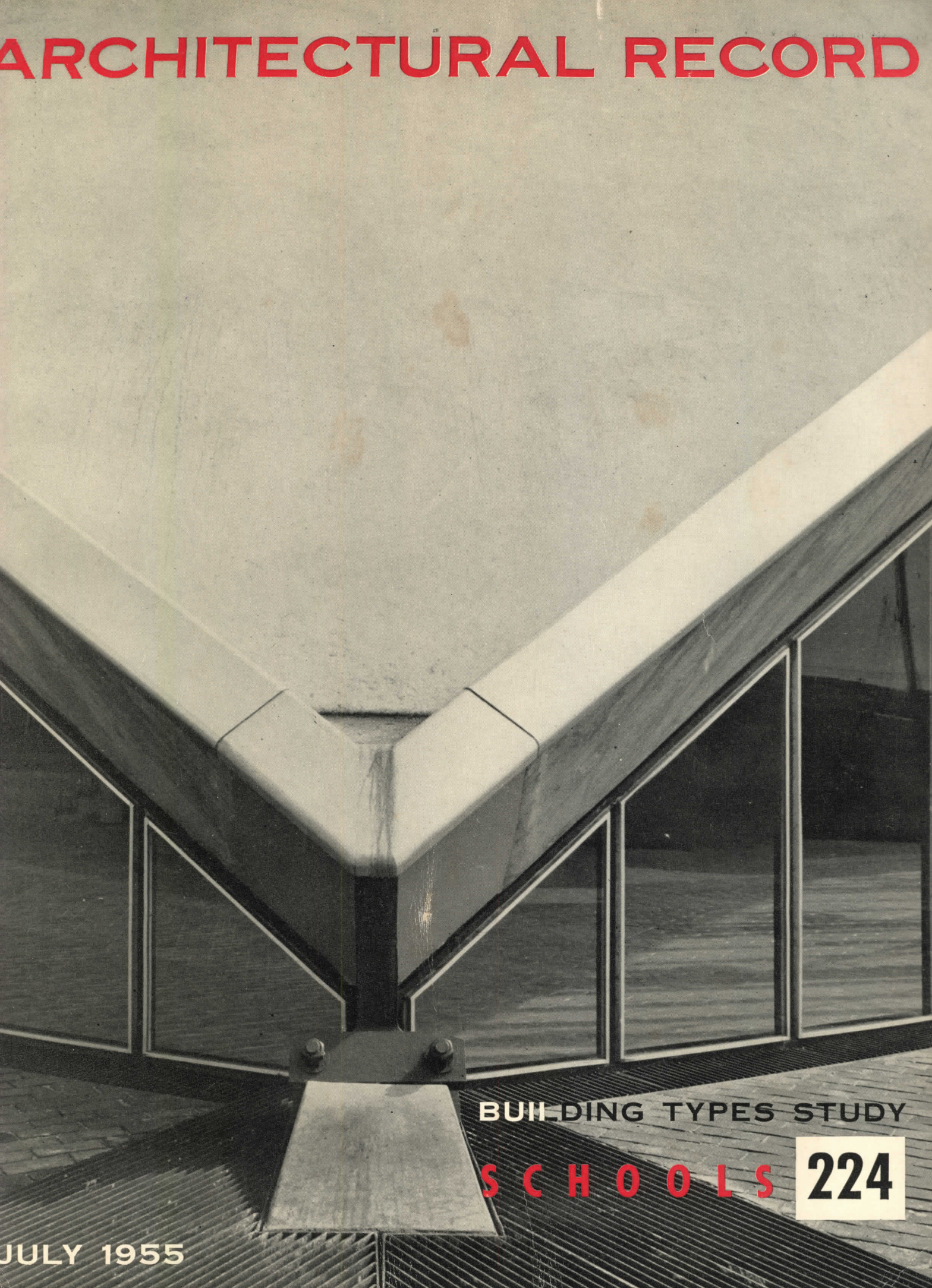
ARCHITECTURAL RECORD



BUILDING TYPES STUDY

SCHOOLS 224

JULY 1955

New Arrow Park plant of The Parker Pen Co., Janesville, Wisconsin. Archt.—John J. Flad & Son, Madison, Wisconsin; Contr.—T. S. Willis, Janesville, Wisconsin; Pozzolith Ready-Mixed Concrete supplied by Janesville Sand and Gravel Co., Janesville, Wisconsin.

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ARCHITECTURAL RECORD

July 1955 Vol. 118 No. 1

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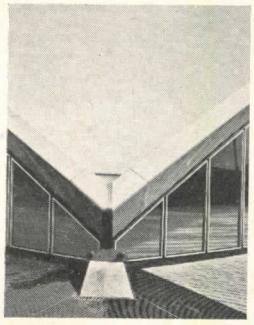

COVER: M. I. T. Auditorium, Cambridge, Mass.; Eero Saarinen, Architect; Robert D. Harvey, Photographer

The Record Reports

M. I. T. Auditorium

Discussion about Eero Saarinen's bold design for the Kresge Auditorium is one of the obvious reasons for building it — it is there to be tested, criticized, debated, as well as used. The RECORD, withholding its own pearls of wisdom, makes so bold as to turn the task over to one who might be called an expert layman — a layman in architecture, a well known expert in activities that take place in our better auditoriums. A professional criticism is appended for good measure, by an English architect, an M. I. T. graduate, who also uses words to good effect.

Birth of a Parti

An architect is happiest when he gets a commission with a pioneering program attached to it — in this case a new kind of jail, with courthouse, and no ancient concepts mixed in. This is a visual story of how such a program finally developed into a building design.

Continued on next page

ARCHITECTURAL RECORD

Continued from page 5

Member of Audit Bureau of Circulations and Associated Business Publications. Architectural Record is indexed in Art Index, Industrial Arts Index and Engineering Index.

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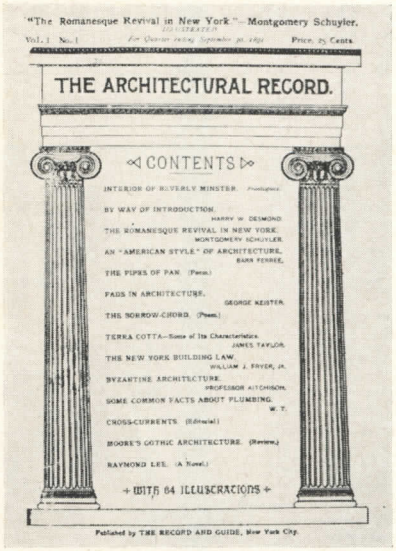
THE RECORD REPORTS

PERSPECTIVES

THE ROARING TRAFFIC'S BOOM, Lewis Mumford's recent series in *The New Yorker*, amounts to an impassioned plea for planned decentralization, as the "hopeful alternative" to "the present system of planning and building 'more and more of worse and worse.'" Such planning is not an idle dream, says Mr. Mumford, but "it will require an ability to face realities, a sense of public responsibility, and a boldness of imagination that have so far been absent among those who have exercised authority." For the complete series — "The Skyline" department of *The New Yorker*, March 19, April 12, April 16 and June 11.

PALACES AND PROGRESS: every century must have its monument, it seems — for the eighteenth century there was Versailles, for the nineteenth there was the Crystal Palace, and now if New York's irrepressible William Zeckendorf has his way, for the twentieth there will be an architectural ode to commerce in the form of the world's biggest and costliest building to house an international merchandise mart and permanent world's fair on the present site of Pennsylvania Station (Stanford White's ode to an earlier concept of progress). An agreement with the Pennsylvania Railroad signed last month gives Mr. Z's Webb & Knapp a $30 million one-year option for the purchase of "air rights" for building above ground level in the area bounded by Seventh and Eighth avenues and 31st and 32nd streets. The Pennsy would spend some $13 million to reconstruct Pennsylvania Station below ground; Mr. Z would spend an estimated $100 million to erect "The Palace of Progress" above it. As currently projected, the building would contain 154 million cu ft (for comparative cubages of the world's largest buildings, see below). The architectural concept being developed by Lester C. Tichy, architect, and the Webb & Knapp Architectural Division, I. M. Pei, director, is in its very earliest stages; simply stated, it would put a nine-acre building on the nine-acre site, with the "permanent world's fair" occupying the lowest block of floors, the "international merchandise mart" the next several floors and buyers' offices the top block. Offstreet loading facilities will be provided, but not off-street parking: traffic and parking, says Mr. Z, are the city's problems. It is estimated that the building will require a workforce of 50,000 and that at minimum it will average 30,000 visitors a day. It will be privately owned and operated by Palace of Progress Inc., a wholly-owned subsidiary of Webb & Knapp Inc., with impresario Billy Rose as president and general manager (he also gave the project its name). As Mr. Z sees it, "only two question marks hang over this project now" — obtaining the necessary building code adjustments; and the problem of construction itself. How do you span perhaps 400 ft and support an enclosure of 154 million cu ft above ground level when your foundations must pierce the world's busiest railroad terminal to be rooted between tracks that carry 689 trains a day — with no interruption in the railroad's operations? In effect, this is the structural problem that confronts Paul Weidlinger as consulting engineer to the designers. The target date for starting construction is June 1, 1956.

THE RECORD OF A REVOLUTION is in the pages of any serious journal which has been publishing without interruption, as this one has, since 1891; no matter what the field. The architectural record of the past 64 years is almost a kaleidoscope of revolution


"The Romanesque Revival in New York."—Montgomery Schuyler.

THE ARCHITECTURAL RECORD.

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SOME COMMON FACTS ABOUT PLUMBING.

CROSS-CURRENTS. (Editorial)

MOORE'S GOTHIC ARCHITECTURE. (Review.)

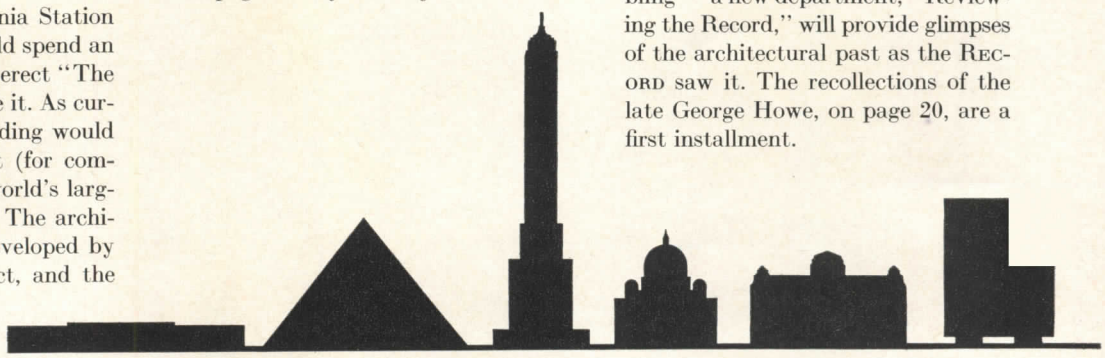
RAYMOND LEE. (A Novel.)

+ WITH 64 ILLUSTRATIONS +

Published by THE RECORD AND GUIDE, New York City.

Contents page of the Record's first issue — September 30, 1891

(and counter-revolution) in big and little things. The pages of the RECORD over the years give architectural history the special perspective of the contemporary account; the revolutions and the counter-revolutions are there, but so are a great many matters with which the architects of their day often seemed a good deal more concerned, and so are a great many with which architects today are still not enough concerned. For an occasional backward look — informative or amusing or nostalgic or even humbling — a new department, "Reviewing the Record," will provide glimpses of the architectural past as the RECORD saw it. The recollections of the late George Howe, on page 20, are a first installment.



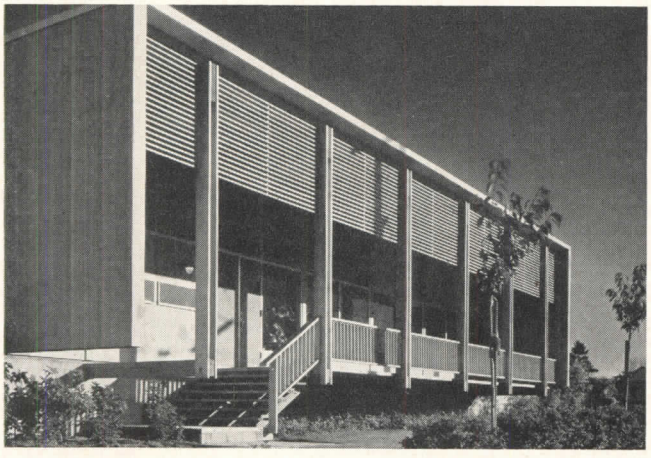
23 SCHOOLS APPLAUDED BY SCHOOLMEN:

The architectural exhibitions at the three regional conventions held this year by the American Association of School Administrators produced eleven top award winners — the Award of Merit recipients shown on these pages — and 12 Honorable Mentions (shown on pages 292–298). It was the seventh year of architectural exhibitions for A.A.S.A., the second of its award program. Members of the Committee on School Buildings of the American Institute of Architects joined school administrators of the National Council on Schoolhouse Construction of A.A.S.A. on the award juries.

Judgments in the three competitions, which were open to all registered architects in the U. S., were guided by two fundamental criteria — excellence of the projects as works of architecture and excellence in furthering the local educational program. In the individual school plants juries looked for these features, all of them regarded as of equal importance: adequacy for educational function; grouping of instructional areas; accessibility of facilities; flexibility; community use; environmental controls; adequacy of light, air, sound; safety; expansibility.

At the only one of the three conventions at which there was a formal "jury report," the Cleveland jury expressed itself as "favorably impressed by some good examples of openness of plan and of continued efforts to solve the daylighting problem." On the other hand, the jury noted that in general, secondary school plans "reveal the need for much basic thinking about the nature of the educational programs to be housed";

AWARDS OF MERIT



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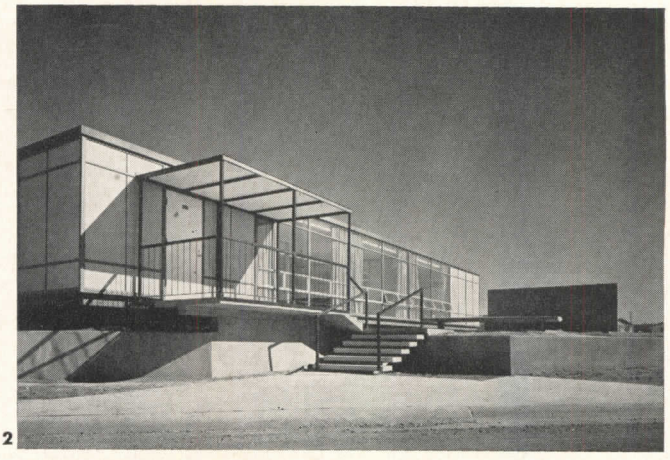

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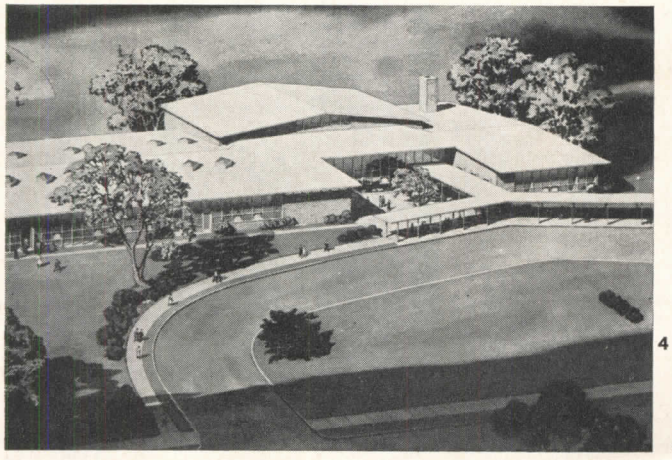

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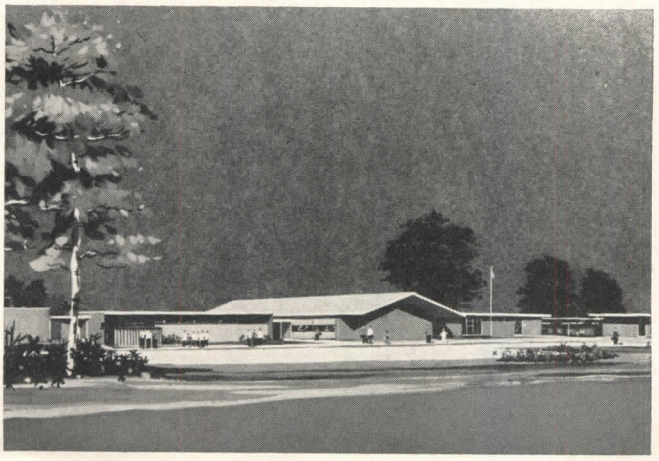

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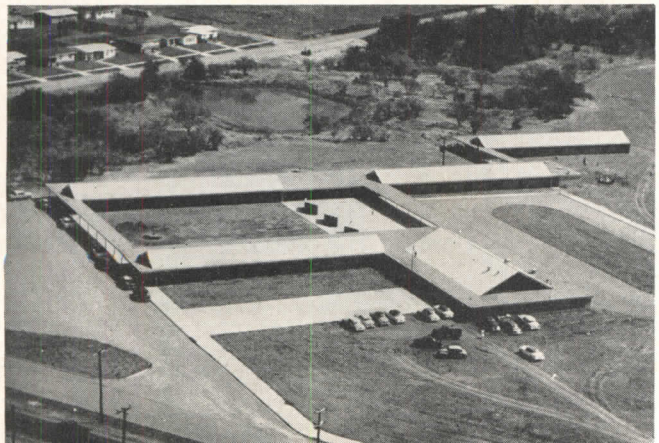

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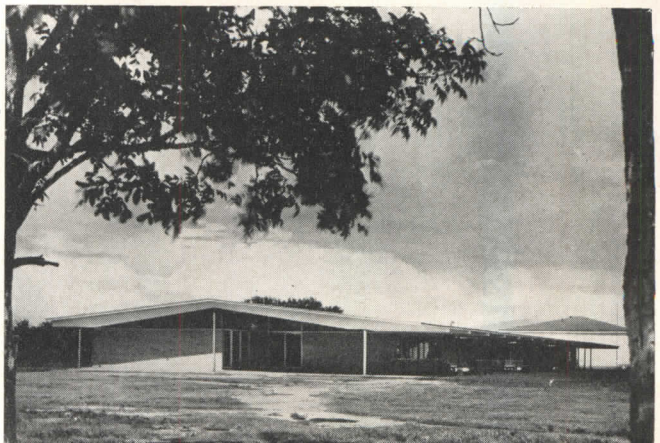

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THE WINNERS IN THREE REGIONAL COMPETITIONS

and "took exception to these features in some exhibits: (1) Play areas, inside and outside the building, located so close to classrooms as to create a noise problem; (2) Stages not accessible to performers without passing through audience spaces; (3) Poor designing for visual comfort and efficiency; (4) Inclusion of statements having the appearance of advertising contrary to the spirit, if not the letter, of the rules of ethics of the American Institute of Architects, and of laudatory statements that were not substantiated."

The jury also suggested that site planning should be given more attention in future exhibits.

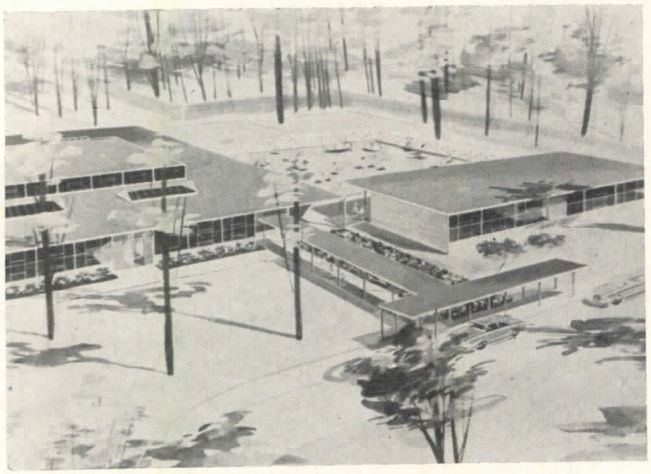
The award-winning panels were shown in a special exhibition, "Contemporary Architecture for Schools," in the gallery of the A.I.A. national headquarters in Washington April 25–May 13. They will have a great many future showings in communities throughout the country via a filmstrip prepared for distribution by A.A.S.A.

Selection of the award winners was made by six-man juries each composed of three members of the A.A.S.A.'s National Council on Schoolhouse Construction and three members of the American Institute of Architects. Membership of the three juries was as follows:

A.A.S.A.–A.I.A. Juries

ST. LOUIS — (for the National Council on Schoolhouse Construction) N. L. George, assistant superintendent of schools, Oklahoma City; George Engelhart, of the Missouri State Department of Education; and Earl A. Stoneman, of the University of Nebraska;

(Continued on page 292)



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St. Louis — *1. Tucker Maxon Oral School, Portland, Ore.; Belluschi and Skidmore, Owings & Merrill. 2. Jane Phillips Elementary School, Bartlesville, Okla.; Caudill, Rowlett, Scott & Associates; 3. Bristol Primary School, Webster Groves, Mo.; Hellmuth, Yamasaki & Leinweber.*

Cleveland — *4. Tallmadge Elementary School, Lancaster, Ohio; Joseph Baker & Associates. 5. Dickinson Street School, Northport, N. Y.; Ketchum, Giná & Sharp. 6. Clover Drive Community School, Great Neck, L. I., N. Y.; Perkins & Will. 7. Birmingham Junior High School, Birmingham, Mich.; Eberle M. Smith & Associates.*

Denver — *8. Florence Black Elementary School, Mesquite, Tex.; Caudill, Rowlett, Scott & Associates. 9. Edna Elementary School, Edna, Tex.; Caudill, Rowlett, Scott & Associates. 10. Harvard Public School, Harvard, Neb.; Clark & Enersen. 11. Farmington High School, Farmington, N. Mex.; Max Flatow-Jason Moore.*

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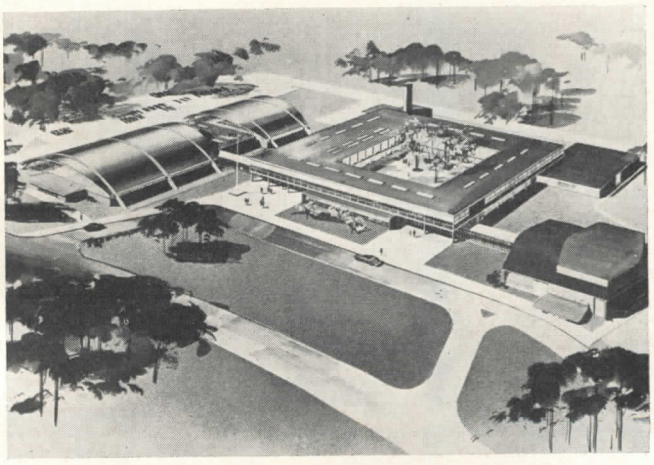

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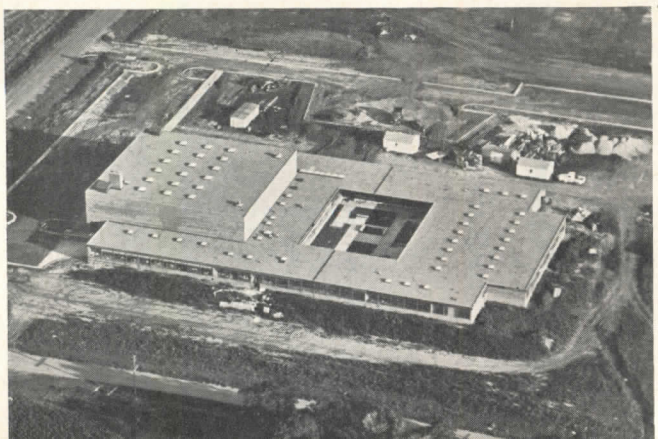

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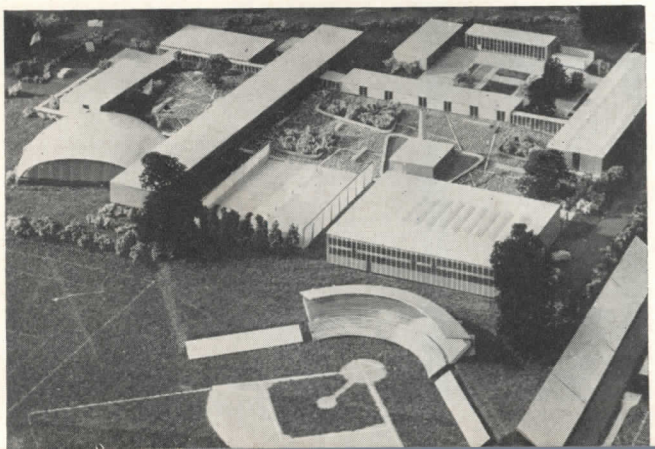

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Most States Would Like to Know:

WHAT "DECLINE" IN SCHOOL NEEDS?

Chief State School Officers replying to a RECORD query on the need for school building facilities testified three to one that there has been no reduction in the estimates of classrooms needed in their states to erase current backlogs and to keep up with estimated enrollment increases and replacement requirements over the next five years. One fourth of those replying said their needs have, in fact, increased. Of the fourth who did report at least a slight decrease, all denied any lowering of educational standards was implied; most reported legislative action to raise local bonding limits had helped spark local school programs — some, apparently, spurred on by *fear* of Federal aid.

104,000 Classrooms a Year

The RECORD's query was suggested by the confusion which arose from testimony of Secretary of Health, Education and Welfare Oveta Culp Hobby before the House Committee on Education and Labor that the prospective classroom deficit by the academic year 1959–60 would be 176,000 classrooms rather than, as previously estimated, 407,000. The lower deficit figure is based on what Mrs. Hobby in her testimony described as "the new State figures of estimated need" and the assumption that the current construction level of 60,000 classrooms a year will be maintained over the next five years. To put it another way, Mrs. Hobby was saying that 476,000 classrooms are needed by 1959–60, and that 300,000 may be built. A construction rate of 104,000 classrooms a year for each of the next four years would be required to erase the deficit.

Needs or Plans?

But Mrs. Hobby's statement has been widely challenged as misleading; the argument is that she was "comparing the incomparable." She was, in fact, comparing estimates by the states in Phase I and Phase II of the School Facilities Survey begun in 1951; and while Phase I required participating states to estimate their classroom *needs* for the year beginning September 1952, the Phase II figures are simply planned *program* — not what the States think they ought to do ideally to meet their requirements, but what they believe they *can* do.

Looking at need rather than program, the U. S. Office of Education has estimated 50,000 classrooms a year are needed to absorb the expected increases in school enrollment (some 1.5 million a year), 20,000 a year for replacements (obsolescence, calamity, population shifts); the present deficit is estimated at 300,000, and to eliminate this by 1959–60 would require another 50,000 classrooms a year. This approach produces a total of 120,000 a year, or double the present rate of construction.

Most of the shortage is concentrated within a few states, according to recent testimony of Commissioner Samuel Brownell before the House Education and Labor Committee. On the basis of data from 34 states, more than half the shortage reported is found in eight states.

Classrooms to accommodate current and expected enrollment increases appear to be the greatest overall need; about 60 per cent of the overall shortage is of this type. The other 40 per cent is for replacement of unsafe or otherwise unsatisfactory school buildings, or abandonment of existing schools as part of a school consolidation program.

Not surprisingly, the shortages are concentrated, in most states, within a few districts — those which have had large and rapid growth. As examples, Dr. Brownell has noted: "California, with a 74 per cent increase in school age population between 1940 and 1952, had 88 per cent of the classroom need concentrated in its metropolitan areas. Similarly, in Florida, with a school age population increase of 50 per cent, nine counties account for 64 per cent of the classroom need. In Oklahoma, where school age population dropped 14 per cent between 1940 and 1952, over one half of the classroom shortage is in two counties — counties which have experienced a heavy growth in the same period. In Maryland, about three fourths of the classroom needs are in Baltimore and the four counties adjacent to Baltimore and the District of Columbia." In general the picture reflects population shifts from central to western states, from country to city, and from the cities themselves to "fringe" areas.

STATE SCHOOL OFFICERS SAY:

(Excerpts from some of the responses to the RECORD'S telegraphic inquiry to chief state school officers in all the 48 states)

Alabama—"Alabama has no decline in school needs."—A. R. Meadows, State Superintendent of Education.

Arizona—"Question accuracy of figures showing decline from 407,000 to 176,000."—C. L. Harkins, Superintendent of Public Instruction.

Arkansas—"Decline in estimated deficit classrooms in Arkansas is due to the reëvaluation of present structures to be rehabilitated. . . . No educational standards lowered."—Joe Kilbury, School Building Consultant, State Department of Education.

California—"California has made no downward revision."—Roy E. Simpson, Superintendent of Public Instruction.

Colorado—"Estimated deficit in needed classrooms reported in Phase Two of the School Facilities Survey for Colorado has not decreased."—Burtis E. Taylor, Assistant Commissioner, State Department of Education.

Florida—"If present enrollment growth rate continues, Florida's estimate of classroom needs . . . will prove too conservative. Most current construction is being financed by debt financing. Many counties have reached their constitutional limitation on bonds. Therefore the current rate of construction cannot be maintained in Florida under the existing methods of financing."—Thomas D. Bailey, Superintendent of Public Instruction.

Georgia—"No reduction in 1960 classroom deficit for Georgia. Estimate is low, since based on 1951–1952 average daily attendance."—M. D. Collins, State Superintendent of Schools. "Heavy enrollment increase postponing abandonment of obsolescent facilities in some areas."—Allen C. Smith, Director of Division of Staff Services, State Department of Education.

Indiana—"As far as Indiana is concerned, there is a greater classroom deficit now than when the first report was made to the U. S. Office of Education in December of 1952. This stands to reason since in recent years we have not been building enough classrooms to meet our year-to-year needs. . . . Since there is a reduction deficit for the United States from 407,000 to 176,000, it seems it would only be possible if many states revised their original estimates downward. As stated above, estimates for the State of Indiana increased. It could be that other states have scaled their needs downward by changing the standards used in determining classroom deficits. . . . If this is not the answer then it may be that other states have done a lot more about their classroom shortages than Indiana has done in the past three years but it is hard to believe that they have done enough to reduce the anticipated shortage by 1960 from 407,000 to 176,000."—Wilbur Young, State Superintendent of Public Instruction.

Iowa—"National report showing decline in estimated 1960 classroom deficit not applicable in Iowa."—J. C. Wright, Superintendent of Public Instruction.

(Continued on page 322)

The State of Construction

This month the (by now) usual story of new all-time records — for the latest month reported by F. W. Dodge and for the year to date — has a footnote which may or may not be significant: though it hit a total of more than a billion dollars, and was the second biggest monthly total ever reported by Dodge for the category, residential construction in May registered the first month-to-month decline since November. Details on page 338.

Hospital Exhibits Invited

All registered architects are invited to submit hospital or other health facilities projects for the architectural exhibit at the 57th annual convention of the American Hospital Association September 19–22 at Atlantic City. Entry forms, due August 1, from: A. H. A., 18 E. Division St., Chicago.

In Caracas in September

The Ninth Pan American Congress of Architects will be held in Caracas September 18–26, not this month as previously announced (earlier it had been scheduled for March of this year). The "topic" for the Congress is "The Social Function of the Architect; Architect and Planification," and this will consist of the following items: main theme — "Integral Planification of the Living Spaces"; sub-theme — "Living, Education, Assistance and Recreation" (economical, social and technical aspects studied in relation to the "familiary group"); and a "free theme." Complete information on travel and living arrangements for the Congress is available from the Commercial and Convention Travel Department of the American Express Company, 65 Broadway, New York City.

The Photographers Win

Three Awards of Merit in the first annual exhibition of architectural photography sponsored by the American Institute of Architects went to Morley Baer, Berkeley, Cal., for photograph (1) of U. S. Navy Postgraduate School of Engineering, Monterey, Cal. (Skidmore, Owings & Merrill, Architects; Walter A. Netsch Jr., Associate Architect), "best exterior"; Phil Fein of San Francisco for view (2) of Olivetti Showroom and Offices, San Francisco (Leo Lionni of Fortune Magazine, Designer), "best interior"; and Erwin G. Lang of Los Angeles for his photograph (3) of Clothing Factory, Mexico, D. F. (Felix Candella, Architect), "most imaginative photograph." The exhibition, consisting of 35 black and white photographs selected from submissions by professional architectural photographers, will tour the country under the auspices of the Traveling Exhibition Service of the Smithsonian Institution. Selections for both exhibition and awards were made by Beaumont Newhall, curator of George Eastman House, Rochester, New York.

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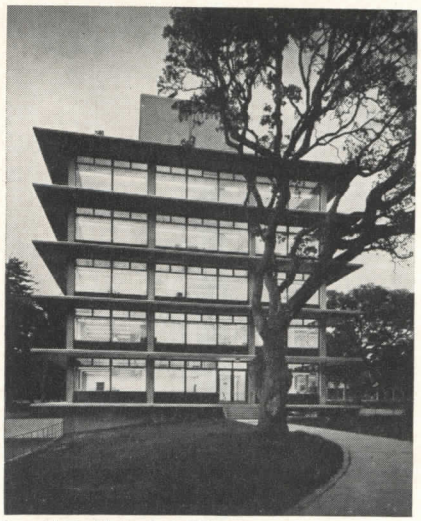
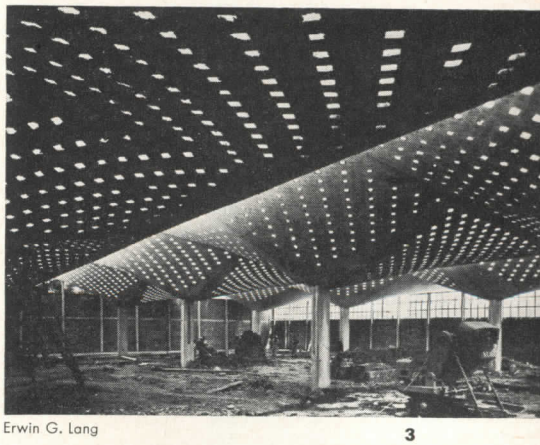
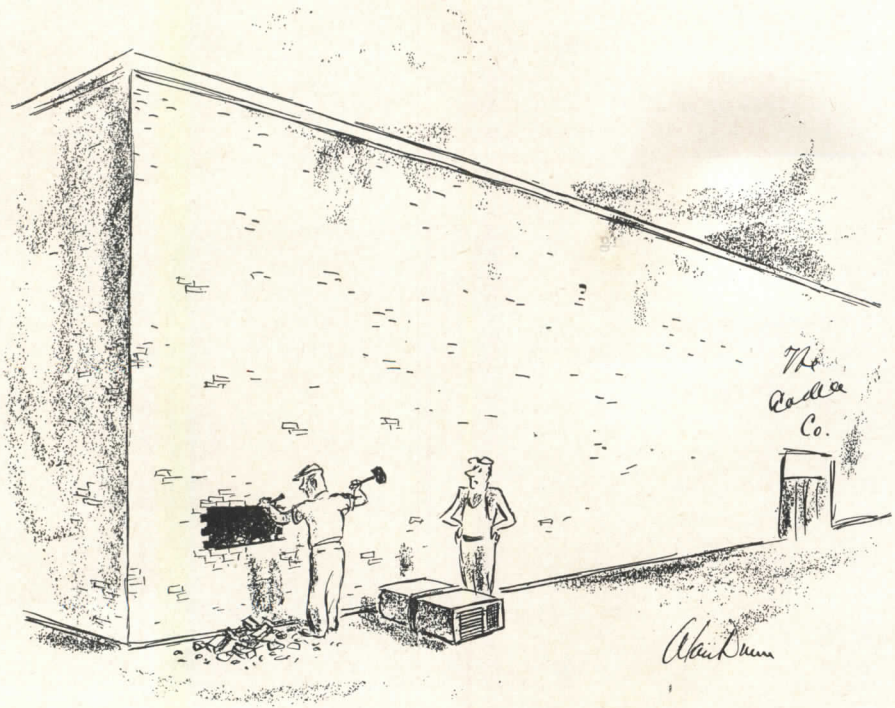


Copyright by Morley Baer 1955 **1**

Phil Fein **2**



Erwin G. Lang **3**



— *Drawn for the* RECORD *by Alan Dunn*

THE RECORD REPORTS:

MEETINGS AND MISCELLANY

(*Continued from page 15*)

Honors

Sir Patrick Abercrombie of London, 1950 A.I.A. Gold Medalist, has been awarded the Gold Medal for 1955 of the British Town Planning Institute.

Edward D. Stone of New York was the 1955 recipient of the Medal of Honor of the New York Chapter of the American Institute of Architects. Mr. Stone, who received the award at the Chapter's 86th anniversary meeting, was cited as "distinguished designer of buildings and inspiring teacher."

Roy F. Larson, architect and president of the Philadelphia Art Commission, received the 1955 Philadelphia Art Alliance Medal of Achievement. Mr. Larson, a member of the Philadelphia firm of Harbeson, Hough, Livingston and Larson, was honored for his long crusade for restoration of the area around Independence Hall in Philadelphia which has culminated in the Independence Mall development now well under way.

Dr. D. B. Steinman, New York consulting engineer and bridge designer, has been awarded the International Grand Prize of Invention for his inventive and scientific contributions and achievements in the design and construction of bridges. Doctor Steinman, designer of such noted spans as New York's Henry Hudson Bridge, the Thousand Islands International Bridge and the $100 million Mackinac Bridge now under construction in Michigan, is the first recipient of the award, established by the Permanent Committee of the Grand Prix International de l'Invention, an organization founded in Paris in 1954 by representatives of national and international organizations of scientists and inventors.

First place winners in the Second Annual Award of Merit Contest sponsored by *Wood Working Digest* are the Architectural Woodwork Institute, Dependable Machine Company, West Coast Lumberman's Association, College of Forestry of the State of New York and Mississippi Products Inc. Honorable Mentions: The Borden Company, Elliott Bay Lumber Company, Hardwood Dimension Manufacturers' Association, Western Red Cedar Lumber Association, Michigan College of Mining and Technology, and Wood Office Furniture Institute. Awards were to be presented at the annual luncheon of the Forest Products Research Society June 21 at the Olympic Hotel in Seattle.

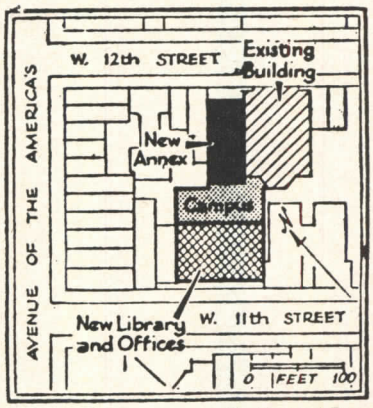
Education Notes

Emil C. Fischer has been named to succeed Paul Weigel as head of the Department of Architecture and Allied Arts of Kansas State College, Manhattan, Kan., effective July 1. The new head of architecture has been professor of architecture in charge of senior design courses at Ohio State University. Professor Weigel retires after 31 years as head of the department; he is being honored by establishment of the Paul Weigel Foundation to provide scholarships to worthy students interested in careers in architecture. The Foundation will be administered by the Kansas State Endowment Foundation.

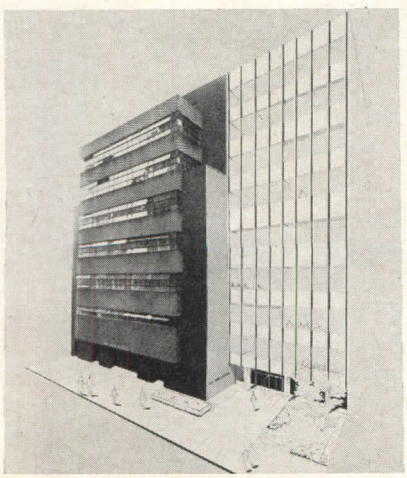
Harlan E. McClure, professor of architecture at the University of Minnesota since 1952, has been appointed professor and head of the department of architecture at Clemson College, effective July 1.

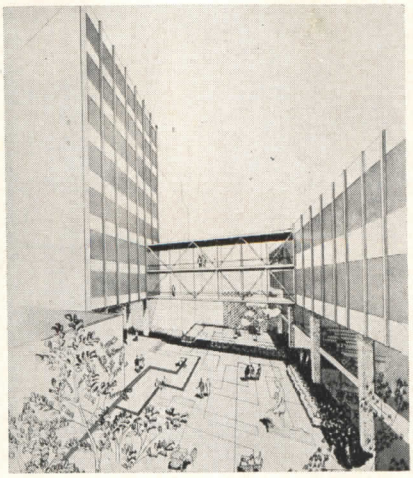
IN THE HEART OF THE CITY, ROOM FOR A CAMPUS

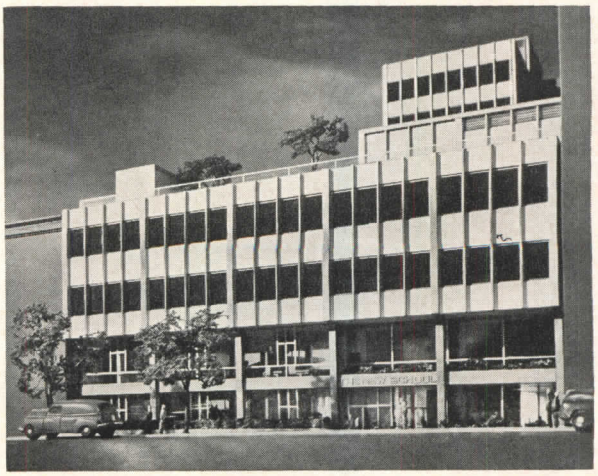
New York's famed experiment in adult education, the New School for Social Research, has announced plans for a $2.5 million expansion program to include an eight-story addition to the present building, a new four-story library and office building, and a miniature campus in the form of a central court planted with trees and shrubbery. The annex, which will get under way this fall, will be set back from the street to make room for a small garden at the entrance. Funds are still needed for the library. New School President Hans Simons notes that the new program will provide "the first real home for the education of adults"; architects Mayer & Whittlesey are asked to embody in their plans the best of what the New School has learned about the needs of adult education since the present building was put up in 1930 — "a building to house an ideal," as its architect, Joseph Urban, described it.



The New York Times







Expansion scheme gives New School's existing building an extension (left), a real "campus" (center) and a new library-office building (right)

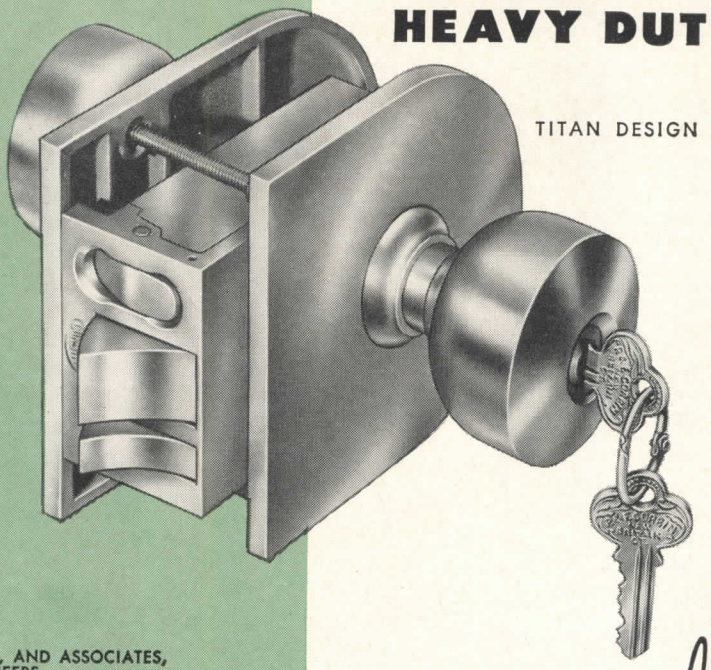
(*More news on page 20*)

HARDWARE

CORBIN

HEAVY DUTY UNIT LOCKS

TITAN DESIGN NO. 767



THE BEVERLY HILTON
Beverly Hills, California
Architect:
WELTON BECKET, F.A.I.A., AND ASSOCIATES, ARCHITECTS, AND ENGINEERS
General Contractor:
DEL E. WEBB CONSTRUCTION CO.
Corbin Locks and other hardware by:
DANIEL C. HAY
Beverly Hills, California

THE WORLD OVER

UNIVERSITY OF MISSISSIPPI MEDICAL SCHOOL & TEACHING HOSPITAL
Jackson, Miss.
Architects: M.N.O. ASSOCIATED ARCHITECTS
General Contractor: FARNSWORTH & CHAMBERS
Corbin Locks and other hardware by:
ADDKISON HARDWARE CO., INC.
Jackson, Miss.

MOHAWK SCHOOL
Columbus, Ohio
Architect: BENHAM, RICHARDS & ARMSTRONG
Associate: EDWARD KRAMER
(architect for the Columbus Board of Education)
General Contractor:
DAWSON-EVANS CONSTRUCTION CO.
Corbin Locks and other hardware by:
COLUMBUS HARDWARE SUPPLIES, INC.
Columbus, Ohio

STATE OFFICE BUILDING
Tallahassee, Fla.
Architect: ERNEST J. STIDOLPH, A.I.A.
General Contractor: JACK CULPEPPER
Corbin Locks and other hardware by:
DAN CARTER CO.
Tallahassee, Fla.

CHILDREN'S HOSPITAL
San Diego, California
Architect: FRANK L. HOPE & ASSOCIATES
Contractor: M. H. GOLDEN CONSTRUCTION CO.
Corbin Locks and other hardware by:
GOULD HDWE. & MACHINERY CO.
San Diego, Calif.

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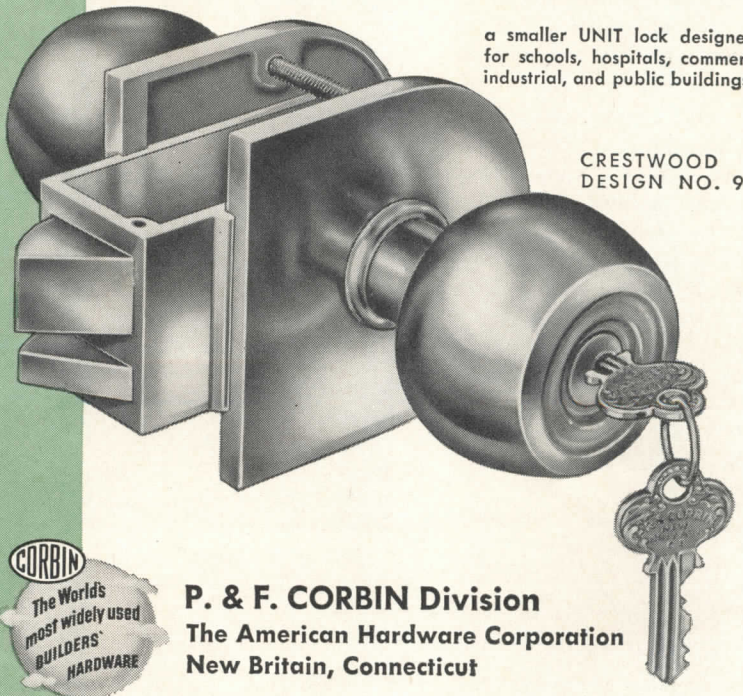
CRESTWOOD DESIGN NO. 905



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GEORGE HOWE, ARCHITECT: 1886–1955

Any retrospective look at George Howe's accomplishments must recall, as the RECORD's pages do, not only his long and diversified career but the dramatic conversion which made him one of the most effective and distinguished pioneers in the battle for modern architecture in America. Having started his professional life in the ranks of eclecticism, he broke with it and took his own gifts and the enthusiasm of a convert into his roles of architect, government planner and teacher.

Mr. Howe, who died April 16 in Philadelphia at the age of 68, received his education at Groton, Harvard (Class of 1908) and l'Ecole des Beaux Arts (1908 to 1913).

As an Architect

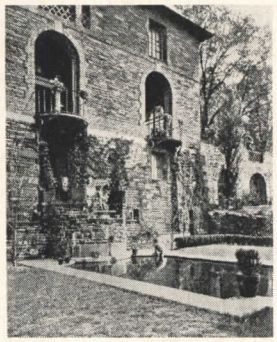
His work first appeared in the RECORD shortly after his return from Paris, when the magazine published the interiors of his own house in Philadelphia (November 1914), designed during his brief association with Furness, Evans & Company.

In 1916 Howe became a partner in the Philadelphia firm of Mellor & Meigs. As Mellor, Meigs and Howe, the firm had a long and thriving practice as designers of country houses, one of which was once described in the RECORD as "a perfect English type, with a certain suggestion of the old French Gothic house adapted to conform to all our complex modern requirements." Although Howe himself was later scornful of this period of his work (he once dubbed it "Wall Street Pastoral"), the small houses of Mellor, Meigs & Howe were among the pleasantest of their kind.

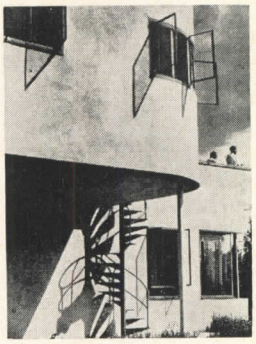
It was during this period that Howe built his own house, sold in 1928 when he renounced traditionalism and eclecticism and left Mellor and Meigs to set up his own office for the practice of contemporary architecture.

(*Continued on page 300*)

Architectural Record, August 1920



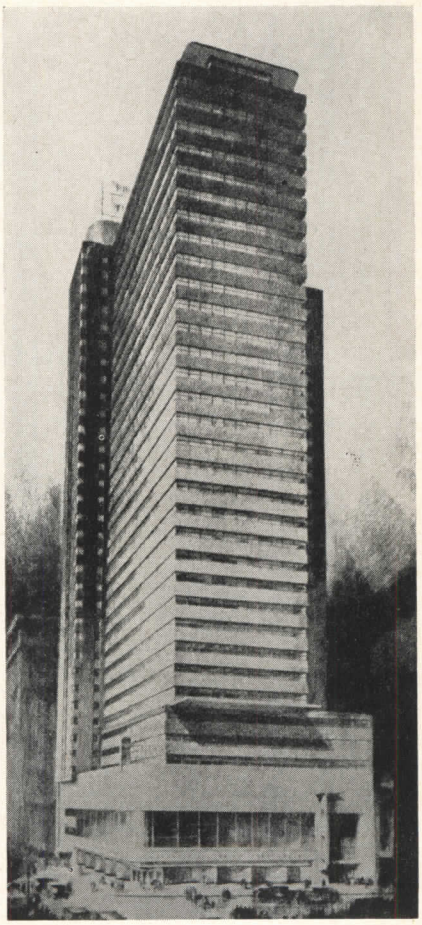
Architectural Record, November 1932



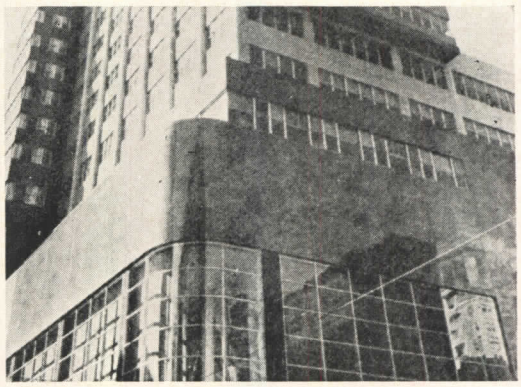
Architectural Record, November 191

Left: Howe designed this Chestnut Hill house for himself when he was with Mellor, Meigs and Howe. Center: with Lescaze, he designed the steel and concrete Field house in New Hartford, Conn., in 1932. Right: the RECORD *first published Howe's work in 1914 when it showed his designs for the interior of his "temporary home"*

Architectural Record, April 1931



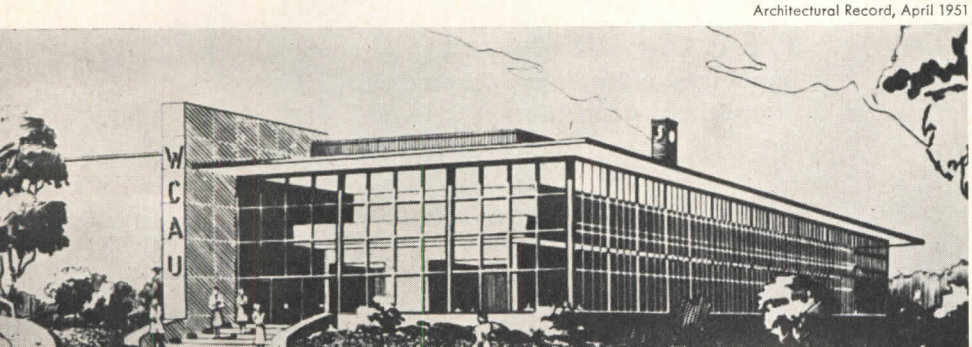
Architectural Record, October 1949



Howe and Lescaze's Philadelphia Savings Fund Society Building (rendering by Hugh Ferriss) was built after long battle to convince bank's directors that, as Howe put it, "we had designed the building in the interests of the bank and not of our personal reputations among the ivory tower boys"

Below: two of the buildings designed by Howe and Robert Montgomery Brown — at left, a radio and television center for station WCAU, Philadelphia, and at right, the newly completed plant for the Philadelphia Evening and Sunday Bulletin

Architectural Record, April 1951



CUPPLES PRODUCTS CORPORATION USES

Alcoa Architectural Colors in Multistory Curtain Wall

A leader in curtain wall design, fabrication and erection, Cupples Products Corporation adds the beauty of color to aluminum "skin" construction of a multistory building. The spandrel panels of Alcoa® Aluminum Sheet, fabricated by Cupples for the Henry C. Beck Building in Shreveport, La., are finished in Alcoa Architectural Blue 3020.

One of a range of Alcoa Architectural Colors now available, the new finish is not paint or enamel, but an integral part of the aluminum surface. It is the result of an electrochemical process developed by Alcoa after years of experimentation and testing.

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For additional information about Alcoa Architectural Aluminum, call your local Alcoa sales office. You'll find the number listed under "Aluminum" in your classified directory. ALUMINUM COMPANY OF AMERICA, 1888-G Alcoa Building, Mellon Square, Pittsburgh 19, Penna.

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$20 BILLION A YEAR FOR 10 YEARS NEEDED TO MEET STATE-CITY PUBLIC WORKS BACKLOG, STUDY FINDS

A recent Bureau of Census survey showed 71,639 non-Federal public works projects costing an estimated $25.3 billion in various stages of planning by state and local governments. All of these could not be built quickly — only $7.6 billion was at or beyond the drawing board stage — but if they were to be constructed, the projects would constitute little better than one year's need on the basis of a new study recently completed by the Department of Commerce.

Projecting the basic need for these non-Federal public works over the next decade, the Commerce publication *Construction Review* found the current rate of construction of new highways, schools, hospitals, water and sewer facilities, and like state and local public works far below what it should be to catch up to known requirements. States and their communities would have to spend around $20 billion annually for each of the next 10 years to fill the estimated need; they now are spending $8.5 billion in terms of work put in place. That was the figure for the record-breaking year of 1954.

State-City Building Needs
1955–1964

Category	Estimated Cost (in billions)
Highways	$ 92.0
Schools (public & private)	31.0
Higher education	12.5
Hospitals (& institutions)	22.0
Water & Sewerage works	25.0
Other	23.0
Total	**$205.5**

Said *Construction Review:* "Expressed in terms of 1954 construction costs, the huge 1955–64 construction requirement is equivalent to nearly four times the amount of non-Federal public works construction put in place during the past 10 years, and one third more than total construction volume for these types in the past 35 years."

Severe community problems loom during the next decade if these deficiencies are not erased, the *Review* commented. Meanwhile, the backlog constitutes "a strong stabilizing force for the economy" during the 10 years ahead.

It was noted that the marriage boom in 1965–75, reflecting the baby boom of 37 million births in 1945–54, implies an even greater demand for housing and for new community facilities than is presently evident. Long-run stability dictates that extensive efforts should be made to overcome the deficiencies during the decade when new family formation will continue at comparatively moderate rates, said the *Review.*

The article treated category needs in some detail. Here are excerpts:

Schools — The Office of Education estimates that school building requirements will total $41.5 billion between September 1954 and September 1964. About $31 billion will be needed for increased capacity and replacement of elementary and secondary schools — including private and parochial classrooms. The remainder of $10.5 billion will be required for college and university construction. For the period 1954–59, project plans to meet public school needs have been reported by 35 states. A national need for school facilities costing approximately $16 billion is estimated from information furnished by states to the Office of Education. To this figure is added approximately $2.2 billion to cover private and parochial needs, assuming that these constitute 12 per cent of total elementary and secondary needs (based on the proportion of total enrollment). This gives a total of $18.2 billion to meet public and private needs by 1959.

For the period 1960–64, the cost of needed elementary and secondary school facilities, public and private, is estimated by the Office of Education at $12.8 billion. This estimate includes the cost of schools needed for increased enrollment and for replacement of obsolete buildings and those lost by fire, etc.

In addition to the construction requirement for elementary and secondary schools, a substantial program of college and university construction is required for the next 10 years. Total higher education construction needs by 1965 are estimated by the Office of Education to be $12.5 billion, of which approximately $6 billion represents current deficit. The total requirements figure has been reduced by $2 billion, to $10.5 billion, to omit dormitory and other student housing needs.

Hospitals — Civilian hospital bed requirements as of January 1, 1955, as reported in state plans to the Public Health Service under the provisions of the Hospital Survey and Construction Act, totaled 838,000 beds. Existing acceptable beds totaled 1,009,000. Of the additional 838,000 beds needed, the breakdown by type of bed was: general, 193,000; mental, 352,000; chronic, 272,000; and tuberculosis, 21,000. This current backlog of needed hospital construction would involve approximately a $13.5 billion expenditure. Allowance for obsolescence and population growth over the next 10 years would indicate requirements of close to 450,000 additional beds, at a cost of about $7.5 billion, bringing total estimated civilian hospital needs for the 1955–64 period to $21 billion.

The construction of health centers, clinics, asylums, old people's and children's centers, and similar institutional projects normally account for about five per cent of all hospital and institutional construction. Recent reports from the states as to the prospective volume of work pending and eligible for Federal assistance under 1954 amendments to the Hospital Survey and Construction Act indicate a substantial increase in the rate of building in these categories. Pending further study of the long-term effect of expanded Federal aid in these fields the historical relationship has been used in this presentation even though it is probably low. Thus, a requirement figure of $1 billion has been added to cover such facilities, bringing total hospital and institutional construction needs to $22 billion.

Water and Sewerage Works — Construction needs for water and sewerage works over the next 10 years have been estimated at $25 billion by the Water and Sewerage Industry and Utilities Division of the Business and Defense Services Administration of the Department of Commerce. The total current backlog of needed work amounts to $10 billion; new construction for growth requirements, $9 billion; and construction to offset obsolescence occurring during the next 10 years, $6 billion.

Other Public Works — No independent estimates are available on con-

(Continued on page 318)

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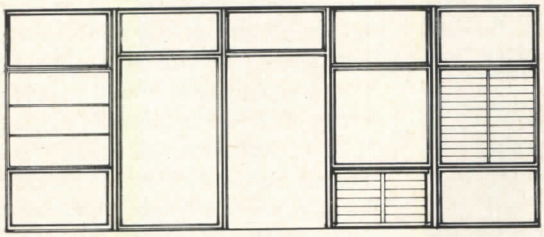

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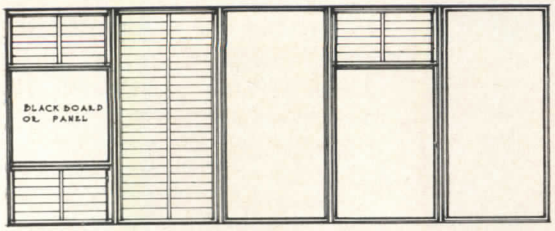

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1955 MASSEY COMPETITION SCHEDULED FOR NOVEMBER

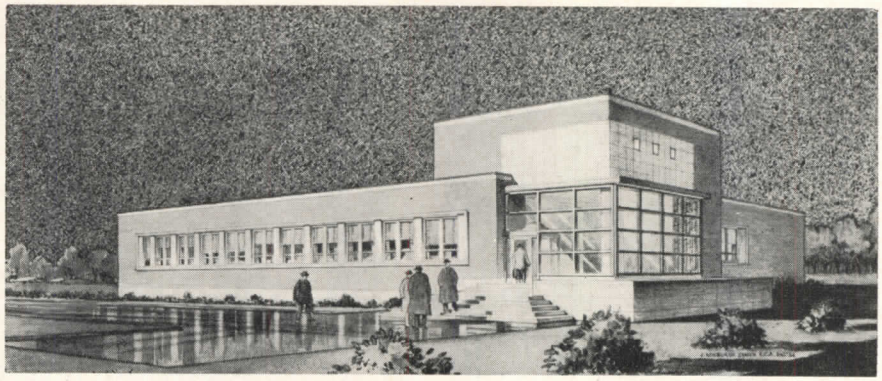
The Massey Medals for Architecture will be awarded for the third time in November of this year, it has been announced by the Royal Architectural Institute of Canada, which administers the program founded in 1950 by the Massey Foundation. The medals are awarded "every second or third year depending upon the amount of building activity in Canada"; previous presentations were made in 1950 and 1952.

The awards include 15 silver medals to be presented to the best entry in each of the categories, and a gold medal to be given to the best entry in the competition. Winners and other entries will be displayed at the National Gallery of Canada and will be sent on a touring exhibition.

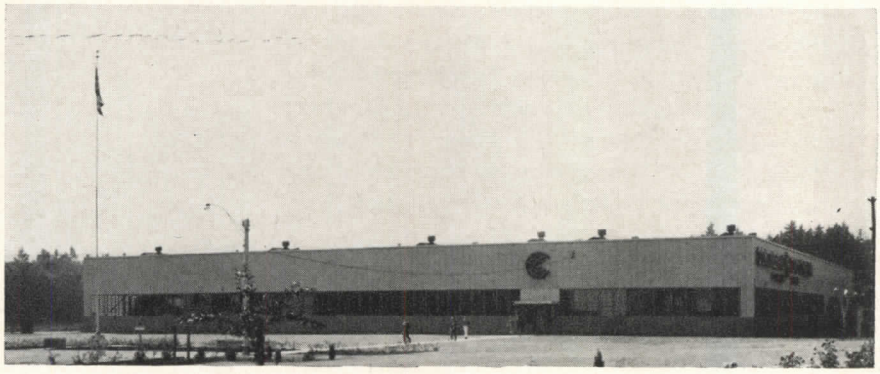
Entries, which are due by October 18, may be submitted by any architect registered in Canada; Canadian buildings completed and occupied for the first time since 1945 are eligible.

Entry forms and further information are available from R.A.I.C. Executive Offices, 88 Metcalfe St., Ottawa 4.

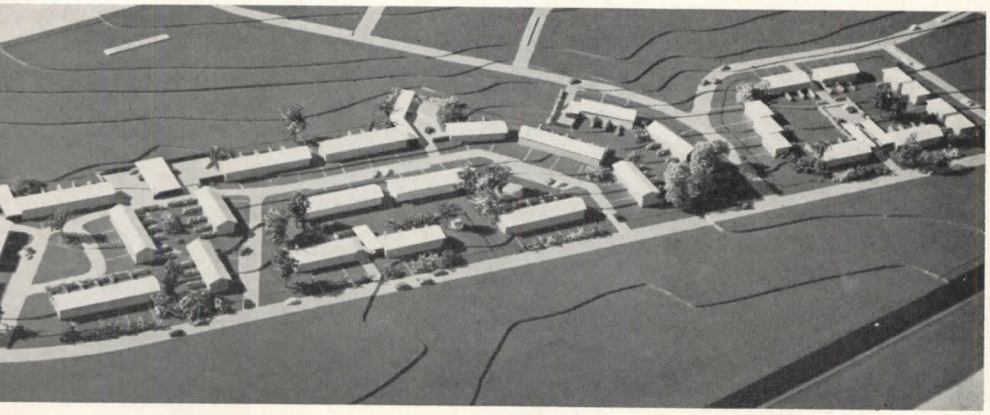
(*Continued on page 30*)



CURRENT INDUSTRIAL BUILDING IN CANADA *includes a research laboratory for Johnson & Johnson Ltd., now under construction at Montreal, designed by architects McDougall, Smith & Fleming; and a newly completed factory for Continental Can Co. of Canada Ltd. at Burnaby, B. C., by architects McCarter, Nairne & Partners*



NEW DEVELOPMENT AT DON MILLS TO PROVIDE 120 THREE-BEDROOM HOUSES FOR RENTAL



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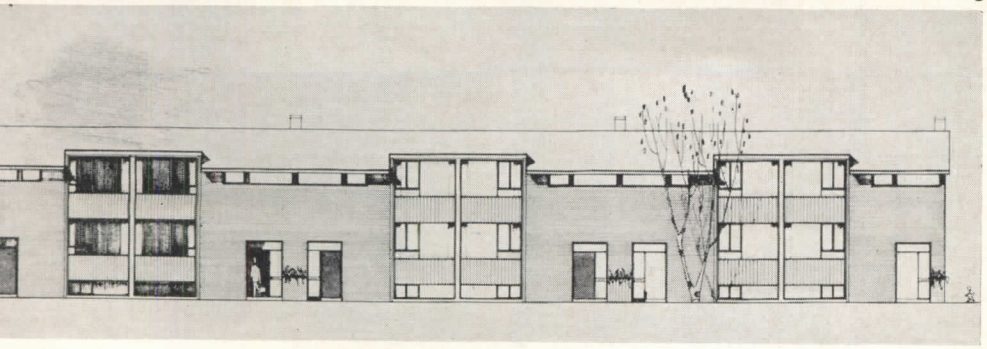
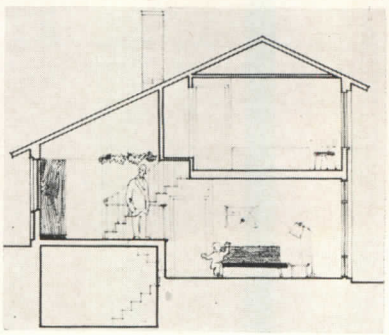


2

Believed to be the first such project in Canada, a block of 120 three-bedroom houses, all intended for rental, got under way recently at Don Mills. Planning of the development followed a six-months study of similar projects in the U. S.

The houses, each of which will have private garden space, are being built in four- and six-house units, and have been designed both as two-story and split-level types. (Cut 1: a section of a split-level unit; Cut 2: elevation of one of the two-story, six-house units; Cut 3: model of over-all site development.) Architects Henry Fleiss and James A. Murray, Toronto, designed the project for Roy P. Rogers Enterprises Ltd.

1



housands of dollars

Central control room is key to more efficient temperature control

THE NEW ERA of electronic efficiency and comfort is coming of age in the southwest. Completion of the new home of the Second National Bank of Houston sometime next year will mark an important step in this era.

The reason for the new efficiency in the Second National Bank is the master control center. Here, a single operator has at his finger tips control over temperatures throughout the 24-story building.

The reason for the new comfort is the flexibility and fast response of the electronic controls. The purpose is to create for the client a more productive environment where people feel, think, and work more energetically and efficiently.

Strategically placed Honeywell thermostats will compensate for every possible occupany, exposure and use comfort factor. The thermostats concealed in ducts will control 318 individual comfort zones, making the new building supercomfortable for employees, clients and tenants.

The *techniques* used in solving these comfort problems can help you provide the Indoor Weather required for your clients' facilities—for a Honeywell Electronic Customized Temperature Control installation is *designed to fit the needs of the building and its occupants.*

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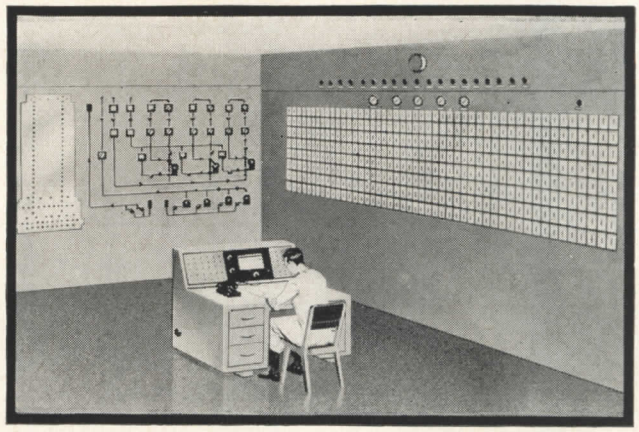
For full facts on Honeywell Electronic Customized Temperature Control, and the economical Honeywell Periodic Maintenance Plan, call your Honeywell Office. Or write Honeywell, Dept. AR-7-76, Minneapolis 8, Minnesota.

Kenneth Franzheim, architect.
M. E. Bovay, Jr., consulting engineer.
Meg F. Taylor, engineering consultant.
W. S. Bellows Construction Corporation, general contractor.
Straus-Frank Co., mechanical contractor.



Master Control Center gives quick service to tenants and reduces daily building operating costs.

Proudly displayed before the public on the first floor of the building will be the master control center. The Colorgraphic panel at the rear shows at a glance and records the operating conditions of the basic heating and air conditioning plant, to insure peak efficiency and economy.

A single operator can maintain complete control over the entire heating and cooling system. On his desk, he can read the temperature at 318 key points throughout the building. At the panel on the right, he can adjust any of these temperatures to suit the individual's exact requirements. Ventilation in any area can also be adjusted for maximum economy and comfort.

With this master control center, maximum service is given to the building occupants at a minimum cost. Many thousands of dollars are saved by eliminating trips through the building to check temperatures and adjust thermostats. Only Honeywell can provide this coordinated electronic control and recording system.

Without Honeywell Electronic Control, 318 check points

318 points would have to be checked at the thermostat.

With Honeywell Electronic Control, 1 check point

An operator at a panel will be able to check and *adjust* all 318 remotely.

MINNEAPOLIS **Honeywell**

Electronic Controls

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112 offices across the nation

THE RECORD REPORTS

NEWS FROM CANADA

(*Continued from page 26*)

NEW BRUNSWICK OFFICERS NAMED AT YEARLY MEETING

Convening recently at Saint John for its annual meeting, the Architects Association of New Brunswick elected Neil Stewart of Fredericton to the presidency. Other officers include Stanley Emmerson, Saint John — immediate past president; Rolph Duschenes, Saint John — vice president; H. Claire Mott, Saint John — secretary-treasurer; and Douglas W. Jonsson, Fredericton — councillor.

Spruce Cliff Apartments, at Calgary, Alta., were designed by architects Rule, Wynn and Rule, of Calgary

TORONTO CHAPTER HOLDS ITS ANNUAL CONVENTION

Concentrating much of its attention on building and zoning problems in Toronto, the Toronto Chapter of the Ontario Association of Architects met late in May for its annual convention.

Committee reports included one from the Toronto Building Bylaw Committee on progress made in establishing a Joint Committee for Metropolitan Toronto, composed of representatives of the municipalities and of professional and trade organizations, to secure the adoption of the National Building Code as the official building bylaw for the area.

The Zoning Bylaw Ruling Committee reported its efforts to prevent "spot re-zoning," an expediency, the report said, which would be unnecessary if the original zonings were established with foresight.

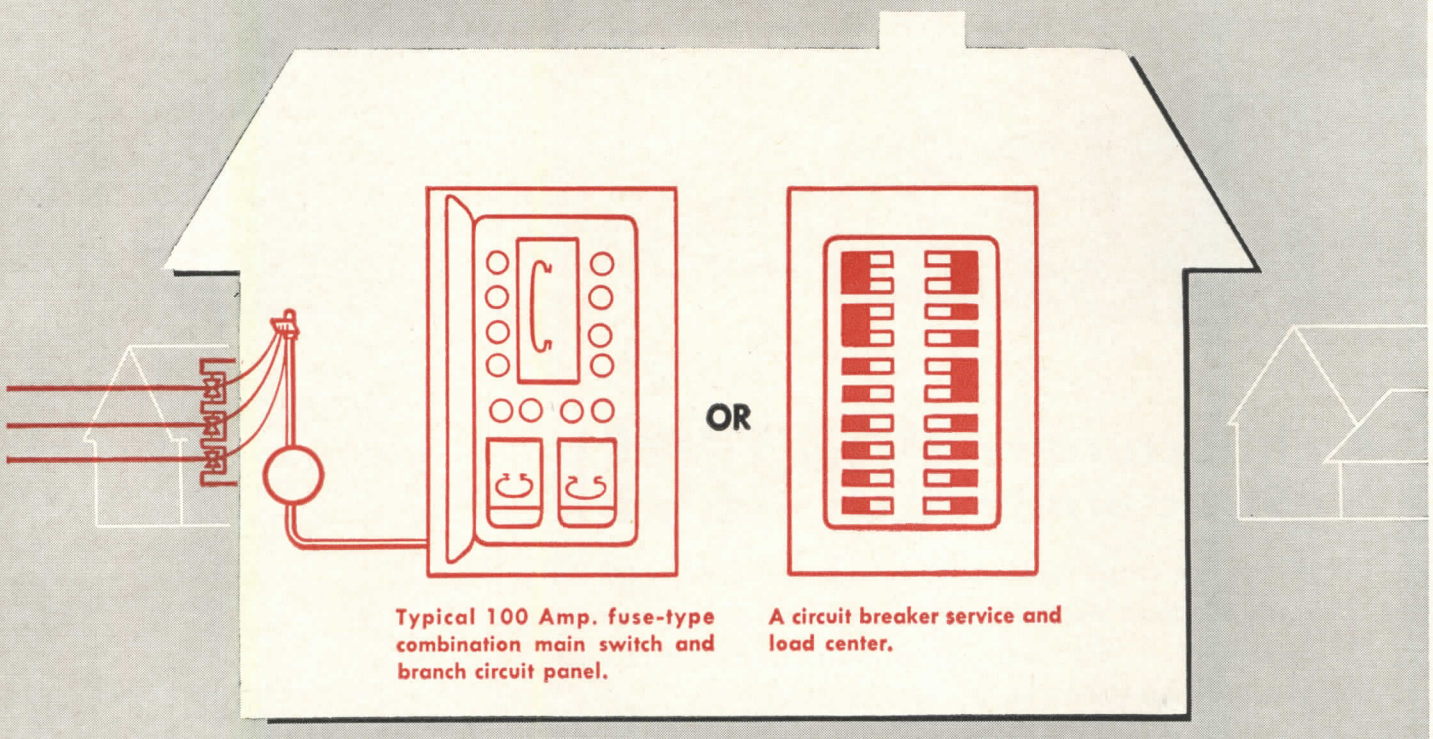
The new executive officers, who will elect officers from their own number, are George Whale, R. G. Calvert, George Abram, Rolph Smyth, James Craig and Loren Oxley.

HOUSING NOTES

The Central Mortgage and Housing Corporation announced in the most recent issue of its quarterly *Housing in Canada* that the 1954 total of mortgage loans for housing construction was a record figure: $632 million, against the $374 million total for 1953. Banks, for

(*Continued on page 32*)

THEIR SERVICE ENTRANCE EXAMS?



Typical 100 Amp. fuse-type combination main switch and branch circuit panel.

A circuit breaker service and load center.

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AT LEAST 100 AMPERES, 120/240 VOLTS

The modern, "Full-powered" house has an electrical capacity of 24,000 Watts — enough power for home lighting and plug-in appliances PLUS the major appliances listed on the right.

Automatic Washer	700 watts
Dishwasher — Waste-Disposer	1500 "
Waste-Disposer alone	500 "
Electric Clothes Dryer	4500-9000 "
Water Heater	2000-4000 "
Home Freezer	350 watts
Water Pump	700 "
Built-in Heaters	1000-1650 "
Room Air Conditioner (¾ ton)	1200 "
Room Air Conditioner (1 ton)	1540 "

ENOUGH FOR THE HOUSES YOU PLAN TODAY!

wired home of today into the *underwired* home of tomorrow!

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THE RECORD REPORTS
NEWS FROM CANADA

(*Continued from page 32*)

OBITUARIES

John M. Kitchen, of Ottawa, who was a co-director of the National Capital Planning Service, and had been since 1921 secretary-treasurer of the Town Planning Institute of Canada, died recently. Mr. Kitchen was a member of the Council of the Institute of Professional Town Planners and of the Advisory Committee to the Ottawa Area Planning Board. He was also a founder and a member of the council of the Community Planning Association of Canada, and for the past nine years had served as the provincial government appointee to the Registration Board of the Ontario Association of Architects. From 1919 to 1940 he was supervising architect for the City of Ottawa.

Prof. Jules Poivert of Montreal died recently at the age of 88. From 1910 to 1952 he had served first as dean of architecture at l'Ecole Polytechnique and later in the same position at the Ecole des Beaux-Arts. Professor Poivert was also an accomplished musician, and had studied under César Franck.

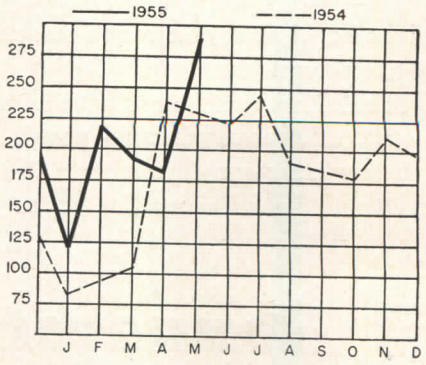
Walter Seymour Allward, Canadian sculptor and sometime carpenter, brickmaker and architect, died recently. He is remembered for his monumental sculpture, and particularly for the Vimy Ridge Memorial, dedicated to the Canadian dead in World War I.

Mr. Allward, who had been made an honorary fellow of the Royal Architectural Institute of Canada, was the father of architect Hugh L. Allward of Toronto.

(*More news on page 38*)

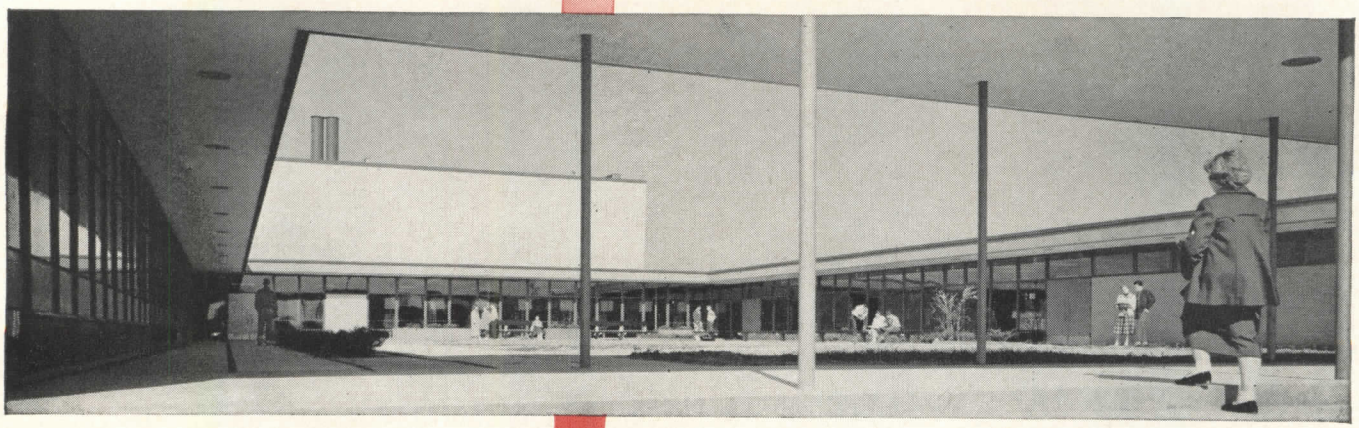
Contracts Awarded: Comparative Figures*

(in $ million)

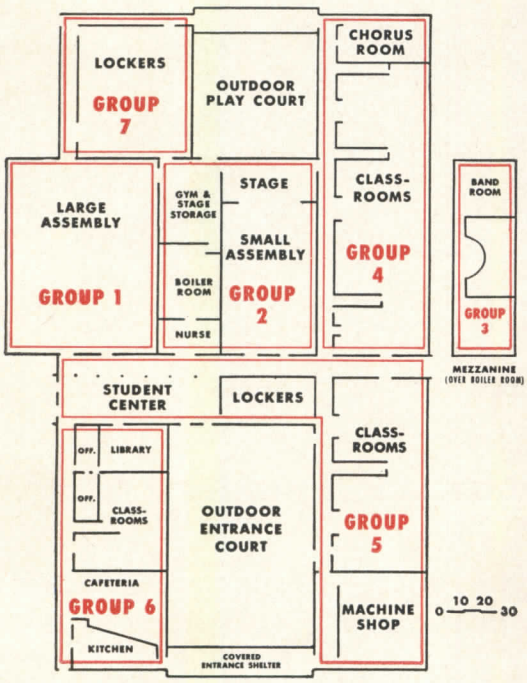


*Compiled by the editor and staff of *The Building Reporter*, from information collected by MacLean Building Reports

another award-winning school gains comfort . . . saves fuel with JOHNSON *DUAL* CONTROL



Norman High School, Norman, Oklahoma, recipient of First Honor Award of the American Institute of Architects in 1954. Architects and Engineers: Perkins & Will, Chicago, and Caudill-Rowlett-Scott & Associates, Oklahoma City, and Bryan, Texas. Heating Contractor: Fischer Engineering Co., Norman.



Floor plan shows how Johnson *Dual* Thermostats are grouped for convenience. During regular school hours, a *Dual* Thermostat in each room maintains every space at the ideal comfort level. When classes are over, each group of thermostats is reset, from a central point, for lower, non-occupancy temperatures. In those rooms which continue in use, a touch of the button on the *Dual* Thermostat restores them to normal occupancy temperatures, *without changing the economy settings of the other thermostats.* In a busy school, heating only the occupied rooms can easily save enough fuel dollars to pay for the cost of the entire system!

Comfort *could have been* a real problem in this remarkable school. The size of the building itself is a factor . . . so are the large glass areas . . . widely varied room sizes . . . exposure . . . changing occupancy levels. A busy program of social, athletic and other extracurricular activities is another important consideration.

But comfort *isn't* a problem, and *never will be,* thanks to a pace-setting system of Johnson Automatic Temperature Control engineered to meet the exact needs of this building and its occupants.

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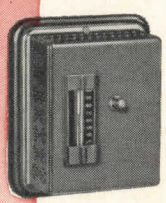

JOHNSON CONTROL
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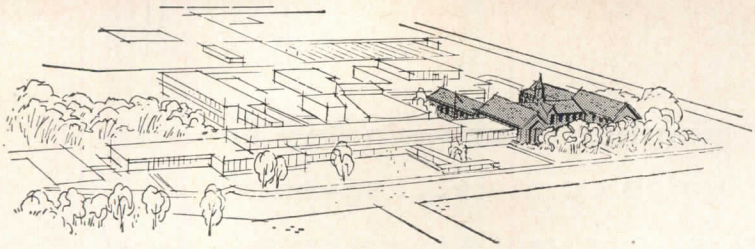
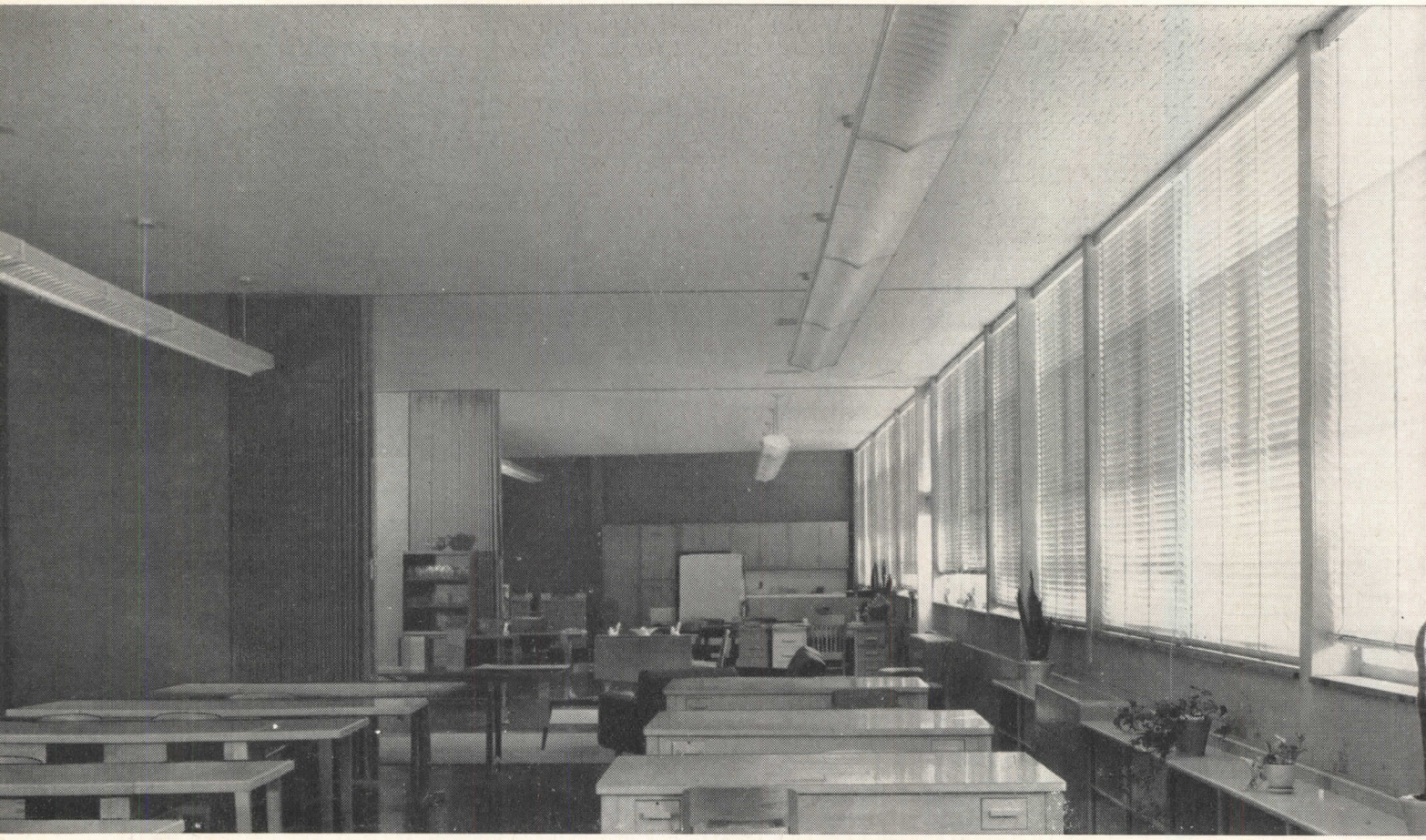


Springfield High School,
Delaware County, Pa.
Architect: *Harry G. Stewart*
Acoustical Contractor: *Berger Acoustical Company*
Acoustical Materials: *Armstrong Travertone*
Armstrong Arrestone



The smart appearance of the Armstrong Travertone ceiling in the home economics area helps minimize the institutional atmosphere of these classrooms. Folding doors are used to separate kitchen, apartment, and sewing areas, while the Travertone ceiling throughout keeps the sounds of the various activities under control at all times.

Traditional school building gets sound-conditioned modern wing

In adding to the twenty-year-old Springfield School in Delaware County, Pa., architect Harry G. Stewart joined a new, modern high school wing to an existing junior high of traditional design. His choice of modern design and materials for the new wing kept costs down to 95 cents a cubic foot and provided a more efficient, functional layout than that of the original building.

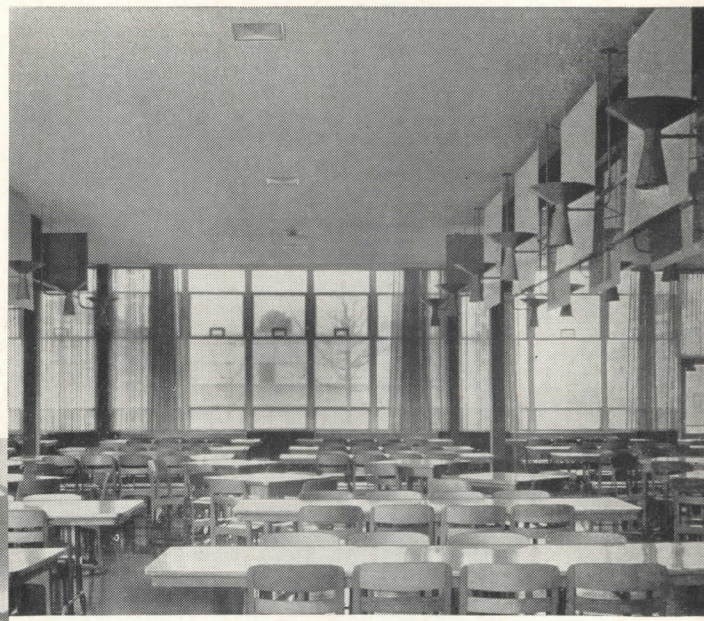
Many noise-centers in the new addition, including a band rehearsal room, auditorium, and cafeteria, made sound conditioning vital to the architectural plan. To quiet the distracting sounds of footsteps and voices of 1450 students, two of Armstrong's acoustical ceiling materials—Travertone* and Arrestone—were installed throughout the new wing.

In the cafeteria, classrooms, library, and lobby, Armstrong Travertone absorbs up to 80% of the sound that strikes it. Travertone, a handsomely textured, mineral wool tile, is completely incombustible and requires only simple maintenance to stay new looking for years. Its light-reflective white paint finish can be washed or repainted whenever desired.

Metal-pan units of Armstrong Arrestone in the band room help prevent the build-up of distracting noise levels by reducing the reverberation of sound. Arrestone soaks up as much as 85% of sound and is quickly installed by conventional suspension methods. Upkeep is easy and economical, too.

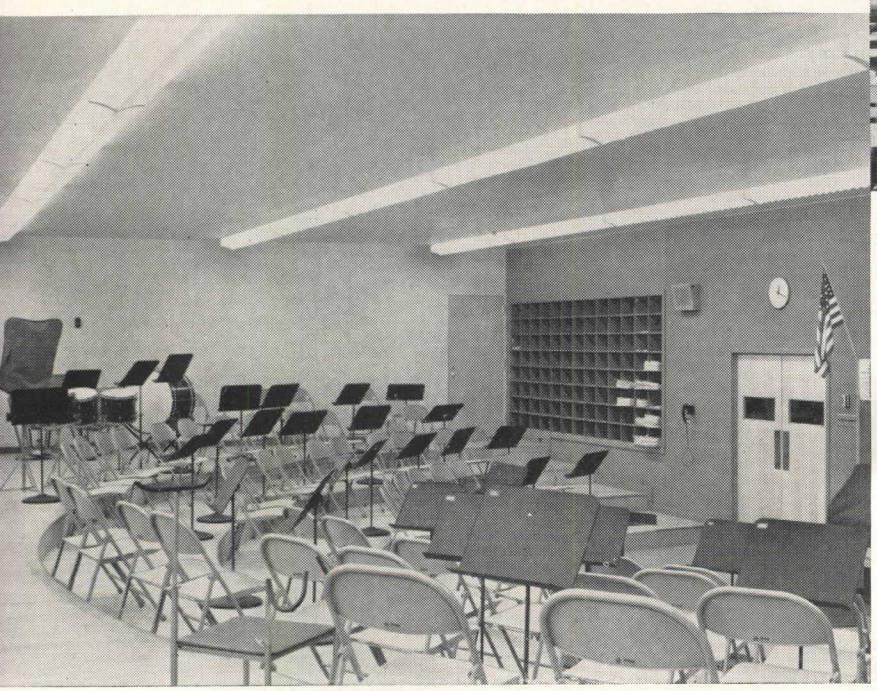
Get full details on Travertone, Arrestone, and the complete line of Armstrong sound-conditioning materials from your Armstrong Acoustical Contractor. There's one material best suited to every sound-conditioning need. For your free copy of the 1955 edition of "Armstrong Acoustical Materials," write Armstrong Cork Company, 4207 Rock Street, Lancaster, Pennsylvania.

Easily cut and fitted to any shape, Armstrong Travertone is readily installed with lighting and ventilating fixtures. In this school lobby, the Travertone ceiling soaks up the sounds of footsteps and voices, prevents them from bouncing off the many hard surfaces and building to disturbing noise levels.

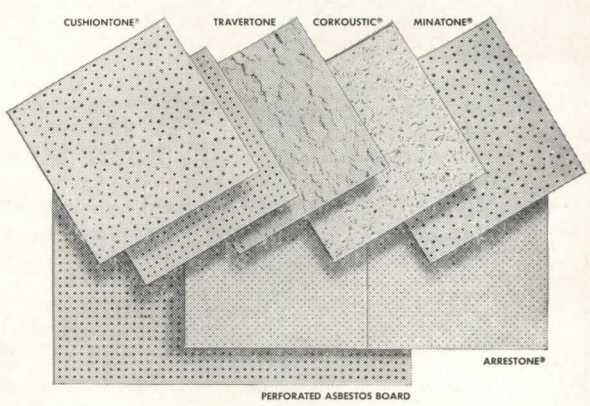


Completely fireproof, Armstrong Travertone's mineral wool composition adds a measure of fire-safety to the school cafeteria. The quiet promoted by the Travertone ceiling makes meals more enjoyable, too. Moderately priced, Travertone helped keep construction costs of the new wing down to 95 cents a cubic foot.

Proper acoustics in the band room are provided by acoustical ceilings of Armstrong Arrestone. The smooth, white paint surface of Arrestone's metal-pan units can be washed or repainted as often as needed. Installed by mechanical suspension, individual units of the Arrestone ceiling can be readily removed for access to concealed piping and wiring.



*TRADE-MARK



Armstrong ACOUSTICAL MATERIALS

THE OPAL ON THE CHARLES

***By Edward Weeks**, Editor, The Atlantic Monthly*

THE Massachusetts Institute of Technology to whom one looks for the latest word in science has just unveiled the latest novelty in the field of the humanities. The Kresge Auditorium, a festival hall on the banks of the Charles River, the gift of the Kresge Foundation, will have a lasting effect on the life of the Institute; with its combination of little theatre, large concert-hall-auditorium and rehearsal rooms, each beautifully self contained, it will call forth such a yearly program of drama, music, speaking (and television) as M.I.T. has never participated in before.

Every university in the country ought to possess these facilities and few do. The closest Harvard ever came to having a little theatre of its own was in the early 1920's when Workshop 47 under Professor George Pierce Baker was attracting budding playwrights like Edward Sheldon, Eugene O'Neill, Philip Barry, S. N. Behrman and Sidney Howard to Cambridge. Baker had raised the money — his little theatre would have cost $150,000 then — but President Lowell would not permit the funds to be collected; he thought there were worthier projects. So Harvard has no stage. When people come to hear Mr. T. S. Eliot deliver the Charles Eliot Norton Lectures they crowd — those who get there early enough — into the musty cheese box of the New Lecture Hall (new when I was in short pants). And when Harvard gathers to hear the Boston Symphony or to confer an Honorary Degree on Sir Winston Churchill indoors the audience stuffs itself into Sanders Theatre, a theatre in name only, which looks like an Elocution Room designed by the inventor of the jigsaw. You never saw such fretwork, and that is all you see; the light is dim, the seats hard. Only the hearing is good. If you detect envy in these remarks, it is there all right, for speaking as a Harvard man this is only one of several instances where I had admired and envied the initiative of M.I.T.

The most memorable feature of M.I.T.'s architecture is the great, central cement dome rising above the massive walls and softly illuminated by night. When Bostonians look westwards across the Esplanade this is what they see. It was a national novelty when it was built in 1906 and has been a landmark ever since. So it was natural and fitting that when Eero Saarinen came to design the new Auditorium he should think in terms of a shell concrete dome. The dome is one eighth of a sphere, pinned down, anchored at three points on heavy sunken abutments and then the dome cut away between these points to allow for the rising, segmental glass walls. The building covers about half an acre. Seen by night, with the lights within, it is an opal; by day it suggests one of those curved white hats the ladies have been affecting this spring, or, less elegantly and to the critics, it suggests a diaper. Since the married students are housed directly behind the Auditorium it might be that Mr. Saarinen had this symbol in mind, though I doubt it. The opal, the white hat, or the diaper depending upon your point of view.

As you enter the airy glass-enclosed foyer you are on the level midway between the main auditorium and

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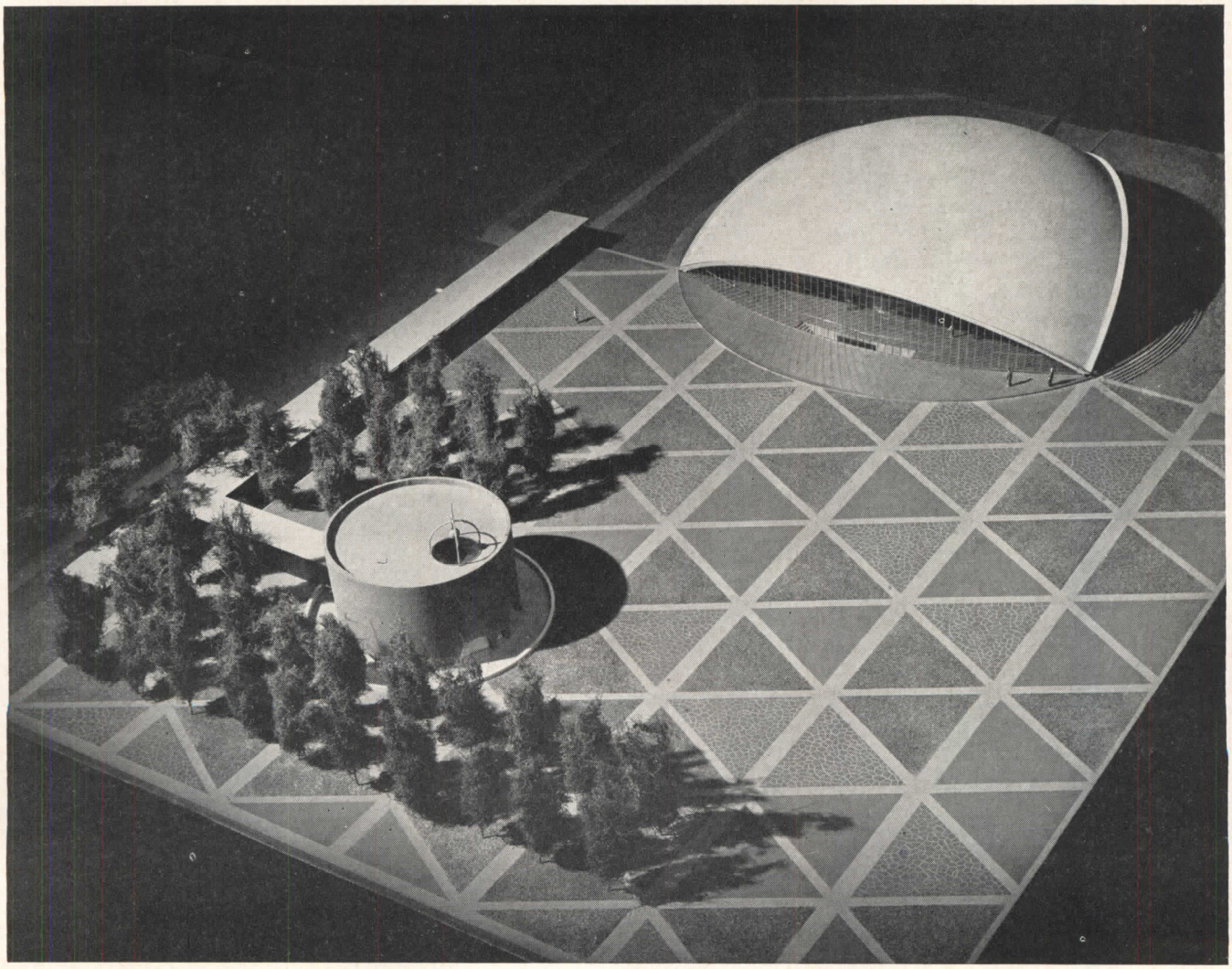
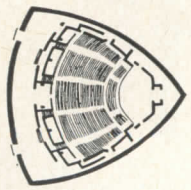


Kresge Auditorium, Massachusetts Institute of Technology
Eero Saarinen and Associates, Architects
Anderson & Beckwith, Associate Architects
Ammann & Whitney, Structural Engineers
Hyde & Bobbio, Mechanical and Electrical Engineers
Bolt, Beranek & Newman, Acoustical Engineers
George A. Fuller Company, General Contractors



THE OPAL ON THE CHARLES

By Edward Weeks

the little theatre below. Side doors and ramps admit you to the big main hall, seating 1250; the doors are of solid oak, three inches thick with weather stripping, a sound shield against the traffic on Massachusetts Avenue as the dome is against the planes overhead. The little theatre with seats for 250 lies directly beneath and to either side of it are hermetically enclosed, soundproof rehearsal rooms. It would be possible, though unlikely, to have all four units occupied at the same time and happily unconscious of the others. The evening I saw Thornton Wilder's play "The Skin of our Teeth," so admirably presented in the little theatre, the M.I.T. concert band was going full tilt in the big auditorium overhead, and although I was listening in both directions I heard only the faint mutter of the bass drum penetrate to our smaller sanctum. This, I am told, is due to many factors, chief among them the fact that the stage floor of the big auditorium is floated on a fiberglass pad, a springy blanket which deadens the impact of piano or ballet, though not yet the drum.

As a lecturer of twenty-five years' experience I have visited several thousand auditoriums, more often as a speaker but often as a listener, and it is fascinating to me to observe the skill and ingenuity with which Mr. Saarinen and his acoustical engineers, Bolt, Beranek and Newman, have met the imperatives of such a building. As I see it there are five imperatives in which the performer and the spectator have a common interest, and I shall rate them in order of their importance.

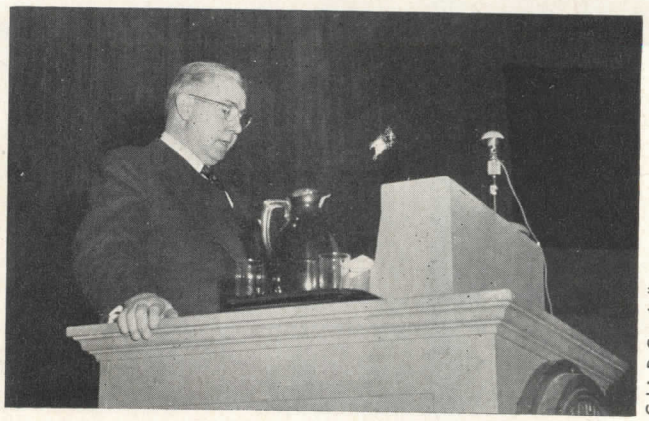
The first imperative is that one can hear and be heard, not in blurred accents but distinctly. Symphony Hall in Boston, for instance, gives magnificently of Myra Hess or the great blend of the orchestra, but is hard on a tenor as reedy as John McCormick. The cruelest performance I ever heard there was a lecture by H. E. Wells. Mr. Wells was a short man with a high Cockney voice: he couldn't reach the high suspended mike (which had not been lowered from its customary spot above the orchestra) and we certainly couldn't reach him.

When the Kresge building was in its next-to-final stage members of the Institute faculty used to wander into the main auditorium and standing in the pit clap their hands for the joy of hearing the sound bounce from the cement floor to the cement dome and back again; then they would seek out Mr. Newman and tease him. But the acoustical engineers had the last laugh; with delicate wooden gratings, with unobtrusive backstops of plastic fabric hung over fiberglass pads, with sound-absorbent seats, they have controlled and clarified the voices that come from the stage. It is a big stage, some forty-five feet across, and deep enough to seat an orchestra of 250 pieces as well as the dignitaries who assembled for the Dedication. They spoke well and were heard with ease.

The single voice and the solo instrument are beautifully accentuated, but it is still a question of how true a blend we shall get from the full orchestra. Commenting on the performance of Haydn's "Creation," performed by soloists, chorus and orchestra, Rudolph Elie, the music critic of the Boston *Herald*, wrote: "Acoustically, the auditorium's properties are inexorably naked, exposing a high fidelity quality equal to if indeed not exceeding that of London's Festival Hall. . . ." And he went on to add: ". . . it is very evident it will not be kind to the amateur, the dilletante or the improperly rehearsed professional as it reveals the slightest flaw while enhancing the auditory response." Trust an engineer to be exacting.

Lighting is the second imperative, and here as a speaker I think I have suffered every gradation from lecterns whose little bulb had long ago expired (fortunately I seldom use notes) to that vast hall in Minnesota where I spoke with footlights playing on my face against a backdrop of (artificial) falling snow. I was told to stand in one place and not to use my hands when I talked, for if I did, I should cut off the beams. Since it was impossible for me not to use my hands I kept blacking out myself and soon the house lights were turned on. I remember seeing Edna St. Vincent Millay begin her Reading in a badly lighted hall by hitching up her evening dress and making her way the entire length of the stage unscrewing the footlights which were too blinding

Dr. James R. Killian, Jr., M.I.T. president, at dedication



Calvin D. Campbell

Robert D. Harvey Studio

for her to see the print. But no such embarrassment will ever afflict a speaker here at the Kresge. The lighting system is the best that engineering skill can devise, and I doubt if any playhouse on Broadway could hope to match it. Indeed, the boys are still working on it: television cameras are to be installed with a direct wire to Station WGBH, the Educational Channel for Greater Boston.

Every entertainment hall should be refreshing — this is the third imperative. Most of them are at the outset, but then the air ceases to circulate, the oxygen is depleted, and the yawning and the nodding begin. In most auditoriums of my experience the yawning increases by the square of the distance from the first number. Through long experience I seem to have acquired the endurance of a camel, but the sight of my wife fighting off sleep all through the second half of a concert is agonizing enough to make me want to leave. The air is notably fresh in the Kresge Auditorium, and thanks to its cooling system it is as fresh at the end as it was in the beginning.

Serenity is my next requirement, and serenity for the spectator depends on how you rest your spine and where you rest your eyes. The seats in both halls of the Kresge are comfortable, they tilt you back at a proper angle, and they give you knee room. But how often elsewhere, as a soliloquy drones on or you become bored listening to Strauss, have you lifted your eyes to count the light bulbs in that fantastically great chandelier, or to chase the painted cupids to their lair in the apex, or to ask yourself if the Greeks really looked like those plaster casts in the niches. The wall space can be a constant detractor in any auditorium, and Mr. Saarinen is well aware of this. He [his father?] handled the problem to perfection in the Buffalo Kleinhans auditorium, and I should say with next-to-perfection in the Kresge where the walls are of oak flooring with an accentuated line between the boards. I find these horizontals rather nervousing as an eye rest. For no reason on Mr. Saarinen's part the sight of all this woodwork reminded me of our old summer cottage at Bay Head, of how damp it used to be in a Northeaster and of how the doors and drawers all stuck.

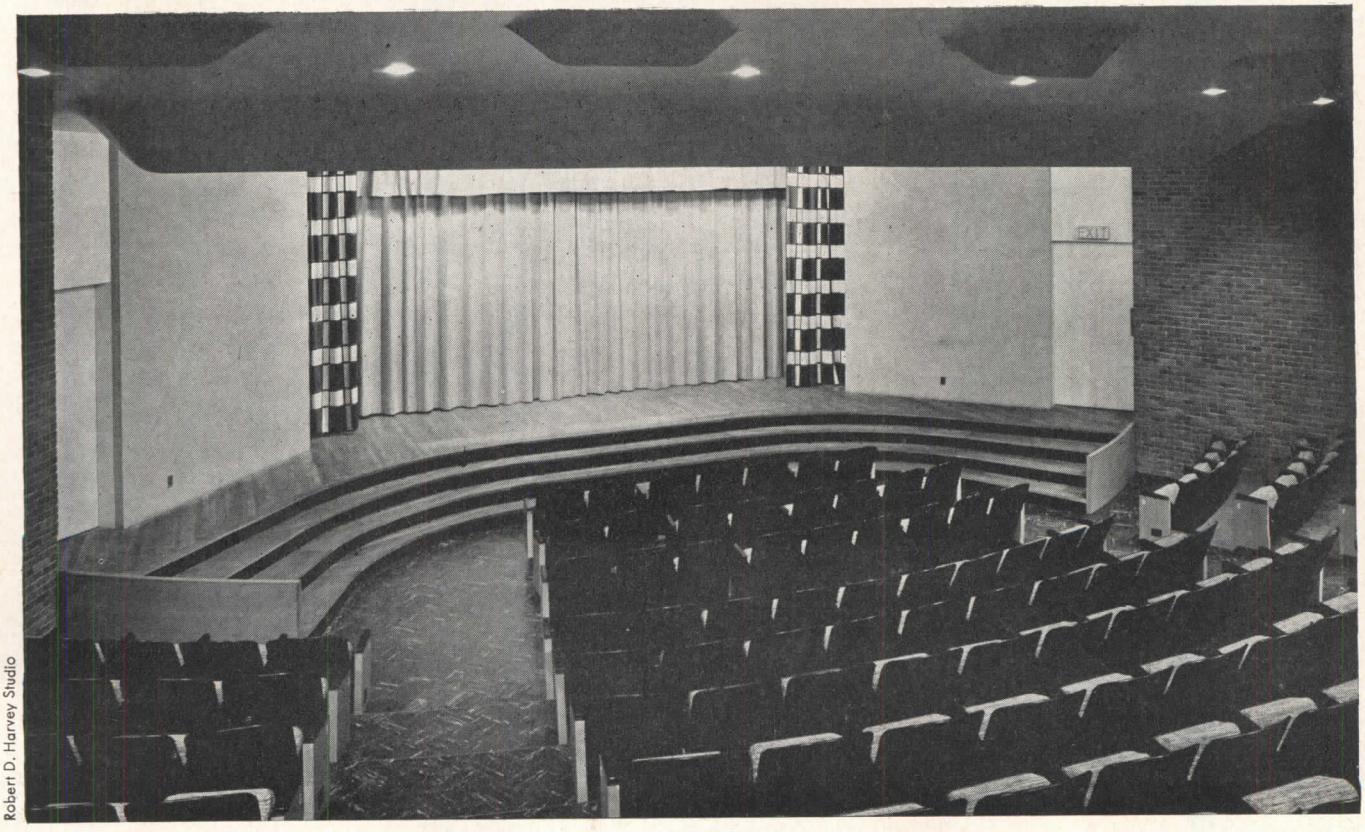
Serenity for the performer depends upon the properties I have already asked for, upon the stage which should be spacious and resonant, and backstage, upon an attractive dressing room, upon a Green Room where one can greet friends afterwards with a hot or cold drink, and upon a carpentry shop where scenery can be stored and instant repairs effected. They are all here.

The last imperative is that the hall be conveniently accessible. M.I.T. has done its best to provide a parking space in an area which is already pretty crowded. But the architect has made no concessions as yet to the rigors of the New England climate. He might as well have been building for Florida. The performer, if she be a lady in vulnerable evening dress, can be driven dryly into the basement. But the audience, some of whom may also be in evening dress, will have to slosh or run through the snow or rain which so often accompany a Boston entertainment. There is no marquee, no island where people could find shelter as their cars or taxis creep up. And while the undergraduates won't mind the exposure, their elders will.

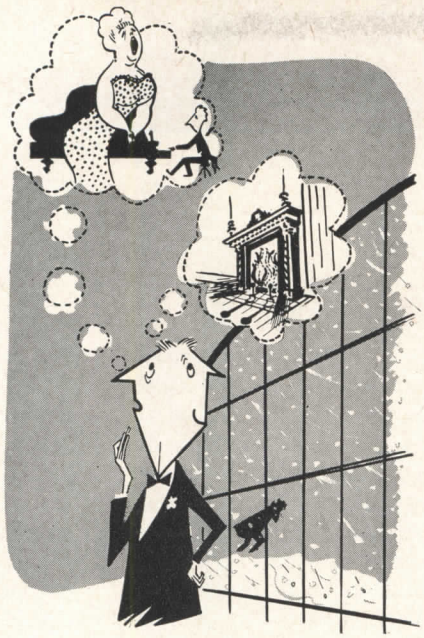
I have said this building fulfills the functional requirements, and yet something is missing. The Little Theatre on which Winthrop Ames once lavished such care was the most intimate and responsive playhouse I have ever attended. Compared to it this is an impersonal igloo. The comparision is unfair but it points to what is missing. There is a stir and expectancy in going to the theatre — or to any performance — and warmth and light fan both. While there is plenty of light in the Kresge building, there is precious little warmth to be felt on entering this great glass cage on a May evening and there may be still less when snow is banked without and the temperature is down. The warmth I mean is not measured by the thermometer, it is kindled by people as they throng together in the lobby in anticipation. But I was conscious of a feeling of bleakness here as if even the individual had been insulated. The materials threatened to minimize the personal magic which drew you out of home: the naked brick walls of the little theatre are cold, the glass enclosed lobby is cold, and the cement which proclaims itself in the main auditorium has never

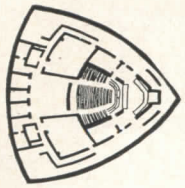
"Perhaps . . . they will generate the warmth . . ."

Philip Lieberman



Robert D. Harvey Studio





THE OPAL ON THE CHARLES

By Edward Weeks

been remarkable for kindling anything. If in the intermission there should be a choice between continuing with a difficult play or concert or going home to an open fire, I wonder whether the fire would not win.

"What's the philosophy behind a building like this?" I asked one who had had to do with the auditorium.

"To enclose space at the least possible cost," he replied.

"Did it?"

"Well, not perhaps this time, but from what we've learned if we had three to do each would be cheaper than its predecessor and the third would be considerably less expensive than the traditional form."

In his address at the Dedication President James R. Killian, Jr., of M.I.T. compared the Auditorium to the early New England meeting-house. "In visualizing an auditorium for M.I.T.," he said, "we sought a building to provide a similar nucleus for our academic community, especially for our student body. We felt it would be proper and possible to design a building which would be appropriate for worship, for academic ceremonials, for educational meetings and conferences, for music and drama, and for the maintenance of the civil life of our academic community." I am sure that this will be so, and having had a sampling of such activity this spring I wrote to my friend John Burchard, Dean of the School of Humanities and Social Studies, asking him to give me a glimpse of what lay ahead for next year. "I know," he replied, "that a group of very good Christmas carol singers would like to give a concert near Christmas . . . and I know that the American Academy of Arts and Sciences will meet in the Auditorium for its Franklin Anniversary in January. . . . I know our students are planning to follow up their very successful national Anti-Discrimination Conference with another conference on a serious topic and that the Auditorium will provide a wonderful place for that. The Tech Show which has had to have its auditions on the curbstone, so to speak, can now do them satisfactorily. There are more requests for nights for the Glee Club concerts and for Gregory Tucker's Celebrities Series, these being internal to M.I.T., than we have had in past years and I think this does clearly mean an increase in the total musical activity here.

"With respect to the little theatre, I think we can simply assume that the Staff Players who have done a good job of amateur theater for a long time under very difficult circumstances will improve their performances accordingly, but it might be more amusing to think of the things that the students are likely to do under the leadership of Professor Everingham. He has a general plan, with which I certainly agree, that instead of doing Broadway successes with amateur actors a student group should try to do imaginative plays which are hard to see otherwise and which task their ingenuity with respect to *all* elements of production and do not limit their contribution essentially to that of trying to be actors. There was a good deal of this, I think, in Everingham's production of "The King and the Duke" and I believe he now is planning to produce next year a play based on an unpublished movie script by Dylan Thomas which was done for the Arthur Rank Organisation but never used . . . In this sense the kind of theatre and ballet that used to go on at the Bauhaus would strike me as the right kind to be done here at M.I.T."

Who says scientists aren't human? Perhaps as these sparks fly upwards they will generate the warmth I have been missing. Perhaps.

"The King and the Duke" produced in the little theatre

Philip Lieberman

M.I.T. AUDITORIUM: AN ENGLISH VIEW

By N. Keith Scott

Reprinted by special permission from the February issue of The Journal of the Royal Institute of British Architects

UNDER the critical eye of thousands of students and staff at the Massachusetts Institute of Technology, there is slowly arising one of the most controversial buildings of our time. Eero Saarinen was commissioned by M.I.T. to design an auditorium for the school to seat 1,200 persons together with a small intimate theatre to accommodate a further 200, the site to be in the heart of the great campus, which has a superb location on the banks of the River Charles, overlooking the centre of Boston.

The choice of architect was excellently made, for in Saarinen, M.I.T. was assured of a design worthy of the highest attributes of the Institute, with its world-wide reputation for research and for demonstrating the validity of revolutionary theories. Nevertheless, it is true to say that the complete originality of the form and concept of the auditorium caught most architects and engineers (to say nothing of the layman) rather off guard, and there has been a tendency among those who should know better to cover their embarrassment in some premature and ill-informed criticism.

The main shaft of the criticism which has been levelled at this structure concerns the effrontery of Saarinen in daring to call into question the time-honoured credo of Louis Sullivan, "Form follows function." Saarinen has quite obviously challenged the assumption that there is a fixed relationship between form and function and in this building he sets forth the contention that contemporary building materials are so numerous, building types so complex and mechanical installations so varied that many forms may be allied to many functions, the skill and ingenuity of the architect being required to weld these variables into a harmonious whole.

From the start, Saarinen rejected the conventional fan-shaped plan with its post and beam construction, and examined the possibilities of more fluid forms, with the result that he designed a dome, daringly conceived so that it was exactly an eighth of a sphere, and delicately poised on three abutments where the structure comes to earth on its wedge-shaped corners. This resulted in a very light-weight structure — the concrete dome is only 3½ in. thick at the centre — and it has virtually no cladding costs, for the only walls required are simply "weather curtains" dropped from the underside of the arches to fill in the segments of space left on the three sides. The segments will be glass walls through which one can read the shape of the auditorium as it rises completely independent of the dome. Its form may be appreciated even more readily than that of the Royal Festival Hall as seen through the glass screen which composes the Thames façade.

There can be little doubt that the architect's departure from the logical approach to design, as we currently understand that term, has created many structural and mechanical problems and in many instances he has relied upon the sheer ingenuity of modern technology to get him out of difficulties that would have presented insurmountable obstacles a quarter of a century ago. The most pertinent question which the designer of any auditorium must ask, of course, concerns the primary function of the assembly space, and it is equally obvious that the solution to the design is most likely to lie in a structural form which of itself tends to permit optimum hearing conditions. In his choice of structural form Saarinen flouts every precept of basic acoustical design, for the concave ceiling and the curved rear wall combine to prohibit good hearing conditions unless there is a vigorous applique design to counter the tendency to focus sound. On the face of it, therefore, the architect seems to be deliberately running the risk of having the same indifferent acoustical conditions as are to be found in the United Nations General Assembly building with its domed ceiling and concave rear wall.

The rapidly advancing science of acoustics, however, can now come to the architect's aid, and by the introduction of floating "clouds" the section of the room was radically altered and the troublesome rear wall made so absorptive that virtually no sound is allowed to return to give a focused echo on the stage. But there is still the problem of the mechanical equipment, and though the "clouds" hide much of it there can be little doubt left in the mind of one who has seen the building in all its construction stages that contortionist feats have been demanded of pipes and ventilating shafts. They frequently are squeezed into shapes, basically unsuited to their form. All service lines of whatever type rely upon the rectilinear plan for optimum economy; there is scarcely a straight line, much less a right angle, in this building.

These in brief are the arguments put forth by the functionalists, and we must now ask what Saarinen has achieved to justify proceeding with a design which has so many generally acknowledged drawbacks.

In the first place he has designed a building of almost unbelievable purity in line and mass. It is quite apparent that once he had satisfied himself upon the form of his conception Saarinen allowed no practical difficulty to stand in his way, even if the appearance of these difficulties pointed to the basic unsuitability of the form in question. Problems which arose from his design were solved and things were made to work. There is much talk of the economic nature of the structure, the tremendous saving in wall costs, and the almost unbelievable lightness of the dome, but in my opinion these arguments are rationalisations thought up to justify the scheme to its detractors. In fact a study of Saarinen's early sketches reveals that at no time did he strive for a perfect shape for an auditorium as such, but that he embarked upon a search for form in terms of the dome from the very beginning.

As the building nears completion it is possible to get a glimpse of the final effect, for it is upon this that the architect stakes his theory and the scheme must stand or fall by its success or failure. To the writer, the M.I.T. auditorium is an outstanding success. From a distance, the dome ties in beautifully with the hitherto somewhat unrelated domes of the main buildings; from close up, the skill and daring of the designer are clearly seen in the stark statement of the structural form; from inside the foyer, the dramatic sweep of the arches looping to earth on all sides is almost overpowering in its emotional content, and in the main auditorium the all-pervading warm white oak lining to the walls contrasts beautifully with the white "clouds" suspended from the vast concave dome which, painted a dark blue-grey suggestive of a night sky, is sensed but not consciously apprehended as one glances around. Although the beautiful texture of the natural

(Continued on page 268)

THE ANALYSIS AND DESIGN OF A COUNTY COURTHOUSE-JAIL

Brazos County Courthouse & Jail, Bryan, Texas
Caudill, Rowlett, Scott & Associates
Architects & Engineers

THERE ARE SEVERAL WAYS to go about designing a building, each one possessing its own peculiar advantages and disadvantages. There is no method for organizing the work and analyzing the problem that will guarantee an attractive, workable scheme. Such a result can come only when the magic intangible, creative design talent, is added to a careful study and resolution of the needs.

Nevertheless there is merit in an organized approach which is followed by a well ordered analysis of the problem at hand. Many architects have profited from satisfying their natural curiosity about how the other fellow works. Doing things in a logical order, having always a well conceived notion of the relationship of ideas and elements to each other and to the ultimate objective is good practice, good office economy, and brings about the atmosphere for a happy result.

The story of the way *this* design process was executed by *these* architects is of interest. Of interest because it gives us a look into the workings of the Caudill, Rowlett, and Scott office and tells us how they arrived at an unusual plan, and why; of interest also because the county courthouse and jail is a typical problem (in the national sense) that begs for widespread and immediate attention.

This design process started with the assemblage of as much information as possible on the nature of the problem, the client, the needs. Data was gathered from observation, conversation, mail inquiries, reading, and also from the investigations of a citizens' committee. Next, a thorough analysis and comparative evaluation of these needs resulted in a listing of 14 "design premises" — actually a set of conclusions which could now become working principles as the process went forward. No drawings or sketches had yet been made.

The third step was the translation of the 14 premises into "idea sketches," 26 of which were made. Their production was the business of thinking graphically. These sketches were intended as guides, concepts for further work — some or all of them might or might not find a place in later designs. The interpreting of ideas into architectural visualizations seemed to help crystallize those ideas.

Thus prepared, the architects then developed four basic schemes, considered (with the client) the strong and weak aspects of each, and ended with a design that gained unanimous approval.

The entire study was reproduced, printed, and bound into a striking 112 page book with colored dividers. The proper persons were given copies and could thus consider — at leisure and privately — the four schemes and all the data that led to each. This made possible a thoughtful, individual evaluation by each interested official.

Such a procedure gives the committee members a sense of active participation in the job; presents effectively the architect's manner of working and a measure of the value of his services; helps promote better understanding and hence better public relations. **— James S. Hornbeck**

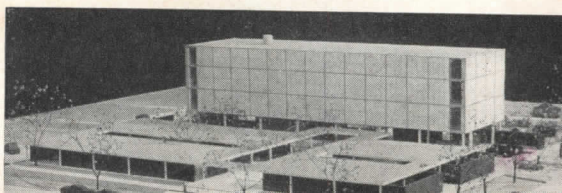
RESEARCH & PROGRAMMING

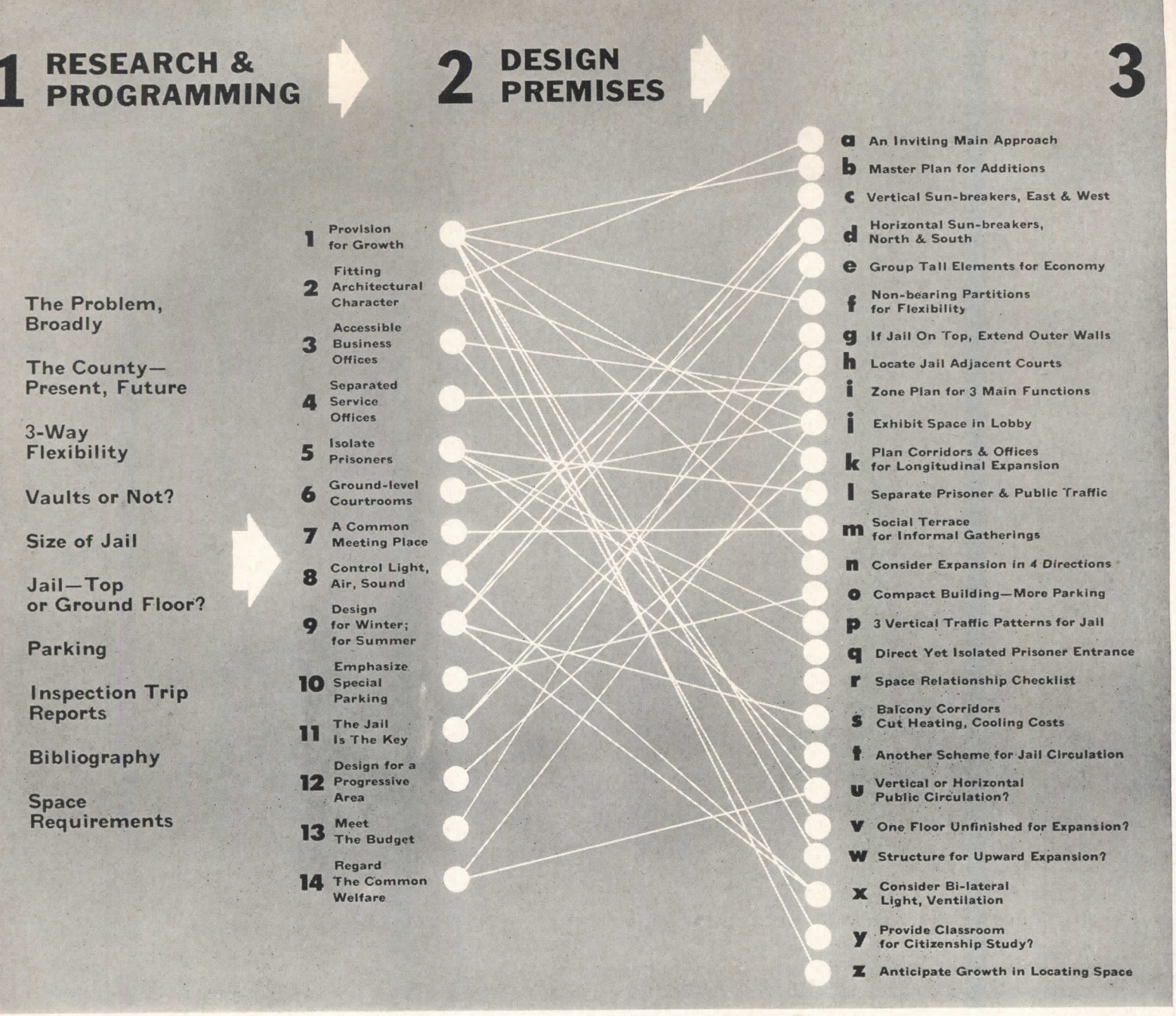
2 DESIGN PREMISES

3 IDEA SKETCHES

4 FOUR SCHEMES

5 SELECTED DESIGN





1. RESEARCH & PROGRAMMING

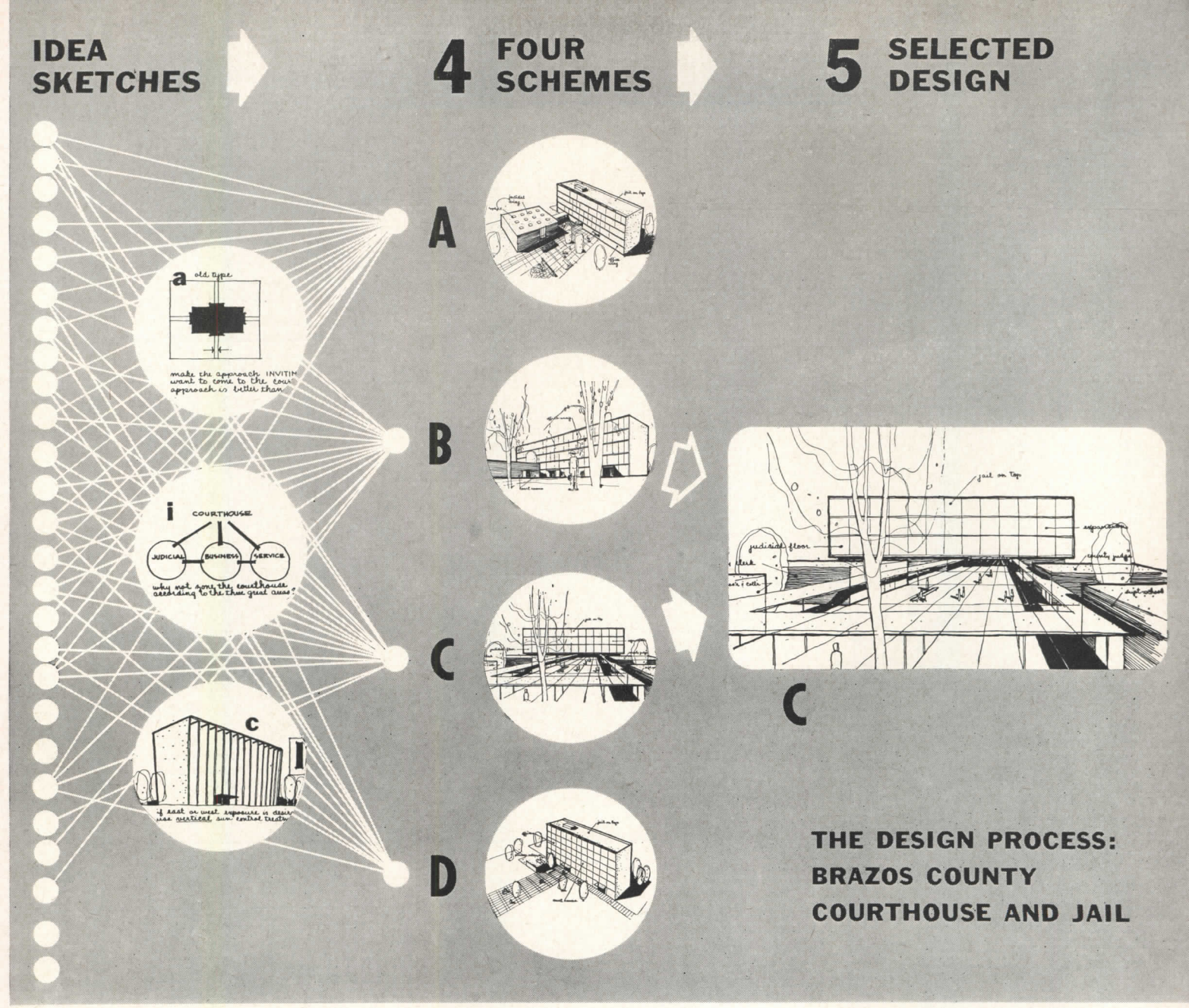
Space requirements prevent more than a brief summary of the architects' detailed 65-page report.

After study had revealed the true nature of the problems, possible solutions could be discussed, suggested. Broadly, it was required to (a) provide for present and future needs (b) on a small site (c) within the bond issue sum. What, then, were these needs?

The county and its government were studied; its 3-part function (judicial, business, service) and its steady growth pattern. For the future, flexibility by way of the qualities of expandability, convertibility,

2. DESIGN PREMISES

Following the research that led to a listing of the problems, the next logical step in planning was a statement of conclusions reached; a list of the salient points that appeared as true premises in the light of research and experience. These could then serve as guiding principles for further design development. Much study produced a list of 14 such premises, listed in the chart above. Only a few will require explanation.



versatility. Vaults — for theft? for fire? Everything considered, the reluctant decision: office space only.

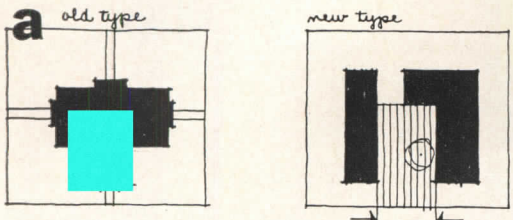
Real jail problem was prisoner segregation, although area a question also; settle for 80 prisoners in 18 to 24 cells — plus expansion. No clear-cut decision possible on top-floor vs ground-floor jail — consider either. Provide maximum parking as plot permits.

For further information: eight other jails and courthouses were visited, carefully reported; facts and opinions gathered from experts, administrators, technicians, judges, lawyers, officials; references were assembled into a useful three-page bibliography.

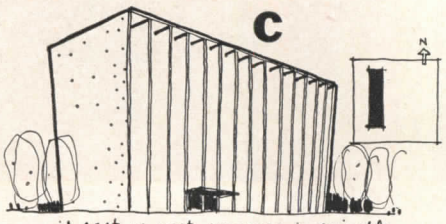
The Citizens' Advisory Committee made a detailed inventory, consulted the officials concerned, then listed space requirements both in detail and in tabular recap; estimated that a 35,600 sq ft building @ $16.50 and a 4000 sq ft jail @ $30, plus fees and equipment, could be built for the $800,000 allotted.

It was felt (2) that the courthouse should have the quality of dignity associated with free people — properly express the idea of a county "capitol," and yet should simultaneously appear friendly, inviting. The business offices (3) are county clerk, county tax assessor and collector; the service offices (4) are those for health, education, welfare, etc. For easier handling of large groups, No. 6 was considered preferable.

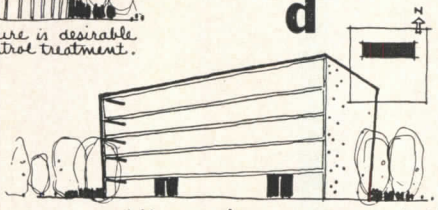
In the only county building common (7) to all, stimulating areas and rooms to encourage social exchange of ideas should be provided. Special parking (10) for jail, staff, jurors, public. Jail and prisoners (11) must be completely segregated, secure. Modern materials and building techniques should be utilized for a progressive area (12). Architecture for local government should serve common needs (14) for the benefit of all.



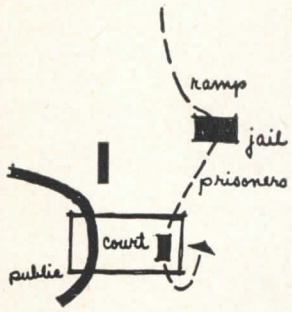
make the approach INVITING so the public will want to come to the courthouse. one main approach is better than many small ones.



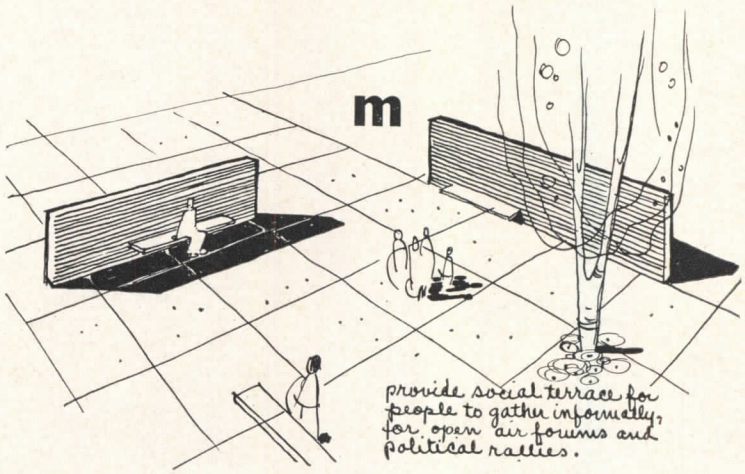
if east or west exposure is desirable use vertical sun control treatment.



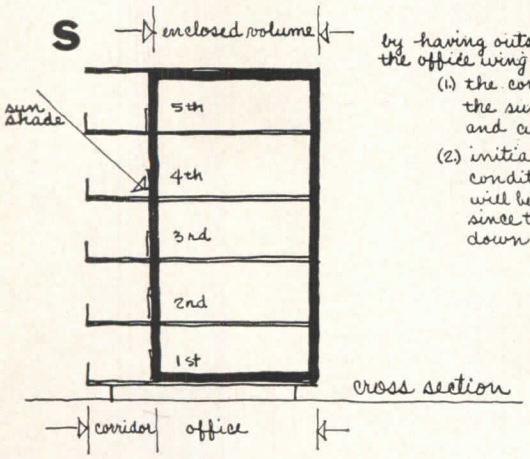
and if a southern exposure is desirable- use horizontal sun control treatment.



design courthouse so that the circulation pattern of prisoners does not cross with circulation pattern of public.



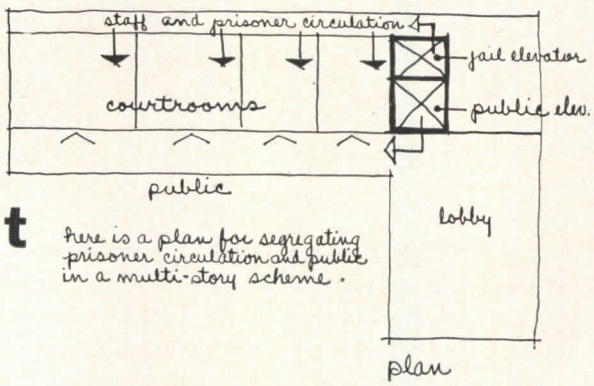
provide social terrace for people to gathr informally, for open air forums and political rallies.



by having outside corridors in the office wing - two features result:

(1) the corridors roof keeps the sun off the south wall and cuts down heat loads.

(2) initial savings on air-conditioning and heating will be as much as 18 percent since the volume is cut down 25 percent.

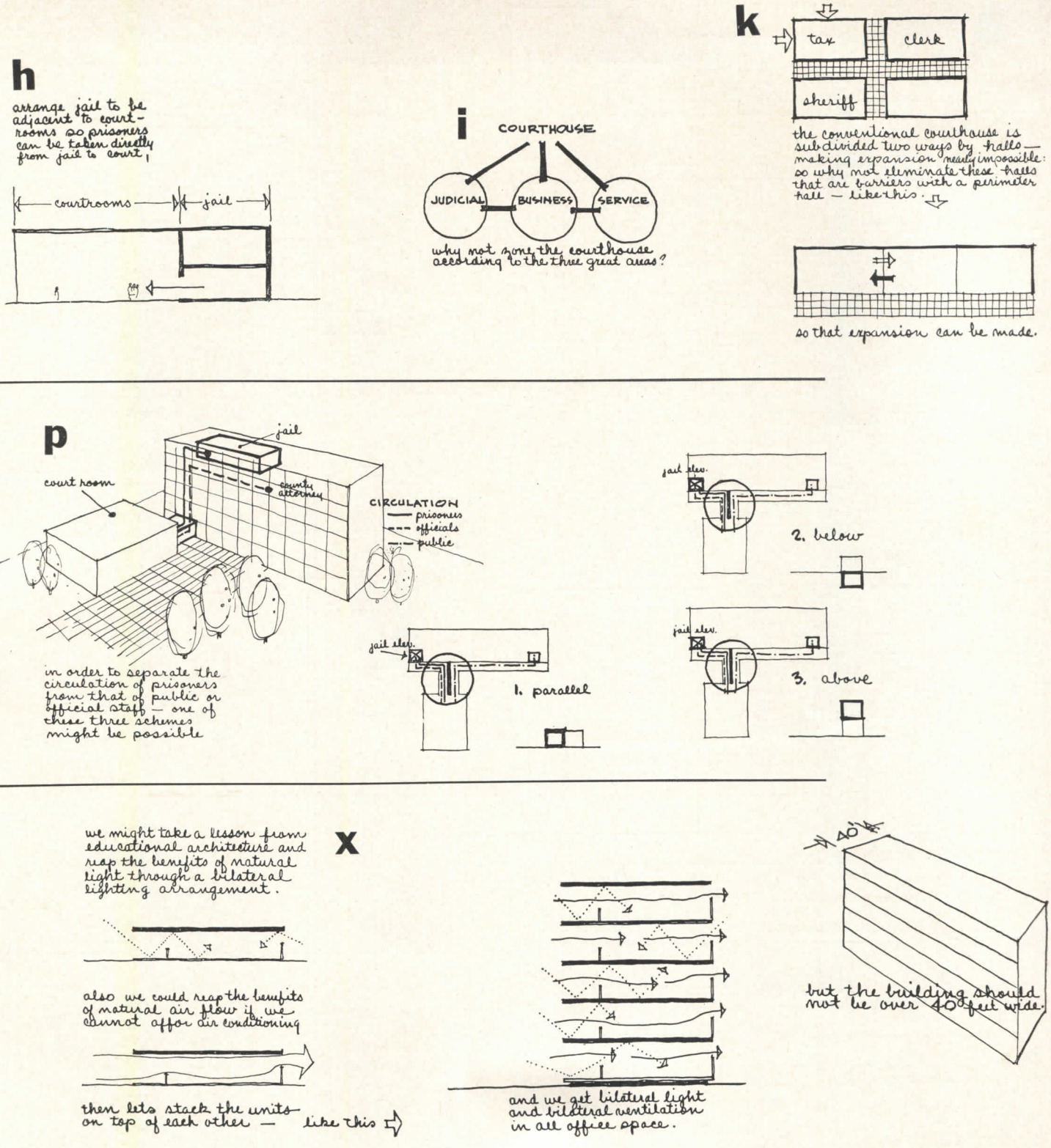


here is a plan for segregating prisoner circulation and public in a multi-story scheme.

BRAZOS COURTHOUSE

3. SKETCHING FOR IDEAS

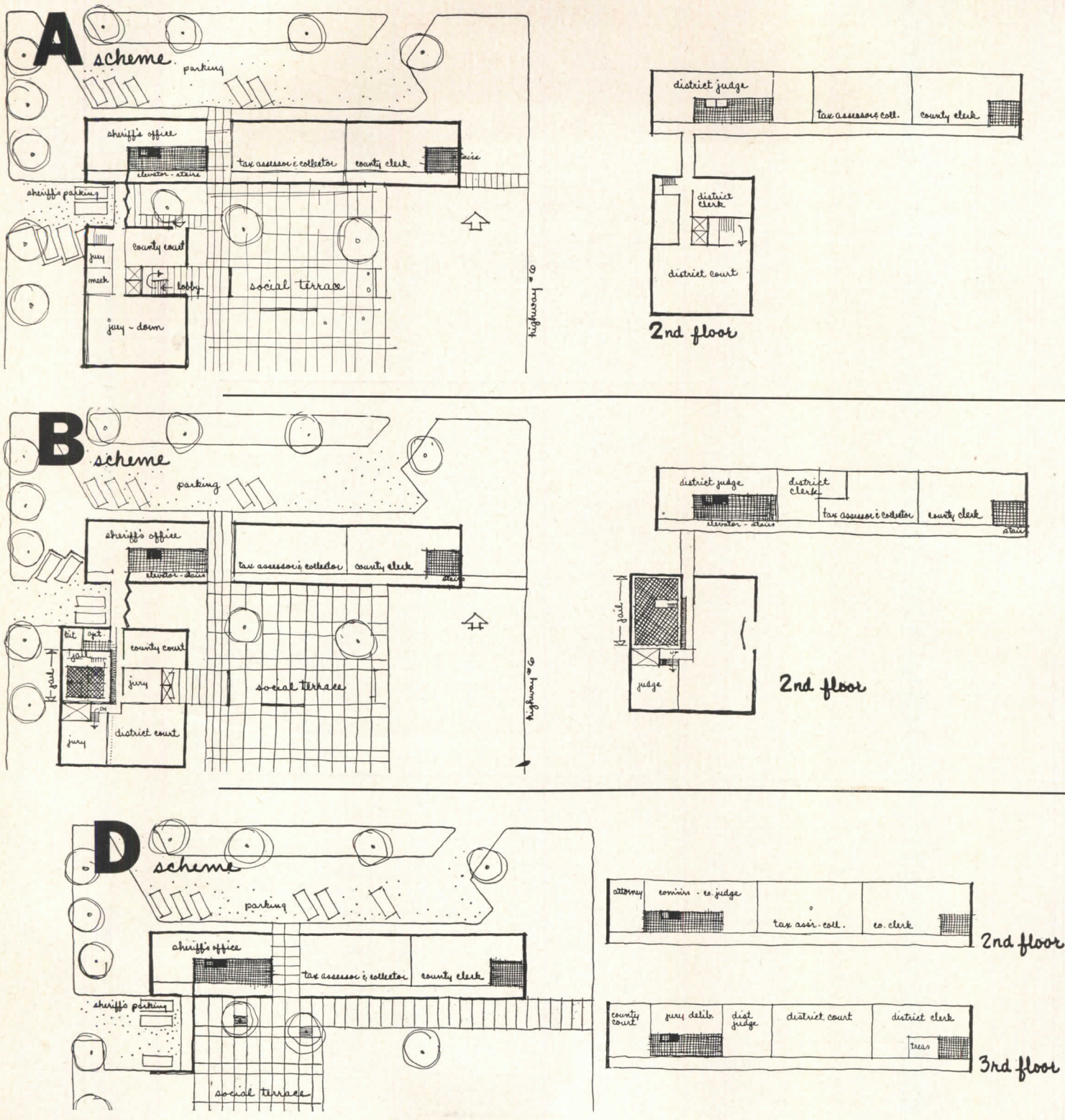
The next step was to begin interpreting the space needs — for the first time — into the three-dimensional language of architecture. Each of the 26 sketches listed (p. 140) stems from one or more of the design premises. Some of these ideas may occur in the final plan — some may not. Nevertheless, principles for guidance as the study proceeds have been restated graphically; crystallized. The architects' report goes on to state, "A good courthouse does not derive only from good ideas, or careful planning, or proper use of materials, or ade-



quate space and equipment. It must be a proper correlation and synthesis of all these — and many more."

Illustrated above are 12 of the 26 idea sketches. They were not arbitrarily selected as more interesting or important than the remainder, but simply as a representative sampling for our available space. Observing these few sketches, note how an idea earlier expressed in words takes on new and vivid meaning — added life and dimension — when presented pictorially. Short of a model, how better to consider design ideas?

The space relationship checklist, item "r," was an interesting tabular charting of the necessary 22 space elements and an analysis of their requirements in common; such as public access, driveway entrance, office type space, relation to other space, fixed or expandible areas, etc. Thus a basis for some sort of system of zoning was drawn. Also, when preliminary plans are made, such a chart can serve for checking. Incorporating all ideas is obviously impossible, but now at least one basis for judgment exists.

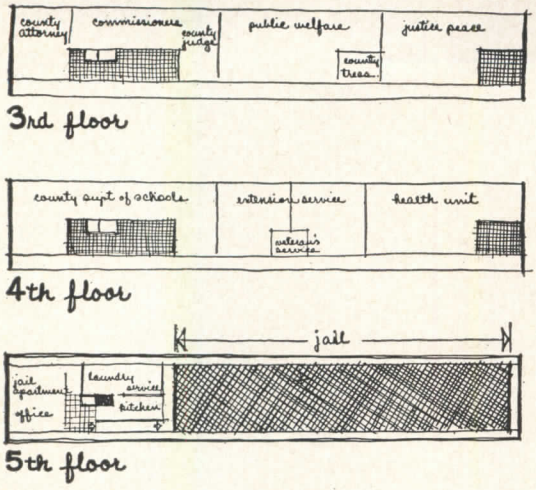


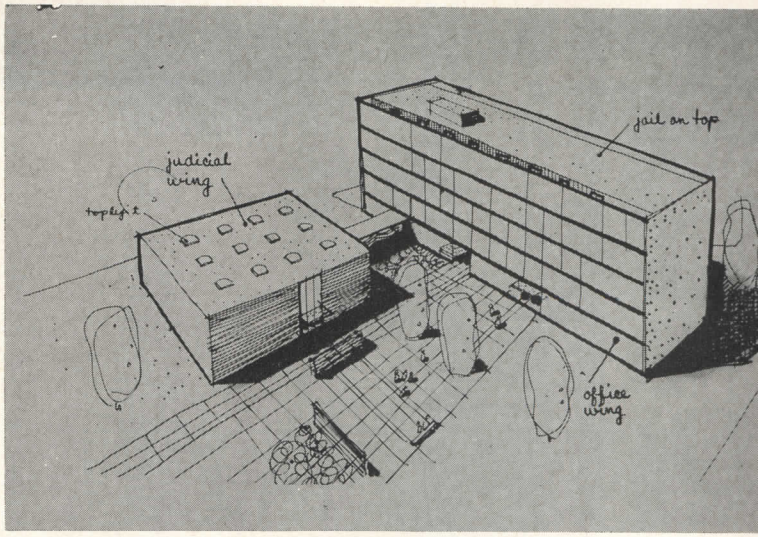
BRAZOS COURTHOUSE

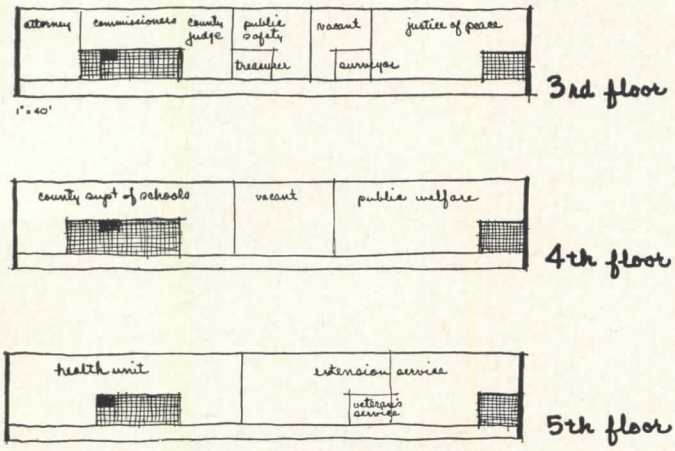
4. FOUR BASIC SCHEMES

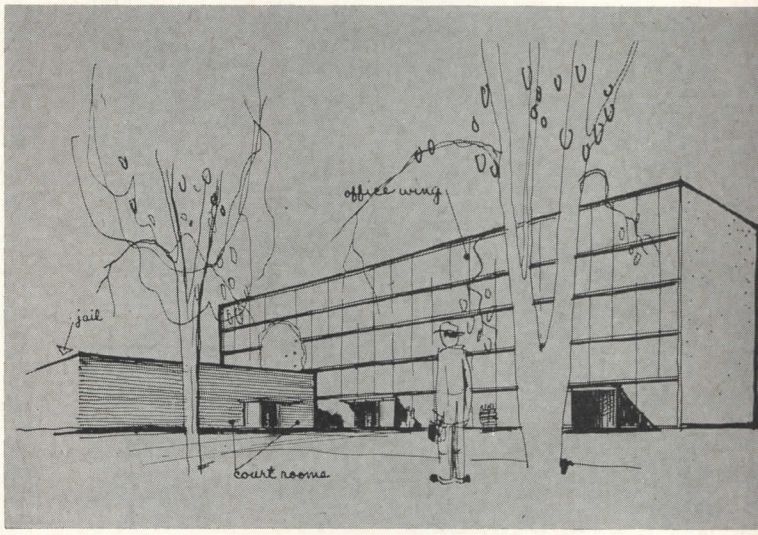
Of which three are shown here, the selected one overleaf

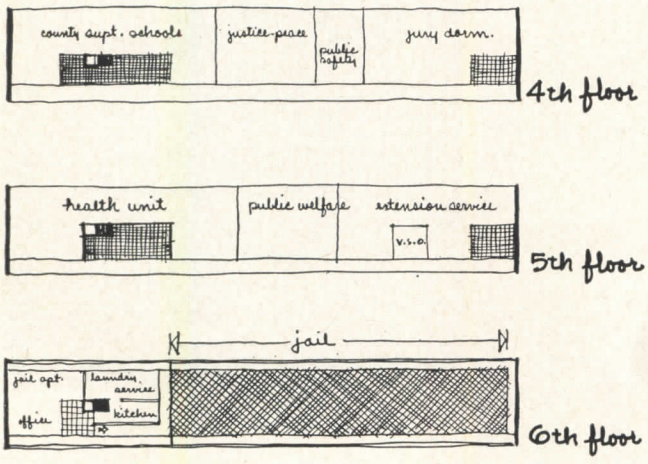
A. Two part arrangement; an office building with jail on top and a courthouse wing. Advantages: compactness for maximum parking, site development; flexible office spaces; direct access to courts; high units grouped for economy. Disadvantages: top floor jail adds problems and expense of extra elevators, heavy construction, service; judicial offices not ideally located in relation to courts; 2nd floor work areas and expansion for business offices; service offices ideally at ground level.

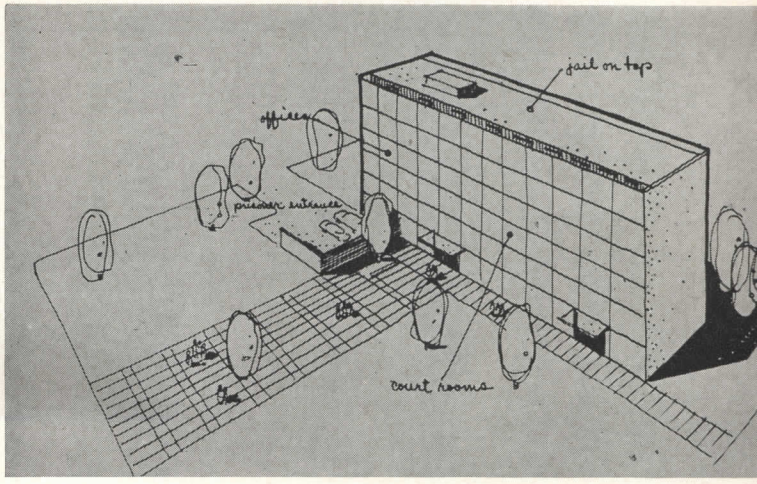






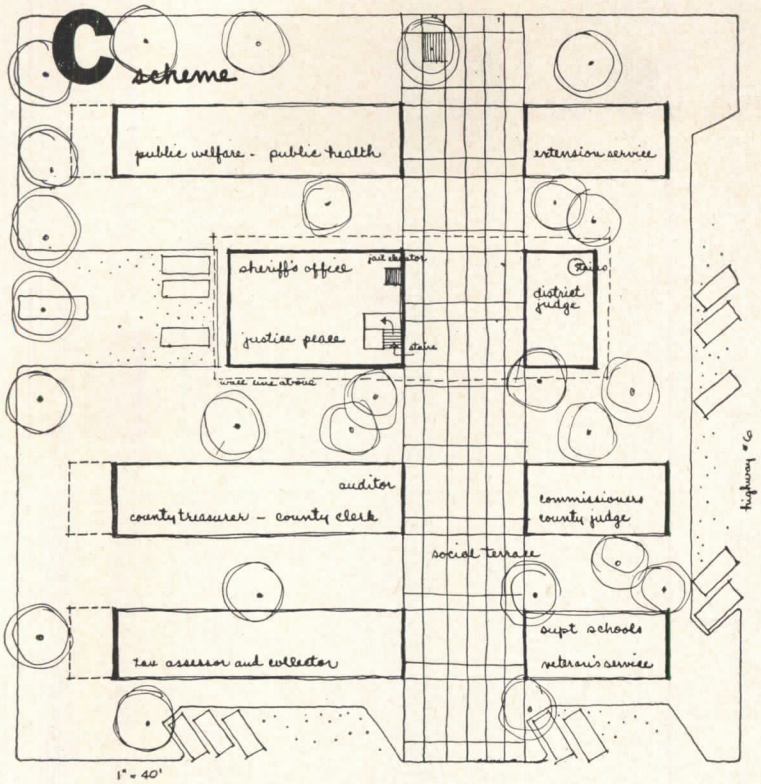


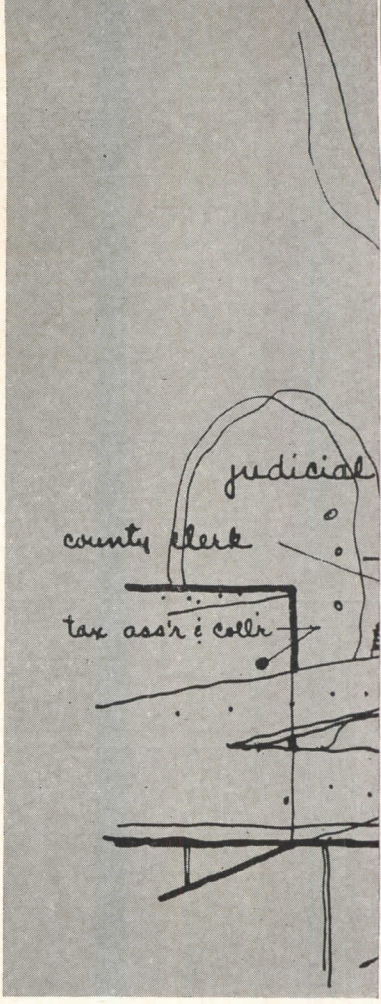


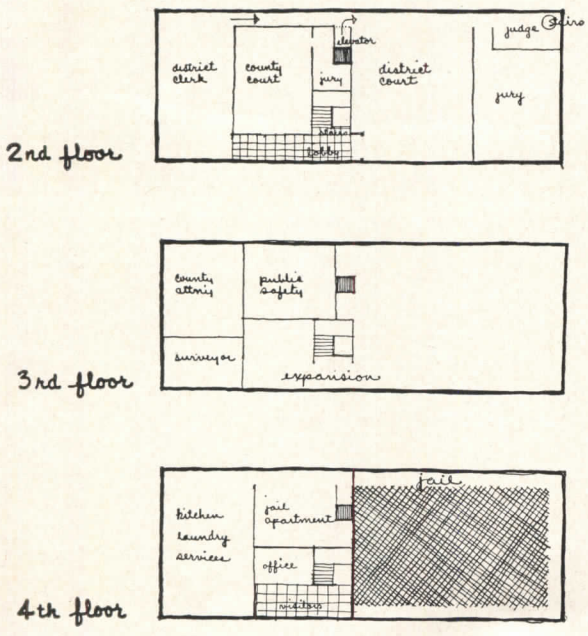


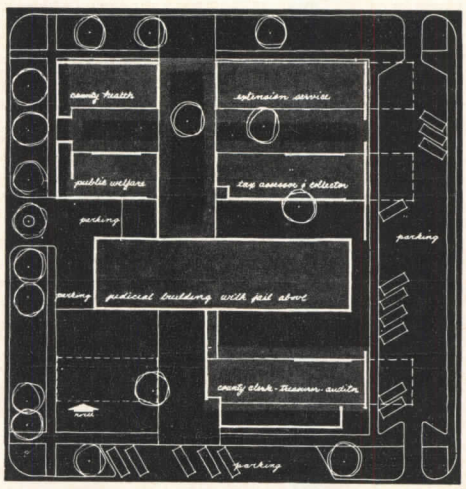
B. Essentially the same as A except that jail is now located on the ground floor of courthouse wing. Advantages same as for A, plus: ground floor jail solves service problem, eliminates one elevator, can be expanded as needed; direct prisoner access to courts; office wing can be lighter, simpler construction without jail on top. Disadvantages same as for A except: ground floor jail creates a security problem and the possibility of prisoner disturbance to public, staff.

D. A single building with the jail located on the top floor. Advantages: greatest possible compactness permits maximum site development and parking area; flexible office spaces; economy through compactness. Disadvantages: only a few elements can have direct ground-level access; top-floor jail problems as noted before; combining high and low elements creates wasteful high ceilings for office areas; necessity of locating the business offices on two different floors.







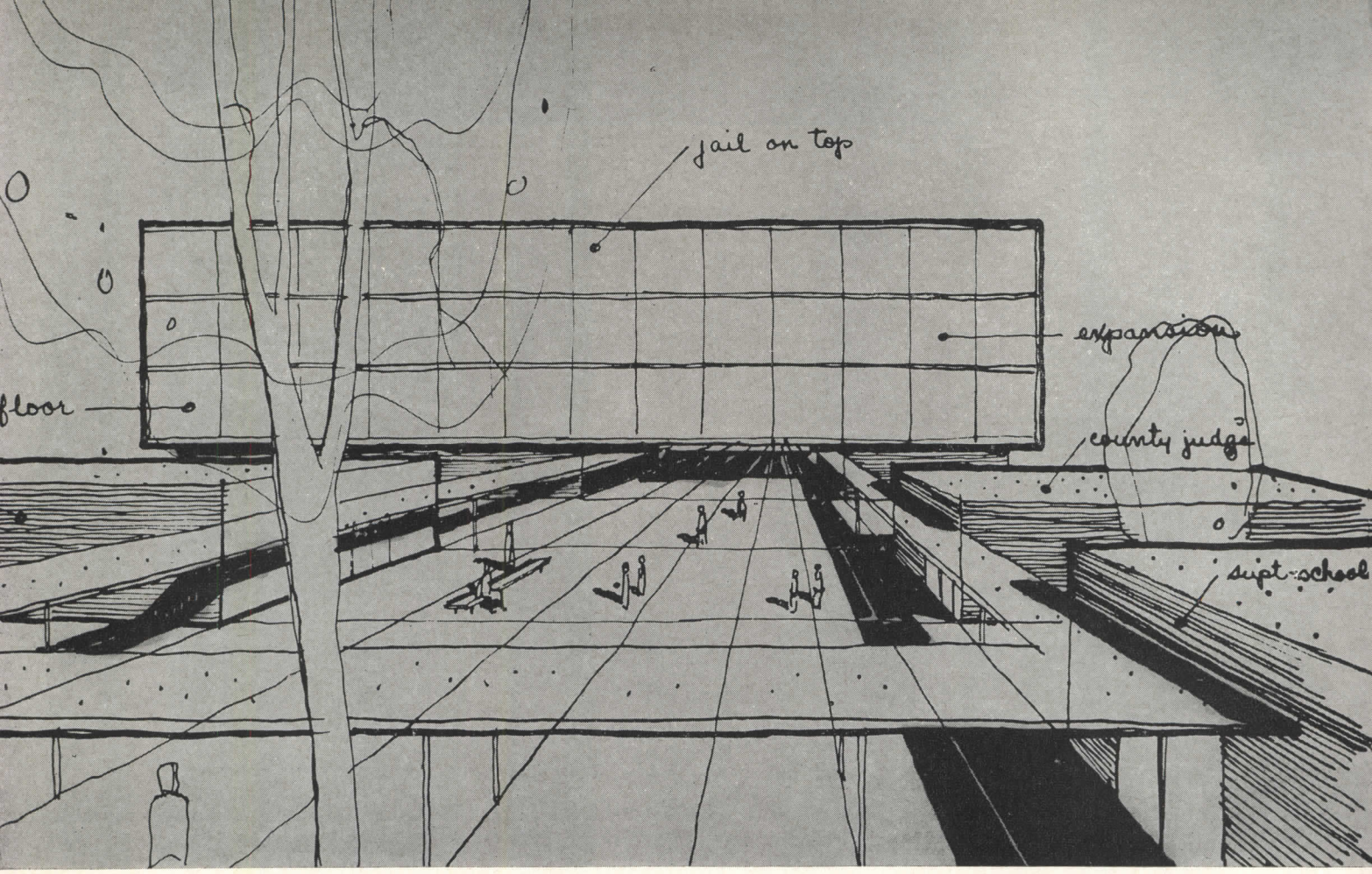


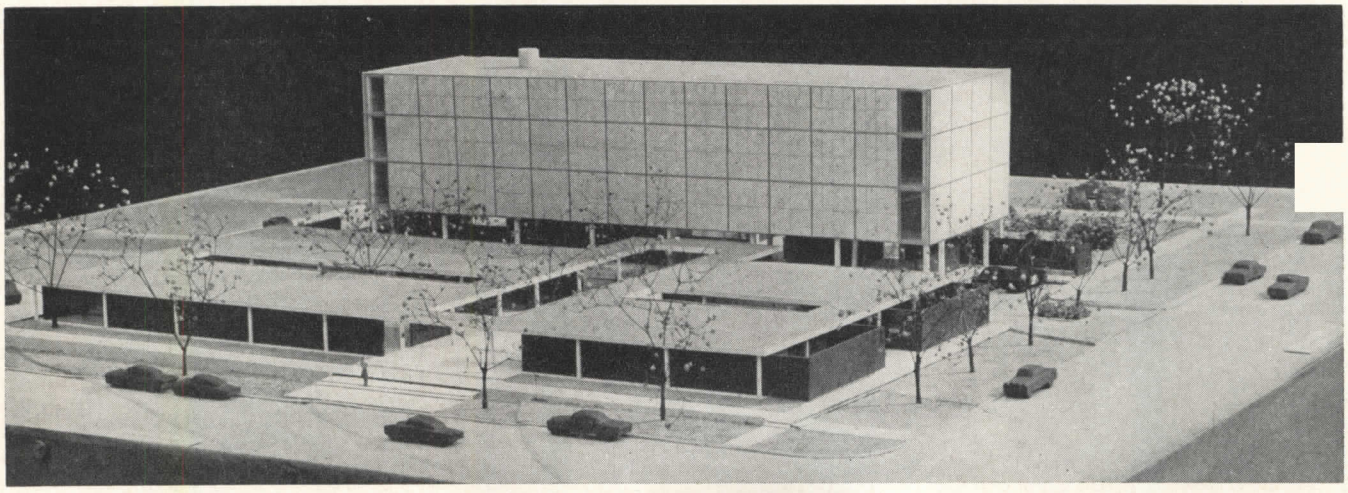
BRAZOS COURTHOUSE

5. THE SELECTED DESIGN

Now being built, with minor modifications

This unusual scheme — within our knowledge the first decentralized plan for a courthouse and jail — should turn out to be both good looking and workable. The architects' original recommendation, in view of the budget, was scheme B. However, after the Court allowed a larger amount, the universal choice was scheme C. Under construction, its steelwork is now above ground. The model is pictured above. Shown also — in reverse — is the slightly modified final plan. The na-





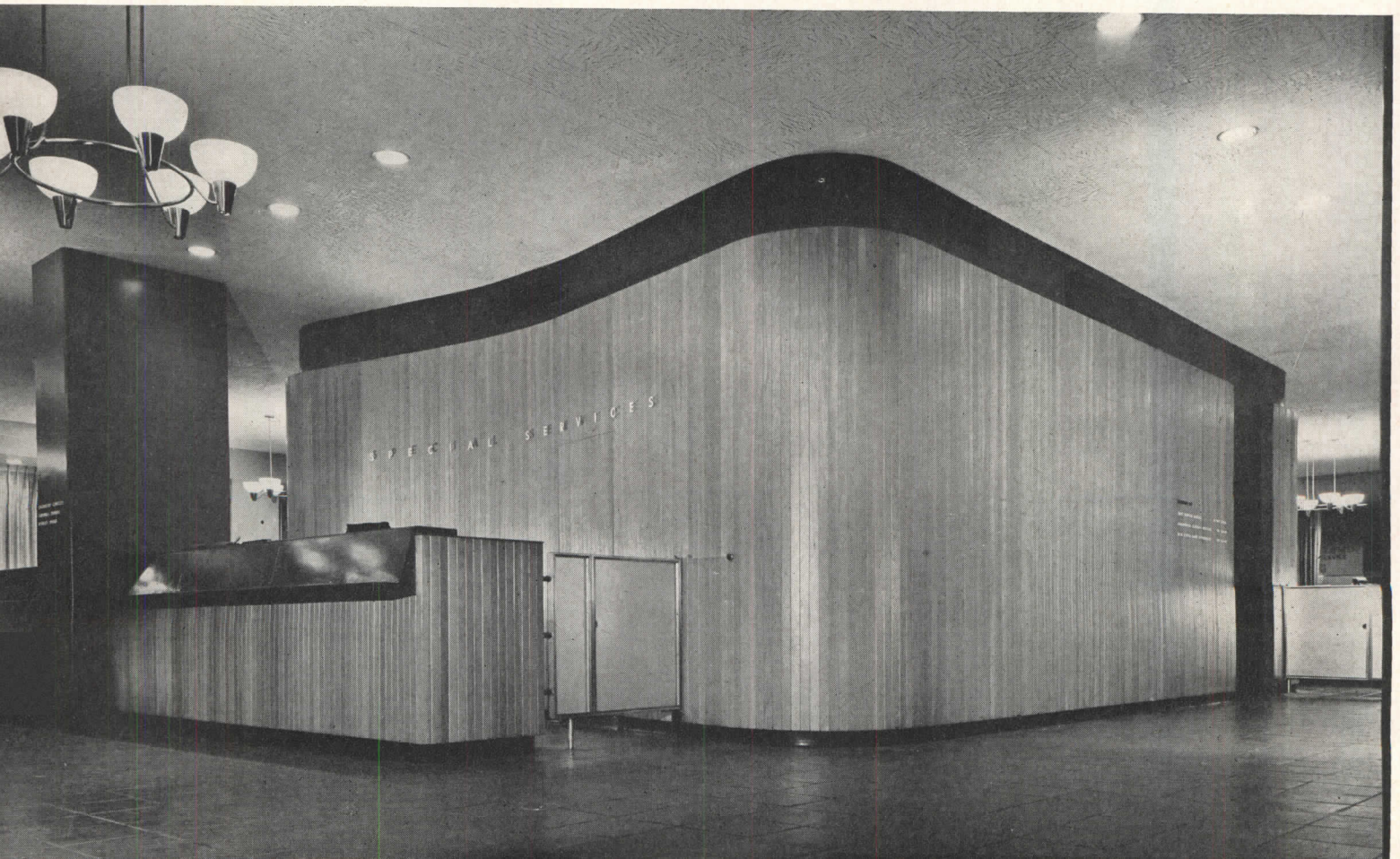
Roland Chatham Studio

ture of its minor modification is unimportant to this study; more properly forms a part of the final story.

Advantages: affords the opportunity for attractive architecture and great public amenity; locates both business and service offices at ground level, with direct and separate entrances; specific units can be separately lighted and heated for night use; three of the wings can be expanded; lawbreakers are completely separated from the public; judicial offices and courtrooms are in the same building; public access to courtrooms is separated from access to other units; direct prisoner access to courts; a surge of people in or out of one unit need not disturb those in other units.

Disadvantages: large site coverage leaves little area for parking; judicial and commissioner offices not ideally located in regard to county courtroom; top-floor jail creates the problems and expense of extra elevator, heavy construction, more difficult servicing.

TASTEFUL BANK REMODELING



Bill Hedrich, Hedrich-Blessing

Personal Banking Division
Chicago National Bank

Skidmore, Owings & Merrill, Architects

Campbell, Lowrie & Lautermilch Corporation, Contractors

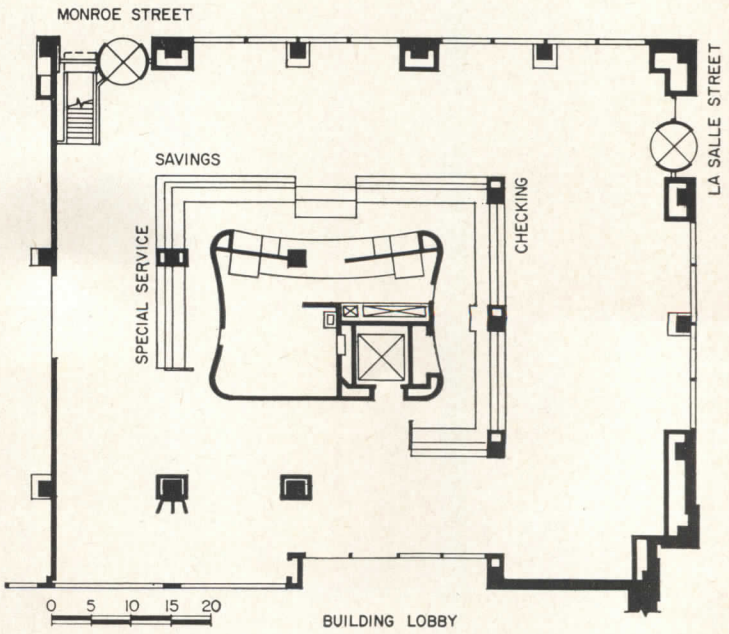
UNIFIES A HARD-TO-HANDLE SPACE

THE ARCHITECTS' PROBLEM was to remodel a relatively small ground floor area in the Chicago National Bank Building, located in the heart of Chicago's financial district. This space was to be devoted to personal checking, small loan, and savings transactions. The idea of the design was to create an informal, friendly atmosphere — rather in the spirit of a "club for banking" — as opposed to the cool austerity of the institution's main banking room, located on the second floor of the building.

The existing space, rectangular in shape, was spotted with irregularly spaced columns and an elevator to the second floor (which was to remain). The architects' solution was to enclose the elevator and all of the columns except two within a central island core and surrounding counter, with the result that the entire area assumed a unified, uncluttered look formerly lacking. The core, which also contains a workroom and lavatory, was — for better appearance — shaped in a form resembling a rectangle with rounded corners and gently concave sides.

Materials, colors and lighting have been keyed to the idea of warmth and informality. The island wall and counter die faces are clad in natural clear white oak flooring, applied vertically with V-joints; the floor is natural red quarry tile in 12-in. squares; the banking counter tops and ledges are gray and white precast terrazzo; all ornamental metal and lighting fixtures are bronze, satin finish; the ceiling is fissured mineral acoustical tile cemented to suspended gypsum board; the lighting is entirely incandescent, a combination of stock downlights and special chandeliers designed by the architects; the furniture and curtains were selected to carry out the "club for banking" theme; the space is air conditioned, with booster heating at the entrances.

On the left page are two views of the remodeled banking area; the photograph above and right shows the bronze and glass entrance-way from the lobby of the existing building.

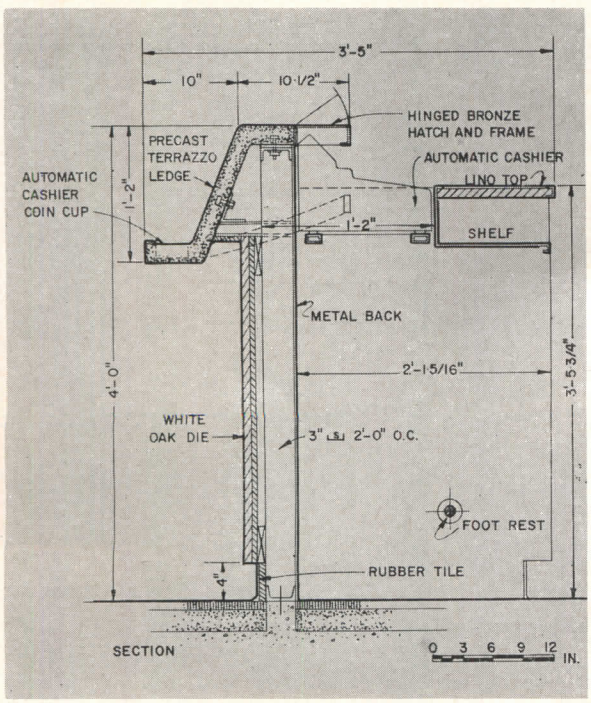


Bill Hedrich, Hedrich-Blessing

CHICAGO NATIONAL BANK

Both the stand-up and sit-down check desks, above, were designed by the architects. They are topped with ½-in. tempered glass, into which the circular pen stands are recessed. The body of the desk and its partitions are of natural unbleached walnut, supported on a satin-finished bronze frame which is secured to the floor. The legs are 1¼-in. o.d. tubes, cross-braced by ⅜ by ¾ bars and longitudinally braced by ⅜ by 1-in. bars. All joints were welded, then ground and polished.

The banking counters, shown in detail below, are topped with a precast terrazzo shelf and ledge, into which the cups for the change-making machines are cast. The support is a welded frame of 3-in. channels, expansion bolted to the floor, rear-faced with painted steel flush panels.



RESIDENTIAL STAIRS

STAIRS are coming into their own again as part of house architecture. Practically extinct in the era of the one-story house, they are an increasingly important design element in today's two- or multi-story residence. Present-day costs do not permit the space-consuming curved stairways or handsomely carved railings of two decades ago, but the best of today's design is equally effective.

The photo below is reproduced from the RECORD'S last photographic study of house stairs some 16 years ago. That at the right (no small children in the family!) and those on succeeding pages are recent.

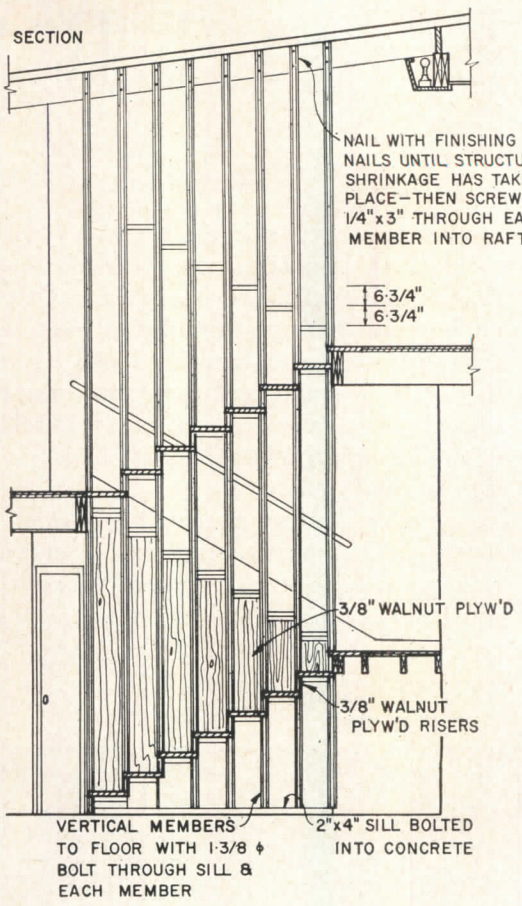
Gottscho

Red Bank, N. J. Howard and Frenaye, Architects
From ARCHITECTURAL RECORD, *February, 1939*

Hedrich-Blessing

1 ***Hinsdale, Ill.***
George Fred and William Keck Architects

Joern W. Gerdts



2

RESIDENTIAL STAIRS

2 *Ogden, Utah. Stephen L. MacDonald, Architect*

3 *Cambridge, Mass. Carleton R. Richmond, Jr., Architect*

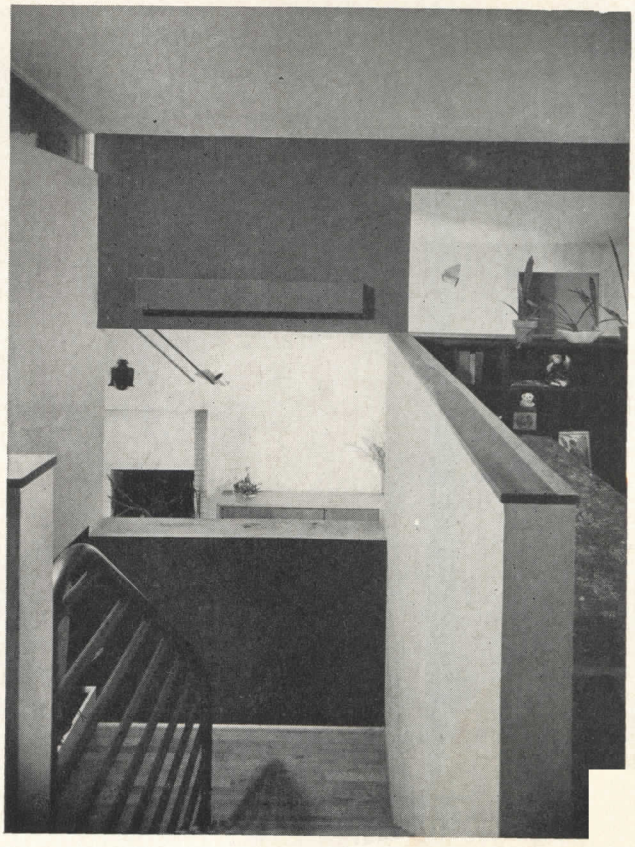
4 *Arlington, Va. Charles Burchard and William Lyman, Architects*

5 *Denver, Colo. Norton Polivnick, Architect*

6 *Honolulu, T. H. Vladimir Ossipoff, Architect*

Joseph W. Molitor

3

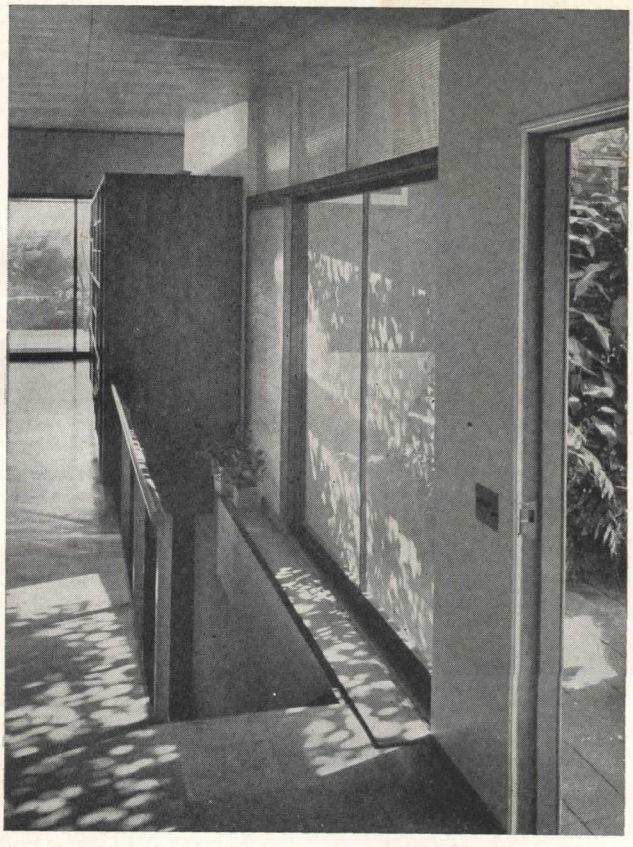


Robert C. Lautman

4

Marshall Brooks

5



R. Wenkam

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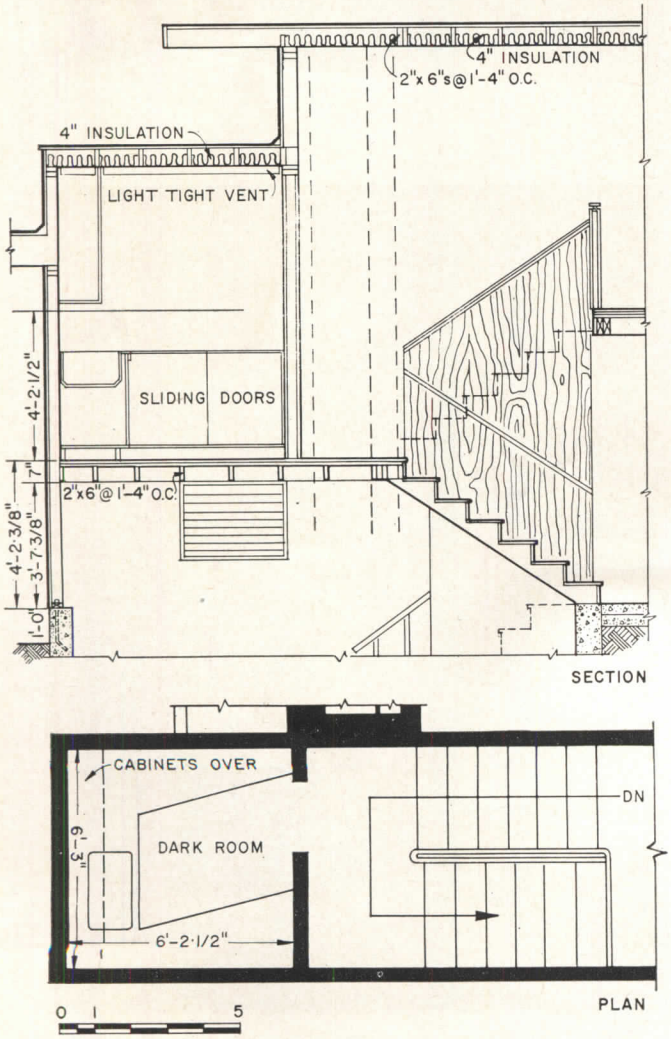


Stair landing in this house was extended to provide space for a dark room with projection windows opening to living room

RESIDENTIAL STAIRS

7 ***Akron, Ohio. Victor Hornbein, Architect***

8 ***Hunts Point, Wash. Young & Richardson, Carleton & Detlie, Architects***

9 ***Sausalito, Calif. Shubart & Friedman, Architects***

10 ***Oak Creek Canyon, Ariz. Harold Ekman, Architect***

11 ***Chapman, Ala. Huson Jackson, Architect; H. Seymour Howard, Jr., and Harold Edelman, Associates***

Chas. R. Pearson

8

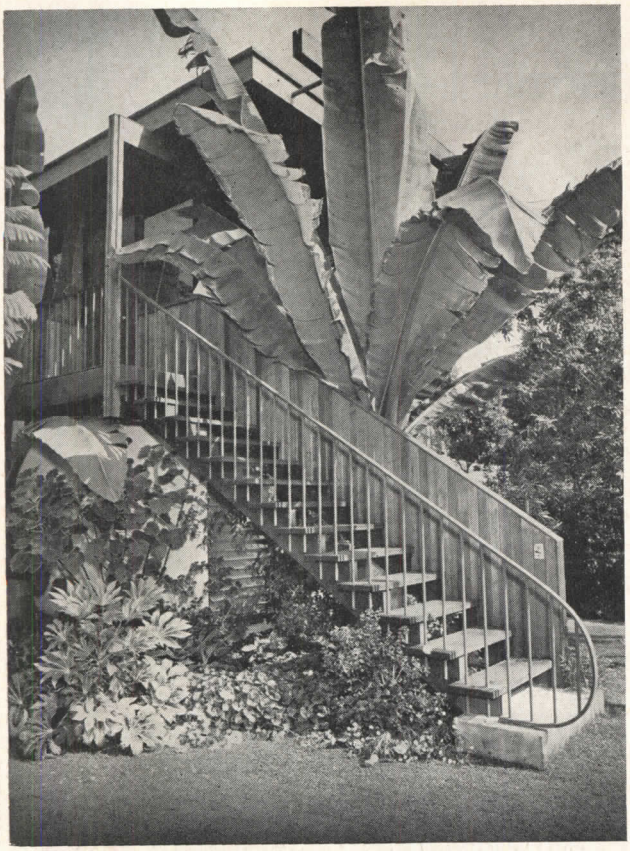
Ernest Braun

9

Stuart Weiner

10

11

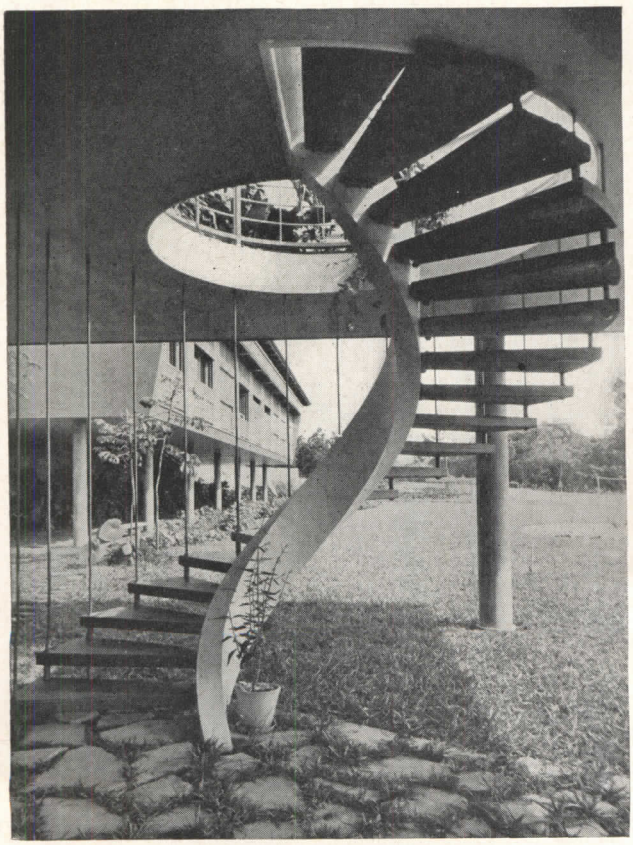


Julius Shulman

12 *Beverly Hills, Calif.*
Richard J. Neutra, Architect

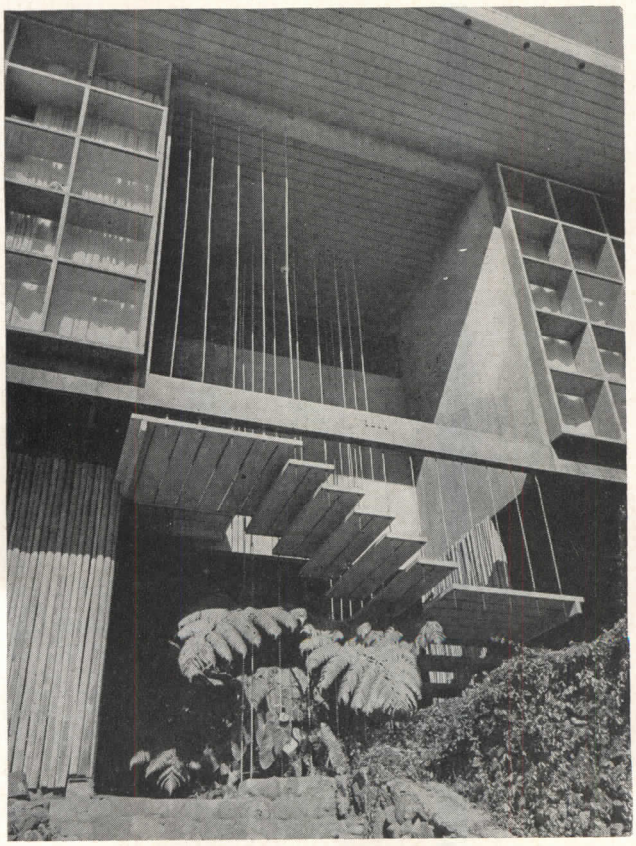
Ben Schnall

13 *New Canaan, Conn.*
Marcel Breuer and Eliot Noyes, Architects



Curt

14 *São Paulo, Brazil*
Rino Levi, Architect



R. Wenkam

15 *Honolulu, T. H.*
Wimberly & Cook, Architects

the SCHOOL and the COMMUNITY

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY ®

224

YEARS AGO we half suspected that the phrase "school-community interrelationship" was high flown verbiage intended to justify a gymnasium and an auditorium in a school where such luxuries didn't belong. The suspicion may occasionally have been well founded. But the more we see of schools, the more we realize how intimately they do interact with their communities, sometimes subtly by simply providing opportunities, sometimes overtly in frontal attack on a community problem; here seizing upon and thoroughly developing manifest opportunities, there gently urging the community in the direction its tentative, imperfectly expressed ideations demonstrate that it would go if it only knew how.

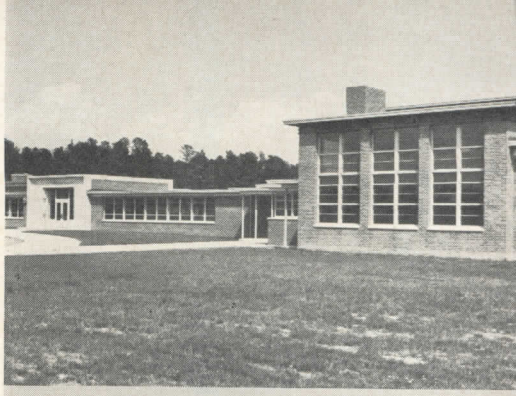
We still suspect that a lot of stuff and nonsense is written about this romantic, intangible subject, so we have no intention of discussing it here in the abstract. We won't include stories about the mountain community where a children's program in the school virtually eliminated certain kinds of disease, or claim for architects any more than their share of social responsibility. We give you here, instead, four long, thoroughly documented case histories presented in detail, four different instances of school-community-architect-educator interaction.

The Maryland school is a small rural plant designed, in a sense, to help an area lift itself by its bootstraps. It has been operating only a year, and the community isn't too sure that its new plant is any good. Yet the buildings it now has offer opportunities which, by their mere existence, can stimulate improvement which may some day blossom. The Brooklyn school is an urban experiment, the best example we have yet seen of great New York City's determination to improve its educational facilities. What makes it so exciting is the consciousness of the school's importance and the way this has been made a design determinant.

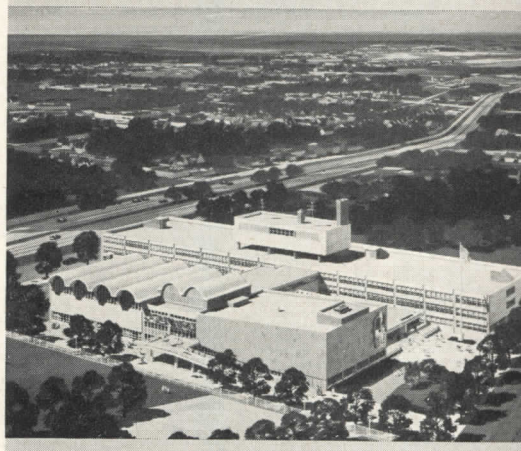
The suburban St. Louis school is being built for a community eager for the most advanced educational theory, beset by unprecedented growing pains, and pinched for money. This too is an experiment; the intent is to turn out into the community the best citizen-graduates possible, and that at a reasonable cost. The history of the suburban New York school is one of literally thousands of professional man-hours spent leading a newly created district from disunity and uncertainty to a point where all agree that positive educational goals seem at last attainable. Here there is an unanswered question: how is this extra professional guidance, so often and so desperately needed, to be paid for?

Indeed, all of these case studies raise questions. The values we see in all of them cannot be proved out now. Years or maybe decades hence perhaps they can be fairly assessed. That is one of the tantalizing things about school architecture; proof takes lots of time.

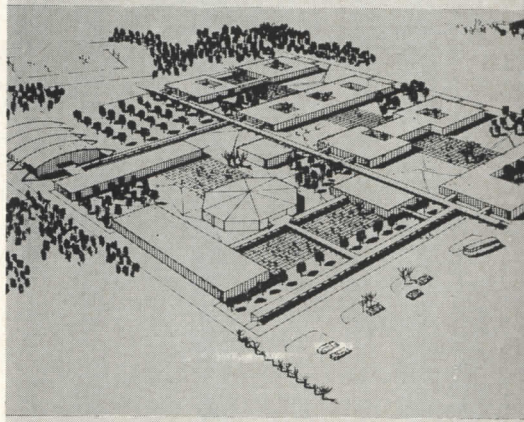
— Frank G. Lopez, A.I.A.



On Maryland's Eastern Shore: a high school without classrooms
Finney, Wolcott & Associates, Architects

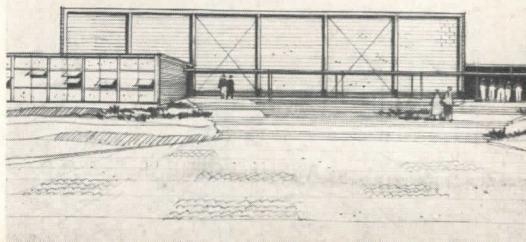


In Brooklyn, N.Y.: vocational high school with a social purpose
Katz, Waisman, Blemenkranz, Stein, Weber Architects



In a St. Louis, Mo., suburb: high schools within high schools meet the budget
Hellmuth, Yamasaki & Leinweber, Architect

Near Katonah, N.Y.: comprehensive architectural services for a regional high school
Ketchum, Giná & Sharp, Architects



SMALL SCHOOL DESIGNED

All photos of the Maryland countryside by A. Aubrey Bodine, F.P.S.A., F.N.P.P., by arrangement with Hastings House

This is the countryside: left, air view, Blackwater National Wildlife Refuge, adjoining the school; right, a waterway, Hooper Islands in background

FOR A BIG JOB ON MARYLAND'S EASTERN SHORE

by Stanton Leggett

WATER AND LAND, sometimes separate, often mixed and blended, never more than a few feet apart in elevation — this is the southern end of Dorchester County. A part of the sandspit peninsula known as the Eastern Shore of Maryland, the land dips and mingles with the water to form countless swamps, coves and islands, catching a people and a way of life in its intricate pattern.

The highway dwindles to a narrow road that forces passing cars to the sandy shoulder. The road runs through empty miles of freshwater swamp and shallow lakes dotted irregularly with humps of land where trees stand black against the flat sky. The road crosses bridges and long wooden causeways to come to an end at Hooper's Island and Little Hooper's Island.

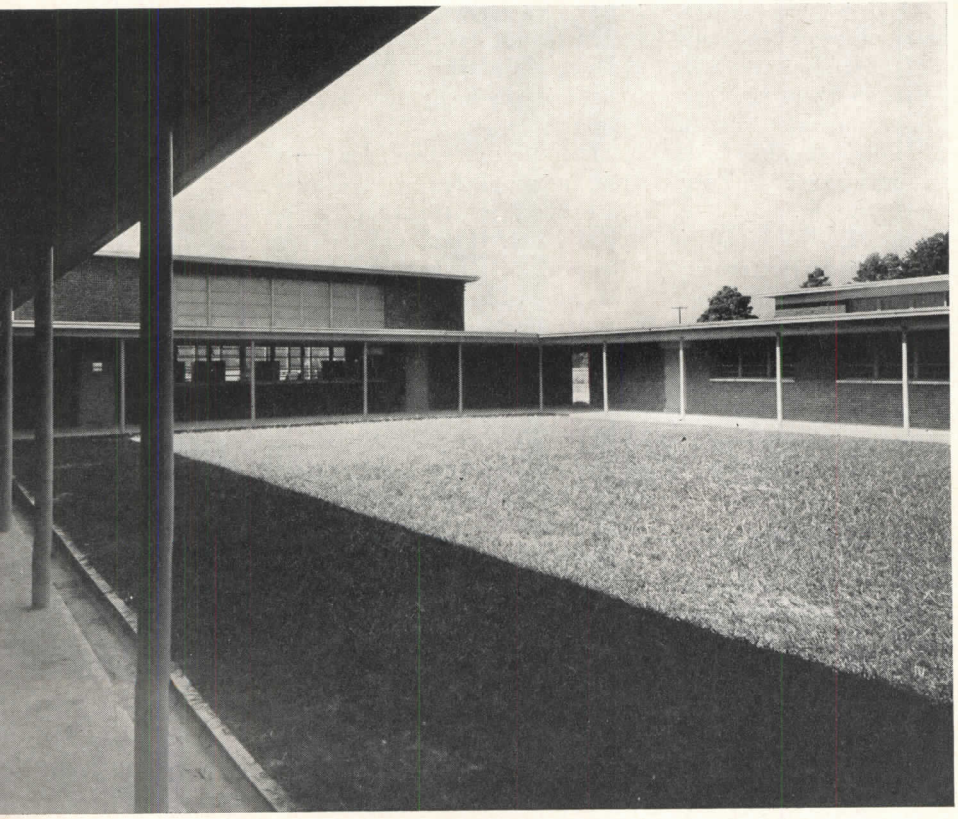
All down the various points of land that project into the Bay, the roads behave in the same way. At one point a brilliantly white causeway that gets mixed up with gray fish sheds comes to a stop against the vivid green of Taylor's Island. At Golden Hill, eight feet above mean high water, the road forks. The right fork leads to the Hooper Islands while the left fork winds down to Crapo, passing farmhouses in the Early Dorchester style, many of which are abandoned.

The roads are alien; for the villages and the people have turned their backs to the land and faced the Bay and the open water. It was not long ago that the roads were not there, and the water was the highway along which the products of the Bay and, less frequently, the people of the Bay, made their way to the small towns — Cambridge, Annapolis, Salisbury, Pocomoke, or even on to Baltimore.

The land never had been inviting. Water ooze, tufts of dry land, all intermixed and blended, these are not the ingredients of modern farming. The Bay, too, in recent years proved less and less hospitable as its bounty diminished. Overfishing with modern technological devices reduced the harvest to a point

The countryside is far from bleak, though its population has been dwindling; the adjoining states have begun cooperative efforts to conserve the Bay's resources. Above, the town of Nanticoke; right Blackwater Reservation

SCHOOL AND COMMUNITY: MARYLAND



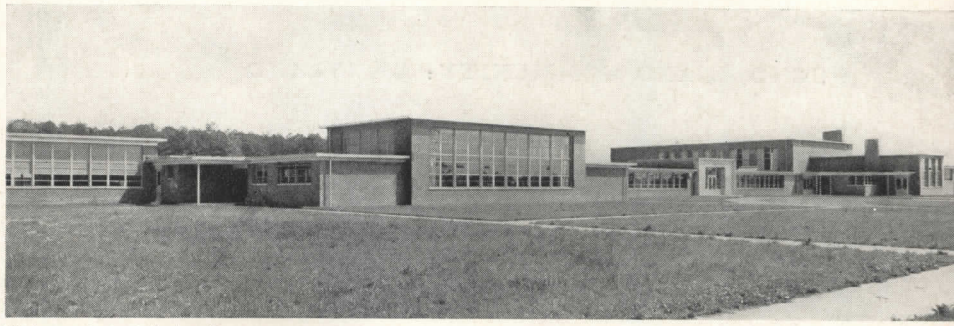
SOUTH COUNTY
JUNIOR-SENIOR HIGH SCHOOL
Dorchester County, Md.

Finney, Wolcott & Associates
Architects

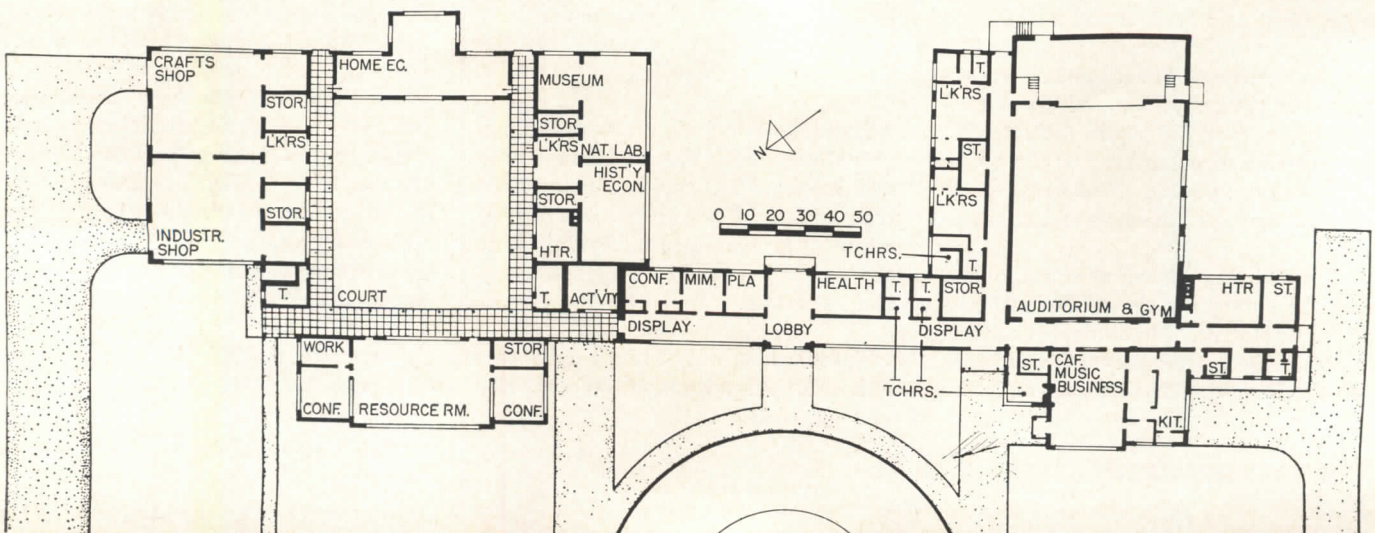
Engelhardt, Engelhardt & Leggett
Educational Consultants

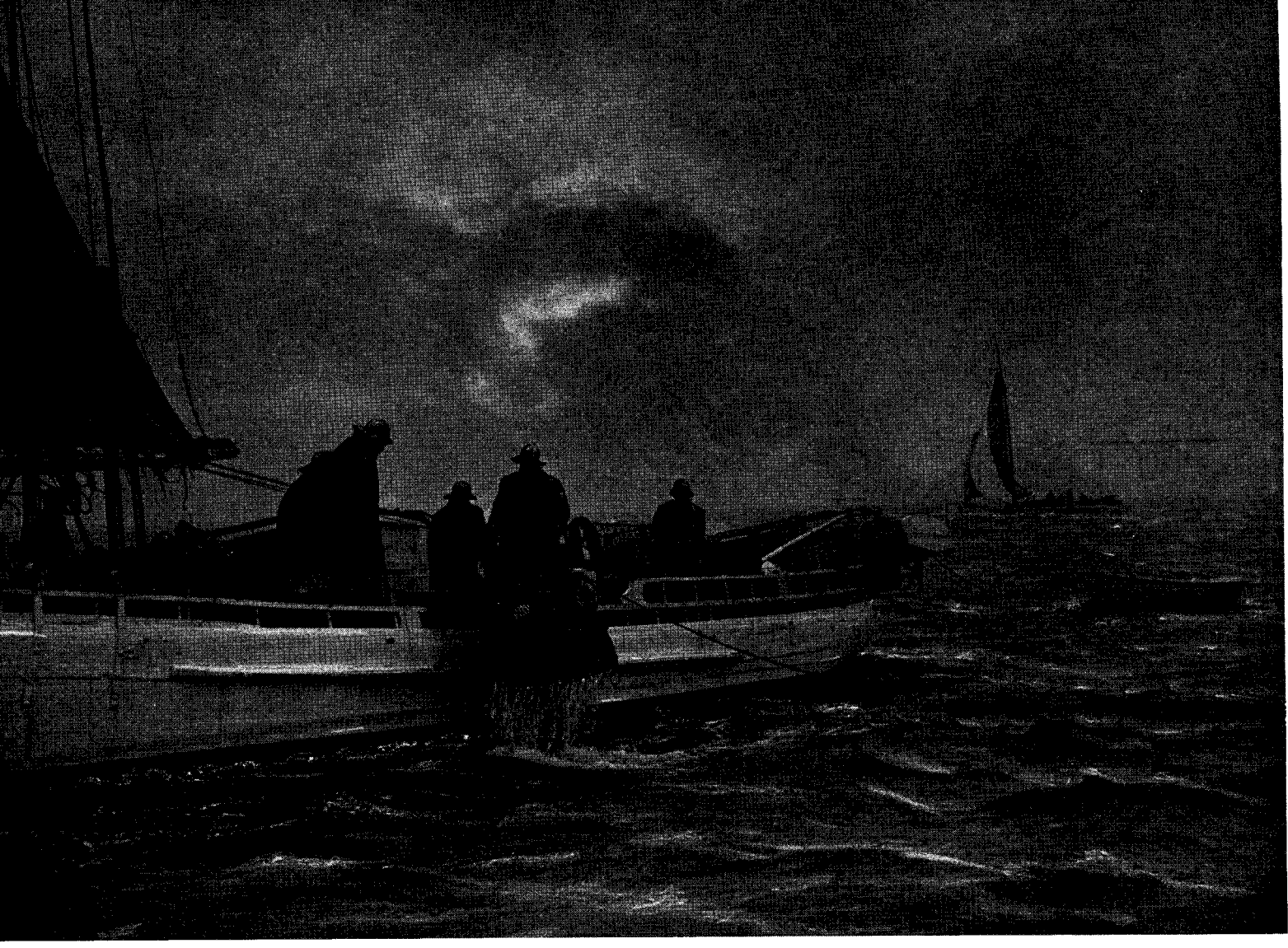
A. Aubrey Bodine

South County High School has no classrooms as such; its enrollment is small, its funds scarce. It was designed to help coming generations capitalize on unique regional opportunities yet not limit the pupils' chances for development. Whether these aims will be achieved it is too early to tell; the school has been in use only one year, and the Superintendent under whom it was designed has been elevated to a position in the state educational system



All photos of school: Hughes Co.





SCHOOL AND COMMUNITY: MARYLAND

where the future is bleak. Rivalry between the sovereign states of Virginia and Maryland did not help as politicians bickered and the fish were obliterated. The resources of the Bay were dwindling and man was to blame and, at the same time, the victim.

Against this background a new high school was to be planned, replacing two smaller schools. The combined enrollment in the upper six grades was estimated to reach 150 pupils. Although far too small a school ordinarily, the sparse population and the great area to be served made the small school unavoidable.

The existing schools were traditional. As the survey by the educational consultants stated: "The students had their noses in the Latin books and their backs to the Bay while their means of future livelihood disappeared." The communities were dwindling and their economic bases were tottering. Can a school and its program be so designed that students are equipped to deal with their environment? Can a school help rebuild its community? It is too early to know in this case, but the attempt was made.

These, in summary, were the basic decisions that were made:

• Since the population was dwindling, give the students the intellectual tools and insights that would tend to retain them with the ability to use the available resources to advantage and to appreciate the values inherent in the community and its setting.

• Since farming was virtually dying out, although the land was fertile, teach the students how to use the land and how to use their intelligence to learn, or develop, farming techniques that would work in this strange half land half water.

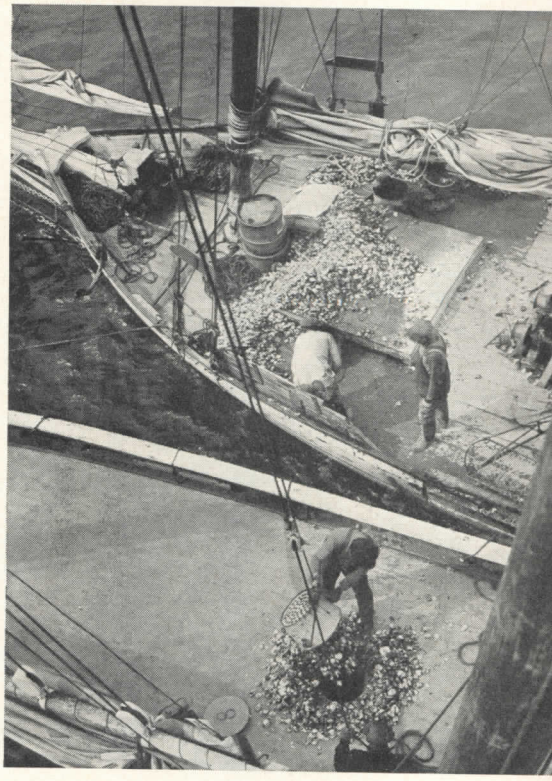
• Since the resources of the Bay were dwindling, teach the students how to farm the Bay using sensible measures to conserve and rebuild the water resources.

• Since few students went to college, provide an educational program that would generate enthusiasm for solving their problems in their community. Provide education that would widen rather than restrict their lives. This could be done without blocking any student from further education.

The attack went ahead on two fronts. One was the developing of promising

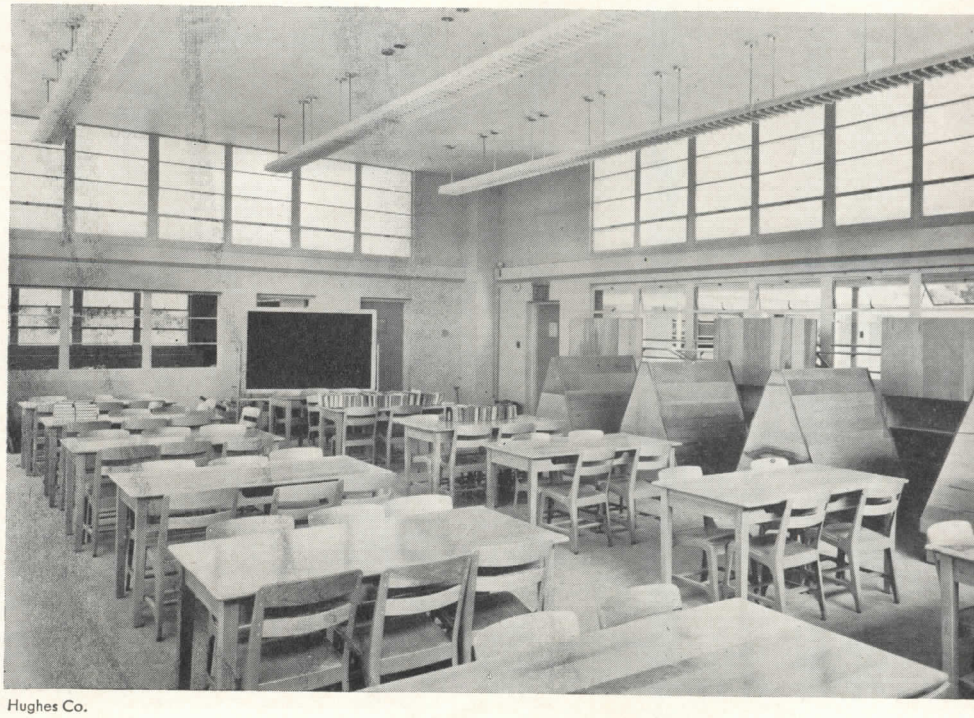
The countryside's marine resources have traditionally dominated along the Eastern Shore: facing page, oyster dredgers working in a driving rain; below, dredges (locally pronounced "drudges") in Cambridge harbor; right, "buy boats" at work taking off oysters and running them to packing houses

A. Aubrey Bodine



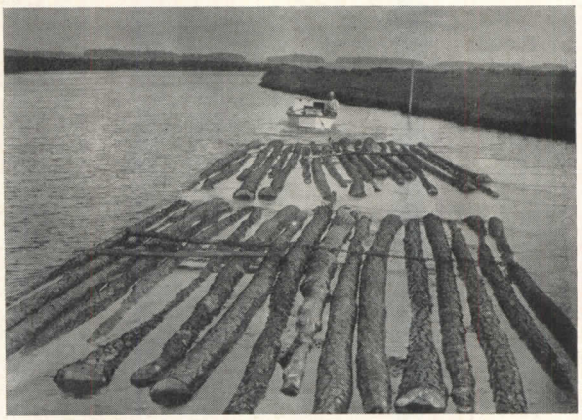
leads and ideas to further the program of the high school. W. T. Boston, then Superintendent of Schools, found farm machinery, crops and techniques that had been used in similar swampy country. Soil analysis showed that the south county area was more fertile, if also more watery, than the prosperous farming areas of the northern section of the county. Even before the building was underway, cedar cypress and wild rice had been planted, both of which would thrive in the area and represented marketable crops. A large government wild life reserve adjoining the school site had

South County High's Resource Room, right, was designed to house ideas for use of the environment — an active workroom with storage, display, conference, research areas



Hughes Co.

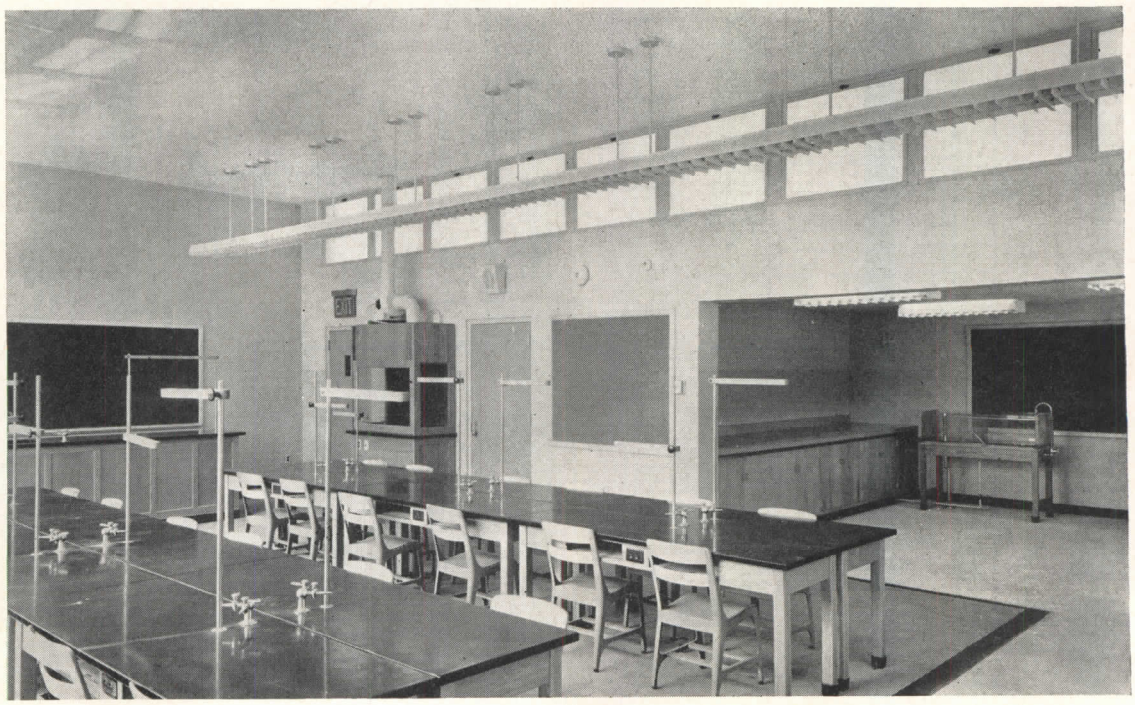
Other resources of the Eastern Shore: right, muskrat trapping, logging loblolly pine; facing page, pound netting for Chesapeake shad; below, duck hunting, so popular that land like this is astronomically priced though it brings local people comparatively little profit



A. Aubrey Bodine

SCHOOL AND COMMUNITY: MARYLAND

Science laboratory, South County High School, contains a science museum area designed as a live demonstration of the role of science in improving community life, with aquariums on wheels, movable growing beds, access to outdoor growing areas, a large quantity of storage space



Hughes Co.

been made available for use by the school. State authorities in conservation were interested in the school and offered help. The State Education Department offered to make additional staff available. It looked as though the resources could be found to do the job.

The second aspect of the attack was the planning of the school building.

The school was to have ten teacher stations, representing a very favorable pupil-teacher ratio, yet a ratio that is forced in part by the small student body. The architects were required to design the building in anticipation of a future elementary school unit that would also use the general spaces, such as cafeteria and auditorium-gymnasium.

A small school is difficult to develop with rich educational resources. Finally, the then Superintendent decided that "we couldn't afford classrooms." Instead, the specialized spaces required were planned together with, in all cases, discussion areas that could also be used for more formal class purposes.

The building was planned about an active resource center. It was the thought that, in addition to a normal library function, this space would serve to collect the materials from any place in the world where people were coping with similar problems.

Here, too, the results of student research would be assembled as a foundation upon which succeeding generations of students would build. The members of the community would find this resource room a treasury of ideas about how to use their environment.

The resource room was conceived of as an active workroom. It was equipped with movable shelf units and storage spaces. The low window wall along the open corridor was seen as a great display window, recording achievements of pupils and community members in meeting some of the challenges of the school. Small meeting rooms were provided off the large resource room.

The science laboratory offered flexibility in arrangement, was heavily loaded with storage, and contained a science museum area. The museum was seen as a live demonstration of the role of science in improving community life. Large aquariums on wheels were provided to allow the reproduction of the bottom of the Chesapeake Bay for study by the students. Movable growing beds indoors and easy access to outdoor growing areas are provided.

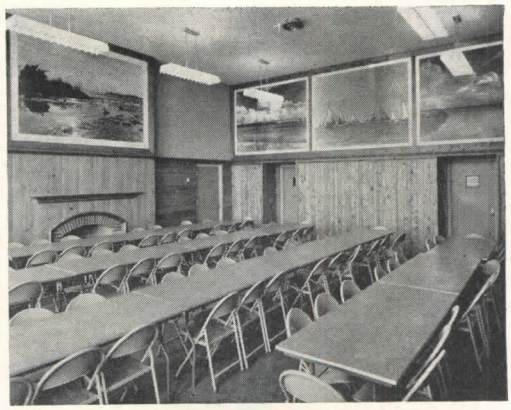
Two large work areas are provided for

SCHOOL AND COMMUNITY: MARYLAND

crafts and for the industrial arts. Each of these rooms has a discussion area that can double for class use, in view of the small classes anticipated. In the general shop it is expected that boat building and marine engine work will be accommodated, as well as repair of farm machinery. The school site includes a wharf and water frontage not far removed from the building. A well developed homemaking unit is provided, as well as a community study laboratory that will be the focus of the social studies program.

Combination spaces seem unavoidable in the small school. Here a gymnasium-auditorium is provided. The cafeteria serves many purposes. Music and business education work are planned for the room with special storage space designed for these needs. The cafeteria also serves as a social room with the use of its fireplace and pleasant views. Since the students are so widely scattered, this function acquires greater importance. In the planning of the school, the schedule set up provided a free period of time at the end of the day. The cafeteria-social room was thought of as an informal meeting place for the students. A door from the room leads directly to the bus-loading area.

The administrative spaces reflected also the pioneer nature of the school program. Main units are health suite, a planning area, a conference and work room, and a student activity room. Again, by planning and thinking together, with staff, students and persons from the community taking part, it was hoped that slowly a group of people of varying ages would show the ability of man to use his intelligence to solve the problems of living a better life.

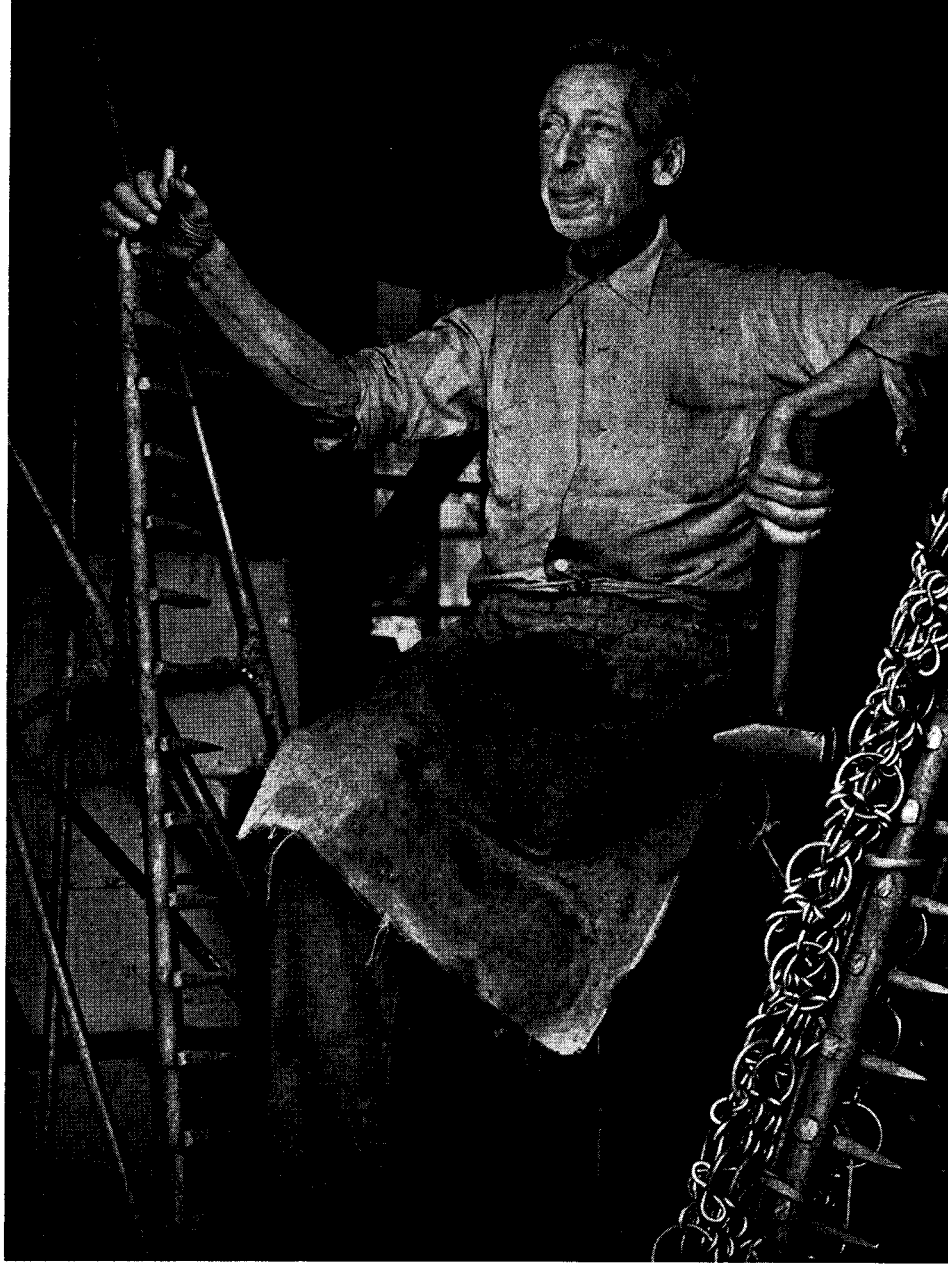


Music and business classes are held in cafeteria (above) of South County High; note prints of famous Bodine photographs, also used in these pages. Gymnasium, right, though not essential to school program, is a source of community pride

People along the Eastern Shore: far left, a waterman

Left: 300,000 people fish for fun in the Bay every year

Right: Melvin Collier, blacksmith, whose oyster "drudges" reputedly insure profitable hauls



A. Aubrey Bodine

Hughes Co.

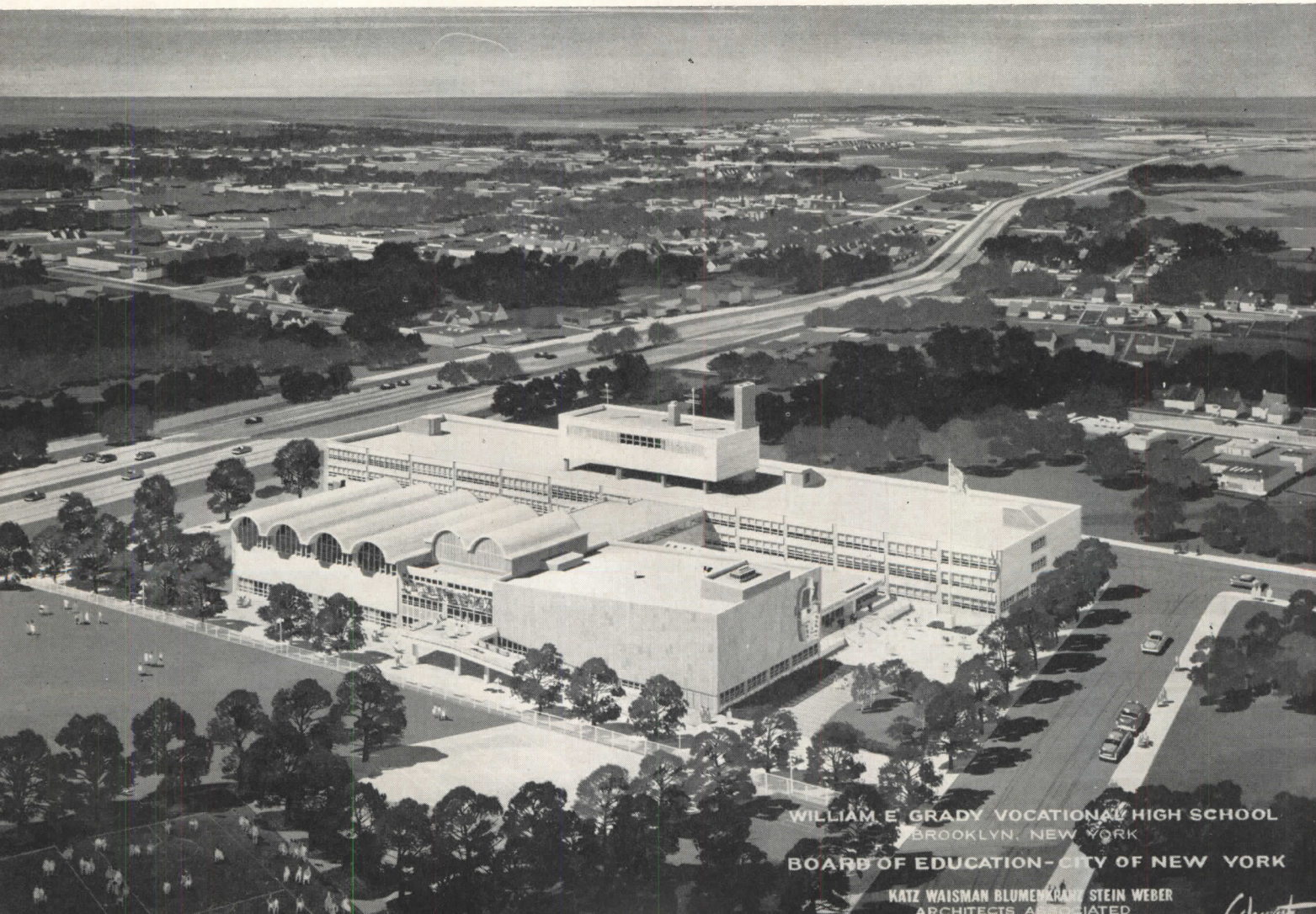
VOCATIONAL HIGH SCHOOL TO DO A SOCIAL JOB

WILLIAM E. GRADY VOCATIONAL HIGH SCHOOL, BROOKLYN, N. Y. Katz, Waisman, Blumenkranz, Stein, Weber, Architects. Leo A. Novick, Landscape Architect. Farkas & Barron, Structural Engineers; Benjamin L. Spivak, Electrical Engineer. Consultants: John C. Mason, Food Service Equipment; Arnold Bank, Lettering. Artists: Ben Shahn, Murals; Costantino Nivola, Sculpture

WILLIAM E. GRADY Vocational High School has existed in Brooklyn for some time, but without buildings of its own. It has used facilities in several school annexes, and has given its series of courses without having any physical entity. Vocational training has not been too popular with pupils; indeed, it is suspected that being sent to Grady seemed only a little worse than being sent to Siberia.

The school, then, has more than a simple vocational job to do. New York City's Board of Education and the city's school administrative staff, acting through their Chief Architect, Michael L. Radoslovich, and the Board's Bureau of Construction, have worked with the architects to produce a design for the $6 million plant that will help city youngsters become both "good providers" and good citizens. Early in the design process it was decided that insistence upon high quality of materials and craftsmanship was one of the best means of inducing an attitude of healthy interest and pride in vocational training; and that the same qualities would, in rousing pride of place, help to curb somewhat the destructive instincts that seem to characterize some city children. Also, there are other institutions on adjoining sites, so Grady could contribute to development of a community cultural center.

The site fronts on Shore Parkway and Brighton 6th St. Its buildable area was severely restricted by a trunk sewer beyond which construction could not be planned, although the remainder of the block is to be developed for school-community recreation by the Department of Parks. In one corner of the site is a Police Force Remount Station,

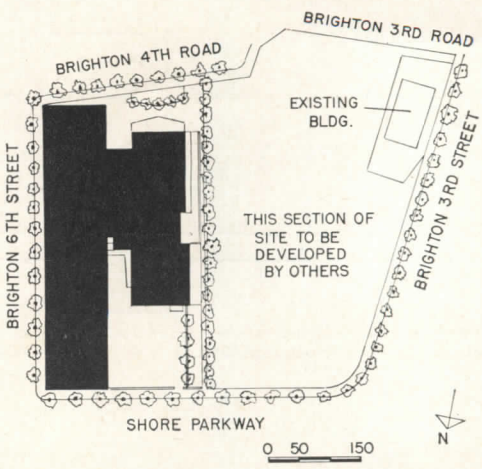


Photographs of Brooklyn by Jerry Dantzic

which is to remain. The school could not be developed horizontally; it had to be multi-story; and design difficulty was increased by the difference in size of the shops (there are 33 of these) and the classrooms as well as the school-community facilities (auditorium, gymnasium, etc.) and cafeteria requirements.

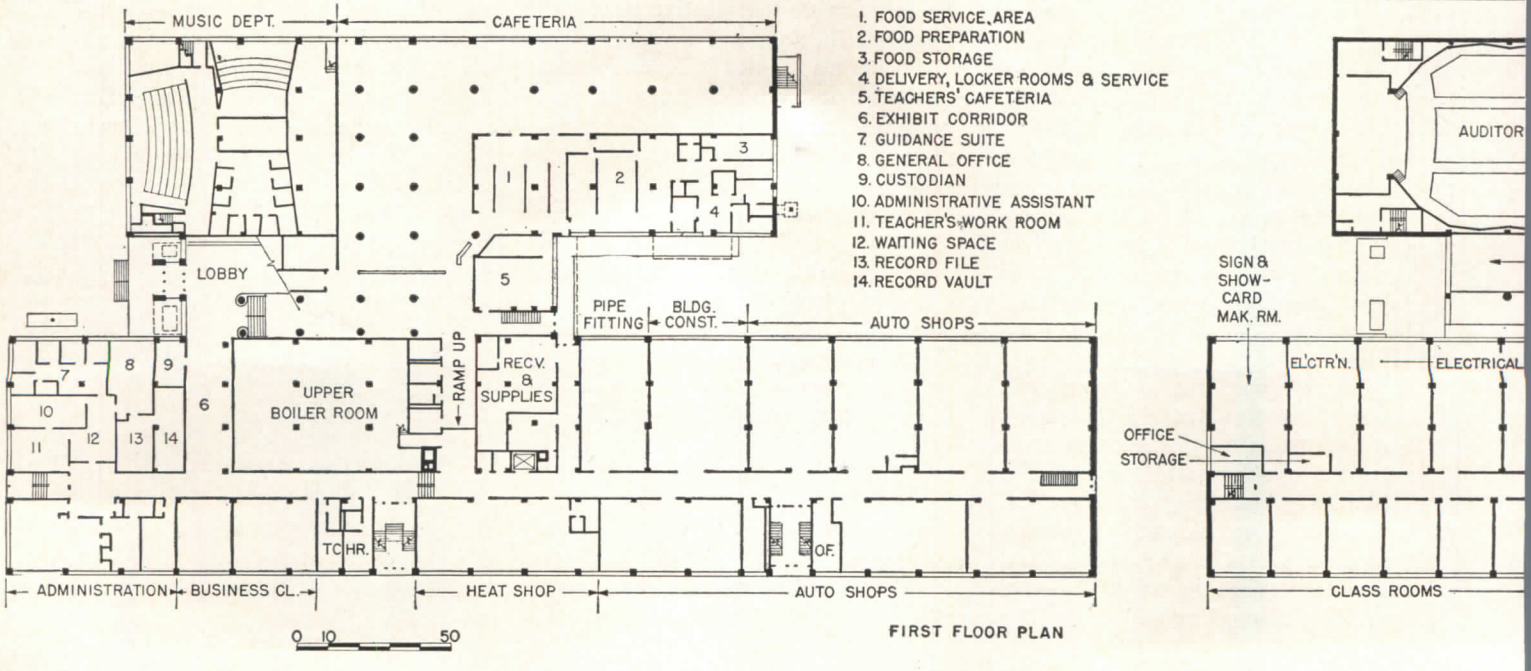
The solution is two "blocks" of buildings with the entrance between them, taking advantage of differences in story heights by means of ramps and stairs to gain greater height for the first-floor shops that need it. The shop-classroom block, which appears to be one unit, is virtually two, one on either side of the unavoidably long corridor. The shop half is laid out to one large module, so columns will not interrupt shop floor space; the classroom half has a different structural module or bay based on end-on classroom dimensions. The corridor unites them, and, in general, classrooms relating to a particular shop are near that shop. The shops themselves are on several floors, zoned so that noisy areas, shops for light work, those for "heavy" activities, etc. are related and organized in plan to minimize interference.

The School is designed for approximately 2000 boys; another floor can be added to accommodate 500 girls. In keeping with the purpose of making it an example of the creative results of modern technology and fine artisanship, the materials selected include the most modern that the building industry can produce: tempered and heat-resistant glass, glazed brick, enameled metal wall panels, aluminum sash, etc. Included in the budget — and this is something for the city to be proud of! — is a provision for sculpture and murals. Over the main entrance is to be a mural, 50 ft long, by Ben Shahn, which it is expected will depict the impact of the machine age on man's way of life and the changes in our culture which will enable him to exploit technology fully. This may be executed in terra cotta, or, if funds can be procured, in mosaic. Another wall has been designed to receive an equally important sculpture by Costantino Nivola. Lettering over the entrance is in a special alphabet, to be cast in metal in such a way that the marks of craftsmanship are transferred from the forms to the finished letters; interior directional signs use a similar alphabet executed in terrazzo and outlined with terrazzo dividing strips. The auditorium design is determined by an acoustically correct wall and ceiling surround; its unusual shapes, it was found, were best defined by a single source of illumination from the rear of the seating area. Downlights give enough light for taking notes, etc.

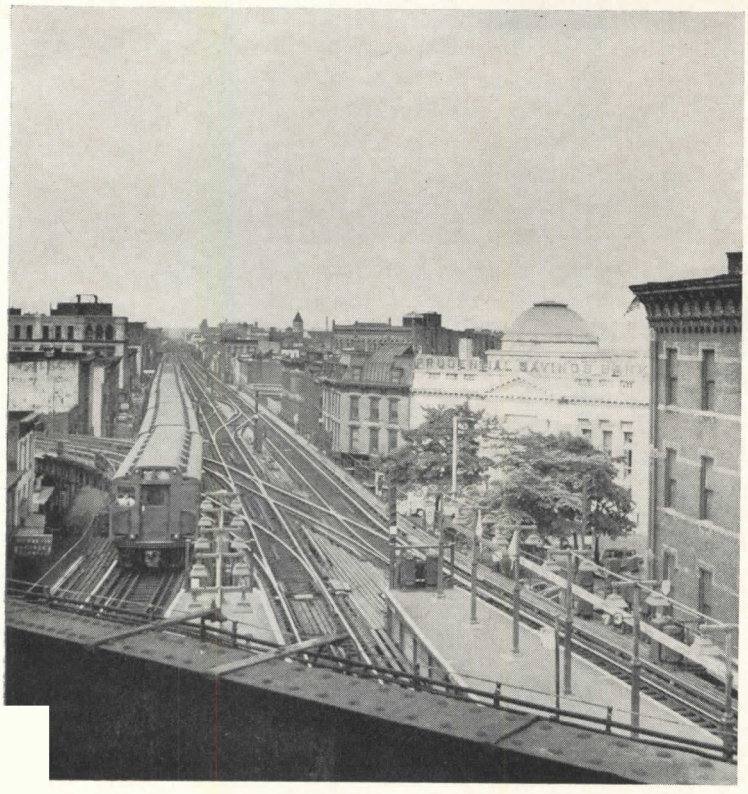


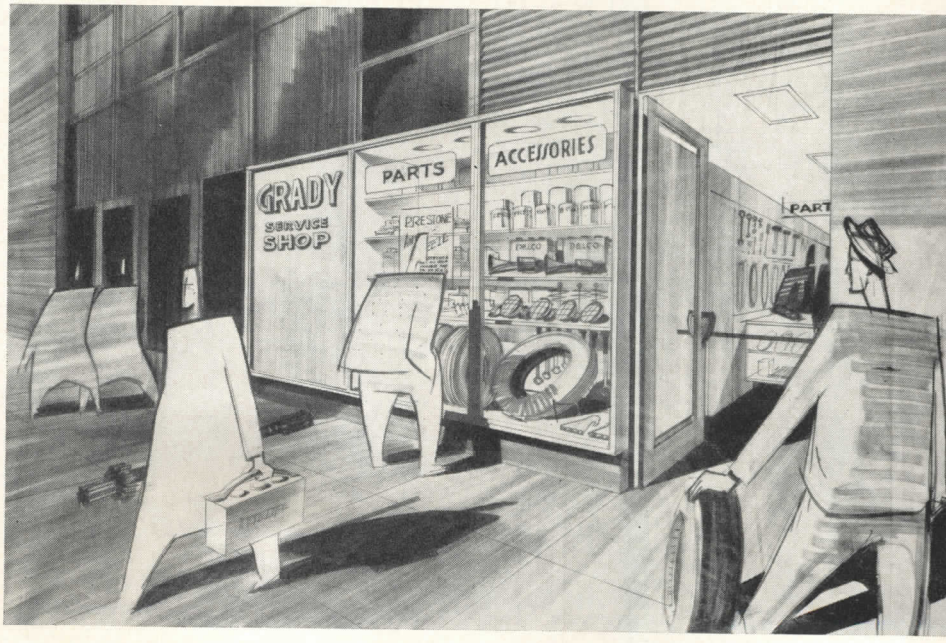
Brooklyn, N. Y. is both like other urban areas and quite different. These views of it are typical: streets that seem crowded even when they are empty, traffic hazards, elevated transit lines, bridges and waterfront where the tall buildings are (mostly, though, its structures are low); a place of many small industries, branches of big industry, of crowded dwellings and playing in the street where many of the best schools — and there are several excellent ones — are architecturally long outmoded

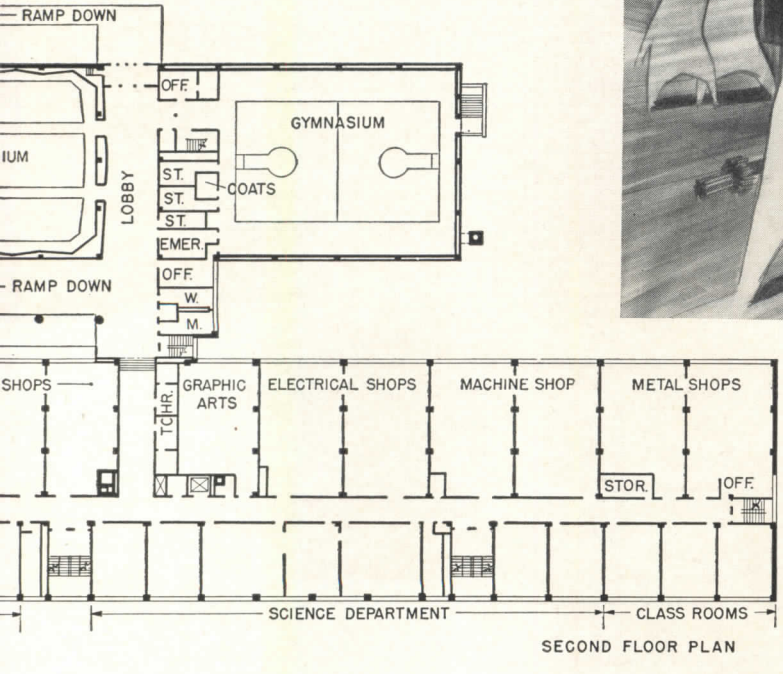
SCHOOL AND COMMUNITY: BROOKLYN, N. Y.



FIRST FLOOR PLAN

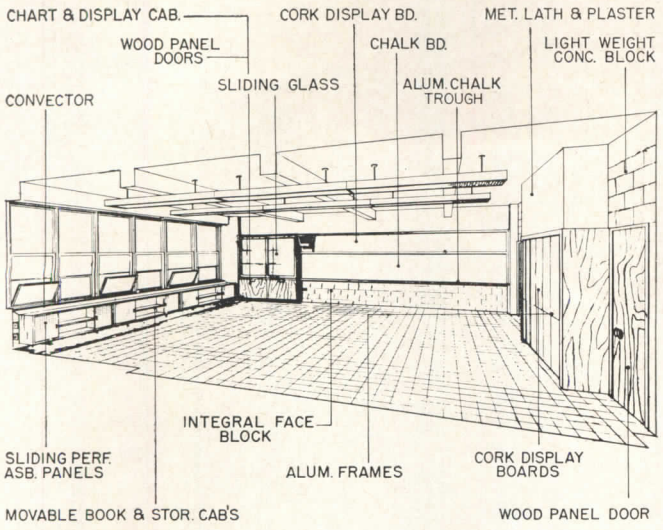






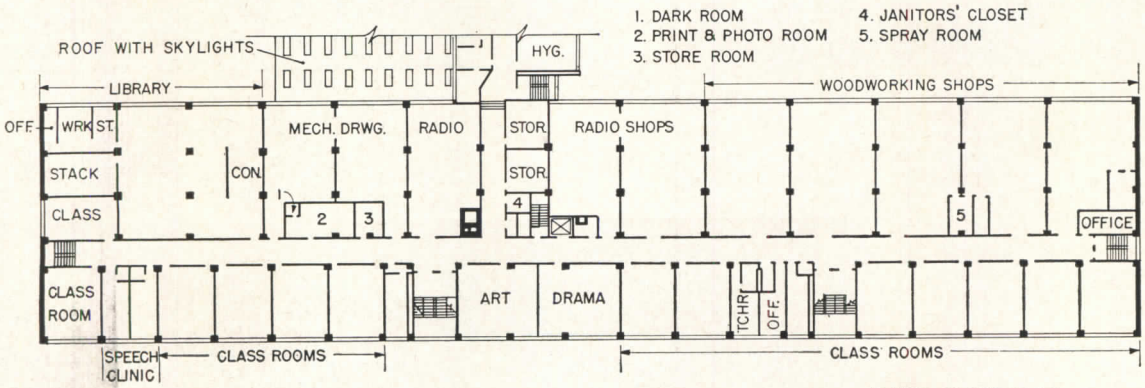
SECOND FLOOR PLAN

Throughout Grady Vocational High School efforts are being made to develop interest and pride in schoolday surroundings, to provide more than trade skills for future citizens. Not only are there to be murals and sculpture by excellent artists; materials and craftsmanship of construction will be of high quality; there are such extras as the auto accessory store, above, for the auto shop



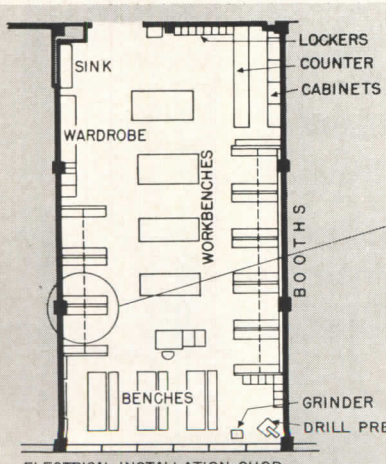
Classrooms are designed to achieve a pleasant atmosphere and to keep maintenance costs low. Chalkboard-cabinet units extend from floor to underside of beams; walls under chalkboards are colorful integrally-faced block. Windows extend to underside of spandrel beams and have cabinets beneath them; corridor walls are permanent cabinets and the same integrally-faced block, the only paint being on the plenum chamber above door height. A complete color specification, for floors, walls and ceilings, including materials, paint, etc., was furnished the Board of Education. Below is one of the 33 shops; on all of these extensive, detailed studies were prepared after research in collaboration with the city's vocational specialists.

SCHOOL AND COMMUNITY: BROOKLYN, N. Y.

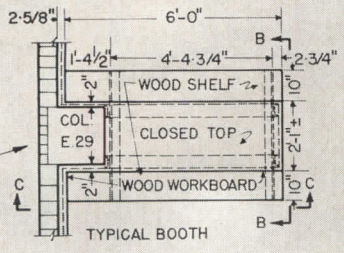


THIRD FLOOR PLAN

Electrical Installation Shop, below, is typical of extensive research; there was no precedent for much equipment

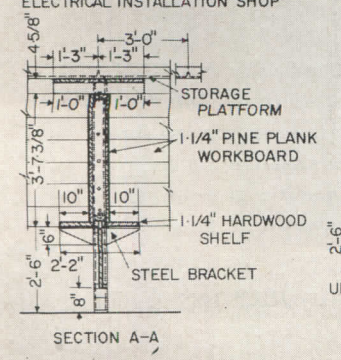


ELECTRICAL INSTALLATION SHOP

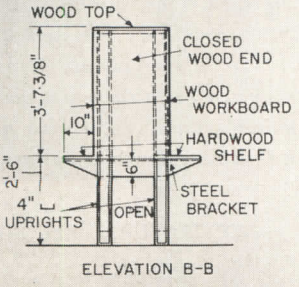


TYPICAL BOOTH

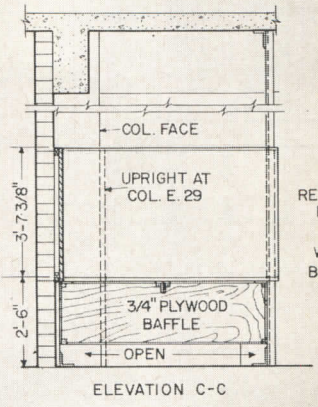
ITEM NO.	EQUIPMENT DESCRIPTION	ELECT. CHAR. PHASE	VOLT	H.P.	WATER	GAS	AIR	STEAM	EXHAU	SPEC. LTG.	QUAN REQ	REMARKS
57	DRILL PRESS	3	208	1/2							1	
66	GRINDER	3	208	1/2							1	
	WORK BENCH 2'-6" X 8'-0"										3	CABS UNDER
	SEATING BENCH 8'-0" LONG										3	
	WORK BENCH 3'-0" X 8'-0"										2	CABS WITH SLIDING DOORS UNDER
	WORK BENCH 3'-0" X 8'-0"										2	
	CABINET 3'-0" X 2'-0"										4	WITH LOCKS
	COUNTER 2'-0" X 12'-0"										1	WITH GATE
	STUDENT LOCKERS 12"x12"x15"										90	
	TEACHER'S DESK										1	
	FILE 4 DRAWER LEGAL										2	



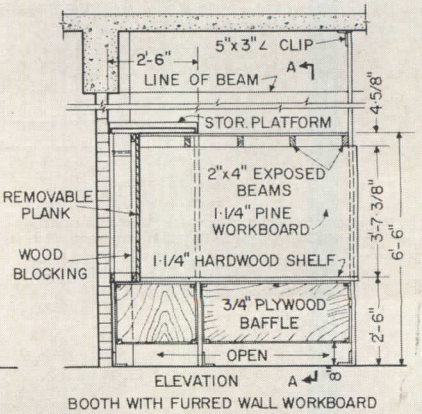
SECTION A-A



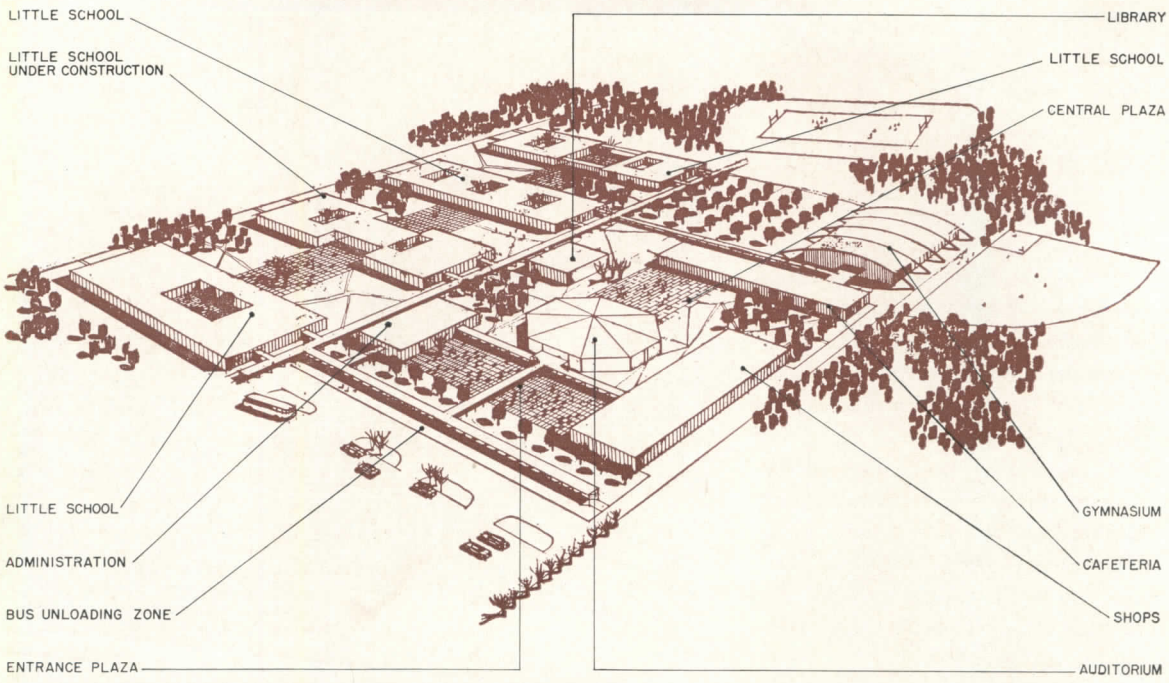
ELEVATION B-B



ELEVATION C-C



BOOTH WITH FURRED WALL WORKBOARD



GROUPED SMALL SCHOOLS FORM LARGE HIGH SCHOOL

RIVERVIEW GARDENS SENIOR HIGH SCHOOL, Riverview Gardens School District, St. Louis County, Mo. Hellmuth, Obata & Kassabaum, Architects; W. P. Manske, Associate Architect. Engelhardt, Engelhardt & Leggett, Educational Consultants. E. M. Lemasters, Superintendent. Ferris & Hamig, Mechanical Engineers; J. P. Nix, Structural Engineers

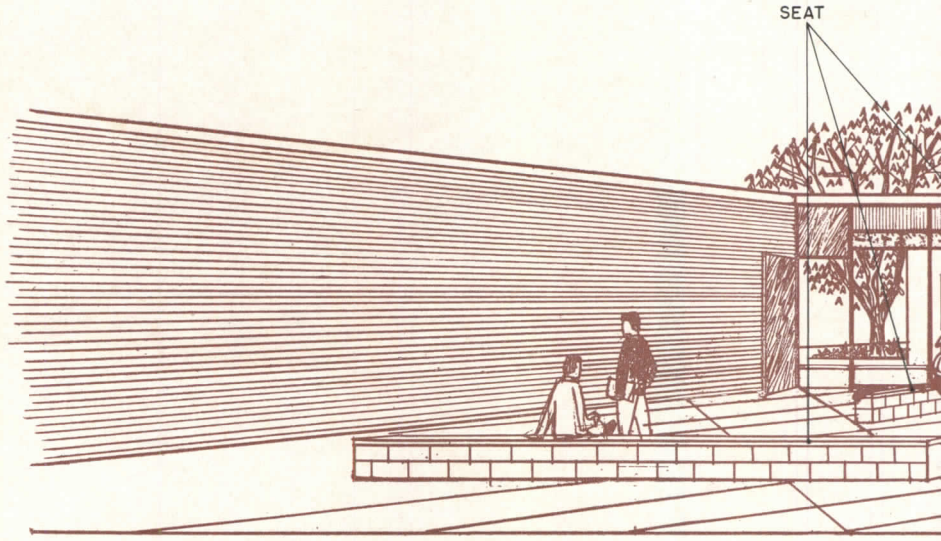
A NEW TYPE of high school is being built in the suburban Riverview Gardens district near St. Louis. As the first of its kind, first to have its educational implications fully studied, its pros and cons thoroughly debated in concrete terms, and its buildings actually started, this high school will be carefully watched, verbally dissected, discussed and weighed by educators and architects alike.

The underlying idea, called the "little school" concept, has been talked about for some time. Examples are in various stages of development in a few communities, but in none the editors have seen have the talents applied to the problem been so free and imaginative, or the concept so completely dominant. At the same time, the capacities of teachers to teach, of pupils to learn and grow, of the community to pay, have been constant directives as the design has developed. Indeed, these are fundamental to the 'little school' idea.

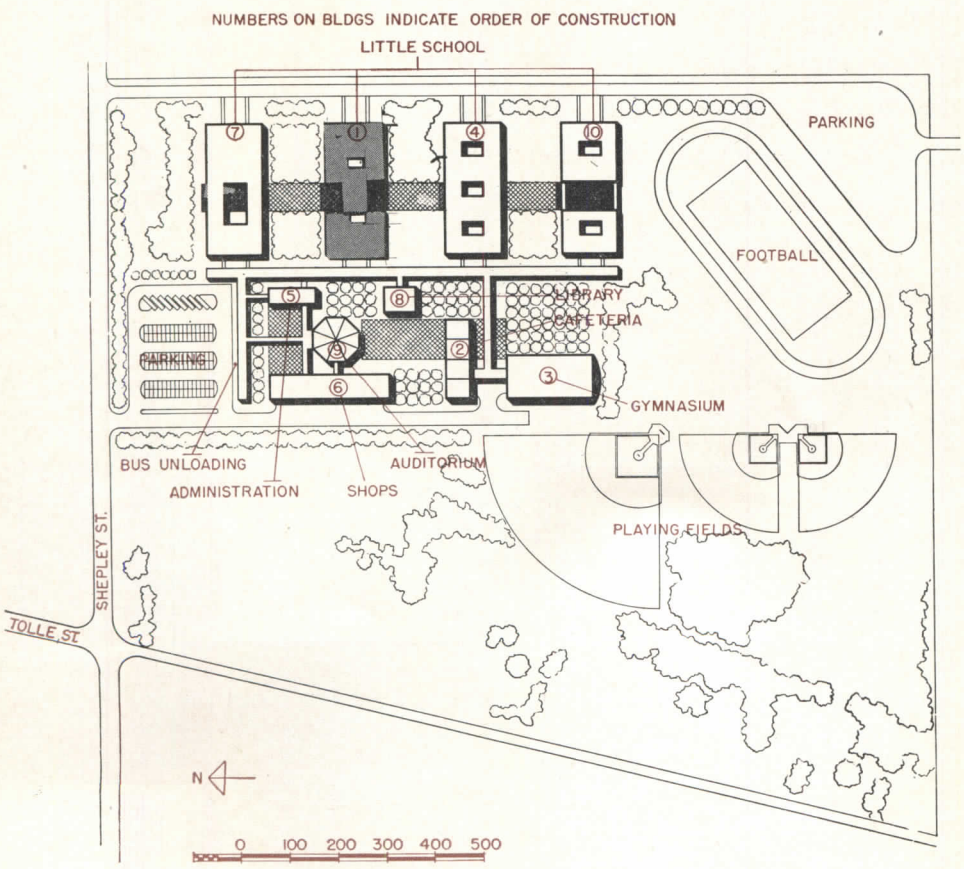
One might say that this new approach to secondary education and its buildings is determined, on the one hand, by the desire to treat each pupil as an individual, to place him in an educational environment in which he has a chance to "count" as a human being, to learn and develop within only those limits which his own abilities dictate; and, on the other hand, by the practical considerations: money, staff, efficiency of plant and program, and the like. There are positive advantages as the concept is here achieving reality, and certain difficulties.

As to advantages, which must be fully capitalized upon if the new approach is to prove out satisfactorily in practice: a small building housing, in effect, a small yet complete high school can attain an

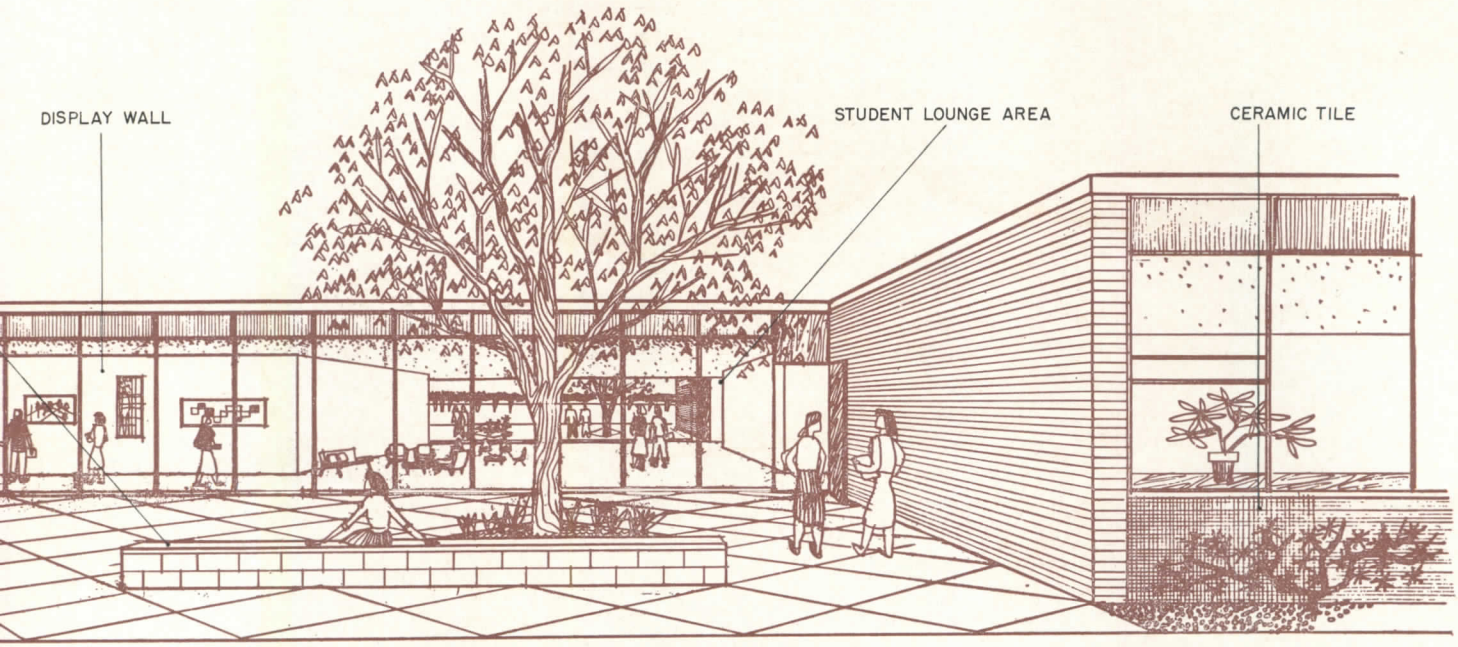
Designed to grow as the community's pupil load requires and finances permit, Riverview Gardens Senior High School is developed as a series of separate high schools, each for 600 pupils, with an ultimate total capacity of 1800 to 2000. In each "little school" are classrooms and some specialized spaces; gymnasium, cafeteria, library, administration, shops, etc. are in other buildings to be built as additional "little schools" are erected. Right, terrace, first "little school," now under construction, opens off student lounge



SCHOOL AND COMMUNITY: MISSOURI SUBURB



identity of its own within the larger whole (each little school at Riverview Gardens is designed for 600 pupils; total enrollment may eventually reach 2000). In such a small unit each pupil can be an individual. Contact between pupils and teachers can become personal; instruction, also, becomes almost individual; classes can be smaller. Within such a homogeneous unit it is relatively easy to apply the educational techniques which have, in recent years, been extended to secondary education — the "common learnings" program, for instance, or one of the several parallel pedagogical theories that have been developed and often imperfectly put into practice, quite often (even architects must admit) because the school buildings were not appropriate. A school plant composed of a group of little schools and their jointly used, separately housed general facilities can be designed so that each unit is not only humane in architectural character — that is, so that it furthers the educational ideal of developing the best that is in each student; the whole plant can achieve its own kind of monumentality to satisfy the very legitimate community pride in its schools and their structures. This new kind of monumentality is not one that seeks to over-awe, as do the



PERSPECTIVE OF OUTDOOR COURT LOOKING TOWARD STUDENT LOUNGE

monstrous city and suburban schools we have been used to; it requires of the architect real talent; he must make of the group of buildings a composition that will impress by its perfection; he can no longer pile materials on top of materials, hoping to crush the observer with sheer mass — and often succeeding.

But we were writing of advantages; and this difficulty of design is, after all, an advantage as far as the community is concerned: the layman on a building committee will find it easier to spot the meretricious or the ill-considered! Properly designed, too, a group of small buildings can cost the community less than a huge structure; it can be laid out to turn features of a difficult site into positive values; and it can be built piecemeal, as finances permit.

There are difficulties, some real ones: not every community or school system is ready to undertake a new approach. The right kind of staff is hard to get — though that seems always to be true no matter what the program. The unpretentiousness of each building may be hard to appreciate. Certain facilities required in each little school building if it is to be a nearly complete high school — science laboratories, for instance — may seem hard to justify from the point of view of efficiency, considering the problems of scheduling, full utilization of expensive equipment, etc. More difficulties become apparent as one studies the concept.

Yet in the main the difficulties are due more to a halfway acceptance of the idea than one might suppose. They seem to derive principally from adherence to familiar educational programs and methods. The little school concept, for instance, contemplates a different kind of use of a science laboratory, one in which science becomes a part of other branches of learning and the other branches are, conversely, integrated with laboratory work; this is not the traditional way.

At Riverview Gardens, the responsible citizens of the community, the local education administrators and school staff, the educational consultants and the architects have jointly applied to their secondary school problem a degree of thoughtful imagination which is commonly encountered only in elementary school design. In discussing the building with us, the architects listed certain factors of basic importance which they believe are usually unresolved in secondary schools:

"1. Scale — most high schools are monumental in character and size, overwhelming the pupil; the trend should be away from mass concentration to sizes and scales easily grasped by the pupil.

"2. Growth — the plan should allow for curriculum changes and easy expansion.

"3. Classrooms — should allow for flexible internal arrangements, should consider storage, work counter and display areas.

"4. Circulation — the high school pupil spends as much time in the corridor as in any one classroom; corridors should be designed with care, not just lined with lockers and forgotten.

"5. Social area — space for students to meet and develop extra-curricular activities should be considered.

"6. Community use — site plan should provide easy access of public to auditorium and athletic area.

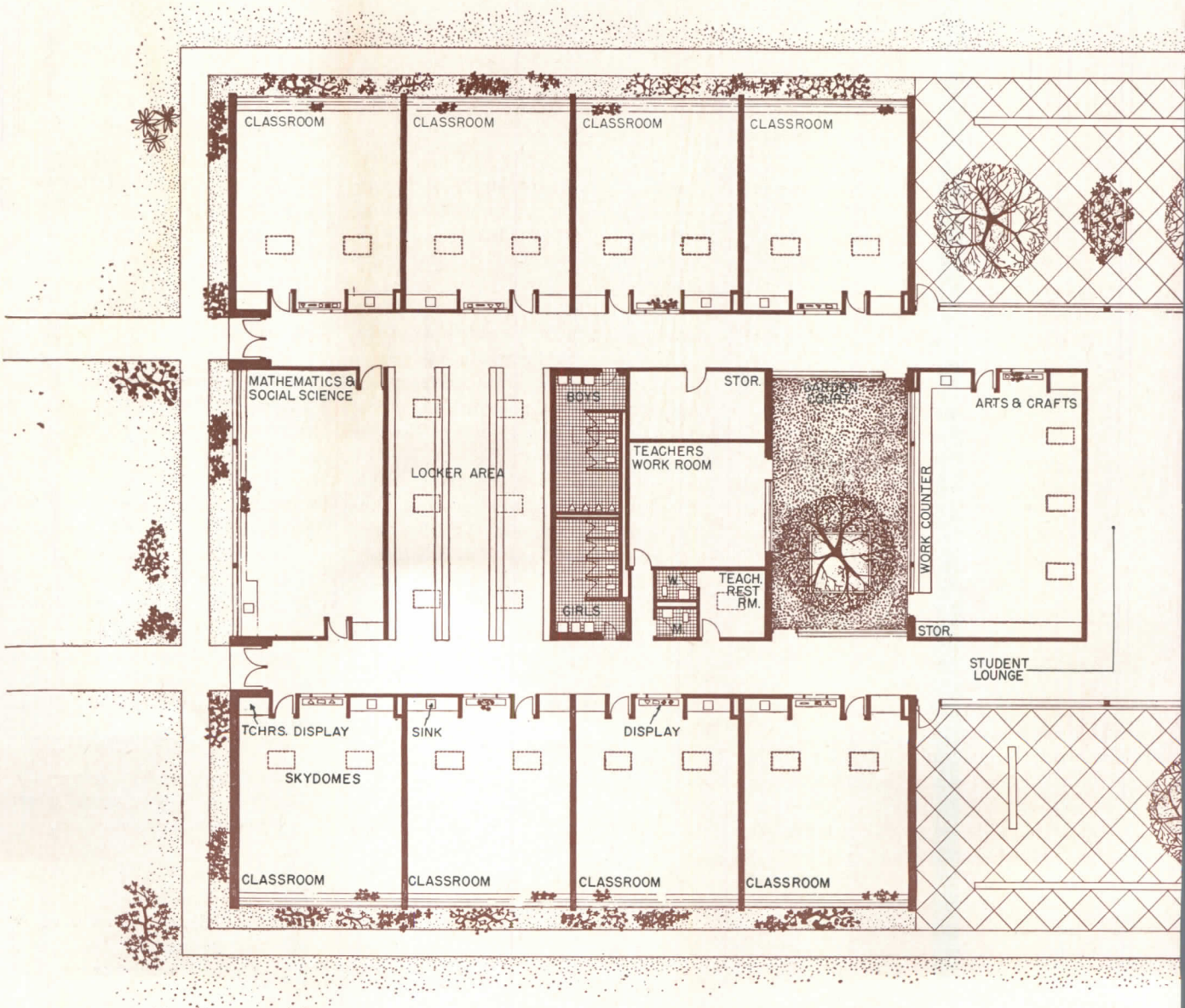
"We have tried to design the Riverview School with these points in mind. The school district serves a section of the northern suburbs of St. Louis, where great tracts of builder houses have over-

night doubled the population. The community needed a senior high plant but had funds available to build only a portion of the total needed. This seemingly negative point was resolved by the educational consultants into an exciting program that fulfilled many of the needs of every high school as we have listed them above."

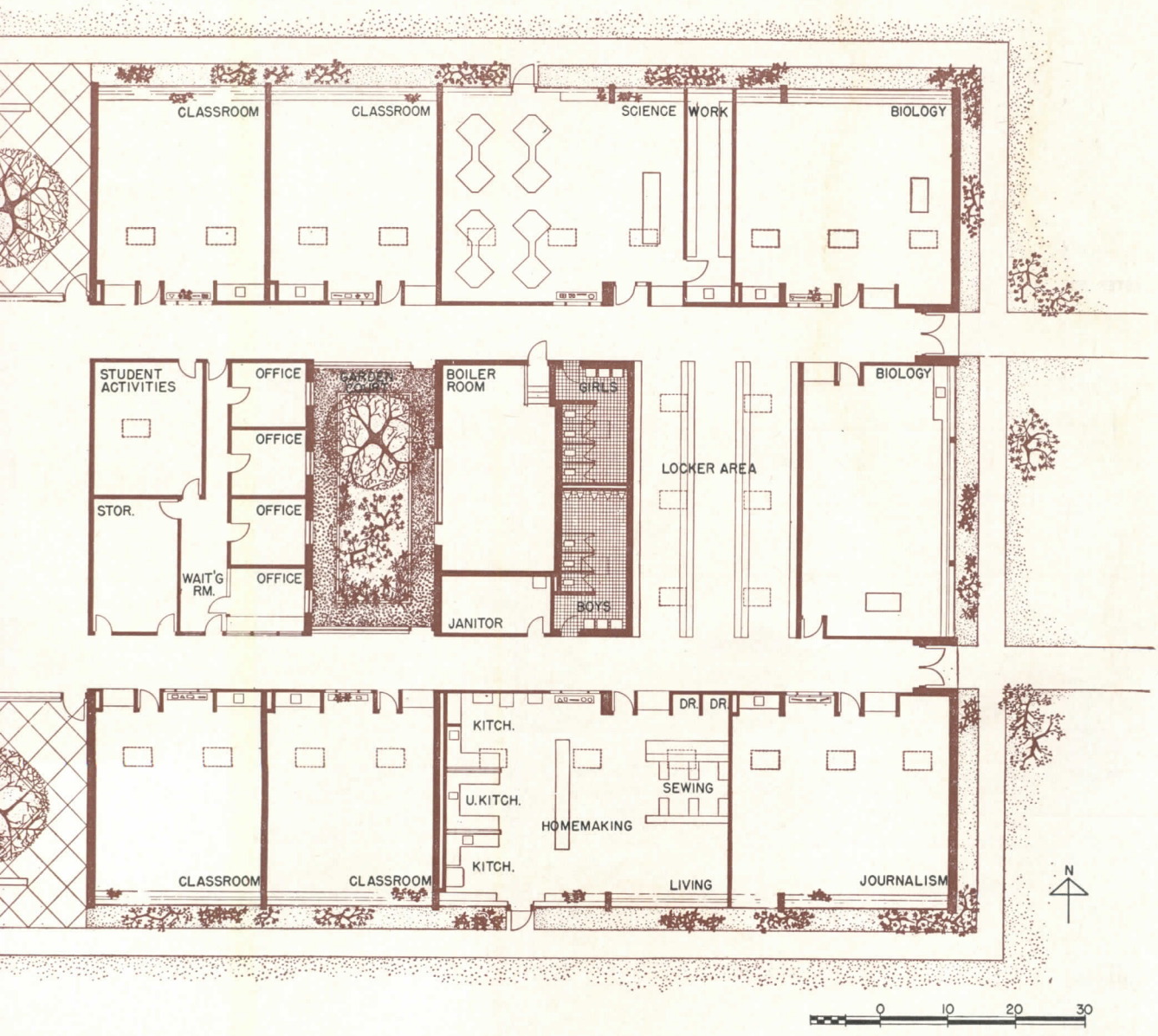
The educational program prepared by the consultants and accepted by the community contemplates an ultimate capacity of 1800 to 2000 pupils in grades 10–12, although initially the school may accommodate only 9th and 10th grade pupils until additional special facilities become available. The buildings, the program stated, "must be planned for construction in a long series of steps as money becomes available and as enrollments dictate. Additional construction should cause a minimum of disturbance to the existing plant." The program proposed that "the school be designed as a series of three separate 3-year high schools," with "each 600-pupil 'little school' containing 14 classrooms, 3 science rooms, 1 art room, 1 home making room, administrative, guidance, student activity and teachers' rest and work space. Units to be provided centrally are: cafeteria, auditorium, gymnasium, central administration, shops, business education, music, student center.

"The general order of construction, as now envisioned, follows. It should be possible to vary from this order: first 'little school'; cafeteria (ultimately to

SCHOOL AND COMMUNITY: MISSOURI SUBURB



PERSPECTIVE OF INTERIOR COURT *(TO BE USED AS OUTDOOR WORK AREA FOR ARTS & CRAFTS)*



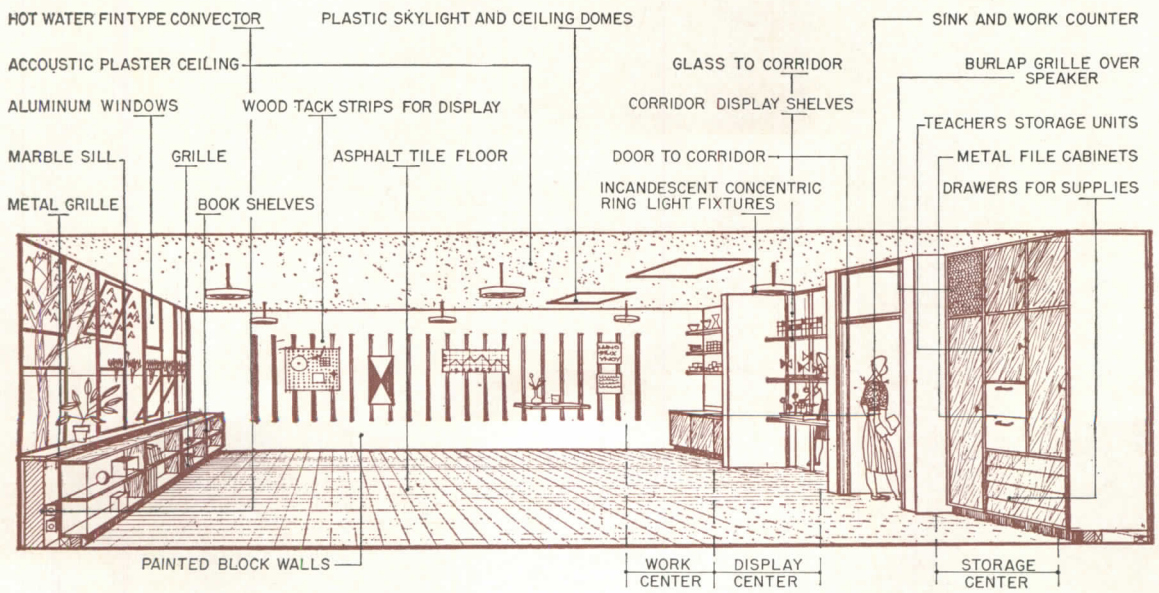
seat 600, but designed as three 200-seat dining rooms, only two to be built now and one of these to serve temporarily as a library); gymnasium; second 'little school'; central administration; shop, business education and music facilities; third 'little school'; library; auditorium; final 200-seat cafeteria unit." From this beginning the program proceeded by degrees into detailed considerations: area requirements, advice on costs, organization of the spaces, land use, development of special areas.

To quote the architects again: they "looked at a number of sites with the school superintendent and helped select a 40-acre site. We began our study with a master plan; the 'little schools' are grouped together on the site's high ground. Different forms of 'little schools' are shown because design of the units can be varied with curriculum changes and with lessons learned from the first one. The library, centrally located to all the schools, overlooks the main plaza. On one side the 'civic' group (central administration and auditorium) is easily accessible to the public. The auditorium is connected to the shop building to ease construction and erection of stage sets. The shops will have a large, paved outdoor apron. Cafeteria and gymnasium are grouped at the other end of the central plaza; the gym's lobby will be the student social center, easily reached from the cafeteria.

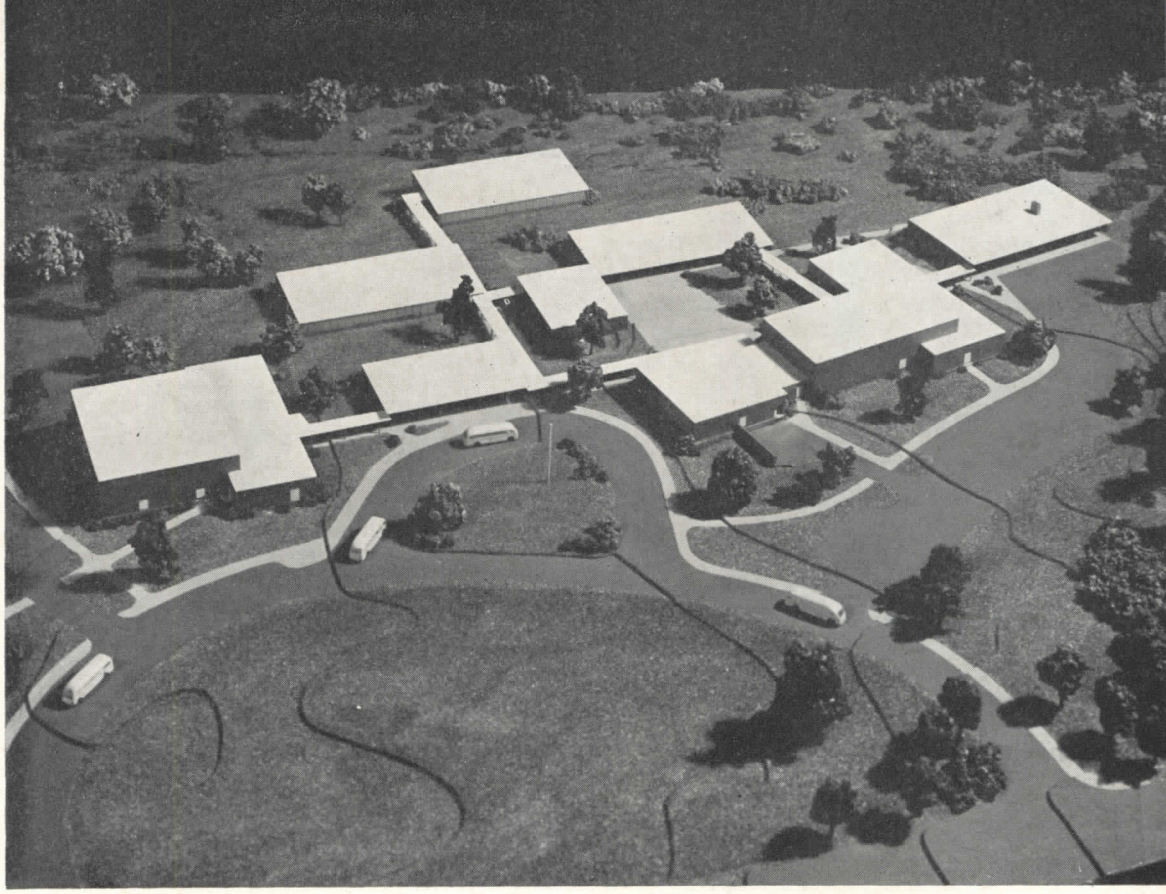
"Next we developed plans and specifications for one 'little school'; bids were received, and it is now under construction at a cost of $362,310, or $10.85 per square foot. It is completely fireproof, with masonry bearing walls every 25 ft and steel joists supporting a lightweight insulated concrete slab. Ceilings are acoustic plaster, floors in classrooms and offices are asphalt tile. In corridors, locker area and student lounge, floors are terrazzo and walls are masonry block with a special face for easy maintenance. Exterior walls are brick, spandrels under windows are colored, unglazed ceramic tile. Windows are aluminum, door frames hollow metal. There are special hot water units under windows for heating. Classrooms will be lighted by 6 concentric ring fixtures each.

"Since the student spends so much time in the corridor we tried to make this an interesting space. The interior courts, terraces, open locker areas, and daylight from the display area for each classroom should create a number of interesting vistas for the student who is walking between classrooms."

SCHOOL AND COMMUNITY: MISSOURI SUBURB



TYPICAL CLASSROOM (*CHALK & TACKBOARD ON WALL NOT SHOWN*)



Often an architect working on schools must do much more than design buildings, prepare working drawings and specifications and supervise construction. Sometimes the community's — and the committee's — conception of its needs, architectural and even educational, is hazy, and for various reasons the architect has to help the community form its judgments and decide how to vote on bond issues. These are responsibilities beyond normal architectural services; their cost, which at times becomes very great, is not reimbursed by normal fees. The article that follows is the behind-the-scenes history of one such job, told in the words of J. Stanley Sharp, partner in the firm of architects who designed the high school

FOR A UNIFIED DISTRICT THAT NEEDED GUIDANCE

JOHN JAY JUNIOR-SENIOR HIGH SCHOOL, Katonah-Lewisboro District, N. Y. Ketchum, Giná & Sharp, Architects. Walter D. Cocking, Educational Consultant. Severud-Elstad-Krueger, Structural Engineers. Tectonic Associates, Mechanical Engineers. Joseph R. Gangemi Associates, Site Engineers. Bolt, Beranek & Newman, Acoustical Engineers.

UNION FREE SCHOOL District No. 1, less formally called the Katonah-Lewisboro, N. Y., District, takes in the towns of Bedford, Lewisboro, North Salem and Pound Ridge. It was created in 1953, and shortly afterward a Citizen's Advisory Committee began interviewing architects and making recommendations for their selection. I believe Board of Education members sat in at most of these sessions. We were selected; and a series of meetings was held to discuss the program and review the general background of the community.

The Board's general conception of the way to provide for their needs was to convert a K-12 school in the Katonah area into a junior-senior high school and find a site for a new elementary school which was required by the existing elementary school load in the same part of the District. Our first field job, then, was to inspect eight potential sites being considered by the Board and the Committee. Katonah is in the westerly part of the elongated District; the most acceptable elementary school site, though a little farther south than was desired, was finally agreed on.

With this first step in programming taken, it was decided to present the site question and the budget to the public at one election. We had to develop building programs for both

the secondary and the elementary school. It quickly became evident to us and to our educational consultant, Dr. Walter Cocking, that the District needed real help in its educational programming. We were dealing with very intelligent people, but educationally and architecturally they were of course laymen. We could not expect really definitive educational specifications from them, nor could they be expected to be aware of recent developments in either field. Perhaps, we decided, a presentation of educational objectives and planning would help them. Dr. Cocking and our staff jointly prepared a series of large-scale charts outlining types of educational programs; Dr. Cocking presented and discussed these at length. The Board and Committee, on the basis of this new — to them — approach, could indicate to us where they believed they were educationally and what type of program they wanted to aim for. Although on some points it seemed to us that they were optimistic, we got what we needed to have: a base for our architectural programming. Although we didn't really realize it then, we were also laying groundwork for a serious cooperative effort by the community and ourselves which has been, we feel, mutually enjoyable as well as architecturally profitable — although financially it has hardly been a howling success for us as architects.

Enrollments were the next question. Projected figures were compiled from various sources — utility companies among others — to help define a logical pattern of community growth. Children born and living there were a known quantity, but forecasting growth from other sources caused consternation. How would adjacent White Plains grow commercially; how would this affect the District as a residential suburb? How many summer homes would become all-year residences? What would parkway extensions do to the community? And so on; the guesses were many and divergent.

We settled on figures that seemed reasonable, but another problem developed. The program was pretty well established

SCHOOL SITE SCORE FORM

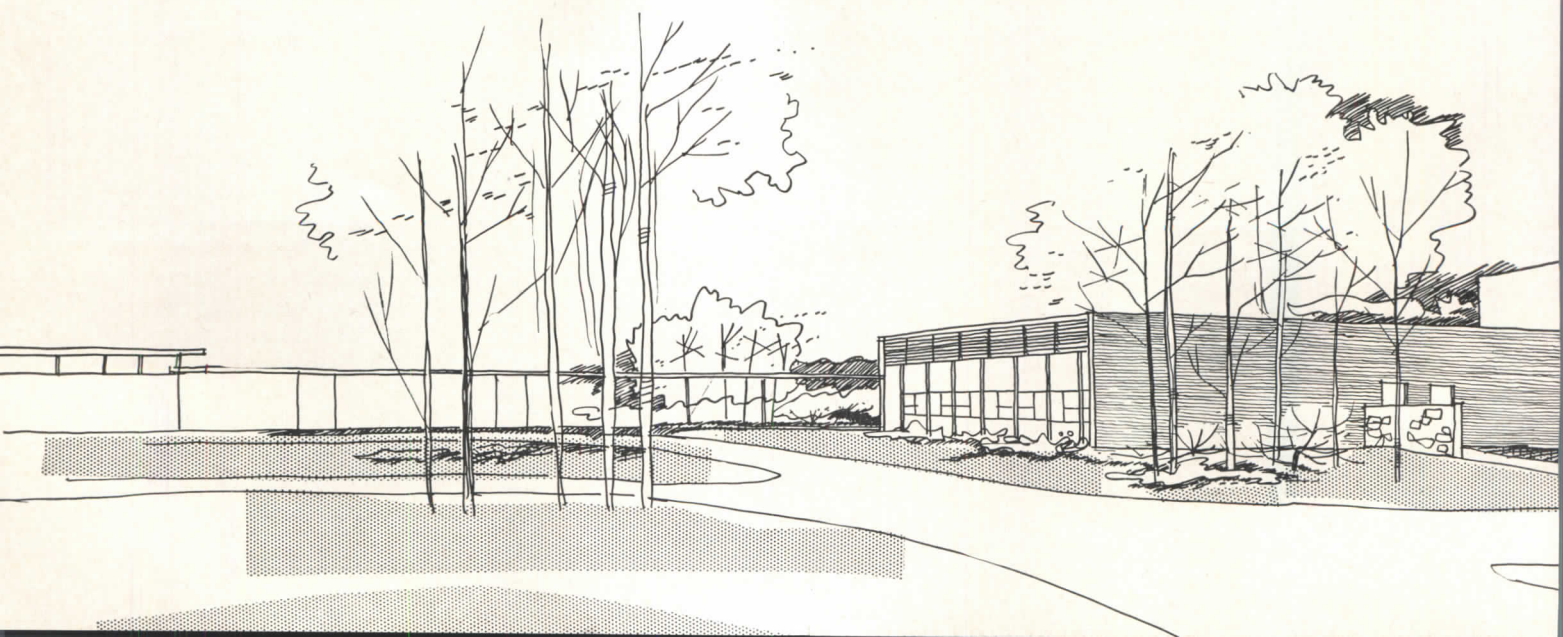
School: Date:

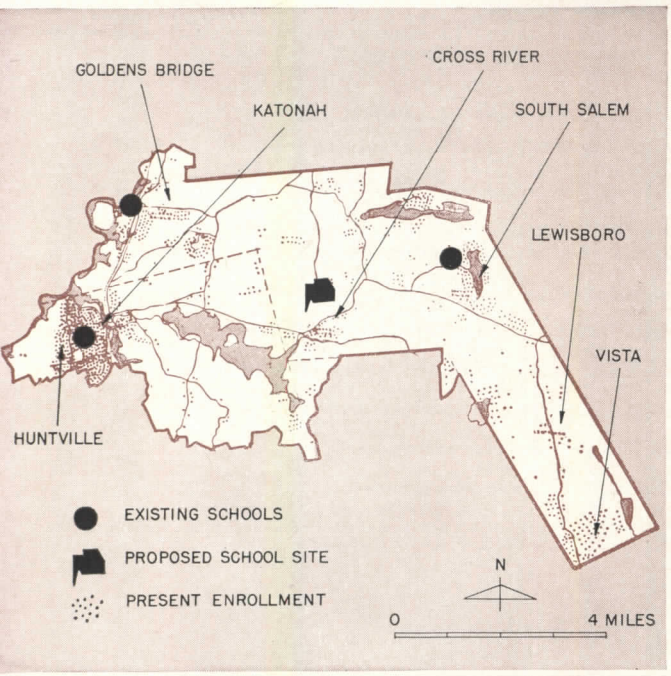
	Standard	Site #1	Site #2	Site #3	Site #4
A. PHYSICAL CHARACTERISTICS - 40 points		.1	.2	.3	4
1. Amount of usable land	... 15	14	.8	.0	12
2. Adaptability of shape, contour and orientation to needs	... 10	10	.7	.0	6
3. Elevation and drainage	... 10	10	10	10	7
4. Character of soil	... 5	.4	.4	.5	3
B. ENVIRONMENT - 25 points					
1. Cleanliness and quiet of surroundings	... 12	11	11	.6	11
2. Freedom from nearby hazards (railroads, flying fields, busy highways, etc.)	... 8	.7	.6	.3	7
3. Attractiveness	... 5	.5	.5	.4	4
C. ACCESSIBILITY - 20 points					
1. Safety and convenience of approach	... 10	10	.7	.5	9
2. Centrality in contributing area	... 6	.6	.6	.6	6
3. Convenience for community use	... 4	.4	.4	.0	4
D. SERVICES - 15 points					
1. Electricity	... 8	.8	.8	.8	7
2. Drinking water	... 4	.3	.3	.3	3
3. Water pressure	... 1	.0	.0	.0	0
4. Sewage facilities	... 1	.0	.0	.0	0
5. Fire company service	... 1	.0	.0	.0	0
E. TOTAL	100	92	79	50	79

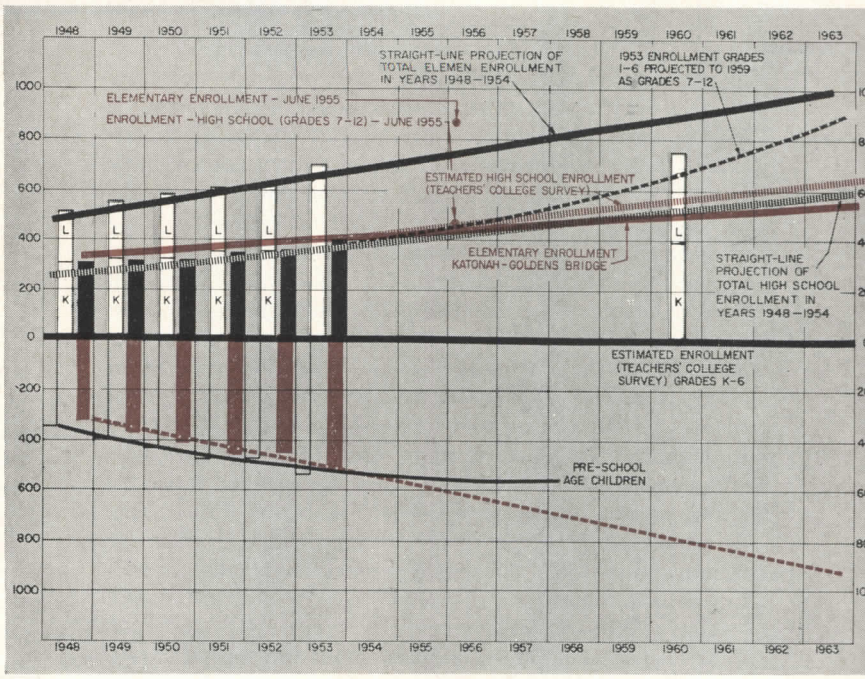
Site #1 - Benedict
Site #2 - Bee Tree Manor
Site #3 - Kahn
Site #4 - Oneil

The school district had been reorganized, consolidating several uneconomical smaller districts (Bedford, Lewisboro, North Salem, Pound Ridge) into the Union Free School District No. 1, in which the largest existing school plants were in Katonah. Prior to selecting the architects the district, through its Board of Education and a Citizen's Advisory Committee, had about decided to convert the Katonah School, which was serving all grades from kindergarten through high school, into a Junior-Senior High School and find a site for a new elementary school. The architects inspected eight sites under consideration; above is an evaluation of four as it was presented to the district. A school population survey (top left, facing page) put into graphic form by the architects showed that the Katonah area of the district contained the greatest concentration of elementary school — not secondary — children. It began to appear that the program could be improved

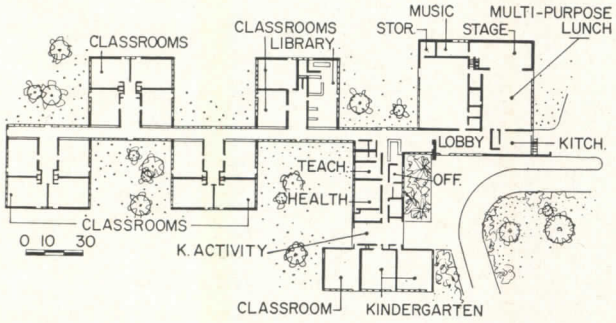
SCHOOL AND COMMUNITY: NEW YORK SUBURB

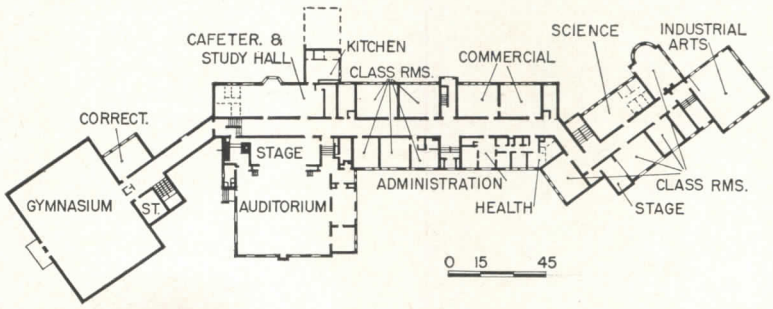




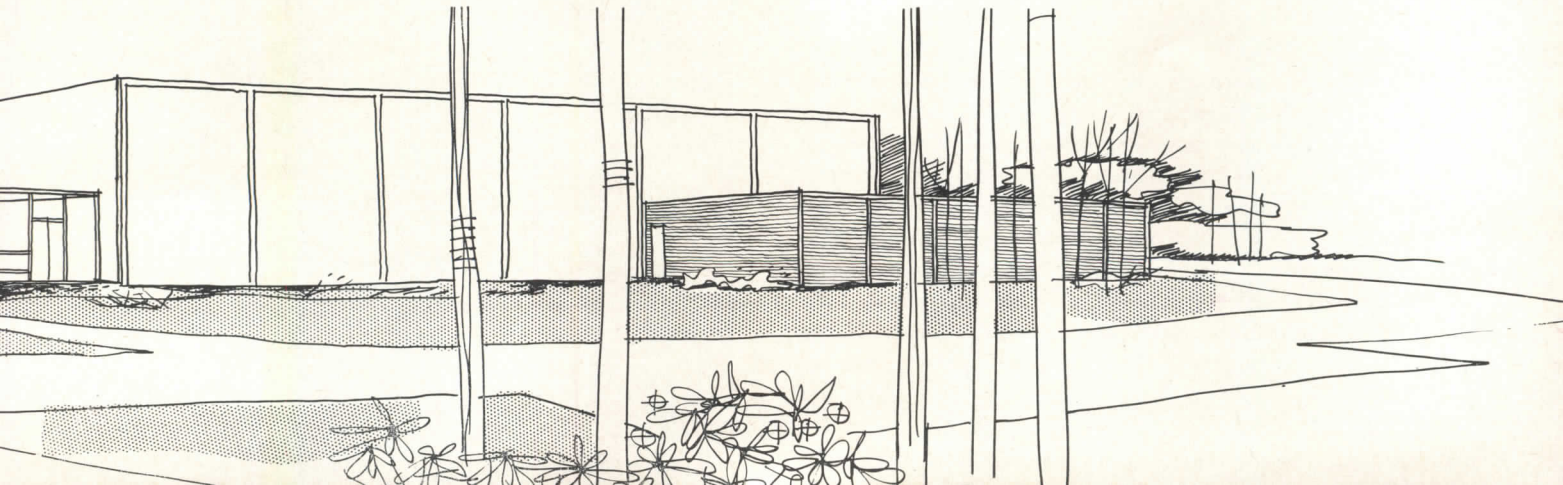


Map above shows school population of the new district. Initial decision to convert the Katonah School into a high school was voted down; a new high school site in the geographic center and more nearly centered in regard to secondary school population was approved; so was a proposition to convert the Katonah plant into an elementary school. The architects furnished the information on which the district acted. At right, population study; note difference between estimates and present enrollment





Before the first proposal was abandoned the architects prepared reasonably complete preliminaries for converting Katonah plant to a 6-year high school (plan of one floor, right above) and building a new elementary school (left above). These were discarded. The architects were paid in standard fashion for the abandoned work, though payment in such cases barely covers costs and makes no provision for anticipated profit. Below, perspective of new high school now under construction



by now. We had an elementary site in mind and what seemed to be a good building to convert into a 6-year high school. As we studied the situation, however, some shortcomings became evident and other possible solutions seemed more logical. Pupil distribution over the District would require excessive bus transportation to a high school not centrally located, for one thing. We began to favor development of a high school near the geographic center, and presented some ideas on this; but it would cost $263,000 more to do this than to stick to the initial proposal. The Board and Committee were understandably unenthusiastic about changing course at this time. We went ahead preparing a brochure and presentation for the imminent election. We developed several alternate schemes for the elementary school and the high school (see illustrations) and appeared at four public meetings in different areas, in an effort to reach all the groups in the still unfused District. Citizen opposition became apparent; it can properly be summed up as: "Who said we wouldn't be willing to spend more money for the right program in the right location? 650 students in this converted building, spending all that money and having no room to grow after 1960 — that's shortsighted!"

At the election the whole proposition was turned down. The School Board sent out questionnaires to find out why; results are tabulated in the illustrations. We began, again, to hunt sites, this time in the geographic center. A tract of well over a hundred acres was found to be available for $25,000. The Board had to do a lot of convincing to win over a majority of the people to buying such a large site as an investment for the future — only about 30 acres would be needed for the contemplated high school — and this time the District approved purchase of the site at a special election. We were instructed to develop schematic plans for the new high school, based on the original educational program.

Among the illustrations accompanying this article are several showing parts of the presentation we now made to the Board and later in slide form to the public, to portray the advantages and disadvantages of campus and non-campus

After the district had turned down the original proposal (remodeled high school, new elementary) the Board of Education made a mail survey to ascertain reasons for adverse voting. The following summary was prepared by the Board:

RESULTS OF QUESTIONNAIRE

Mailed 10–22–53 by the Board of Education; includes returns received through 11–2–53

57% OF THOSE WHO VOTED NO ON OCTOBER 10TH MADE RETURNS

80% thought that a new junior and senior high school should be built and that the present Katonah school should be converted to a grade school

44% thought that the cost of the new site was too high

36% thought that the proposed location of the grade school was unsatisfactory

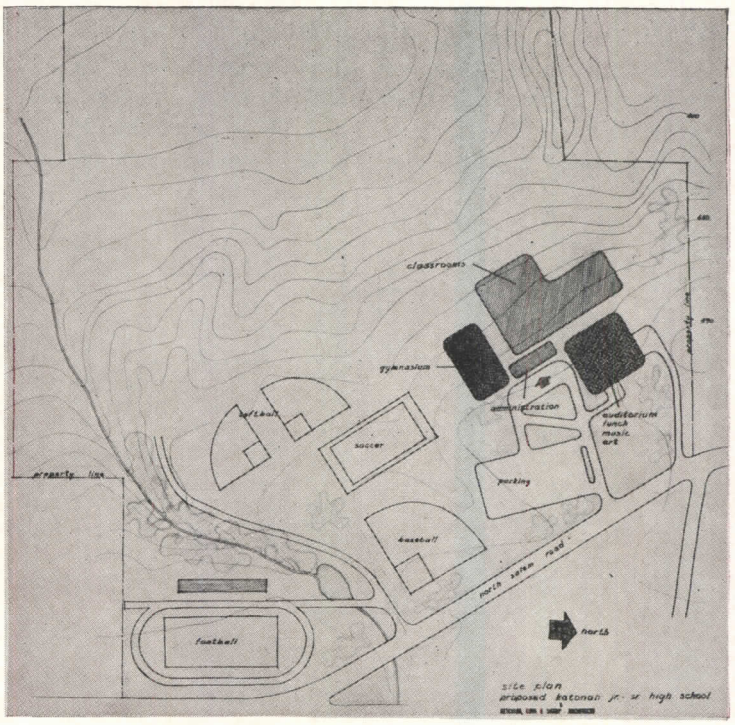
29% thought that the cost of converting the Katonah school was too high

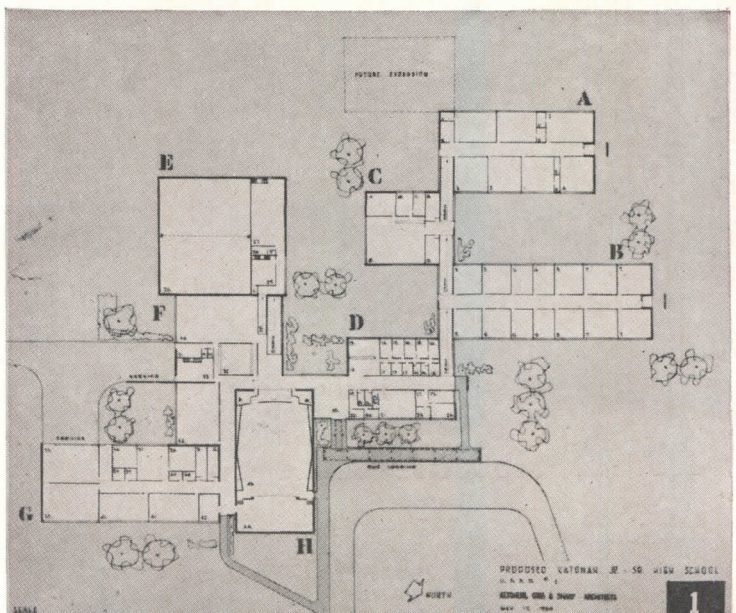
26% thought that the cost of the proposed grade school was too high

14% were opposed for miscellaneous reasons

4% thought that no building was necessary

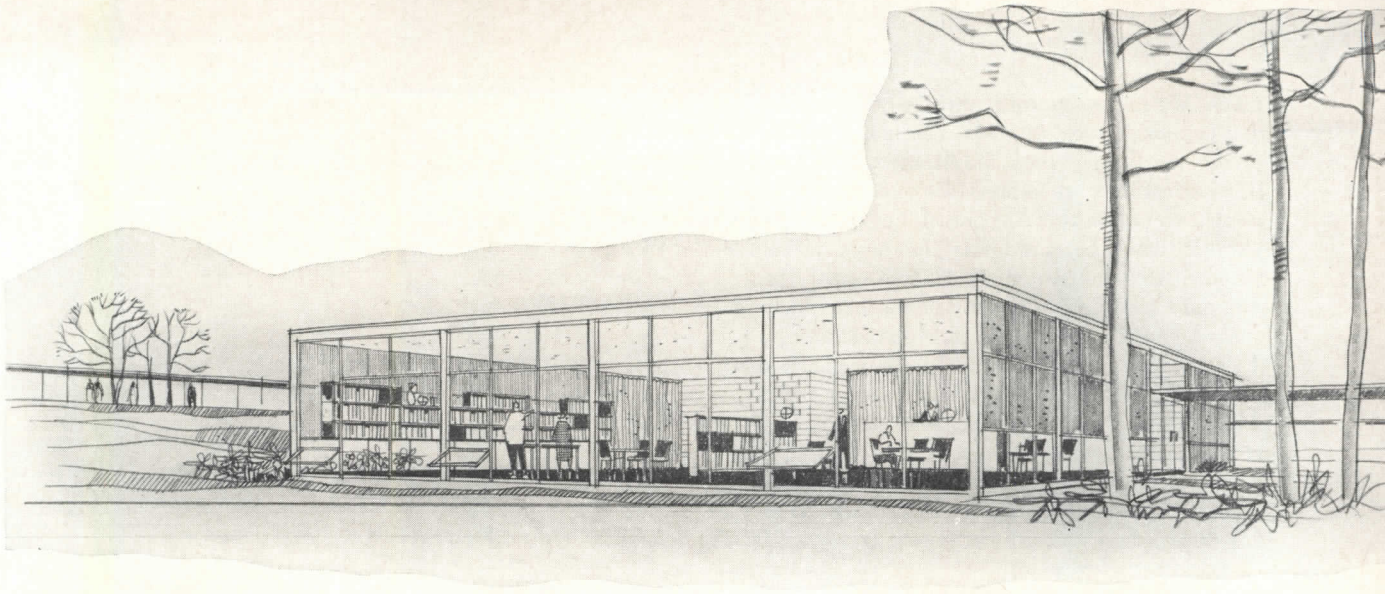
NOTE: The majority of the replies had more than one reason checked. Because of this the percentages above do not total 100%





SCHOOL AND COMMUNITY: NEW YORK SUBURB

After the adverse vote and return of the questionnaires indicating reasons for it, the architects again helped the Board investigate potential sites; they assisted in explaining to the public the advantages of the central site (see preceding page); the vote this time was favorable. In preparing for the vote the architects studied the new site, developed extensive presentations and discussed the proposition at length before numerous public meetings. At right, top row, site development study and evaluations in terms of cost and area utilization for three types of school plant for the new site; bottom row, schematic preliminaries as presented to the public. Each was thoroughly studied and fairly presented although the architects favored scheme No. 3, the one which was finally adopted

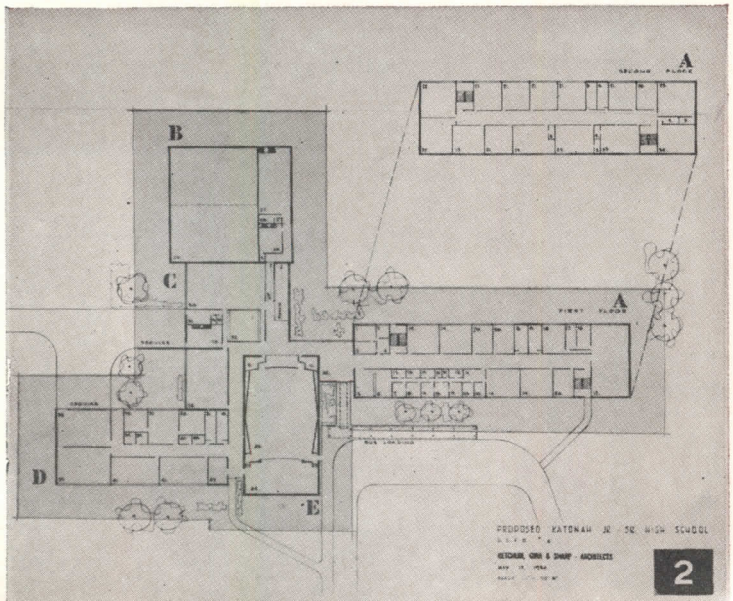


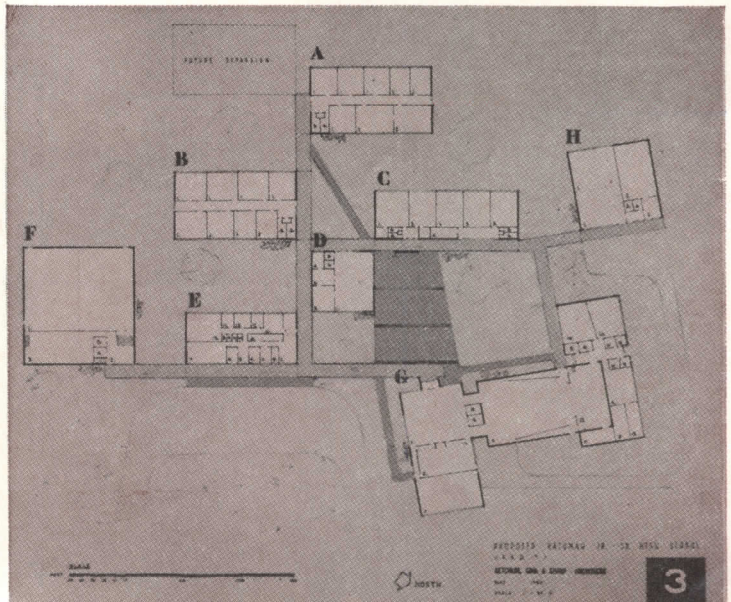
Final design for library

AREAS	SCHEME #1 1 STORY NON CAMPUS	SCHEME #2 2 STORY NON CAMPUS		SCHEME #3 CAMPUS	
	TOTAL	TOTAL	CHANGE	TOTAL	CHANGE
TOTAL BUILDING AREA	80,747 #	80,971 #	+ 224 #	70,567 #	- 10,180 #
EDUCATIONAL AREA	47,090	47,165	+ 75	47,400	+ 310
% OF TOTAL AREA	58%	58%		67%	
ENCLOSED CORRIDORS	12,414	12,363	- 51	3,839	- 8,575
COVERED WALKWAYS	1,200	1,363	+ 163	7,760	+ 6560

EDUCATIONAL AREA
(1) INCLUDES ALL CLASSROOMS, AUDITORIUM, LUNCH ROOM, LIBRARY, GUIDANCE ROOMS GYMNASIUM & LOCKER ROOMS
(2) DOES NOT INCLUDE KITCHEN, ADMINISTRATION, TOILETS, CORRIDORS, BOILER ROOM JANITOR'S CLOSETS, WALLS & PARTITIONS

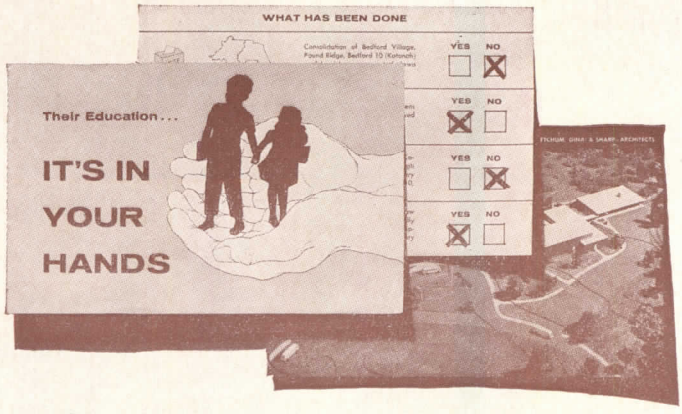
COSTS	SCHEME #1 1 STORY NON CAMPUS	SCHEME #2 2 STORY NON CAMPUS		SCHEME #3 CAMPUS	
@ 17¢ (one story) @ 17¢ (2 story)	TOTAL	TOTAL	CHANGE	TOTAL	CHANGE
BUILDING COSTS GENERAL CONSTRUCTION INCL. COVERED WALKS HEATING & VENTILATING PLUMBING & SEWAGE ELECTRIC	$1,372,000	$1,391,000	+ 19,000	$1,200,000	-172,000
ADDITIONAL COSTS FURNITURE & EQUIPMENT CLERK OF THE WORKS LEGAL SERVICES GENERAL ADMINISTRATION & INCIDENTAL COSTS INSURANCE DURING CONST. ARCHITECT'S & ENGINEER'S COMMISSIONS SITE DEVELOPEMENT INCL. ROAD & WALKS	535,000	543,000	+ 8,000	488,000	- 47,000
CONTINGENCY 10 % OF BUILDING COSTS	137,200	139,100	+ 1,900	120,000	- 17,200
TOTAL PROJECT COSTS	$ 2,044,200	$2,073,100	+ $ 28,900	$1,808,000	- $ 236,200



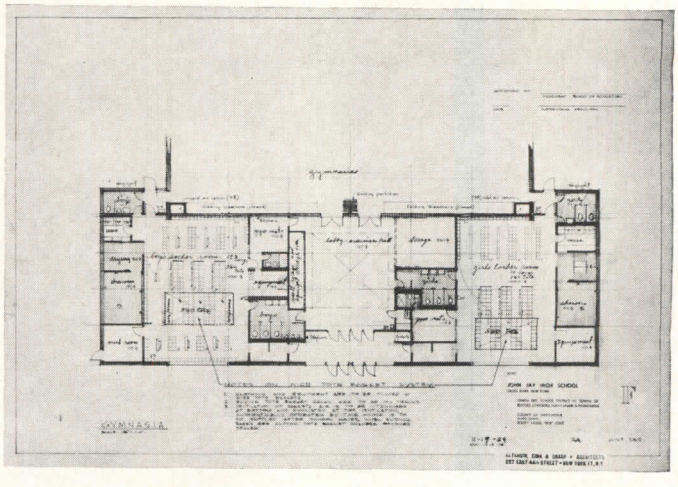


plans. We made several photostatic brochures for the Board and key citizens to use in discussing types of development at public meetings. When public approval of a campus plan became evident we refined the preliminary drawings sufficiently to obtain State approval, and prepared another photostatic brochure containing the basic plans for the new scheme. A committee of citizens was very helpful in developing and expediting work on still another brochure developed specially for the election at which bonds were to be voted on. This was very brief because "if they put it down without reading it all the first time they'll never pick it up again." Attendance at some public meetings had at times been spotty, so we and the Board decided to hold only two large public meetings and to have members of the interested citizen's group set up many small meetings at private homes. For these, data and drawings were furnished by the School Board in slide form.

On October 23, 1954, nearly a year after the first proposition was voted down, the citizens approved the campus scheme by a two-thirds vote. Now our work really began — many hours of conference time, of design study, of planning refinement and detailed study ensued. Some of these — space permits including only a few — are illustrated. There were many more. During this period it was very gratifying to work with a school administrator, Charles T. Helmes, and a cooperative Board whose confidence seemed to gather momentum from meeting to meeting. At one session a Board member questioned omission of a section of covered walkway. At the next meeting, finding we had not included it, there was further discussion. Another Board member eventually said, "I know. You fellows just don't want anything to interfere with that big expanse of wall!" He was right. We had neglected what should have received attention: the difficult job of conveying to the Board the importance of esthetic considera-



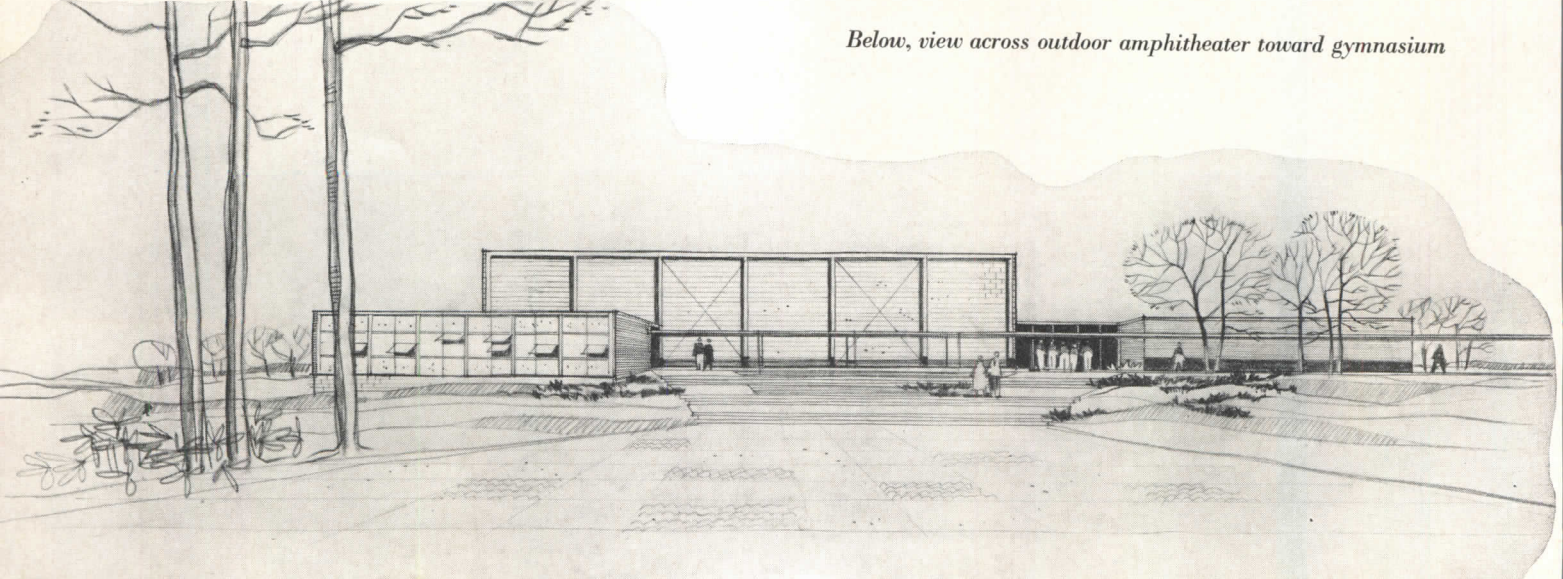
Above, pages from one of several presentations prepared for the Board by the architects; this is leaflet circulated before election was held which authorized acquisition and development of new high school site

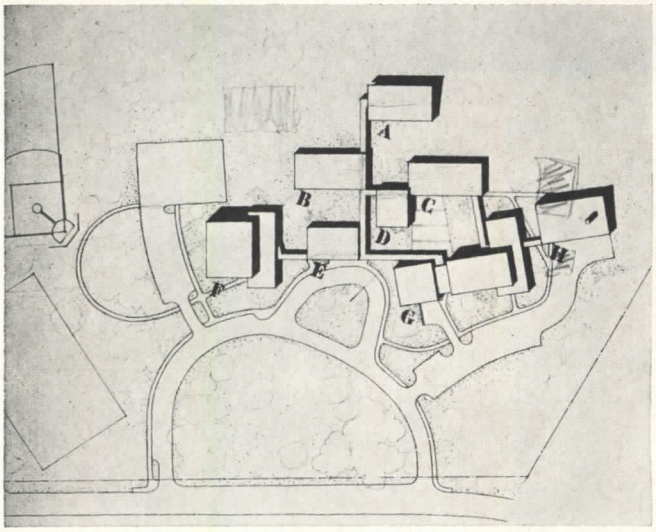


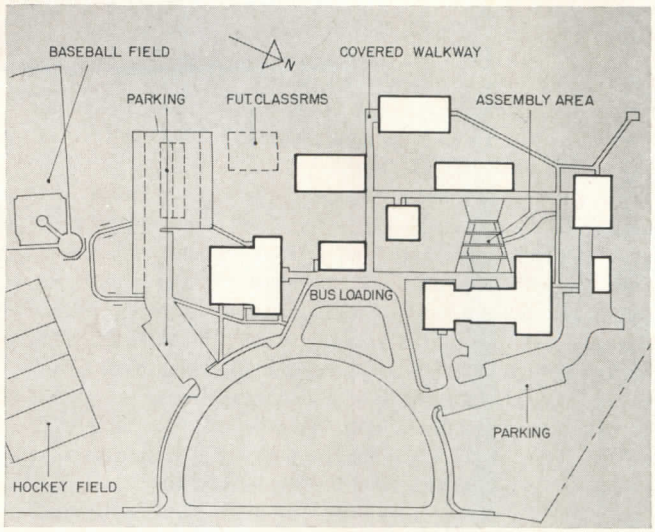
As final design ideas evolved accurate schematic drawings were prepared with spaces for signatures of accepting authorities. Above, typical schematic showing development of gymnasium lobby as an exercise room and, in locker rooms, pull-out, roof-vented tiers of tote baskets designed to increase room utility by making open floor area available

SCHOOL AND COMMUNITY: NEW YORK SUBURB

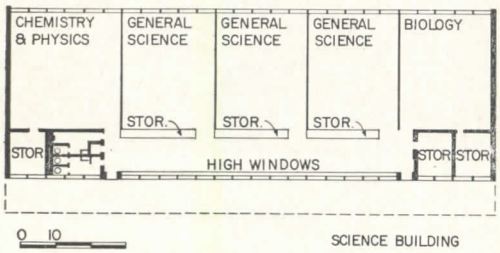
Below, view across outdoor amphitheater toward gymnasium

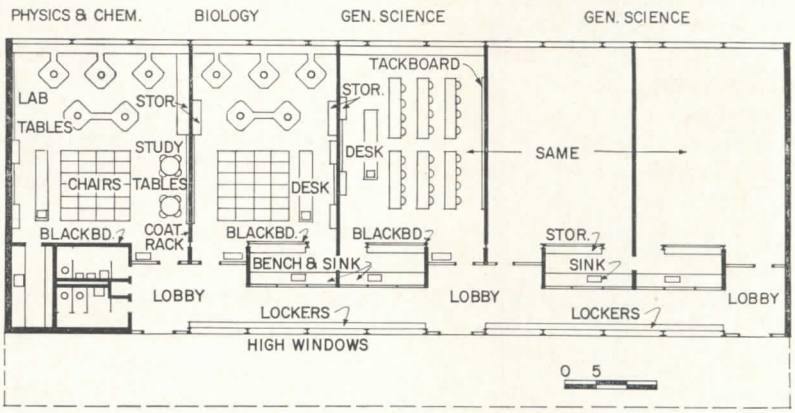






On final project, high school site utilization was further developed in conjunction with the developing educational program. Plan at left, site as presented; right, final plan. At first, boiler room was part of shop building; eventually it was separated, its floor slab placed at footing level to reduce exposed height; art rooms were relocated; home making better related to other areas



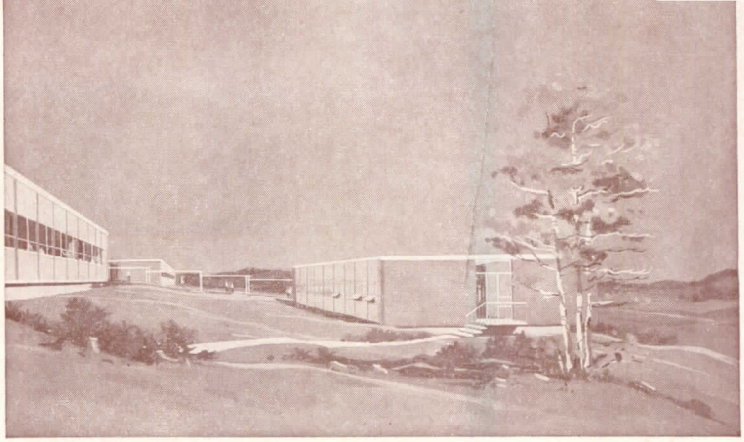


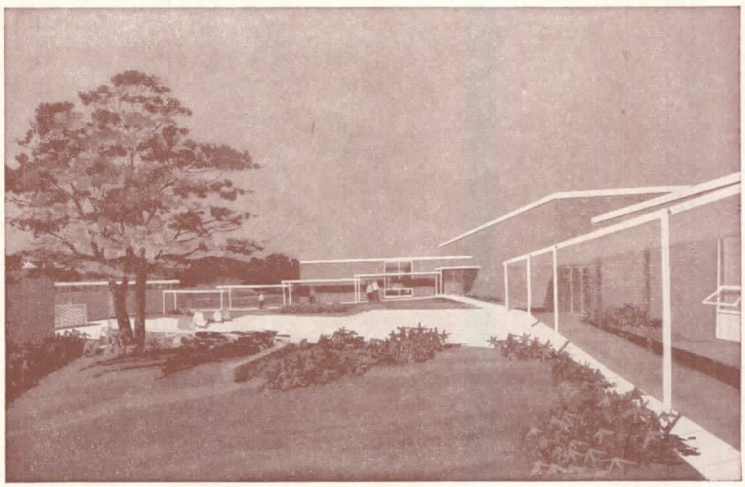
Restudy before starting working drawings improved all the buildings. Above, first plan, science building; right, final plan. Note reduction of unneeded lobby space, greatly improved storage facilities

Corridor, classroom building, is characteristic of whole plant: gayly colorful, open in feeling

tions. He did it for us, the matter was dropped and the walkway was forgotten. Only weeks later did we realize that, as plans were still further refined, somehow that section of walkway got back into the job!

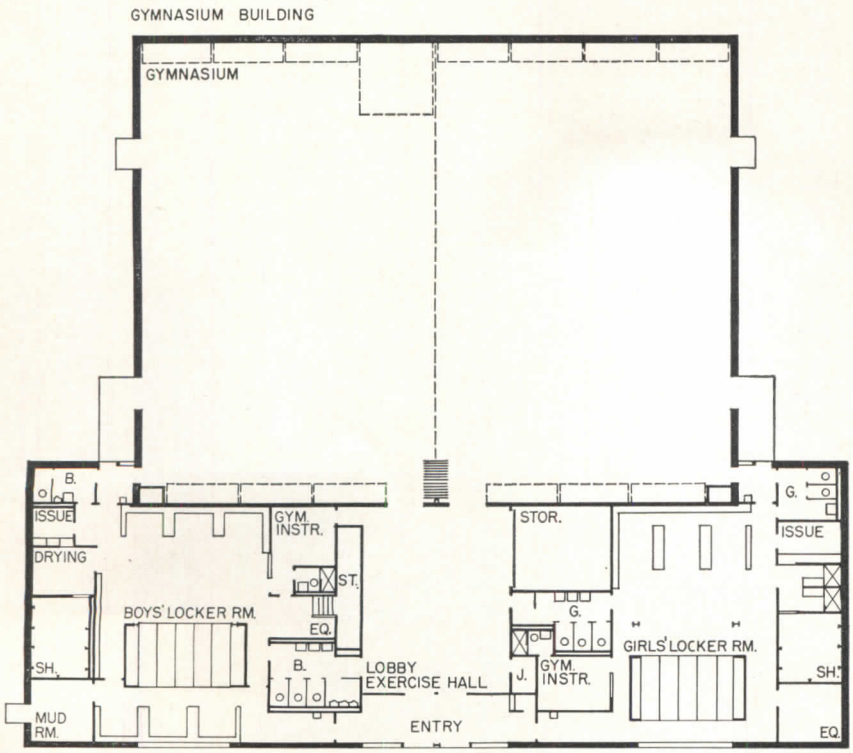
We went beyond normal engineering services, furnished by our consultants, in employing acoustical engineers to help develop ways to eliminate sound transmission, to improve acoustical qualities, etc. With our mechanical engineers we designed an unusual hot air heating system utilizing peripheral ducts poured in place along with the footings. The electrical system is 227–480 volts rather than the usual lower voltages, the theory being that high voltage reduces current drop where runs are fairly long. We proceeded to refine and develop a type of porcelain enamel panel wall which preceding experience had indicated would be satisfactory, and had the pleasure of seeing bids come in hitting our predicted costs almost "on the nose." We helped the Board select and appoint a clerk of the works, running want ads, screening applicants and interviewing candidates. We are taking out of the general contract, on this job, most of the built-in equipment (cabinet work, etc.) and combining this with the special portable equipment we have designed, in a separate contract. This reduces charges for overhead and profit, gets a better price for the whole because the cabinet work contract is larger, and affords us better control of finished production.

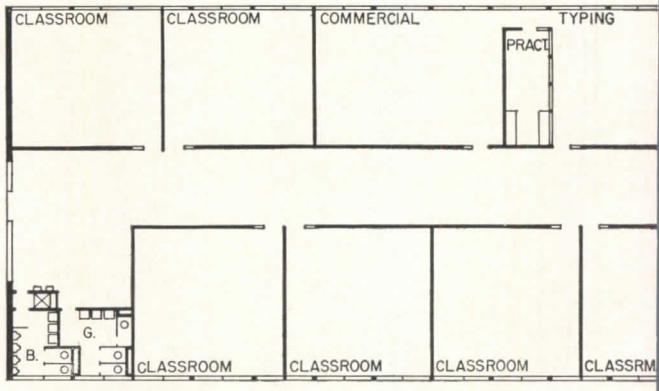




Renderings show adaptation of buildings to site contours and appearance of types of construction discussed on facing page

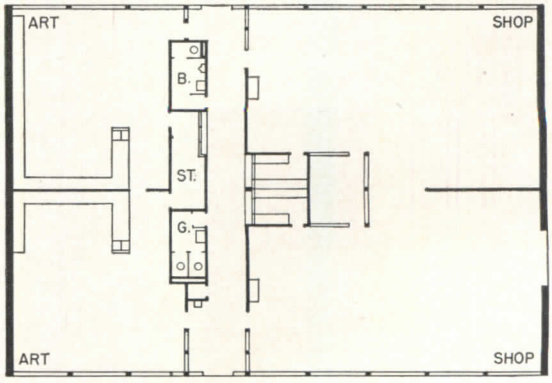
SCHOOL AND COMMUNITY: NEW YORK SUBURB

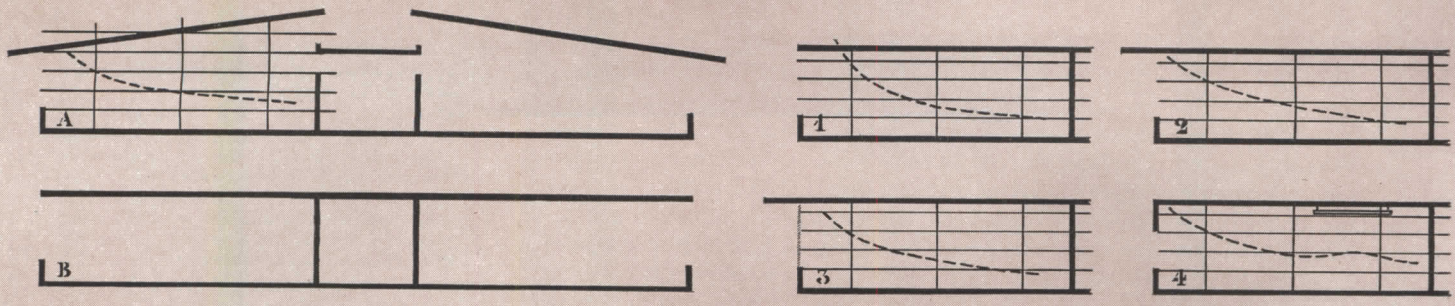




CLASSROOM BUILDING

CRAFTS BUILDING

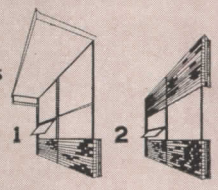




CLASSROOM DESIGN RESEARCH

For economy, classroom buildings have double-loaded corridors; section was thoroughly studied. Drawings above show, A, bilateral natural lighting — which, on the basis of previous experience, was too costly to construct, somewhat difficult to control, and often ignored by a teaching staff who, forgetting operating cost, neglect to turn off artificial lights when they are not needed. The simple cross-section, B, with flat roof, end-on classrooms, and minimum cubage and perimeter wall, was adopted. Diagrams 1 through 4 are variations of scheme B. 1, unprotected glass from sill to ceiling caused brightness ratios too high for comfort, unacceptably low lighting intensity at interior classroom wall. In 2 the overhang improved brightness ratios but not interior light level. Adding a louver at the glass, 3, provided acceptable brightness ratios but reduced interior light intensity, cost too much both initially and in maintenance, and did nothing to reduce heat losses. In 4, the adopted scheme, windows are used principally for vision and ventilation; use of gray glare-reducing glass insures good brightness ratios; heat losses are cut considerably; artificial sources are relied on for daytime lighting as well as night. Cost of current is offset by reduced heating costs. At right, two of numerous studies of wall construction costs

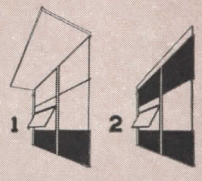
MASONRY CAVITY WALLS



prorated cost per square foot of total wall for: 1 2

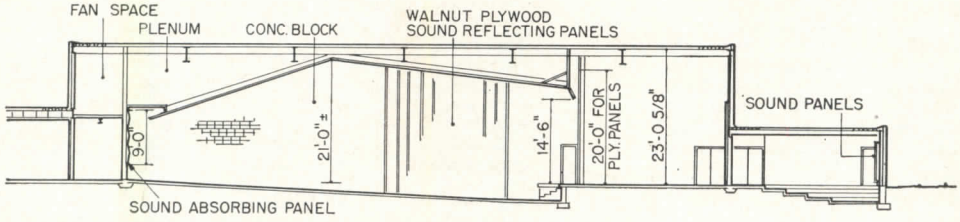
	1	2
CONSTRUCTION	$2.90	$2.63
GLAZING	.94	.51
HEATING PLANT	.87	.56
BLINDS	.72	.39
TOTAL	$5.43/sq ft	$4.09/sq ft

METAL FRAME WALLS

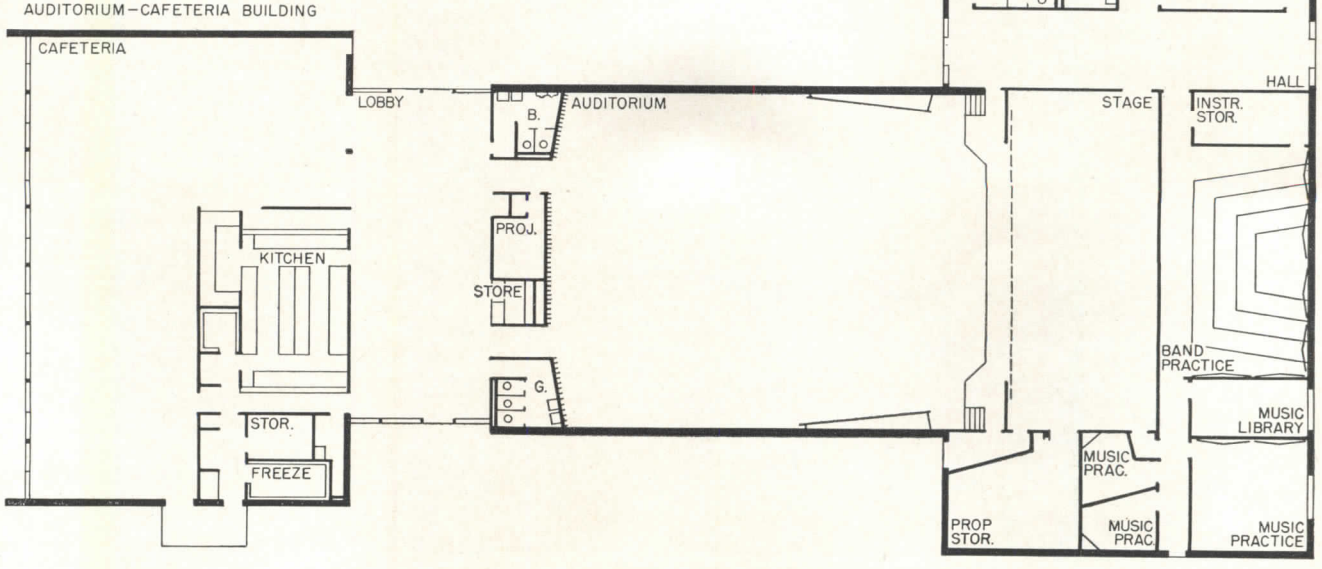


prorated cost per square foot of total wall for: 1 2

	1	2
CONSTRUCTION	$3.21	$3.69
GLAZING	.91	.49
HEATING PLANT	.78	.51
BLINDS	.72	.39
TOTAL	$5.62/sq ft	$5.08/sq ft



SECTION THROUGH AUDITORIUM



Throughout this job — as in any job — the importance of the architect-client relationship was never underestimated. In the ideal case, confidence and understanding increase as the job progresses. I think some of the examples cited, incidents at Board Meetings, and particularly the major issues discussed and resolved, demonstrate how essential such understanding is. Community attitudes are continually being voiced as these matters come up. We usually try to have one staff architect, working closely with a partner, follow a job from beginning to end. In this case circumstances forced us to use three men at different times; one of the original three is now in charge. This caused some discussion by the Board; and certain Board members pointed out that they had engaged a firm, not an individual. Moreover, an experienced partner was following the work closely, and we could assign a staff member well suited to each phase of the project.

— J. Stanley Sharp, A.I.A.

SCHOOL AND COMMUNITY: NEW YORK SUBURB

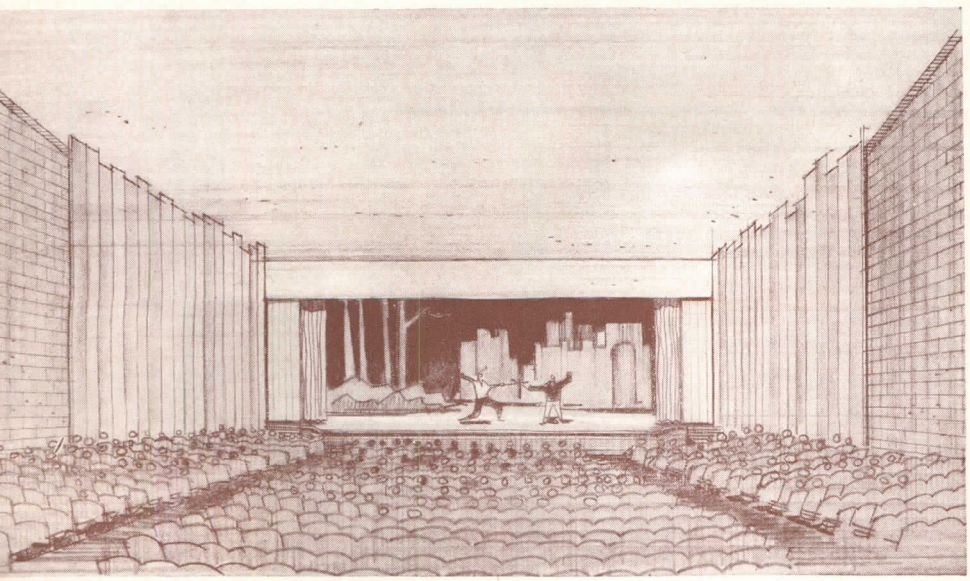
MAN-HOURS SPENT ON PORTIONS OF JOHN JAY HIGH SCHOOL JOB

Not including any time for principals or any provision for overhead, etc.

Public Meetings 18 HOURS	Conf. with Consultants & Board, Programming Studies, Preparing Brochures 254 HOURS	Prelim. Design (incl. Budgets) 1154½ HOURS	Renderings 45 HOURS
Working Dwgs. (Prelim. & Final incl. Sketches used to Explain to Board) 3402½ HOURS	Selecting Clerk of the Works 15 HOURS	Specification Writing 130 HOURS	Schematics 8 HOURS
General 26 HOURS	Supervision (Addenda) 6 HOURS	Supervision (Bidding) 44½ HOURS	Supervision* (Construction) 206 HOURS

GRAND TOTAL....5309½ HOURS*

* Includes supervision of construction only through May, 1955; considerable additional supervisory time and some drafting on details, etc. will be added before completion



Only recently have the architects been able to set up a realistic time schedule for the various phases of the school plant's progress toward completion. For one thing, they have been too busy trying to make up time lost in shifting, reappraising, restudying. For another, the actual effect of the entirely legitimate changes upon progress has been almost impossible to assess. However, the schedule below shows that the ultimate requirement, occupancy by the beginning of the 1956 fall term, can be met although there is no leeway

DATE COMPLETED OR POSSIBLE	DATE FIRST CONSIDERED DESIRABLE	ITEM OF WORK
	4–13–54	Board of Education approves program
	4–15–54	Architects meet with Board of Education and Citizens Building Advisory Committee
	4–20–54	Board of Education reviews schematics and decides on direction of final preliminary
	4–21–54	Conference with State Education Department at Albany to review program and schematics
	4–22–54	Architects begin preliminary drawings, outline specifications and budget estimates
7–2–54	5–20–54	Conference with State Education Department, Albany, to review preliminaries
9–8–54	5–27–54	Preliminary drawings, outline specifications and budget estimates forwarded to State Education Department for approval
10–1–54	6–3–54	First advertisement for bond vote
		General Public Meetings to discuss pending bond issue
		Registration for voting
10–23–54		District votes for Bond Issue on new High School and conversion of Katonah School K-12 to Elementary K-6
11–25–54		Working drawings and specifications started after Board of Education's authorization
2–28–55	10–11–54	Working drawings and specifications completed and presented to Board of Education for approval
3–7–55	10–12–54	Working drawings and specifications forwarded to State Education Department for approval
3–14–55	11–1–54	Approved working drawings and specifications distributed to contractors for bidding purposes
4–18–55		Sealed bids opened at Public Meetings
4–25–55		Award of Contracts
9–1–56	6– –56	Construction of classroom facilities in High School completed for occupancy. Katonah School conversion partially completed

PAINTS AND FINISHES—INTERIOR AND EXTERIOR: 1

Paint is a medium which imparts to a surface, in addition to decor, both durability and protection against deteriorating elements to a degree that depends upon the ingredients in the solution and the type of surface. In this summary the qualities of the general categories of paints and finishes are presented with an eye toward their most practical applications to particular types of surfaces: interior masonry, interior wood trim, exterior masonry, exterior wood, floors and metal surfaces. No attempt has been made to include special waterproofing coatings, as these are a study in themselves.

With the exception of the most recently developed acrylic finishes, practically all conventional paints and accessory materials required for architectural uses are adequately covered by Federal Specifications, which are available from the U. S. Government Printing Office. These specifications provide criteria for the selection of paints and can be employed as a basis of quality and performance.

Definitions

Vehicles are the liquid portions of pigmented paints. They serve as "carriers" for the pigments. The vehicle usually contains *both* volatile and non-volatile components. The volatile, or solvent, component, such as mineral spirits or water, serves two major purposes: (1) it facilitates application of the paint, and (2) by its evaporation it contributes to the drying of the paint film. The non-volatile component, referred to as the "binder," remains as an integral part of the paint film to bind the pigment particles together. Durability of the paint and adhesion of the film to the surface are largely functions of the binder. Typical binders or non-volatile vehicles include drying oils (linseed, tung), alkyd and phenolic resins and acrylic and vinyl resin emulsions (latexes).

Pigments include natural and synthetic, organic and inorganic types. For example, titanium dioxide is a synthetic inorganic pigment, while toluidine red and yellow are synthetic organic pigments. Pigments are employed to impart color and hiding power, as well as to protect the organic vehicle binder from the damaging rays of the sun. Hiding power, or the ability of the paint to obscure underlying color, varies with the different types of pigments. Dark pigments are more effective than light pigments. Of the commonly used white pigments, titanium dioxide is the most effective, while white lead is the least effective. Fading and color change result partly from instability of the pigmentation. Blue and green pigments generally are most susceptible to fading outdoors, with even some variation among these.

Clear coatings include varnishes, unpigmented lacquers, shellacs, clear sealers, wax polishes and water-repellent coatings. In general, they do not have the same protection against sunlight as pigmented coatings.

Varnish is a homogeneous solution of resin, drying oil, drier and solvent. Varnish dries by evaporation of the solvent followed by oxidation and polymerization of the drying oils and resins. It is commonly used as the vehicle in pigmented paints and enamels of the quick-drying, smooth-leveling types.

Lacquer is any type of organic coating that dries rapidly and solely by evaporation of the solvent. Typical solvents are acetates, alcohols and ketones. Although lacquers were generally based on nitrocellulose, manufacturers currently use vinyl resins, plasticizers and reacted drying oils to improve adhesion and elasticity.

Shellac is a solution of refined lac resin in denatured alcohol. It dries by evaporation of the alcohol. The resin is generally furnished in orange and bleached grades. Shellac comes in various "cuts," which indicate the amount of resin in pounds added to 1 gal of solvent: 4-, 4.5- and 5-lb cuts cover the range of light, medium and heavy grades used. Shellac can be used to seal knots in wood prior to painting.

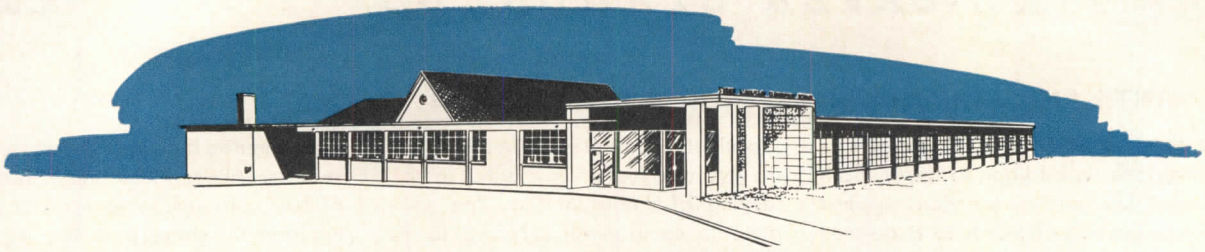
Emulsion paints generally employ synthetic emulsion resins today and are water-thinned.

Interior: Masonry, Plaster, Wallboard

New interior surfaces of plaster, wallboard and masonry should be coated first with a primer-sealer and then with finish coats. Alkyd-type primer-sealers are used more extensively today than conventional oil types, especially under alkyd paints, although they can be used under finishes of any base. The new acrylic primer-sealers, which can be used under any type finish, are finding wider use because of their ease of application, resistance to alkalinity and rapid drying time. Common finishes are listed below:

Acrylic resin emulsion paint	Excellent durability Excellent washability immediately upon drying Excellent resistance to moisture Excellent hiding power in colors, fair in white
Latex paint	Good durability, except on hot surfaces Excellent washability, contingent upon chemical curing, which varies from 30 to 90 days Excellent hiding power in white, fair in colors
Alkyd flat enamel	Good durability Good resistance to moisture and washing Excellent hiding power and appearance
Oil flat paint	Good durability Fair resistance to moisture and washing Good hiding power and appearance
Casein and alkyd resin emulsion paints	Still used, but to a much lesser extent because of poor resistance to moisture and washing

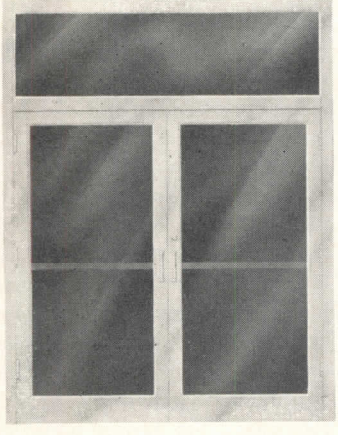
Prepared with the assistance of Benjamin J. Harris, Maintenance Coatings Co., Inc. and John C. Moore, National Paint, Varnish and Lacquer Association, Inc.



The school building budget—
One way to help meet its limitations

Too often, in the jargon of selling, economy is glibly paired with quality. It isn't good enough to say so—it has to be. You are confronted with problems imposed by economy, nevertheless you want to provide the best facilities you can for the money. To fulfill your responsibilities to the community, you have to be sure of both.

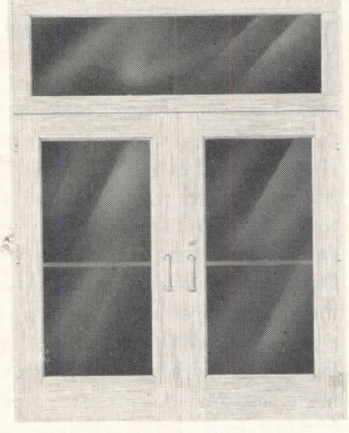
Amarlite production is geared only to quality—a quality we believe is unquestioned. And yet, on a cold cost analysis, this is the entrance picture:



STEEL ENTRANCE

	Labor	Material	Sub-Contractor
Doors (2)—Hollow Metal Doors, Frame, Transom and Trim	$50.00	$488.00	
Butts—3 Pair		21.00	
Overhead Closers (2)		45.00	
Threshold	2.00	15.00	
Surface Mounted Panic Hardware	10.00	142.00	
Glass & Glazing			$63.00
Painting			18.00
	$62.00	$711.00	$81.00

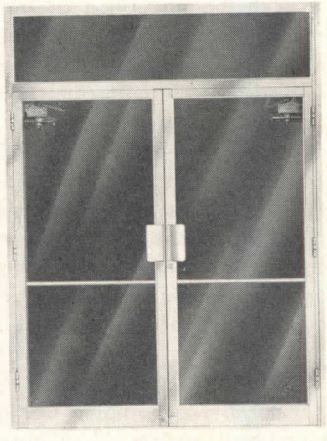
TOTAL **$854.00**



WOOD ENTRANCE

	Labor	Material	Sub-Contractor
Doors (2)—Birch	$30.00	$196.00	
Frame, Transom & Trim	20.00	90.00	
Butts—3 Pair	10.00	21.00	
Overhead Closer (2)	6.00	45.00	
Threshold	2.00	15.00	
Surface Mounted Panic Hardware	25.00	142.00	
Glass & Glazing			$52.00
Painting			18.00
	$93.00	$509.00	$70.00

TOTAL **$672.00**



AMARLITE ENTRANCE

AMARLITE MX7284TF	Sub-Contractor
with Hinges, Closers, Thresholds and Amarlite Concealed Panic Hardware	$566.00
Glass & Glazing	76.00

TOTAL **$642.00**

NOTE: These costs have been provided by representative general contractors of high standing in metropolitan areas. They reflect no intention to set prices. While some variation can be expected, they will hold relatively true in most localities.

Savings mount considerably when you consider the fact that the Amarlite Entrance is complete. There are no costs for fittings, painting, applying hardware. This favorable comparison is the direct result of standardization and increasing efficiency within the Amarlite system. The finest entrance in the industry now *costs less* than products less distinctive. The savings are yours.

AMARLITE® aluminum entrances

AMERICAN ART METALS COMPANY

- ATLANTA, GEORGIA
- ENGLEWOOD, NEW JERSEY
- BROOKFIELD, ILLINOIS
- DALLAS, TEXAS

PAINTS AND FINISHES—INTERIOR AND EXTERIOR: 2

Exterior: Wood

Pigmented paints for exterior wood surfaces are generally of the ready-mixed, linseed-oil-vehicle type. The pigments, apart from extenders, usually consist of white lead, titanium dioxide and zinc oxide. When combined in the proper proportions, they provide the optimum in hiding power, durability and repainting characteristics. Especially recommended for areas where industrial fumes are present are the high-quality titanium dioxide paints without lead pigments. They are white initially and stay white even in heavy fume areas where other white paints containing lead turn to gray, yellow and brown. Although three-coat painting of exterior wood has been conventional, it is now possible to apply two coats if properly executed. Regardless of the number of coats, the total thickness should be about the same. For two coats the primer should be applied at about 450 sq ft per gal and the finish coat at 550. For three coats the primer should be applied at 550 sq ft per gal and the succeeding finish coats at about 650.

Exterior oil paint	Zinc oxide hardens film and prevents mildew growth Chalking-type titanium imparts self-cleaning and good repainting characteristics Very slow drying
Oil trim enamel	Retains gloss well Good resistance to fading Very slow drying
Spar varnish	Excellent for doors, handrails, thresholds, etc., where maximum outdoor durability is desired
Stain	Good shingle stains, in various shades of red, brown and green, permit "breathing"

Floors: Wood

Wood floor finishes are usually formulated with a varnish vehicle for weatherability and effective penetration into the wood. Two coats are usually applied.

Oil-base enamel	Good wear resistance Good moisture resistance Recommended for softwood porches, steps and floors, both inside and outside
Varnish	Penetrating varnish is an effective sealer and leaves a thin but durable coating
Shellac	Seals wood and leaves a hard-gloss finish
Polishing-type wax	Protects a clear-finished surface and improves its appearance
Wax emulsion	Practical for an inexpensive, no-buffing floor treatment

Exterior: Masonry

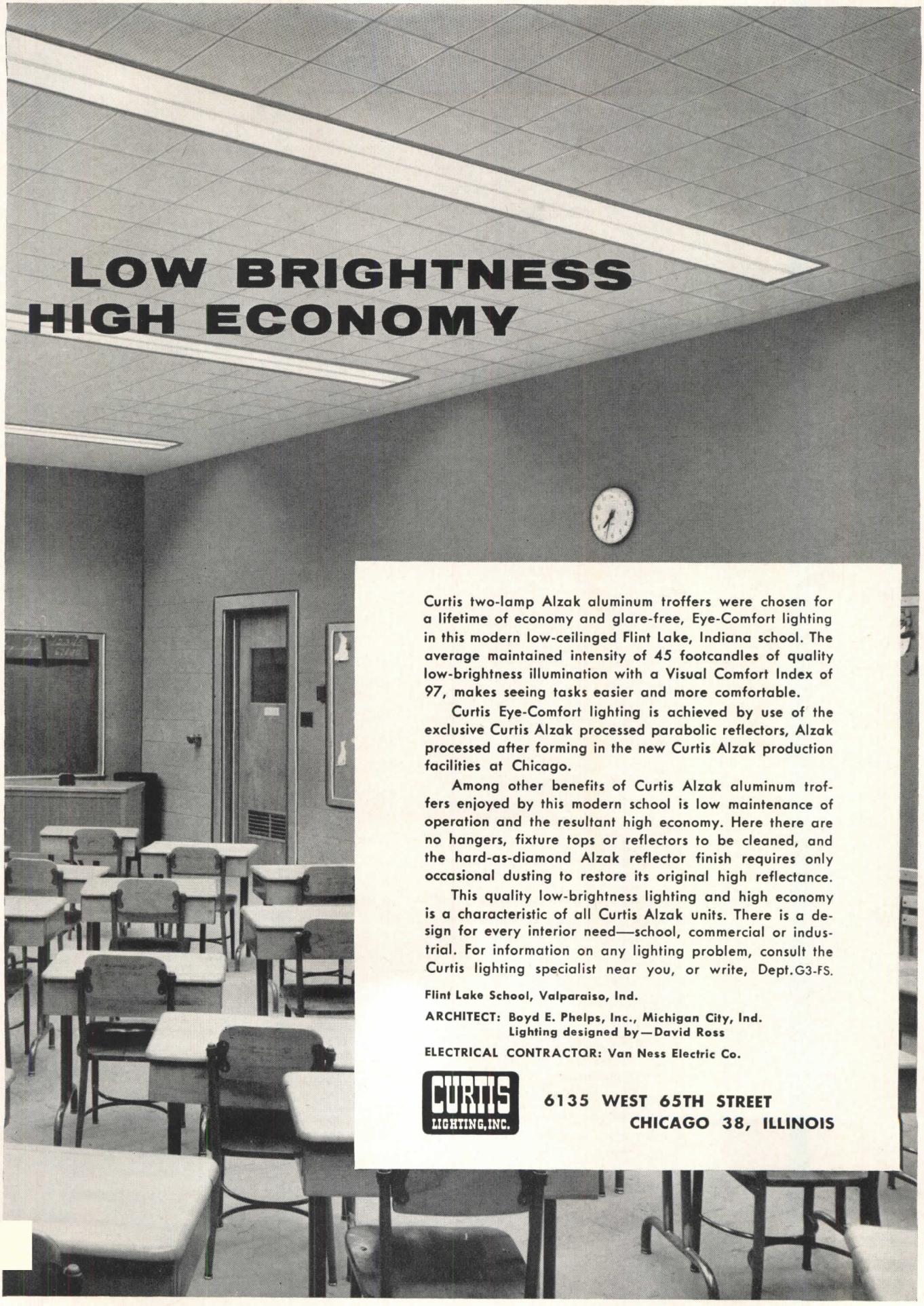
For concrete, plaster, stucco, asbestos-cement siding, concrete masonry, brick and cinder block the exterior finishes listed below are used. Washability is not important in exterior paints. Many are formulated to "chalk" gradually, thus becoming self-cleaning.

Acrylic resin emulsion paint	Excellent durability Excellent alkali resistance Excellent color retention Fast drying
Latex (styrene/butadiene) paint	Excellent alkali resistance Good durability Color retention not so good as the acrylics Overnight drying
Polyvinyl acetate (p.v.a.) emulsion paint	Excellent alkali resistance Good durability Color retention not so good as the acrylics Overnight drying
Cement base paint	Suitable for coarse, rough surfaces. Smooth or glazed surfaces must be specially treated for roughening Excellent alkali resistance Good durability against moisture Overnight drying
Exterior oil paint	Good durability when applied to old masonry Vulnerable to attack by alkali

Floors: Concrete

Coatings on concrete floors do not vary much in appearance, at least not to an important degree. Their most important effects are the qualities they impart to the floor. Vehicles are usually selected on the basis of hardness and toughness, but they should not be so hard that they will be brittle and chip off when bumped. In addition to pigmentation to produce color and hiding power, inert pigments are sometimes added to contribute to the over-all wear and foot traffic resistance of the finish.

Epon resin base enamel	Excellent abrasion resistance Excellent alkali resistance Excellent adhesion Excellent resistance to grease and oil
Chlorinated rubber paint	Excellent wear resistance Excellent alkali resistance Excellent for damp floors
Varnish-base paint	Good wear resistance Good moisture resistance Excellent for dry, aged floors



Curtis two-lamp Alzak aluminum troffers were chosen for a lifetime of economy and glare-free, Eye-Comfort lighting in this modern low-ceilinged Flint Lake, Indiana school. The average maintained intensity of 45 footcandles of quality low-brightness illumination with a Visual Comfort Index of 97, makes seeing tasks easier and more comfortable.

Curtis Eye-Comfort lighting is achieved by use of the exclusive Curtis Alzak processed parabolic reflectors, Alzak processed after forming in the new Curtis Alzak production facilities at Chicago.

Among other benefits of Curtis Alzak aluminum troffers enjoyed by this modern school is low maintenance of operation and the resultant high economy. Here there are no hangers, fixture tops or reflectors to be cleaned, and the hard-as-diamond Alzak reflector finish requires only occasional dusting to restore its original high reflectance.

This quality low-brightness lighting and high economy is a characteristic of all Curtis Alzak units. There is a design for every interior need—school, commercial or industrial. For information on any lighting problem, consult the Curtis lighting specialist near you, or write, Dept. G3-FS.

Flint Lake School, Valparaiso, Ind.

ARCHITECT: Boyd E. Phelps, Inc., Michigan City, Ind.
Lighting designed by—David Ross

ELECTRICAL CONTRACTOR: Van Ness Electric Co.

CURTIS LIGHTING, INC.

6135 WEST 65TH STREET
CHICAGO 38, ILLINOIS

PAINTS AND FINISHES—INTERIOR AND EXTERIOR: 3

Interior: Wood Trim

Interior wood trim can be painted with enamel or with a flat finish to be consistent with flat finishes on interior walls. Of course, semi-gloss and full-gloss finishes are still applied too. Pigmented paints for interior wood surfaces are generally formulated with quick-drying vehicles, such as varnish, alkyd resin or a mixture of varnish with linseed oil. New wood must have a prime coat before application of the finish coat. Three coats of pigmented paint are usually applied. However, two coats are often satisfactory. For estimating purposes, a coverage of approximately 400 to 500 sq ft per gal may be assumed. If treated with reasonable care, a good paint job on interior woodwork will last many years before repainting is required.

Alkyd flat enamel	Excellent leveling properties Excellent washability Excellent mar resistance Good durability Overnight drying
Acrylic resin emulsion paint	Excellent washability within 1 hr after application Very good durability Very good mar resistance Good leveling properties Fast drying
Oil flat paint	Good leveling properties Fair washability Fair durability Fair mar resistance Slow drying
Latex paint	Excellent washability, contingent upon chemical curing, which takes from 30 to 90 days Good durability after curing Good leveling properties Good mar resistance
Alkyd semi-gloss paint	Very good washability
Alkyd or oil-base full-gloss paint	Good hiding power
Varnish	Good, clear finish for trim
Stain	Frequently used in clear finish systems to intensify or modify the original color of the wood

Metal Surfaces

Before being finished with the desired type of protective and/or decorative coating, a metal surface must be properly cleaned and primed with a rust-inhibiting primer. The surface should be free of rust, scale, grease, oil, wax or other contaminant that will impair the adhesion of the primer. The function of the primer is to seal the surface to which it is applied, to inhibit corrosion of the metal surface, and to ensure good adhesion of the finish coat. Most of the finish paints described before for masonry and wood surfaces provide satisfactory finishes. Of the emulsion paints, the acrylics are best for primed hot radiator surfaces. In addition, a whole series of new paints has been developed, incorporating the resins of vinyl, epon, neoprene, phenolic, furane, etc., which resist acids and alkalies. This quality makes them particularly valuable for chemical plants, breweries, dairies, etc. Primers useful for metal surfaces are listed below, classified by pigment and vehicle, both of which are important. Regardless of which primer is used, the primed surface should be finish-coated in a reasonable length of time after application, because the primers are not intended to be weather-resistant.

Red lead pigment	Excellent for ferrous metalwork which cannot be cleaned of all rust Best for exterior use Most commonly used with oil vehicle
Zinc chromate pigment	Excellent for ferrous metalwork which is clean, bright, rust-free Most commonly used with alkyd resin vehicle
Zinc dust pigment	Good for all metal surfaces Excellent rust-inhibitive action Good for galvanized surfaces
Iron oxide pigment	Most commonly used to provide thick coating over thin zinc chromate coating Sometimes combined with zinc chromate to provide color Little rust-inhibitive action
Alkyd vehicle	Most commonly used with zinc pigments, but can be used with others Quick drying
Oil-base vehicle	Oil (about 25%) often added to other primers to get under old rust and so hold paint film better Slow drying
Phenolic vehicle	Good for metals which will be exposed to dampness or water immersion Quick drying
Vinyl vehicle (wash coat)	Excellent for non-ferrous metals, such as aluminum, copper, brass, etc. A thin, tightly adherent film is obtained over which any type paint can be applied Most commonly used with zinc chromate pigment Quick drying

Miami Beach's new $15,000,000 Fontainebleau Hotel depends on Chase Copper Tube and Fittings for entire plumbing and air conditioning systems!

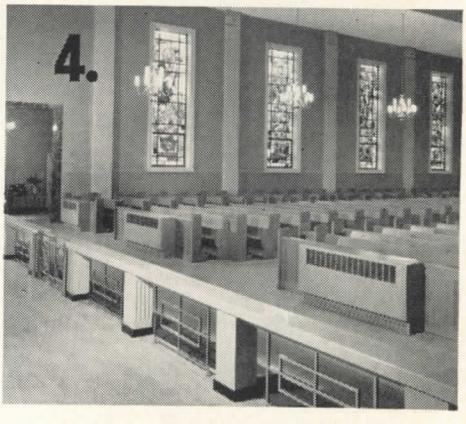
Luxury and practical utility are perfectly combined at the Fontainebleau! Everything is top quality—so Chase Copper Tube and Fittings were chosen for the plumbing and air conditioning systems!

Using Chase Copper Tube and Fittings pays off in top-performing, longer-lasting systems that add extra value to any home or building. Such systems, too, cost *little or no more* than ones of ordinary rustable materials! That's because Chase copper tube and fittings can be installed faster—substantially reducing installation costs! Specify Chase copper tube and fittings on your next job!

Here's how the mechanical contractors sum up their reasons for using Chase materials:

"We have been using Chase Brass and Copper for many years. Chase has always maintained the highest quality in their industry. Their quality along with their excellent service to customers is a combination that makes Chase superior."

—MARKOWITZ BROS., INC., MIAMI, FLA.



Name your heating job...
Chances are there's a smartly-styled Modine Cabinet Unit to do it better...at less cost

FOR new construction or remodeling, Modine Cabinet Units give you quick, positive and quiet distribution of heated air. With modest-priced accessories, they also provide introduction, filtering and distribution of outside air. Yes, here's the most practical way to heat or ventilate large public rooms or entryways. Some units heat with hot water, cool with chilled water. Others for steam or hot water heating only.

Choose from five models—120 to 640 Edr. Get all the facts and you'll never install unsightly radiators again. See the Modine representative listed in your classified phone book or write for Bulletin 552—Modine Mfg. Co., 1510 DeKoven Ave., Racine, Wisconsin.

ABOUT THE PHOTOS **1.** Type BT unit with plenum base installed in school entryway. Duct work concealed in wall discharges heated air through wall grill. **2.** Type BF unit with plenum base recessed in masonry wall of supermarket. **3.** Type BT unit, ceiling-mounted in lumber company office and display room. **4.** Type BF unit with plenum base installed in church.

Modine
CABINET UNITS

C-1261

M.I.T. AUDITORIUM

(Continued from page 138)

white oak is applied as a finish to both the inside and the outside of the auditorium proper, the expensive effect of these vast areas of vertically hung boards is not in fact borne out by the cost, for realising the potential expense, the architect specified ordinary 2¼ in. by ¾ in. white oak floor boards which were tongued and grooved in the normal manner with the exception that the top edge was milled, giving a pronounced shadow between the boards. The boards are hung as they would be set on a floor — in random sizes — so that the whole wall lining system was acquired for little more than the price of a normal floor.

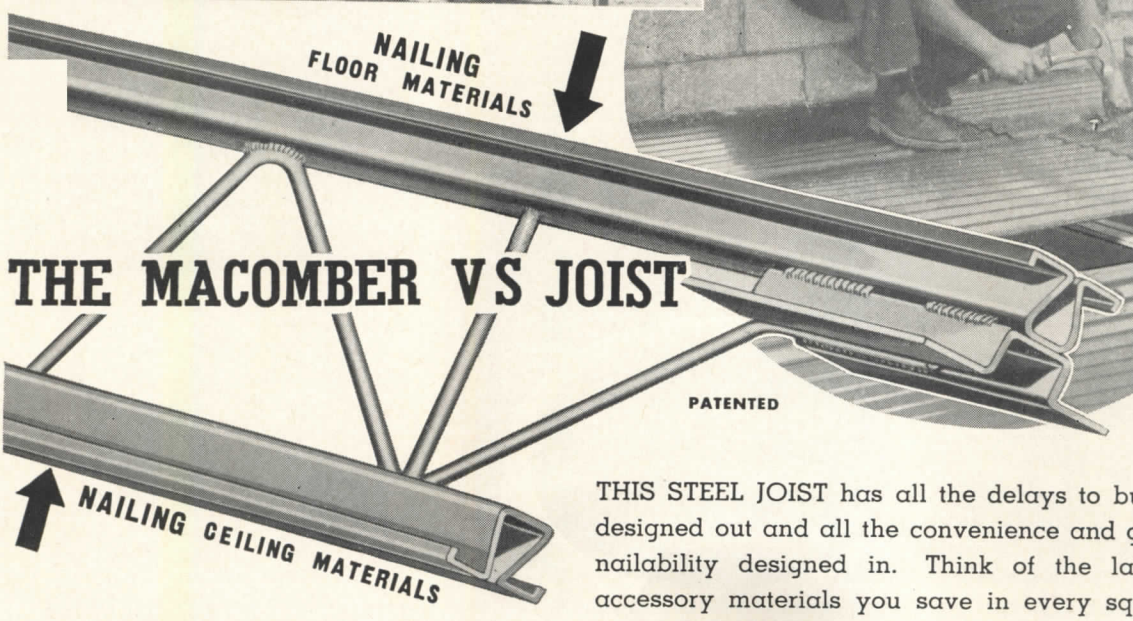
Indeed the detailing of the entire structure is worthy of close study and it is the more interesting because it contrasts sharply with the prevailing poor standard of detailed design and workmanship in contemporary work in the U. S. A. The dome, for instance, is an independent form and has no contact with the structure of the auditorium. The necessary light and sound tightness has been achieved by most ingenious detailing and the junction between the two forms effected by flexible rubber separators. Similarly the small auditorium, located directly beneath the main room, required special attention since it had to be acoustically independent of the large assembly. Its ceiling is hung from the floor above via rubber-in-shear mounts and further insulated by a completely independent plaster ceiling sandwiched in the 3-ft gap between the floor and ceiling of the two rooms. The fact that no facilities for drama were required by the programme did much to determine the shape of the main structure, for the necessity of a stage-house would naturally have wrecked the present conception, but the theatre below the assembly is well equipped to handle small productions, and ample stage and dressing-room facilities appear to have been provided.

Finally I wish to allude to the structural problems which have confronted the architect and engineers during construction, and on which the main burden of ill-informed criticism has rested. This article is not the place to discuss in detail the technical problems which arose as work proceeded, in spite of the most careful and expert analysis by Amman and Whitney, the engineers. I do however wish to place on record that not only has the structural analysis been thoroughly justified in practice but that I have found the architect very willing to discuss his problems in most frank terms. Amendments to the design have been of a very minor nature and were introduced as a result of contingencies which could not have been foreseen in the design stage of such a revolutionary structure, and they in no way detract from the appearance of the building.

M.I.T. is to be congratulated on its farsighted policy of erecting buildings upon the campus which reflect a relentlessly enquiring, progressive approach to knowledge. This is particularly refreshing, for it contrasts vividly with the sterile eclecticism countenanced by many of the foremost schools in their recent building programmes. The completed project, which will comprise the auditorium, a small chapel of equally controversial design (now in the first stage of construction), a large open-air skating rink and a vast landscaped area, will be a notable addition to this great school; one that will take its place fittingly with the recently completed Aalto dormitory and the Anderson and Beckwith biology laboratories.

lo Cost Factor Is More Important To A Spec. Writer Than The Answer To This All Important Joist Question

Is It *Nailable*?



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Made in sizes for all loadings – 4 to 44 ft.

THIS STEEL JOIST has all the delays to building progress designed out and all the convenience and greater speed of nailability designed in. Think of the labor hours and accessory materials you save in every square foot when you specify Macomber Nailable Steel Joists. Our Steel Joist Catalog shows four types to meet specific needs. Send for it.

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NAILABLE STEEL JOISTS
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BOWSTRING ROOF TRUSSES
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METAL DECK
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•
STRUCTURALS

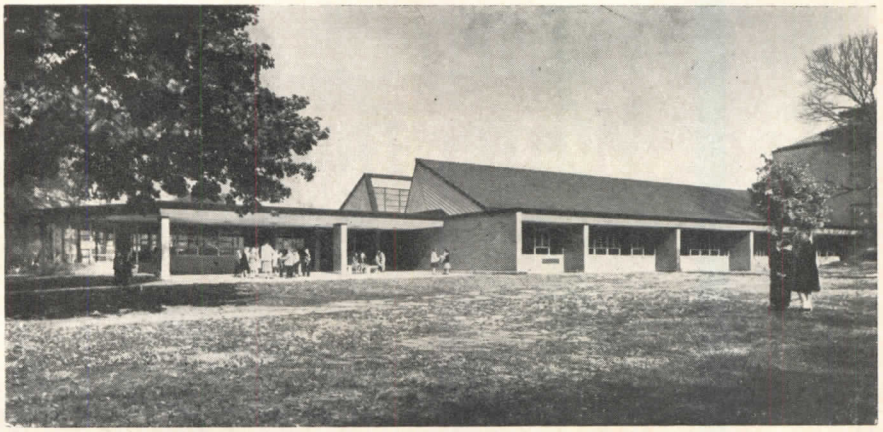
BUILDINGS IN THE NEWS

(Continued from page 11)

1955 A.A.S.A. Winners: Honorable Mentions

St. Louis

Equal awards; numbers identify only



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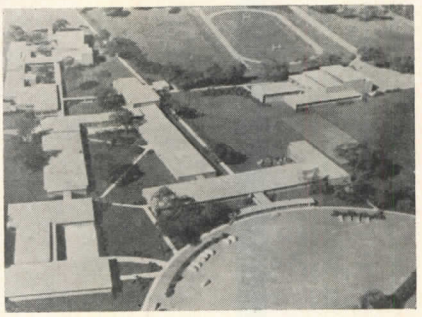

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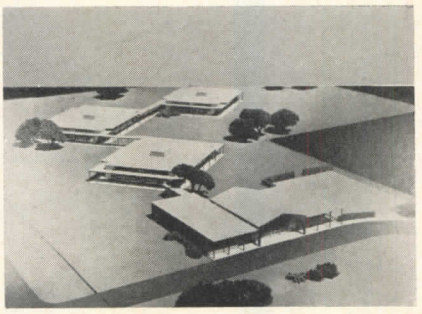


3

1. Washington (Elementary) School, Evanston, Ill.; Perkins & Will. 2. Kirkwood High School, Kirkwood, Mo.; William B. Ittner Inc. 3. Dunklin County Elementary School, Campbell, Mo.; R. Paul Buchmueller

(for the American Institute of Architects) Charles Colbert of New Orleans; John McLeod of Washington, D. C.; and Max Flatow of Albuquerque, N. M.

CLEVELAND — (for the National Council on Schoolhouse Construction) Wilfred F. Clapp, assistant superintendent, State Department of Public Instruction, Lansing, Mich.; John H. Herrick, head, School Plant Division, Ohio State University, Columbus, Ohio; R. H. Wilson, superintendent of schools, Alpena, Mich.; (for the American Institute of Architects) Alonzo J. Harriman of Auburn, Me.; Carl W. Clark of Syracuse, N. Y.; and Lauren V. Pohlman of Elizabeth, N. J.

(Continued on page 296)

BUILDINGS IN THE NEWS

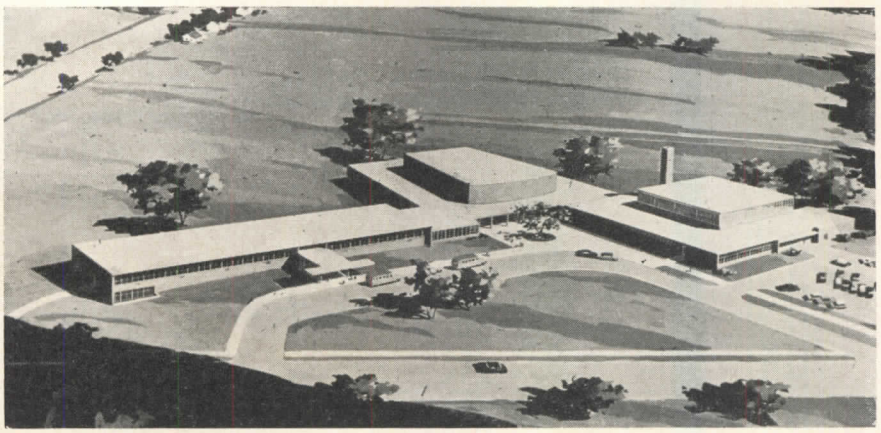
(Continued from page 292)

1955 A.A.S.A. Winners:

Honorable Mentions

Cleveland

Equal awards; numbers identify only



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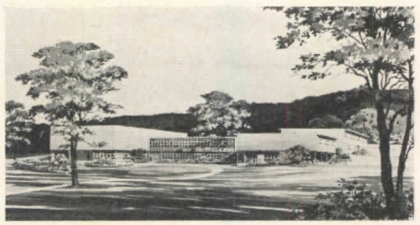

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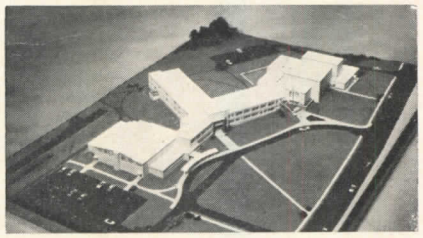


4

1. Pine Grove High School, Pine Grove, Pa.; Muhlenberg Brothers. 2. Patterson Elementary School, Tecumseh, Mich.; Warren Holmes Company. 3. Frederick Carder Elementary School, Corning, N. Y.; Sargent, Webster, Crenshaw & Folley. 4. Millburn Senior High School, Millburn, N. J.; Epple & Seaman

DENVER — (for the National Council on Schoolhouse Construction) Dr. Charles W. Bursch of the Department of Education, Sacramento, Cal.; Floyd G. Parker, director, School Building Service, Department of Public Instruction, Lincoln, Neb.; and Dr. Arnold C. Tjomsland, consultant in community planning, Department of Public Instruction, Olympia, Wash.; (for the American Institute of Architects) Richard L. Aeck, Atlanta; Stayton Nunn, Houston; and Eberle M. Smith, Detroit.

(More awards on page 298)

for problem floors

When you select flooring materials for unusual or severe conditions, look into the unusual combinations of properties offered by the five types of resilient tiles made by Kentile, Inc. In practically every case, one of them will be just right for the job, whether conditions call for serviceability under heavy foot or industrial traffic, ease of maintenance, or resisting alcohol, acids, alkalis, oils and greases, chemicals and foodstuffs. All of them help to create an impressive decorative composition. Uniform thickness, accuracy of cutting, trueness and clarity of color, surface smoothness and built-in durability—all of these qualities make this the world's most popular line of resilient tile floorings.

KENTILE, INC.

America's largest manufacturer of resilient floor tiles

KENTILE: Asphalt Tile ... Carnival ... Corktone • KENCORK: Cork Tile for Floors and Walls • KENRUBBER: Rubber Tile • KENFLEX: Vinyl Asbestos Tile ... Carnival • ROYAL KENFLOR Vinyl Tile ... CUSHION-BACK KENFLOR Vinyl Tile ... also available by the yard • SPECIAL KENTILE: Grease-proof Asphalt Tile • THEMETILE, KENSERTS: Decorative Inserts • KENCOVE: Vinyl Wall Base • KENBASE: Wall Base

BUILDINGS IN THE NEWS

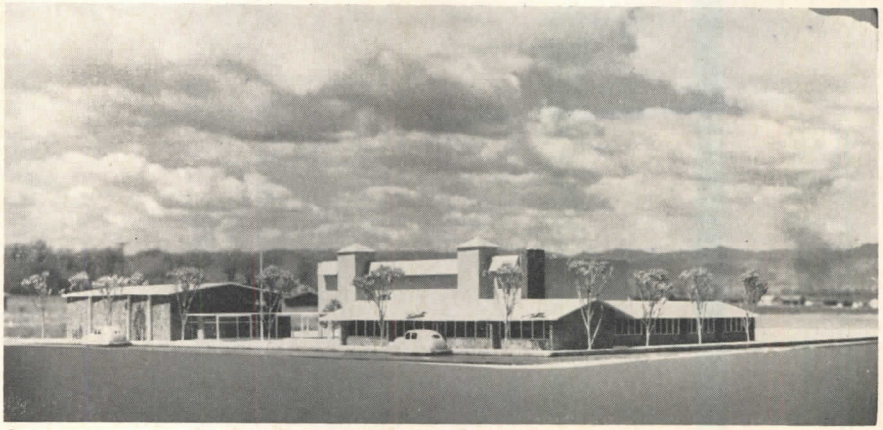
(Continued from page 296)

1955 A.A.S.A. Winners:

Honorable Mentions

Denver

Equal awards; numbers identify only



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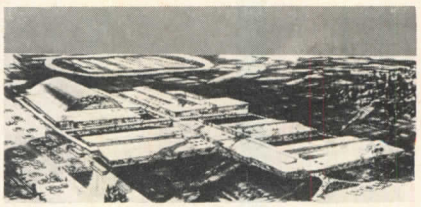

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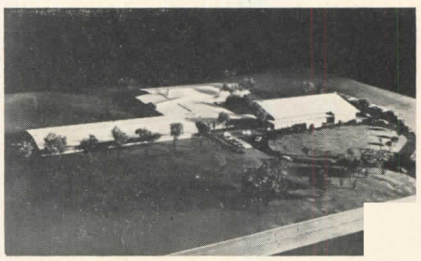

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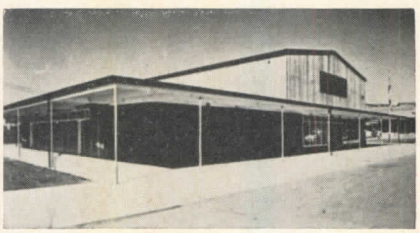

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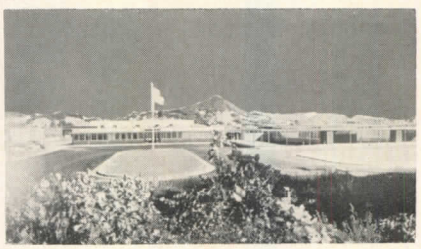

5

1. Akron Elementary School, Akron, Colo.; Pollock & Sink. 2. North Thurston High School, Thurston, Wash.; William Arild Johnson and Harry E. Botesch. 3. Ocosta Combination Grade and High School, Grays Harbor, Wash.; William Arild Johnson and Harry E. Botesch. 4. Tierra Linda Intermediate School, San Carlos, Cal.; John Lyon Reid. 5. Healdsburg High School, Healdsburg, Cal.; Falk & Booth