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A New Chapter in School Design

Ben E. Graves, Hon. AIA	Out Goes the Textbook for School Planning	In goes an era when students gather in settings unthought of even yesteryear	18
Alan C. Green	Look Who's Under the Same Roof Now	That's thinker, tailor, soldier, sailor, everybody—and, yes, schoolchildren	26
Evans Clinchy	Where People Move, Schools Must Follow	New towns attract thousands of families, but what about educational provisions?	32
Ewing H. Miller, FAIA	The Difference That Method Makes	The design/build bid means of school delivery: Is it for better or worse?	40
Bess Balchen	The Difference That Funding Makes	It does matter who pays for the schools, as residents of Maryland are learning	43
	Architectural Education	The Next Horizon; Opening Their Eyes to Architecture . . . and to the City Environment; A New Option	46
	'Show and Tell' with a New Twist	Here, an architect gets on stage	52
	Fee Schedules and Price Fixing	Pertinent points on a topical subject	54
	Departments	Comment and Opinion 4 Going On 6 Institute Page 14 Books 55	Letters 60 Events 60 Advertisers 64

Cover: Once they were square and very traditional; today, school designs burst out in all shapes and forms (p. 18). Peter Bradford design.

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Professionals and Political Contributions: The leaders of the seven professional societies that comprise the Interprofessional Council on Environmental Design (ICED) have gone on record as strongly supporting legislation for limitation and full public disclosure of all political contributions and have recommended enactment of laws that would make improper conduct by design professionals grounds for suspension of licenses by state registration boards. Because of the significance of their statement, it is printed here in its entirety as follows:

"We, the presidents of the several professional societies representing architecture, engineering, landscape architecture and planning, view with concern recently reported instances of alleged improper or patently illegal conduct by professional individuals or firms seeking contracts for public work. While few in number, these widely publicized cases leave the impression of a general breakdown in ethical behavior.

"Members of all our design professions accept the responsibility to practice in the public interest and subscribe to codes of ethics and guidelines for professional activity. The vast majority of design professionals adhere to these codes and practice in a legal and ethical manner. We condemn without equivocation any attempt by any person dealing with government to influence the award of contracts through political contributions or by offering, or providing services, materials or other gratuities in the hope of obtaining work. Equally, we deplore the political pressures exerted on individuals and firms to make contributions in order to be considered 'preferred contractors' for services in connection with public work.

"Every citizen in a democracy has the basic right and duty to participate in the political process. However, offering to pay, paying or accepting, directly or indirectly, any gift, bribe or other consideration to influence the award of professional work is illegal and unethical conduct. We strongly support federal, state and local legislation for limitation, control and full public disclosure of all political contributions. Our professions continue to support government action which would remove the selection of design professionals from political influence to minimize the possibility of abuse. We support the enactment of state statutes and the adoption of regulations which would make improper conduct grounds for suspension or revocation of licenses by state registration boards.

"The professional societies representing the nation's architects, engineers, planners and landscape architects recognize and accept the responsibility to discipline their members for unprofessional conduct and pledge to undertake an interprofessional program to restore and maintain a climate for government activities in which the integrity of the profession will not be compromised in the performance of design and planning services."

In addition to The American Institute of Architects, the organizations that make up ICED are the American Consulting Engineers Council, American Institute of Planners, American Society of Civil Engineers, American Society of Consulting Planners, American Society of Landscape Architects and National Society of Professional Engineers. *Robert E. Koehler*

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AIA

The Institute Issues Two New Documents For More Efficient Office Management

Two new documents issued by the AIA are aimed at assisting the architect to achieve more efficient office management.

"Project Checklist" (D200) is a listing of tasks that a practitioner would perform on a given project. The checklist will help him to recognize the required tasks and to locate data necessary to carry out his responsibilities. It is suggested that the checklist be started at the time the architect is notified that he is being considered for a project and that it should be maintained until the project is complete. The price of the document is 75 cents.

The "Owner's Instructions for Bonds and Insurance" (G610) has been designed to help obtain insurance and bond information from the owner of a project in accordance with the requirements of the "General Conditions." It should be sent to the owner for his completion. Architects are cautioned not to give insurance advice or information regarding types or amounts of coverage because this is not covered by professional liability insurance. The cost of the document is \$2.50 for 25 sheets.

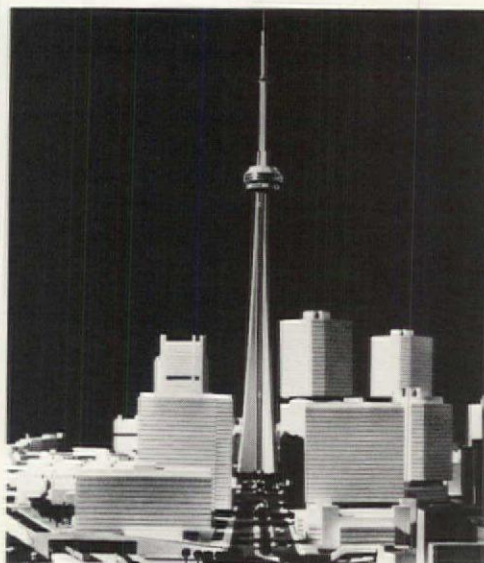
Both documents may be ordered through the Order Fulfillment Department, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

Cloud-Piercing Landmark in Toronto Will Break All the World's Records

The world's tallest self-supporting structure is being built in Toronto by CN Tower Ltd., a subsidiary of the Canadian National Railways. It will rise to a height of more than 1,800 feet, which beats the present record-holder, the Ostankino TV tower in Moscow, by some 50 feet. It will be taller than New York City's World Trade Center and Chicago's Sears Tower.

The CN Tower has no columns but carries all loads on the core walls by the use of post tensioning. It is the design of John Andrews and the Toronto firm of Webb, Zerafa, Menkes & Housden; Roger Nicolet, also of Toronto, is the structural engineer.

CN Tower's contoured shaft is of reinforced concrete. It will rise from a park-



Glass-faced shaftways on the outside will take riders up 1,126 feet to observation decks and a revolving restaurant.

like setting in Metro Center, a new development between the downtown and the Lake Ontario waterfront. The Otis Elevator Company is installing the tower's elevators through its Canadian affiliate.

Pensions for Professionals, Inc., Aims To Serve Nonprofit Societies

Most pension plans under which engineers and other professionals work have demonstrated deficiencies. In 1970 the American Chemical Society organized Pensions for Professionals, Inc., to serve as a medium of cooperation among all professional societies to improve retirement benefits. The greatest stress in this effort has been placed upon "portability" of pensions, an objective which is difficult to achieve.

The stated purpose of PFP is to aid nonprofit professional societies by providing counseling and advisory assistance on pension plans with early vesting and on obtaining pension benefits on terms as advantageous as possible for professional society members. Most of the members of its board of trustees will represent participating professional societies. The John Hancock Mutual Life Insurance Company of Boston has been selected as the PFP carrier.

PFP has begun formal enlistment of professional societies to provide initial but

Office management aids, still another record-breaking structure and pension proposals are all part of the current architectural scene.

modest financial support and to participate in its activities. Among the societies to become full participants are the American Chemical Society, the American Society for Microbiology, the American Society for Metals and the American Institute of Chemists.

The PFP pension philosophy embraces the following elements:

- Every professional should have the opportunity to earn retirement benefits every working day of his life.
- Pension considerations should not be a factor in the career decisions of professionals.
- Pension accumulation should be considered as deferred compensation; and, therefore, regular employer contributions to a retirement fund are, in fact, a normal charge against cost production rather than a charge against fringe benefits.
- Pension funds should be placed in trust and should not be available to the employer for any other use.
- Pensions should be individually and fully funded and not partially funded in the aggregate. There should be an option for investment in equities to combat inflation both before and after retirement.

Recently PFP reached a formal agreement with the American Society of Microbiology for adoption by that organization of the first PFP pension plan. The society's executive director, Asger F. Langlykke, said that the plan provides "maximum security and highest benefits at lowest cost and with greatest individual freedom of choice" for all members of his staff.

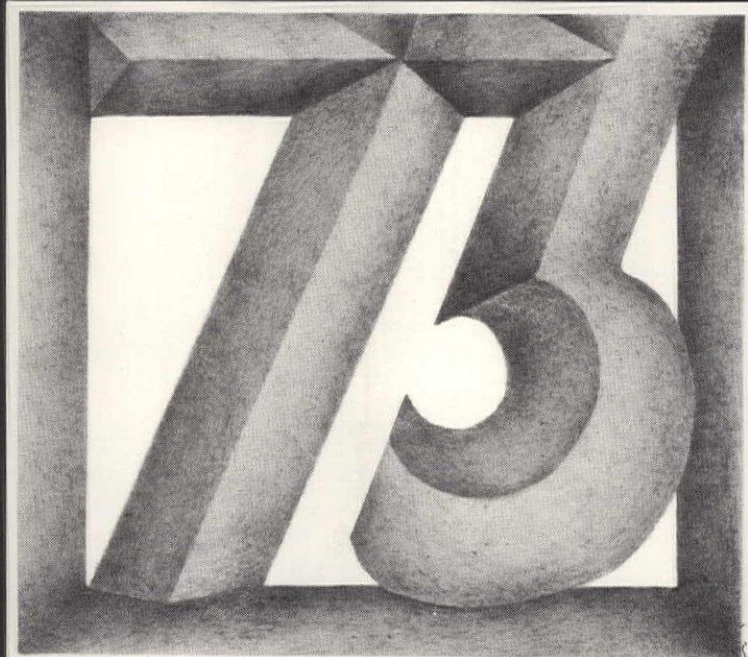
Information on any phase of PFP activities may be obtained from Pensions for Professionals, Inc., 605 Greenfield Place, Wilmington, Del. 19809.

Meanwhile, the Institute's Task Force on Pensions is exploring a similar program for architects. Its members are Chairman David M. Bowen, Indianapolis, Robert E. Fehlberg, FAIA, and Frederick G. Frost Jr., FAIA, directors of the Northwest and New York Regions, respectively.


Many of the benefits of any such program depend upon legislation now before Congress. Senate bills 4 (Williams/Javits) and 1179 (Bentsen) hopefully will provide for society-administered pension plans.

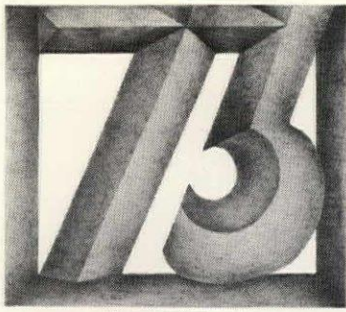
continued on p. 10

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**ANNOUNCING THE
WINNERS OF THE
ARCHITECTURAL
AWARDS. 1973**

A.I.A.  **Red Cedar Shingle & Handsplit Shake Bureau**



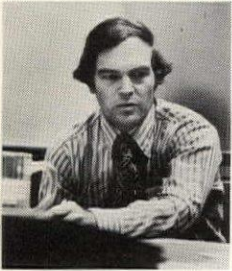
AWARD WINNING ENTRIES AND COMMENTS BY THE JURY.

The eminent jurists selected by the Board of Directors of the American Institute of Architects for the 1973 Red Cedar Shingle & Handsplit Shake Bureau/A.I.A. Architectural Awards Program have selected the winners from some 250 entries submitted by architects from the United States and Canada.

The five, First Award and 16 Merit Award winners have been selected to honor design excellence and significant functional or aesthetic uses of red cedar shingles or shakes.

Awards in five categories—Residential Multi-Family, Vacation Homes, Residential Single Family, Commercial/Institutional and Interior Design—were presented at the Bureau's Annual Meeting. No awards were given in the categories of Remodeling/Restoration, Special Design and Industrial Housing.

JURY.



**Clovis Heimsath,
A.I.A., Houston, Texas**

A specialist in creating environments for special conditions, his award-winning work includes the unique recreational facilities for the Manned Spacecraft Center, a Connecticut country club and a planned unit development in Louisiana. Mr. Heimsath is a member of the National A.I.A. Housing Committee and holds degrees from Yale University, Yale School of Architecture and attended the University of Rome as a Fullbright Scholar.



**Richard Foster,
A.I.A., Greenwich, Connecticut**

Richard Foster brought a broad spectrum of architectural design concepts to the 1973 jury. The New York State Theatre at Lincoln Center, the Biology Tower at Yale University, the State Pavilion at the New York World's Fair and other such diverse projects as the Montauk Golf and Racquet Club and several buildings for New York University. He is a graduate of Carnegie Institute of Technology and Pratt Institute.



**Saul Zaik,
F.A.I.A., Portland, Oregon**

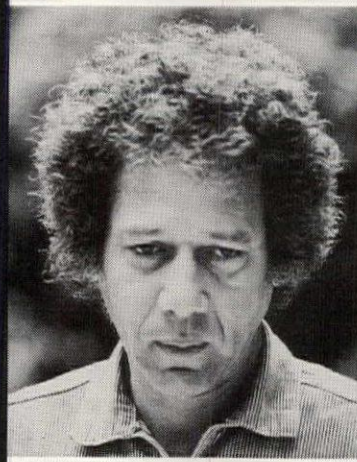
Efficient houses in the woods, at the coast and in the mountains have become Saul Zaik's trademark in distinctive Northwest design. And his designs in the residential field have been strongly marked by their use of wood. Mr. Zaik received his academic training at the University of Oregon Architecture School and he is a member of the College of Fellows of the American Institute of Architects.



RESIDENTIAL MULTI-FAMILY, FIRST AWARD

John Hackler and Company
One Commercial National
Bank Building
Peoria, Illinois 61604
Pierson Hills, Peoria

Comments: Excellent human scale—The village quality relates well for site and people users—Variety of form and intermixing of one and two stories exemplary.



RESIDENTIAL MULTI-FAMILY, FIRST AWARD

Leonard Veitzer, AIA
3625 Fifth Avenue
San Diego, California 92103
Collwood Townhouse Apartments,
San Diego

Comments: Precise planning creating an intricate variety of elegant outdoor public and private living spaces—Units are well planned in terms of access locations and relationships to achieve interest and variety.



VACATION HOMES, FIRST AWARD

Walz and MacLeod, Architects
50 Green Street
San Francisco, California 94111
Willard S. Johnston Residence,
Seascape—Muir Beach

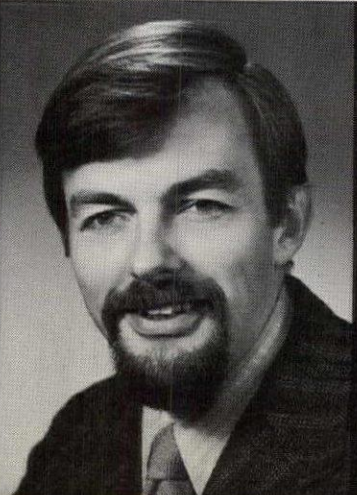
Comments: Sensitive application of shingle detailing—Restraining respect for magnificent site—Interior spaces relaxed and innovative.



VACATION HOMES, FIRST AWARD

Roland/Miller Associates
666 Seventh Street
Santa Rosa, California 95404
Clarence Hall House,
The Sea Ranch

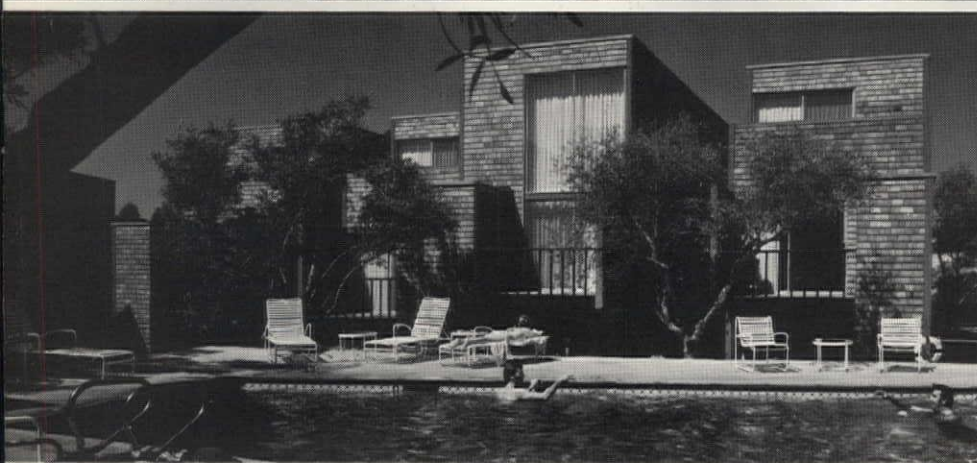
Comments: Meticulous care in detailing and execution. Jury noted excellent craftsmanship displayed and compliments to builder—Reflects study of exterior spatial qualities which result in a strong unified composition.



RESIDENTIAL SINGLE-FAMILY, FIRST AWARD

**Gary L. Michael AIA,
Architects & Planners**
430 S.W. Morrison Street
Portland, Oregon 97204
Jan Zach Residence & Studio,
Elmira, Oregon

Comments: Innovative, strong, sculptural statement—Details consistent with straightforward techniques.



MERIT AWARD WINNING ENTRIES.

RESIDENTIAL MULTI-FAMILY

Bissell/August Associates

359 San Miguel Drive
Newport Beach, California 92660
Sixty-01, Redmond, Washington

Bulkley, Szevich and Associates

1154 Clement Street
San Francisco, California 94118
Friendship Village, San Francisco

William Kessler and Associates, Inc.

18000 Mack Avenue
Grosse Pointe, Michigan 48224
Wayne Public Housing, Wayne, Michigan

VACATION HOMES

Rodney Wright

4643 North Clark Street
Chicago, Illinois 60640
Hawkweed Farm, Osseo, Wisconsin

Venturi and Rauch

(with the assistance of Terry Vaughn,
Project Architect Christopher Holland)

333 South 16th Street
Philadelphia, Pennsylvania 19102
Trubek and Wislocki Houses, Nantucket Island

RESIDENTIAL SINGLE-FAMILY

Alfredo De Vido

4 West 58th Street
New York, New York 10019
Michel House, Southold, New York

Bahri & Associates

1015 Park Street
Peekskill, New York 10566
Y.S. Bahri Residence, Putnam Valley, N.Y.

Bull/Field/Volkman/Stockwell AIA

350 Pacific Avenue
San Francisco, California 94111
Residence

COMMERCIAL/INSTITUTIONAL

Calvin/Gorash Architects

303 East Pine Street
Seattle, Washington 98122
Lake Wilderness Park, Maple Valley

Boyle Engineering Corporation

John P. Barbarino AIA, Project Architect
412 South Lyon Street
Santa Ana, California 92702
San Diego Zoo Skyfari Cable Lift, San Diego

Peter Hemingway Architect

11810 Kingsway Avenue
Edmonton, Alberta, Canada
Central Pentecostal Tabernacle, Edmonton

Aotani & Oka Architects, Inc.

225 Queen Street
Suite 400
Honolulu, Hawaii 96813
Inter-Island Terminal, Ke-ahole, Kailua

Robinson and Mills

45 Ecker Street
San Francisco, California 94105
Borel's Restaurant, San Mateo

Russell Gibson von Dohlen

80 South Main Street
West Hartford, Connecticut 06107
Church of St. Peter Claver, West Hartford

Anderson Notter Associates, Inc.

10 Thacher Street
Boston, Massachusetts 02113
Brocton Art Center-Fuller Memorial, Brocton

INTERIOR

Oda/McCarty, Architects

P.O. Box 5, Hilo, Hawaii 96720
Harrell McCarty Residence, Hilo

REMODELING/RESTORATION, SPECIAL DESIGN & INDUSTRIAL HOUSING

No awards were given in these
categories for 1973.

**Churches continue to be built,
though their character has changed.
The Institute's library is back in full
swing to serve AIA members.**

going on from page 6

Structure in Switzerland Is Top Winner In Religious Architecture Exhibit

The current economic situation and a shift in concern from the local congregation to areas of social outreach by the churches in this country were cited as reasons for the limited number of submissions in the architectural exhibit at the 1973 conference of the Guild for Religious Architecture. Nevertheless, the jury indicated that the projects shown at the Minneapolis meeting were of high quality, ranging from the traditional church to flexible multipurpose spaces.

An honor award was given to Marcel Breuer & Associates for the Baldegg Convent near Lucerne, Switzerland. Merit awards went to the Congregation Ezra Bessaro, Seattle (Durham, Anderson, Freed Co.); St. John's Episcopal Church, St. Paul (Hammel, Green & Abrahamson); Church of St. Peter Claver, West Hartford, Conn. (Russell, Gibson, von Dohlen); Church of the Blessed Sacrament, East Hartford, Conn. (Russell, Gibson, von Dohlen); and the United Methodist Church, St. Charles, Iowa (Sövik, Mathre & Madson). St. Benedict's Abbey, Benet Lake, Wis. (Stanley Tigerman & Associates) was cited as a special interest project.

Chairman of the architectural exhibit committee for GRA was Lloyd F. Berquist, AIA, of St. Paul. The jury members were Harold T. Spitznagel, FAIA, Sioux Falls, S.D., chairman; Dr. Frank Kacmarcik, St. Paul; Uel C. Ramey, AIA, Sheboygan, Wis.; Dr. Robert Roth, Wayzata, Minn.; and Saul C. Smiley, AIA, Minneapolis.

A traveling exhibit of the award-winning designs is offered by the GRA without charge—except for transportation—to interested groups. For further information write the GRA, 1777 Church St. N.W., Washington, D.C. 20036.

AIA Library Ready to Be of Service To Members Anywhere in the US

The AIA library is one of the country's larger collections of books on architecture and related topics. In addition, it takes care of the Institute's audio-visual materials.

During the time that the AIA was in temporary headquarters while its new building was being constructed, it was necessary because of limited space to curtail some of the library's services to the membership. Now that the collection is housed in the new Octagon Building, full services have been resumed.

The library will lend books to AIA

members and will send requested volumes anywhere in the country. There is a transaction charge of 25 cents on each of the first two books in a loan, plus a mailing charge of 25 cents per volume when the loan is by mail. A maximum of six books may be borrowed at one time, and they may be kept for one month from date of receipt.

Also, the AIA library will provide members with an accession list on a bimonthly basis for \$1 a year. This is a classified list by subject which gives the user information about new books that the library has acquired. Most of the books listed are available for loan, the exceptions being handbooks, directories, bibliographies and similar reference books.

More complete information about the services of the library to AIA members may be obtained by writing to George E. Pettengill, Hon. AIA, Librarian, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

Document on Housing for the Elderly Available Free to AIA Members

A conference sponsored jointly by the AIA, Association for the Study of Man-Environment Relations, Gerontological Society and National Tenants Organization has resulted in a published report entitled *Behavioral Requirements for Housing for the Elderly*. The publication presents the consensus opinions of 22 leading researchers, program administrators, housing managers, tenants and architects who are concerned with housing for the elderly.

Divided into two parts, the first consists of design suggestions based upon the behavioral requirements of older people. The second section is on research need development and is intended as an advocacy document for researchers, research policy makers and administrators.

Single copies of the report are available without charge to all AIA members who request it on the firm's letterhead. Non-AIA members may obtain a copy for \$1.50 to cover handling and postage. Address all requests to Don Conway, AIA, Director of Research Programs, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.



Traveling exhibit, with top winner here, consists of 22x28-inch photographic mounts.

The talents of the profession don't stop at the drawing board, as is indicated by the work of three architects in the latest international snapshot awards program.



Architects Zoom in as Prize Winners In International Snapshot Contest

Architects evidently have a way with cameras. In the recent international newspaper snapshot awards program conducted by the Eastman Kodak Company, first prize in the color category went to E. Jay Nielson, an architect in Bountiful, Utah. Nielson won a trip for two around the world plus \$1,000 in spending money. His prize-winning photograph is a study in monochromatic tones of black and gray of storm clouds over the Moab Desert.

In the contest, in which more than 260,000 snapshots were submitted to 90 participating newspapers in the US, Canada and Mexico, two other architects won honor awards. One of them, Andrew D. Bowles, AIA, who is associated with the US Corps of Engineers in Alaska, was cited for three photographs. Jerry H. Houston, an architect employed by P. M. Bolton Associates in Bellaire, Tex., won an award for a portrait of his daughter.

Winning prints will be on display in Washington, D.C., November 20-December 3, and in New York City, January 9-February 27.

Any reader who may want to enter Kodak's future snapshot awards programs and does not know of a participating local newspaper may obtain information from the Contest Activities Section, Corporate Information Department, Eastman Kodak Company, Rochester, N.Y. 14650.



Winning snapshots by architects include the desert scene, tops in color category.

Manhattan's Fifth Tallest Building Is Designed for Energy Conservation

A new highrise complex is being planned for New York City which will feature a 46-story tower resting on a platform 112 feet high. Citicorp Center, to be built at a cost of \$128 million on Lexington Avenue, is the design of Hugh Stubbins & Associates, Inc. Associate architects are Emery Roth & Sons. Structural engineers are LeMessurier Associates Inc. and the Office of James Ruderman.

Citicorp Center's main tower building

will contain more than 1 million square feet of office space. The center will also include a new free-standing St. Peter's Lutheran Church on a corner adjacent to the tower. A lowrise building, a part of the complex, will have eight stories of terraced levels. A shopping area in the center of the block will have three levels of restaurants, stores and other retail establishments that will form a U around a 70x80 foot galleria or courtyard. A large sunken plaza on the corner of 53rd Street and Lexington Avenue will provide a pedestrian area with sculpture, fountains and landscaping.

The tower building will stand on a platform 10 stories above ground. The platform, in turn, will be supported by four columns, each about 24 feet square. The areas under the platforms, open except for the portion taken up by the elevator core, will give access to the galleria from the plaza and church area.

The galleria, called "one of the most vibrant parts of the projects," will have a network of escalators to link its three levels; a transparent skylight above will permit airconditioning of the area. Double-deck elevators, the first in New York City, will be used in the tower.

The complex has been designed to con-

continued on page 61

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Robert Allan Class, AIA

Measure for Measure: Five years ago Congress directed the Department of Commerce to initiate a three-year study on conversion to the metric system, to evaluate the impact on America of the metric trend and to consider alternatives for national policy. During the course of the study, in which the AIA participated (see AIA JOURNAL, Dec. '70, p. 21), public hearings and special investigations were conducted. The July 1971 report *A Metric America*, resulting from the study, recommended that the United States change to the international metric system through a coordinated national program over a 10-year period.

A flurry of metric legislation has been introduced in both houses of Congress over the past two years. The Senate passed a metric bill in August 1972, but it died for lack of action by the House prior to the close of the 92nd Congress.

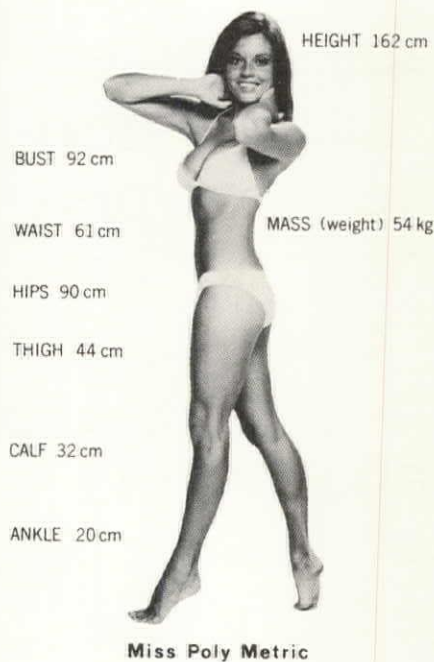
The birth of the 93rd Congress in 1973 has been marked by increasing interest in metrication (a British term for conversion to the metric system). Many more bills were introduced, especially in the House. Most called for making the international metric system the predominant but not exclusive system of measurement in the US, for providing for conversion to general use within 10 years, for setting up a National Metric Conversion Board to work out the details of the changeover and for implementing a widespread educational program.

Hearings on the House legislation started in March. AIA President S. Scott Ferebee Jr., FAIA, presented testimony favoring planned metric conversion over a 10-year period. He pointed out the chaos that would result from an unsupervised evolutionary conversion, particularly in the complex construction industry.

Imagine, for example, the problem of trying to apply metric-sized wallboard to studs on conventional spacing as required by present building codes in a wall with customary-sized windows. Ferebee made a plea for incorporating the principles of modular coordination, standardized component sizes and dimensional coordination

Mr. Class is director of AIA Technical Programs.

Think *NOTHING*... but metric



INCHES TO MILLIMETRES				mm TO INCHES			
FRACTION	DECIMAL	mm	FRACTION	DECIMAL	mm	mm	INCHES
INCHES	INCHES		INCHES	INCHES			mm
1/16	0.0625	1.587	1/8	0.125	3.175	0.1	0.00394
1/8	0.125	3.175	3/16	0.1875	4.762	0.2	0.00787
1/4	0.250	6.350	1/4	0.250	6.350	0.3	0.01181
3/8	0.375	9.525	5/16	0.3125	7.937	0.4	0.01575
1/2	0.500	12.700	3/8	0.375	9.525	0.5	0.01969
			1/2	0.500	12.700	0.6	0.02362
			5/8	0.625	15.875	0.7	0.02756
			3/4	0.750	19.050	0.8	0.03150
			7/8	0.875	22.225	0.9	0.03543
			1	1.000	25.400	1.00	0.03937

into the conversion program and for representation of the construction industry on the metric board and its advisory panels.

Although such groups as the engineering societies, the American National Standards Institute and the Chamber of Commerce of the US support metrication at this time, not all segments of the economy feel the same way. The steel industry fears that massive costs would result with little or no benefits; costs for retooling and carrying dual inventories could be astronomical. The fastener industry considers the present legislation premature and calls for detailed cost/benefit analy-

The AIA favors planned conversion to the metric system of measurement over a 10-year period, believing that metrication will improve unification of the construction industry.

ses. Labor wants a study on costs of conversion to workers and provisions for compensation to workers for new metric tools and retraining. And some interests want government subsidies and tax incentives.

The debate continues. A bill probably will be acted upon by the House this year; action in the Senate may be somewhat later. Disparities among versions of the legislation will have to be resolved as part of the normal legislative process. When Congress has pointed the direction for metric conversion, and the President has concurred, there will be plenty of work for everybody to make a success of it.

The AIA believes that metrication will afford an excellent opportunity to improve unification of the construction industry. Since the sizes of many of our building materials and products will be somewhat changed, they might as well be modified according to a planned program which will coordinate them dimensionally one with the other. This approach should lead to cost benefits and improved technology. The presently inactive ANSI Committee A62, Precoordination of Building Components and Systems, has set objectives which should be carefully considered in realizing the coordination potential of metric conversion. Close cooperation among product manufacturers, builders, cost consultants and design professionals will be essential to the realization of these potentials.

The AIA Committee on Office Practice has kept in close touch with developments relating to metrication. It has proposed that a Task Force on Metric Conversion be appointed in 1974 to begin planning for participation of the architectural profession in the conversion process. This participation would be addressed both to assistance to the profession in its comparatively minor problems with conversion as well as to the larger issues of coordination potentials in the public interest. As President Ferebee stated in his testimony, "We stand ready to offer our services in assisting with the implementation of conversion to the international metric system." There will be many opportunities for AIA members to lend their talents to this effort. □

CONSTRUCTION BONDS AND

INSURANCE GUIDE by

Bernard B. Rothschild, FAIA

This guide has been prepared to serve as a reference on bonds and insurance related to construction projects.

It explains the bonding and insurance coverages usually needed for the protection of the Contractor and the Owner as well as others who will be involved in the construction of the project. The material contained in this guide includes a glossary of insurance terms and a suggested check list.

^ This indispensable reference manual is now available from your local distributor, or write Publications Marketing, The American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006. Retail \$12, AIA member \$9.50. M163

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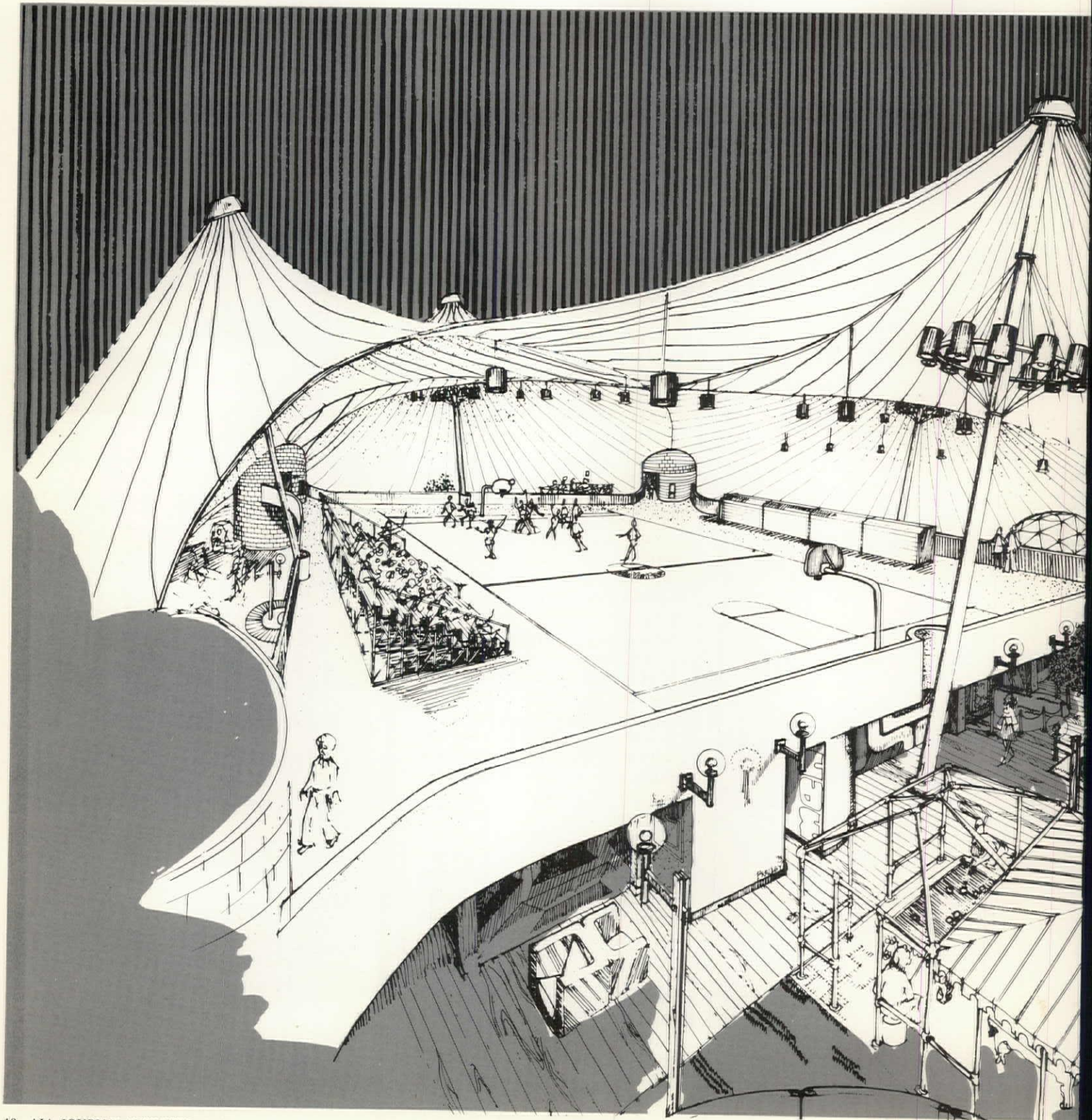
A New Chapter in School Design

Change is apparent in our entire educational system. Possibly architects are more confronted with the immediate consequences of this than any other group: The shapes of our learning spaces are taking on new forms, forms that even today appear almost unorthodox to many. And setting up shop in "found space" and calling kids to classes in restored but healthy old buildings has become commonplace. Also, the added, varied functions under many a new school's roof require new layouts. These changes are almost forced on us by economic considerations and the need for flexibility. With the tight money situation, product delivery methods are changing and so are methods of funding; both influence practice. In all, the educational facilities business never provided more possibilities for an architect to exercise his imagination.

Maurice Payne, AIA, Director, AIA Department of Design

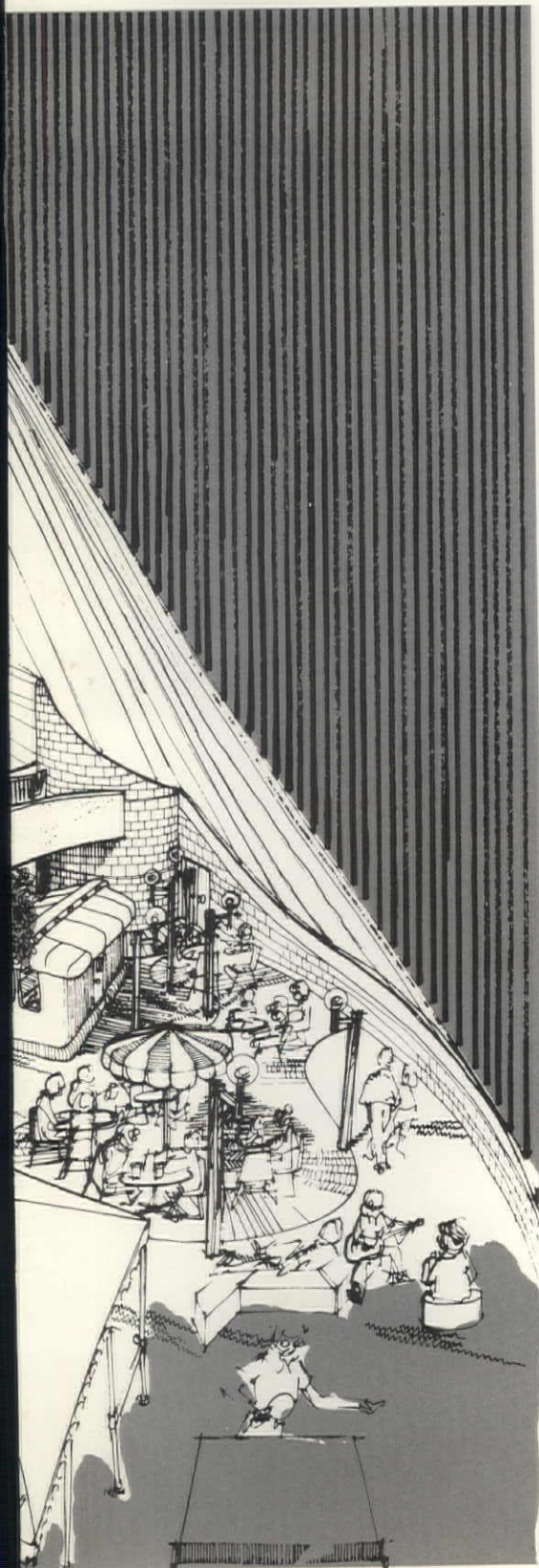
Out Goes the Textbook for School Planning

Ben E. Graves, Hon. AIA



The traditional school is taking on new forms and new functions as well, making these very good times for the imaginative architect.

A student center and drama lab are under a network of long-span cables covered with a lightweight skin at La Verne College, La Verne, California (The Shaver Partnership).



The most amazing thing about what's happening in educational facilities planning is that it *is* happening: Who would have thought, even 10 years ago, that we would see a college put its student center under a canopy of Fiberglas and Teflon stretched over steel cables? For no more than 10 years ago, the majority of educational projects were fairly traditional in approach, with classrooms and supporting facilities all planned according to textbook space formulas.

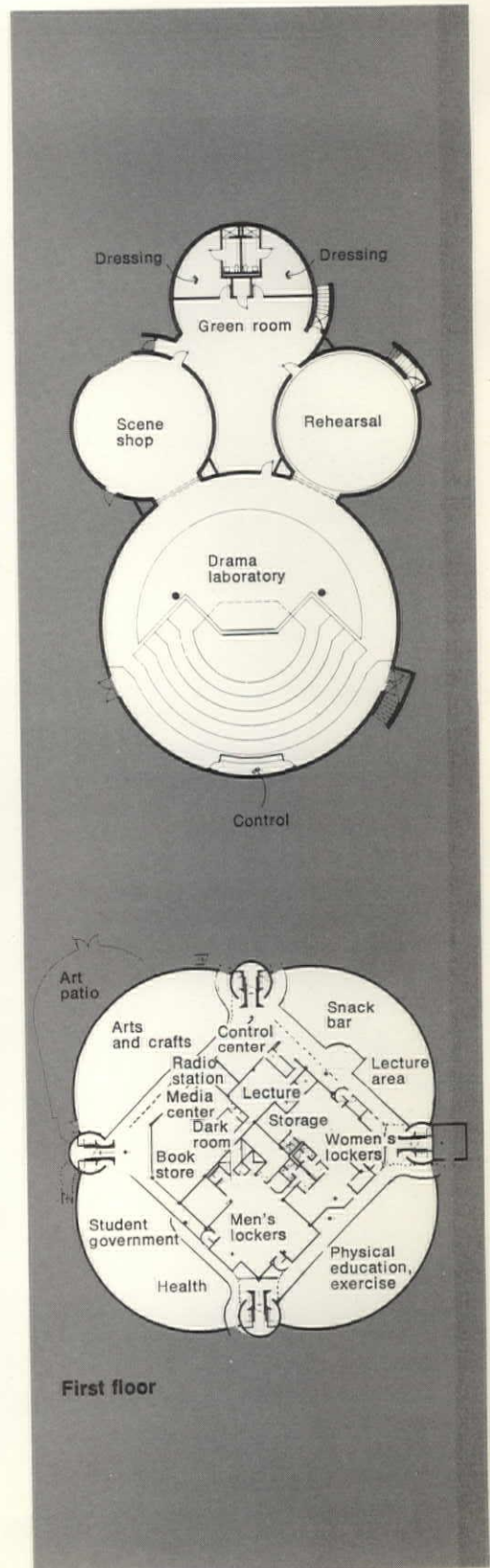
Or who would have thought that school administrators would be planning learning spaces combined with offices or apartments? Most of us would probably have cast a questioning eye on a speaker who would suggest that the City University of New York would become one of the largest, if not the largest, single renter of space in New York City with an annual rental budget exceeding \$15 million.

But all of these things have happened, as well as others that are equally dramatic. They all indicate the diversity of opportunity open to the imaginative designer. It would be difficult to catalog the many approaches and philosophies emerging or being applied. Here are a few examples of what's happening which indicates that educational facility planning is an active area and offers, perhaps, the greatest challenge ever to the design professional.

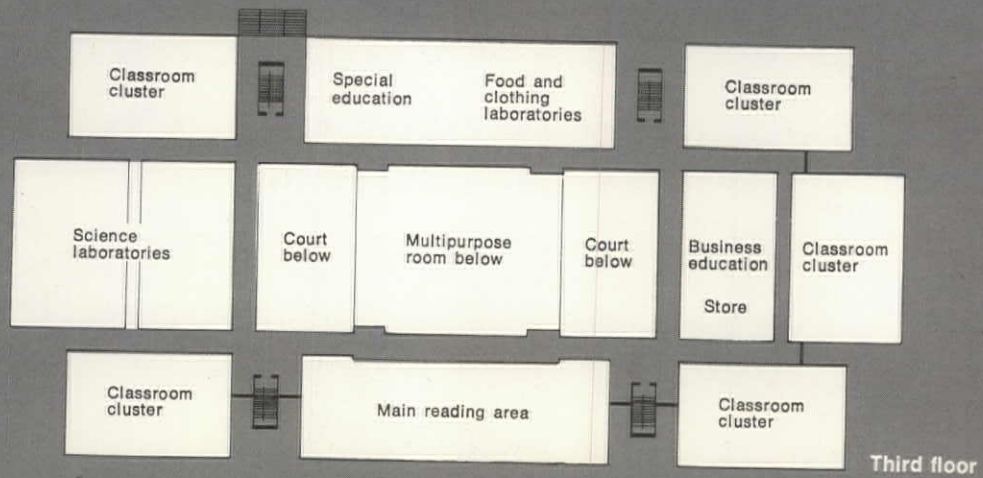
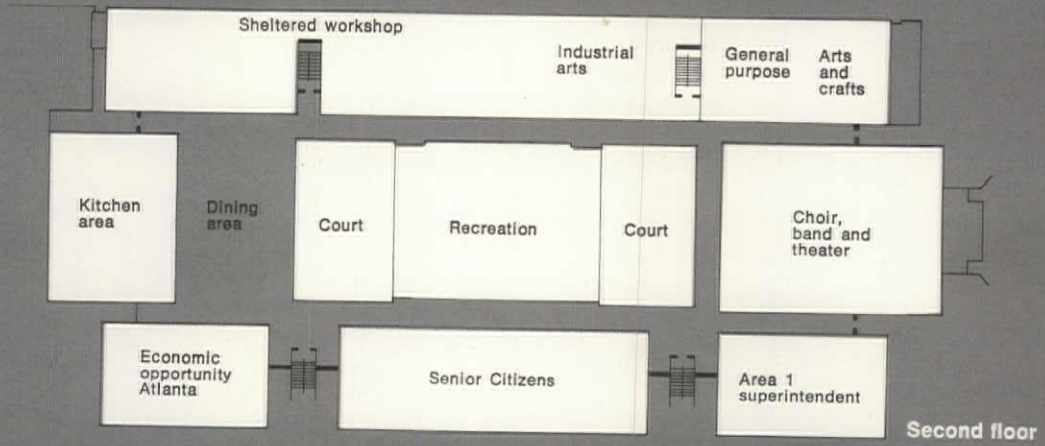
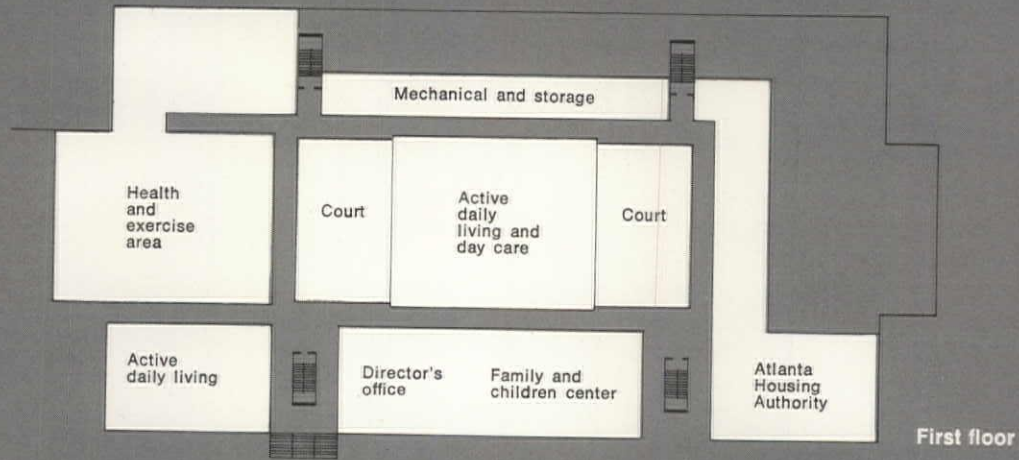
Community centers/schools. Generally, these combine space for an educational program with facilities for other community services such as library, recreation, health and the elderly. By using this approach, limited construction funds can be used more efficiently through sharing space among agencies instead of each creating its own competitive domain.

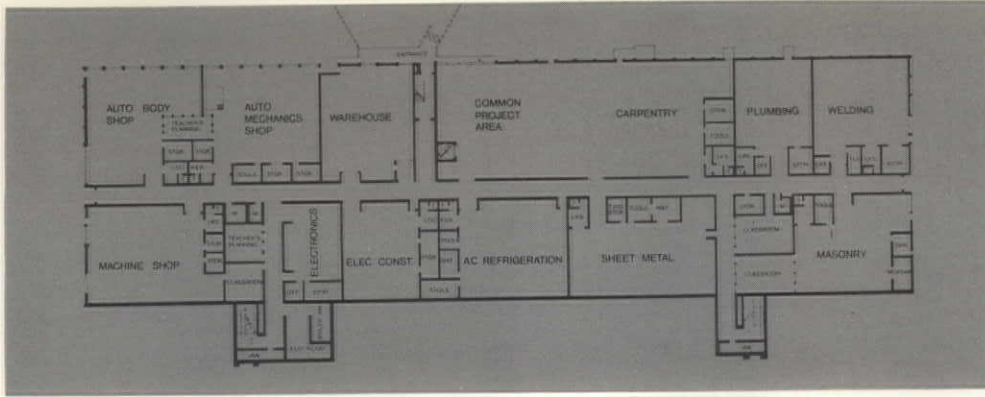
A current Educational Facilities Laboratories report on the subject profiles such facilities as the Human Resources Center in Pontiac, Michigan, Atlanta's John F. Kennedy School and Community Center, and also the various approaches

Mr. Graves is president of the Council of Educational Facility Planners, project director of Educational Facilities Laboratories, Inc., and a liaison member of the AIA Committee on Architecture for Education.



A school is combined with other activities in Atlanta's John F. Kennedy School and Community Center, which sees no age limits of its users, adds vitality to the city (John Portman & Associates).





A vocational learning space, which is usually a minor part of a high school, is in a structure all its own in the Career Studies Center, Washington County, Maryland (McLeod Ferrara Ensign).



used in Arlington, Virginia. The difficulty facing the author, Larry Molloy, as he tried to finish his manuscript, was that he was constantly discovering other communities exploring the possibilities even further: Why not include the private as well as the public sector? Other communities, among them Kalamazoo, Michigan, are looking at "Old Central" high school, often centrally located geographically but no longer needed because of shifts in location of school-age population. These well-constructed buildings with life still left in them are often on public transportation lines. The space is there to be converted for community center use.

Mini modernizations. A trend which appears to be growing is the remodeling of four to six classrooms at a time as open pods, permitting alternative approaches to education within what started as a traditional building. Several districts which



A multiactivity center is nestled under an air-supported membrane resting on a sloping concrete wall assembly at the Charles Wright Academy at Tacoma, Washington (Donald F. Burr & Associates).

are involved in such planning retain an architect on a continuing basis and, following his advice, use the district maintenance crews for small projects, eliminating the necessity for bond issues. The architect is able to look at the small project as part of the district's overall plan, lessening chances of haphazard modernizations.

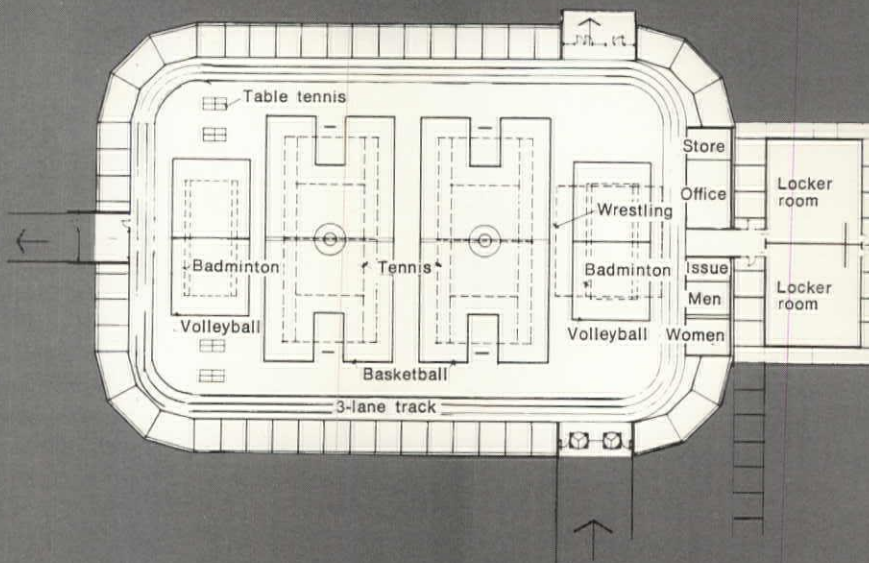
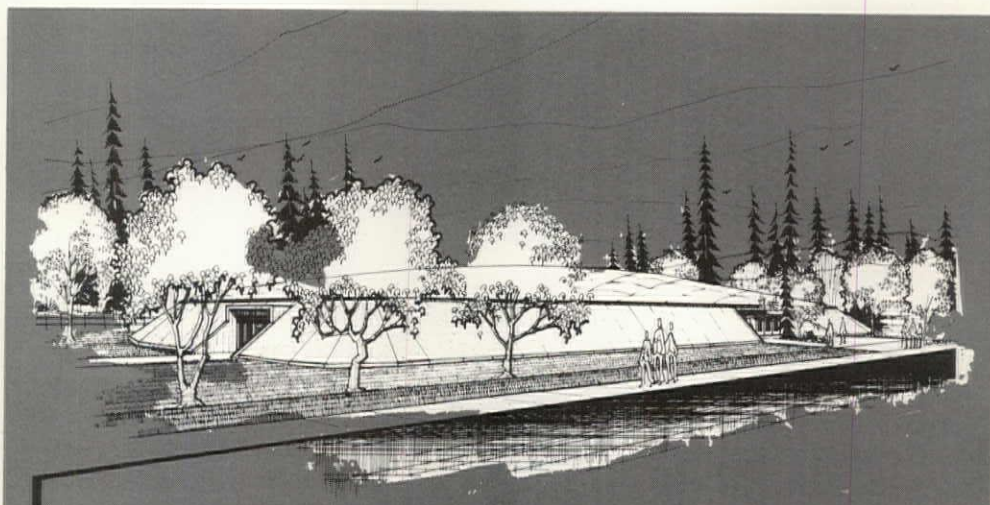
Career education facilities. These are coming more and more to the forefront as we realize that the need for college education has been exaggerated in the immediate past decades. In the 1970s and '80s, the Department of Labor predicts, only 20 percent of all jobs in the US will require bachelor's degrees. It is the facilities that meet the needs of the other 80 percent, then, that we're talking about. They could also be called vocational or skill centers.

Often, vocational education programs are conducted in the high schools. A community often has to duplicate expensive equipment while still not providing a full range of programs to its students. A career center, on the other hand, can offer a full scale of programs, and the equipment can be shared by students from more than one program.

Leslie D. Tincknell, AIA, a member of The American Institute of Architects' Committee on Architecture for Education, holds that during the next eight to ten years "projections will require plans to spend between \$400 million and \$600 million (state, local and federal) for the constructing and equipping of career or skill facilities." Tincknell is one among a team of architects who has undertaken studies on Michigan's career education program. Their reports will be published this year by the Council of Educational Facility Planners, International.

Recreational facilities. "... the sports facility should never become one of the traditional 'temples of sweat' operated at enormous cost for the benefit of a few talented people for a short season of the year." This statement sets the direction of a new EFL publication, *Physical Recreation Facilities*, in which the editor, Richard Thiebert, gives a roundup of what is or could be happening as an alternative.

Air structures are making an impact with all kinds of activities and are finding



a home. One school in Tacoma, Washington, is planning to build an air structure to enclose a sports arena that would also provide the right type of environment for learning activities, conferences, etc.

The community school concept mentioned will influence the design of many recreational facilities. One example is the Thomas Jefferson Junior High School and Community Center in Arlington, Virginia,

where areas for performing arts, recreation and physical education are jointly built and operated (6 AM to midnight) by the county's department of recreation and the school board.

Special facilities. Rather than look upon the decreases in new educational facilities as a problem, many consider it an opportunity. Now that we have some "breathing time," many districts are

A 1927 model, Southern Junior High School in Louisville, is made contemporary by renovating, remodeling and increasing space (Design Environment Group Architects Incorporated).



instituting programs that had to wait while we caught up with the need for seats. These can range from the new Disney Magnet School in Chicago to New Orleans, where authorities are looking to a no-longer needed elementary school just off the French Quarter as a creative arts center. The principle is the same for both: In Chicago, elementary children from all over the city are scheduled to Disney for an enrichment experience in communication arts; in New Orleans, high school students identified as outstanding will leave their home base schools for special programs in art, drama, music and dance, including related fields such as set and costume design, lighting, etc.

These are but two such programs, both typical of the bold thinking by forward-looking educators.

Did you design college dormitories or residence halls during the college housing building boom? If so, you can probably make a career of going back and remodeling them to suit the changing lifestyles of today's students. Faced with half-empty



dorms and with a mortgage agreement based on 90 percent occupancy, administrators are open to redesign concepts to lure back the users.

The preservation of old buildings is becoming increasingly popular with the general public. Education could be a prime element in saving some of our landmarks. In Austin, the University of Texas restored a no-longer used courthouse and federal building to its headquarters. In New Jersey, the Brookdale Community College is happily ensconced in what used to be two big barns. And Southern Junior High Addition in Louisville, a drab but sound structure from 1927, has been turned into a dramatic, functional building suited for youngsters of the 1970s.

Old railroad stations are coming into their own now that we realize that they





Two old horse barns house the administration offices and various academic activities and also inspire the design of new buildings at Brookdale Community College near Lincroft, New Jersey (The Shaver Partnership; The Office of B. Kellenyi, associated architects).



are fast disappearing from the scene. In Baltimore, Maryland Institute's College of Art put its sculpture and art studio into an abandoned train station. Indianapolis, Cincinnati and other cities are studying ways to make these architectural gems useful again.

At the NECON V (National Exposition of Contract Interior Furnishings) sessions at Chicago's Merchandise Mart this past summer, more than 200 persons showed up at 8:30 AM for a seminar on the "Creative Reuse of the Railroad Station," which is just another indication of the present concern for recycling our assets.

Then there are the areas of facilities for the handicapped, living/learning colleges within the larger university, the early childhood education. Many of these were discussed in the AIA JOURNAL article,

"The Inspired Learning Space," in February 1972.

So in all, there's still vital activity in the educational facilities field. West Virginia currently has some \$200 million in funds earmarked to assist districts in upgrading educational facilities. In Illinois, a bill authorizing \$400 million in state-administered funds for construction has just been signed into law. Other states, including New Jersey, New York and Florida, are reportedly contemplating similar legislation. And the Maryland experience of state funding for all school construction is being studied by many other states. Combined with the changing ways of funding educational facilities, the changing forms these facilities take mean that the architect will have to change his concept of the learning place. □

Look Who's Under the Same Roof Now

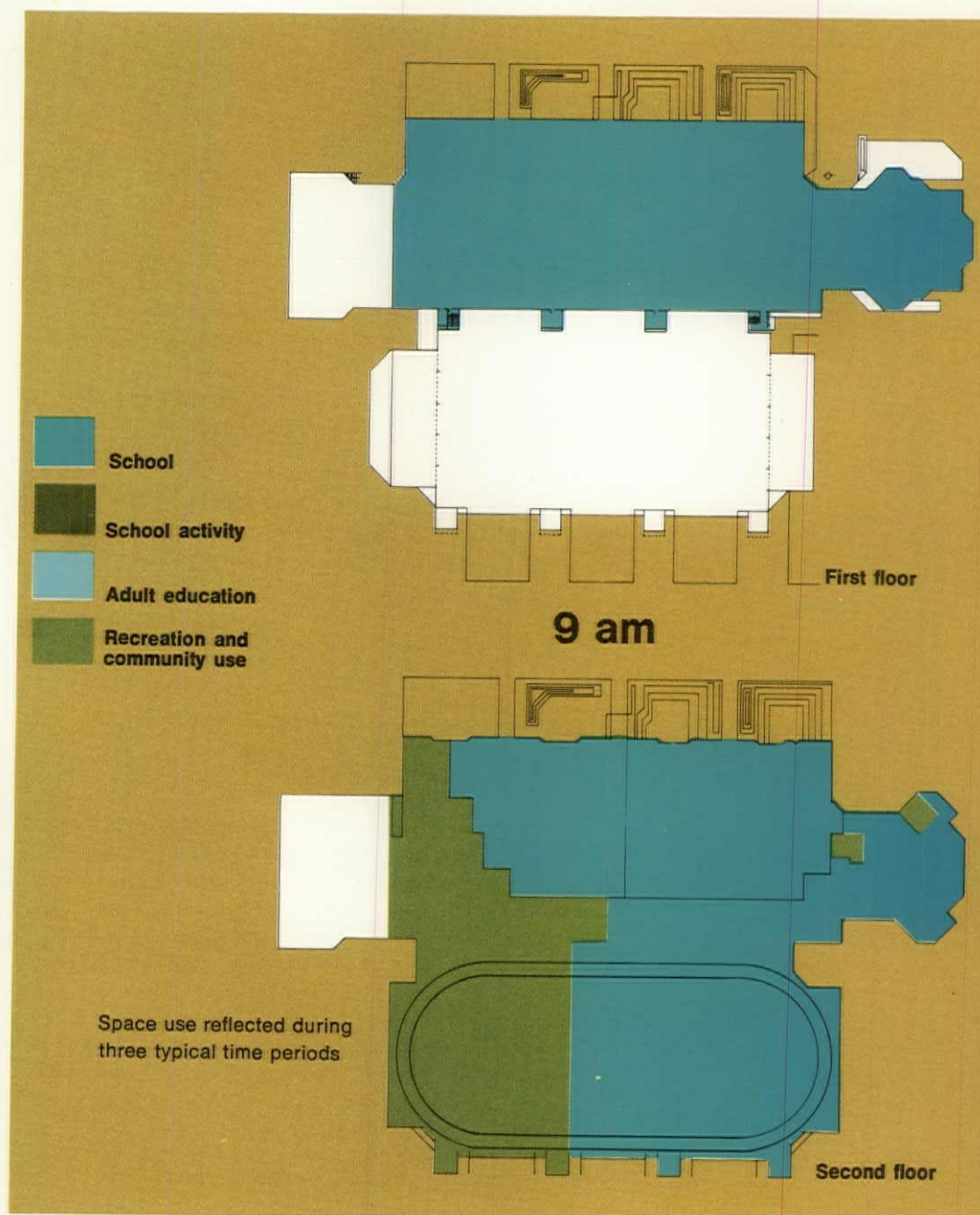
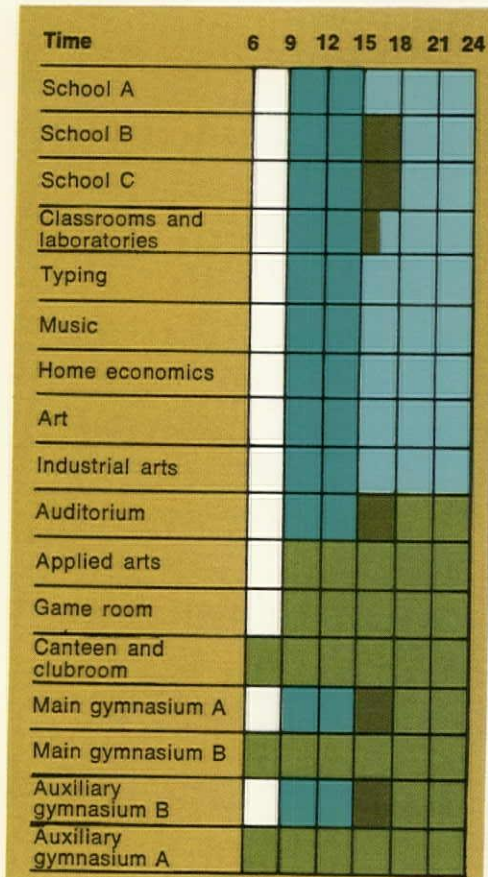
Alan C. Green

Many critics of contemporary American society deplore its high degree of compartmentalization and specialization. We have created, so say the critics, neat niches, reinforced by our institutions and political organizations, into which we sort people by criteria such as age, socioeconomic status, educational background, social service requirements and family status.

From whatever your special viewpoint, this compartmentalization is there if you look for it. From a physical planning view, it results in political organizations and institutions which provide education and social services, each with its own separate place of business: firehouses, town halls, schools, libraries, adult and children's centers, playgrounds, health centers, vocational centers and jails.

In my own suburban community of

Mr. Green is secretary and treasurer of Educational Facilities Laboratories, Inc., New York City.



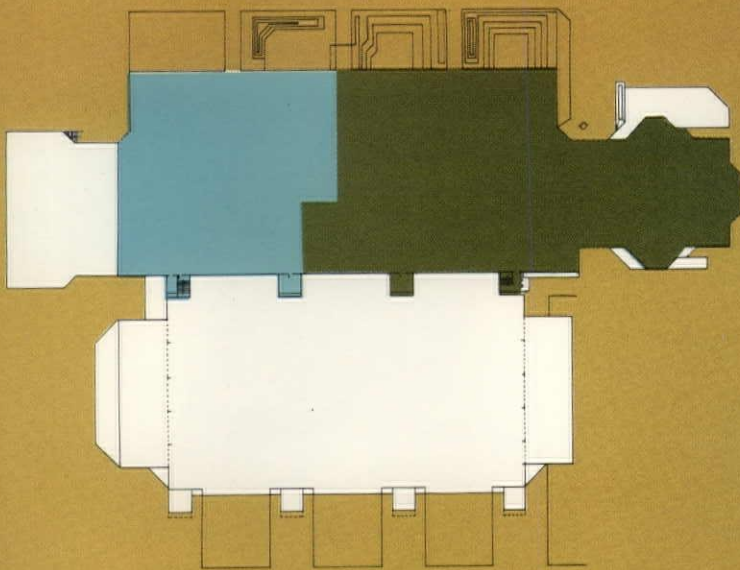
12,000, the school district operates the schools; the town provides for recreation; the village has its own public library; the county delivers health and related services; and private organizations cater to the needs of the very young and the elderly. Together a rich mix of services is provided but the places are separate and distinct and I, as a taxpayer, eventually pay my share of each, as fragmented and inefficient as it all may be. Such institu-

tional territorial imperatives seem characteristic of our cities and towns.

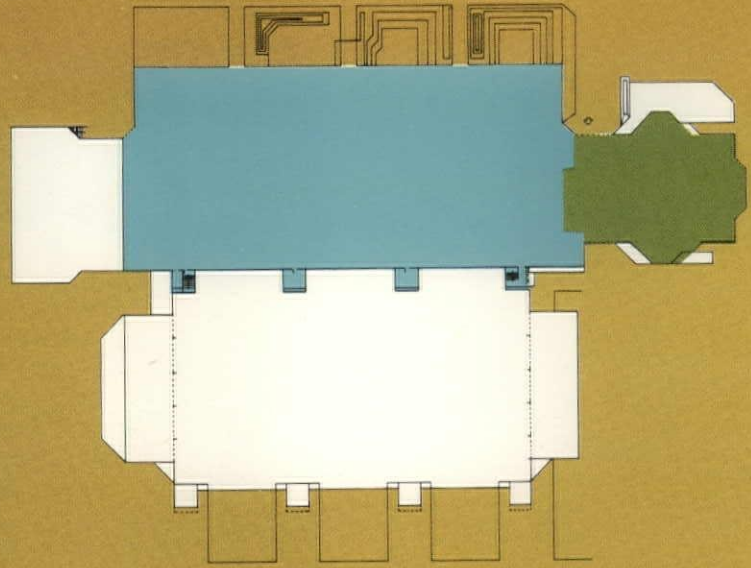
Many people say that we should reconnect our organizations and institutions at the local level, integrate and coordinate rather than separate and duplicate. Some say that this is a more reasonable way to provide humane, responsible services. Others say it is sociologically healthy for the young to deal with the elderly, for the technically skilled to deal with the pro-

Why close the school when the last bell rings and leave it forbidding and dark the major part of its existence? Sharing the facility with other groups makes economic sense and brings more life to a school and its surroundings.

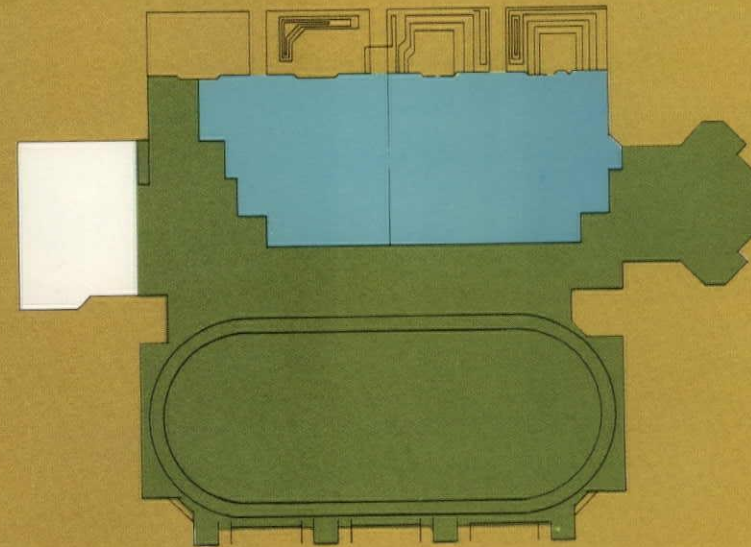
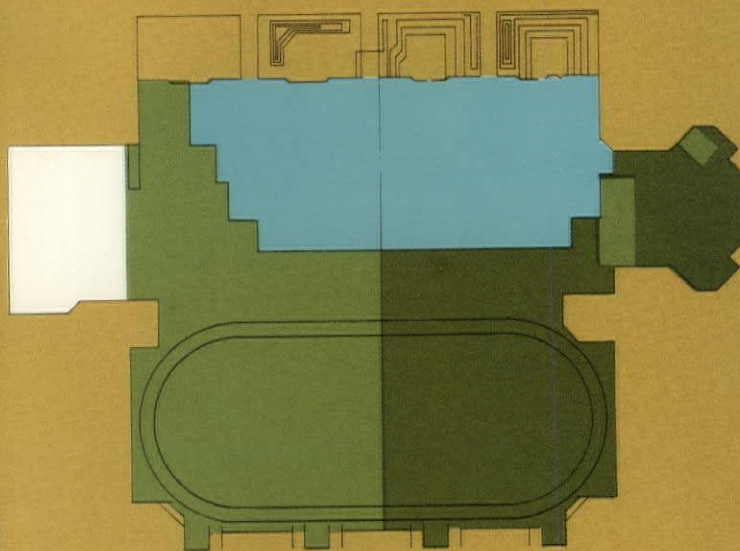
Around the clock, preschoolers and senior citizens use the Thomas Jefferson Junior High School and Community Center in Arlington, Virginia (Vosbeck Vosbeck Kendrick Redinger).



4 pm



9 pm



fessional, for the housewife to deal with the businessman. And others say we must reconnect because we cannot afford the inefficiencies and costs of not doing so; we cannot afford the costs of owning and operating separate buildings with the inherent duplication of facilities, inefficient use of land and overlapping services. Since education and other social services require an ever-increasing share of the gross national product, the day may well

be coming when the citizen demands more efficient use of public resources and facilities.

I see some evidence that we are making the connections and that schools and colleges are taking the initiative in seeking new partners and new arrangements. Sometimes these arrangements are sought to provide more varied opportunities for the users—because they may be more fun—and sometimes because they are

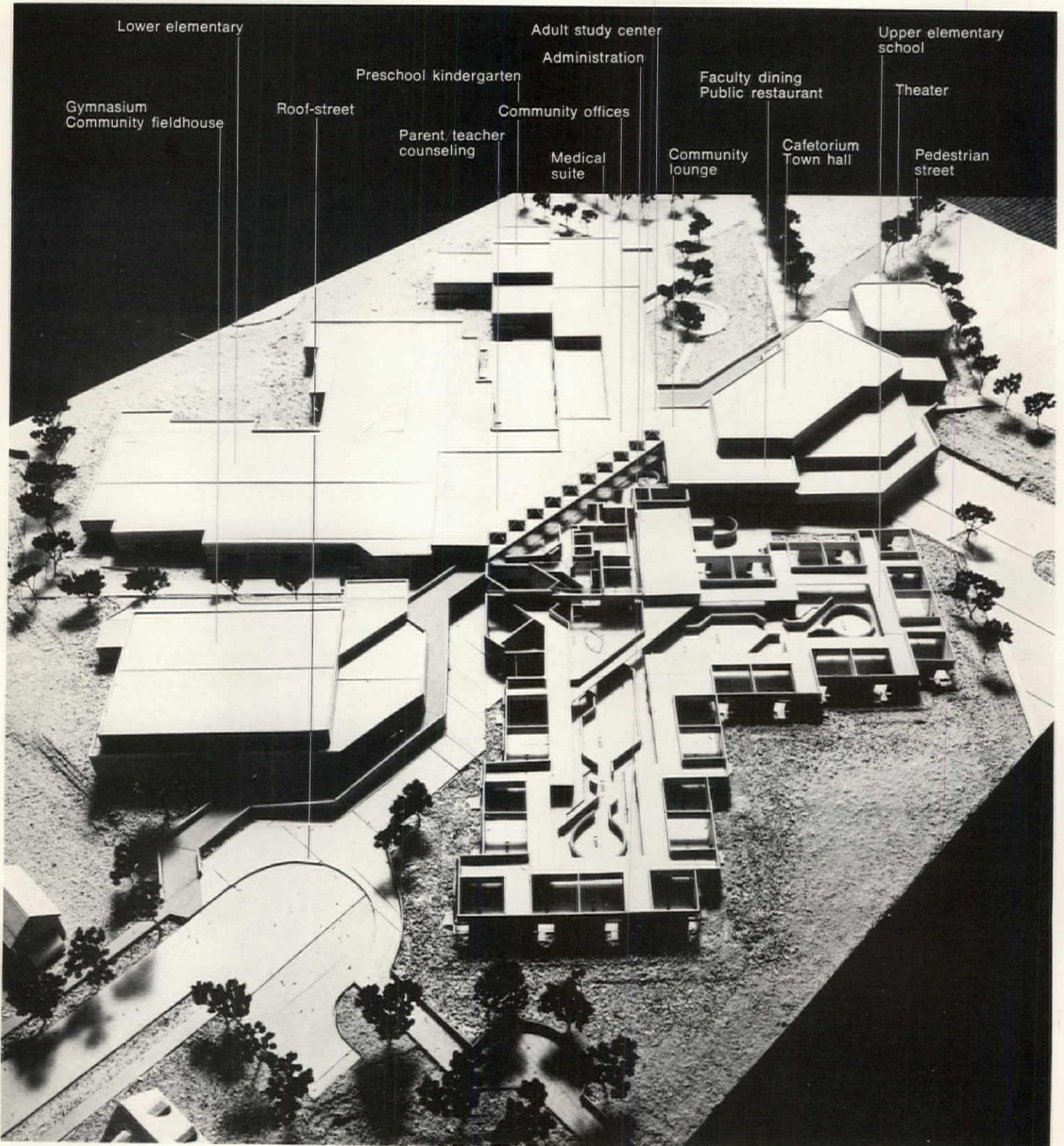
more efficient and more profitable. In all cases they have important implications for planning, financing and operating educational buildings.

The following types of arrangements seem to be emerging:

Using excess school and college space for community purposes. It is not unusual for school districts to lease (or charge a nominal service fee for) auditoriums, gymnasiums, theaters and shops to other

In the middle of Pontiac, Michigan, with a pedestrian roof-street linking business core and neighborhoods, is the Human Resources Center, funded by city, state, board of education, private foundations and HUD.

The center houses students of all ages and, among other agencies, the Michigan Employment Securities Commission dealing with the disadvantaged; Pontiac Youth Assistance Agency; and Center for the Education of Returning Veterans (Urban Design Associates; O'Dell, Hewlett & Luckenbach, Inc., associate architects).



In downtown Philadelphia, Friends Select School leases one-third of its site, which was once the play area, to a company which built an office tower there.

This arrangement has enabled Friends to stay in its old location and to double its former space in a new facility. The play area is now on the roof (Mirick Pearson Ilvonen Batcheler).

public, nonprofit agencies when not needed for school use. In fact, the commonly held definition of community school is really just that: opening the school to community uses during off hours. More and more, school districts are encouraging such use of their real estate, actually marketing space. And they are finding ways of getting around such bothersome details as janitorial services and liability insurance, which have plagued community use in the past.

There are also schools intentionally designed to provide facilities that will be attractive for community use. When Mount Olive, New Jersey, and Portsmouth, Virginia, built new high schools, auditorium/theaters were specially designed to meet the nonschool use projected by local theater interests.

A recent phenomenon has accelerated nonschool use of schools. With school enrollments leveling off (in some communities rapidly declining), some schools have excess space. Planning is underway to convert this for use as branch public libraries, day care centers, community arts centers and drop-in or day centers for the elderly. While some view the shrinkage of school districts with alarm, others view it as a rare opportunity to bring into the school related social services now inadequately housed elsewhere. An added benefit is that such arrangements can foster community support of education by encouraging day-to-day contact among elements of the community who otherwise have little contact with the school system.

This idea also holds promise for higher education. A number of colleges and universities with excess college housing caused by declining occupancy rates have opened up dormitories for other purposes. Mankato State College in Minnesota has converted part of a dormitory into a children's day care center and is looking at other surplus space to lease as housing for the elderly and nursing homes.

Building extra space in order to provide room for other services. In some locations, school districts have building programs which include space for other public agencies, based on the conviction that the proximity and interchange of multiple community programs and services is edu-

cationally sound and sociologically productive. The school district becomes a public landlord and provides the needed facilities when they are inadequate or nonexistent in the community.

The John F. Kennedy School and Community Center in Atlanta is one such example. A new middle school was needed but the Nash-Washington community also lacked some other services. The JFK center houses a middle school and also provides for the recreation department, a day care center, branches of the Atlanta housing office and Social Security Administration as well as a dozen other agencies. Through the school system's leadership, a "little city hall" places a variety of services at the community level. Administratively, the school is run by the principal, the community services by a community director. Asked how he would measure its success as a community center, the director noted that several weddings took place at the center within the first few months of its opening (plan on p. 20).

Another variation on the theme is the Human Resources Center in Pontiac,

Michigan. There, funds from other government agencies helped cover the costs of the extra community facilities.

The new town of Gananda in upstate New York has taken the school-as-community-center approach from the outset of planning its neighborhood and town centers. However, rather than the school district being the responsible party, a public facilities authority will plan, finance, build and operate facilities that in turn will be leased by the school district, the local health department, the recreation commission and other local agencies. The motivations were improved planning for social activities through coordinated delivery, and savings through sharing space and time as well as from operating and program costs.

Providing for education and social services through cooperative building ventures. Some school districts build and operate educational space on a joint venture basis. Public funds from two or more agencies are put together, planning is done cooperatively, and the building is managed and used cooperatively. Clearly,



The multiuse Human Resources Development Center in Northwest Hamilton County, Tennessee, gives each participating agency more building for less cost.

The second level holds a vocational training school, adult programs and reading spaces, a civic and cultural section; on other floors are youth programs, child development and special education (James Franklin).

part of the motivation is the integration of education with other social services, but there can also be large savings of capital and operating costs.

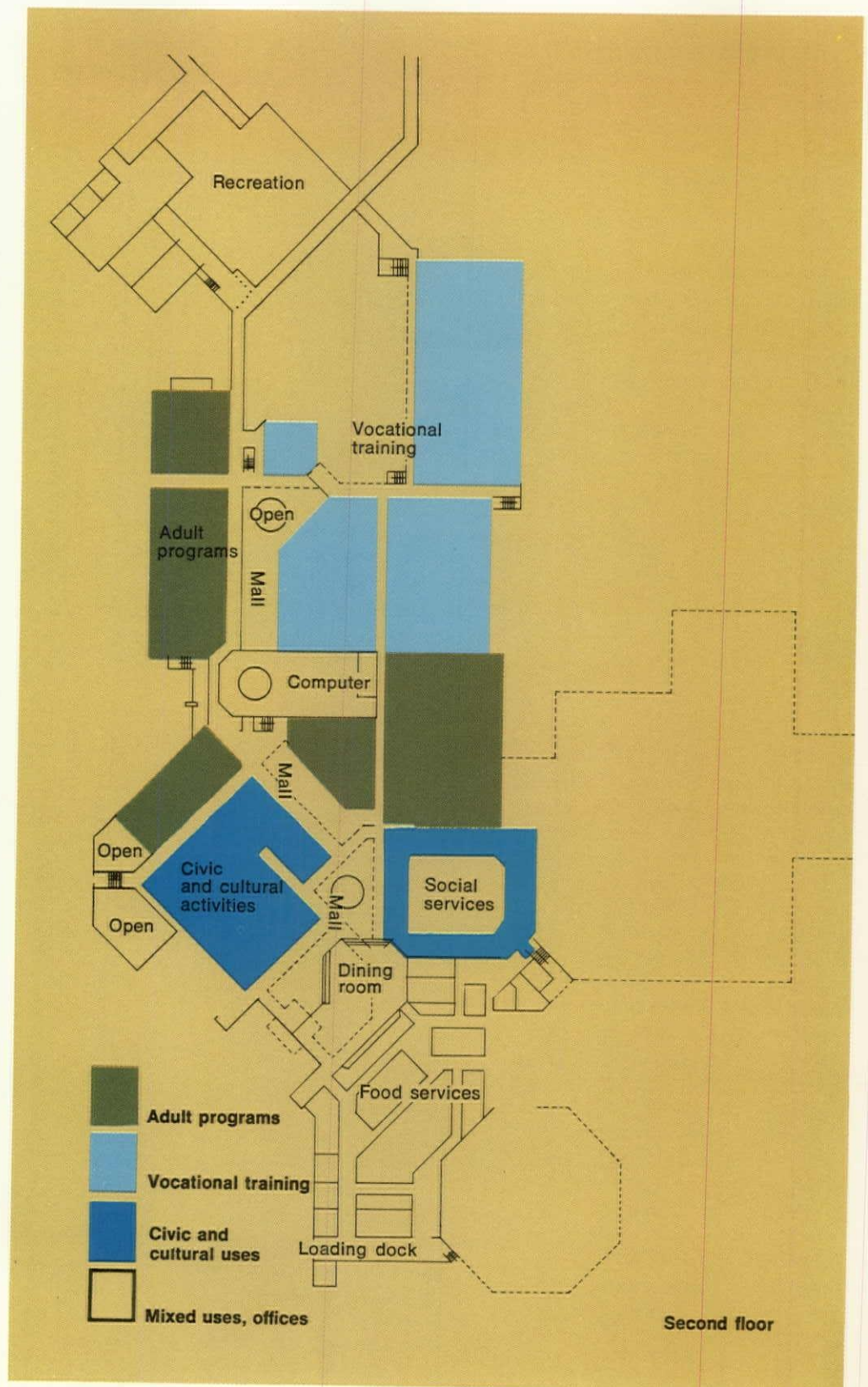
Considering auditoriums, gymnasiums, administrative offices, kitchen and dining facilities as well as building services, it is possible for two or more agencies to build in concert a larger total entity at less cost than if each of them went to independent sites and developed independent facilities. The Thomas Jefferson Junior High School and Community Center in Arlington, Virginia, is one example. Another is a center now in the planning stages which will serve varied social and educational needs of Hamilton County, Tennessee.

Such combinations offer opportunities for capital funding from local, state and federal agencies—funds that would not have been available were the buildings to be used solely by the school districts for conventional education.

Joining schools and housing or commercial enterprises. When land is scarce and has income-producing opportunities, it makes sense for schools to join with other agencies to develop joint occupancy facilities and sites. In some instances, a part of the site is leased for commercial development or housing. The income produced helps retire a portion of the construction debt of the educational facilities. The Friends School in Philadelphia leased a share of its site to a private corporation for an office building; several colleges with excess land have leased portions for commercial development. These are primarily financing strategies; additional benefits may be work-study opportunities, student housing and auxiliary services such as bookstores and food services.

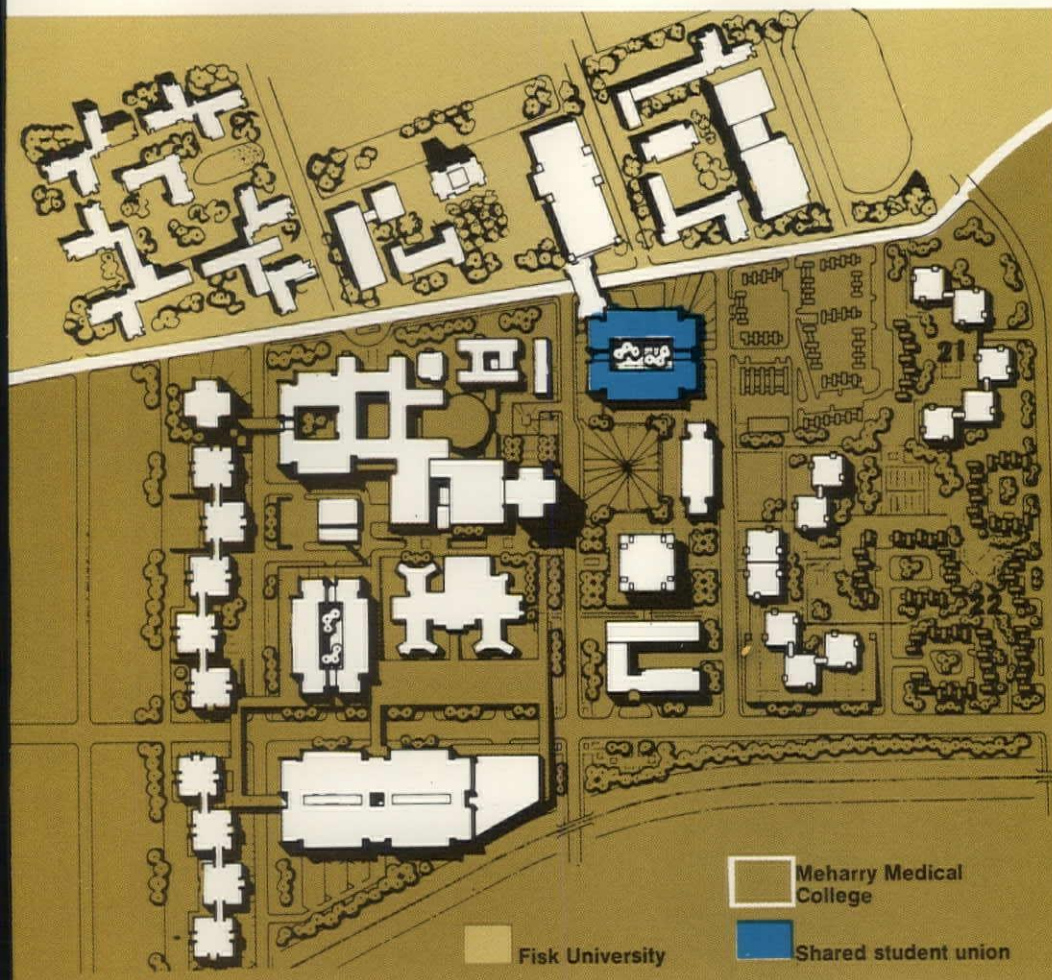
Then there is the leasing of air rights above a school. The income thus generated again helps with the costs of construction. This is the rationale behind the legislation creating the New York City Educational Construction Fund. The high cost and scarcity of land in New York City are strong motivations for the fund's various joint occupancy projects: schools/housing, schools/commercial and schools/business space.

Joining with educational partners. Especially among colleges and universi-



The advantages of joint occupancy are taken into account in campus development for Meharry Medical College, Nashville. Adjacent is Fisk University, which will share a student union with Meharry. A skywalk will bridge the street (Robert & Company Associates).

The architect is greatly challenged when it comes to designing schools for shared occupancy: He must watch out against complexes that are formidable to the user and insensitive to human scale.



ties, finding educational partners for joint planning and construction is more and more being seriously considered. When Meharry Medical College and Fisk University, across the street from one another in Nashville, each began to plan student unions, it became apparent that there might be great advantages if the two institutions developed a joint student center. This could offer a wider range of services and provide a place for students from both institutions to mix, and conceivably also save each institution some capital and operating costs.

A similar planning effort involves the Hudson-Mohawk Association of Colleges and Universities in upstate New York. Plans call for a central, joint library for little-used reference materials owned by the cooperating institutions, thereby opening space in the existing libraries on the various campuses. Groups of private

schools are discussing similar approaches for the development of shared facilities, an initial motivation being financial, a second being the strengthening of consortia and joint program offerings.

Planning for students and the community. Especially in higher education, several institutions may join with the local community and together develop joint-use facilities. The Worcester Consortium for Higher Education, Massachusetts, is planning housing open to students from all 11 institutions, and this will also be available to the community at large. Planning, funding and financing will be a joint consortium/community effort.

It is not difficult to imagine shared college-community centers for day care, health, arts and recreation. The latter is a major reason for a link planned between the campuses of William Woods and Westminster College in Fulton, Missouri.

That link will contain sports and recreation facilities not only used by the two colleges but also by the Fulton community at large. The community will also partly fund the project.

If there are problems planning a single, freestanding educational building, the complications arising from the planning of partnership places can be far greater. For one, the planners must work with conglomerate clients and constituencies, not just the school board, the school administration, the teachers and the local citizens. A variety of other boards will be involved as well as legislative bodies and special interest groups. Shared use requires careful procedural, financial and political planning in order even to reach the point when some architectural planning can take place. The process may seem extremely complex, time consuming, and fraught with insolvable legal, financial and jurisdictional issues. But the architect will be squarely in the midst of a vital and lively experience.

It is imperative in designing shared places that facilities management and operation strategies be planned at the same time. The issues of who turns on the lights, who pays the electrical bill and who arbitrates the disputes over the use of space must all be worked out in advance to insure effective use.

To me, the great challenge lies in the environmental design role to be played by the architect. We may get so caught up in the financial and political planning, in the preparation of treaties and involvement of all constituencies that we fail in the very sensitive problems of architectural design. One of the principal reasons for finding partners is that we will get more effective ways of delivering education and social services, along with a melding of age groups and interest groups. Much of the advantage can be lost by large, complicated complexes insensitive to human scale, difficult to comprehend and formidable to the users.

If just a few such monolithic structures come about, there will be a retreat to known ground, to separate places for separate institutions. Lost will be the opportunities for reconnecting by finding partners for fun and profit. □

Where People Move, Schools Must Follow

Evans Clinchy

Since the early days of the modern new town movement in Great Britain, the new community has been thought of as a unique opportunity to develop and to test unusual approaches to solving the problems of urban living. The new town is seen as a chance to create, under comparatively controlled conditions, what English planner Frederic J. Osborne has called "a good piece of apparatus for civilized living."

A fashionable term for a new town is "urban laboratory," a place where a serious attempt is made to develop a community that will somehow work for all kinds of people, a place in which the rewards of urban life are enhanced and the unpleasant aspects are kept under reasonable control.

Clearly, the educational system of a new town might or should, within certain limits, be a "new" educational system; therefore, it is important that the new town not pass up the opportunity to explore, and perhaps develop, different approaches to education. New approaches are rather desperately needed because the existing American educational system is under considerable financial, philosophical and physical strain. We need to invent more widely accepted and more productive ways of educating people—not just in new towns but in old ones as well. If new town educational systems are going to serve the urban laboratory function successfully, whatever is developed for them must work also for existing city systems.

There are other reasons why educators, federal officials, policy makers, real estate developers and planners — and just plain people — should be worried about new towns and their educational systems. So far the path toward developing new educational systems in new towns

has been quite rocky. The sudden imposition of a new town on an already settled area and an existing school district causes enormous problems, not only for the local people but for developers and planners as well.

The problems are legion. How are the large numbers of new town children to be accommodated? Who pays for the educational space, the program and the teachers? Who does the planning? The local school people? The developers? Both together? How is a workable educational system that is really new and/or different planned and created? How are people persuaded that there is reason for change? What kind of change? How is an educational system that works for children (and parents) of all income groups and all races provided? What does it mean to create a more "productive" school



system, and how is productivity measured? Are there ways to save money? Will new technology help?

These are only a few of the educational problems that the new town movement faces. We do not know what the ultimate solutions may be, but it is clear that both school people and new community plan-

ners need a range of possible solutions, a series of options that they may or may not want to try out in their particular communities.

Every American educational system, small or large, rural or urban, is in the grip of a severe financial crisis. Many big city systems are close to bankruptcy. They can pay neither their current bills nor their long-term debts. Some have been forced to close their doors before the school year is over. Almost every school system faces the taxpayer's revolt in some form. If this appears to be the case in most of the existing, conventionally organized and operated school systems, what then is liable to happen to a new town educational system if it proceeds to finance, organize and operate itself according to the existing, conventional ways?

The long-term financial success of new towns will be severely jeopardized, if not actually ruined, if these problems are not faced and solved in the early planning stages. The problems connected with financing education in new communities and developing ways of handling a diverse school population are really only two parts of a much larger problem: How does one sensibly go about planning such a new educational system anyway?

Everyone interested in seeing the new towns movement succeed agrees that new towns should be an unparalleled opportunity to devise and test out better ways of educating human beings of every age. All well and good, but what does this really mean? Is it possible?

The first fact that has to be faced is that imaginative planning and experimentation are not natural devices already built into the American educational system. As a nation we have unconsciously but quite effectively created for ourselves an educational structure that finds change difficult, a structure in which change is almost always the exception and rarely the rule. Neither the big city nor the suburban school systems have yet figured out workable ways of making change a normal part of the day-to-day operations. Where research and development offices do exist, most of them devote their time to gathering and processing statistical

Mr. Clinchy is president of Educational Planning Associates in Boston and director of the Education in New Communities Project, a joint effort of Educational Facilities Laboratories Inc. and the US Office of Education. So far the project has produced three working papers on various aspects of planning educational systems for new towns. This article is a condensation of Working Paper No. 1.



The paths toward school systems in new towns in America have so far been rocky. The sudden imposition of a new community on an already settled area and an existing school district causes enormous problems.

information and "evaluating" what is going on, i.e., giving tests and publishing the results. Where a school system does operate experimental programs, there is rarely any built-in way for successful experiments to be transferred into common practice in other parts of the system.

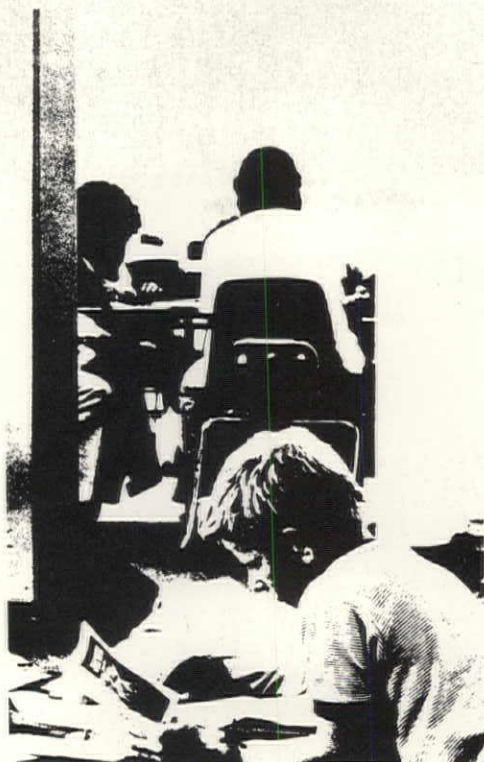
In some new towns, a local district's entire school administrative staff may consist of the superintendent, perhaps two or three assistants and a few secretaries. Planning or thinking ahead will consist of keeping track of enrollments, making crude projections and trying to get conventional schools built where they are going to be needed approximately when they are needed. No one has time — and certainly no one has money — to do more.

New town developers, on the other hand, are by nature planners. The entire new town movement and the clear thrust of Title VII of the Housing and Urban Development Act of 1970 is toward comprehensive and innovative urban planning, toward establishing rational control over the use of land, toward maintaining a habitable environment and toward creating more humane social conditions than those which exist in many of our present cities and towns. Most new town developers, being basically real estate entrepreneurs, have experience in planning the physical aspects of new communities — housing, roads, commercial facilities, recreational areas, etc. — but they do not have experience in planning the social environment — the educational and health systems, for example. In fact, very few people, including learned consultants, know how to plan a social environment that is really going to work. Everyone is trying, but there are certainly no firm answers.

We have no firm answers in the field of education, but every developer has an educational plan of some kind. Indeed, Title VII developers are required to have an educational plan. The quality of these plans varies widely depending upon the personal inclinations and interests of the developer. He may or may not have an educational planner on his staff. He may or may not hire educational consultants. Most often, he seems to employ a general

"social" planner or consulting firm to handle educational planning along with health, governance, communications, community associations, etc. Many a developer who will hire a special consultant to design a golf course, for example, will not use a specialist to plan an educational system, even if he could find one who grasps the problem.

If the developer proposes to seek Title VII loan guarantees, he knows that he has to come up with an educational plan. Even a casual glance at the approved



Title VII projects shows that, on the whole, there is enormous variation in the quality of the educational planning that has been found "acceptable." The variation runs from no educational thinking at all to highly sophisticated plans that probably have little chance of ever becoming reality.

In part, this general lack of careful, detailed planning can be ascribed to naiveté on the part of the real estate entrepreneur. Most of it can be chalked up to those hard facts of the American educational system. Even if the developer wants an adventurous school system and is willing to support his side of the plan-

ning, it still takes two to make a marriage. If the local school district has no planning capacity and little eagerness to get into thinking, planning and experimentation, then the developer, in most cases, is relatively powerless. This situation is not at all helped by the near total absence of federal and state financial assistance to either the developer or to the local school district.

The actual range of experience and quality can be very roughly divided into three categories:

1. *The "Let's continue the way we are" response.* This is probably the most common and immediate reaction in new communities, especially the non-Title VII variety. It may be unfair to categorize this approach as no planning at all since it usually consists of setting aside specific sites for elementary, middle and high schools within the general land use plan. In most cases, the district has been informed that the new community is coming and is given the projected needs for school space, etc. At the very least, the developer agrees to sell the land to the school district at the original cost. Thus there is no profit to the developer, and there are minimally good public relations.

In increasing numbers, the developer donates the land to the school system, thus reaping a greater number of public relations credits with the local people. In a few instances, planning has been carried to the point of beginning to think of school playing fields as part of the open space and recreation program — thus the developer gets open space credits. There may be talk of school children using the community recreation facilities during the day and adults using the school at night, but that is about where the planning ends. In most of these instances, the actual planning, construction, operation and paying for the schools is left in the hands of the local school district.

This approach, in a sense, is that of least resistance so far as the developer is concerned, but it raises some tough questions, both financial and educational. From a financial point of view, it assumes that the local school district can afford to plan, build, staff and operate all those schools and have them ready in time for

To whom does a new town school belong, to the town or the county board of education? Who does the planning? Who pays for the educational space, the program and the teachers?

all of the children as they move into a new town. This is by no means a sure thing and is probably impossible in the early years of a new town when the town is not producing sufficient tax revenue to pay its educational way.

If the developer assumes that those schools somehow will be there when the new town opens and they do not appear, what does he say to the people who have bought his houses? What does he say in five years or so to the people who are thinking of buying houses in the new town only to find that there are no schools? Not many parents are going to buy houses in a new town if their children have to be bused out to overcrowded, ancient schools in nearby towns. To some extent, this is what is happening in Reston, Virginia, where the building of schools is lagging seriously behind hopes and expectations. Most of Reston's children are being bused to existing spaces in schools outside the new town. The developers do not believe that this increasingly difficult school situation is going to limit or destroy the growth of Reston. They reason that the situation applies to the whole county. In spite of its educational difficulties, they surmise, Reston will survive on the merits of its remaining new town amenities. It is, one supposes, possible, but one surely wonders. And one wonders whether there is not some better, more adaptive way to go about planning for the long-range survival of school systems in new towns.

2. *The "We'll plan the perfect school system for you" response.* For all those developers who take the "new" in new towns seriously, this is a most appealing approach. After all, one mission of the new town movement is to break new ground, so to speak, to discover, if possible, better ways for people to live. If no new and better ways seem to exist, the least a new town planner can do is to make sure that his community has the best that is available from what already exists. The concerned and imaginative developer believes that it is his duty to see that the "best" comes to pass in his new town.

There are, of course, limits to how "new" the schools can be. The developer



knows that there are marketing limits on schools just as there are on housing, even though the people he hopes to attract may be more adventurous than the existing population. If the school system he proposes is too advanced, too "far out," it may turn prospective buyers away.

The developer's first impulse, in some cases, has been to call in a group of "the best minds there are" to think about what the new town environment should be. This almost always includes "the best minds" in education, who come to "blue sky" about what the perfect school system might be.

Perhaps the classic example of this approach — at least in its earliest planning stages — is Columbia, Maryland. In 1963 James Rouse, the developer, brought together a panel of 14 experts from a variety of disciplines. They explored all of the possibilities within their various fields and ways in which there could be an overlap in the new town. It is not clear just what effect the thinking of this panel had on the eventual design of Columbia or its schools. Rouse has been quoted as saying that the \$100,000 spent in this fashion was "enormously worth it."

Christopher Jencks, then education editor of the *New Republic* and now on the

faculty of the Harvard Graduate School of Education, was the person selected to worry about schools. His position paper is full of arresting ideas, especially for 1963, but not many of them are in evidence in Columbia today. It would be unfair to imply that Jencks thought his job was to design the perfect school system, but certainly the experts were brought in so that the planners of Columbia could avail themselves of the "latest thinking" about what new ideas might be put into effect in the new town. The experts who followed Jencks may or may not have paid much attention to his report.

What is more important about the early Columbia example is that, by and large, the eventual planners (as opposed to the "blue sky" group) abandoned the "we'll plan the perfect school system for you" approach. They were forced by the realities of their situation to develop a third response, to wit:

3. *The "Let's take an innovative step together" response.* What the planners of Columbia discovered was that the future schools in the new town were not going to belong to Columbia but to the Howard County Board of Education. When the actual planners and the outside consultants began to work with the county school people, they discovered that the problem



The variation of plans for new town schools runs from no educational thinking at all to highly sophisticated schemes that probably have little chance of becoming reality.

was not primarily what the schools in Columbia would be like but what could be done with and for *all* of the schools in the county. It was only within this total context that anyone would think about what might happen in Columbia. The planners ran smack up against the non-golden rule of no special treatment.

The schools that now exist in Columbia itself are modern, open-space, team-teaching schools. The new Wilde Lake High School, for example, will probably be one of the most visited high schools in this country during the next few years. What is perhaps more important in Columbia's case is that all of the schools in

between the planners and the school people, nothing is going to happen at all.

There is, of course, a fourth approach to solving the educational planning problem:

4. *Become your own school district.*

Of all possible worlds, this is in many ways the best. Under these conditions, at least in theory, neither one's hands nor one's planning brains are tied by the constraints to dealing with an existing school board or, in a sense, a pre-existing set of voters.

Conditions that permit such a revolutionary approach are rare. Almost every new community has gone through an

ample that indicates that this is not likely to happen. The history of the Park Forest South/Crete Monee relationship shows an intense caution on the part of local people and a clash with the developer who desired to have a different, more "advanced" educational system.

The only place where such a secession is likely to happen is in thinly populated areas. Thus the Minnesota Experimental City, a state-supported, free-standing new community of 100,000 to be located somewhere in the wilds of Minnesota, will perhaps be its own school district. If the new town is located where there are few people and little land development, however, there will be only a small tax base. In turn, there will be small assessed evaluation against which to issue bonds or to tax for the operation of schools. The developers will have to raise the initial front money to build and operate schools until the new community can be economically self-sustaining.

There is an example of a new community that is its own school district. This is Gananda, a new town for 82,500 people, located 12 miles east of Rochester, New York. The developers obtained the consent of the two local school districts to carve out a separate Gananda district. The state legislature passed the bill. The new town also applied for permission to create the Gananda Educational Construction Fund, a nonprofit, public benefit corporation with bonding power and the specific mission to create joint occupancy multipurpose and multiuse educational, recreational, commercial, social, civic, religious, health and "personal enrichment" facilities.

The act would enable the new town to use capital bond money not just for construction but for leasing and/or renting of school space as well. This major breakthrough would permit the Gananda School District to lease its piece of any multiuse complex and to rent other community or commercial space only for the *specific times* when it is needed for school purposes. The rest of the time such space would be available to and paid for by other agencies in the new town. Unfortunately, this law has not yet been passed.

In this country we are just approaching



the county have been updated and transformed through the new town's presence and its countywide effort to get attractive schools for the new town.

Most of the successful examples of something unusual actually happening are cases where the planners and the school people have developed a sound working partnership. Such a team approach, however, does not necessarily guarantee success or insure that the resulting educational system will be radically new or better. There are several factors in the equation that are probably more important in creating real change than simple teamwork. Certainly the chances seem to be that without an honest partnership

early phase in which the developers and planners have imagined how wonderful it would be to carve out their own district.

In almost every case, reality has set in almost immediately. There is, first, the host of legal problems involved. Because education is a function of state government, setting up a new school district requires an act of the state legislature. In order to get a legislature to consider such an act, when most other parts of the state are still attempting to consolidate, the existing school district (or districts) would have to agree to secession. Park Forest South, a new town located 30 miles south of Chicago within the Crete-Monee Unified School District, is an ex-

In some new towns where money is not an agonizing problem there nevertheless has been little impetus to do things differently. There is much talk about open space and carpeted floors, little about better ways to spend the money.

the threshold of learning how to plan sensibly and imaginatively for educational systems in new communities. We are only beginning to find out what works, what kinds of planning can lead to the flexibility and inventiveness that are obviously required. It would be quite wrong to assume that the problems are not solvable and that new communities should, at this early stage, be eliminated as laboratories for the testing of new ideas. The more imaginative developers and their planners do not regard themselves as only high-class real estate money makers but rather as creators of those "urban laboratories." Of course, they do not plan to lose money on their new towns. Indeed, they genuinely seem to believe that innovation, a quality of being different and new, will help them sell their communities and thus, in the long run, guarantee profits far larger than conventional real estate development can produce.

Innovation is apparently a good thing—up to a point. Where developers have attempted to make attitudinal surveys of their potential customers, as at Flower Mound, Texas, and the Minnesota Experimental City, they have found an eagerness for "good" schools, but no consensus on what a "good" school is and no overwhelming desire for unusual or highly experimental schools. Therefore, it may be possible that a new town's educational system could be so different and innovative that it would repel rather than attract potential settlers. There does seem to be a kind of pioneering quality to many of the first settlers of new towns, but just how much newness and experimentation even these early pioneers will accept is not yet known since none of the existing new towns has offered—or been able to offer—any inhabitant the opportunity to choose a genuinely different alternative.

It is difficult to escape the impression that the lack of success to date in actually creating striking examples of new educational approaches is, at least in part, the result of the manner in which new town planners have gone about their planning. The so-called mistakes are not limited to the planners of new towns; they extend to all of us involved in any kind of educational planning, be it for new towns or old.



Indeed, those of us who have been involved in both kinds of planning are peculiarly aware of the difficulties.

First among the difficulties is that we have trouble dealing with the facts, with things as they are. Almost every new town so far—from Reston to Gananda—has gone through its "blue sky" planning period from whence quite elaborate and wonderful ideas emerge. Many of these ideas are quite relevant to the real problems facing new towns, but more often than not, the trouble is that deliberations take place in some cozy vacuum and are conducted by people who do not have the front-line responsibilities for translating words and ideas into practice.

Another difficulty is the lack of money. No matter how much we might all wish it were not so, there is a taxpayer's revolt against the escalating costs of education in all its forms. In part, this is due to our almost sole reliance on the real property tax, but whatever the causes, the fact remains that school bond issues are being turned down all over the country. Taxpayers are refusing to pass school operating budgets, even though inflating costs include no additional services of any kind.

It is possible that a revamping of the educational tax levy system will produce some improvements, at least for poorer school districts. Undoubtedly, the distribution of school money will be much more fair, but there is no reason to imagine that such a revamping will suddenly convince taxpayers to put more total money into education.

There is growing evidence to support the notion that more than a mere shortage of money is behind the taxpayer's revolt. As a nation we have always held the belief that education will cure almost any social or political disease, but the schools have come under increasing attacks for being rigid, permissive, monolithic, inhuman, irrelevant, boring, undemocratic, anti-black, anti-intellectual, anti-child and the last refuge of failures and incompetents. Whatever the truth may be, the taxpayer no longer sees the conventional education system as very successful or worthy of ever-increasing financial support.

For planners this presents a particularly

Could it be that affluence is the enemy of change? This question, of course, is no argument against anyone providing new town planners or local school districts with funds for thinking and planning.



unpleasant form of reality. The history of recent educational change has essentially been one of adding things to schools: more teachers, more curriculum specialists, more administrators, more space, more labs, more equipment, more books, etc. At the same time, teacher groups have had impressive victories at the bargaining table: higher salaries, lighter workloads, greater fringe benefits, etc.

We planners and reformers, meanwhile, have been very much a part of this general movement. Few of us have attempted reforms or planning that do not require more money. We spend money for the planning itself, for hiring experts and consultants, for new personnel and materials, for changing teachers' minds (we call it teacher "retraining"), for publicity (we call it "dissemination"). Almost always what we have invented ends up costing more than what went before.

Given this general situation, the single most difficult fact that planners are going to have to face in the planning of educational systems for new towns is simply this: *If it costs more, it probably isn't going to happen.* We have no examples of new town planning in which the new system clearly does not require a rise in the per pupil cost, nor do we have any examples of planning aimed at lowering the per pupil cost.

In addition to the rise in the cost of schooling, the recent history of educational change contains another central theme: Most change has been the work of outsiders. It rarely has risen spontaneously from within. There is a powerful argument that says change can only come from outside, and there is considerable evidence to suggest that no institution or field of inquiry has ever reformed itself. The sad fact is, however, that in most cases such "reforms" from the outside in are relatively minor, often short-lived and accomplish real change only in the long run as part of a much larger historical process. The educational scene is littered with the bones of hundreds of once warm and vibrant innovations which burst briefly on the scene only to die a few years later when the extra money ran out or the chief inventor and moving spirit of the reform got promoted or moved on to his next invention. In many cases, these deaths have occurred because the initial urge for change was not there to begin with but was imported from the outside.

In the case of new town educational planning, there appears to be a very real danger of planners arriving on the local scene with their heads full of inventions that they are eager to impose on both existing school people and parents and on the people who will be moving into the

new town. It is possible that the bones of the lovely inventions will soon be cluttering up the golf course, the pedestrian paths and tennis courts of the new town.

Another difficulty is that there is extra money now and then but far from always. Much educational change in this country has operated on the "incentive" theory that money is available (from federal, state or private sources) if people are willing to try something new. It is not a bad theory at all. Inventors, planners and school people are happy to take the money and run because money, after all, is money and because we sincerely believe that we will do good with it.



There is nothing wrong with the theory that such extra money should be used, if possible, to create change. The problem is, as always, what kind of change. Many new town planners are currently scouring the federal and foundation landscape for this kind of early planning or "seed" money. Indeed, the Title VII legislation has built into it a series of such incentive grants. A close reading of the proposals and early educational plans for new communities does not reveal any instances where the new educational systems depart substantially from the standard model of inventing additions, either in terms of cost or services, to the existing system. There is much talk about open space, carpeted and airconditioned schools, arts-centered curriculums, team teaching and even of "open" education, which in most cases is taken to mean the same thing as "open" space. What there is very little talk about is how to look closely at how the school system's money is being spent *now* and how better ways can be invented to use *that* money.

There is also the "crisis" theory which says that real change, real invention, can

But if it is true that simply planning for educational systems that replicate what we have now is essentially planning for more disaster, then it may not make much difference whether school districts receive planning funds or not.

only have one mother: necessity. One of the most significant changes in Western educational practice in recent years has been the growth of the British primary or infant school movement, variously referred to as "open" education, the integrated day, "developmental" education, etc. This change, which began during World War II, did not come about because people were critical of the existing schools or because there was a strong theoretical base on which to build. It came about because large number of British children were evacuated from the cities to escape the bombing and the disruption of war. Traditional age groupings and conventional teaching methods could not handle classes of 45 children of widely varying ages, with many of the classes held in bomb shelters. Teachers began to discover that students could direct their own education in ways far beyond anything teachers had believed possible.

What is useful about the British experience is not only that change arose out of the necessity to deal with real problems, but that these changes were accomplished without the aid of massive exterior financial support, seed money or incentive grants. Poverty, in fact, was one of the main incentives all by itself.

Is it possible that affluence is the enemy of change? Certainly in most new town cases where money is not an agonizing problem, there seems to be little real impetus to do things that are radically different. In some places where money is a real problem, such as Park Forest South or Riverton or almost any large new town, there is perhaps some hope. Perhaps the money crisis in new towns will prove to be the closest thing we have (thankfully) to Britain's crisis during and after World War II.

This is, of course, no argument against anyone providing new town planners, or especially local school districts, with funds for thinking and planning. However, if it is at all true that simply planning for educational systems that replicate what we have now is essentially planning for more disaster, then it may not make much difference whether school districts receive planning funds or not. Unless such money is used to create some measure of flexi-



bility, of choice, of greater economy and productivity, then the money may well be wasted. Hard questions about the aims of the thinking and the quality of planning need to be asked before such money is actually doled out.

Then there's the high cost of keeping everything apart. The stubborn fact of American education is that it takes place in school, within the walls and under the roof of a single purpose building. Many critics have argued against this deliberate separation of school from the rest of society. The institution of school/schoolhouse is defended as the most efficient and economical way to conduct an educational process, but many people are beginning to question whether this traditional, segregated approach is actually the best way to conduct the enterprise and specifically whether it is the most efficient and economical approach.

The basic question is twofold: Is it possible to desegregate the educational process and to integrate it with the business, industrial, social, civic and, most importantly, the cultural resources of the larger community? And does such an integration of school and community actually produce a more useful educational system at a cost that does not exceed the present one? Is it possible, finally, that such an integrated system could cost less?



We do not have the answers to these questions now, but we appear to be heading for the transformation of the conventional schoolhouse into something we could call a school/community center.

We have some impressive examples of such centers already in operation outside of new towns: in such places as the Human Resources Center in Pontiac, Michigan, in the Thomas Jefferson Junior High School and Recreation Center in Arlington, Virginia, and in the John F. Kennedy Community Center in Atlanta, Georgia. This kind of integration of physical facilities also leads to the integration of programs, i.e., a situation in which the school and other agencies collaborate in

Hard questions about the aims of the thinking and the quality of planning need to be asked before planning funds are actually doled out.

both the provision of community services and in the actual teaching of children.

There are two basic ways that integration can occur: One way is to send children out into the larger community to use its resources; the other is to bring the resources and services into a new kind of institution, the school/community center. Such integration is much talked about in new town planning circles and is an idea that makes common sense. It is not easy to achieve, however, either programatically or physically. Often state laws prohibit such joint ventures. An alternative is to construct school space and to lease it back to the school system, but this also can run into financial and legal problems.

Despite all of the difficulties, almost every new town developer is looking into the possibilities of the joint development and use of public facilities. Many interesting and potentially useful devices are being invented, such as Gananda's Educational Construction Fund. Armed with this legislative breakthrough, the developers of Gananda are proposing that all of their community as well as some of the commercial space be built jointly with other community agencies. The first such neighborhood school/community center has already been designed and is about to be constructed. Other new towns, such as Park Forest South, Riverton, The Woodlands, Harbison, Flower Mound and Cedar-Riverside, are in various stages of discussion and planning for integrated services and facilities.

A good example of integrated planning that at the moment is actually under construction is the New York State Urban Development Corporation's physical planning for Welfare Island, now called Roosevelt Island, situated in New York City East River. The community education system, if fully developed as planned, will extend from day care through continuing education for adults. All school space will be distributed throughout the island and mixed into the nonschool indoor and outdoor space. "Home base" space, especially for younger children, will be located in the housing, while older elementary children, middle school and high school students will use the rest of the island and the city as their school.



They will spend large portions of their time in specialized centers mixed with such commercial and community facilities as the island's town center, stores, office spaces, theaters and hospitals.

And, finally, there is the question: Will technology help? For new town planners in general, the most immediate technological attraction is the 40 to 60 channel cable television system with its two-way capability. Almost every new town planner is now exploring the ultimate application of this two-way capability: the "wired city." Such a city is centered around the multi-channel underground cable system which is used to connect every home to everything else in the community.

The new town of Jonathan, Minnesota, is in the process of developing what it calls a "community information system." Other new towns are negotiating as to who is going to shoulder the costs. It is hard to say what this means for education in new towns. New town planners talk about connecting all of the schools with each other and with nearby universities. They also talk of piping educational programs into

In several new towns there is much ferment and new thinking in educational planning brought about by the money crisis. Whether this will produce startling and important results in both new and old towns, we will have to wait and see.

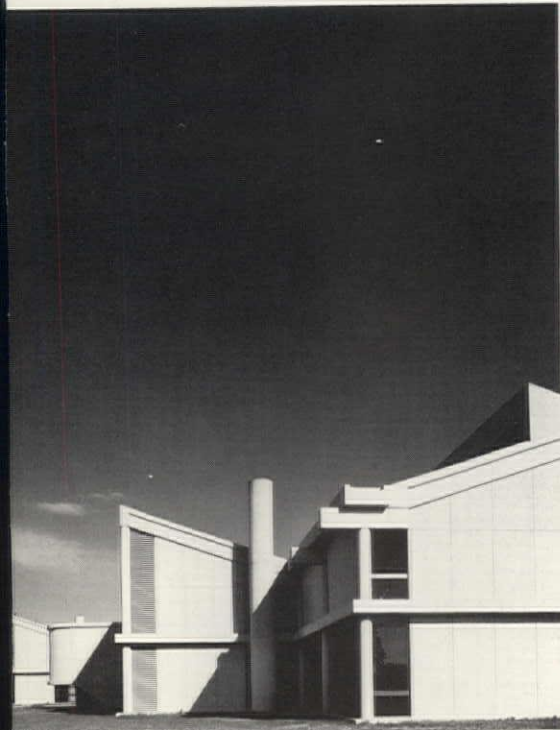
homes so that students can learn without going to school. The technology exists and improves every day. We are told repeatedly that each new invention is going to "transform" or "revolutionize" education, but somehow this never seems to happen.

We do not as yet have any definitive evidence concerning whether advanced technology will or will not produce superior educational results. Nor do we know if we will get better results for less money than we are now spending. Most of the advanced educational technologies, primarily computer-aided instruction and cable television, are still in the developmental stage. It is too early in this particular game to expect any hard data to prove that the technology will work and save us money. The question of cost is both crucial and complicated. If we mean reducing existing costs, we are talking about replacing teachers and other human beings with machine technology. If we are not going to replace people, then technology is going to increase operating budgets. Even if we are talking about maintaining our present cost levels while adding technology, this will still mean replacing enough people to cover the initial and continuing technological costs.

This "state of the art" analysis of educational planning in new towns has touched upon a few of the larger problems that confront new town developers and planners and their local school districts. Some of the major areas have not been considered at all. There can be as yet no definitive work on educational planning for new communities because they are developing too rapidly to permit any ultimate judgments this early in the game. What we can say at the moment is that there is a great deal of ferment and new thinking going on in the field of educational planning in new towns, most of it fueled by the sheer economic crisis of planners and school people faced with no money to house and educate new town children. Whether these opportunities of crisis will produce startling and important results for all education in both new and old towns, we will simply have to wait and see—and do everything that we can to help the process along. □

Project delivery has evolved in a number of ways in recent years: construction management, the use of industrialized systems, design/build, and assigning the architect the total project cost. The award-winning Parkway North Senior High School (below) is a product of the latter category (Hoffmann Saur/Associates).

One of the newer project delivery methods is design/build bid, now used by a number of school districts across the nation. It provides low cost space quickly, but can it provide for the users' real needs?



which in all honesty might not have been there had it not been for the tool employed. It is important that we are aware of the difference.

These markets used the system and, by many measuring sticks, it didn't work. Consequently, it is essential for educators to look to other management options in order to control cost. The State University System of New York has used construction management and fast-track effectively. If your state's laws permit this approach, this method should be investigated. Small buildings can also be fast-tracked.

Industrialized components (as they have come to be known) can be combined into building systems to provide a more flexible and longer life environment at approximately the same initial cost as conventional building. The combination of construction management and systems should be investigated if your building program is large enough and your school organization has the ability to define the user requirements well. Professional consultants can do this if the school system cannot.

Another management system has been used in St. Louis. The Parkway District

employed a rather imaginative approach by assigning the architect (Hoffmann-Saur) the responsibility for the total project cost. The client had a well-defined education program and a good idea of the money the district could afford. As a result, the Parkway North Senior High School was designed and bid using a modified construction management method, with the architect in total control. It has turned out to be one of the finest designs I have observed in recent schools and won the 1973 Walter Taylor Award from the American Association of School Administrators and The American Institute of Architects as "the most outstanding architectural and educational environment selected out of more than 300 entries."

When the architect has control of the entire budget, he can match equipment against building, open space against enclosed space, etc. In other words, he can control all the trade-offs. His options for providing a good environment while staying well within the budget are enhanced.

In choosing the management tool, you must know your community well, and you must know what needs are to be met. If people want to have direct input into their

building program through the architect, if there are groups of poor citizens or teachers or students who want to be heard, then design/build/bid is not the answer. Such participation would build in too many variables for the bidding teams. If your community wants to have its say and demands creative design, then look to the total architect-controlled project.

If your school system has an unpredictable variety of needs, including a demand for immediate shelter, then it should choose building systems, construction management and fast-track in an effort to get things on line with cost control and flexibility.

On the other hand, if the only concern of your community is a guarantee that costs are the lowest, and if it is not design conscious but is satisfied with things that look new and modern, then design/build bidding may be the answer to getting the lowest possible cost for an acceptable environment.

Design/build bidding does allow a school board to know the cost of its project with a minimum expenditure on the part of the school board. The board members get a number of ideas free and are able to look at a number of schematics

Industry has turned away from the design/build bid method; it has failed in the housing market. The use of industrialized components is an alternative. The Library at Indiana State University (below) is constructed in this manner (Archonics Corporation).

Why is it that the design/build bid method is invading the educational field when it has failed in others? Possibly it is a viable tool, but could it be a fad which, in solving one problem, creates many more that are harder to solve in the long run?

without allowing the architect to be in control, so to speak, as in the traditional method. It does limit teacher, principal, PTA, student and ethnic input, and it gets the board out of the architect selection game.

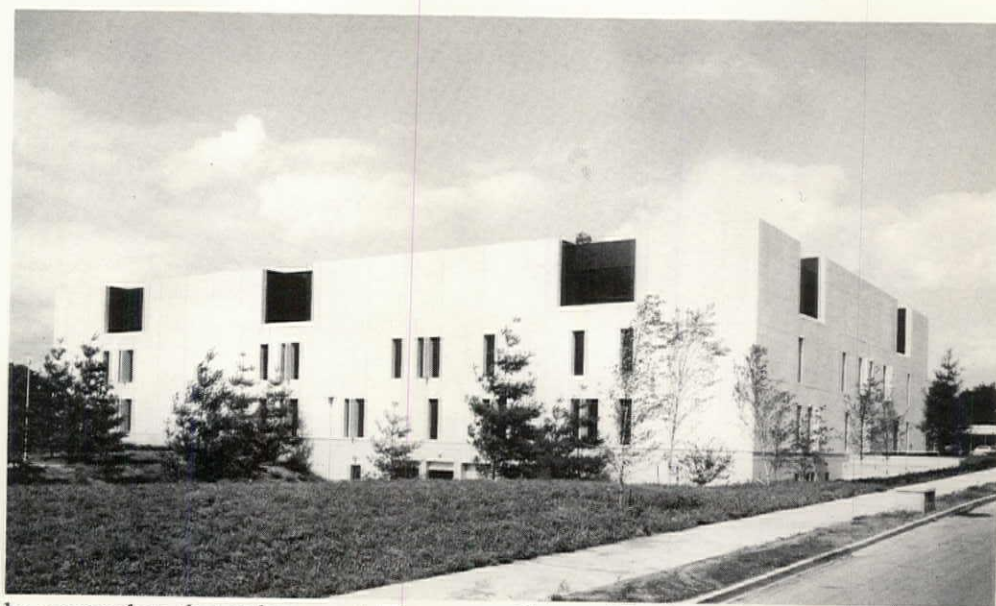
On the other hand, it has these difficulties: Performance specifications are still imprecise, particularly as they must be written in the English language. If the performance specifications are very strict, this is as limiting to the bidding as is the traditional specification. For example, the method relies for its success on very open bidding and is thwarted if uniform maintenance policies or brand name equipment are required to be consistent with previous schools in the system. It does not provide proper protection (as now practiced) for the people who are bidding, and there is not a clear definition of what design ideas are the property of the architect previous to the bid and what must be distributed to the others to make the bidding fair, particularly when the design is improved by disregarding specified requirements.

The system has not been uniform across the country. Some clients hire an architect who produces a thorough project analysis and description while others only provide one sheet of such simplistic directions that you cannot tell what is to be included in the building.

Board members do not define what they're looking for and what they hold as values, which makes it difficult to know how they will decide on environmental quality versus the dollar.

Up to now we have been discussing the management tools. We need to spend some time looking at these as they affect the architect in practice.

Of all these tools the least attractive is the design/build bid. The architect must spend too much time and money; his exposure is too great. There is enough experience in design/build bidding to realize that even the largest firm may not be able to take several losses in a row. I have been advised by several people with experience in bidding not to allow more than 20 percent of the firm's volume to be in design/build bidding. I have also been warned that if educators choose this tool, we as architects should insist that there



be a procedure that reduces cost. There could be a first stage of bidding with a full exposure of the plans that are acceptable. The teams can then decide whether they want to remain in the game.

The second stage of the bidding is acceptance of design, with full exposure of those acceptable. The third stage should be the cost of the project based on the plan and design of previous stages and the performance specifications. At this stage, it should be the low bid that is accepted. This method would limit the risk that now permeates the design/build bidding field.

As things are now, it is much more profitable and less risky to enter the development field because people do not mind spending on things that give them pleasure. There is a better chance for success because the architect controls more variables. Therefore, design/build bidding as now practiced in the field of education may be left to those who serve it least well. In my own county, as each succession of design/build bidding takes place, fewer participants are bidding. If your school district chooses to use design/build bidding, then ask for thorough research to determine whether it has a fair code of bidding procedures.

There are a number of people you can contact for advice. The State of New Jersey has hired an executive architect and has done much experimentation, particularly in college housing. The US Army

Corps of Engineers has used multistage bidding for a number of years and will let you benefit from its experience. Fairfax County, Virginia, is investigating ways of refining the process. The American Institute of Architects' Board of Directors has authorized a commission to study and report on the ramifications of design/build bidding for the public, clients and the architectural profession.

All of these tools should be understood and applied to the values your community holds. Also, the traditional method of commissioning an architect is going to be in use for a long time; after all, the results have been quite good if you look at the product in perspective.

Design/build bidding is the least desirable method for the architect but it has good points for the owner. It is most useful where no conflict exists, where the only goal is to get the least expensive building, where no user input is desirable, and where the community is willing to chance accepting a mediocre designed environment rather than something it would point to with pride as reflecting its image. It is not desirable if the building should have great flexibility for future needs, or if there is concern for life-cycle cost.

We, as architects, do not argue that these new tools are viable; we are afraid that they are fads and that in solving one problem we will create many more that are harder to solve in the long run. □

The Difference That Funding Makes

The source of money for school construction can have a vast influence on practice, as architects in Maryland are finding out.

Fed up with escalating taxes and the way they are handled by local governments, voters turn down general obligation school bonds in election after election across the nation. And, apparently, the Better School Act (HR5823, S1319) will not be acted upon by Congress for the 1974 fiscal year. Instead, the Elementary and Secondary Education Act of 1965, which expires each June and automatically is renewed for one year, may possibly be extended through 1978 by act of Congress.

These facts, and a multitude of related issues, make funding for public school construction by state governments a likely alternative. State loan programs have been in existence since the early part of the 19th century, and state grants have been around for a long time. What is referred to as full state funding, however, is new and is so far only practiced in Maryland. (Hawaii, with a single school system, automatically has funding from only one source.)

Two years ago, Maryland wiped out its existing school funding law which provided for "state sharing in 80 percent of up to \$1,500 per pupil housed for school buildings under construction," or about 28 percent of the cost of school construction. The old law also provided for state sharing in 80 percent of debt service payments for earlier school construction funded by bonds issued before June 30, 1967. Under the new law those obligations were assumed in full by the state; they amounted to \$500 million when the new law went into effect.

The responsibility for the supervision of public school construction activities in Maryland now rests with the Interagency Committee (IAC), which is composed of the State Superintendent of Schools, and the Secretaries of the Department of Planning and of General Services. IAC chairman is the State Superintendent of Schools, whose department earlier was overseeing school construction.

The professional staff of IAC consists of about 20 persons drawn from the three departments. The executive director of IAC works under the direction of the committee, which again reports to the Board of Public Works. This, consisting of the Governor of Maryland, the State Com-

troller and the State Treasurer, is the final approving authority for project allocations and guidelines for interagency operations.

In simple terms, IAC states the rules of the program:

"Each school system in the state submits to the Interagency Committee by November 1 of each year its capital improvement program for the following fiscal year, plus an updated five-year plan.

"The committee either approves a school system's proposal or modifies it in consultation with local school board staff. The committee submits its recommendations to the Board of Public Works, which acts at its February meeting. It is limited in its allocations by the total bonding authorization set for the year by the Maryland General Assembly.

"A wide range of capital expenditures are eligible for payment once approved under the program. They include building construction, including instructional, administrative and other auxiliary buildings other than those for storage and maintenance of vehicles; purchase or lease of eligible facilities, including relocatable classroom buildings, which become the property of the state so that they may be used elsewhere when they are no longer needed by the original user; renovation and remodeling, but not repair or maintenance; architectural and engineering fees; initial capital equipment and furnishings; razing existing on-site structures and providing or relocating on-site utilities, including grading, drainage facilities, power plants, sewer, water, electricity, roads, lighting, walks, parking areas and other facilities; inspection of construction projects; airconditioning.

"Not included among eligible costs under current guidelines are administrative costs incurred in developing plans, programs or specifications; site purchase, stadiums, lighting systems for outdoor athletic fields, or fine art embellishment. Also ineligible are improvements designed exclusively for civil defense or other non-educational uses.

"The committee does encourage cooperative arrangements by which two or more school systems or educational and noneducational governmental agencies share facilities, paying that portion of the

cost that would be eligible for payment if the facility were built by just one school system.

"IAC passes upon proposals for the acquisition or disposition of school sites or buildings; plans and specifications for capital improvement projects for which state payment of costs is sought; awards of contracts by local boards funded under the program; change-orders in excess of \$5,000.

"Local school boards may appeal any decision of the committee to the Board of Public Works.

"Local boards select their own architects and engineers, the only proviso being that those selected be licensed or registered in the state. The committee approves the selection of architects and educational specifications, and reviews and approves the various schematic designs, design development and construction documents. It also specifies procedures for the award of contracts and methods of payment."

What has the program accomplished in its two infant years?

At the end of the 1972 fiscal year, the State of Maryland had 233 public schools under construction or being remodeled. Against this should be seen the number of existing schools the previous year: 1,318. The 1973 school year added 45 new construction and remodeling projects as well as 456 approved revisions to projects that were already approved. Allocations for the fiscal year is close to \$267 million, a hefty jump from the \$50.5 million available from the state for the purpose only four years ago.

Why did Maryland go to state funding? Ask Marylanders, and the answers will differ. Republicans will be wont to say that it was for political reasons, but this is from Republicans with short memories, for the ball was actually started rolling under a period in time when the state was not under Democratic rule but under the governance of Spiro Agnew, who was involved in early efforts to pass the law.

The initial attempts at revamping Maryland's public education system were through a bill that would provide full funding not only for construction of educational facilities but also for salaries for administrative personnel as well as for

In Maryland, full state funding has been in effect for about two years. The result is more school construction, but questions arise: Does it result in better schools? Is control better left at local levels?

Though more basic services are required of the A/E, fees are generally lower. What should suffer, quality of work or compensation?

faculty. In the deliberations on the bill, the discussion was not over whether the state should pick up 100 percent of the cost but over the ability of the state to administer the program. It ended in a tie vote, but the snag was removed when it was suggested that the bill concentrate instead on capital construction. It became part of Governor Marvin Mandel's "State of the State Message" in 1971 and passed right through.

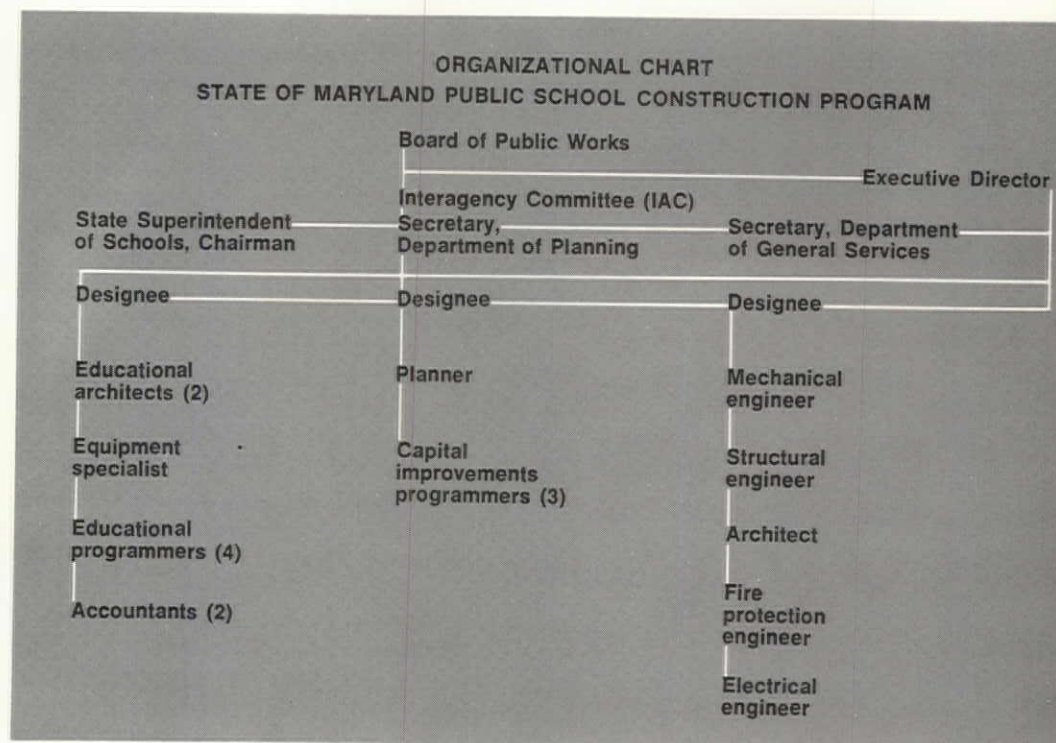
A small fraction of parents in Maryland thinks the bill was passed as a possible means of countering the busing problem. Moneys for public schools are evened out with the program and, furthermore, the state now covers the local school boards' teacher salaries with a basic amount that averages 55 percent. In a rich county this figure will be lower while a less affluent and a poor county will get larger pieces of the pie. This evens out the overall system still further. And where a county wants to build two smaller schools, say, 15 miles apart, the Board of Public Works can prescribe one large school not only to save money but also to prevent future forced busing if the racial mix in the two proposed schools would not be balanced.

But most Marylanders see the real purpose of the law as a means of eliminating the school bond issue, which they contend has been a millstone around their necks.

Naturally, some counties now ask for more than they themselves could have come up with. On the average, the counties get better facilities since there is one set of standards, though some of the more affluent may have had a setback in this connection. Another factor that has helped raise the standards in some districts is that the State Superintendent of Schools division has been pushing and persuading school administrators to adopt more modern programs and facilities, sharing as it does in early design phases of the various programs. A change here is seen as possible when money gets tighter, the caliber of IAC personnel drops, and bureaucracy takes over.

Today, a number of other states around the country watch Maryland and ask how well its funding system functions.

How well *does* it work? On the whole, people will say that the program works



better than expected even with the snags that are encountered and although the initial difficulties in administration, organization and communication within IAC easily lost the schools a year in construction. But officials expect to catch up.

The danger is seen as lying ahead, however. There is the likelihood that the state will get even more involved in the nuts and bolts decisions; that IAC will become a political machine and as such become dishonest, although the caliber and integrity of the initial staff were extremely high. Changes will occur; there will be a shift of emphasis; and the program could get so big that it gets out of hand. The possibility of a State Department of Architecture is not easy to ignore; stock plans could become the rule. And, already, health care authorities ask why the state doesn't also fund health care facilities.

As of now, what does the state funding mean to an architectural firm and its client? The consequences of the program are quite drastic. Take the fee: Generally it is lower than before. While the State of Maryland has given counties the right to pay a higher fee than that offered by the state, no county has been known to volunteer to do so. Not that this makes it likely

that a firm will turn down a job, but either the quality of the work or the compensation will suffer. The materials will become standard, but the design could easily become a hacked-out version of a scheme pulled out of a drawer. And if the architect sees possible ways of improving his building through trade-offs, he will have a whole new go-around of state approvals. Any and all change-orders are reviewed, and the state may refuse to fund even the smallest, in spite of the \$5,000 amount quoted as the figure that cannot be exceeded without state approval.

At the same time that the fee has been lowered, the list of services demanded has been expanded. For instance, among basic services the state requires are interior furniture layout and selection, down to a list of the names of the manufacturers. Therefore, since no recompensation is given for this interior work, it is difficult for a firm to deliver top quality. Quite possibly, lesser-paid people, often a draftsman, will be used for the work. Firms without interior designers on their staffs are apt to turn the job over to some guy down the street. There is no way under the system as it presently works that the interior can be made to respond to the real needs.

Will the state government also take over funding of other types of facilities, such as for the health care field? Could a State Department of Architecture come about?

Feelings about state funding of schools, how it works, what it portends, are mixed in Maryland. With many another state seeing similar funding as an alternative to other ways of financing school construction, it is well worth while looking into all aspects of the issue.

At the outset, there was no provision in the law regarding moneys for feasibility or environmental impact studies. This has changed now; for instance, the state pays for feasibility studies on renovation versus abandonment. If a project results from the study, the state credits 50 percent of the study fee to the project.

Under the law, only items expected to last 15 years or more can be covered by bond money. Consequently, only a master antenna was provided for the TV equipment at the start of the state funding program, but no TV receivers, since these are not expected to last 15 years. "You call this full funding?" local school boards ask.

interpretation of the term "renovation." According to the law, "renovation and remodeling, but not repair or maintenance" will be funded.

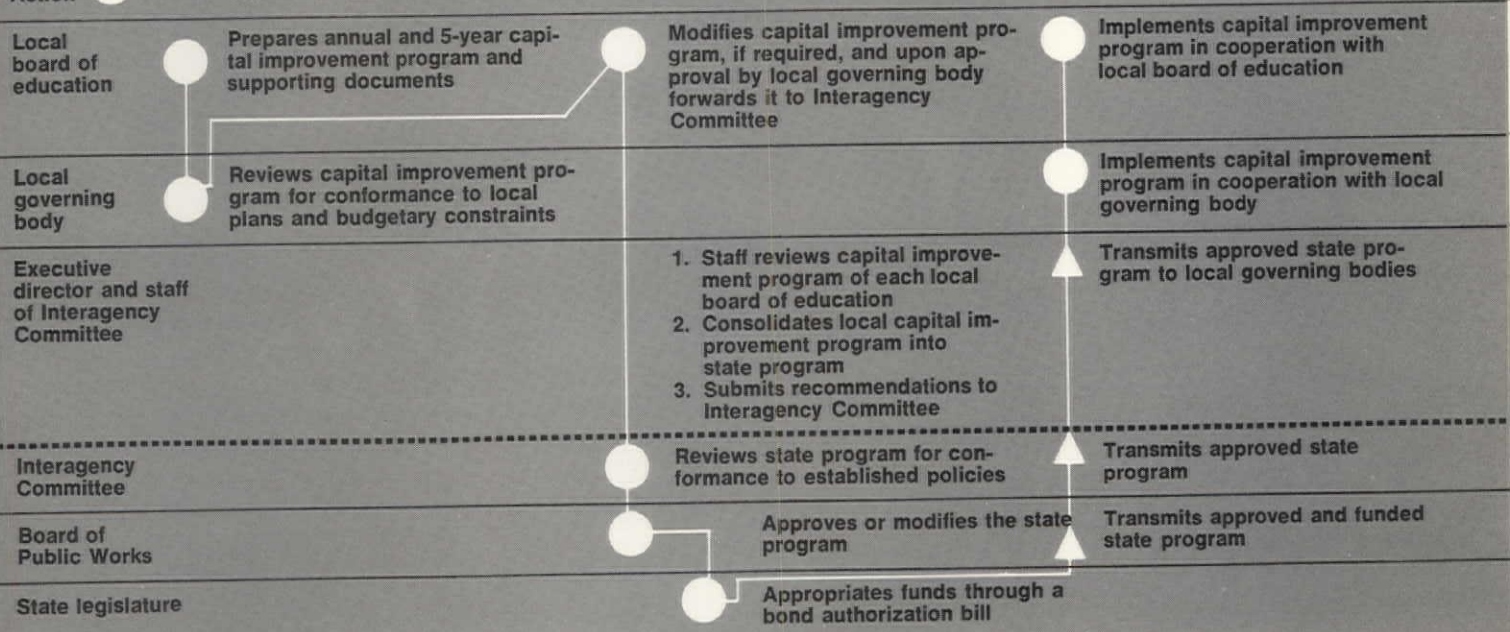
Clearer guidelines are in order, some architects maintain, they are too nebulous. And the board is not always consistent in its position.

What is really needed, according to many who work with the program, is a more liberal interpretation of the law before the state gets too involved with details and makes up too many rules and regulations. Some suggest that in order to get the state government away from quibbling over inconsequential issues, local

in details, architects are left with mountains of paperwork. The bureaucratic process has been multiplied by the thousands, and the architect spends equally many manhours on what appears as endless (and costly) paper shuffling.

Funds from the state come forth in three parts: for planning, construction and equipment. Money for the latter item is not committed until construction is finished. The funding method prevents use of fast track, but the conventional contracts are all right with the architects, especially since the crunch is off in school building. The delays in construction which they do find difficult to accept stem from the num-

SCHOOL CONSTRUCTION FUND APPROVAL PROCESS



The rules have been eased now, and such equipment as needed for instructional operations are supplied, although no TV transmitters and cameras are included. A typewriter for an administrative secretary will not be funded since this is ruled to be a noneducational item.

As the law stands, it provides other rough spots. While state representatives do inspect construction projects, the local schools boards are also required to make inspections of their own, but the boards are not paid for these inspections. A constant source of friction centers around the

school boards should be given a fixed sum per square foot or per pupil and be left to decide what to buy. Being so close to their own situations they would seem in a better position to judge what their needs and wants are. (For the overall development of the state's public school system the case may be different, since IAC personnel do get a complete overview in the field.) But at state level there is reluctance to give out money without having the control; the thinking seems to be that the school boards could buy the wrong things.

As one result of the state's involvement

ber of authorities to be dealt with, since this hampers and prolongs their work.

Technically, the local boards still have the say, but subtle pressure from state level is being felt and, therefore, the architect has a rougher time getting his viewpoints across. Most architects feel that their chances of survival are better with the control left to local boards. Visions of turnkey schools loom on the horizon.

In the final analysis it is, of course, the concern for the individual school child that must come first. There are many questions yet to be probed. *Bess Balchen*

The Next Horizon

Charles Burchard, FAIA

A nebula of social and cultural concepts is gathering force, a force whose being found impetus in the unfolding crisis of our cities, in the realization of the impoverishment of our environments and in the massive technological change that has engulfed this nation in recent years.

Environmental designers who will, in fact must, assume responsibilities for the shaping of physical environments will be asked to find the as yet undefined environmental parameters that are a "fit" to these concepts.

This challenge has thrust our schools into a ferment of experimentation. Students and faculty of a majority of these schools perceive a scale of activities for future environmental designers which exceeds the boundaries prescribed by the current practices of most professionals.

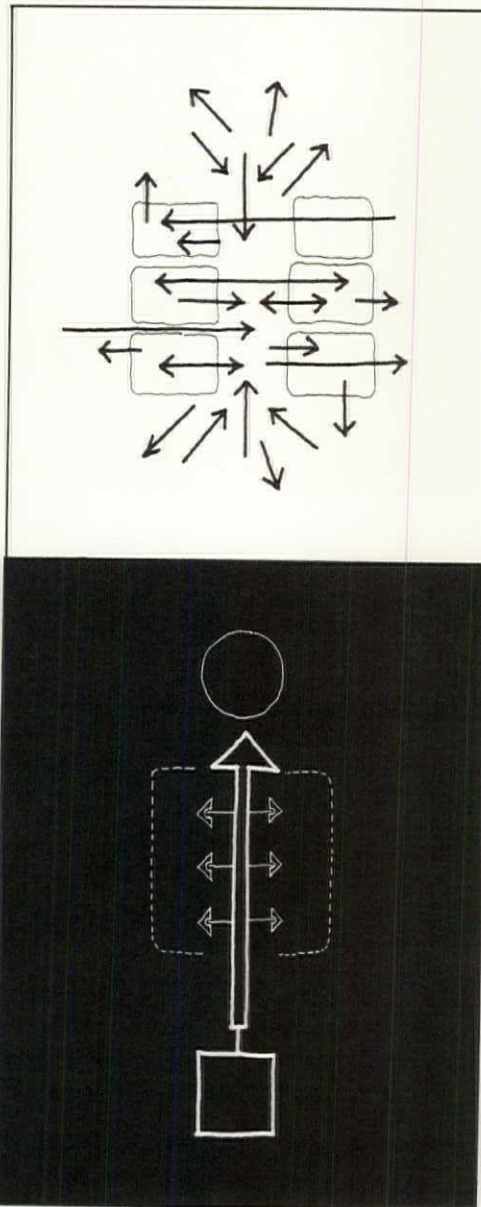
The educational community therefore sees the need to explore new avenues of social and public responsibility and to develop depths of expertise in a variety of new professional concentrations, while providing broad exposure to methods for integrating other disciplines into the education and professional practice of environmental design.

In the College of Architecture at Virginia Polytechnic Institute and State University such perceptions have generated new curriculum formats—diverse, multifaceted, experimental—which again generate a shift from instruction to discovery, from matching to making, from subject matters taught authoritatively and independently to command of interdependent processes, with which to identify problems and to devise methodologies for finding resources which can facilitate solution strategies for those problems.

The college is not organized into traditional departments; rather, it is structured along functional lines with chairmen of faculty task force teams assigned to provide overall direction and coordination for various degree curricula, concentrations of study and research investigations. The faculty, interprofessional and multidisciplinary, may be involved in several cur-

Mr. Burchard is dean of the College of Architecture, Virginia Polytechnic Institute and State University, Blacksburg.

No longer will fixed course structures do, with an irreversible arrow aimed at a defined environmental design task. Free and varied means of access to a range of resources through interactive, multifaceted and open-ended programs are needed.



ricula or investigations depending on their interests and the need for their expertise. This arrangement has provided the flexibility to evolve wholly innovative concepts in design education and research.

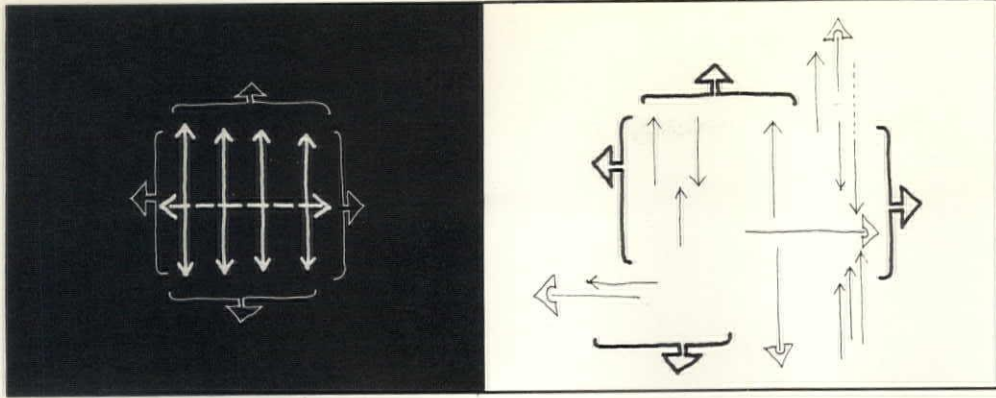
The education and research mission is articulated both at the macro- and micro-scales, responding to perceived shifts in the scope of concerns in the environmental design professions. These shifts have occurred at the macroscale in terms of the range of inputs in the social, economical, political and behavioral spheres which must be part of the cognitive field of en-

vironmentalists and environmental designers. They have occurred at the micro-scale in terms of a reintensification of the search for holistic and integrative attitudes and methodologies with which to derive information, determine standards, conceptualize form and structure new concepts for the design of the artifacts of the natural and man-made worlds.

In flexible, process-oriented environments for learning, which afford ready access to a spectrum of resources, new generations of professionals may equip themselves for continuing design and planning involvement, in areas and on levels where the professions had not hitherto been concerned, i.e., the urban ghetto, the third world (the research laboratory, the problem-solving team) and which afford opportunities to develop broadly in all spheres: moral, social, intellectual. They permit students to pursue a wide variety of career opportunities and to address themselves to the formulation of professional, scientific and societal tasks in terms of human value and experience.

These new attitudes are basic to professional realization of the dimension of the environmental design task—dimensions which postulate new uses for a technological society's vast resources—on a basis which does not divide the world into territories but can yield a dynamic method for connecting individual motivation and a kaleidoscope of knowledge to a human need.

The basis is pervasive. At the leading edge of the professions of environmental design and among environmental scientists there is now an evident awareness that the interactions of man and his environment can no longer be studied adequately within the confines of the traditional sciences and humanities. In scientific circles increasing reference is made to the emergence of man/environment relations as a separate scientific discipline to which multidisciplinary oriented scientists contribute. In the area of environmental design, there is reference to sociophysical technology as an outgrowth of the concept that the social and physical aspects of each environmental intervention cannot be viewed separately but must be consid-



ered in their totality, leading to the ecological viewpoint.

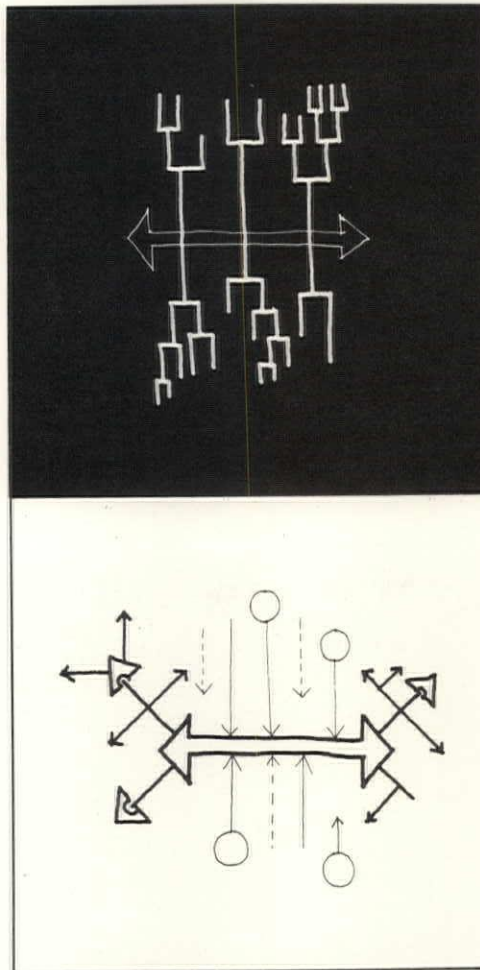
There is nothing new, of course, in the notion that all aspects of man's sociophysical and cultural environments are intrinsically related. What is important is its reassertion, now, when an infinity of cultures are living simultaneously and sending out danger signals calling for rapid yet sensitive professional response. Industrialized society, having unloosed its fruits of communication and technology, finds the scale of life's processes not linear but exponential. We are suddenly in a system expanding and moving so fast that we barely become aware of problems before we have to deal with them.

In this historic context, environmental designers must begin to operate on their own initiatives, must anticipate man's needs, and seek to integrate effectively the significance of information won by the respective disciplines in the specialized sciences and humanities in order to provide new and advanced standards of living for a steadily increasing percentage of the world's population.

To accomplish such a further expanded dimension of design effort will require academic and professional networks continually responsive to new needs as they occur. To be relevant to our lives and the problems we now face, methodologies, techniques and facilities must be continually renewable. It will also require access to information in new formats, and in formats that are systematized for retrieval in some form of sensible tools for design.

What is urgent now, in a world of fast changing events, is an ability to measure new concepts as well as to conceive them, rapidly, in simulation, in multilevel and spatial modeling, measurable against a model of reality that is defined in quantitative and qualitative terms.

Conceptual measurements require, first of all, that we begin to build into educational and research programs a long-range and time-sequenced environmental systems inventory and information network for the inputting, assembling, storage, updating and retrieval of environmental systems information. The network will require the evolution of an out-



line of the basic organization of environmental systems, as a confluence of behavioral, societal and physical subsystems, and an approach capable of describing and analyzing the structure and function of the systems. It must be concerned with changes in structure and function over time and with processes through which change may be achieved. Concern for the dynamics of environmental growth is also of significant importance for providing clues to the shifts that will take place in the future structure of systems, subjected to periodic correction and refinement in establishing the desirable ranges in which choices can and should be made.

In preindustrial society, environmental decision making could be conducted by environmental designers close to the source of application and entailed a relatively simple and flexible technology. Consequently, the processes of choice, im-

plementation, feedback and alteration could be immediate, continuous and adaptive. But in contemporary industrial/technological societies, environmental decision making involves complex organizational structures, a vast range of applications and an intricate network of participants in modes of participation which increase the social and administrative distance between environmental designer and user. Accordingly, far better mechanisms need to be devised to supply accurate, objective knowledge of diverse user groups to environmental design decision makers.

Fortunately, technology which helped create our present predicaments may provide as well the means and the media to help us resolve them. It includes tools once called by Robert Wood "tools a magician would envy": advanced computers, simulation theory, information sciences and communications technologies.

Recent scientific knowledge now enables us to propose a heuristic theoretical model for systematically ordering our world by relating collective knowledge to individual subjective experience. It is no use to pretend that formulation of the model is now completely possible or easy to accomplish in the future. There are large gaps in our knowledge but the effort begins to press upon existing institutions for response and support—and it is forthcoming. For the model affords the exciting possibility of relating a universe of information and experience to give relevance to the educational modes we seek.

It will yield a new role for the college as an environmental consortium, an interactive center for a worldwide environmental expertise and a depository for environmental data. As a situs for re-education, it will help the thoughtful practitioner and experienced teacher to incorporate into their particular experiences new methodologies for problem finding, decision making and design modeling.

It could yield the next horizon, a larger purpose in the education of environmental designers, a sought-for construction of communication and a change in our intellectual conduct. It could yield a way to express the role of knowledge and its transfer for the building of a civilization in this historic present. □

Opening Their Eyes to Architecture . . .

It's never too soon for a child to be taught to appreciate — and appreciate — the buildings around him.

David R. Dibner, AIA



Showing my wares



Examining the goods



Building "architectural" models



Explaining about drawings

Mr. Dibner,
I thought your presentation was interesting. I thought the visual were very helpful to us, because it helped us understand the formation. Thank you so much coming to our school.
Yours truly,
Mrs. H. Trumaldi

Mr. Dibner, your presentation I enjoyed. I never knew that building came in so many shapes. A be seems so hard to make. You have many different kinds of same a glass mirrors were most interesting. Thank you for appealing to our school.
Sincerely,
Nancy

Dear Mr. Dibner
I enjoyed your lecture this m very much. I enjoyed seeing the were very good. The best! I be

The rewards are so great compared to the small effort it takes that I'm surprised that so few architects do it. Do what? Why, talk to sixth, seventh and eighth graders about our profession. I've been doing it for several years now and I still get the greatest kick out of it—in fact, more than from any of my other activities. All it takes is a couple of hours.

My impresario is my wife Dorothy, who is a sixth-grade art teacher and who arranges yearly series for her pupils in which artists and related professionals talk about their work.

What I do is to fill a cardboard box with a lot of materials that the architect uses, take along some tracings and some sketches and some plans and specifications, a model and some slides of some buildings. I talk about what an architect does and how great it is to be an architect. Then I answer their questions, which to me is the most fun. Most interestingly, after my talk the students do a project of designing and constructing a building model. And look at the fan mail you can get!

On the adult level, the New Jersey Society of Architects has formed a "speakers bureau" and sends a list of subjects and names of speakers to schools all over the state. The schools, in turn, choose the topics they find most interesting for their localities and best suited to the courses they offer. Handling it this way avoids bringing too much strain on the individual architect since each speaker usually appears only once in a series. This year 20 architects are participating.

No matter what the ages of the students, these appearances are a human, personal way not only of developing visual awareness but also an understanding of the profession. □

Mr. Dibner is a partner, The Grad Partnership, Newark, New Jersey.

and to the City Environment

Understanding a structure alone is not enough; learning to be aware of the total urban scene comes next. Architects are the natural teachers.

George Zimberg

There are people who care. There are architects who care, care that children are given the opportunity to learn, in the schools, how to become aware of the city around them, of its sights, its sounds.

Why should urbanism be a subject for kids to study? Because the continuity of urban vitality is essential to an area, a region, a country. If our civilization is to survive it will be because there are men and women who are concerned about this continuity and about instilling it in future generations.

Who better than the architect and planner to teach about the urban scene? They have scrutinized the elements of the city on the drawing boards and scale models. The city, as a living laboratory, is their textbook without covers, seen, heard and smelled.

In the Commonwealth of Massachusetts, no structured curriculum within the public school system deals with visual awareness. However, this is a real and live subject among members of the education committee of the Boston Society of Architects, who had the idea of bringing the experience and knowledge of the practicing architect and planner into the Cambridge elementary school classes.

In an urban awareness course, architects talk about the design of schools and houses and hospitals, about transportation problems and historical buildings. Most material is presented visually so that the children can recognize the sites, react to the problems, experience the delight of discovering things for the first time.

Initially, individual architects paid one visit to a school, trying to get the entire school system involved this way. The approach this year has been to work through four-man teams from the various offices in the Boston/Cambridge area. Each team is assigned a school for the year. Once a month one member of the team will speak; this way, no one person will be obligated

to make more than two appearances within the school year, usually an eight-month period.

This program fitted neatly into the social studies course on urban awareness initiated in the Cambridge schools by Dr. Elizabeth R. Boyce. It caught the attention at state level and an invitation was extended by the Commissioner of Curriculum Instruction of the Massachusetts Department of Education to present it at a humanities conference a year ago.

When the Northeast Conference of Social Studies Teachers was held in Boston last spring, a full day's clinic on "The

City: An Urban Environment" was co-sponsored by the Cambridge School Department and the Education Committee of the BSA. The teachers outlined the research involvement behind their urban awareness program and detailed the specialized approach for the high school level; the architects spoke about human reactions to interior spaces and urban spaces, presented a slide show and encouraged urban learning through experiencing, conducting walking tours through Boston for the teachers. The latter were convinced of the contribution architects can make in teaching urban awareness. □



Mr. Zimberg, who practices in Boston, is deputy chairman of the Education Committee (public education area) of the Boston Society of Architects. The project he describes is a labor of love, but funds are needed so that it can be continued and expanded.

A New Option in the Curriculum

More and more, CDCs and AIA chapters work together to motivate and expose architectural students to community-oriented services.

Ralph Johnson

Over the last few years many schools of architecture have recognized the importance of a meaningful working experience as an integral part of the architectural professional curriculum. In part, this direction is in keeping with The American Institute of Architects' strategy which, according to AIA First Vice President Archibald C. Rogers, FAIA, is to seek to improve the milieu within which the Institute works to broaden the field of potential practice and to deepen the opportunities for reward in all such fields. This makes the case for an inside-out strategy of institutional and professional evolution.

The AIA looks to its young practitioners to provide the thrust for the strategy. But the student must be prepared and trained for this public responsibility in order to influence and carry out public policy decisions. In much the same way as the well-established professional educational programs of law and medicine, a program is being instituted across the country and is designed to motivate and expose the student to community-oriented services which include design and technical assistance. All these professional programs require a full-time commitment to the community from the institution as well as the student.

Reviews must be scheduled; students must be phased into continuous problems; student programs must be scheduled and funded to provide continuity of operations. In most cases, universities are able to facilitate these kinds of activities and have developed an effective program through workshops or studio-type situations. These university-based workshops may be limited and therefore cause frustration to a certain extent because they are not able to provide the community with the necessary year-round service. Financial support for students to continue their involvement after the academic year is found to be a hindrance to their programs.

Community Design Centers provide an effective vehicle through which these programs can be implemented. Since they are located right in the community, informa-

tion accumulation, design and development decisions are all made in the open with citizen participation. There are several other reasons why the CDC has such an important role. In a workshop situation, for example, students perform under daily pressures. They cannot retreat into a strictly conceptual situation or be allowed to dwell on paper projects which are usually associated with traditional academic scheduling. As a consequence, through an exposure to this continuous and real process and under close supervision of experienced architects, the true meaning of design must be realized by the student.

Students will develop a maturity in their motivations and in their understanding and handling of people. Extensive team work is required, and a level of professional and technical expertise is a prerequisite. Above all, it is made clear to the student that he is responsible to the community for his actions. Because the CDC is likely to remain long after the student has left, it provides an important element of continuity. Community problems and issues usually involve a long-term commitment. Services must be assured on a 12-month basis, and there must be an end product that the community can use.

In areas where CDCs already exist, the students under the supervision of their directors are able to take on the responsibilities of a comprehensive service package to the community. To date, there are some 71 CDCs operating across the country of which 40 percent are sponsored by universities and/or schools of architecture. In most cases academic credit is offered for the working experience.

Wide AIA support at the local and component level is also increasing. Over 33 percent of the CDCs are sponsored by AIA chapters and use the volunteer services of practitioners.

Four universities have found another way to insure year-round support for the architectural student. This is through the University Year for Action (UYA) program, a university-based volunteer program in which the volunteers are students. The four are Hampton Institute in association with Virginia Polytechnic Institute and State University, and the Universities

of Minnesota and Kentucky. They have either established their own CDC or have existing CDCs in the communities. Each institution has redesigned its curriculum as required by the program to accommodate a public service option for year-round, full-time jobs and related academic work.

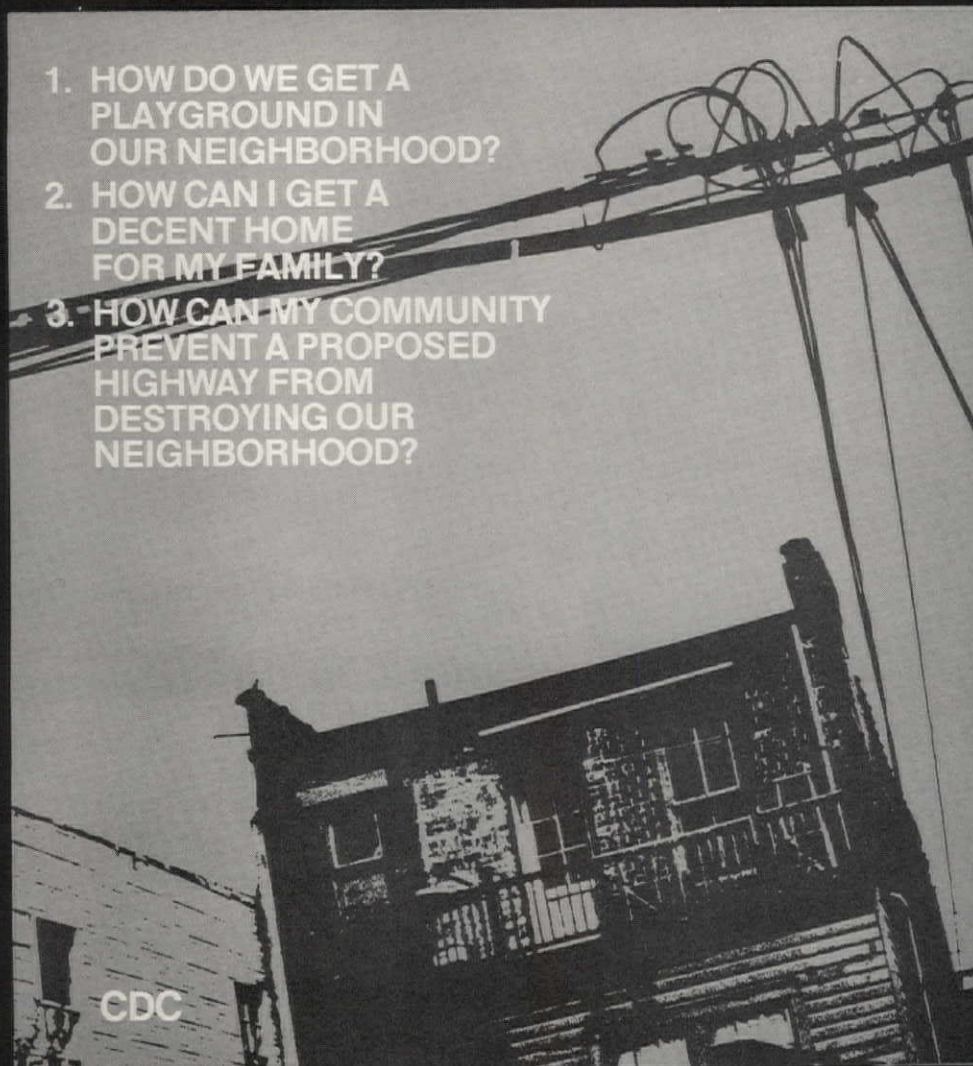
At Lexington and Louisville, for example, UYA student volunteers from Kentucky's School of Architecture work in CDCs on plans for low cost housing projects in poor neighborhoods of both cities. These CDCs are cosponsored by the East and Central Kentucky Chapters AIA. They are also coordinating a new program through the schools and building trade unions which will provide opportunities for high school youths from poor neighborhoods to enter the building and design fields as architectural apprentices.

In the Southside Workshop, the CDC in Portsmouth, Virginia, architectural students from Hampton Institute and VPI work at establishing close communications with the community through their projects. Activities are varied and include the redesign of local playgrounds and of a factory to be used by a city-sponsored narcotics rehabilitation program.

Operating as a design studio option in the School of Architecture, the CDC of Minnesota, sponsored by the Minnesota Society of Architects, obligates students to give from 20 to 30 hours weekly in return for four to nine credit hours per semester. It provides interdisciplinary design and development services and acts as an advocate for the Twin Cities and surrounding rural areas.

The four universities mentioned are among a growing number of institutions which have made significant advances to provide the kind of options to their architectural students which will prepare them to better serve an increasingly complex clientele. With the aid of AIA chapter-supported CDCs and the added resources of the UYA program, this thriving public service mechanism can be sustained. It is a mechanism through which not only the student can develop his professional potential but the community as well can benefit from the design and technical skills of the profession. □

Mr. Johnson is administrator of Community Services at AIA Headquarters.



1. HOW DO WE GET A PLAYGROUND IN OUR NEIGHBORHOOD?
2. HOW CAN I GET A DECENT HOME FOR MY FAMILY?
3. HOW CAN MY COMMUNITY PREVENT A PROPOSED HIGHWAY FROM DESTROYING OUR NEIGHBORHOOD?

CDC

COMMUNITY DESIGN CENTERS across the country are trying to answer these and numerous other vital questions of the inner city and rural neighborhood groups and individuals with free design and technical assistance.

The **AMERICAN INSTITUTE OF ARCHITECTS** recognizes the tremendous need and is responding by providing support and technical assistance for some 71 CDCs presently operating in 59 cities.

If you are interested in what these centers are doing and what the AIA is doing in support of this program, contact the Department of Community Services, The American Institute of Architects.

'Show and Tell' with a New Twist

A new school in Atlanta has been designed as a teaching aid in itself. It seems proper, then, that the children who will use the school should ask questions of the architect at the building site.

"Where will I sit?" "How big will it be?" "Can I see out of the window?" "Why?" "How?" These and many other questions were asked by a group of 60 children ranging in age from three to twelve when they visited their new school during its construction. They were learning about architecture and construction from experts who answered all the questions and prompted still others.

The teachers of this group of children from the Montessori School in Atlanta were Caraker Paschal, AIA, a partner in the planning/architectural firm of Finch Alexander Barnes Rothschild & Paschal, Inc., and Ford Crowley, job inspector from the firm. The youngsters watched workmen going about their tasks; they learned how to look at building plans; they happily picked up bits of lumber that they will use later as play blocks when they move into their new schoolhouse. After their educational experience at the construction site, the children returned to a temporary classroom to discuss all that they had experienced in the educational "happening."

The school itself is designed as a teaching aid. Paschal says that the exposed trusses which support the roof are "a visual presentation of structural members in action." The sloping roof will allow an object lesson in how drains work. The design provides for the inclusion of nature,

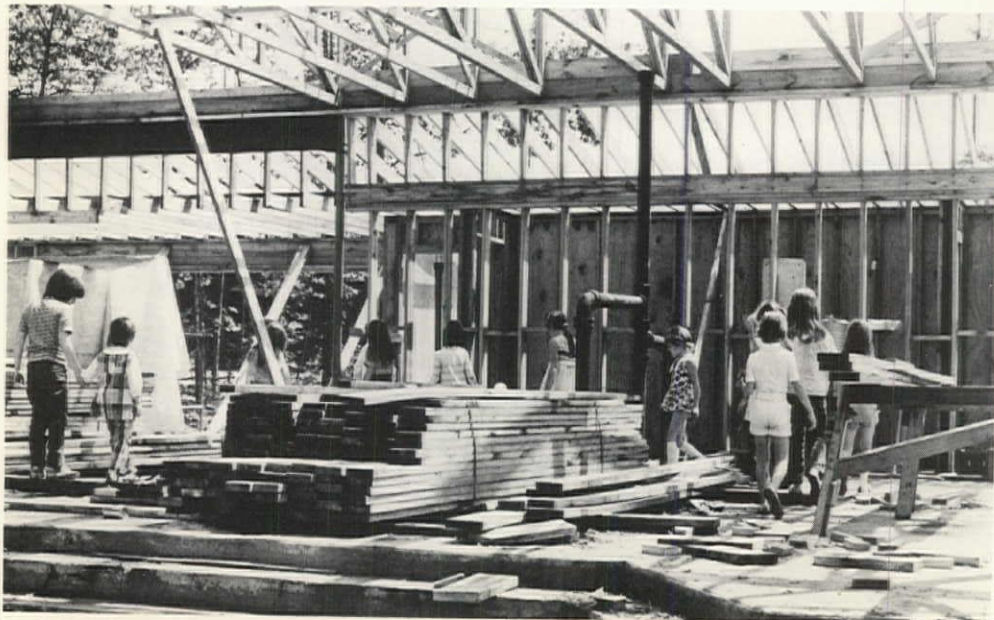


and through the clerestory windows the children will see the changing seasons.

The school follows the natural contours of the land. The architects carefully preserved the landscape, cutting only those trees absolutely necessary to the construction of the new complex. The parents of the children raised the money for the purchase of the four acres of land and will carry out the landscape design themselves. They also will decorate the interiors. The architects want to preserve the surrounding wooded landscape as much as possible to act as a buffer from the noise of a highway which runs about 200 feet from the edge of the property.

Two smaller buildings are located at the front of the complex. One contains a large multipurpose area and storage space; the other has space for an administrative office, a faculty lounge, a workroom and a lobby exhibit area. A covered walk connects these two buildings with the larger classroom structure. The community will be invited to use the multipurpose area for gatherings of various kinds; no such facilities presently exist in the vicinity.

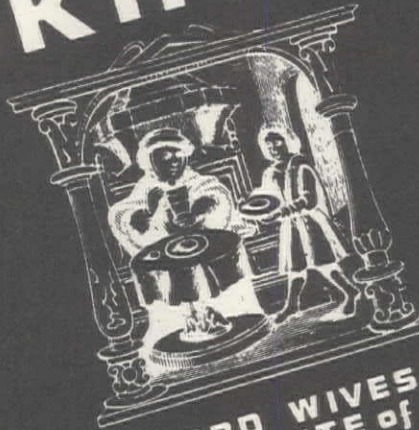
Education is a two-way street, and undoubtedly the architects learned a thing or two themselves from the children's probing questions. □



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Fee Schedules and Price Fixing

An editorial from the "American Bar Association Journal" for April 1973, reprinted here with permission, raises some pertinent points about fee schedules and services that have relevance for the architectural profession too.

The decision of Judge Albert V. Bryan Jr. of the United States District Court for the Northern District of Virginia that "minimum fee schedules are a form of price fixing and therefore inconsistent with anti-trust statutes" has aroused a great deal of interest among the legal profession. Judge Bryan's opinion goes on to hold that since price fixing is an unreasonable restraint of trade per se, it is immaterial that it also may serve an honorable or worthy end.

The case, which was reported in the department "What's New in the Law"* . . . was a class action brought under Section 1 of the Sherman Act for injunctive relief and damages, and it arose when the plaintiff, a lawyer at the Federal Trade Commission, was quoted the same minimum fee schedule charge by several lawyers for legal services in the purchase of a house in northern Virginia. The district court invalidates the Fairfax (county) Bar Association schedule and left the amount of damages to be determined later.

The court described the schedule as proposing a floor on which professional legal fees should be based, and it found this type of price fixing "contrary to the spirit of competition which sustains a free enterprise system in that it prevents competitors from using their own judgment in determining the value of their own services." In particular, the court saw a lack of justification for a minimum fee for real estate settlements based on a percentage of the purchase price, as this sort of fee bears no relationship to the amount of labor or service rendered. "This is particularly so," the court observed, "in view of the fact that the 'responsibility' involved is assured by a separate charge for title insurance. The attorney's ultimate 'responsibility' is illusory."

Having found an unlawful price-fixing agreement, Judge Bryan went on to determine that interstate commerce was involved because a significant portion of the mortgage funds for northern Virginia homes came from outside Virginia; that lawyers are not exempt because they perform personal professional services, the court stating that it had some doubt

whether the adoption of a minimum schedule was itself "professional"; and that the adoption of the schedule was a private undertaking of the county bar association and not exempt as a "state action." The last point was acknowledged to be the most difficult one in the case. Because of it, the court dismissed the case against the Virginia State Bar, an integrated bar created and governed by the Supreme Court of Virginia under an enabling act of the state legislature. The state bar was found to be an "administrative agency" of the Supreme Court of Virginia. Lawfully regulated state action is not subject to the Sherman Act under the Supreme Court's decision in *Parker v. Brown*, 317 US 341.

But this immunity was not available to the county bar association, which was not under a compulsion to adopt the fee schedule and whose schedule "did not derive its authority or its efficacy from the legislative [or judicial] command of the state." The fact that the Virginia State Bar furnished a vehicle for enforcement of the minimum fee schedule through a professional ethics opinion and its disciplinary power did not serve to extend the state immunity to the local bar association. The state bar was found not to have taken any action to enforce or police the local schedule.

Many questions, of course, are raised by this decision, and these can be answered only as the case is appealed or further litigation develops. One question is whether an immunity line will be drawn between voluntary and integrated state bars. Another is whether all fee schedules, and they come under a variety of names, will be regarded, to use Judge Bryan's language in the Virginia case, as "minimum fee schedules."

The Committee on Professional Ethics of the American Bar Association made it clear in Formal Opinion 323, issued in 1970, that a "minimum fee schedule" can never be mandatory and that a lawyer cannot be subjected to disciplinary action merely because he fails to follow a "minimum fee schedule." The Code of Professional Responsibility contains but one reference to fee schedules, and that is in Ethical Consideration 2-18, which states that "suggested fee schedules" and "eco-

nomics reports of state and local bar associations provide some guidance on the subject of reasonable fees." Formal Opinion 323 notes that the legal fee customarily charged in a community was recognized as one of six elements for determining a reasonable fee under Canon 12 of the old Canons of Professional Ethics, just as it is one of eight under Disciplinary Rule 2-106(B) of the new code. But the position of the Code of Professional Responsibility and Formal Opinion 323 clearly seems to be that fee schedules cannot be "minimum fee schedules" in the sense that phrase is used in the Virginia case to describe a price-fixing procedure.

Warnings have been coming from the Antitrust Division of the Department of Justice. Thomas E. Kauper, the assistant attorney general in charge of that division, told a New York State Bar Association meeting in January, "I think the legal profession has been given sufficient warning: Fee fixing by lawyers can run afoul of the antitrust laws. It may well be that our next warning will be in the form of a complaint." This was followed in February by the remarks of Donald I. Baker, director of policy planning for the antitrust division, at a Washington conference of nonprofit organizations: "For what it is worth, I would say that we in the department entirely agree with [Judge Bryan's] analysis insofar as the Fairfax Bar Association is concerned — 'recommended' fees designed to maintain higher prices should be regarded as illegal under the Sherman Act. Fortunately, this message seems to have been heeded across the country. We have been looking at bar association practices and have found that one after another has abandoned it."

Several state and local bars have eliminated their fee schedules recently. Indeed, two of the original defendants in the Virginia section — the Alexandria Bar Association and the Arlington County Bar Association — canceled theirs during the pendency of the suit and agreed to a consent judgment. . . . It will become increasingly difficult for the profession to justify flat or percentage fees that ignore professional time and skill expended when there is no agreed upon contingency of recovery or payment. □

* *American Bar Association Journal*, March 1973, p. 290.

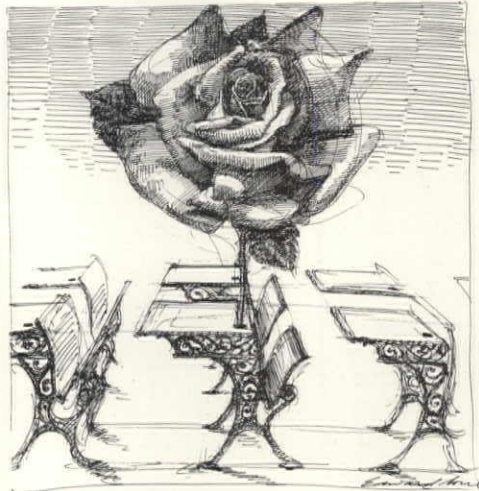
The Economy of Energy Conservation in Educational Facilities. 81 pp. \$2. **The Greening of the High School.** Ruth Weinstock. 88 pp. \$2. **Career Education Facilities.** Alan P. Woodruff. 47 pp. \$2. **Physical Recreation Facilities.** 56 pp. \$3. New York: Educational Facilities Laboratories, 1973.

Any architect who does not have the publications of the Educational Facilities Laboratories in his office library is missing a great opportunity to acquire inexpensive and informative books on current issues in education which affect architecture. EFL advocates concepts that will benefit planners, administrators and users of schools and colleges. Its address is 477 Madison Ave., New York, N.Y. 10022.

The first in this group of four books, *The Economy of Energy Conservation in Educational Facilities* is a report prepared with the assistance of a panel of experts. EFL admits that it presents "this philosophical and financial approach with more trepidation than usual before committing its views to print." The energy crisis is real, however, and even if "there aren't easy or general answers" to this major problem, everyone concerned with schools (and that's all of us, after all) should be grateful to EFL for setting forth the best information available in this short but important report.

The booklet tells specifically how economies can be effected in the operation and maintenance of school buildings; in the modernization of existing schools; and in the planning of future facilities. "You can't measure altruism, but you can savor cost savings on a balance sheet," comments EFL. "And that's what energy conservation is all about."

School administrators are advised to incorporate these steps into energy conservation programs: 1) Review operation and maintenance personnel to be sure that they are qualified to cope with the increasingly sophisticated mechanical/electrical equipment in schools; 2) identify sources of energy waste through an analysis of energy consumption in existing schools; 3) include energy conservation as a major part of an architectural program for both modernization and new construction projects; 4) use life-cycle



costing to replace initial cost as the sole basis for contract awards for energy-consuming systems.

The architect should not think that this report is only for the school administrator. It is filled with information that is of concern to any planner of school facilities.

The Greening of the High School is a report of a conference sponsored by EFL and the Institute for Development of Educational Activities, Inc. It is provided in the expectation that it will provoke "ideas and actions that will make high schools happier, more productive places for the young." Contemporary youth, the client, is considered first. The report reminds us that the young people of today are unlike the generations before them, and our world is not the same either. Yet high schools are essentially unchanged from what they were at the beginning of the century.

The analysis of the present-day adolescent is followed by suggestions for change to fit the client. The reader is reminded of Buckminster Fuller's words: "Reform the environment; stop trying to reform people. They will reform themselves if the environment is right."

The next chapter gets down to cases, giving examples of school programs that do take youth into consideration. It is followed by a discussion of new settings for schools, and proposals are made for humanizing these facilities. The final section, "All About Change," is particularly provocative.

Reporter Weinstock says that the pur-

For the architect who wants to keep abreast of the changing needs in schools, EFL publications provide a good start in building a library.

pose of the "greening" conference "was not to dwell on the moribund state of America's secondary schools" but to discuss "how to make them healthy, how to infuse them with elements that would turn them green and growing." The reader may not agree with all the statements made, but the report is bound to pique one's interest.

EFL is concerned about the cost per use of school buildings or equipment and has recently been exploring the concept of shared facilities. In its publication *Career Education Facilities*, guidelines are offered that will reduce capital and operating costs by making one set of spaces or equipment serve several purposes. But it's more than just a treatise on how spaces and equipment can be shared. There is much information in it as well for the planner of any career education facility.

It's a new world in sports these days, as EFL's report *Physical Recreation Facilities* points out. Today's students want to participate in sports rather than just to watch. And then there's the female who in this day and age demands a place to exercise both her mind and her body. Why should physical education be directed primarily to the male, she asks.

As this publication states, a change in sports styles has affected physical education facilities, and the football stadium and the traditional gym are obsolete. Attention is given to how the stadium can be put to good use by roofing the area for year-round activities and by using the football field for many sports and games. There's information on how to update old places and how to design new ones that are low in cost and flexible.

Facilities for Secondary School Science Teaching: Evolving Patterns in Facilities and Programs. Joseph D. Novak. Washington, D.C.: National Science Teachers Association, 1972. 173 pp. \$15 hardbound, \$12.50 paperbound.

The rapid changes occurring in the design of school facilities are caused by a number of things, including societal influences. This study sponsored by the National Science Teachers Association began with a search for facilities which have exemplary features, and a study team visited

many schools throughout the country to help gain this information. The team found that none of the facilities was outstanding by every criterion used. But it was indicated that all the so-called "better" schools "were striving for modifications in the facilities and/or programs." The hoped-for changes were "strikingly similar from school to school." And as the study went forward, a consensus was reached with regard to programs and to better designs of space, furniture and technology.

The report is divided into two major parts. The first presents general concepts to be considered before planning either new or remodeled science facilities. This section is important to the architect to help him gain an understanding of just what's happening on the educational scene these days.

Part 2 contains illustrations of a number of facilities visited. It gives what the study team believes to be important design considerations to take into account in the planning of facilities for science teaching. The instructional space described includes laboratory space, lecture-discussion space, individual and small group study areas, integrated learning areas and areas for special projects and special purposes.

There is an informative chapter on construction details, and here detailed attention is given to such things as acoustics, internal walls, utilities, furnishings, safety, etc. The carefully selected annotated bibliography at the end of the report is most helpful to those seeking more information.

Novak, the project director, says that the most emphatic consensus emerged among the study team members—that the most promising facilities and programs were found in those schools "where the principal concern was with children as developing human beings." The architect who also has this concern will find this report helpful in designing any kind of school facility.

Innovative Financing of Public School Facilities. W. Monfort Barr and William R. Wilkerson. Danville, Ill.: Interstate Printers & Publishers, Inc., 1973. 177 pp. \$3.95.

The authors of this book say that the traditional rule that public school facilities financing should be supported primarily by local property taxation has outlived its usefulness and should be changed. They make recommendations to help states move from present practices to those more consistent with recent legal and economic theory.

Student Housing: Architectural and Social Aspects. William Mullins and Phyllis Allen. New York: Praeger, 1971. 248 pp. \$25.

Whether in camp, dormitories, student apartments or hostels up to half of the

world's young people spend some time every year in student housing. The first section of this book is devoted to student housing and other community living in the United Kingdom. It provides an overview of the social and architectural aspects of housing young residents. The second part gives a selection of structures with plans and photographs that portray what the authors consider to be "some of the better schemes" built in Europe, Japan and the United States over the last decade. The final section is a "briefing guide" with information on furniture and fittings, loan finance, noise control, etc., in student housing in America. There is also a selected bibliography.

Seven Schools: A Story of Community Action for Better Education. Philadelphia: Young Great Society Building Foundation, 1972. 95 pp. \$3.

Here is the story of seven schools in Philadelphia, each of which is "expressive of the national struggle to change the system of public education and to create the conditions of a better life." They all show a trend toward decentralization of authority with greater involvement of citizens.

The authors, staff members of a community owned architectural and development office in a West Philadelphia neighborhood, have been involved in the life of each school and have worked as architects for five of the seven schools discussed. They are Lawrence A. Goldfarb, Peter H. Brown and Thomas P. Gallagher.

The three major divisions of the book concern case studies, profiles of seven people "whose unique qualities are reflected in one or more of the seven schools" and design and development. In the last section, the architects give views on the way in which the physical environment can respond to the "realities of street life in the ghetto, low construction budgets, rising construction costs and a deteriorated environment."

The Design Necessity: A Casebook of Federally Initiated Projects. Ivan Chermayeff, Richard Saul Wurman, Ralph Caplan and Peter Bradford. Cambridge, Mass.: MIT Press, 1973. 80 pp. \$6.

Some months ago President Nixon asked that three steps be taken to improve the quality of federal design: that a design assembly be held; that graphics in federal agencies be studied in order to improve them; and that the "Guiding Principles for Federal Architecture" developed in 1962 be revised and updated.

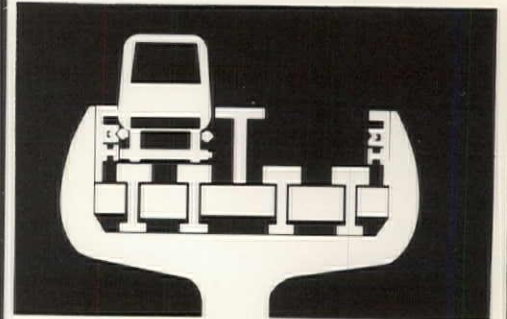
Subsequently, the first Federal Design Assembly was held in Washington, D.C., in April under the sponsorship of the Federal Council on the Arts and Humanities. Its theme, "The Design Necessity," placed emphasis upon demonstrable design performance. The program, an exhibit, a documentary film and this book

were all aimed at "presenting a clear and compelling view of design as a process."

The book is the result of the collaborative efforts of four men: Ivan Chermayeff, designer; Richard Saul Wurman, AIA; Ralph Caplan, writer; and Peter Bradford, designer. Chermayeff and Wurman were co-chairmen of the assembly. (Bradford designed the new format of the AIA JOURNAL which was established with the April issue; Caplan was a consultant.) The book itself is a beautiful example of good design. The graphics are well presented; the layout makes for easy reading.

The volume contains a collection of designs that were funded by the federal government and are case studies of projects "that work because they were designed to work." The projects selected for inclusion illustrate the design process "in which objects, systems and environments are related to people."

The introduction enunciates certain principles: There are sound, proven criteria for judging design effectiveness; design is an urgent requirement and not



a cosmetic addition; design can save both time and money; design enhances communication; design simplifies use, manufacture and maintenance; the design necessity is recognizably present in projects of varied scale and complexity; the absence of design results in the costly consequence of design by default; the basic goal of both designers and government officials in any project is performance; effective design of public services is in itself an essential public service.

The first major section is devoted to visual communications, one case study being the graphics program of the Internal Revenue Service. The next part of the book is on interiors and industrial design, an example being the laboratory outfitting of the Salk Institute for Biological Studies at San Diego, California (architect: Louis I. Kahn, FAIA).

There is a section on architecture, and many of the case studies presented have been featured in the AIA JOURNAL, for example, the St. Francis Square housing project in San Francisco (architects: Marquis & Stoller). The final part of the book gives attention to the landscaped environment in which a number of innovative designs are considered, such as the Auditorium Forecourt Fountain in Portland, Oregon, designed by Lawrence Halprin & Associates.

As the authors state, this book is directed primarily to the federal administrator, but it "also provides a definition of design ideas and goals for design performance crucial to the designer." It is both timely and provocative.

The Architecture of Yorke Rosenberg Mardall, 1944-1972. Introduction by Reyner Banham. New York: Crane Russak & Co., 1972. 128 pp. No price given.

The partnership of Yorke Rosenberg Mardall was formed in 1944. Nearly every building type has been included in its output: airports, hospitals, housing, factories and warehouses as well as interiors. This lavishly illustrated book gives an account of the British firm's broad scope. In the perceptive introductory essay by Reyner Banham titled "Architects to the Mixed Economy," an assessment of the firm's evolving architectural policy is given.

What Time Is This Place? Kevin Lynch. Cambridge, Mass.: MIT Press, 1972. 277 pp. \$10.

Strange it is that the design professions which focus so much on *place* have so long ignored *time*. Not strange is it that Kevin Lynch has been exploring the relationship, the result being his latest book. It is a very different one from his previous three: *The Image of the City* (1960), *Site Planning* (1962) and *The View from the*

Road (1966). This is mainly because the subject is so much broader.

Image of the City was, I felt, somewhat misunderstood. It was an attempt at describing the anatomy of urban perception. Designers mistook it as a set of urban design components. *Site Planning* was a cookbook, one of the best. *The View from the Road* indulged in some wishful thinking—that the visual experience of the highway could itself be a design determinant. But it was a nice wish, well thought out. *Image* was descriptive, whereas the other two books were proscriptive. *What Time Is This Place?* cannot be neatly pigeonholed.

That the subject of time has been little noted by designers is indicated by the bibliography. The sources of the references are in the sciences—biology, psychology, anthropology—and in philosophy and social comment. There are some, too, from scholars and critics of design, but there is very little from the practicing designer, except when he is interested in the past or the future or is something other than a practitioner. That is not hard to understand. Designers tend to focus on place, the locus of the job. *Time* is not much more than a schedule for design and construction. When the site environs contain important remnants, or must anticipate future actions, a somewhat larger span comes into play. But not too much larger.

In planning, the time span can cover a decade or two. But Professor Lynch has something much deeper and more encompassing in mind.

He introduces his views in the first chapter by describing major time experiences in five cities. He sketches the recovery of London after the Great Fire of 1666, tracing its rather rapid rebuilding. Next he probes the dilemma of trying to preserve Bath, England, where the past overwhelms the present. He outlines the effort to make something out of the industrial waste piles accumulated in Stoke-on-Trent. The planners' ideal is poised against the inhabitants' reality in Ciudad Guayana, Venezuela. Then Lynch confronts Havana's social evolution with its constraining physical shell, a product of its past. With these examples the paths of inquiry are charted.

Cities are organisms alive in time, in constant evolution, retaining traces of their past, eliminating obstacles, striving toward futures. People have inner clocks, as well as other biological governors, that must be related to external time phenomena. The experience of time in people and in cities is simultaneously felt and perceived. Lynch makes it visible. His theme is "that the quality of the personal image of time is crucial for individual well-being, and . . . our success in managing environmental change, and that the

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external physical environment plays a role in building and supporting that image of time." He argues "that a desirable image is one that celebrates and enlarges the present while making connections with past and future. The image must be flexible, consonant with external reality, and above all, in tune with our own biological nature."

A baffling challenge to designers? Hardly, but still a challenge. It is really very much part of our task—environmental continuity and context, tuned to place and to person. To understand a building in time, as a continuity of time, as an experience in time, is to enlarge its conception and its reality.

I found much in this book to cause my thoughts to expand, my mind to wander and explore. As well, I found myself returning to thoughts of the mean and narrow determinants that designers are given to work with. How will they be broken? How will our full measure come to be employed? Possibly by a general and widespread recognition that whole people and the whole external world are the real business of design. To address only a narrow part of the task, to be steered mainly by narrow aspects of realization, is indeed a folly. Lynch's thoughts are a search in the realm of a fundamental reality—that we are part of time and that we must learn to design in it and with it.

Lastly, and not the author's fault, the MIT Press has done a less than mediocre job of putting this book together. They seem intent on applying their best efforts to their least deserving books. *Paul D. Spreiregen, AIA*

Principles of Pneumatic Architecture.

Roger N. Dent. London: Architectural Press, 1971. 236 pp. \$16, AIA members; \$18.75, nonmembers.

The subject of pneumatics may seem quite foreign to most architects, one best left to engineers and maybe applied in the aerospace field, but far removed from the static, gravity-governed concern of architecture.

A pneumatic structure "is supported or motivated by the action of pressure differentials, created with air or gases." Thus the environment creates the structure. This is just the reverse of traditional architectural thinking wherein we generally conceive of a static, definitive structural system which itself creates an enclosed environment. This arbitrary limitation appears to be an intrinsic part of the architectural mind, established by the profession and, consequently, imposed upon students and emerging architects.

As this book clearly establishes, where speed of erection and economy of initial costs are concerned, we have severely limited ourselves and have failed, perhaps, to provide a proper evaluation of this design alternative for our clients.

Dent investigates the potential uses of pneumatic structures and presents here an overview of the basic theory and definitions for them, together with a rather complete review of the state of the art. This survey of necessity involves many potential and futuristic implications which Dent, from a purely investigative point of view, attempts to encourage and stimulate.

He makes important distinctions between air-inflated structures (rib and dual-walled) and air-supported ones. Following these definitions and others, the reader



is introduced to basic mathematical formulas which establish the simple principles involved.

An historical review of the development of pneumatics is followed by a more complete and thorough discussion of the analysis and technical detail considerations of the subject. It is this section which will prove of most value and interest to the architect who contemplates the design and construction of a pneumatic structure or who is willing to allow his professional insights to be enriched by the potentiality of such a design alternative. The illustrations, analogies and explanations are clear.

The final sections provide a review of both architectural and nonarchitectural applications of the previously defined technology. The clear impression is that we have relegated this type of construction to military and exhibition uses where speed and economy of construction are the leading priorities. Warehouse, greenhouse, swimming pool, winter construction enclosures and even office building applications, particularly in Europe, make it quite evident that we have nowhere nearly explored the full potential of pneumatics.

As both the models of the first two schemes and the final solution of the US pavilion at Expo '70 illustrate, there is also an abundant opportunity for a stimulating, esthetic experience as well. *Jack Alan Kremers, AIA*

VNR Metric Handbook. Jan A. Sliwa and Leslie Fairweather. New York: Von Nostrand Reinhold, 1972. 206 pp. \$5.95.

When the race between the tortoise and the snail is finally done, the United States will be a metric country. We will probably have a 10-year period similar to that of

the United Kingdom to effect the conversion from our traditional system of weights and measures to the international metric system of SI units. Our body of literature presently has precious little in it to help the architectural profession in its task of assisting the construction industry in the metrication process. Fortunately, Britain is in the final stages of metric conversion, and we can learn much from its experience.

In 1968, under the leadership of the Royal Institute of British Architects, the *Architects' Journal* published three special issues on metric, later updated, expanded and bound as the *AJ Metric Handbook*. Well over 100,000 copies have been sold. This volume has recently been republished in this country under the title *VNR Metric Handbook*. The authors, both members of the RIBA, are well versed in their subject.

Part of the handbook resembles a metric miniature of *Architectural Graphic Standards*, centering around basic anthropometric and ergonomic data useful to the design professional. The key subject of dimensional coordination is explored in its relationship to the metric system. Many chapters are devoted to essential data relating to broad groups of building types and to building engineering subjects.

Perhaps the most useful pieces of information for Americans in the handbook at this stage are the introductory materials, conversion tables and extensive bibliography. It's a little weird to read 1968 material in 1973 which refers to what will be happening when you know that it's already happened and you wish that you knew how it really turned out. An updating of the chapters on the conversion program, relating planned to actual events, would have been very helpful to the American reader.

The stated purpose of the handbook is to "offer those engaged in the planning, design and construction of buildings a grounding in the principles of the metric system, with a reasonably comprehensive spread of basic data presented in metric terms." The book has succeeded in this goal and has even gone further in providing considerable information on the conversion process itself. It can be acquired for the cost of a couple of Trader Vic drinks and is must reading at this time for every architect who is doing overseas work or is thinking of lending a hand when the US converts to the metric system. *Robert Allan Class, AIA, Director, AIA Technical Programs*

Construction Project Management.

Richard H. Clough. New York: Wiley-Interscience, 1972. 264 pp. \$12.95.

This publication is written for contractors to delineate exactly how they should process their work from bidding to final completion of a project. Written in a read-

able style, the book has a minimum of wasted words.

The heart of the book is in the development of a critical path method system by a contractor for a project. The pros and cons of the CPM are illustrated in an easily understood series of progression.

Architects can find here an insight into the methods employed in the contractor's office. Those who are unfamiliar with CPM will also gain the benefits of the author's understanding of its proper application in the construction process. *Steven H. Rosenfeld, Director, AIA Professional Practice Programs*

Art Career Guide: A Guidance Handbook for Art Students, Teachers, Vocational Counselors and Job Hunters. 3d ed., revised and enlarged. Donald Holden. New York: Watson-Guption Publications, 1973. 303 pp. \$7.95.

The three major sections of this book concern planning an education in the arts, choosing a career and finding a job. There is also a directory of degree-granting schools as well as a listing of professional organizations and guidance agencies.

In the section on choosing a career, there is a chapter devoted to architecture. Such questions as what does an architect do, what does an architect study and where does an architect find work are considered. To get more information about a career in architecture, the reader is told to look at some of the major architectural journals, to watch for exhibitions and to experience at firsthand buildings, landscaping and urban planning projects.

A Guide to Myth and Religion in European Painting, 1270-1700. Satia and Robert Bernen. New York: Braziller, 1973. 288 pp. \$6.95 hardbound, \$3.95 paperbound.

If you want to know why Saturn devoured one of his own children or how Samson killed a thousand men with the jawbone of an ass, or the names of the 12 apostles, this guide will help you. It provides a useful reference to the stories told in some famous European paintings, enabling the viewer to better understand the myth and religion behind the paintings.

Modern Masonry Panel Construction Systems. J. J. Svec and P. E. Jeffers. Boston: Cahners Books, 1972. 129 pp. \$12.50.

Brick and block panels, say the authors of this book, have the advantage of rapid installation, low cost and increased productivity per man hour.

The first section on masonry systems, shows how such systems are made and used throughout the world. The materials were first published in *Brick & Clay Record*, whose editors have prepared the book.

The second part contains a record of two symposiums on masonry systems

which were conducted by *Brick & Clay Record*. A collection of editorial comments on panel systems make up the third section; it is followed by a brief history of worldwide masonry prefabrication.

PCI Manual on Design of Connections for Precast Prestressed Concrete. PCI Committee on Connection Details. Chicago: Prestressed Concrete Institute, 1973, 99 pp. \$4.

Previous connection design references, says the Prestressed Concrete Institute, have concentrated almost exclusively on "transfer of forces." This manual consid-

ers this facet of connection design and adds information on production, erection, standardization, volume changes, force systems and general industry practice.

Soil Mechanics in Foundation Engineering. Zenon Wilun and Krzysztof Starzewski. New York: Wiley, 1972. 2 vols, \$10.75 each.

The first volume of this work concerns the properties of soils and site investigations; the second covers theory and practice. Together they present a comprehensive treatment of the fundamentals of soil mechanics and foundation engineering. □

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LETTERS

Environments for the Mentally Retarded:

Concerning my article on "Design as a Nonverbal Language" in the August issue, I regret that no credit was given to John Miller, the talented young prize-winning photo-journalist, who took the pictures as his contribution to the cause.

At the risk of sounding picky, I must point out that both the table of contents and the introductory abstract used the term "mentally ill." While God knows that the same warehousing and cold Hill-Burton structures make up the hell holes which are institutions for both retarded people and mentally ill patients, the handicaps are discrete and in no way connected.

Mental illness lends itself to a medical therapeutic and possibly curative rationale. Retardation, on the other hand, responds to psychology and education. The point is especially imperative because it fingers the inappropriateness of anything but normal home-like environments.

*Dolores Norley
West Palm Beach, Fla.*

I have just read the marvelous article by Dolores Norley entitled "Design as a Nonverbal Language" in the August issue.

This speaks the language that every architect who designs an environment of living for the retarded should know and by which he should be guided.

*James T. Canizaro, AIA
Jackson, Miss.*

The Doctor and the Architect: The August issue on the planning of health facilities was of interest to me as a practicing physician. I have discussed hospital architecture with a number of architects, but I usually have difficulty making them listen. How can an architect build a facility for surgery when he's never removed an appendix? He has to listen to those who have.

It seems to me that a hospital should be built to care for the patient in all phases of treatment in the best and most economical manner. The American people in their affluence, however, have come to expect Cadillac medicine at Ford prices. All over the country hospitals are competing with each other at the expense of the patient rather than to his advantage. It seems that anything is done to keep up the census in a hospital.

Carpeting the floors in a hospital is a great idea, but it is not practical. It is impossible to keep that carpet clean, unstained and uncontaminated. Of course, carpets are quieter and more beautiful, but the end does not always justify the means. It also is harder to transport patients and food carts on carpets.

I know of a hospital which is in the

process of building a recreation room for teenage patients at the cost of some \$60,000. It will have a pool table, facilities for ping pong, stereo, hi-fi, etc. But it's all at the expense of the patient and the taxpayer. When a patient is ready for such activities, he is ready to be discharged or to be treated as an out-patient.

I am not nearly so interested in my hospital's being a thing of beauty as I am in its providing what the patient needs. It seems to me that it is here that architects fail. A fountain and a pool in the lobby are lovely to behold, but they won't do a thing for the pneumonia patient on the third floor. My experience has been that architects want to build palaces rather than efficient hospitals. It should be remembered that the cost of any hospital expenditure must be borne by the patient and the taxpayer. They are the ones who pay.

Architects should listen to doctors before they design a hospital or any kind of health facility. But my experience has been that after a three-hour conference with the doctors, the architects build the structure their own way.

Now let's be completely fair about this subject. There are four principal factions involved in hospital construction: the government (regulations), the hospital administration, the doctors and the architect. None can function properly without the complete cooperation and interest of each of the others. All too frequently, the doctors are either too busy or too complacent to take the time and make the effort to demand the proper things for the patients in the construction of health care facilities. Perhaps they have too much blind faith in the other three factions, but they will yell the loudest after the facility is completed and occupied.

*Dr. John W. Williams, Fellow
American College of Obstetricians and
Gynecologists
Enid, Okla.*

Words We Like to Hear: The "new look" of the AIA JOURNAL is just great. Congratulations! *Trevor W. Rogers, AIA
Buffalo, N.Y.*

EVENTS

Oct. 14-17: New York State Association of Architects Annual Convention, Kutscher's Country Club, Monticello, N.Y.

Oct. 16-18: Producers' Council National Member Conference, Carrousel Inn, Cincinnati.

Oct. 18-19: Illinois AIA Annual Regional Conference, Pheasant Run Lodge, St. Charles, Ill.

Oct. 21-25: American Institute of Planners Annual Conference, Regency-Hyatt House, Atlanta.

Oct. 22: Submissions due, National AIA Honor Awards. Contact: Maria Murray, Awards Programs, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

Oct. 25-26: Architects Society of Ohio Annual Meeting, Akron, Ohio.

Oct. 26-28: Georgia Association AIA Annual Convention, Unicoi Conference Center, Helen, Ga.

Oct. 26-28: Louisiana Architects Association Convention, Lake Charles, La.

Oct. 29: Entries due, 1974 Library Buildings Award Program. Contact: Maria Murray, Awards Programs, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

Oct. 31-Nov. 2: Texas Society of Architects Annual Meeting, Convention Center, San Antonio, Tex.

Nov. 1-2: Annual Construction Contracts and Specifications Institute, University of Wisconsin, Madison, Wis.

Nov. 6-8: Designing for Disaster Symposium, Illinois Institute of Technology, Chicago.

Nov. 15: Applications due: White House Fellowships. Contact: President's Commission on White House Fellows, 1900 E St. N.W., Washington, D.C. 20415.

Nov. 23-25: Association of Student Chapters/AIA Annual Forum, University of Miami, Miami.

Nov. 27-29: Building Research Institute Fall Conferences, Sheraton-Park Hotel, Washington, D.C.

Nov. 27-29: Annual Industrialized Building Exposition and Congress, McCormick Place, Chicago.

Nov. 28-30: Systems Engineering Conference, Statler-Hilton Hotel, New York City.

Dec. 13-14: Bringing Underground Power into Urban Areas Institute, University of Wisconsin, Madison, Wis.

Dec. 15: Entries due, One-Stage International Competition for the Building of a Library in Damascus, Syria. Contact: Comité de l'Aménagement de la Bibliothèque Publique de Dams, Ministère des Travaux Publics et des Ressources Hydrauliques, Damascus, Syria.

Jan. 10-12: Grassroots Conference East, L'Enfant Plaza Hotel, Washington, D.C.

Jan. 15: Entries due, Student Competition on Combining Energy Conservation and Design. Contact: AS Competition, Association of Student Chapters/AIA, 1735 New York Ave. N.W., Washington, D.C. 20006.

Jan. 16-18: Material Handling and the Industrial Engineer Seminar, Marriott Motor Hotel, Philadelphia.

Jan. 17-19: Grassroots Conference West, Vacation Village, San Diego, Calif.

Jan. 21-23: Grassroots Conference Central, Crown Center, Kansas City, Mo.

Jan. 31: Entries due, National Plywood Design Awards Program. Contact: American Plywood Association, 1119 A St., Tacoma, Wash. 98401. □

GOING ON

going on from page 11

serve energy. The building's exterior walls will be insulated and windows double-glazed with reflective glass to reduce demands on airconditioning and heating. It is estimated that only about 20 percent of solar radiation will be transmitted into the building. Newly developed lighting



Steel frame of tower will be sheathed with reflective glass and aluminum bands.

fixtures are designed to reduce energy requirements. A system of air filters will reduce the amount of air taken into the building to diminish the need to cool or heat outside air and to let the air inside the structure be cleaner and freer of pollutants.

With groundbreaking set for February, it is anticipated that the project will be completed in the fall of 1976.

Baltimore Plans for New Town-in-Town Designed by Canadian Moshe Safdie

The Canadian architect Moshe Safdie has designed a new town-in-town for Baltimore which will accommodate some 12,000 persons of moderate and middle income. The new town, Coldspring, will be built on 580 acres of open land within the city limits on a location which Safdie says is "one of the most spectacular urban sites" that he has seen. The land lies between the Northern Parkway and Druid Park and the Jones Falls and Greenspring Avenue.

Safdie's plan calls for about 3,780 houses in three overlapping neighborhoods, each of which will have a school



Coldspring will be adjacent to a wildlife preserve within Baltimore's city limits.

and community center. They will be linked by a network of parks, pedestrian walkways and roads, with a centrally located town center as a common focus.

The housing will include townhouses on the flat areas and vertically stacked houses on the slopes. The houses are clustered together to allow room for open space, lakes, recreational facilities and other urban amenities. Cars and people will be separated, with parking provided under elevated pedestrian walkways that connect the housing units.

Safdie's aim is to "integrate personal space into a workable community system." He has remarked that Coldspring's facilities—housing, shopping center, schools, etc.—"are part of an integrated structure" with "the open space a continuous system" as well, "rather than just an open surface on which individual structures sit."

Coldspring is sponsored by the City of Baltimore and will be built by a private developer supported by public subsidy.

Prototypical Modular House Described As 'Log Cabin' of the Industrial Age

A demonstration house built in Kohler, Wis., was designed as "an example of how technology could give the average man the wherewithall of building his own home." Centennial House commemorates the founding a century ago of Kohler Co. and was built by the firm and the magazine *Better Homes and Gardens*. Its designer is Laurence Booth, AIA, a partner in the Chicago architectural firm of Booth & Nagle.

The three-bedroom modular structure is viewed as a "prototype for the kind of house that its architect envisions for the future—a house built by the average handyman using a system of factory-built core units and precut field-assembled modules." Booth says that the house

"might well be the 'log cabin' of the industrial age in that it returns to its builders some possible participation in creating and expanding their environments."

Field constructed, the modular structure was built around a core that includes the plumbing, heating, airconditioning, electrical services, kitchen appliances, storage cabinets, circular stairway to the second floor and even all the interior doors. The other rooms were erected as wing components or space modules that are attached to the central core. Such a system of modular construction, com-



Diagonally placed redwood paneling of the exterior is repeated inside.

ments Booth, provides flexibility for individualized planning and expansion. Because it uses factory-built units that may be quickly assembled with precut components, the house also offers possibilities for economy.

The House That Recycling Built Is Ready for Occupancy in Richmond

A four-bedroom, trilevel house has been erected in suburban Richmond, Va., to demonstrate that recycled materials can be used advantageously in normal construction. All the recycled products used in the project, coordinated by Reynolds Metals Company, are either available now or are technically practical for future use.

"Excluding freight charges to bring all of these materials together at the Richmond site," explained W. B. Moore, Reynolds vice president for architectural and building products, "the costs of these individual products are, or can be, comparable to conventional ones. Some are being used by builders today, and we

certainly expect them to be used more in the future.”

The designer of the house, Robert H. Clark, AIA, of the Richmond firm of Carlton, Taylor & Clark, found that while some recycled materials required more preplanning than others, “all of them have good design characteristics, and the unconventional products ultimately worked as well as the familiar ones.”

The major problem, Clark pointed out, is in developing some kind of system of area collection to make the whole thing economically feasible.

Aluminum beverage cans picked off a Florida beach, glass bottles from California parks, old newspapers from New Jersey, fly ash collected from a smoke stack in West Virginia, scrap fibers gathered from North Carolina carpet plants, processed garbage from New York City, worn-out auto tires from Mississippi and fibers from a municipal waste separation plant in Ohio are just some of the materials that went to make up the house. (A list of participating companies and their contributions is available through the AIA JOURNAL.)

The builder, Realty Industries, Inc.,

expects to sell the house for about \$60,750, a price in line with other homes in the neighborhood.

Architectural Leader in Indiana, Active in Building Congresses

Merritt Harrison, FAIA, was known in Indianapolis as “the dean of Indiana architects,” having designed such well-known structures as the Attucks High School, the Indiana School for the Blind, Irvington Presbyterian Church, Meridian Street United Methodist Church and the Coliseum.

When Harrison died on July 24 at the age of 86, the *Indianapolis News* commented editorially that “architects differ from the followers of other professions in that their contributions are tangible assets to the community in which they live and work and may be seen and admired by many generations.” The newspaper eulogized Harrison for the buildings he designed in that city over a 60-year period and called him “an outstanding member of a profession deeply concerned with the appearance of the community, state and nation.”

Harrison, a graduate of Cornell Univer-

sity and a leader in civic activities, was twice president of the Indiana Chapter AIA and also its secretary for nearly a decade. He helped organize the Indiana Building Congress in 1929 and was chairman of the Building Congress of the United States from 1951 to 1954. He was from a distinguished Indiana family and was a relative of Presidents William Henry Harrison and Benjamin Harrison.

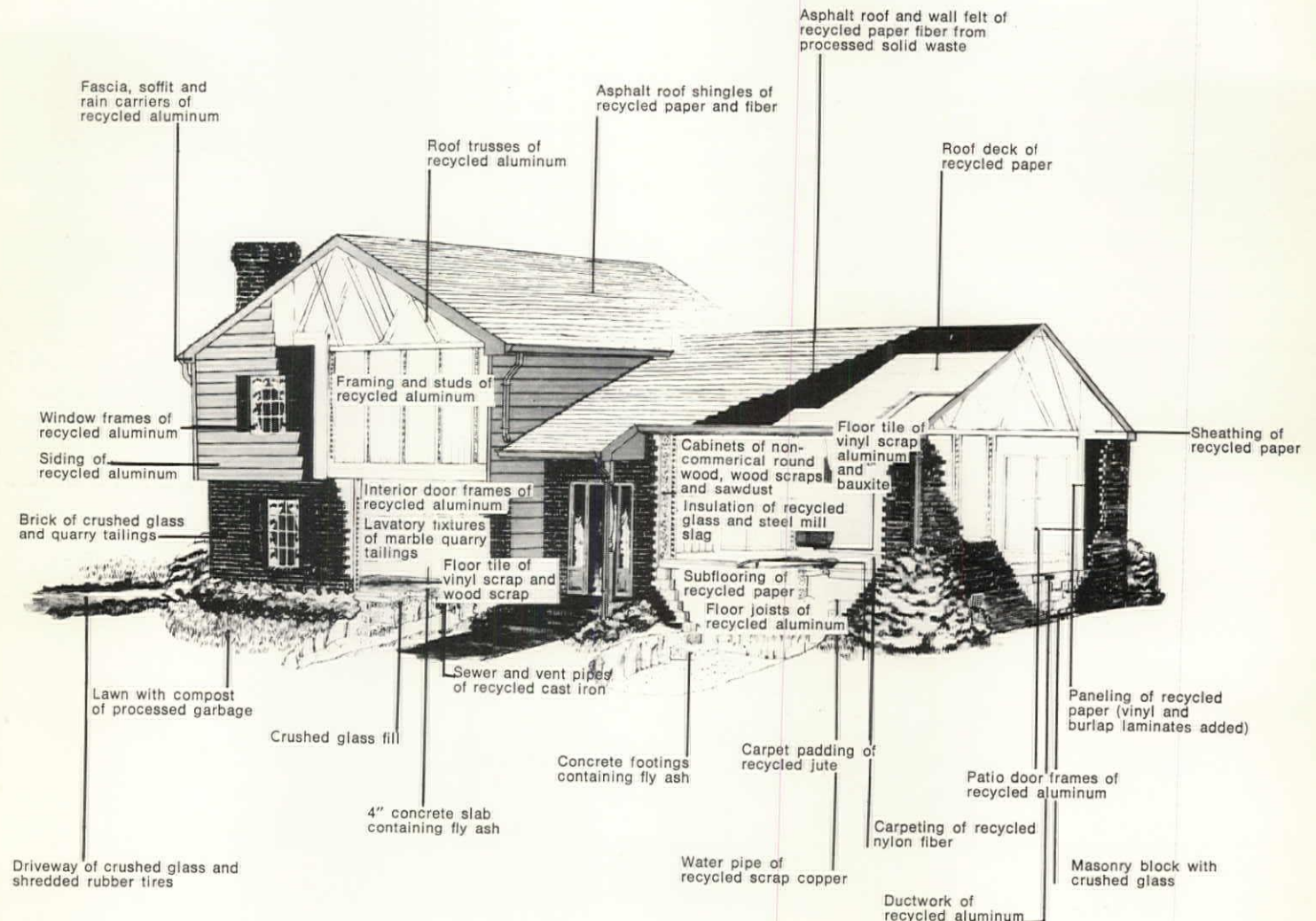
Deaths

H. HAMILTON BROWN, FAIA, Carmel, Calif.
LEONARD R. BRUNSWICK, Laguna Beach, Calif.

EUGENE D. CORWIN, North St. Paul
JAMES R. EDMUNDS III, Baltimore
WARD W. FENNER, Stamford, Conn.
ALFRED MORTON GITHENS, FAIA, Laguna Beach, Calif.

FRED R. HAMMOND, St. Louis
T. GEORGE MCHALE, Houston
NOBLE W. MILLER, Orlando, Fla.
STEPHEN P. NOLAN, Morristown, N.J.
ELEANOR MANNING O'CONNOR, Boston
WALTER PIERSON JR., Greenwich, Conn.
CHAUNCEY W. RILEY, New Canaan, Conn.

JAMES A. SPENCE, Saginaw, Mich.
JOE H. WILDERMUTH, Marathon Shores, Fla.



This cutaway drawing pinpoints the location of the various recycled materials used in a conventionally designed suburban house.

Newslines

The forces that shape the built environment were highlighted in a film festival held last spring under the sponsorship of the Columbia University School of Architecture and Planning. A catalog was published which gives information about the selected films, their subject matter, purchase price, rental fee, length, etc. The catalog will help those who want suggestions for a good film to show at a meeting as well as those who want to build up a film library. It may be obtained for \$2.75, including postage, from the Graduate School of Architecture and Planning, Avery Hall, Columbia University, New York, N.Y. 10027.

Rudard A. Jones, AIA, research professor of architecture and director of the Small Homes Council, Building Research Council, University of Illinois, Champaign, was recently elected president of the American Society for Testing and Materials.

The Octagon House, owned and maintained by the AIA Foundation, has qualified for museum accreditation under the standards of the American Association of Museums.

A workbook to aid decision making by nonprofessionals in community affairs was published in 1969 by the Princeton University Research Center for Urban and Environmental Planning. Now the center has published its first evaluation of the document to determine the extent to which suggested methods have been applied and the areas in which the workbook was most useful. A copy of *Planning and Design Workbook for Community Participation: An Evaluation Report* will be sent without charge to interested persons. Requests may be sent to Dorothy E. Whiteman at the center, School of Architecture and Urban Planning, Princeton University, Princeton, N.J. 08540.

Jan Hird Pokorny, FAIA, a partner in the New York City architectural and planning firm of Pokorny & Pertz, was recently sworn in as a member of New York City's Art Commission. This agency's responsibility is to approve the designs of all city buildings and all works of art on city property.

The growth of the mobile home industry is indicated by the fact that four mobile home manufacturers made *Fortune* magazine's top 500 US companies for 1972.

C. Randolph Wedding, AIA, is the new mayor of St. Petersburg, Fla. He won the race by a margin of 5,747 votes.

A student job bank has been established by the Association of Student Chapters/AIA. The aim is to provide a network of

contacts which can give students information about vacancies for full, part-time or summer jobs. Information may be obtained from Ellen Meyerson, ASC/AIA, 1735 New York Ave. N.W., Washington, D.C. 20006.

Directional signs at Expo '74 in Spokane, Wash., may have figures in both feet and meters. The concept of a bimeasurement system has been approved and is viewed as a start toward eventual US conversion to the metric system.

The National Architectural Secretaries Association has launched a quarterly mag-

azine, *The Architectural Secretary*. It will keep NASA members informed about matters of concern to the group. A copy will be sent anyone who requests it by writing to Terry L. Peck, editor, 1735 New York Ave. N.W., Washington, D.C. 20006.

Richard W. Cramer, AIA, formerly associated with the Corps of Engineers Construction Engineering Research Laboratory in Champaign, Ill., has been appointed Chief, Special Projects Section, Structures Branch, Military Construction Directorate, Office of the Chief of Engineers in Washington, D.C. □



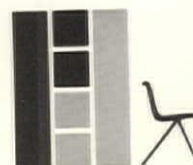
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