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ARCHITECT

APRIL

1969

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THE TEXAS ARCHITECT

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TABLE OF CONTENTS

Humble Service Center	p. 3
Exhibit of Outstanding Schools	p. 7
North Bell Elementary School, Humble ISD	p. 8
Gary L. Herod Elementary School, Houston ISD ..	p. 10
Brandenburg Elementary School, Irving ISD	p. 12
Ethel C. Goodman Elementary School, Arlington ISD	p. 18
Sherwood Elementary School, Spring Branch ISD	p. 14
Memorial Elementary School, Plano ISD	p. 16
Sylvester B. Boone Elementary School, Alief ISD	p. 18
Alief Elementary School, Alief ISD	p. 19
Central Elementary School, Carrollton ISD	p. 20
Robert Louis Stevenson Elementary School, Houston ISD	p. 22
Callier Hearing & Speech Center	p. 23
Hong Kong International School and Lutheran Church	p. 24
Texas at the Crossroads—Governor's Committee on Public School Education	p. 27
Contractor Attitudes on School Construction	p. 33

ADVERTISING

Electric Utility Companies of Texas	p. 28
Texas Caterpillar Dealers	p. 29
Josam Manufacturing Company	p. 30
Southwell Company	p. 30
Thiokol Texas, Inc.	p. 31
Trinity White—General Portland Cement Company	p. 36
Monarch Tile Manufacturing Company	p. 37
Texas Bureau For Lathing & Plastering	p. 39



Cover Photo: Bold forms and exciting use of materials highlight the Humble Service Center, a 1968 Texas Architecture Award winner.

TEXAS ARCHITECTURE 1968

McKITTRICK, DRENNAN & RICHARDSON, ARCHITECTS

Robert O. Biering, Houston Lighting and Power Company, Associate Architect

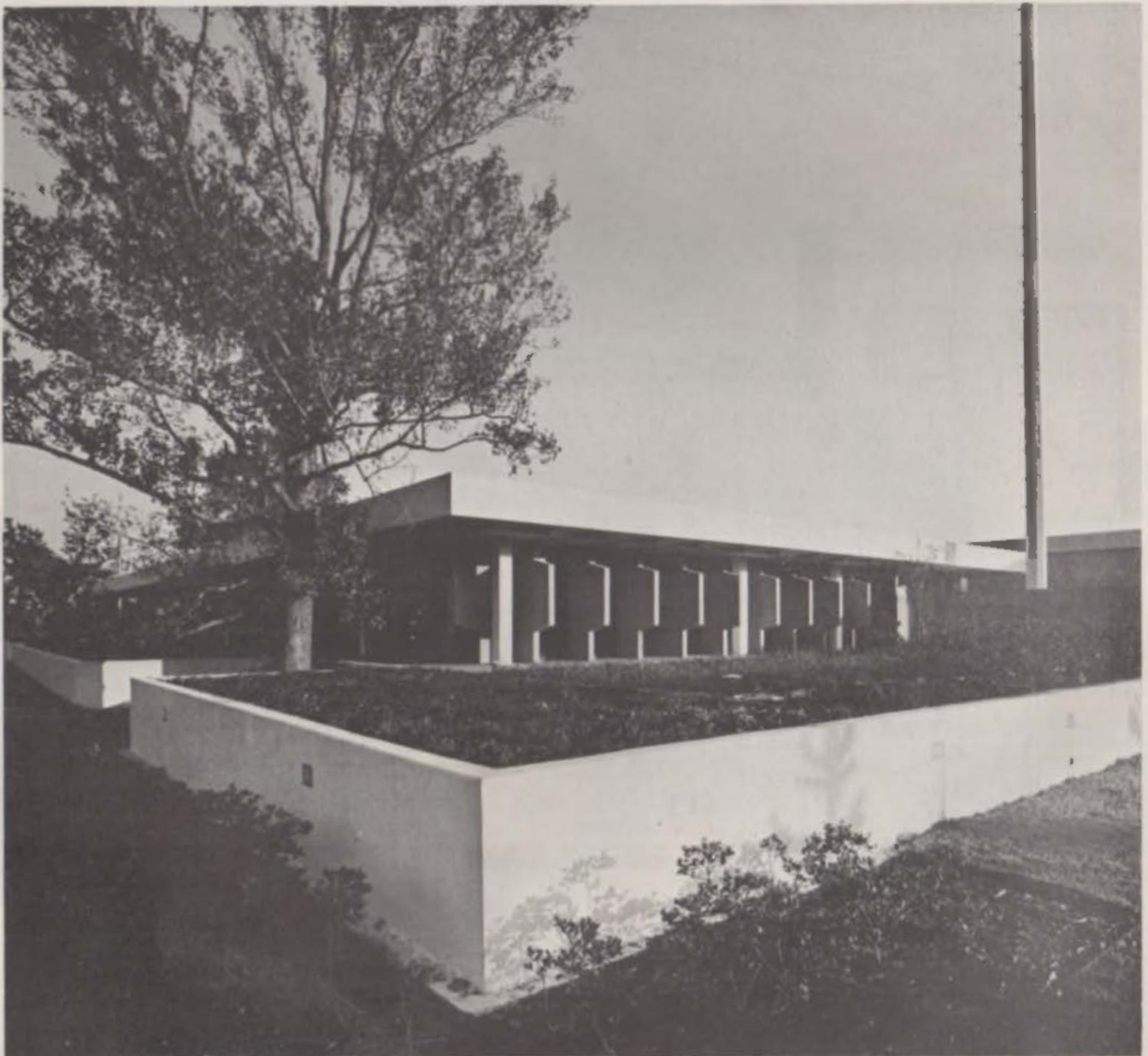
HUMBLE SERVICE CENTER

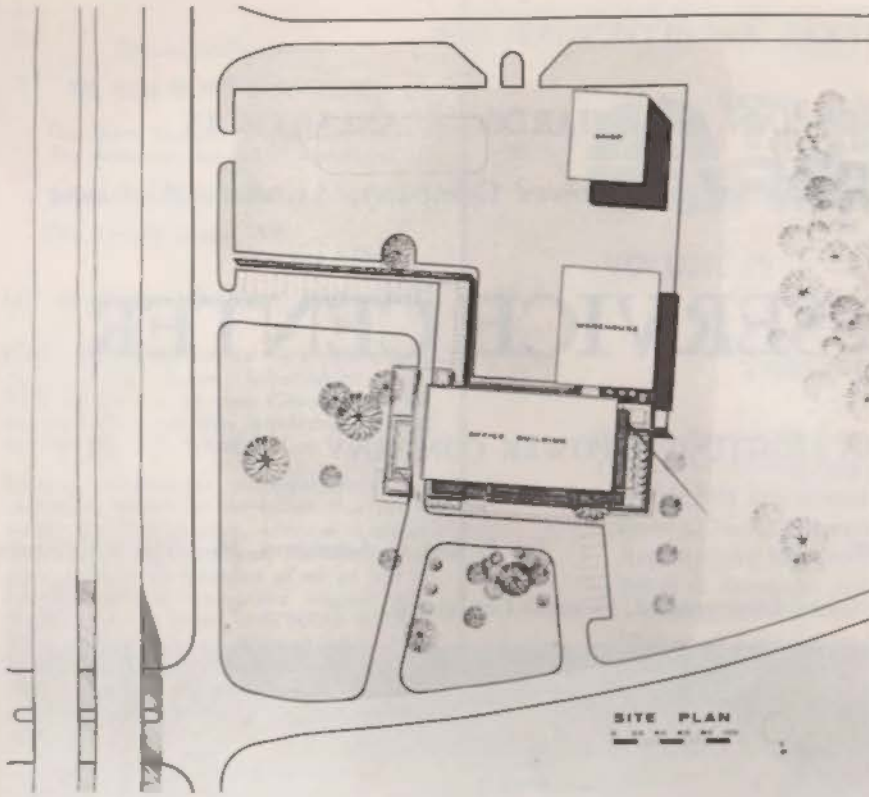
HOUSTON LIGHTING & POWER COMPANY

William P. Moore—Structural Engineer

Joe E. Lee & Associates, Mechanical Engineer

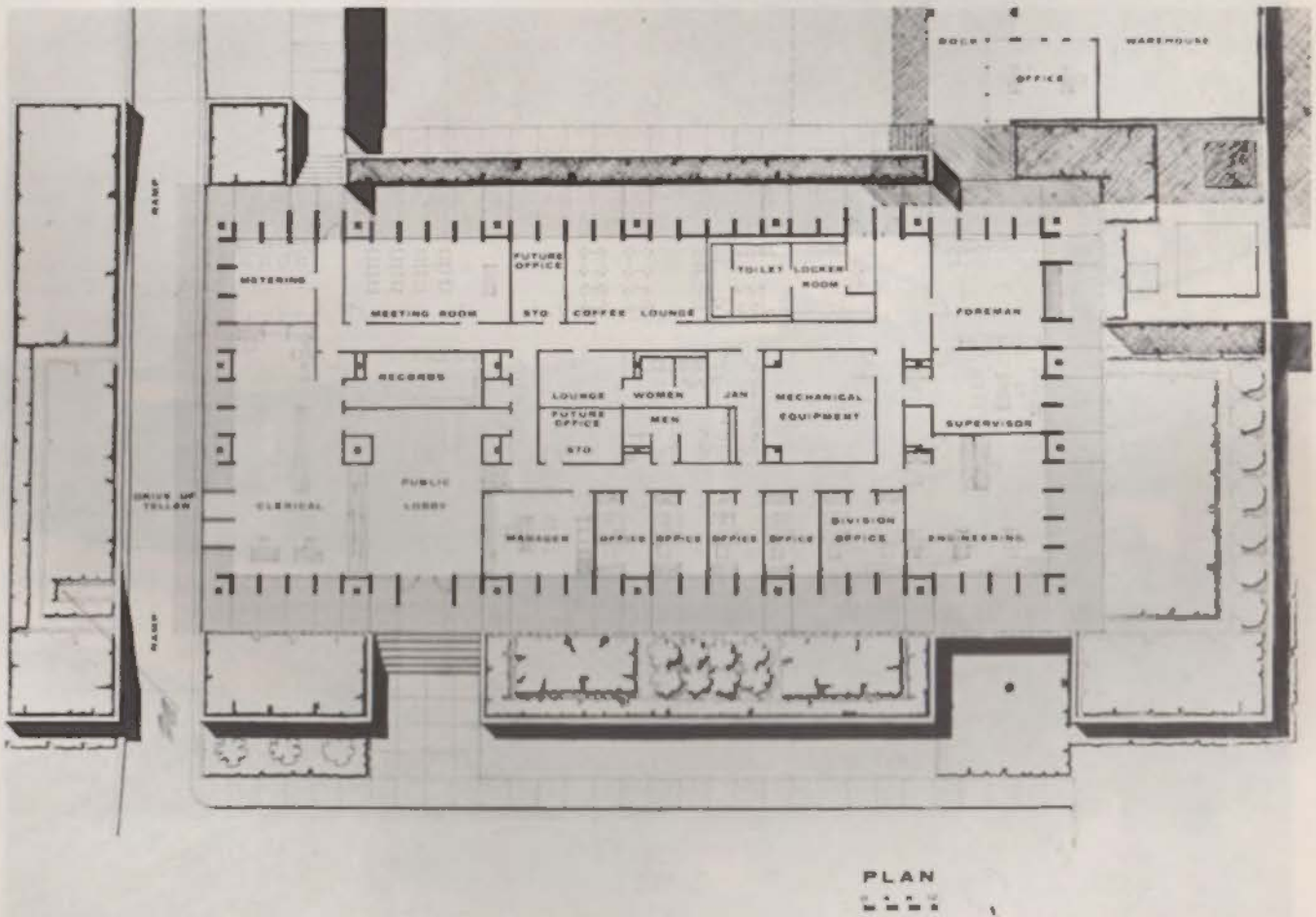
Spaw-Glass, Incorporated, General Contractor





THE PROBLEM: Design a service center for an electric utility company to provide complete support services in its assigned area. Operations involving the public will include sales, metering, billing, record keeping, with provisions for a convenient place to pay bills and have questions answered about charges and services. Office space for such supporting personnel such as engineers, foremen and supervisors will be provided. Provide warehousing space with dock for storage of materials and equipment as well as locker room facilities for mobile maintenance crews. Facilities for on-site servicing, maintenance, and repair of all vehicles will be provided.

A generous paved yard area will also be necessary for maneuvering bulky equipment and storage of unusually large items such as utility poles. Planning is to consider the possibility of future changes to the office space as well as the desirability of easy access to utilities. The site is to be landscaped and all unsightly operations and storage screened from view.

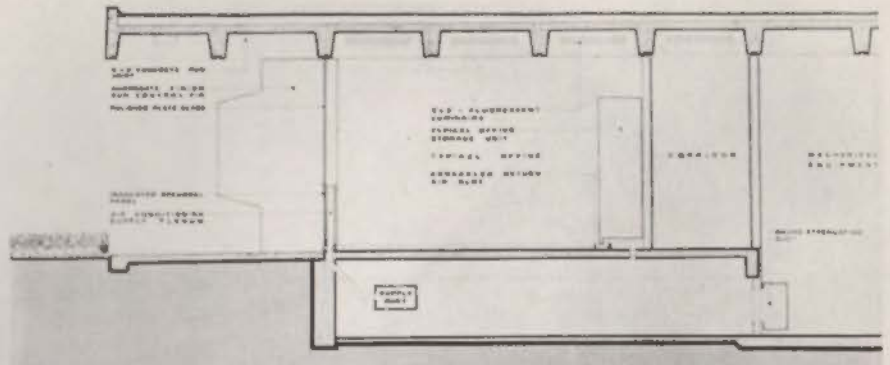




THE SOLUTION: The project was first zoned into public and internal areas. For reasons of appearance, safety, and security internal areas were screened by walls or landscaping. Within the public area were grouped all personnel dealing directly with the public as well other related office personnel. The internal area included warehousing, equipment maintenance and yard areas. To accommodate traffic between these two general areas, the office space floor level was raised to the level of the warehouse. This made possible the creation of a crawl space under the entire office building which was utilized for air conditioning supply ducts, a return air plenum and an access-way to reach utilities, thereby facilitating service and future remodeling. With most services under floor the structural waffle roof slab was exposed as the finished ceiling and three foot square luminaires were placed in each of the waffle's five foot square coffers. This five foot planning module is used throughout the project. The elevation of the office building is expressed on the exterior by means of a landscaped podium. A sun-stimulation device was used to design the sun control fins which eliminate the necessity of drapes or blinds, thereby permitting unobstructed view of a handsome site.

MATERIALS AND CONSTRUCTION:—The office building has concrete floor slabs, concrete columns and a concrete roof system. The window wall system is gray glass and spandrel panels flush glazed into aggregate surfaced fins. Interior partitions are gypsum board on metal studs. Flooring is terrazzo or resilient tile. Wall finishes are wool suede fabric, ceramic tile or paint. Ceilings are exposed structure or suspended gypsum board in toilet areas. Lighting is both incandescent and fluorescent. The mechanical system is an electric drive direct expansion cooling system with multiple zones. A separate multi-contactor electric resistance heating system serves each zone.

The warehouse and shop have a structural system composed of concrete floor slabs, concrete columns, and steel beams, purlins and deck. Exterior walls are aggregate surfaced insulated panels. Interior walls are concrete block or gypsum board on metal studs. Floors are resilient tile or concrete. Lighting is both mercury vapor and fluorescent. Electric radiant heaters and roof fans provide heating and ventilation. ■



SECTION



CROSS SECTION



photos by john bintliff, Houston

NORTH DALLAS COUNTY SCHOOL

ARCHITECTS

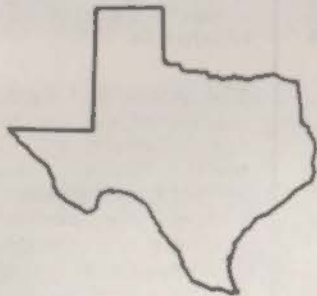


EXHIBIT OF OUTSTANDING SCHOOLS

SELECTED FOR EXHIBIT AT 1968
TASB-TASA STATE CONVENTION BY
Texas Society of Architects

Texas Association Of School Boards
Texas Association Of School Administrators

RECOGNIZED FOR EXCELLENCE IN
PLANNING, DESIGN & CONSTRUCTION



This is the era of education: During the 1967-68 school year almost 30 per cent of the nation's population was enrolled in schools and colleges. The little red schoolhouse has come a long way.

Within the past decade virtually every community in this country has experienced the need to expand existing educational facilities or to create new structures—some of which already have become obsolete.

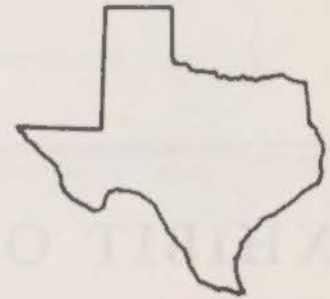
In the years immediately ahead, interest in education will become increasingly intense:

By 1975, when the nation's population is expected to reach 227,874,000, school enrollment is expected to reach 63.3 million.

NORTH BELT ELEMENTARY SCHOOL

HUMBLE ISD

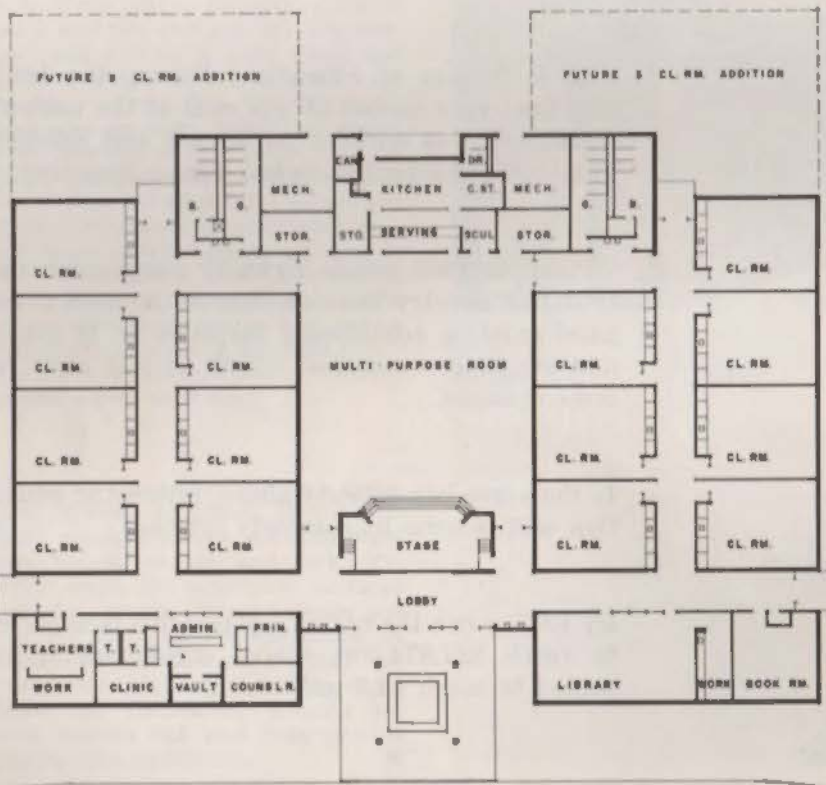
JOINER, COBURN AND KING, ARCHITECTS



The Client required a new air-conditioned elementary school to serve an expanding suburban residential area. Facilities to be designed for 640 student capacity, including 14 classrooms initially with design provision for two 3-classroom additions. The multi-purpose room and supporting toilets, lobby and storage areas should be available for community use while maintaining security of balance of school areas. Having a new air-conditioned windowless type high school in successful operation for two years, the Client requested that the proposed school be designed to achieve similar efficiencies.

The simple and compact plan working around the central multi-purpose area answers the Client's requirements. Masonry construction with glazed, epoxy painted and face brick surfaces ease maintenance. Massing is simple and accented by brickwork detailing. Color, texture and detailing of spaces together with the short distances, visual and physical, through corridors to outdoors compensate for windowless design.

A well designed facility offering excellent teaching and working spaces, control, community service and economy of maintenance and construction is the result.

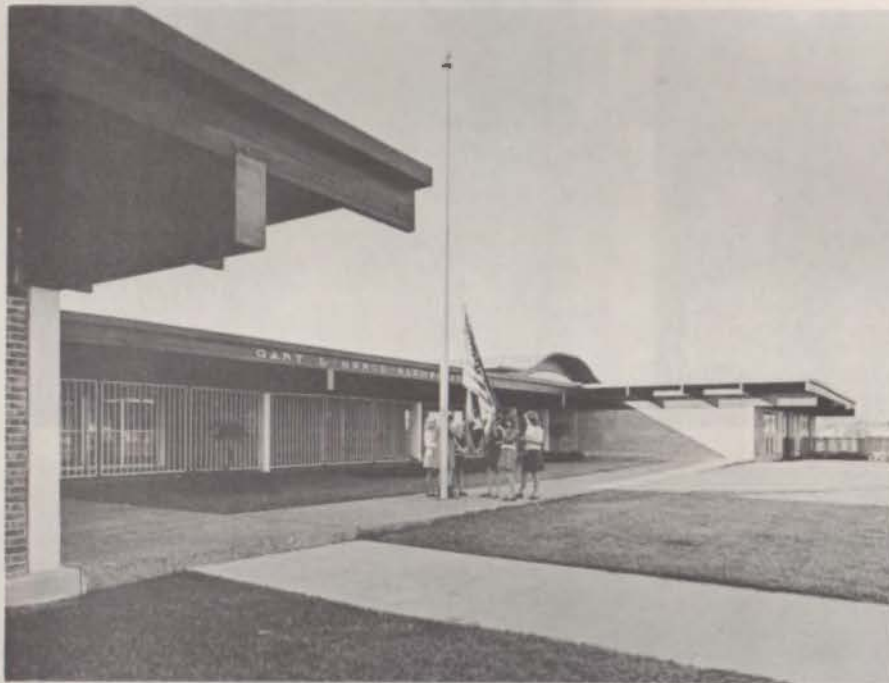




GARY L. HEROD ELEMENTARY SCHOOL

HOUSTON ISD

McKITTRICK, DRENNAN, RICHARDSON & WALLACE
ARCHITECTS



The design of Gary L. Herod Elementary School is a deliberate attempt to establish a scale for "little people." The structural system of the 30 classroom school consists of concrete columns supporting laminated wood beams, purlins, and a wood roof deck, with the primary beams only 7 feet above the floor. The natural finish wood roof system, combined with accents of bright orange and ochre and a warm, textured brick help to create an atmosphere in which children will be at ease socially and stimulated educationally.

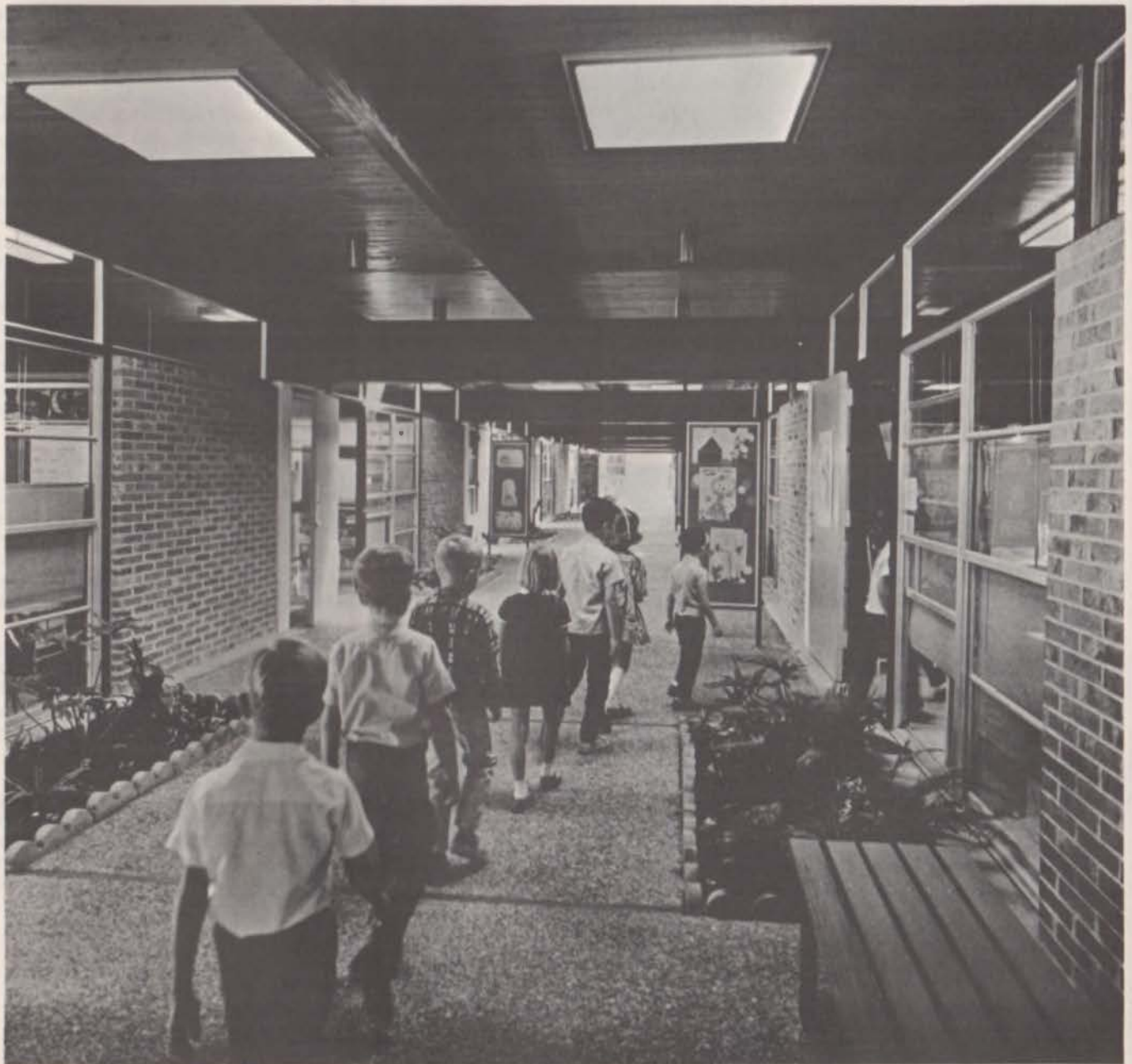
A skylighted, landscaped mall 16 feet wide serves each double loaded wing. Aggregate finish concrete floors, benches, display panels and planting give the malls an almost outdoor character, which in turn transforms each classroom into a light, open space with "outdoors" on two sides.

A central core contains administrative facilities, the library/resource center, and six team-teaching spaces which can be combined by opening operable walls.

A landscaped courtyard separates this core from the wing which contains the kitchen, mechanical room, cafeteria-auditorium, and two kindergarten rooms. The "cafetorium", which has a small stage, is spanned by "bent" laminated wood beams which create a greater ceiling height in the center of the space. Dark terrazzo floors, brick walls, and orange vinyl end walls help to maintain a warm, friendly character in this relatively large room which might otherwise seem impersonal.



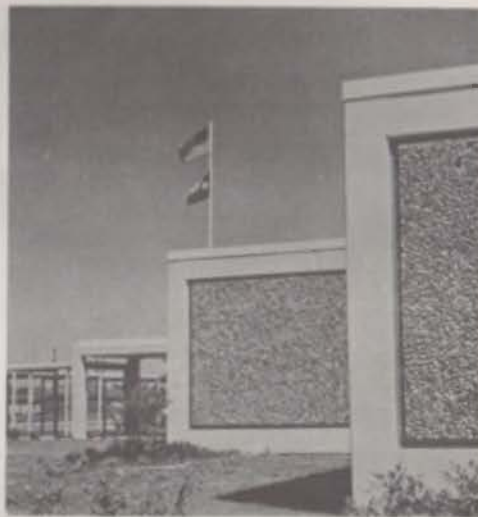
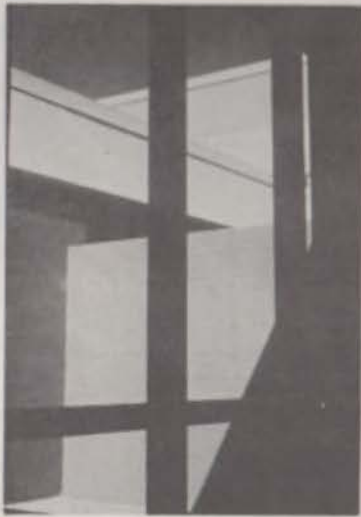
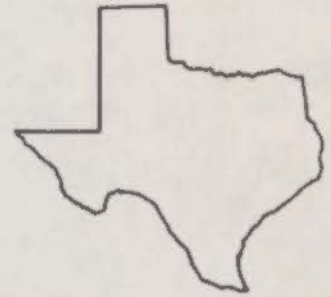
photos by john bintliff



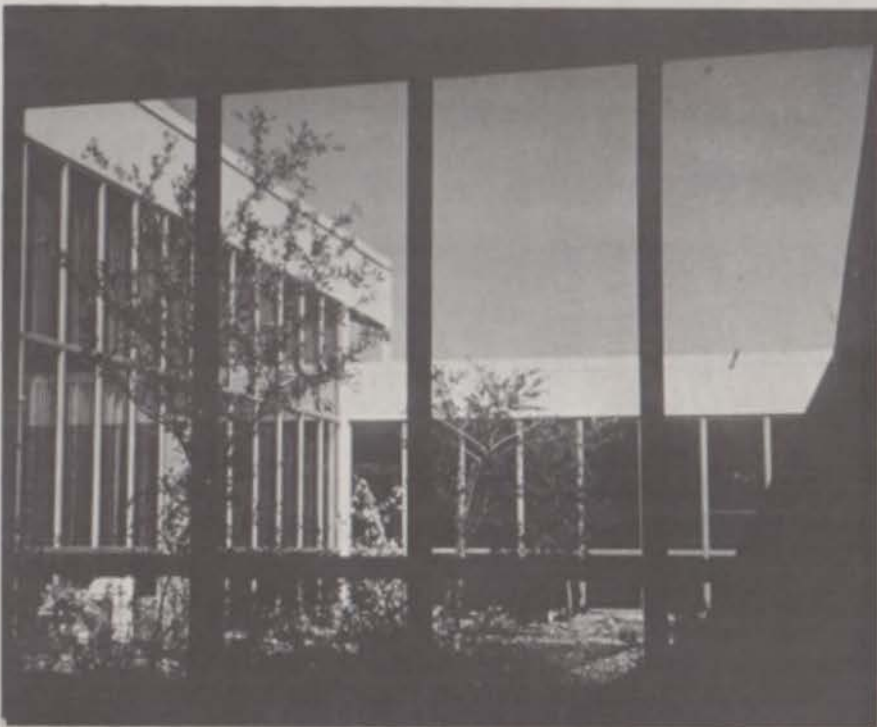
BRANDENBURG ELEMENTARY SCHOOL

IRVING ISD

GROGAN & SCOGGINS, ARCHITECTS



An air conditioned elementary school for 610 students, Master Plan for 1200. While the building is apparently "windowless" each classroom has a glass wall opening to it's own, individual courtyard. This courtyard is used as a science and nature laboratory where each student may plant and water "his" plant that has his name attached with a string. Each classroom has the responsibility for maintenance of it's courtyard with classroom competitions for the best. Tadpoles, earthworms and toad frogs (brought by the students) inhabit these areas. Each courtyard is furnished with one or two senisa plants, commonly known as "Barometer" plants because of their habit of blossoming small purple flowers some 48 hours prior to rain.



Each classroom has a teacher-center where the teacher may, while seated at the desk, operate the thermostat, the intercom controls, the light switch and a convenience outlet. Projectors and other visual aids may be used without leaving the teachers desk.

All classrooms are equipped with a chalk-tackboard that pivots from the center of one wall. When extended it changes the room from one big space to one large space and two smaller spaces for project work centers.

Seven exits from the classroom section give easy access to the site. The compact plan provides short walking distance within the building. The cafetorium may be used at any time by the public.

Ethel L. Goodman Elementary School

ARLINGTON ISD

LAWRENCE D. WHITE ASSOCIATES, ARCHITECTS



The essential elements considered in the design of this compact south-western elementary school was a combination of requirements derived by local school board and Architects.

Basic considerations were flexibility of plan, most efficient circulation, and the possibility of eventual expansion.

Program requirements dictated the need for twenty classroom spaces with one-half maintaining flexibility through the use of folding partitions. These partitions would allow room sizes to be doubled to accommodate the changing of size of classes and team teaching methods. Although the school was air conditioned, each class is designed to have an outside exposure by the use of an interior courtyard. This courtyard also becomes an excellent space for outdoor classwork and study. Flexibility was again considered in the design of the multi-purpose cafetorium. The combination of auditorium and cafeteria functions allows for maximum utilization of space and volume.

With the basic flexible arrangements decided upon, the next element to be considered was that of circulation. The most advantageous circulation routes of students and teachers to and from the administrative areas, classrooms, library, cafetorium, playgrounds and toilet areas was achieved by the grouping of related functions. This grouping, and the location of lockers in classrooms, minimized the congestion and established the most functional arrangements of space.

Photographs by Don Barnett



SHERWOOD ELEMENTARY SCHOOL

SPRING BRANCH ISD

WINTERS & WILPITZ, ARCHITECTS



Consideration should be given to the construction method used so that future additions may be added with minimum expense and inconvenience. This requirement should prevail for mechanical as well as architectural additions, keeping in mind that economy may be gained in scheduling as well as quantity. Facilities should include 16 classrooms plus 2 kindergartens. In order to keep pace with the rapid growth of the District, an alternate bid of 8 classrooms shall be included in the Contract Documents. Additional facilities should include a cafetorium and kitchen, administrative offices, teachers' work rooms and resources center. With future enrollment increases in mind, these facilities would remain constant, having been originally designed to meet the future needs of 30 classrooms plus 2 kindergartens.

Because of the educators' responsibilities in creating their own programs, work areas should also be set aside to allow the teachers space for individual as well as team planning.

Audio-visual electronic aids that have so assisted the learning processes may be used to their maximum by the location of a central resources center, complementing the individual teachers' program. The importance of this center will be stressed by the direct relationship to the classrooms. The classrooms should function independently, but have the advantage of working in enlarged or clustered groups.

Photos by Paul Peters

MEMORIAL ELEMENTARY SCHOOL

PLANO ISD

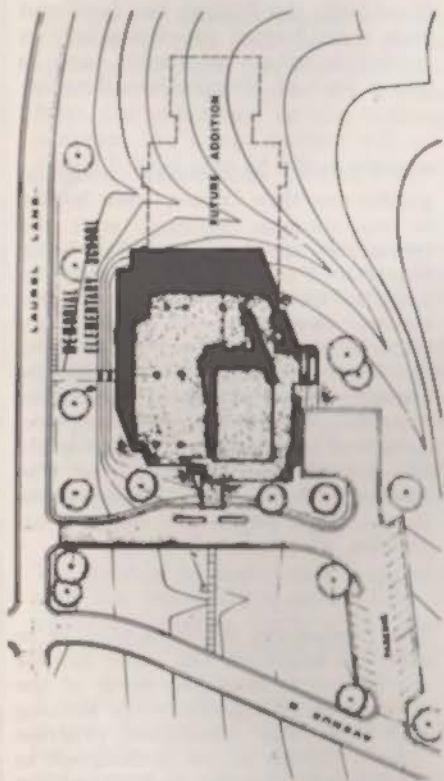
JACK CORGAN AND ASSOCIATES, ARCHITECTS



The educational program developed by Dr. H. Wayne Hendrick, Superintendent of Schools and his Staff required a structure which would implement the educational program planned for the school. The basic requirements were:

- 1) To develop the best plan possible for areas of study for: a) strong academic; b) art education; c) health education-physical development; d) choral music; e) instrumental music for grades five and six; f) and special education projects.
- 2) The school to be built in two stages, with the first stage to include Grade 1—150 pupils, Grade 2—130 pupils, and Grade 3—120 pupils. The schematic plans must be developed for the second and final phase also. This must be taken into consideration in site planning for total project.
- 3) The arrangement should allow for flexibility in the grouping of students within a given grade and for team teaching.
- 4) The building must be economical in initial cost and be reasonably free from maintenance and aesthetically pleasing.

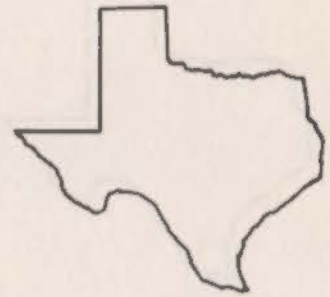
The clean contemporary lines of the building with dark brown brick exterior wall panels framed by white, rubbed concrete columns and beams make a handsome building initially, and one with a minimum of maintenance.



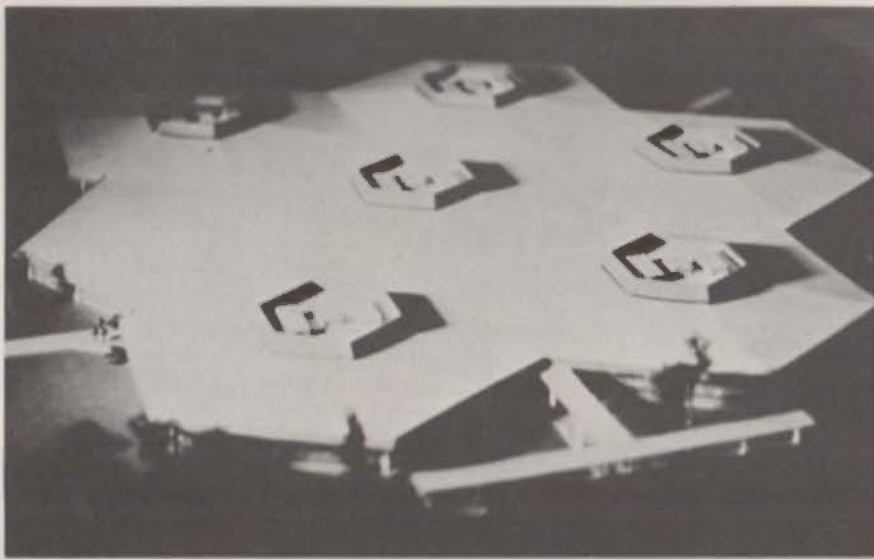
Sylvester B. Boone Elementary School

ALIEF ISD

RUSTAY, MARTIN, VALE & ASSOCIATES, ARCHITECTS



Since 1962, the District has developed from a small rural population into an exploding urban population, and is now a part of Metropolitan Houston.



The entire educational program, grades one thru twelve, were housed in one six-room building, with the increasing student population being transferred to adjoining districts. In 1966, an Elementary School was constructed to alleviate the district's immediate growth problem. Since then, the student population has been increasing at fifty percent each year. Therefore, a progressive building program has been initiated. The program includes, in addition to a new Elementary School, an Intermediate School, High School and eventual expansion of present facilities.

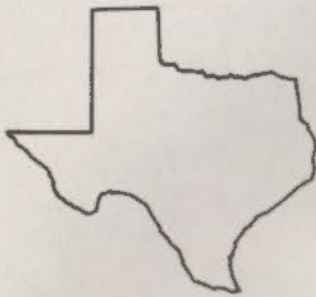


The Elementary School is planned to offer an expanded and more flexible curriculum to meet the needs of the children in an above average housing cost area. The educational program offered in this school is designed to provide an adequate background for further academic study. The program is provided to enrich the child's background and the general program of education is tailored to develop the potential of each student. It is hoped that this program can be successfully executed through the capability of flexible scheduling for grades four and five with attendant teacher planning and preparation, team teaching, large group—small group instruction, individual student study, and research. The program for all grades provides for physical fitness, adequate counseling and guidance, special services, full utilization of audio-visual instructional media and the individualization of instruction.

ALIEF ELEMENTARY SCHOOL

ALIEF ISD

RUSTAY, MARTIN, VALE & ASSOCIATES, ARCHITECTS



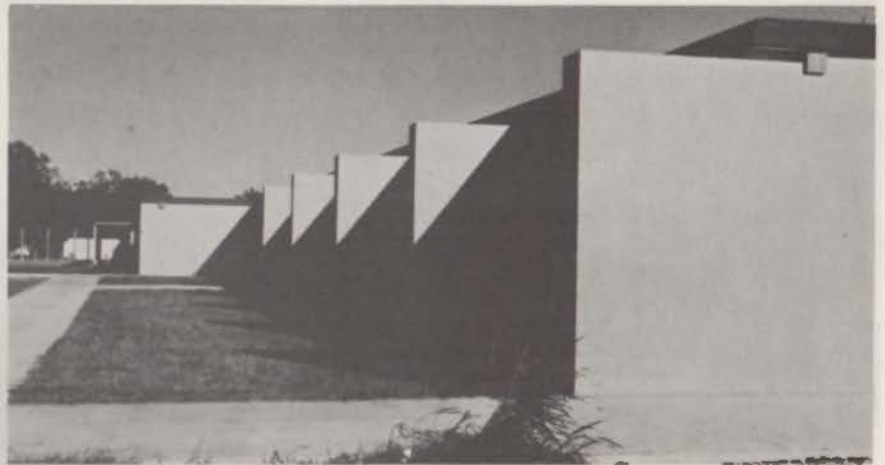
The growth problem necessitated the planning of this building for grades kindergarten thru five and additional buildings for the upper six grades. With the completion of the building program, the school district will employ a K-5-3-4 plan of school organization.

In addition to the above listed forces shaping the educational program, the use of team teaching instruction by Phonoscope has been made available for the fourth and fifth grades. The utilization of Phonoscope permits the change in pace from one instructor to another and/or from one subject to another. The change is thought to prevent much of the boredom that students experience in a self-contained system.

The building is located on a large site with the intermediate school that is under construction. There will be common use of some outdoor play spaces.

A majority of the students are bussed to the site, thus a need for a generous bus loading drive and canopy. A drive and canopy is also provided for children brought to school by private transportation. From this point, the students move with ease into the dining area, a large space from which they have immediate access to their instructional spaces.

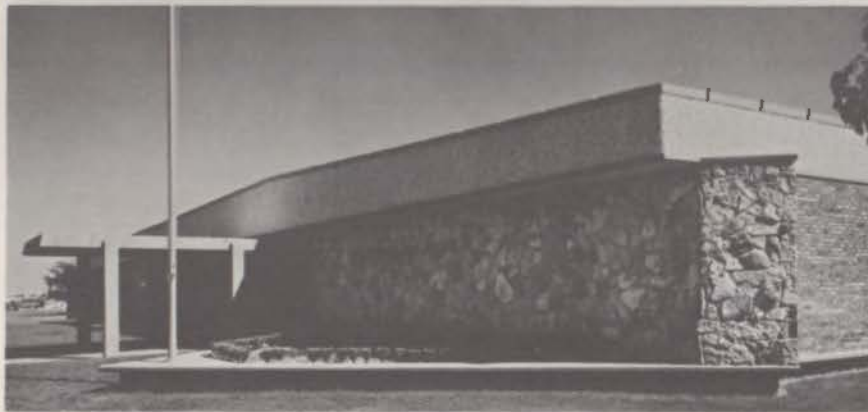
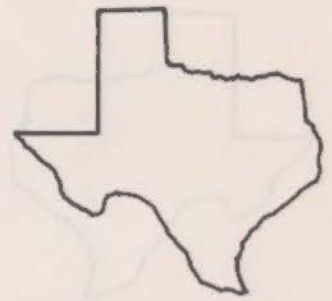
The building is a compact, windowless design, and is completely climate controlled.



CENTRAL ELEMENTARY SCHOOL

CARROLLTON ISD

JOHN R. THOMPSON & ASSOCIATES, ARCHITECTS



The scholastic programming reflects this new era and the requirements of the contemporary student it serves in that even at the elementary level emphasis is placed on those studies and experiences which will prepare him for the advanced educational levels required by the society in which he will live and work. It was the opinion of the School Board, the Administration and the Architects that it was most important for the beginning student to be in an environment that would encourage the formation of values to help him achieve his full potential, therefore considerable study was given to the character of spaces as well as to their arrangement within the building. It is to be noted that the effect of this has been an increase in the spirit of creativity on the part of the teachers as well as the students as evidenced by the imagination displayed in room decoration and the examples of art work even by the first graders. It was the Architects' goal to achieve a thoroughly delightful building to go to school in.

The advent of comparative prosperity caused the School Board to consider the feasibility of air conditioning for its buildings and as a result of this the "compact" plan with interior classroom spaces was found to be workable and also added the possibility for classroom rearrangement to meet the needs of future teaching concepts. The economies allowed in structural and area planning due to the air conditioning factor offset the cost of the mechanical equipment so that the additional cost to the school system lay solely in operation and maintenance.

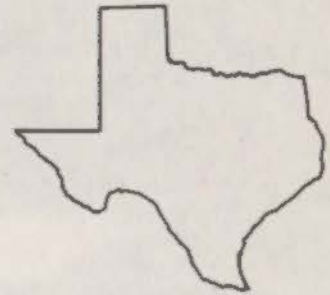
Photos by Walter DeLima Meyers



Robert Louis Stevenson Elementary School

HOUSTON ISD

GREACEN, EVANS & ROGERS, ARCHITECTS



The mural based on Robert Louis Stevenson's "A Child's Garden of Verses" designed and executed by students of Grades I--VI under the direction of Mrs. Frances Homeyer, Art Consultant to the School District.



Stevenson School is in a neighborhood left behind by the city in its progressive development. The original building was constructed in 1917. Classrooms were added in 1929 and an auditorium and kitchen in 1954.

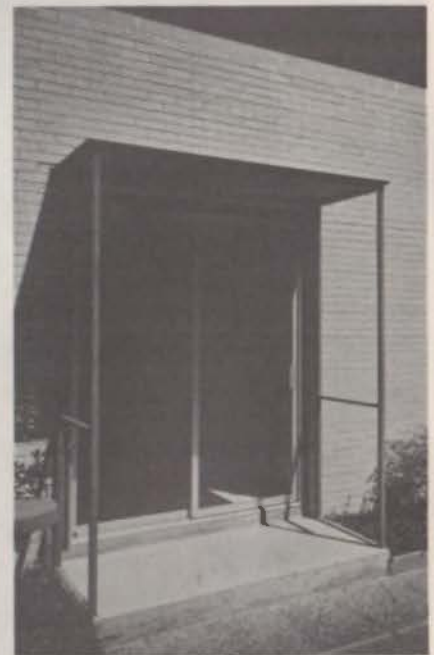
The new classrooms were to be paired for team-teaching. The new wing was to be air-conditioned.

The plan is designed around a small landscaped patio and gives direct circulation to all parts of the building.

The children's mural is a charming feature which, in their eyes, sets it apart as a building.

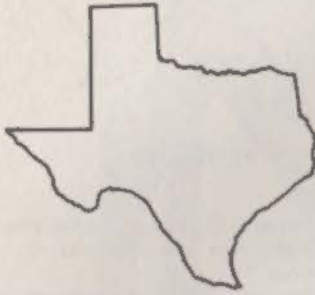
photos by F. Wilbur Seiders

Patio Doors From Library.



CALLIER, HEARING & SPEECH CENTER

J. HERSCHEL FISHER, FAIA & PAT Y. SPILLMAN AIA
ARCHITECTS



Editors Note: See January 1969 Issue of The Texas Architect for additional coverage on Callier Hearing & Speech Center, in Texas Architecture 1968 series.



HONG KONG INTERNATIONAL SCHOOL AND LUTHERAN CHURCH

Lutheran Church Missouri Synod, Repulse Bay, Hong Kong, B.C.C.

WONG & TUNG & ASSOCIATES,
ARCHITECTS, DALLAS & HONG KONG



DESIGN PROBLEM:

Site:

- Repulse Bay. Land cost requires high rise development in this area.
- One acre. 20' building setback.
- Slope. 80' drop across site.
- Location and topography allows building to become a dominate and pivotal element to the entire area.

Facility Criteria:

- American type curriculum.
- 780 pupils, Kindergarten through 12th grade.
- 26 classrooms; 3 science laboratories; music laboratory; art laboratory; cafeteria; gymnasium; administrative suite.
- Lutheran Church, 250 seats; fellowship hall.
- Central air conditioning.

DESIGN CONCEPT:

- A tower takes advantage of and emphasizes the already dominant site and identifies the church. The church is expressed as both separate from and unified with the school.
- The scale changes from the more urban eight-story facade grouping with adjacent buildings to the more intimate and individual plaza and church facades. Open space, expensive and rare in Hong Kong, provides play areas and makes the entire neighborhood softer, less forbidding, and more personal. The act of carving a flat playground out of the steep site expresses the preciousness of such an area. The playground covers $\frac{1}{2}$ of the 1-acre site.
- The steeply sloping site allows grade entry at 4 of the 8 floors. The several kinds of entry articulate and give particular location to the main functional elements. The play fields (open and covered), cafeteria, offices and main entry are at level 5. The two-story elementary school is below, the three-story high school above. Gymnasium, music room and mechanical plant are at levels 1 and 2. The church is at level 6.





Hong Kong International
School And Lutheran Church



TEXAS AT THE CROSSROADS



From "The Challenge And The Chance" Report of the Governor's Committee on Public School Education.

Texans stand once again at the crossroads in public education. Faced with problems of explosive school enrollment growth 20 years ago, the State responded with the farsighted and imaginative Minimum Foundation Program. However, a major overhaul of that 1948 model program is now required to meet even more crucial challenges facing the public schools in the 1970's.

—A veritable explosion of knowledge and technology promises to revolutionize traditional patterns of education and produce much higher levels of individual achievement for all students —provided the system is made flexible and responsive to change. The minimum State-supported program must be made more comprehensive and it must contain more options to fit a variety of new educational concepts.

—To prevent social and economic chaos the schools have been asked to help fill the voids left by breakdowns in traditional family responsibility. Educational programs must be fitted to the background preparation and individual abilities and problems which each student brings to the school house door. Additional State aid must be provided for district with high concentrations of educationally handicapped students. New and better educational approaches must be found to prevent dropouts and to give every student the tools to earn a living and be a constructive citizen in a complex urban society.

—To increase the productivity of Texas' economy, reduce unemployment and welfare costs, and neutralize a major cause of current school dropouts, an all-out attack must be launched on Texas' massive backlog of undereducated adults. Past failures of the educational system must be remedied before future progress can produce national leadership.

—To avoid internal concussions in the educational system the traditional "second class" status of its professional employees must be abolished. Teachers should be brought into the mainstream of educational policy-making and given the compensation, recognition and working conditions by the importance of their role in American life. The causes of teacher strikes must be removed.

—To insure the quality of its professional staff, Texas must support personnel training programs and improve the procedures for evaluation and certification of both training institutions and teacher candidates. Incentives must be provided for matching individual training and retraining to the needs of the statewide school system.

—To afford the cost of a first-class educational program. Texas must eliminate structural inefficiencies and financial favoritism among local school districts. Where reorganization will produce effective performance it should be required. If distance and sparsity make consolidation impractical, the State should provide whatever assistance may be necessary to insure a quality program. All districts, regardless of size or location, must be required to finance their fair share of the cost of quality education.

Failure to meet these challenges will plunge Texas further into the depths of educational mediocrity. The Governor's Committee has fulfilled the legislative mandate for a definite Long-Range Plan to make Texas a national leader in educational aspiration, commitment and achievement. The choice between mediocrity and excellence now lies with the citizens of this State and their elected representatives.



Architect, Chas. J. Muller AIA; Wm. K. Hall and Co., Consulting Engineers

Schools, large or small, demand
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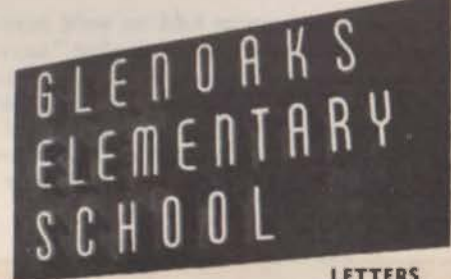
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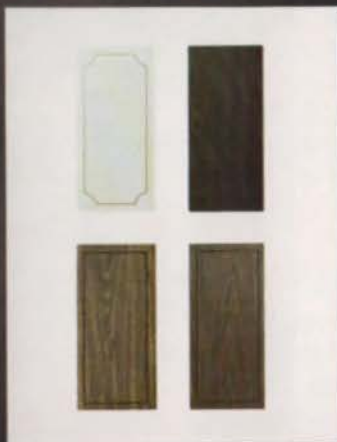
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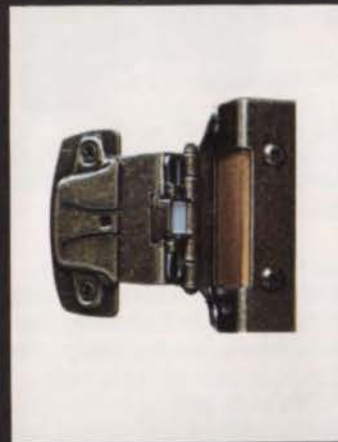
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IF THIOKOL DOES IT – THIOKOL DOES IT RIGHT

The following excerpts comprise the summary and observations by the Committee on School and College Architecture of the Detroit Chapter of the American Institute of Architects regarding a survey undertaken cooperatively with the Builders Exchange of Detroit and Michigan. The comments and observations are also appropriate to problems and concerns about school construction throughout the State of Texas.

CONTRACTOR ATTITUDES ON SCHOOL CONSTRUCTION



We are concerned with the quality and cost of school construction. As parents or as citizens, we know that school facilities influence the effectiveness of education. As tax-payers, we know that school buildings require large expenditures of public funds. Often we ask: "Can we build better schools? Can we build schools for less cost?"

These questions are of special significance to architects. Because of the nature of public school work and the legislation which regulates it, no other building type is so influenced by architects. Several studies have shown that the ingenuity of American architects has been the major influence in restraining schools costs to a markedly lower rate of incline than construction costs generally. Recent indications, however, are that current school building prices are subject to extraordinary inflationary trends. If architects are to retain their creative influence on individual project design, they will need to explore every way to heighten both bidder competency and bidder competition.

Of concern to school building professionals has been the opinion, sometimes expressed, that problems exist which tend to make public school work, as compared to private work, less desirable to the contractor and unnecessarily costly to the owner. Representatives of the American Institute of Architects, the Public School Districts and the Builders Exchange met and decided that an essential first stop was to secure a clear expression of industry view points.

The survey was effective in eliciting information from all trade groups, and was proportionally representative of the

construction, industry. By statistical sorting, it was possible to analyze the data regarding various sub-groups. When the statistics were computed and the contributed comments summarized, the conclusions centered on the following topics:

1. Inspection Practices

- a. Owners should avoid overlapping inspections wherever possible. In general, this can be accomplished by careful selection of a competent architect, followed by reliance on his inspection judgments. A less desirable alternative is for the owner to undertake complete inspection, and to delete that portion of the work from the architect's contractual responsibilities.
- b. The practice of school boards in some smaller districts has been to assign owner inspection responsibilities to educators or to other persons lacking a background in construction. Use of unqualified field personnel, which often delays progress and adds to costs, discourages potential bidders.

2. Disbursement of Contract Funds

- a. Delays in payments are a major complaint of prime contractors against school clients and of sub-contractors against prime contractors. The Committee has recommended that the traditional retainage of 10 per cent be reduced to a smaller amount, such as 5, 2 or 1 per cent. The emphasis should be on rapid payment in full on completed portions of the work. Retainage on incompleting portions should be proportional to the deficiencies.
- b. Consideration should be given to use of an outside cost estimator to check—and, if necessary, revise—contractor's cost breakdown in order to combat tendency of contractors to "front end load" construction cost breakdowns for payments in beginning stages of projects. This practice may not be extensive, but it is disadvantageous to owners in seeking performance.
- c. Since speed of production is critical to the contractor as well as the owner, the owner should initiate a process which would expedite the inevitable minor adjustments in contingencies and costs which arise during the construction process. A single board member or administrator could be delegated to that responsibility—within definite limits—with-

out the recurring delays of waiting for regular formal meetings of an entire school board.

3. Construction Techniques

- a. The survey reported many contractors' and suppliers' comments on the inefficiency and slow pace of most school construction as compared with other building types (commercial and industrial, in particular). Many contractors recommended greater use of pre-fabricated components, standardization of systems, simpler design and engineering. The committee considers utilization of such techniques to be desirable when compatible with the architect's overall concern for function, expression, and appearance.
- b. In order to achieve economy, large school districts should explore the practice of systems planning. This practice is also possible for smaller districts by use of consortium cooperation.
- c. Owners and architects should cooperate to eliminate archaic or contradictory codes and to create sound, useful standards. Because of the fragmentation of school owner groups and the diversity of their architect and engineer consultants, the sustained leadership and careful preparation required to effect legislative changes can best come from state-wide associations. Because of the complexity and importance of such matters as fire codes, it is unreasonable to expect basic revisions to stem from intermittent committee operation. The interested state-wide associations need to recognize that full-time staffing will be required to explore and establish well-prepared standards in lieu of the present overlapping codes.

4. Bidding Practices

- a. Because of the expense accrued to school clients from delays caused by inefficient contractors, owners should understand the desirability of actively inviting a competent group of bidders. Although school owners cannot legally refuse to consider a bid, they should understand their legal prerogative to reject the low bid if it comes from a contractor the owner believes unqualified.
- b. A conference at mid-stage of bidding period between architect and contractors—interested and invited—recommended. Such a meeting would permit architect to clarify intent

SCHOOL CONSTRUCTION



of documents, owner's payment procedures, and other matters. It would permit industry representatives to make suggestions regarding material availability or techniques which could contribute to economy of contract. It should also provide contractors a specific occasion to officially record what they view to be inadequacies in architectural and engineering documents and thus obviate their subsequent complaints in this regard. In any event, a firm final date in advance of the bid due date should be established as a cut-off point for addenda of any kind.

- c. All prime contractors should be required to list sub-contractors and all major suppliers as part of their bid proposals. The prevalent post-bid shopping for lower bids is generally deleterious to the quality of the work and results in little or no cost saving to the owner. An alternative is the bid-depository, which is administratively more complex.

5. Cost Control

- a. An important aid to all school districts interested in effecting economies in construction would be the further development and wider distribution of the annual State Report of School Building Costs. There is need for an instrument of greater statistical refinement—with more precise measures and greater accuracy. Owners need to examine many factors (such as area per student and percentage of area for instructional space) before entering a race for lowest square foot cost.
- b. Owners, in cooperation with one or more of the contractors' organizations, should arrive at an equitable standard percentage of mark-up for extras that occur in construction projects. An established mark-up, such as 15 per cent for overhead and profit, would put bidding on a more equal basis and speed the negotiations that are now often time-consuming.
- c. Many cost problems associated with building schools would be alleviated if the labor forces were adequate to operate without the use of overtime pay as an inducement to work. Owner groups, or those owners that are large public agencies, should encourage broadened apprentice programs and such other ways of easing labor shortages as they are able to influence.

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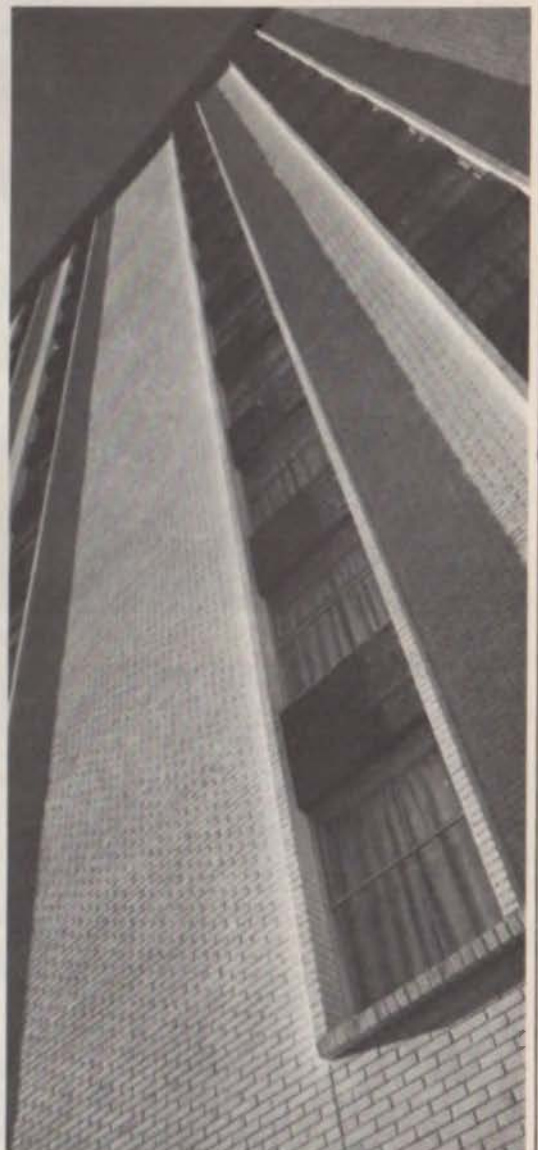
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CREDITS: Western Towers Apartments, Western Kentucky University, Bowling Green, Kentucky. Architect: Edwin A. Keeble, Associates, Nashville, Tenn. General Contractor: Clarence G. Shaub, Nashville, Tenn. Masonry by Bush Building Co., Nashville, Tenn. Concrete Brick by Brecko Industries, Nashville, Tenn.

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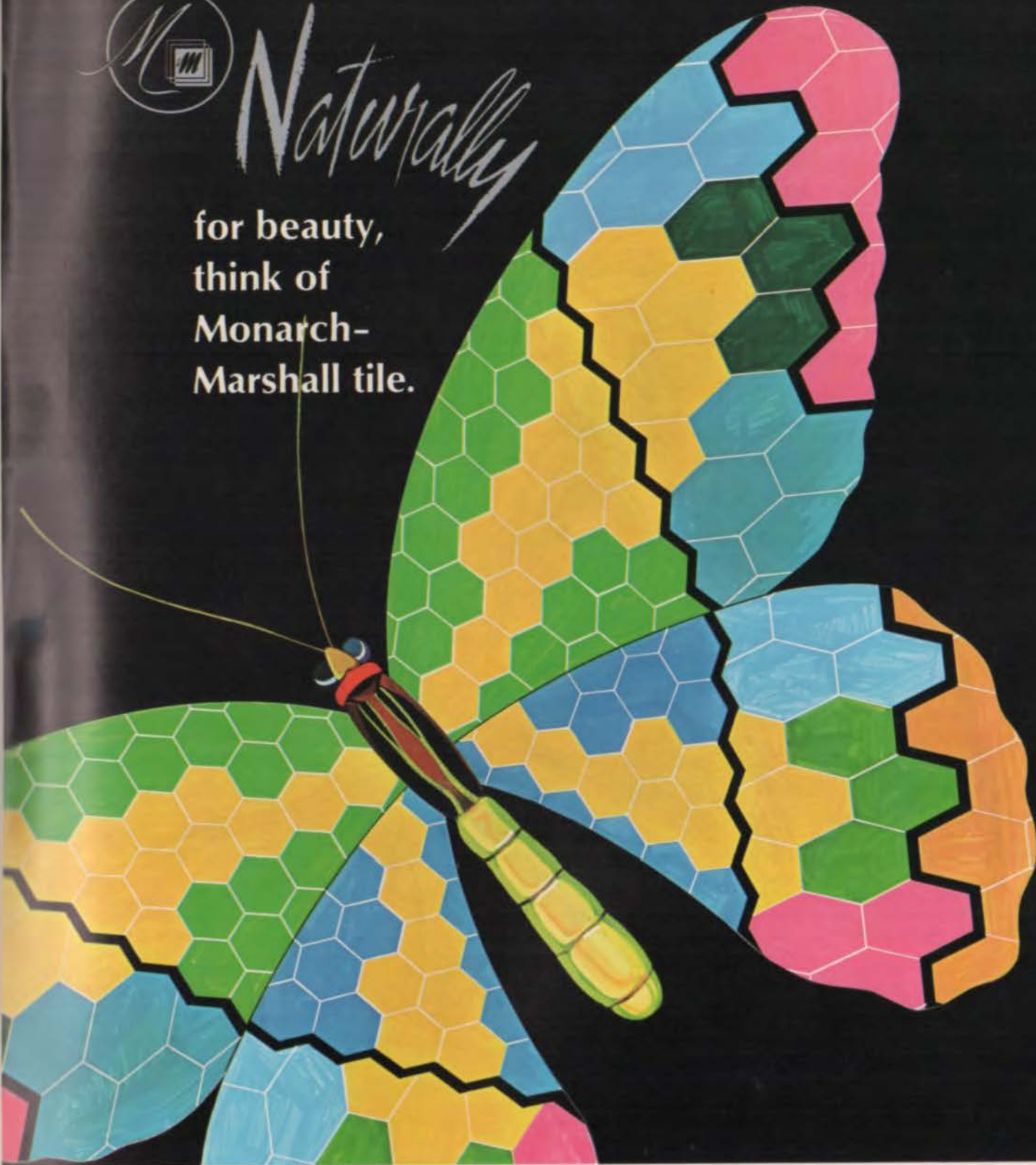


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B. F. GREENWOOD, AIA, FCSI

Ben F. Greenwood, FCSI, Houston architect, has been elected a Vice-President of The Construction Specifications Institute. The Institute with headquarters in Washington, D.C. is a technical society comprised of architects, engineers, material suppliers, educators, attorneys, contractors and others interested in specifications writing and currently has over 11,000 members in 107 chapters throughout the nation. ■

SCHOOL BUILDING COSTS

The upward spiral of school building costs continues. It now takes at least \$1,265,000 for a school that could have been built for \$1 million 10 years ago, according to *School Management's* annual "Cost of Building Index."

Finding no end in sight, *School Management's* editors point out that the painful realities of inflation can make it costly for a community not to pass necessary school bond issues. Charging that "negativism at the polls is a real problem to be reckoned with," they cautioned taxpayers against becoming too complacent. Four of every 10 bond issues proposed in the year 1968 were defeated.

The primary cause of the continued rise in school building costs is the cost of labor, not the extravagant use of materials frequently blamed by dissident voters. Of the total 26.5 rise, only 7 index points are attributable to materials costs. More than 53 cents of every construction dollar now goes for labor.

Stressing that it was not criticizing labor, the editors said that the increased costs cannot be avoided and, therefore, school boards and administrators must persuade their constituents that new construction needs continue high and that most building programs are essentially free of frills. The increased cost of borrowing money was also cited in the Index as contributing to the problem, especially since today's money market tends to be extremely erratic. ■

ARCHITECTS — UNIONS

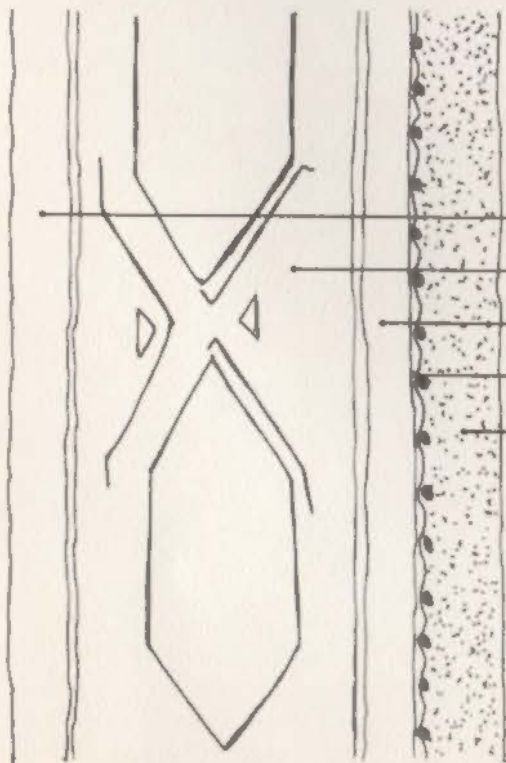
The Proceedings of the conference on "Alternatives to Unionization," held in St. Louis last December has been published and is now available to engineers, architects, surveyors and others. The 81-page Proceedings includes the full text of papers and discussion on such topics as the union approach to organization of professional and technical employees, alternatives through a professional atmosphere, the "sounding board" approach to management-employee relations, establishment of a positive environment, selection and indoctrination of new employees, personnel policies, in-house advancement of technical personnel, motivation of employees, the views of the National Labor Relations Board on issues involving professional and technical employees, methods of dealing with employee problems, use of personnel consultants, the importance of pension plans, relationships between the design professions and contractors, and how to communicate information on the unionization problem.

The conference was sponsored by the Joint Committee on Employment Practices, composed of representatives of the American Congress on Surveying and Mapping, American Institute of Architects, American Society of Civil Engineers, Consulting Engineers Council/USA, Council for Photogrammetry and the Professional Engineers in Private Practice-NSPE.

Copies of the Proceedings are available from the Joint Committee on Employment Practice, 2029 K Street, N.W., Washington, D.C. 20006 at \$5.00 a copy. ■



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