and slowly toward instituting any reforms in art education. The same has been true of Duhamel, likewise a purely political appointee.

The dissatisfaction of the rebellious students with what they regarded as the continuing dilatoriness of the Ministry of Cultural Affairs in taking suitable action meant that members of the more politically radical UPs remained ready to participate in revolutionary movements. Many of them, therefore, together with some of the young workers of France, were particularly attracted to a violently revolutionary group, the Proletarian Left (*La Gauche Proletarienne*), founded late in 1969, which kept Paris in a turmoil that reached a climax in two days of rioting in May 1970.

Even before the founding of the Proletarian Left, the most politically—and artistically—radical of the UPs, No. 6, had become so disenchanted by official indecisiveness that it decided to take action itself, forcible if necessary. It therefore had set up, in October 1969, a federation of UPs (*Fédération des Unités Pédagogiques*). In this, however, it was joined only by three of the more radical UPs in the provinces.

The Ecole Is Rejected

In November the federation put on a student strike, supported by some members of other UPs, against the lack of educational facilities, materials and personnel. The strike accomplished almost nothing. When no further official action was forthcoming, the federation held a Paris meeting in June to decide for itself about the problems involved in architectural education—a meeting reflecting the fact that in the absence of official decisions each of the UPs, including those outside of the federation, had come to the conclusion that it would have to formulate its own educational standards.

By the beginning of the next academic year in October, therefore, each UP had set down its principles and curriculum in some kind of organized form and was ready to



publish them in a more or less complete catalog. Though some of the catalogs seem to reflect utopian dreams more than educational realities, they do demonstrate a praiseworthy desire for a new breadth of approach. For instance all of the UPs are calling upon teaching services of a far wider range of experts than the old Ecole ever had.

While each UP is following, in a general way, the principle of having three educational cycles filling a period of about six years, no common core of courses as urged by the general conference has ever been agreed upon except by the four members of the federation of UPs. As a consequence, nearly all UPs continued to differ profoundly from one another in their approach to architectural education, some being radically progressive, some relatively traditionalist, and the rest taking positions in between.

Like so many of the students in the French universities, however, students in all UPs have called for courses in sociology and, in connection with these, courses in environmental problems, physical as well as social—subjects all essentially neglected in the traditional curriculum of the old Ecole and that have given rise to a new emphasis in urban planning.

The same general differences can be seen in the old and new attitudes toward the history of architecture. The courses on the general history of architecture at the old Ecole concentrated on the drawing of details of past architecture, especially details involving ornament. Being required in the first year, the courses were necessarily elementary. Discussion of the historical development of architecture and of architectural styles was subordinated to the preparation of a series of careful drawings—some measured—of “fragments of architecture of different epochs” in order to give the student some knowledge of the great monuments of the past while also adding to his facility in drawing. He passed or failed the course primarily on the quality of these drawings.

As the influence of the modern movement in architecture had increased, such courses had inevitably come to seem more and more irrelevant to most students. Consequently, the history of architecture is now being taught in the UPs primarily from the point of view that the past is important as the source of the present, but especially the more recent past beginning with the industrial revolution. After all, most of the rebellious students and teachers are sympathetic to the New Left's elements of social utopianism and Marxism for both of which the industrial revolution marks the beginning of the modern era.

The UPs that seek to be the most progressive architecturally also tend to hold political and social views furthest to the Left, though their Leftism is not that of the centralized Communist Party but rather that of the international New Left with its broad spectrum of different radicalisms. Several of

the varieties of radicals involved, especially anarchists, Trotskyites and revisionist Marxists, have traditionally been more sympathetic to the modern movement in the arts than have orthodox Marxists.

The Ecole Is Assailed

The most politically Leftist of the UPs is UP6, which regards itself as being also the most architecturally progressive, and the three other members of the federation of UPs. In Paris, only slightly less progressive than UP6 is UP8.

As could be expected, UP6's catalog stresses in a revolutionary way a highly militant social attitude especially toward the Ministry of Cultural Affairs. It also assails the traditional Beaux-Arts concept of the architect as a member of an elite and the idea that he is always a generalist controlling specialists. This undemocratic contradiction between generalist and specialist is false, the catalog declares, because there are in fact a variety of different profiles represented by architects, some more specialist than others; and architectural education must allow the student to select his own profile.

The old Beaux-Arts method of teaching design is also rejected: the patrons and ateliers are declared anathema; the traditional, highly competitive projects with carefully rendered drawings in elevation, plan and section are essentially done away with in favor of models. The few required courses are for background in mathematics and physics during the first cycle. Thereafter, each student can choose his own road or profile, and in so doing make use of courses given in the universities. Specific grades are no longer given; courses are taken on a pass/fail basis which further does away with the emphasis on competition so important in the old Ecole.

Each student must elect a certain number of the many courses offered that deal with sociology and with various other social sciences. Among the sociology courses taught at UP6 is characteristically one on ideology with topics of particular interest to Marxists such as colonialism, imperialism, industrialization, and urban society and political life. The two basic courses directly devoted to the history of architecture deal with architecture and society from the industrial revolution to the present and with problems of urbanism beginning with the social utopians.

At UP6—as of course in all architectural education today—a certain amount of attention has to be paid to problems of modern construction. But in this connection it must be remembered that the New Left has always involved a basic dilemma. For even though a majority of New Leftists rejects modern technology as having made possible the hated “consumer society of bourgeois capitalism,” a strong minority of them exalts technology as constituting the necessary basis for achieving the social utopia of the future. UP6 is torn between these two views.

The Ecole Is Defended

At the opposite pole from those UPs best exemplified by No. 6, which at once are most radical politically and regard themselves as the most progressive architecturally, are several that reflect a relatively traditionalist atti-

tude toward architectural education. The best example of this is UP4, and to a somewhat lesser degree UPs 2 and 3.

UP4 grew out of a group which, while the riots of May 1968 were still going on, had formed a *Conseil Paritaire de l'Ecole des Beaux-Arts*. This council by no means wholly rejected the old Ecole but wished to reform it primarily by putting its student and teacher members on an equal basis, thereby rejecting all patrons. The aim of the council, like that of UP4, in contrast to nearly all the other UPs, was to “defend and promote a reform of architectural training in an apolitical context,” the kind of context that had been expected to prevail in the ateliers of the old Ecole. Significantly, the catalog of UP4 lists among the 10 members of its management council no less than three former winners of the Grand Prix de Rome and one former second prize winner. Furthermore, again not unlike the old Ecole and utterly unlike UP6, UP4 holds that only the architect as an independent individual is capable of creating, of composing, and of animating and synthesizing the works of the specialists who participate in the art of building and in the organization of space.

Also, apart from a common core of background courses required of all students in UP4, its curriculum is taught by means of seven different but quite similar options—each with its separate teaching staff—from among which the student is free to choose for himself much as a student in the old Ecole had been free to select his atelier while still taking basic courses with the rest of the students. The teaching of design is still based on the traditional competitive Beaux-Arts projects.

As for architectural history at UP4, the flavor of the old Beaux-Arts approach is in some respects maintained. However, the two one-year required courses show a new approach in that one of them deals with architecture throughout history in relation to other arts, while the other deals with it in relation to political, economic, philosophic and social movements and to the evolution of ideas. Though they cover essentially the same periods as the history courses of the old Ecole, their aim and content are thus much more truly historical with more cultural breadth.

The Ecole Is Ignored

The remaining Parisian UPs, 1, 5 and 7, fall somewhere in between the most traditionalist, UPs 4, 2 and 3, and the most radical, 6 and 8. Of the intermediate group, one is so different in its educational emphasis from all the others that it requires special mention. This is UP7 which, far more than any of the others, emphasizes structure in steel and concrete.

UP7 developed directly out of the old Ecole's atelier Perret-Remondet which, after World War II, had strongly insisted upon modern materials and structural techniques as fundamental for all modern architecture. Indeed, the present administrative and pedagogical directors of UP7 were both trained

Mr. Egbert, who holds an MFA in architecture, is professor emeritus of history of architecture at Princeton University.

in that atelier under the late Auguste Perret and his colleague André Remondet, who continues to aid UP7 occasionally as an unofficial adviser. The fact that the administrative director was their pupil and a second prize winner in the Grand Prix competition suggests that in many respects UP7 is by no means so antitraditionalist as UP6.

However, in its teaching of structure the atelier Perret-Remondet was by far the most progressive of all the ateliers. Perret had never completed his architectural course at the Ecole des Beaux-Arts; he had left it to join the contracting firm of his father and to become a great innovator in the use of reinforced concrete at a time when that material was generally regarded at the Ecole as suited only for structures of so sheerly utilitarian a kind as to be essentially subarchitectural.

And although Remondet had won the Grand Prix de Rome, he too had promptly demonstrated that he was by no means a typical Beaux-Arts architect. As winner of the prize he had rebelled by insisting on submitting drawings of the ancient Mayan architecture so admired by many modern architects instead of the usual classical buildings.

With such a heritage, it is fitting that the catalog issued in the fall of 1970 by UP7 declares that its methodology must provide a constant progressive renewal of knowledge as the only way to avoid "hardening of the arteries and latent academicism." The catalog makes very clear the descent of UP7 from the atelier Perret-Remondet by beginning with a manifesto calling for a "new teaching . . . aimed at forming the new constructors." Insisting that architecture is made for *social* man, the manifesto goes far to the left of the old Ecole by declaring that "the social confrontation is necessary."

Like nearly all the other UPs, therefore,

UP7 gives much importance to courses in sociology. And even though it does so to a lesser degree than UP6, its required course in sociology emphasizes Marx and Engels and such figures of the New Left as C. Wright Mills and Herbert Marcuse. In contrast, not one of UP7's courses in architectural history is required—as could be expected in the light of its focus on modern technology.

The Ecole Is Reorganized

The great diversity among the various UPs in Paris has been encouraged not only by lack of decisive direction from the Ministry of Cultural Affairs but also by the fact that they are so much more independent and so much more widely scattered throughout the Paris area than the old ateliers had been. So outgrown have the buildings of the Ecole des Beaux-Arts become—despite a prefabricated addition erected in the main courtyard in 1969 (directly symbolizing the revolt against Beaux-Arts traditional monumentalism)—that only three of the eight UPs can be housed there. These three represent the whole range from progressive to traditionalist. Of the five other UPs only one is in the same area as the old Ecole and its ateliers. One is even located as far away as Versailles.

Consequently, inasmuch as the students of these widely dispersed UPs, unlike those of the ateliers, have no courses or teachers in common, French architectural education today has achieved its much-needed new freedom, its often stimulating new pluralism, at considerable sacrifice of unity of approach.

Not until September 1970 did the Ministry of Cultural Affairs finally get around to sponsoring a decree providing for a thorough reorganization of the French Academy in Rome. Candidates are no longer restricted to architects, painters, sculptors and composers.

In addition to a total of 12 of these, a total of five writers, motion-picture makers, stage designers and art restorers are now to be admitted, as well as eight art historians. Furthermore, candidates in the visual arts are no longer required to make designs in competition for a Prix de Rome. Instead, each submits a portfolio of his previous work. And their admissions are now controlled by a committee appointed by the Minister of Cultural Affairs, whose members can serve for only a term of two years.

Although the Academy at Rome has thus been fully reorganized, it remains to be seen whether the Ministry of Cultural Affairs will succeed in bringing some degree of educational integration among the UPs. If it can successfully arrange for a certain number of courses, especially background courses, to be offered by each UP as part of a common core, and if it can arrive at suitable requirements for a diploma to be accepted nationwide (two of the proposals made by the general conference back in April 1969), much of the somewhat anarchistic pluralism that now tends to pervade French architectural education may be overcome. At the same time, enough variety of approach should still remain to prevent a recurrence of the exaggerated centralization that formerly prevailed under the old Ecole des Beaux-Arts.

Certainly it has seemed to this foreign observer that a very real sense of hopeful excitement about the future of architectural education in France is animating many of the students and teachers of architecture in Paris, which still dominates the provinces. Right or wrong, many of them believe that the limitations of the old system are being overcome, that Paris is on the road to becoming once more a leading world center for architectural education. □



Despite a prefabricated addition to l'Ecole — a direct symbol against its monumentalism — only a minority of the architectural students are housed there.

What's Happening in Architectural Education

Campus Notes. The North Dakota State University Department of Architecture has been accredited by the National Architectural Accrediting Board, Inc., and so have the Boston Architectural Center and the Department of Art and Architecture, University of Idaho, Moscow.

æ Jorn Utzon of Denmark is visiting professor of architecture at the University of Hawaii for the 1971-72 school year. Utzon, mainly known for his design of the Sydney Opera House in Australia, will teach the graduate design studio course at the Manoa campus.

æ Alexand Kouzmanoff is new chairman of the Division of Architecture of Columbia University's School of Architecture. Kouzmanoff, who has been professor of architecture at Columbia since 1957, succeeds Romaldo Giurgola, who has served two three-year terms. Giurgola will continue to teach at the school.

æ William R. Ewald Jr., development and planning consultant, is visiting lecturer this fall at the University of Texas at Austin. He will present four public lectures on the topic "Epoch and Environment" and will participate in seminars on that subject for students of architecture and planning.

æ Case Western Reserve University now has a graduate program in architecture leading to an MA degree. It replaces the present undergraduate architecture program, which will be completely phased out by June 1972. Philmore Hart, who was head of the undergraduate curriculum in architecture, is director. The new program will require two years

for students who have a BA degree with a concentration in environmental design. BA holders in other fields will earn the MA degree after three or more years of study.

æ Pennsylvania State University's College of Arts and Architecture has opened its new Division of Environmental Design and Planning, made up of the Departments of Architecture and Landscape Architecture. Dr. Walter H. Walters, dean of the College of Arts and Architecture, is in charge.

æ The James Irvine Chair of Urban and Regional Planning is new at the University of Southern California. Established with a \$500,000 endowment from the James Irvine Foundation, the chair will be filled as soon as possible with a nationally renowned leader in the planning field.

Off-Campus Notes. Two young draftsmen are presently taking advantage of a four-year apprenticeship training program offered by the engineering firm of Connell Associates and its A/E companion firm of Connell, Pierce, Garland & Friedman in Miami. While getting supervision and work experience in mathematics, structure and contract document familiarization, building operations, job site inspection and, of course, drafting, the two receive half the pay of a senior draftsman and may advance to that status during the four-year period.

The firm's Architectural/Engineering Division and Civil Engineering Division's managers maintain a biweekly reporting system on the progress of each youth. More apprentices from among the area's underprivileged may be added as the firm's workload requires. These don't have to have prior job experience, but they must be properly motivated.

The course was worked out by Connell Associates in cooperation with the US and Florida Departments of Labor but is not in any way subsidized.

æ Soon-to-be-discharged servicemen are now being offered free education at Fort Bragg, North Carolina. Among the courses, which are sponsored by the US Government, are two in architectural drafting. Each consists of about 240 hours and graduates some 50 students on a seven-week cycle. Instruction is in construction drawing, structural

theory, principles of architectural details for frame and masonry construction, general requirements for plumbing, heating and electrical fixtures, etc. For further information regarding hiring of graduates, contact Gregory Walker, instructor, Architectural Drafting, Project Transition, Fort Bragg, N.C. 28307.

æ The Royal Institute of British Architects would like to hear from US architects in practice or in education who will be visiting Britain and would like to speak to student audiences in schools of architecture. Prospective speakers should send the RIBA brief details of their backgrounds and special interests, state on what theme they wish to speak and whether they would prefer to give a lecture, illustrated talk, seminar or some other form of confrontation. Speakers would not normally receive a fee, but their travel expenses within Britain would be paid if they wished. Contact: Michael Merchant, RIBA Student Relations, 66 Portland Place, London W1N 4AD, England.

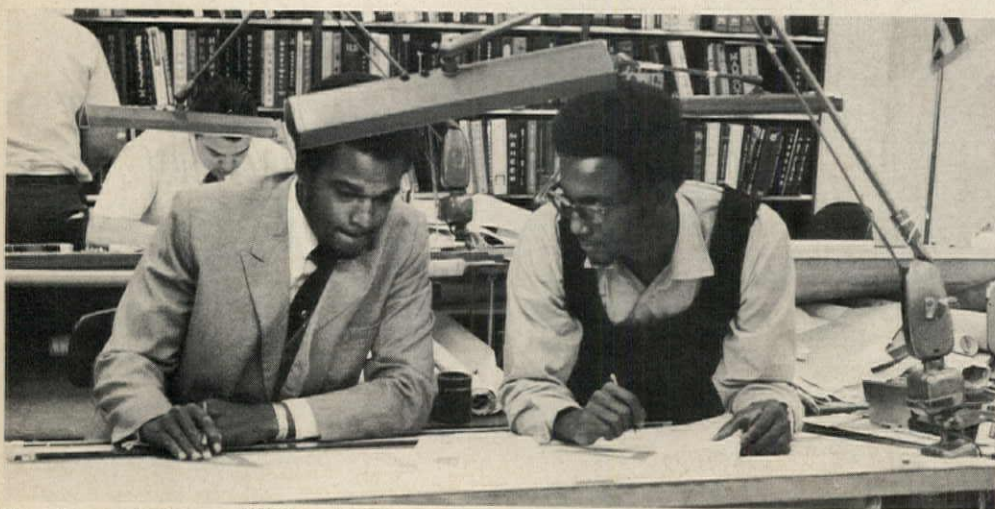
Continuing Education. Individual AIA members are now being given an opportunity to help shape the Institute's expanded program in continuing education. Questionnaires have been mailed to the entire membership to determine the subject areas of greatest interest to practitioners.

Once topics of the greatest relevance and need have been determined, reference data on each subject will be assembled and published, and current information will be placed on audio cassettes or videotape. Experts in the field will be identified to serve as resource people; in situations where actual "hands-on" experience is required, an Architectural Training Laboratory will be organized to provide firsthand exposure. The training laboratory approach represents a departure from the more usual lecture and question/answer format.

This variety of learning materials and methods will allow practitioners some choice as to the depth to which they can explore a given topic. Thus the participant in a continuing education program will be able to control his degree of involvement and the cost to him. As a means of insuring that course materials, in whatever form, are of uniformly high quality, experts in course content will be brought together with media specialists who will advise them on effectiveness of presentation.

In addition to area-level programs and distribution of tapes, correspondence course materials, etc., a number of architectural laboratories will be conducted during and possibly before the 1972 convention in Houston. A number of "living experiences" are also planned, including ocean cruises and campouts during which participants take part in both seminars and training laboratories.

The Institute's continuing education program is directed by Stuart Rose, who joined the headquarters staff in June. Stressing the importance of the questionnaires, Rose points out that a good response from the AIA membership will result in a comprehensive system of continuing education which is most responsive to the needs of practitioners. □

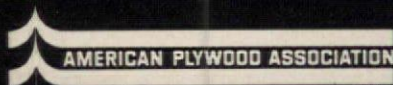


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Federal Leadership in Regional Planning: Past and Future

From 1933 to 1943, regional planning programs in this country were led by a duly constituted federal agency. Charles W. Eliot II, executive officer and director of the first National Planning Board, reviews its past efforts and presents its experience as a basis for the organization of new and fruitful endeavors in nationwide planning.

Prior to the election of President Franklin D. Roosevelt in 1933, the stage already had been set for major regional planning efforts. The "First Hundred Days" of the New Deal produced legislation with long-range effects: The Tennessee Valley Authority was established and machinery for planning was realized in the Public Works Administration.

The bill offered by Senator George W. Norris of Nebraska in 1933 concerning the TVA contained no mention of planning. At the urging of John Nolen Sr. and myself, Norris added our draft of what became Sections 22 and 23 of the TVA Act. The planning arm of the TVA, headed by Earl Draper and Tracy Augur, sited and designed the new town of Norris and pioneered new methods of land classification and planning. The success of the TVA spurred the planning for additional valley projects in this country and in distant parts of the world. Regional planning for a whole valley is now accepted as the most efficient way to relate all the factors of land and water uses in a drainage basin.

When the PWA was set up, its administrator, Secretary of the Interior Harold L. Ickes, secured presidential permission for the inclusion of the National Planning Board, consisting of Chairman Frederic A. Delano, Charles E. Merriman and Wesley Mitchell. I was named executive officer. This was the national planning agency which continued for 10 years under slightly different names: National Planning Board, 1933-34; National Resources Board, 1934-35; National Resources Committee, 1935-39; and National Resources Planning Board, 1939-43.

In furtherance of a policy of decentralization of planning activities "from the ground up," efforts of regional, state, local and private agencies were encouraged and supported by the federal government.

The very first action and circular of the new planning board dealt with regional planning as the principal duty of the 10 regional advisers of the PWA, appointed by Ickes at the same time as the members of the board.

"The regional adviser will endeavor to stimulate . . . public interest in regional and general planning . . . to formulate a plan for each region," stated the directive. State plans and interstate projects were to receive special attention.

Early in 1934, when the advisers were superseded by regional chairmen, the field services of the NPB were organized around their offices and districts. During the organizational period, close relations and joint meetings were maintained with the TVA and the Mississippi Valley Committee, which later became the board's Water Resources Committee.

To further cooperation among federal agencies in regional and national planning, the board set up a series of technical committees with membership of individuals from each of the departments and bureaus concerned, as well as three or four nationally known experts, one of whom acted as impartial chairman. From among eight such committees, three—Land, Water and Public Works—were often involved in initiating, providing assistance and coordinating agency participation in regional planning projects. The plans developed through the efforts of the board, the regional chairmen and the technical committees and their staffs and consultants covered a variety of areas and subjects which have had continuing influence on the areas with which they dealt and upon the furtherance of regional planning theory and methods.

Before the NPB was organized, only two or three states had taken first steps in regional planning. Two years later, 30 had planning boards by legislative act, two by special resolution and 13 by authority of the governor: a total of 45. The board's part in this remarkable development took several forms: sessions with governors when board meetings were held outside Washington; contacts by regional chairmen, circulars and speeches; and, most significantly perhaps, provision of planning consultants and technical staffs to the state planning boards.

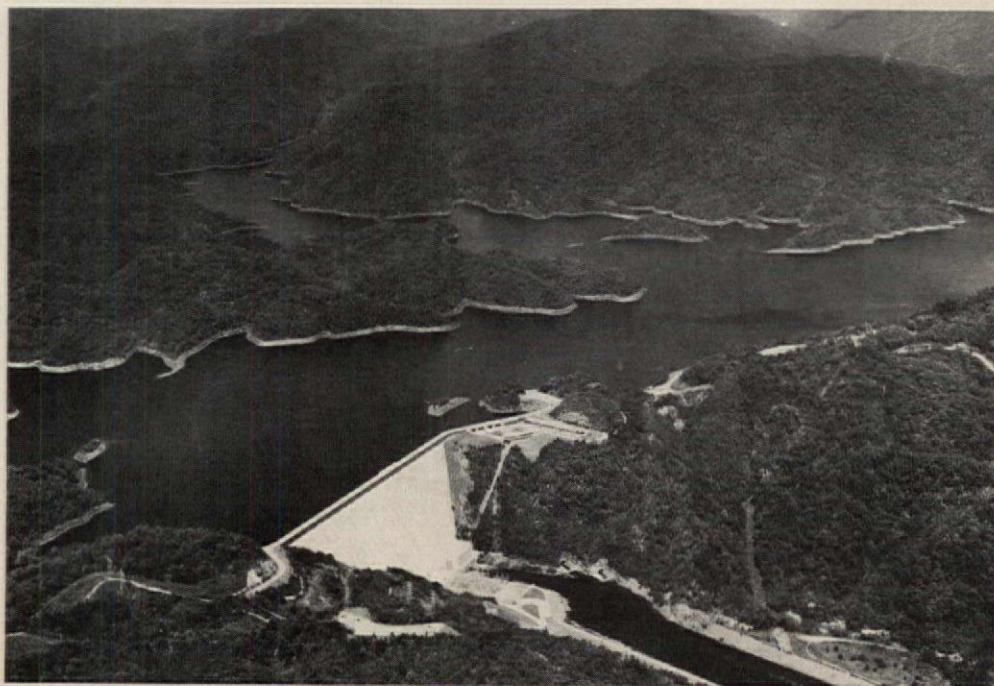
During the Depression, great numbers of

highly trained technical and professional persons were in desperate need of work. Jobs, at ridiculously low wages, were obtained through agreement with work projects under the Emergency Relief Administration or the Civil Works Administration. Thus state planning boards were staffed by competent people. Nationwide planning studies were conducted in cooperation with the state planning boards with specialized consultants assigned for those projects by the NPB through the regional chairmen. World War II interrupted much of the work, but there is now an organization of state planning agencies, and planning assistance grants are available from the Department of Housing and Urban Development.

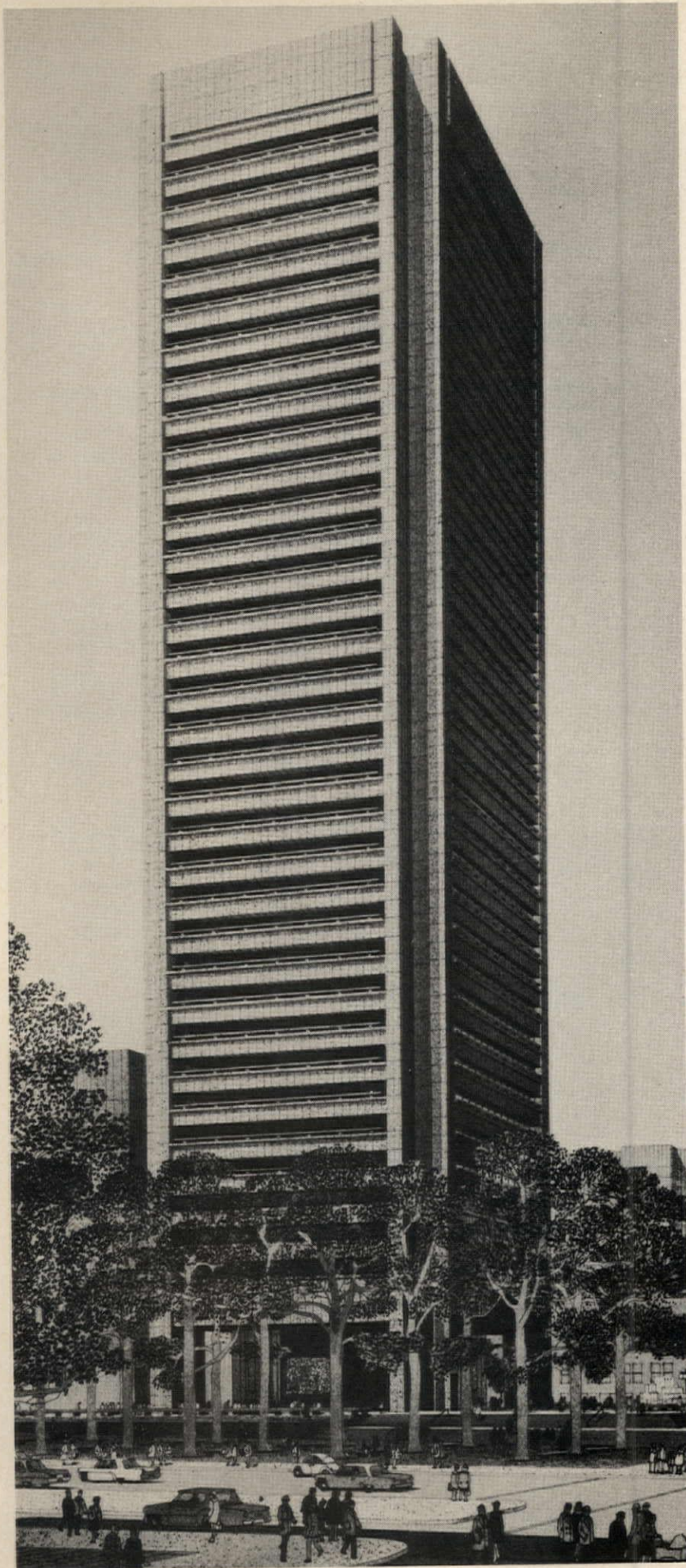
The regional plans developed covered a variety of areas and subjects, ranging from the intercity to metropolitan to state and interstate.

Planning for river basins or drainage areas also preceded the establishment of the NPB. There were the "308" reports on some rivers by the Corps of Engineers, continuing work by the Mississippi River Commission and several studies by the Reclamation Service, most notably on the Colorado River before Boulder Dam was constructed. With the organization of the technical committee on water resources, a continuing program, which involved all the federal agencies concerned and as many state agencies as possible, pressed for the coordinated development of drainage basins as whole units. The committee broadened and developed the multiple use of water resources, promoted and improved techniques of hydrologic research and planning and evaluated detailed projects against the overall plans for comprehensive valley development.

A series of inventory reports in 1936 were followed in 1937 by Drainage Basin Committee reports which covered the entire country. Special joint investigations were organized for the preparation of regional plans for the Red River of the North, Rio Grande Valley, Columbia Basin, Platte Valley, Arkansas Valley and the Central Valley of Cali-



Fontana Dam in North Carolina, completed in 1945, is TVA's highest, towering 480 feet.

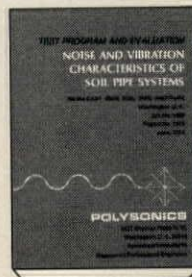


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fornia. Other reports dealt with state water law and interstate compacts, water pollution and hydrologic data and research.

These regional plans for drainage basins provided bench marks of data and programs for action on the development of water power, flood control, navigation, irrigation, water supply and other water resources projects in relation to land use, transportation, urban growth and other planning considerations. The experience of joint endeavor by many agencies opened a new era of multiple purpose planning.

After the National Resources Planning Board was abolished in 1943, the Water Resources Committee continued to meet for more than a year, and bills were introduced to establish a permanent water planning agency. The work goes on with succeeding generations of specialists and changing emphasis on different aspects of regional planning for drainage basins.

The regional chairmen, to whom reference was made earlier, were from the outset involved in promoting state planning and providing coordinating services to interstate planning efforts. The first to get "organized" were in opposite corners of the country: New England and the Pacific Northwest. Capitalizing on the previous work of the New England Council (a private business group), a New England Regional Planning Commission was organized in 1934 by District Chairman Victor M. Cutter. There were representatives

from all six New England states. The Pacific Northwest Regional Planning Commission was established along the same lines as the New England commission by District Chairman Marshall Dana. The staff had remarkable success in cooperative planning studies of the Columbia Basin, forest resources, industrial development and economic opportunity. The commission, supported by a parallel citizen organization, played a leading role in the establishment of the Bonneville Power Authority and in all planning projects for the Columbia River Valley.

This type of interstate regional planning at the instigation of the regional chairmen and field offices of the NRPB also produced reports in other regions. Those for the southeastern region and the northern lakes states were particularly significant in breaking new ground for regional planning.

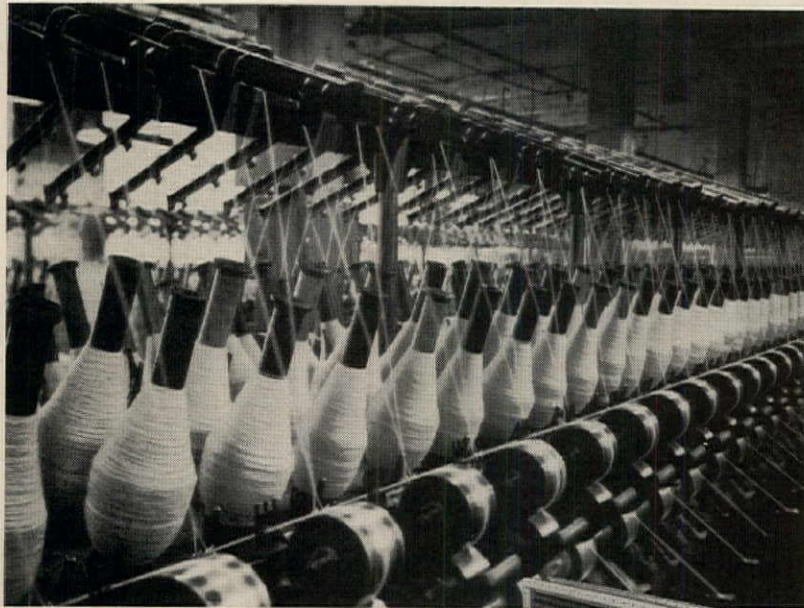
Interstate regional planning has continued, of course, since the abolition of NRPB; except in a few cases, however, it has been without consistent leadership from the federal government. The overwhelming problems of Appalachia were recognized by a special agency set up by Congress to study that area, and a New England Regional Commission continues the work of the board in the northeastern corner of the nation.

The most important effort and report by the national planning agency concerning regional planning was the volume *National Factors in Regional Planning* (1935-36). A team representing the fields of political science, planning and geography reviewed the

progress of regional planning and recommended vigorous action by the federal government to establish "centers" for federal field offices and to support regional planning efforts, particularly in areas where problems overlap state lines.

The lack of any single national planning agency since 1943 has left the movement for regional planning without any consistent policy or leadership. Some of the functions of such an agency are under the Board of Economic Advisors, some under Management and Budget, some under Environmental Policy, etc. Many of the functions of the NRPB have reverted to one or another department, such as planning assistance and open space grants to HUD; welfare problems to the Department of Health, Education and Welfare; and water resource planning to the Corps of Engineers, the Department of Agriculture and the Department of the Interior.

The essence of regional planning—from the earliest writings of Benton MacKaye in 1921—is the interrelationship of physical, social and economic forces as they can be guided or influenced to enrich the lives and protect the environment of those now living or who will be living in the varied regions of the US. Leadership and support for regional planning must come from the federal government. Sooner or later better methods and procedures for planning and coordination will be established. The experience of 1933-1943 with a national planning agency should be used in the organization of new efforts in regional planning in this country. □

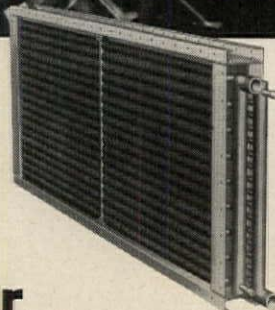


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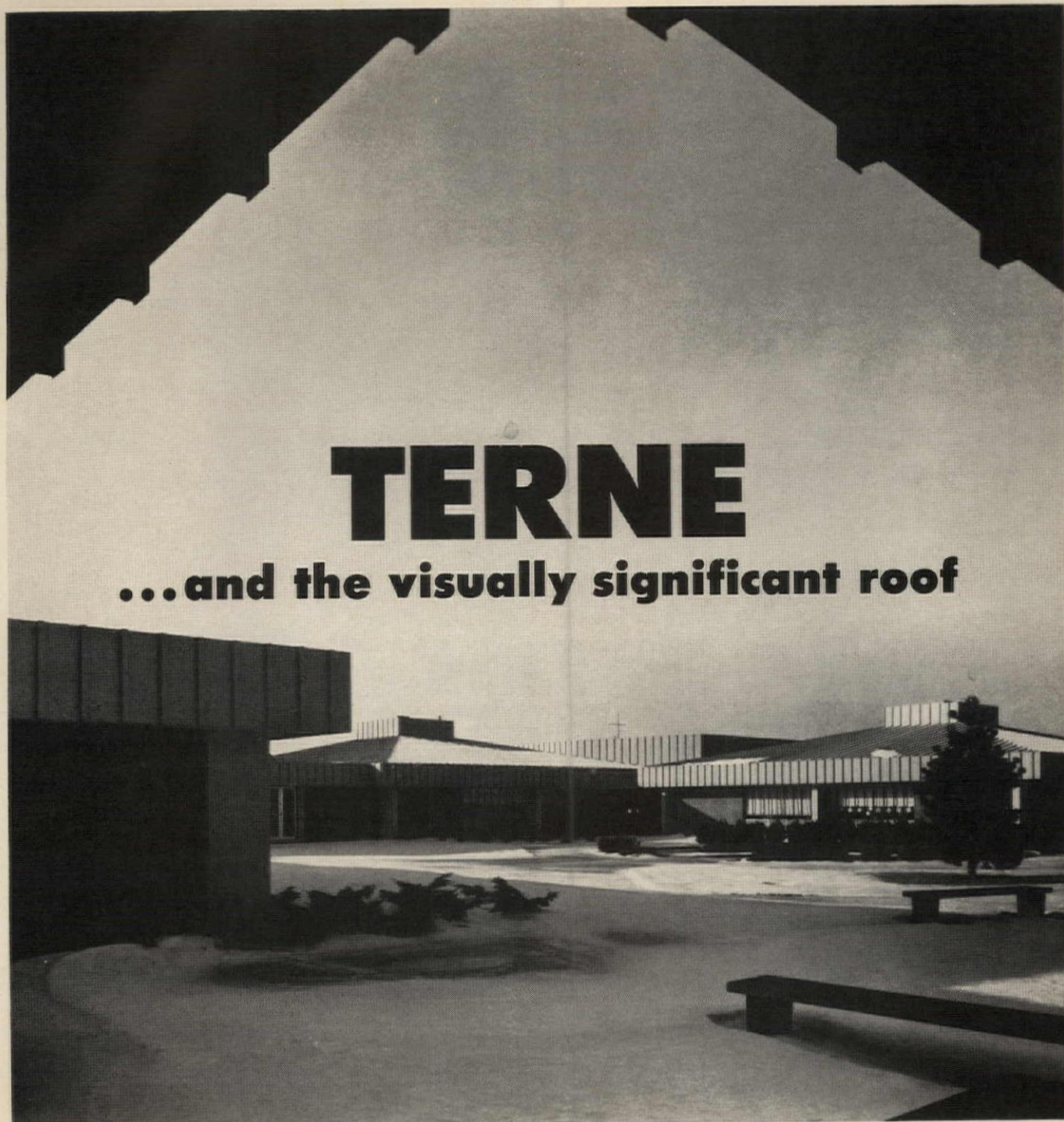
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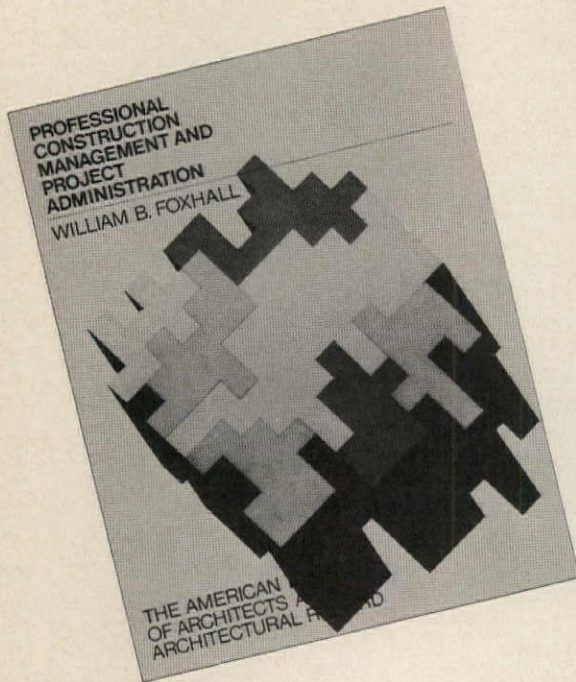
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by William Foxhall



NOVEMBER PUBLICATION

A NEW BOOK on the subjects of project management, project administration, construction management and construction consultation—in step with changing times and giving new meaning to the language of building design and construction—

Project administration and construction management are techniques which are being increasingly employed on large, complex building projects. More and more owners—individual owners, corporate owners, public owners—need someone to be responsible for the quality of their buildings. Someone with the ability to employ sophisticated tools—management tools—in the special context of building design and construction to overcome the deficiencies of the low-bidder multiple contract system. Owners—individual, corporate, public—need a workable process for decision, design, and delivery. This is project administration and construction management.

William Foxhall, senior editor of Architectural Record, examines these new techniques in the light of the architect's role in modern, complex

building projects and describes the role of the professional in all delivery and design phases.

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What is a project administrator? Author Foxhall labels him individual, department, consultant, or consulting firm—"he" represents the owner in the entire building process.

This veteran architectural writer shows how professional construction management and project administration can overcome the deficiencies of the multiple contract system. Every architect will want to see how these techniques tie into the complex building processes of this decade.

Professional Construction Management and Project Administration—a hardcover volume—has been published by the AIA and McGraw-Hill Book Company at a retail \$15.00. Special price to AIA members is \$12.00. To obtain your copy of Professional Construction Management and Project Administration, just complete and mail the form below. If payment accompanies your order, we will pay the postage.

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Architecture and the Phenomena of Transition. Sigfried Giedion. Cambridge: Harvard University Press, 1971. 311 pp. \$18.50.

There must be many Americans who have read only two books about architecture: Nikolaus Pevsner's *An Outline of European Architecture* (1942) and Sigfried Giedion's *Space, Time and Architecture* (1941). Giedion was a Swiss art historian visiting at Harvard, and at the time his name was hardly a household word. His book went beyond the scope of conventional studies; art, architecture and technology were discussed with equal confidence. The book also had the rare quality of suspense, keeping the reader wondering what unexpected topic and fascinating illustration were coming up on the next page.

In 1948, Giedion published *Mechanization Takes Command*, a highly original study of American technology, then as now a neglected subject of historical research. After producing two successful books, a conventional professor might have settled down as an eminent authority and specialist on the 19th and 20th centuries. Instead, Giedion went back thousands of years to the difficult preliterate topics of *The Beginnings of Art* (1962) and *The Beginnings of Architecture* (1964).

His present book, subtitled *The Three Space Conceptions in Architecture*, is rigidly organized into three chapters on "conceptions" separated by two chapters on "phenomena of transition."

Giedion's first conception is called "architecture as space-radiating volumes." It is exemplified by the temples of ancient Egypt, Mesopotamia and Greece. All are seen as sculptural objects in space related to their environment but never entered by the common people.

An inconclusive chapter follows on the "transition" to Roman design in which Maltese, Greek and Etruscan structures were burrowed among in a search for prototypes for centralized Roman buildings.

Giedion's second conception is "architecture as interior space" as developed by the Romans. He writes, "The main theme of this book is the relation of Roman building and building methods to the development of Western architecture," and the subject takes up two-thirds of the volume.

The second "transition" is the introduction of iron, steel and concrete as building materials, leading to the third conception, namely "architecture as both volume and interior space." This subject is presented in a perfunctory final chapter on 20th century buildings and projects.

The main value of the book lies in the long chapter on Roman architecture. It is a revela-

tion. The key to Roman building was concrete: a mixture of rubble, lime, water and the hardening volcanic sand known as *pozzolana*. The massive walls, great arches and daring vaults of major Roman structures were built of concrete. Brick, stone or marble were only facings of the concrete core.

The great masterpieces include the Pantheon whose dome of 141 feet in diameter was not surpassed until the 19th century; the Colosseum which remains the prototype for spectator sports arenas; the great Thermae with their grandiose halls; Hadrian's Villa, a complex of architectural fantasies, lakes and gardens.

There are also the superb but less familiar structures: the Sanctuary of Hercules at Tivoli; the Domus Augustana with its tall brick arches; the Piscina Mirabilis, a fresh water reservoir for the Roman navy; the amazingly "modern" looking villa of Rufus at Pompeii.

The stripped and broken shells of these structures are even more overwhelmingly impressive now when both outside and inside are exposed to view. The secret of concrete, lost with the fall of the Roman Empire, continued as an influence in the arches, vaults and windows. The Roman chapter is handsomely illustrated with the author's own photographs, good plans and romantic 18th and 19th century engravings.

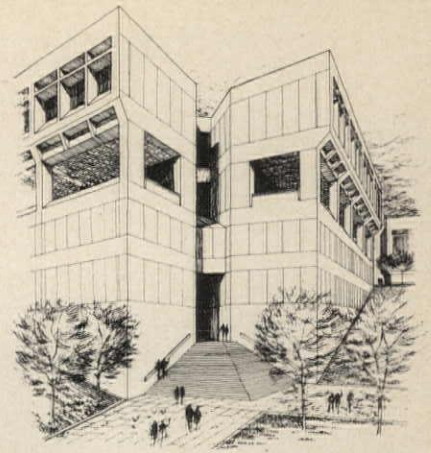
This book will probably not rank with Giedion's earlier classics, but it displays, for the last time, the author's endless curiosity. He clambered over Roman ruins, camera in hand, when he was more than 70 years old. Giedion died soon after the book was completed in 1967. Giedion was a scholar of integrity. He tackled hard subjects and did not write about trivial matters—and he asked the right questions.

JOHN MAASS

Community Centers and Student Unions. Eugene and Barbara Sternberg. New York: Van Nostrand Reinhold, 1971. 319 pp. \$27.50.

The authors of this timely book consider it a curious phenomenon that "the world's most successful democracy" displays "highly class-structured patterns of community centers." Other countries, such as Holland, Sweden, Switzerland and Great Britain in its new towns, on the other hand, have "community centers that are genuinely intended to involve all levels of a multiclass community. . . . We still are searching for our own appropriate equivalent to the agora, the forum, the cathedral dominating a main plaza, the eastern European Korso or the village green."

They have found that the vast majority of community centers in this country are of mediocre or poor design. But the Sternbergs do note that there are several candidates for the role of community center for our own age: the comprehensive high school, the



Student Center, University of Arkansas.
Architects: Wittenberg, Delony & Davidson, Inc.

community college, the cultural center, the community recreation center, the all-town sports center, the expanded shopping center and the municipal civic center. The student union is regarded as "the community center of the college."

If our cities are to be saved, the authors declare, and if architecture is really a social art, the community center must involve these factors: "stimulating architectural form; a gathering together of as many institutions as possible that draw people out of their homes; an easy transition from passive to many kinds of active involvement, with abundant chances for people to meet and greet informally; and a mixing of different types of people."

Effort is directed here toward bringing together some of the best examples of community centers built in recent years. There is an examination of the social and planning philosophies that lie behind the location, programming and operation of different types of community centers and a presentation by both text and illustration of creative ideas about community centers today.

There are two major sections to the book. The first is text illustrated with photographs, plans and diagrams. Following it is a portfolio of noteworthy examples from a design point of view.

The Sternbergs work together as an architecture/planning/sociology team. Eugene Sternberg, a member of the AIA, has practiced architecture in Colorado for nearly 25 years. Barbara Sternberg holds master's degrees in urban sociology from Denver University and Cornell.

MARY E. OSMAN

Greater Peterborough Master Plan. Peterborough, England: Peterborough Development Corporation, 1970. 103 pp. No price given.

Peterborough, an existing town of about 88,500 people, one hour and 10 minutes by train from London, is an expanded city conceived to be a counter magnet to London. The master plan here presented was completed by the Peterborough Development Corporation under the direction of Wyndham Thomas. It calls for the expansion of Peterborough to 187,000 people by 1985. Much of the population increase is projected to relieve London's severe housing and congestion problems by absorbing some of the huge

The reviewer is an information officer for the City of Philadelphia and an architectural historian.

natural increase in population occurring in southeast England.

Ebenezer Howard, the original advocate of new towns, conceived as their ultimate form the Social City, consisting of a cluster of separate townships or garden cities in a green setting, each largely self-sufficient but all closely linked with one another and with a somewhat larger "central city," the whole sustaining a regional center of big city caliber. This report says, "It is remarkable that this highly articulated form of development (Howard's), so perfectly suited to the mobile and affluent society of a fully motorized age, should have been produced before the end of the 19th century."

It will be some time before the US can develop and implement an urban growth policy which can build new urban "counter magnets" as alternatives to undesirable growth in hard pressed central cities. Meanwhile, we should be grateful for master plans such as this one to help guide future development.

Pueblo Architecture of the Southwest: A Photographic Essay. Photographs by William Current; text by Vincent Scully. Austin: University of Texas Press, 1971. 97 pp. \$12.50.

Scully's brief text and captions to these stunning photographs provide an introduction to a cultural resource that "is not yet valued as it deserves to be." Ruins of prehistoric pueblos of the Southwest and their successors, modern pueblos, are treated well in this volume which was published for the Amon Carter Museum of Western Art in

Fort Worth. The sites of these dwellings are in harmony with the architecture. But, as Scully says, there is more than harmony. There is "challenge and response, bravado even, or sublimated fear." And as he points out, the photographs by Current "seize upon the vivid relationship between men and places."

Modern School Shop Planning. Rev. Ed. Ann Arbor, Mich.: Prakken Publications, 1971. 306 pp. \$6.75.

Here is current information on how to plan every school shop conceivable from elementary school general shops to high school or post-secondary unit shops with sophisticated and complex equipment.

This sixth edition includes for the first time a section on new plants and new programs and one on plastics. New features concern such topics as fluid power, power mechanics shops, shop layouts and revised equipment lists. The planning ideas have been tested in leading school shops throughout the US.

Precoordination — Basis for Industrialized Building. Ed. by Russell W. Smith Jr. Washington, D.C.: US Government Printing Office, 1971. 131 pp. \$1.50.

The papers collected here resulted from a conference sponsored by the American National Bureau of Standards, which was held in 1969. The book is No. 32 in the excellent Building Science Series issued by the US Department of Commerce, National Bureau of Standards.

The contributions here provide a background, summary of progress and survey of future goals and strategies for precoordination of building components and systems. The belief is that our crying need is for greater numbers of more adequate housing units and that the necessity can only be met through a systematic, industrialized approach to building in which modular components are dimensionally and functionally coordinated in advance of their arrival at the building site. If the precoordination approach is to be effective, standards of product design are required. The papers explore this aspect of the problem.

Construction Management. Ian Atkinson. New York: Elsevier, 1971. 150 pp. \$5.25.

All of you architects who are looking for information on construction management in the current idiom, keep looking. What we have here is a very British look at firm management for the contractor, with asides into the cotton and wool industries and a short course in English history.

To call this book "must" reading, even for contractors who are planning to open a subsidiary in Great Britain, is a strain. The text is a rambling, superficial look at what is a very complex and intricate industry.

Be patient; maybe someday we will have a book that explains what everyone's talking about when construction management is discussed.

STEVEN H. ROSENFELD

The reviewer is director of Professional Practice Programs at AIA headquarters.

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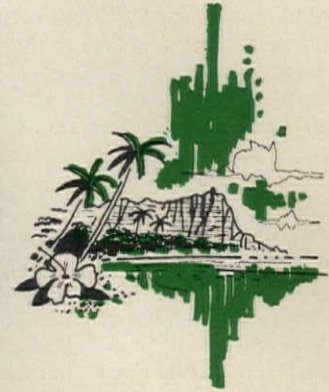
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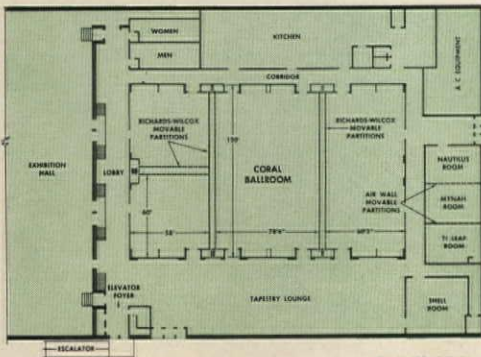
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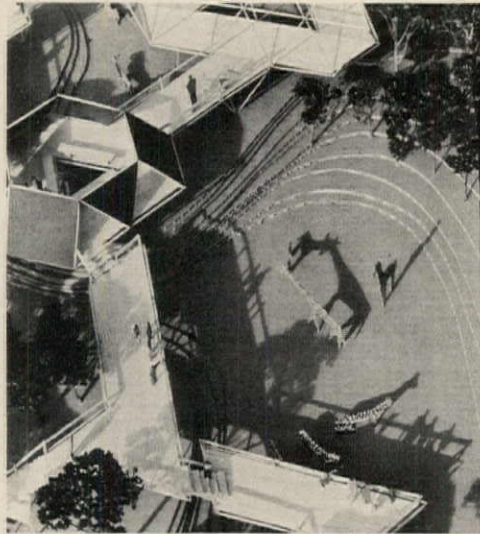
Looking Down on Animals

The Reynolds Metals Company has undoubtedly offered a great amount of benefit to the architectural profession and the generosity of its prizes is to be applauded.

I am concerned, however, that in its latest Aluminum Prize for Architectural Students that a seal of approval has been granted to an environmental concept which is both physically and psychologically dangerous. The demountable zoo complex which was awarded an Honorable Mention certainly offers an ingenious use of aluminum products but, far from showing "an unusual respect for ecology," the provision of elevated walkways where people can look down upon animals is perhaps the most insensitive planning arrangement that can be applied to zoo design.

I use the word "dangerous" in all seriousness and for many reasons, from the practical physical danger of people dropping (or throwing) objects into the animals' paddocks to the undesirable subconscious attitudes expressed in exhibiting animals so that they are looked down upon.

Although aluminum is a modern material,



its use in this context is really little more than a highly sophisticated version of the old bear pits in the Victorian menageries. It is unnatural for an animal to live in a place where its potential enemy is always above it. I have witnessed many examples in zoos in Europe where under these conditions the animals

have become neurotic, constantly crouching and nervously glancing upward.

Quite apart from these considerations, many animals can look just plain silly when viewed from above. **DAVID HANCOCKS**
Bath, England

ED. NOTE: The design, which won a \$1,000 prize for Leon Goldenberg of the University of Illinois, "creates easily moved walkways for viewing zoo animals in a natural setting," according to a Reynolds release.

Westminster College's Chapel

The article, "A Tale of a Church in Two Cities," in the July issue recalls a related story which may be of interest.

Shortly after the Civil War, an architectural firm began practice in Chicago under the name of an architect, Fisher, who later took into partnership Norman Patton. Patton later became a partner of a man named Miller. This firm dissolved, and the firm of Patton, Holmes & Flinn was started. Upon Patton's death, the firm continued as Holmes & Flinn. After Holmes' death, I was in partnership with Raymond W. Flinn.

About 30 years ago, Flinn received a letter from the then president of Westminster College in Fulton, Missouri, informing him that a chapel built for the college about 20 years before, for which Patton, Holmes & Flinn were the architects, was beginning to come apart. This building was sited on a level area which ran out to a long, sloping hill.

The entrance steps of the chapel were beginning to separate from the building. The

Continued on page 62



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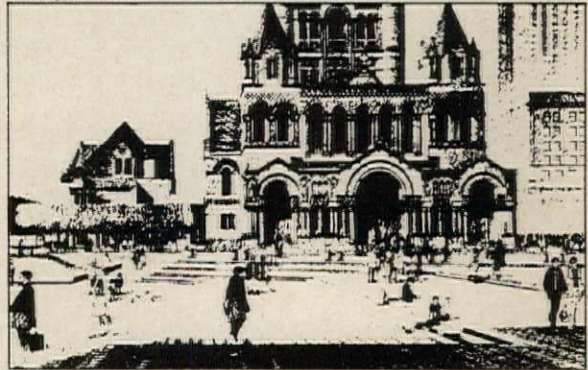
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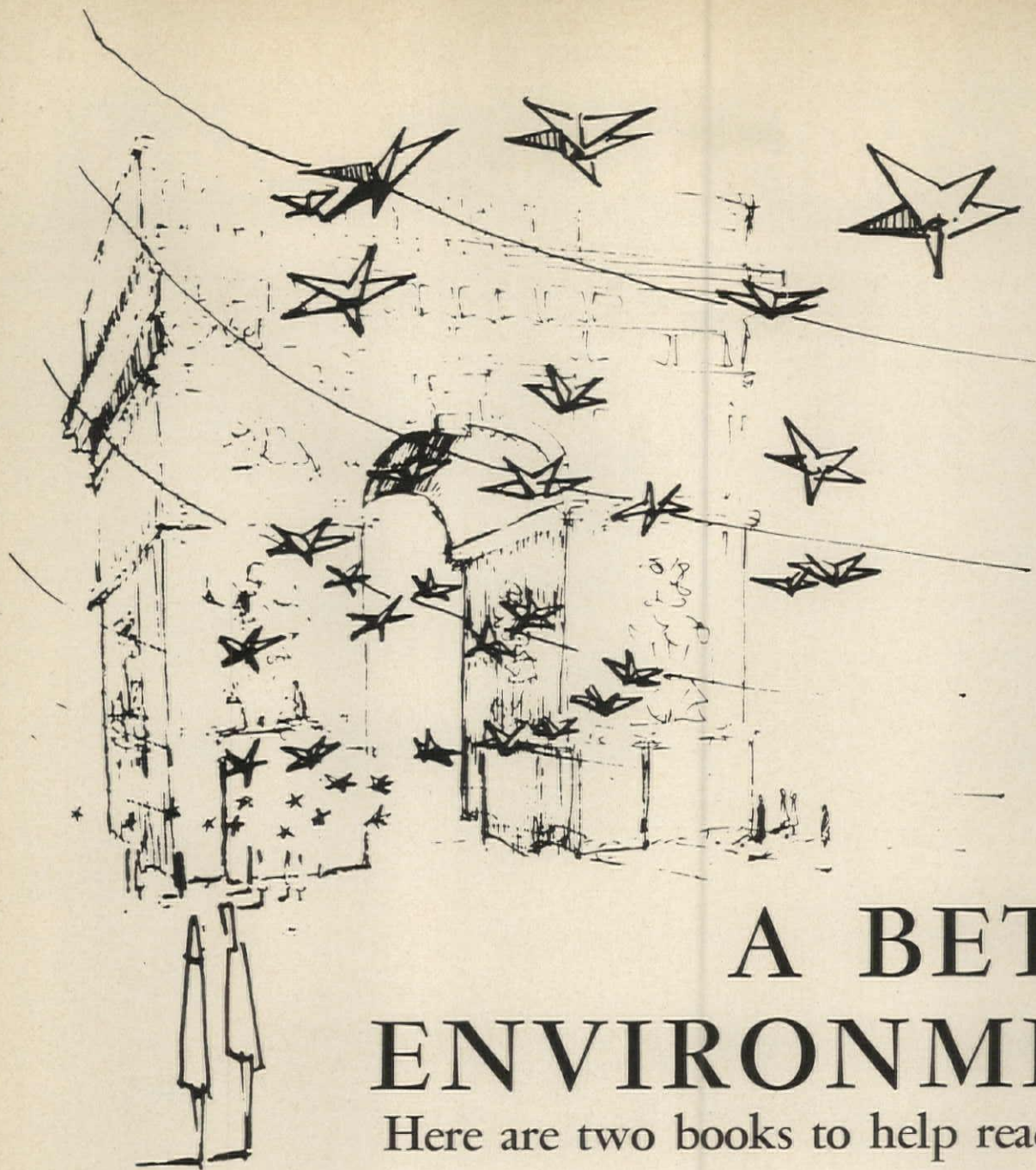


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firm of Holmes & Flinn were being charged with the responsibility for the damage occurring at the entrance steps some 20 years after the building was completed. As I recall, responsibility was denied because the construction inspection was handled locally.

Later I checked through some Missouri mining reports. I discovered that while the chapel was on level ground, the subgrade fell away under the building with the mines below. The entrance steps probably were built on rock, but the plane on which the chapel was erected rested on a sloping clay layer. So what had actually happened was that the entrance steps stayed where they were built but the entire chapel moved away from them, due to slippage along the clay layer on the sloping bedrock, and the underlying mining hastened the separation of the chapel from the steps as it moved slowly down the slip-page plane.

DANA D. CORROUGH, AIA
Lodi, Calif.

Favorable to the NCARB Exam

I am glad that the structure of the architectural exam is being changed because I feel that it will give men like me a better chance to pass it—men with 15 years' experience but without a college degree. I go along with the qualifying portion of the exam because it seems to me that this will doubly illustrate the ability of the noncollege graduate.

At the present time, I am studying the

material issued by the Architectural License Seminar (the group from California), and I find it boring in many respects—similar to the boredom I suffered in the schools of architecture that I have attended over the years. Even though I have a good knowledge of such things as building construction and equipment, history and theory and site planning, I do what every architect does: I call in a consultant.

Because my experience has afforded me the pleasure of being exposed to more practical aspects of architecture than the normal architectural student is able to receive, I feel that I will be better equipped to pass the exam. My philosophy is that a good architect has to have a certain amount of maturity before he is truly successful. Based on the unique situation I am in, I feel that I am on the verge of reaching this maturity.

I work for a black architectural firm: Nelson A. Harris & Associates. I am considered to be the key man in the five-man firm. We work exclusively in the black community throughout the Chicagoland area, including Gary, Indiana. We also maintain an office in Youngstown, Ohio. We boast about the fact that we are responsible for 80 percent of the new black churches that have been built throughout the Midwest over the past 10 years. We are emerging in the field of non-profit housing because many of our past clients are planning and building 236 housing units after the churches are built.

In many respects I am practicing architecture because the principal of the firm has

confidence in my ability. I sometimes plan, design and supervise construction, as well as coordinate the relationship between the various owners and contractors. On occasion, I have had to make presentations to zoning bodies, federal bureaus, city agencies and organizations.

I am an active member of the Chicago Chapter AIA, and I endeavor to attend the professional development seminars that pertain to architectural technology at the University of Wisconsin.

I have been personally responsible for the design of large and small housing complexes, community centers, churches, homes, shopping centers and other projects. I have counseled clients on various aspects of architecture and I have lectured high school students. Recently I was asked to be architectural adviser to the building commissioner of a black community south of Chicago which is on the verge of rebuilding a vast blighted portion of the community. Because of my relationship with the community, this situation affords me an exclusive place to practice architecture legally when I do get my license.

With this account I have tried to illustrate that a future licensed architect can gain the necessary experience to practice as well as to "pay his dues" by becoming truly sensitive to the demands of his chosen profession.

I have also made a commitment to my people and feel that I can take part in solving some social problems through good architectural practice.

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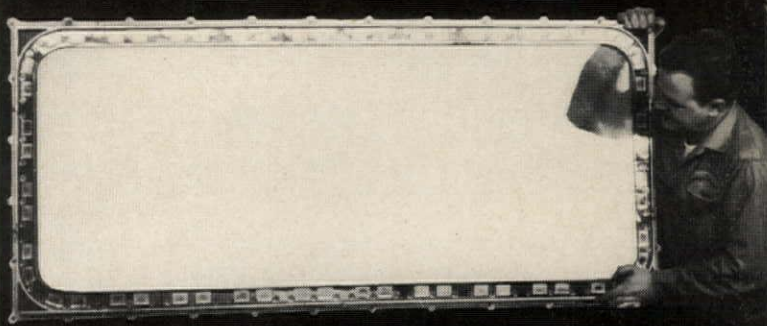


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- Oct. 18-21:** New York State Association of Architects Convention, Kutsher's, Monticello
- Oct. 21-24:** Florida Association of Architects Convention, Sheraton Beach Hotel, Miami Beach
- Oct. 24-26:** North Dakota Chapter Fall Convention, Oak Manor Motel, Fargo
- Oct. 27-30:** Texas Society of Architects Annual Meeting, Sheraton Hotel, Dallas
- Nov. 11-13:** Kentucky Society of Architects Convention, Seelbach Hotel, Louisville

National

- Oct. 20:** Seminar on Creating an Environment for the Handicapped, Commodore Hotel, New York City
- Oct. 24-28:** American Institute of Planners Conference, Hilton Hotel, San Francisco
- Oct. 26-27:** Producers' Council 50th Anniversary Meeting, Mayflower Hotel, Washington, D.C.
- Oct. 28:** Campus Planning Conference, Blake Hall, Rutgers University, New Brunswick, N.J.
- Oct. 29:** American Arbitration Association, National Industry Conference, Ilikai Hotel, Honolulu
- Oct. 31-Nov. 4:** Industrialized Building Exposition and Congress, Kentucky Exposition Center, Louisville, Ky.
- Nov. 3-6:** New Communities Development Conference, Washington Hilton Hotel, Washington, D.C.
- Nov. 11-13:** ACSA Teacher's Seminar/Annual Environmental Educators' Conference, Key Biscayne Hotel, Key Biscayne, Fla.
- Nov. 29-30:** A/E Conference on Federal Agency Programs, Chase-Park Plaza Hotel, St. Louis

Awards Program

- Oct. 29:** Entries due, Library Buildings Awards Program. Contact: Director of Awards, AIA Headquarters, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.
- Jan. 31:** Entries due, Plywood Design Awards. Contact: American Plywood Association, 1119 A St., Tacoma, Wash. 98401.

Fellowships and Scholarships

- Nov. 1:** Applications due, US Government Full and Travel Grants for graduate study abroad. Contact: Institute of International Education, 809 United Nations Plaza, New York, N.Y. 10017.
- Dec. 15:** Applications due, AIA/AIAF Scholarship Program. Contact: David Clarke, AIA Headquarters, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.
- Dec. 31:** Submission of work due, Rome Prize Fellowships for 1972-73. Contact: American Academy in Rome, 101 Park Ave., New York, N.Y. 10017. □

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