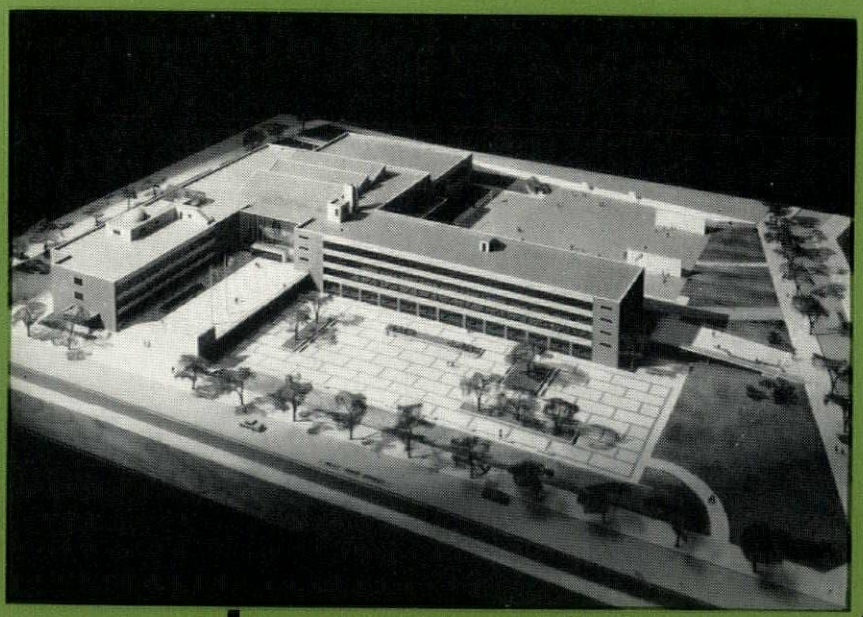
EMPIRE STATE ARCHITECT



MAY - JUNE
1958
VOLUME XVIII - NUMBER III

● 1958 CONVENTION — OCTOBER 16 TO 18 — ROCHESTER, N. Y.

FICIAL PUBLICATION—NEW YORK STATE ASSOCIATION OF ARCHITECTS

ARCHITECTURAL BRONZE PROVIDES A GENUINELY WARM AND FRIENDLY WELCOME FOR THIS DISTINGUISHED BUILDING

The entrance to the Sinclair Oil Building in New York City is another example of the versatility of architectural bronze. It gives zest to the architectural composition. Its warmth of color—and the wide variety of finishes and shapes possible—enhance the beauty of other building materials. Architectural designers are finding that copper alloys in extrusions, drawn shapes and sheets offer almost unlimited opportunities in design and color effects.

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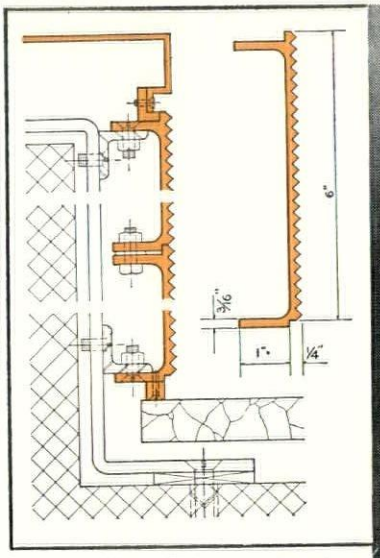
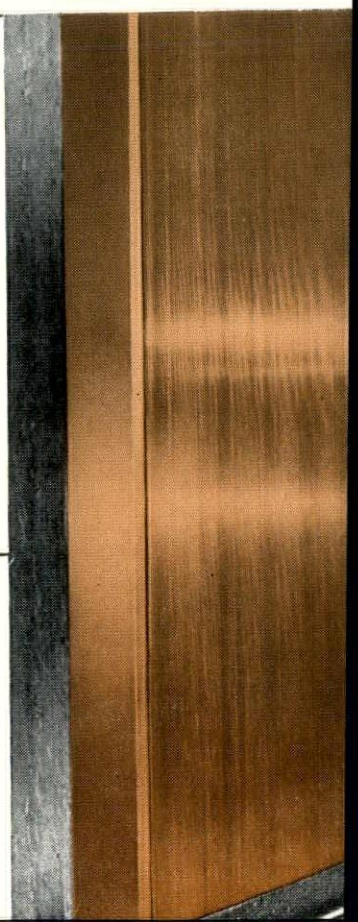
5832

The main entrance (above) of the Sinclair Oil Building. Architectural bronze forms the door openings and housings, and frames the glass panels above.

Escalator and stairs (left) from lower-level concourse have architectural bronze paneling and trim.

Architects: Carson & Lundin, New York. **Engineers:** Edwards & Hjorth, New York, and Jaros, Baum & Boles, New York. **General Contractor:** Turner Construction Co., New York. **Ornamental Bronze Fabricator:** C. E. Halback & Co., Brooklyn, N. Y.





Elevator lobby (left) has an extremely interesting wall treatment. To complement the marble, the wall surrounding the elevator doors is composed of serrated architectural bronze extrusions. Detail drawing (above) shows how extrusions are fastened to the wall construction. Close-up photo (right) indicates the pleasing vertical striated effect.

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The Ironbound* Continuous Strip* Maple Floor installed in New York's Trinity School was chosen for more than three reasons, of course. But the planners of Trinity's new Athletic Building were so impressed with three of Ironbound's features that they specified it without hesitation. These were its beauty, resiliency and long run economy — three features of Ironbound that are unmatched by virtually any other floor.

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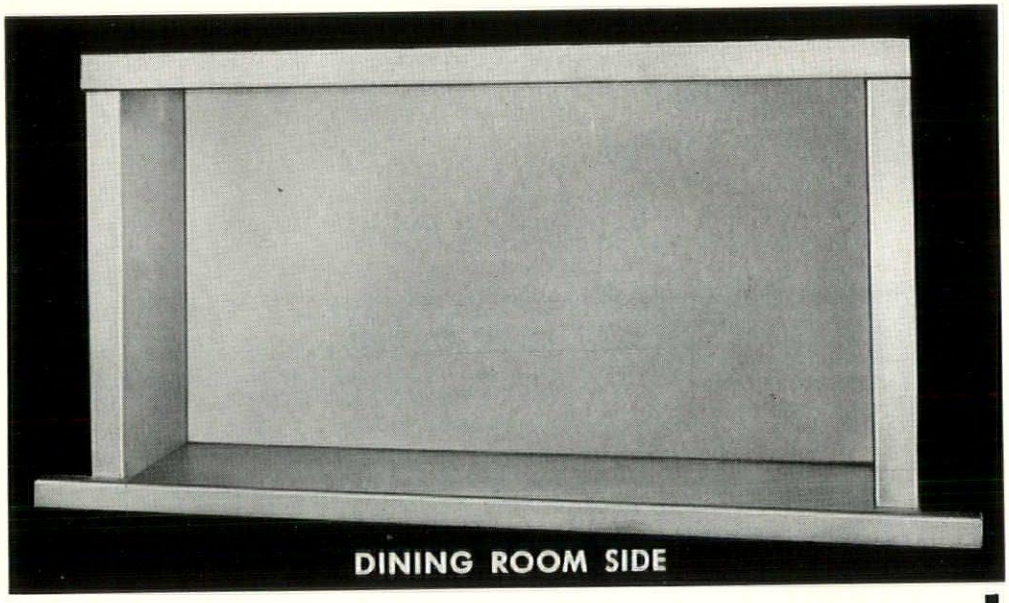
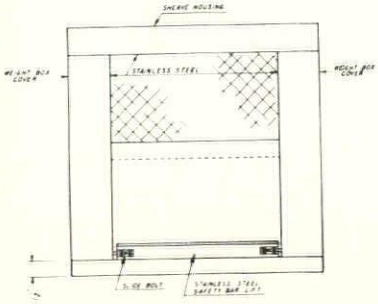
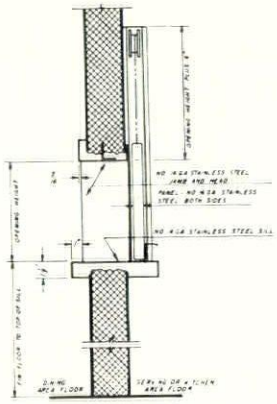


DINING ROOM SIDE

DETAILS



KITCHEN ELEVATION



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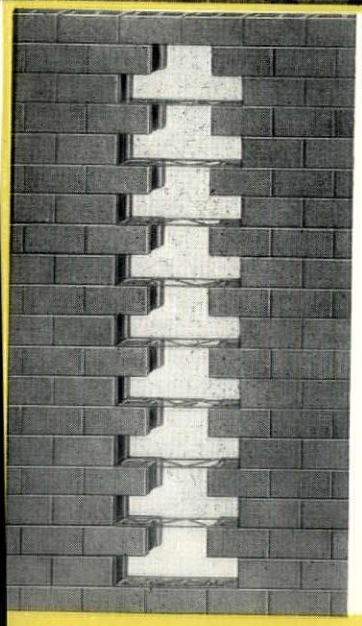

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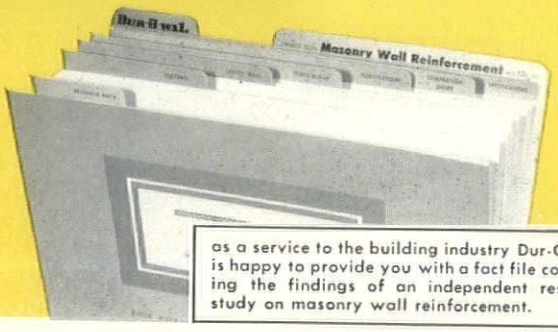

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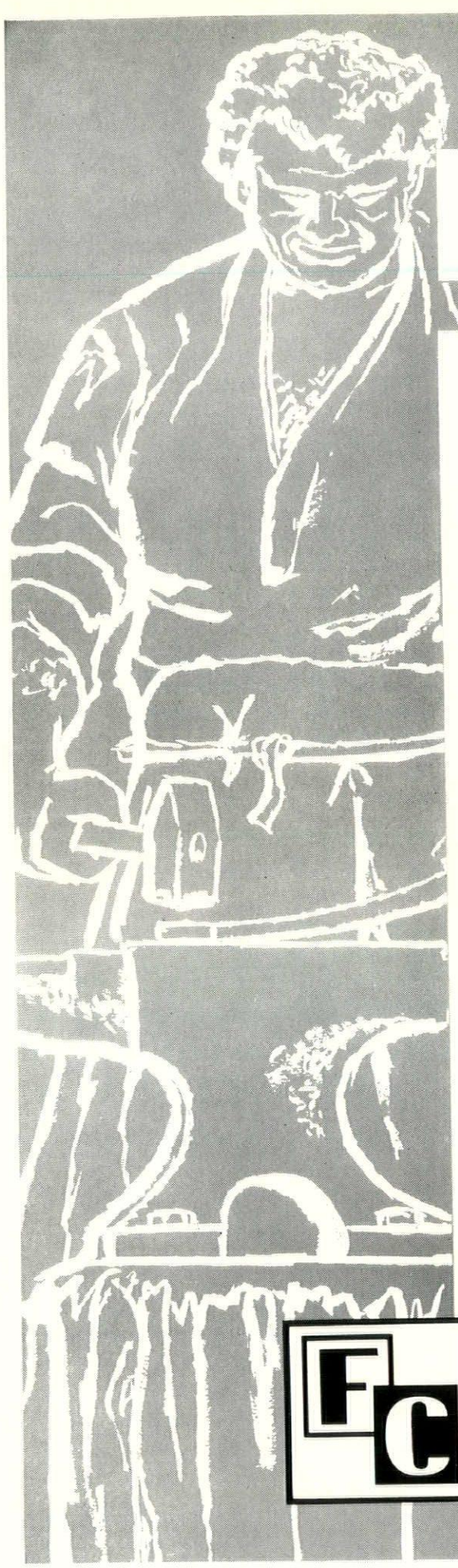

TO MEMBERS OF THE

New York State Association of Architects

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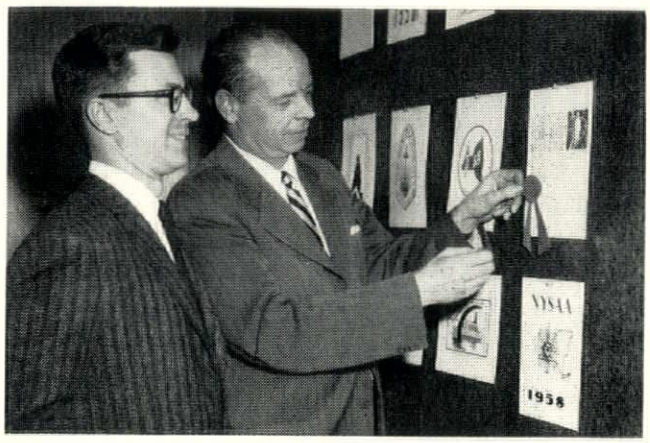
1893 SIXTY-FIFTH ANNIVERSARY 1958

1958 STATE CONVENTION

Rochester Society of Architects' Competition

Ronald E. Sattelberg, 120 Woodman Park, an architectural draftsman of the firm Barrows, Parks, Morin, Hall & Brennan, Architects, of this city was awarded the First Prize in the Rochester Society of Architects' Competition to design a convention seal to be used as an emblem for programs and stationery for the forthcoming New York State Association of Architects Convention.



LEFT, Ronald E. Sattelberg, First Prize Winner in Rochester Society of Architects' Competition for the "Design of a Convention Seal" looks on approvingly as F. Allen Macomber, President of the Society, affixes award to winning entry.

The convention will be held at the Powers Hotel next October 16, 17, and 18th and the program will develop the theme "Your Architect—Your City." The Rochester Society as a constituent organization of the N.Y.S.A.A. will be host for the conclave.

The First Prize of $75.00, awarded to Mr. Sattelberg, was made available through the generous gifts of two local concerns, the City Blue Print Co. and the H. H. Sullivan Co.

Awards of Honorable Mention were also given to Igor Shwabe, and John K. J. Lau. Other member competitors included R. E. Ashley, Jr., Robert A. Jones, Bernard Heatherly, Kenwyn E. Phillips, Robert Helmer, Arthur J. Pohle, Don De Angelis, and member sponsored competitors included James J. Jerris, Jr., Marjorie Sattelberg, and Joseph Kendricks.

The Jury for the selection was the Board of Directors of the Rochester Society of Architects and John W. Briggs, 1st Vice President of the N.Y.S.A.A. who is General Chairman of the convention.

Sattelberg who holds the degrees Bachelor of Architecture granted by Pratt Institute, Brooklyn, New York, and Master of Architecture in Town Planning granted by Cranbrook Academy of Art, Bloomfield Hills, Michigan, is a student and practitioner of city planning. As a result he and his wife, Marjorie J. Sewell Sattelberg, a graduate of the University of Toronto, School of Architecture, evaluated the Eastern portion of the United States and found Rochester to be an excellent urban community; consequently they decided to live here.

Formerly of North Tonawanda, Mr. Sattelberg has been employed by James Wm. Kideney and Associates, Architects, Buffalo; Stanley C. Podd, Architect, Buffalo; Ketcham, Gina & Sharp, Architects, New York; Harry N. Denyes, Architect, Birmingham, Michigan; and Arthur C. Jerkens, Architect, Fayetteville, North Carolina.

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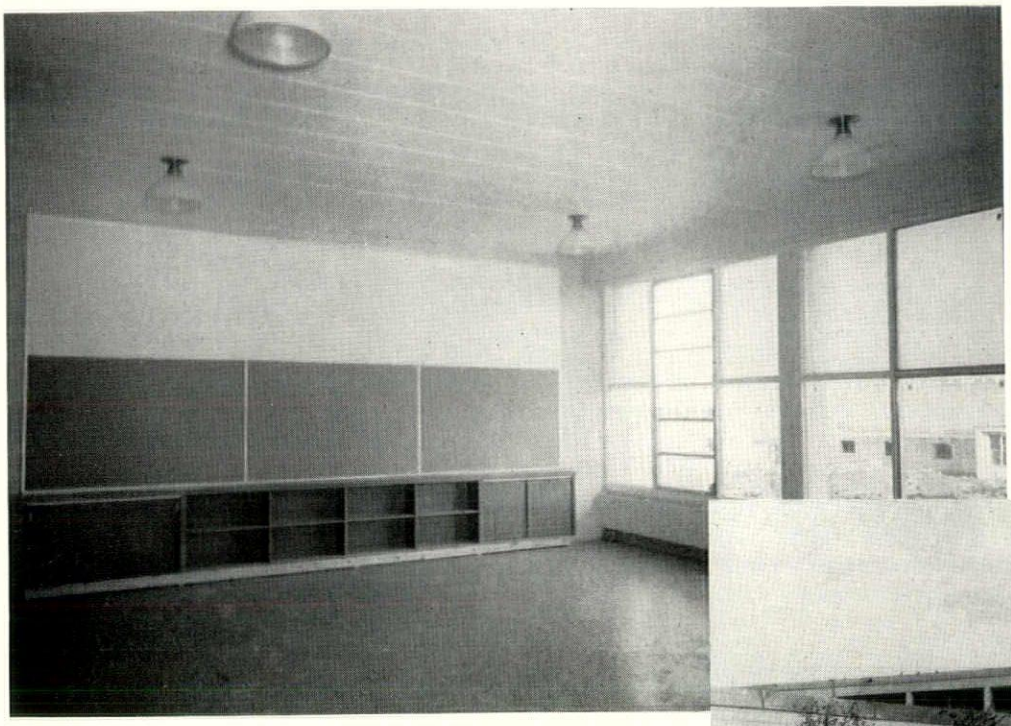

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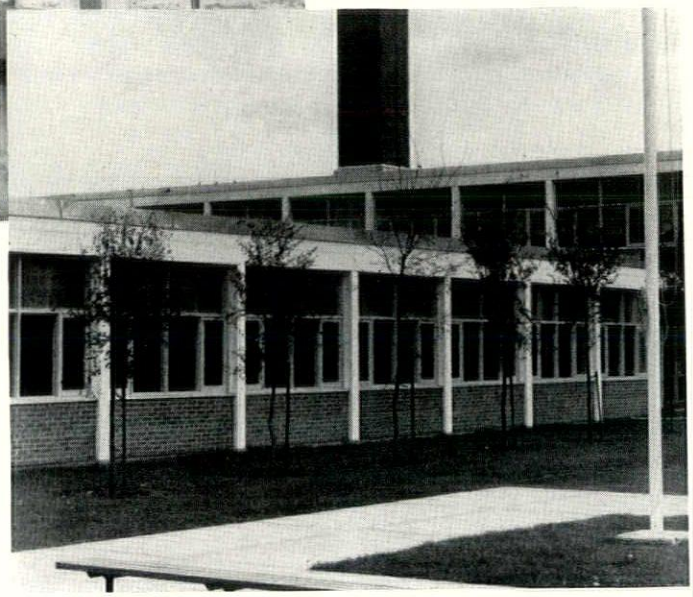

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CONTENTS

ON THE COVER

PHOTOGRAPH OF MODEL SHOWING MAIN ENTRANCE, CAMPUS, AND ATHLETIC FIELD.

Bronx High School

Emery Roth & Sons, Architects

May - June Issue — Vol. XVIII, No. III

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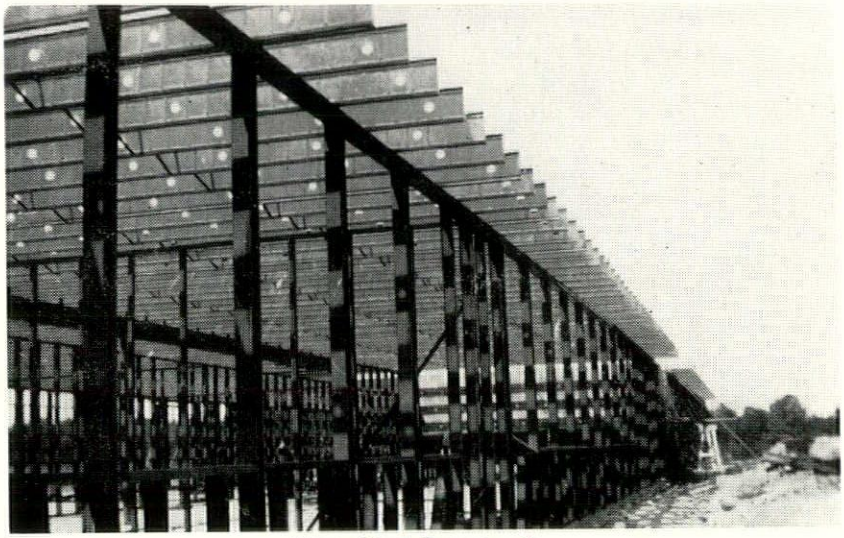

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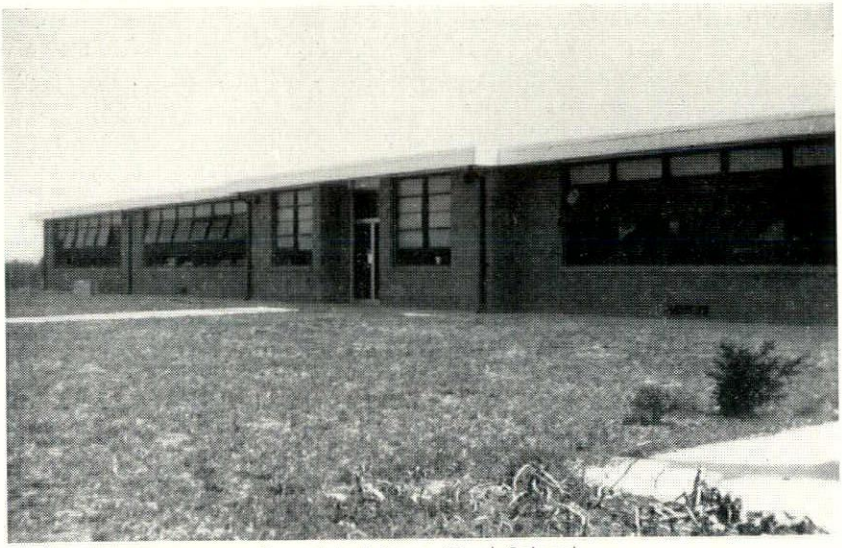

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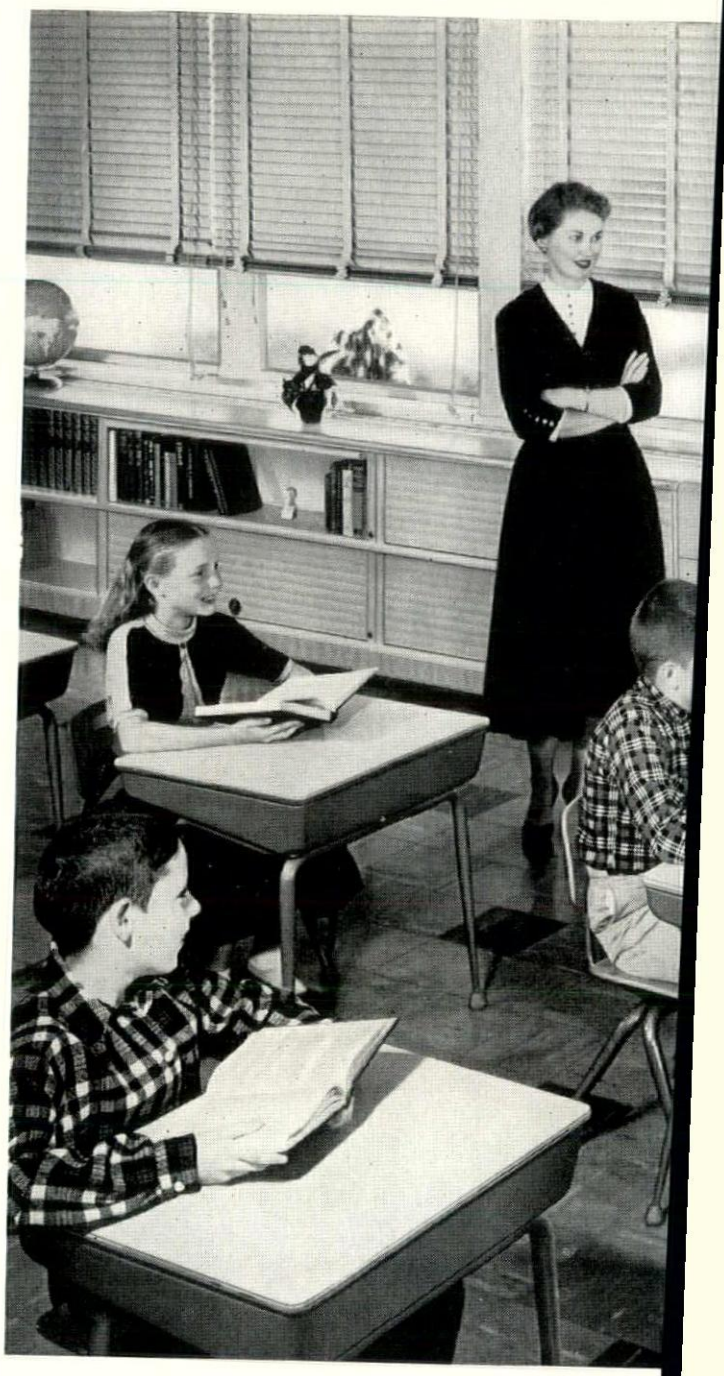

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Nesbitt Series Hot Water Wind-o-line System eliminated pipe trenches—put all piping above floor for maintenance accessibility

entilation for your school at a cost hat's way down . . . with quality hat's way up for every classroom.

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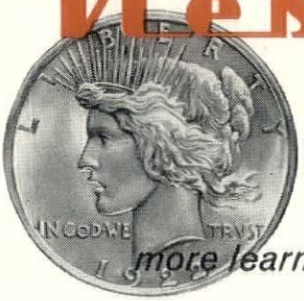

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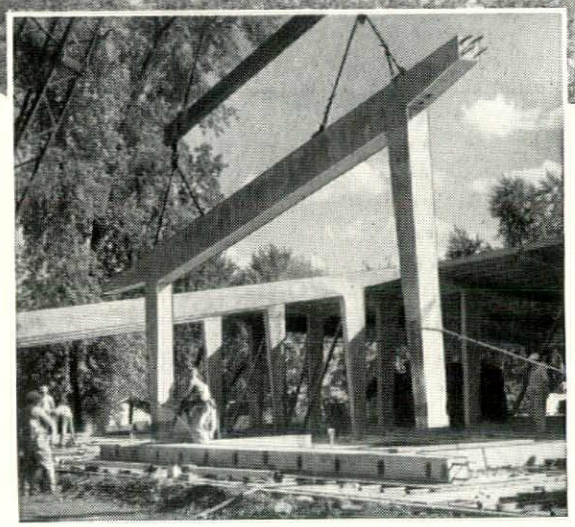
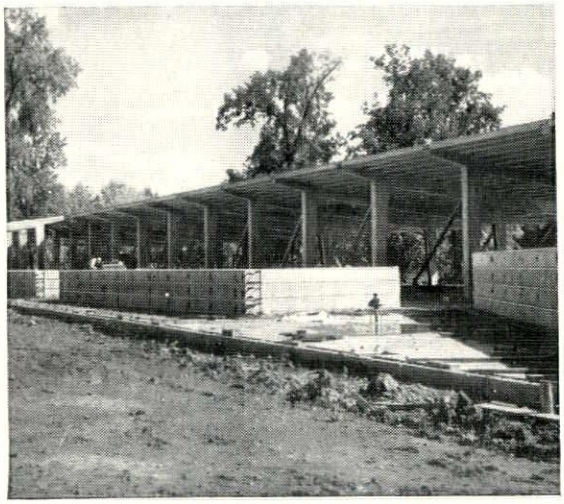


Large photo shows one wing of the Linton-Stockton School. Small photo above shows a close-up view of one of the precast concrete bents while photo below shows method of stockpiling concrete bents before erection. Designed by Thomas C. Dorste and Spiros G. Pantazi of Indianapolis. Structural engineer was Floyd E. Burroughs, also of Indianapolis.



Precast concrete members make low-cost school possible

The new Linton-Stockton Elementary School in Linton, Ind. has been widely acclaimed in educational circles. It is an example of the speed and economy with which urgently needed classrooms can be provided quickly and economically.

Saving in time and money resulted from the use of precast concrete construction. The frame is formed by precast concrete bents supporting precast channel slabs. Integral parts of the bents are arms for cantilevered sections. Both bents and roof slabs were precast on the site. Careful planning, standardization of members and utmost re-use of forms held down costs and construction time.

As a result the 80,000-sq. ft. school was built for $870,000. Its 36 classrooms, averaging 1200 sq. ft. in size, will accommodate 1,200 pupils. The restrooms and halls are floored with terrazzo, which was also used for wainscoating in the building.

Modern precast concrete schools such as this not only have low initial cost but also low maintenance cost, long life and low annual cost. And they're fire-safe, too! So make your next school precast concrete.

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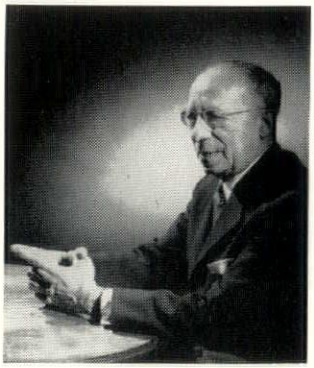
FROM THE DESK OF THE PRESIDENT



In my last column I touched briefly on the activities of the N.Y.S.A.A. Architects Scholarship Committee which began early this year to distribute the scholarship fund of $1000.00 donated through the generosity of the New York State Concrete Masonry Association.

When the Committee met early in January it unanimously agreed on the following basic policies to guide its decisions:

1. That the Committee would take the most desperate cases based on financial need, with preference to be given to students in their senior year.
2. That the Committee would not disburse the entire fund at one time.

To date, six students from the architectural colleges in New York State have been the beneficiaries. Many more applications were received than the Committee was able to fulfill. The fund, as constituted, is a modest one and will soon be exhausted unless it is implemented with additional contributions. The Committee decided to seek an expansion of the fund and will shortly solicit the assistance of the membership and the constituent organizations in the State Association. It is the sincerest hope of the Committee, in which I wholeheartedly concur, that the enlarged fund will broaden the scope of financial aid to more deserving students and encourage the continuance of those students who may be on the brink of discontinuing or postponing the completion of their studies.

A report on the activities of the Scholarship Fund will be submitted at our Convention to be held in Rochester, N. Y. October 16 to 18, when a definite plan will be presented by the Committee for the consideration of the general assembly. Meanwhile, the Committee is formulating a program it hopes will be practical, acceptable and successful.

The necessity to train and educate architects for the future welfare of our country is greater than ever. The economy of our state and nation is constantly expanding. Our population is growing. New schools, public buildings and civic improvements, hospital facilities and institutions must be adapted to the ever changing progress in the fields of governmental, medical, sociological, technical and industrial research. Business and residential needs must be fulfilled. The future holds an undreamed vista of considerable professional activity that will require all the available architectural talent that can be assembled.

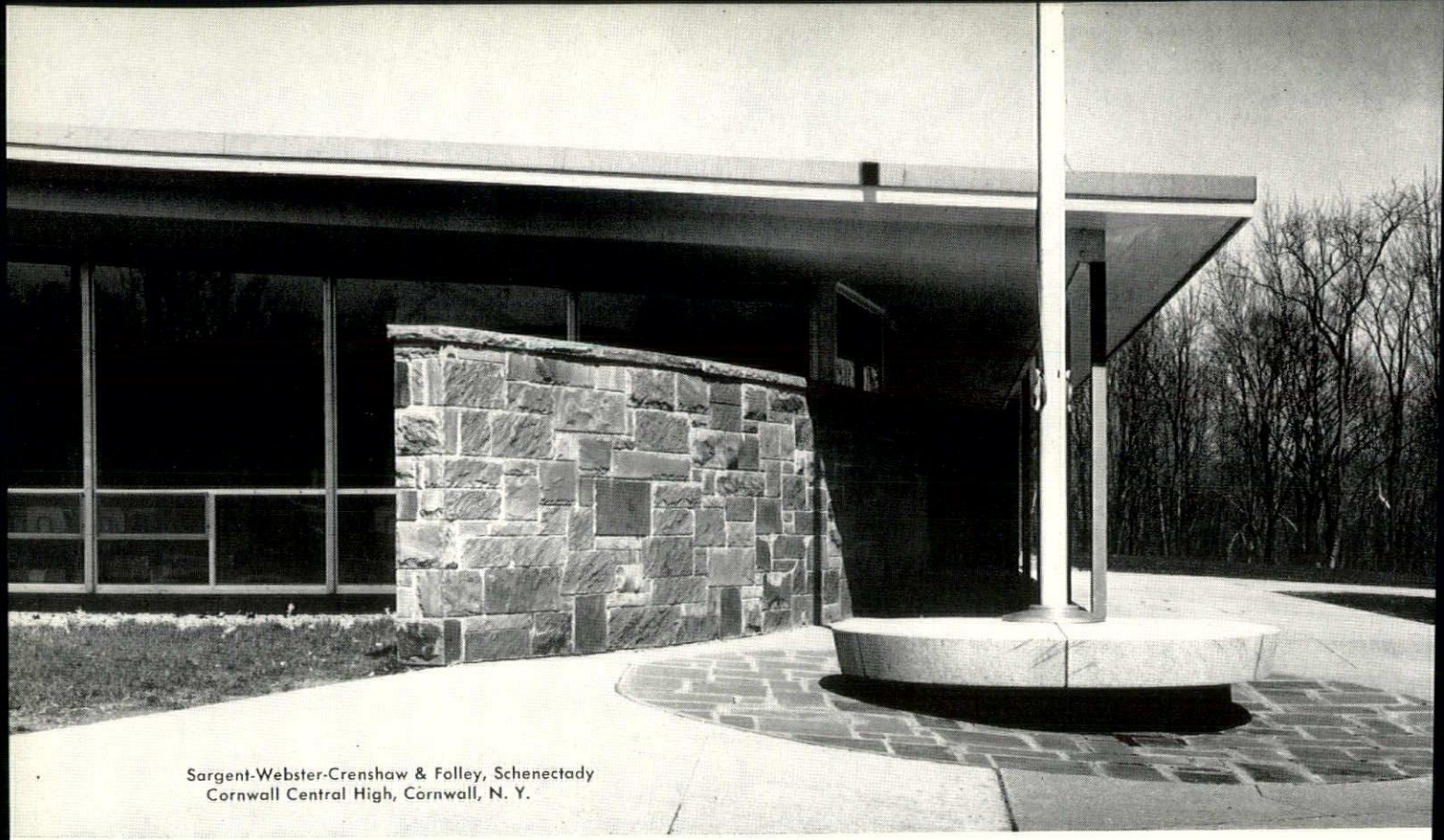
We, the architects of today, owe an obligation to the architects of tomorrow. Your N.Y.S.A.A., dedicated as it is to the present and future welfare of the architectural profession, is happy to lend its services and techniques to the immense tasks that lie ahead. These tasks can only be achieved through the cooperation of the individuals of our membership and the constituent organizations that comprise our Association.

I trust this advance notice of the objectives of the Architects Scholarship Committee will be carefully noted and seriously appraised at this time by our constituent organizations. Your suggestions and recommendations will be most welcome.

The Architects Scholarship Committee is composed of George B. Cummings, F.A.I.A., of Binghamton, former A.I.A. president, who is chairman; Leopold Arnaud, F.A.I.A., Dean of the School of Architecture, Columbia University; Matthew W. Del Gaudio, F.A.I.A., of New York City, regional director A.I.A. and past president N.Y.S.A.A.; Donald Q. Faragher, F.A.I.A., member of the New York State Architectural Board of Examiners and a past president of N.Y.S.A.A.; Perry Coke Smith, F.A.I.A., of New York City, past president New York Chapter A.I.A.; Frederick H. Voss of the firm of Kiff, Colean, Voss & Souder of the Office of York & Sawyer and a past president of Westchester County Chapter, A.I.A.; Alden C. McGuire of Rochester and of the New York State Concrete Masonry Association, and your president, ex-officio. The Committee deserves your complete support.

Harry M. Prince

HARRY M. PRINCE, President
New York State Association of Architects



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Faragher & Macomber, Rochester
Greece Central School, Greece, N. Y.

Fenno, Reynolds & McNeil, Buffalo
Green Acres Elementary, Tonawanda, N. Y.

Haskell, Considine & Haskell, Elmira
Our Lady of Lourdes School, Elmira, N. Y.

Heacock & Platt, Philadelphia
Shady Grove Junior High, Ambler, Pa.

Duane Lyman & Assoc., Buffalo
Watkins Glen Elementary, Watkins Glen, N. Y.

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FROM THE EXECUTIVE DESK AT 441

A Report on Progress

It has been an extremely busy two-month period since my last report. Much of my time has been devoted to legislative matters in Albany.

I am happy to advise that we had a most successful session. The perennial and persistent corporate practice engineering bill never came out of Committee. The bill which would have deleted the $10,000 provision in the Education Law which now requires the seal of a registered architect was first passed by the Assembly, subsequently recalled, the vote nullified and the measure overwhelmingly defeated and recommitted back to the Rules Committee. It is inevitable that some amendments to the law will be recommended next year but whatever changes are made will be initiated by the Legislative Committee of N.Y.S.A.A.

We believe our membership will be pleased to learn also that the Resolution introduced by Assemblyman Goddard which would have created an architectural division in the State Education Department was defeated in Committee, as it deserved to be. Other measures which would have waived the present requirements for registration of architects were killed through our efforts. I shall not attempt to report in detail the disposition of all legislation in which we were interested, favorably or adversely. A complete report has already been submitted to all constituent organizations by the Legislative Committee. The summary is published elsewhere in this issue of *Empire State Architect*. Co-chairmen Matthew W. Del Gaudio and Richard Roth deserve the warm commendation of the entire membership of the State Association for the splendid job they have done this year. The Committee watched, analyzed, reported every bill that in any manner affected the interests of the architects and submitted numerous memoranda to the Governor.

The end of the legislative session did not diminish, however, the use of the well-travelled executive director's carpet bag. Conferences were held in Syracuse, Rochester and Albany. Also a delightful visit to the Annual Convention of the Ontario Association of Architects in Toronto at the invitation of executive secretary John D. Miller. Our Canadian cousins really rolled out the red carpet and gave your executive director the V.I.P. treatment. It was a pleasure too to see immediate past N.Y.S.A.A. president, Trev Rogers, and the charming Pat Rogers, as fellow-guests in attendance. Most impressive was the ceremony at the "graduation exercises" on the evening of the annual banquet when the certificates of registration were distributed to the new architects by the Ontario Association. This is something we hope will happen in New York State some day when the N.Y.S.A.A. will do the conferring upon newly registered architects.

I want to thank the two Chapters whose annual functions I was privileged to attend—the dinner-dance of the Queens Chapter at Far Rockaway, presided over by president Arthur Schiller, and a memorable visit to the annual dinner-dance at Freeport sponsored by that gay Long Island Society Chapter group, of which my host was that up and coming young architect, president Walter Watson. Regrettably, I was unable to attend the Staten Island Chapter annual dinner due to my needed presence in Albany. I hope president Mike Diamond gives me a rain-check for a future meeting.

The next two months will be equally busy ones. (Editor's note: Who said this was a 3-month job only? Not if you could sit at my desk at 441!) Immediately ahead is the formulation of plans for the annual N.Y.S.A.A. Convention to be held in Rochester in October. If you have not yet entered these dates in your calendar, please do so now. Here they are:

October 16 to 18, 1958

Powers Hotel, Rochester, N. Y.

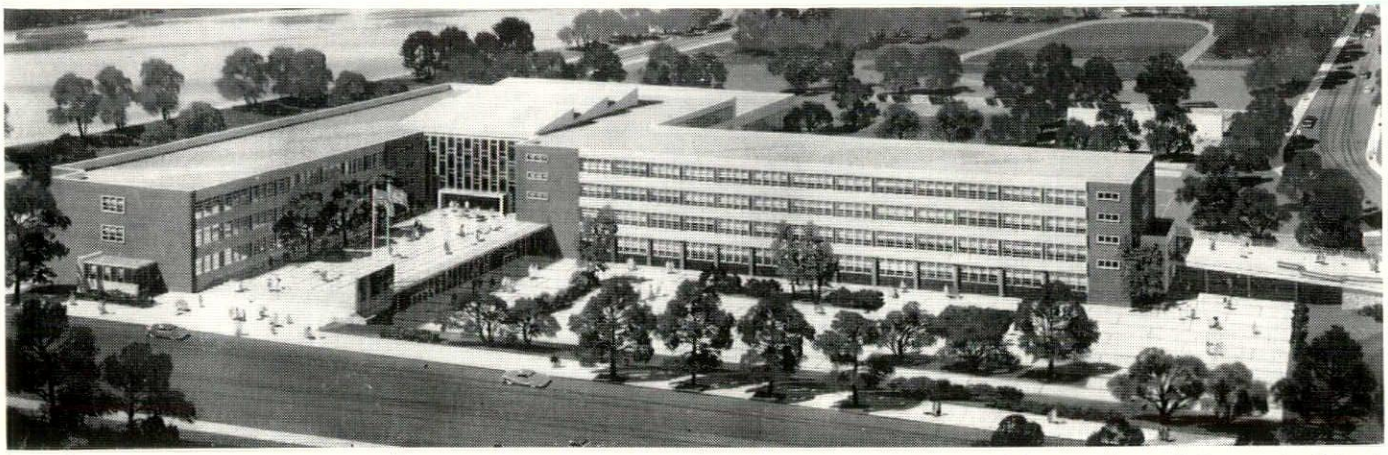
See you soon.

Joseph F. Addonizio

Executive Director

THE BRONX HIGH SCHOOL OF SCIENCE

By Richard Roth



Emery Roth & Sons, *Architects*

The Bronx High School of Science is one of the two "super" schools in the New York City Board of Education construction program. SCIENCE as a school has been in existence for 20 years and is recognized by colleges as the foremost secondary school in the entire country for the teaching of science and mathematics.

Its present plant which is completely inadequate for its growing needs is located about one mile south of the new site; the new building will provide every facility needed, to continue the superb reputation, its principal and organizer, Dr. Morris Meister, created with such foresight and perseverance. The reality of the new school came about through the efforts of Charles H. Silver, President of the NYC Board of Education and Charles J. Bensely, Chairman of the Board's Committee on Buildings and Sites. Through their instigation, and with the cooperation of Mayor Wagner, the 1956 capital budget was amended to make available the necessary funds for this $8,000,000.-00 project. Construction started in December, 1956, and is now approaching completion, so that it will be ready for the Fall term of 1958.

The new school is located at the northern end of Bronx County in New York City, just south of Mosholu Parkway and Van Courtlandt Park. The site which covers about eight and one half acres, is on fill land (formerly a reservoir) created years ago when the Jerome Avenue subway was constructed. The elevation of the streets surrounding the project had been raised to approximately 8′0″ above the property, creating what is essentially a saucer shaped plot. Therefore, while the building is actually four stories in height, the main school entrances are at street level; and the lower depths of this bowl-form site helped to produce a substantial student campus and athletic field at the present ground level; thus eliminating cellar space. With no cellar as such being necessary, maximum natural light and air was available for all rooms.

Above the entrance (or street) level the building is 3 stories high, constituting in essence three wings; (1) science; (2) academic; (3) auditorium and gymnasium. The southeast portion, flanking the main entrance is the science wing. The first floor is devoted to the study of physics, the 2nd floor to the study of chemistry and the 3rd floor to the study of biology.

The classroom or academic wing is to the east of the main entrance and is the secondary approach to the building, being the portion of the project closest to the subway; probably the means of transportation most widely used by students. All three floors of this wing contain social study classrooms. The dominant wing of the building—to the north—is flanked by the athletic field and has easy access to the campus level. The wing contains the main entrance to the building and also the auditorium and two gymnasiums, with all their necessary appurtenances. This main approach to the school is a broad promenade deck, leading off 205th Street. The entrance feature is 3 stories in height, allowing for an undisturbed view of a mosaic mural, being done by Frank J. Reilly. The mural itself, covering the entire rear wall of the Lobby, pictorially depicts all the sciences and their origins.

The cafeteria is immediately below the main entrance and opens directly upon the campus level so that the students may eat either in a sheltered area, or in more clement weather can dine in the open.

The spaces between the 100′0″ trusses that span the auditorium were utilized for music and drafting rooms. The planetarium, radio and weather stations and a greenhouse were placed on the main roof.

Shops, classrooms, medical department, cafeteria and student activity rooms are all on the campus level; the locker rooms are directly below the gymnasiums and afford easy access to the gyms themselves and to the athletic field.

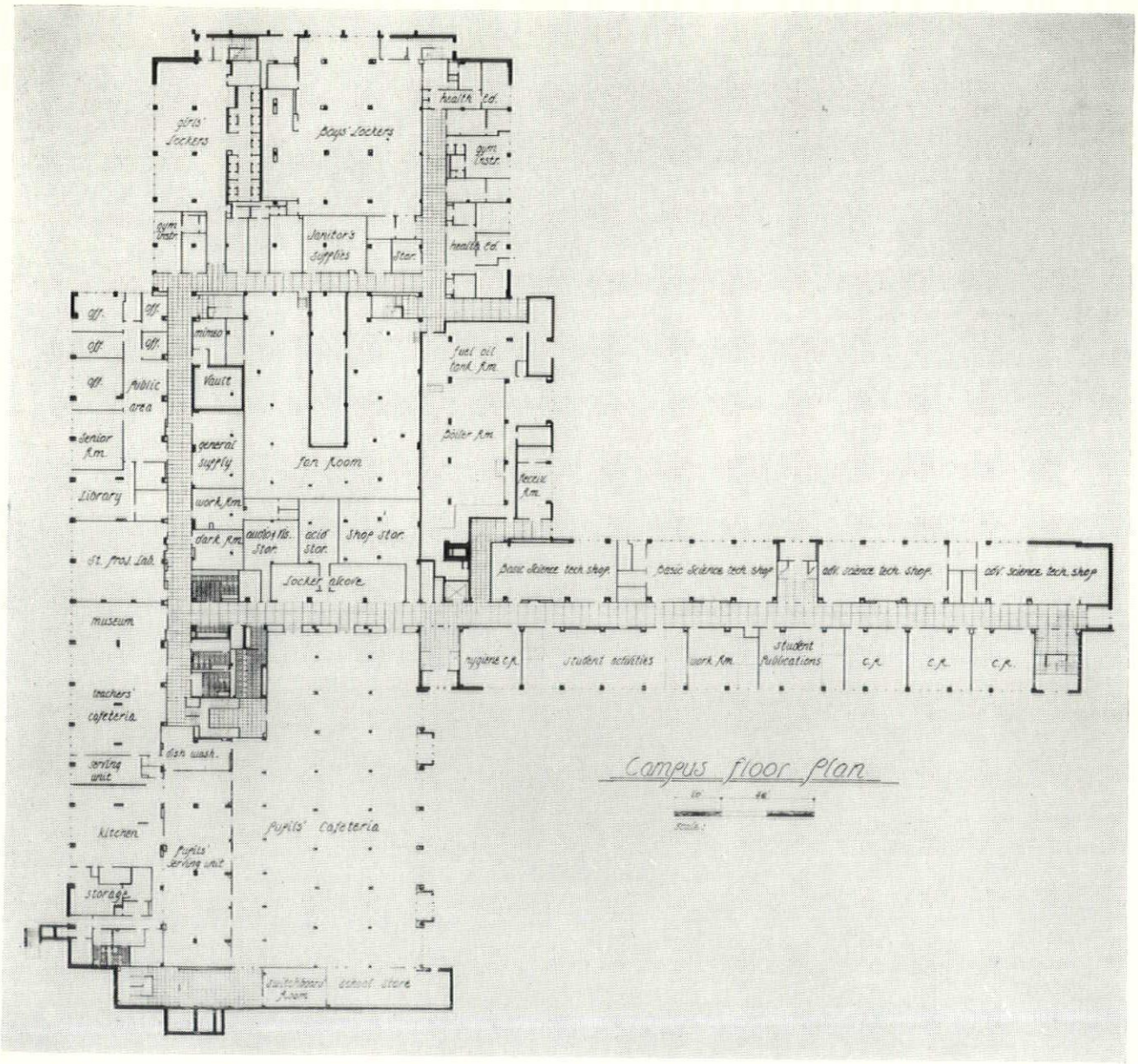
The building, having accommodations for approximately 3,000 specially selected boys and girls, has been designed to standards and facilities that are unique in the ordinary school planning. Despite the rarity of this type of school, the Board of Education's program of requirements had to be met. Provisions were made for 42 regular classrooms, 37 science rooms and shops, science lecture halls, four science project labs, three photographic dark rooms and studio, two greenhouses, radio house and weather stations, planetarium and astronomy observatory; as well as two gymnasia for boys and girls; 1,000 seat auditorium, library and cafeteria. All these are in addition to the usual offices, teachers lounges, and student and faculty dining rooms. Special facilities are being included for parent, alumni and student activities, and for guidance and college-entrance services.

A closed-circuit television loop will permit special programs to be viewed in many classrooms simultaneously. Lectures given in the science halls and dramatic rooms can be broadcast to certain other rooms and areas of the building. The electrical layout and services are complete enough to cover all scientific needs. A complicated and comprehensive system is being provided so that variable voltage will be available as needed.

The magnitude of the structure can possibly best be illustrated by the fact that 15,000 cubic yards of concrete, over 1,000 tons of reinforced steel and about 5,000 tons of structural steel went into the project.

In planning the Bronx High School of Science, the aim has been to have as many features as possible contribute to the education program. For this reason the heating plant, plumbing layout, electrical system and other equipment will be utilized as "teaching equipment." The shops are intended to develop fundamental skills in the use of basic tools and machines useful in and for the teaching and application of science, and to give opportunities for construction and repair of scientific equipment and apparatus.

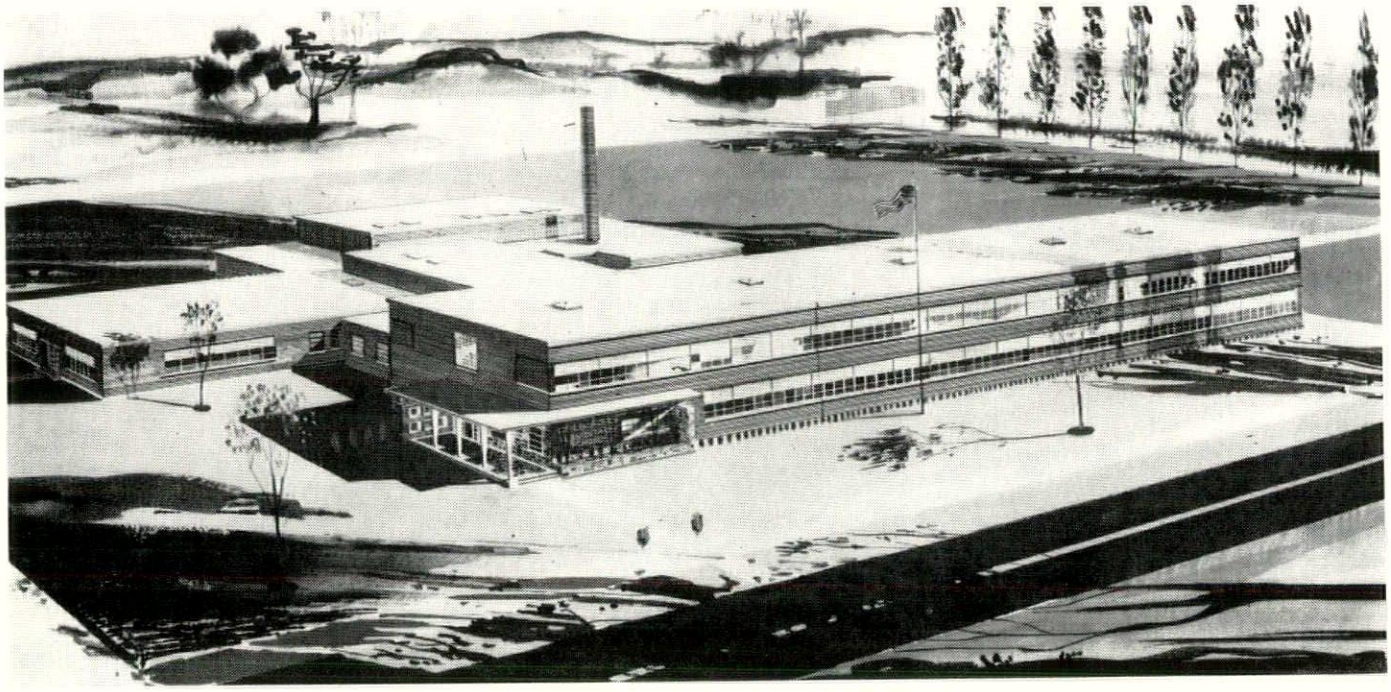
Thus this school is not only meant to be preparatory for the higher education of physicists, architects, astronomers and engineers, but is also basic training for meteorologists, photographers, printers and skilled mechanics.



GREEN ACRES ELEMENTARY SCHOOL

TONAWANDA, N. Y.

FENNO, REYNOLDS AND MCNEIL, *Architects*



Green Acres Elementary School is situated in the northeastern part of the Town of Tonawanda, Erie County, New York, and is the eighth school to be added to the Kenmore School System, Union Free School District No. 1, since World War II.

This building was designed for 650 pupils; contains twenty classrooms and two kindergartens. Additional features consist of an Auditorium with a seating capacity of 325, and a well-equipped stage; a cafeteria and kitchen to accommodate 200 students at a sitting, with a separate dining room for teachers; a double gymnasium with adequate locker and shower rooms. The cafeteria is also designed to serve as a community room for neighborhood activities. The Administrative Suite includes General Office, Principal's Office and Mimeograph Room.

Special rooms for the educational activities are a health center, consultant's room, special teacher's room, faculty room and a music room.

The typical classroom used in this building for the first time, was the outgrowth of months of study by the Architects, Administrative staff of the School District and the teachers of the School System. Its special features are a classroom area of 830 square feet, a self-contained coat room, storage closet and teacher's closet, which form a buffer between the classroom and corridor. Corridor lockers are completely eliminated.

In addition, each classroom has a working counter across the entire rear of the room with a Formica top, recessed sink, and drinking fountain. Storage space is provided under the counter. A 3′-0″ high by 6′-0″ long wall-hung storage cabinet and a 3′-6″ wide by 6′-8″ high book case are also included.

Metal window wall storage units are provided in conjunction with the unit ventilator cabinets. A maximum of chalkboard and corkboard area is provided on three sides. The primary rooms have their own private toilet in addition to the above features. All classrooms have wood floors, acoustic ceilings, painted walls and are lighted with fluorescent fixtures.

The building is steel frame construction with floors and roof supported on steel joists. Foundations are all reinforced concrete; exterior walls are brick with Indiana Limestone trim; classroom windows are of glass block with operating vision metal units, full-length of the room. Interior finish includes terrazzo flooring and facing tile wainscoting in corridors and in the cafeteria.

The toilet rooms have ceramic tile floors and facing tile wainscoting. The gymnasium has a wood floor, facing tile wainscoting, with brick above and suspended acoustic tile ceiling.

All other principal areas have suspended acoustic tile ceilings. All windows are glazed insulating glass.

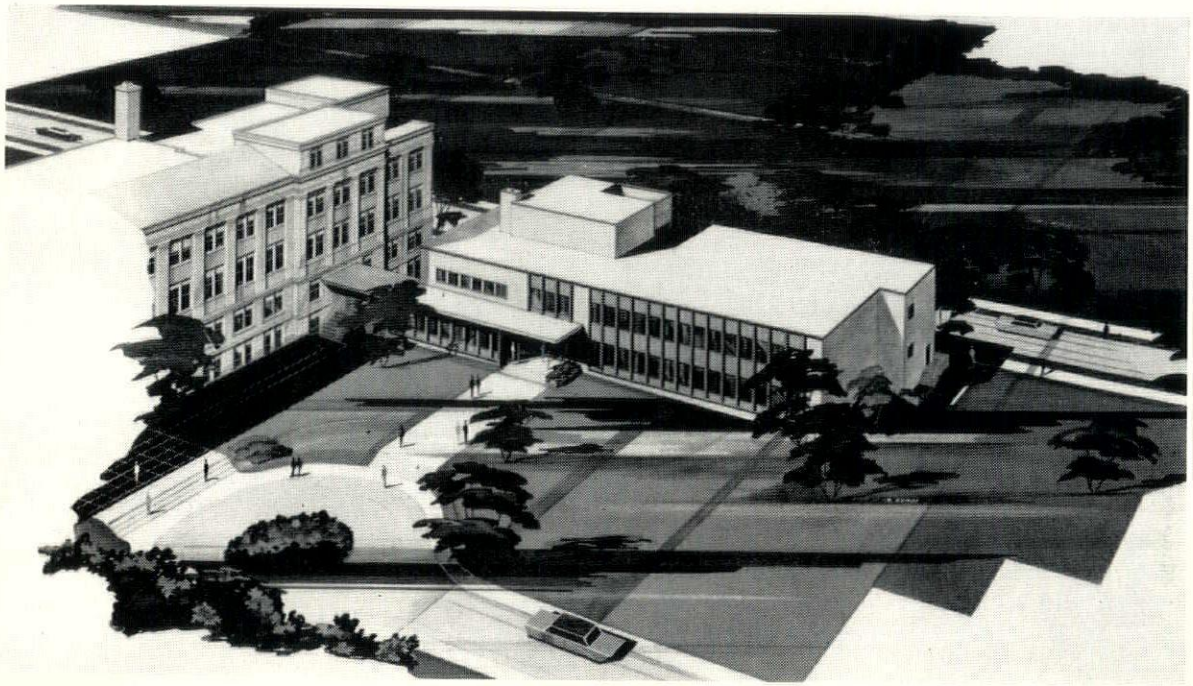
The building is heated by two steam, oil-fired boilers, each capable of carrying 7.8% of the heating load of the extreme period.

Contracts were let for this building in November of 1955 and were completed in April of 1957 at a cost of $15.53 per square foot.

THE NEW CANISIUS COLLEGE LIBRARY

BUFFALO, N. Y.

FOIT & BASCHNAGEL, *Architects*



The new Canisius College library is a three-floor building containing approximately 11,166 square feet on each floor, a total of 33,500 square feet. Rectangular in shape, the library is situated in front of the main classroom building, and is connected with it by a covered passage. The main entrance is close to ground level; wide window areas on the north and south sides give the building an open and inviting air. The library as planned is modern, functional, and economical in its operational aspects.

Mechanical features include the control of humidity, light and air-conditioning of each floor level on an individual level basis. Since all windows will be of fixed insulating glass, all air entering into the building will be electronically filtered and washed.

It has a structural steel frame, fireproofed. Floors are of reinforced concrete. Entire structure is sound-conditioned.

Except for a collection of reserved and restricted books, the library will be open shelf, and will have a book capacity of approximately 125,000 volumes distributed over three floors. Slightly more than one-third of the total capacity will be shelved on the lower level; the remainder will be distributed about evenly on the main and upper levels. Provision has been made for the shelving of recordings, periodicals, pamphlets, microfilm, etc. Free-standing steel shelving will be used.

Provision has been made for a reader capacity of approximately 400. Seating and study facilities include regular reading room tables and chairs, individual study desks, informal lounge areas, seminars, a typing room, small studies and discussion rooms. It is not anticipated that this maximum will be required for many years. In addition, a room for group listening or film viewing will accommmodate an audience of 70, it is also equipped for broadcasting and telecasting.

Of modular construction, with bays 22 feet 6 inches square, the building has a minimum of fixed interior partitions, and will thus be flexible and adaptable to changing needs. Shelving areas can be converted to reading areas, and vice versa. The work space for the library staff is adequate, but not extravagant, and has been planned in anticipation of a normal staff growth. Staff control points are centrally located on each floor; on the main floor, the circulation desk is strategically located for control, ease of access to the processing and work areas, and the Librarian's office.

Lounge space, where smoking will be permitted, is provided on each floor, as are restroom facilities and janitor closets.

The library's collection of old and rare books will be exhibited in various locations in protective shelving.

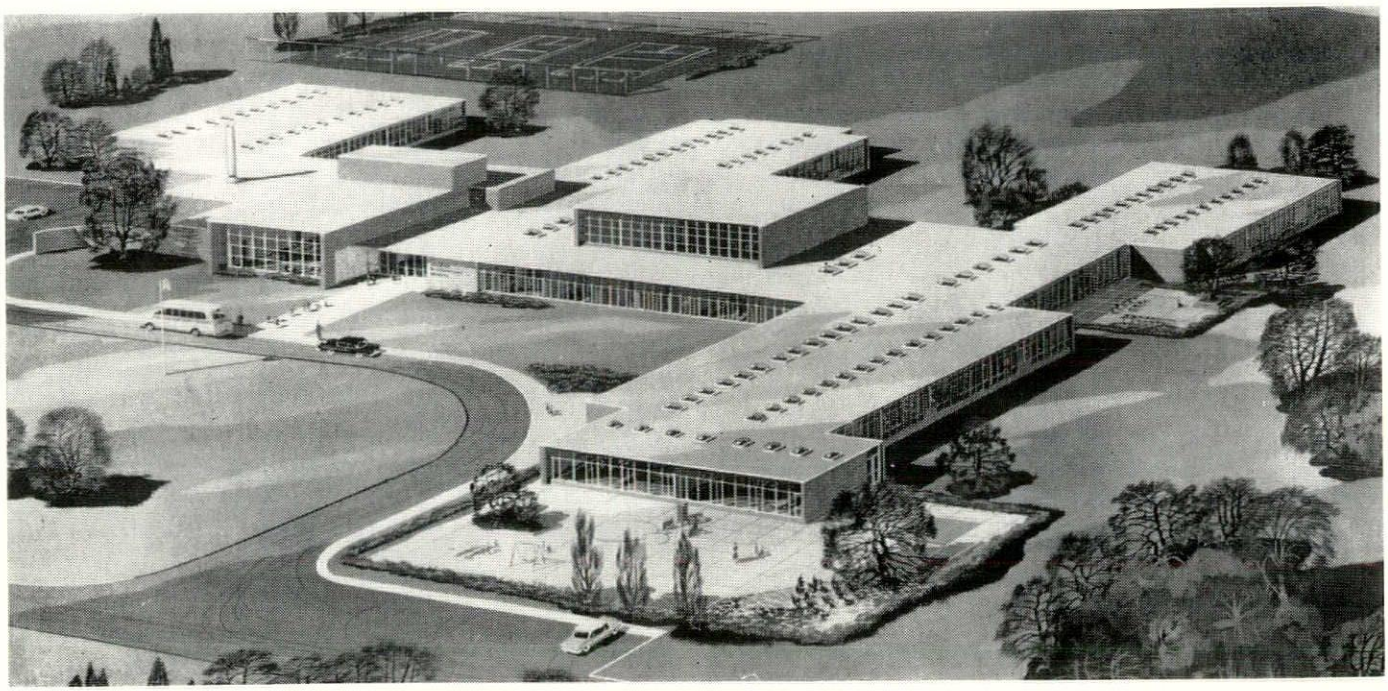
Display space for special exhibitions is provided in strategic locations.

It is anticipated that with the library's normal acquisition rate of between 2,500 and 3,000 volumes a year, the building will be adequate for the next twenty years. Sufficient ground will remain available at the west end for an addition, and provision has been made for an addition in planning construction details, heating, plumbing, lighting and air-conditioning.

WINDOM ELEMENTARY SCHOOL

ORCHARD PARK, N. Y.

PAUL HYDE HARBACH & ELON B. CLARK, JR., *Architects*



The Windom Elementary School is the most recent unit of the Orchard Park Central School System, having been completed and occupied in the fall of 1957.

The problem was to provide a twenty-eight room Kindergarten through Sixth Grade building with combined Cafeteria-Auditorium facilities and a physical education unit larger than usual to encourage community youth activities. The policy of the district being to hold Kindergarten half-day sessions, the foregoing was accomplished with twenty-six Class Rooms, the Library being an added requirement as was the Art Room which, in reality, is a work project area supplementing the individual work areas in the Class Rooms.

The site is reasonably level with extensive play areas for the proposed youth activities program referred to above.

Due to the nature of the sub-soil, it was expedient to keep all foundations and floor levels of boiler room areas as shallow as possible. The building itself is structurally of slab on grade construction with utility corridors under the corridor around the Gymnasium unit.

The structure is completely framed with light steel columns and beams, gypsum roof deck insulated and exterior walls of a light, warm, pinkish brick. All windows are of the continuous window-wall type.

A very extensive use of plastic sky lights permitted deep class rooms with excellent daylight distribution, thus shortening the corridors of the semi-detached class room wings which are each allotted to related grades. Each class room wing has a distinct color combination in terrazzo floor, glazed block wainscots and class room decor, including varied colors of corkboard tacking space in each room, together with the necessary work counters, sinks and, in the case of the Primary Wing, individual toilets.

The Gymnasium interior is of simple concrete block, painted, with a padded type wainscot.

The plan stresses multiple use of the Cafeteria-Auditorium unit with the Music Department. The stage is provided with simple curtains and drapes and lighting and, in addition, a folding partition which, when closed, permits use of both stage and music room as a music or other instructional area, while the main area is supporting other activities.

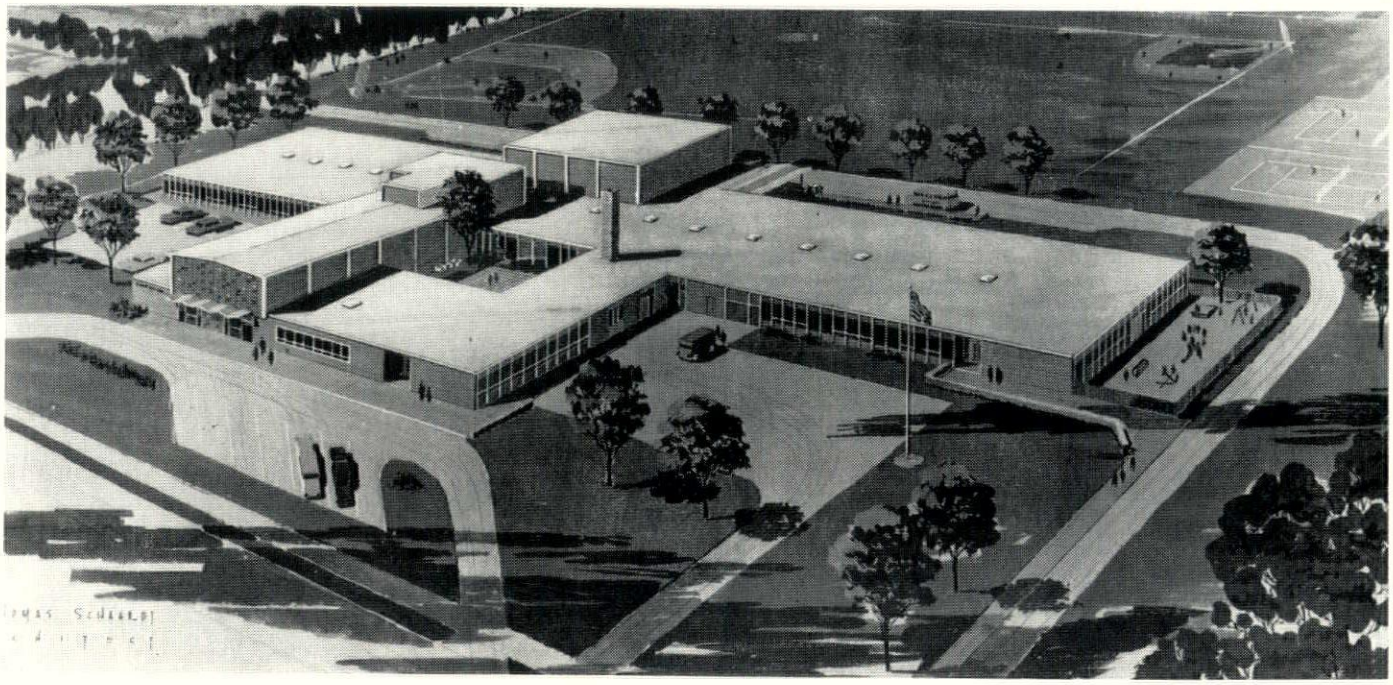
The heating system is of an oil-fired, forced hot water type for both convectors and ventilating units so designed that it could be converted in the future to a water cooling system should extensive summer use become desirable. The accompanying perspective shows the contemplated expansion of a fourth wing on the extreme left for eight additional Class Rooms.

Because of the isolated nature of the site, an extensive parking area has been provided for extra-curricular activities in addition to the use by the staff. As the District maintains a central bus depot, no provision was made for a bus garage for this particular unit.

SHORE ROAD SCHOOL

BELLMORE, NEW YORK

W. THOMAS SCHAARDT, A.I.A., *Architect*



The Shore Road School has an area of 59,310 square feet, and is located on a 10-acre site. This Kindergarten through Sixth Grade School will house 650 elementary school children with separate Auditorium, Gymnasium and Cafeteria facilities. The facilities, plus Administration, Health and Library areas are contained in a central block separating the classrooms into two wings, one for primary age and the other for secondary. Special classrooms for Music and Art, Home Economics and Shop classes are provided. An interesting plan feature is the very pleasant landscaped interior court adjacent to the Library and Music and Art room.

The building is of one story contemporary design and is located on the south shore of Long Island within view of the Jones Beach Tower. The school is constructed of fire resistant materials throughout with exterior walls of buff brick and porcelain enamel panels with limestone trim. The focal point of the design is a terra cotta mural over the main entrance, consisting of sea life motifs in keeping with the building's location.

The soil conditions required pile foundations and reinforced concrete floor construction providing a crawl space under the entire building. The insulating concrete roof slab is supported on steel joists and structural steel frame. Interior walls are of lightweight block and all walls are finished in plaster or other special finishes.

The classrooms are complete with built-in bookshelves, closets, bulletin boards and chalkboards. Separate toilet facilities for girls and boys are provided for each two classrooms. Daylight is supplied through a continuous window wall of glare reducing glass in projected sash. Walls are plaster, ceilings acoustical tile and floors vinyl tile.

Kindergartens and first grade classrooms have direct access to exterior play areas.

The Auditorium has fixed seating on a sloping floor and is acoustically treated for best sound conditions. Lighting is provided through indirect coves continuing from one sidewall across the ceiling and down the other wall.

The Gymnasium has a folding partition to divide the space into two teaching stations, one for girls and one for boys, complete with locker rooms, showers, etc. for each. With the partition retracted, a full size basketball court is provided complete with folding bleachers for spectators. Ceiling is perforated metal tile, walls sprayed plastic on block and floors, wood.

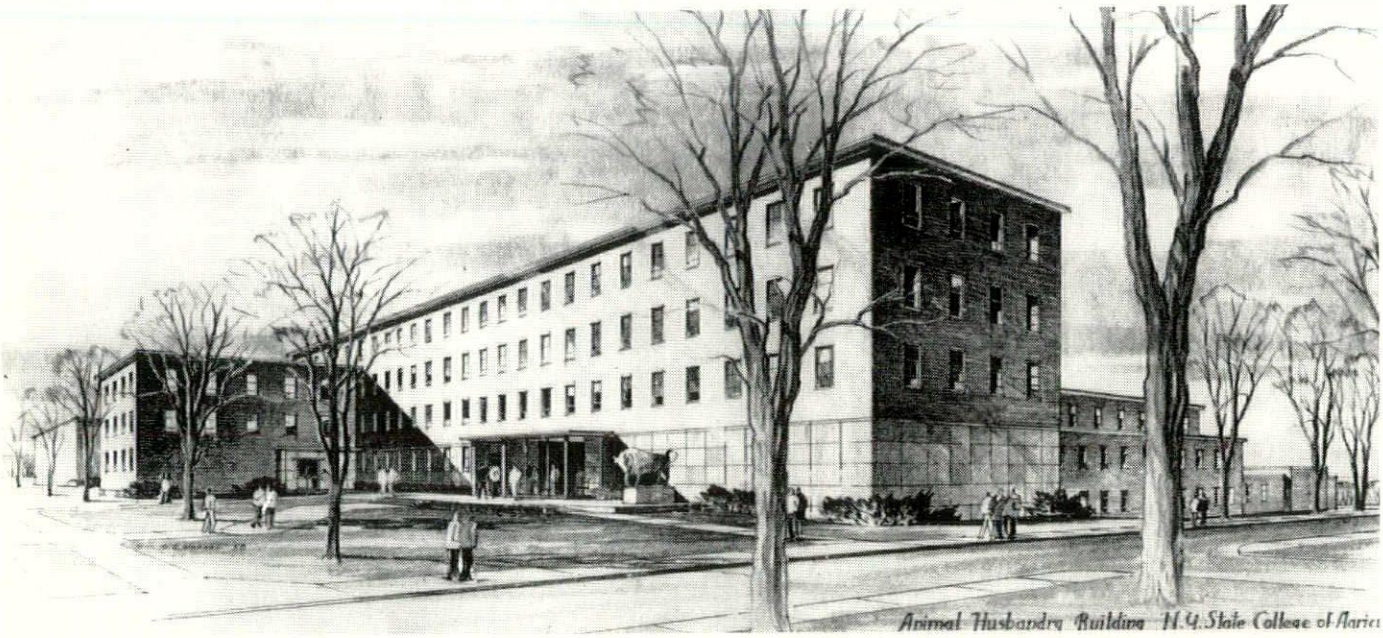
The corridors have terrazzo floors, and wainscots, with acoustical tile ceilings and plastic skylights to provide daylight.

The heating shall be forced hot water supplemented by unit ventilators. Lighting is mainly fluorescent.

NEW YORK STATE COLLEGE OF AGRICULTURE

CORNELL UNIVERSITY

JAMES CAMERON MACKENZIE, *Architect*



A new multi-million dollar building for the Department of Animal Husbandry at Cornell University will give the New York State College of Agriculture up-to-date facilities for development in this field. The College is a unit of the State University of New York.

Designed by New York architect, James Cameron Mackenzie, F.A.I.A., the new structure will harmonize with existing buildings while still bringing a new note to the eastern section of the campus.

State University architect, Otto J. Teegen, has coordinated the efforts of state officials, professors, scientists, and laboratory experts who have cooperated in the planning to produce a functional unit capable of housing the teaching, extension, and research programs of the department.

Covering approximately three acres, the new building will be located at the southeast corner of Tower and Judd Falls Roads. It is hoped that ground may be broken in the summer or fall of 1958.

According to plans, the building will have a four-story front facing on Tower Road and a two-story wing along Judd Falls Road, tapering to a one-story structure in the rear to house the meats division of the department. In terms of floor space, approximately 133,000 square feet will be provided. The proposed exterior is natural brick with limestone trim.

Six classrooms will be provided, including one of 300-student capacity, five student teaching laboratories, offices for academic and non-academic personnel, 18 research laboratories, modern facilities for slaughtering and processing the meat of livestock, animal rooms for housing small laboratory animals, a seminar room and supporting equipment.

The research projects of the department include such fields as dairy cattle, beef cattle, sheep and swine studies, animal nutrition, animal physiology, animal breeding, meat processing, forage crop utilization, and others. Provision is made to house this work along with the large division of animal husbandry extension personnel.

As in any highly specialized building, much thought went into interpreting the needs and aims of each division, the architect said. For example, it was found that a small separate slaughter room was needed for the slaughter and processing of certain experimental animals not suitable for use as food. The use of fixing fluids needed in the preparation of tissues for microscopic study, the introduction of undesirable organisms, strict food inspection codes and the reactions of retail buyers made it highly impractical to use the regular slaughter room for this purpose.

A further indication of the advanced thinking in the plans is the incorporation, in the slaughter room, of an anaesthetizing trap for CO_2 hog immobilizer. Developed in Europe, this trap has only recently become available in the United States. It will eliminate the disturbing squealing of hogs at slaughter and will conform to the recommendations of the leading humane societies.

The building will give adequate space to enable the staff in animal husbandry to do a more efficient and expanded job in teaching undergraduate and graduate students, said Prof. K. L. Turk, department head. It will also provide quarters for staff members who now are located in other buildings because of the inadequacy of the present headquarters. The principal building of the department, Wing Hall, was completed in 1914.

Aiding in the planning was the building committee of the department which included Professors J. K. Loosli, William Hansel, J. I. Miller, C. R. Henderson, K. L. Turk, and S. E. Smith, Chairman.

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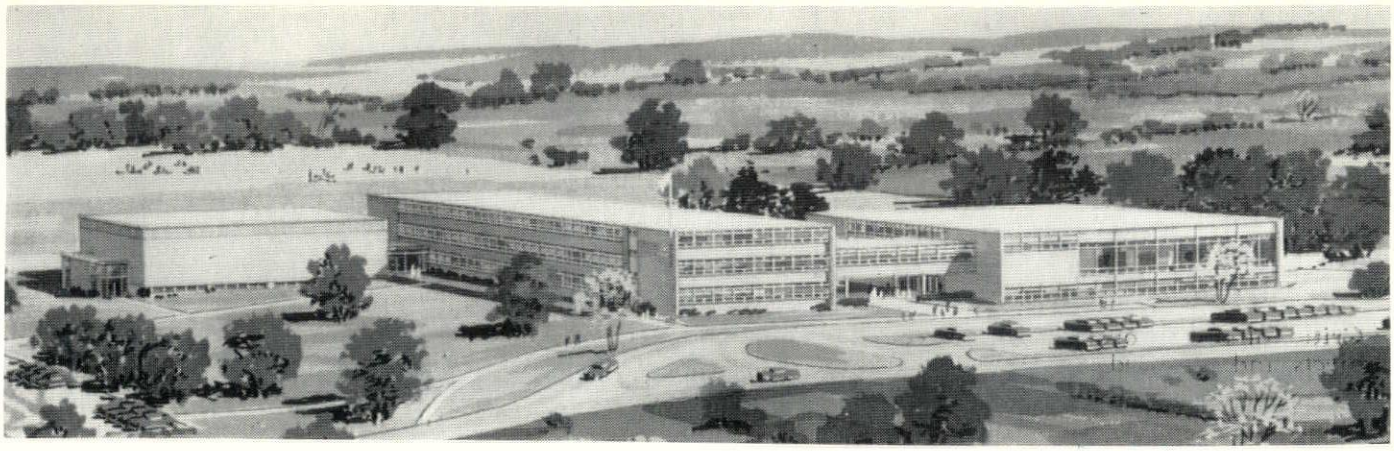


MIDDLETOWN JUNIOR HIGH SCHOOL

MIDDLETOWN, N. Y.

ROBERT A. GREEN, *Architect*

Supporting the recent Reader's Digest article, on the need for economy in current school building costs, the residents of the City of Middletown, New York, are justifiably elated with the fact that construction will begin immediately on their new 1,200 student junior high school at a cost one quarter million dollars less than expected. (Bids were received November 12, 1957.)

The Board of Education has directed the office of Robert A. Green, Architect of Tarrytown and Pleasantville, New York, to prepare contracts for formal signing with the following prime contract low bidders:

General Construction:	
Dean Construction Co. Inc.	$1,383,636.00
Heating and Ventilating:	
E. J. Wohrle, Inc.	$ 133,153.00
Plumbing:	
Meola-Annis Plumb. & Heat. Co. Inc.	$ 102,525.00
Electrical:	
Asa J. Strong	$ 134,865.00
*TOTAL CONTRACT PRICE FOR CONSTRUCTION	$1,754,179.00

*Total cost of construction includes the following costs for site work and fixed equipment not generally included in tabulating the cost of school building construction:

Site Development	$ 83,090.00
Roads, Parking, and Bicycle Shed	$ 26,945.00
Grounds Lighting	$ 2,874.00
Fixed Equipment (Kitchen Equipment, Stage Furnishings and Seating, Lockers, Bleachers, Science, Art and Library, Window Draperies)	$ 83,698.00
Elevator	$ 13,795.00
*TOTAL COSTS FOR SITE DEVELOPMENT AND FIXED EQUIPMENT INCLUDED IN PRIME CONTRACTS AS STATED ABOVE	$190,392.00

Detailed Unit Costs for Project are as follows:

		Per Pupil 1200 Pupils	Per Sq. Ft. 110,000 Sq. Ft.
Construction: (Less Fixed Equipment and Site Work)	$1,563,787.00	$1,303.00	$14.21
Construction: (Including Fixed Equipment and Site Work)	$1,754,179.00	$1,462.00	$15.95

The Architect and his assistant, Mr. Roger Sheppard, were formally commended by the Board of Education for the "evident completeness of plans and specifications which contributed in no small measure to the spirited bidding which resulted in a most favorable building cost."

Questioned as to the reason for the favorable construction costs received for the Middletown School project, the Architect states that the combined School Board and Citizen's Committee insisted upon an economical practical solution of their educational needs without sacrificing quality of materials or space and equipment requirements.

The superior quality of the specifications is established by the following examples of materials included in the above stated construction costs:

> Reinforced concrete and non-combustible framing, aluminum windows and exterior doors, face brick exterior walls, integrally colored sound absorbing masonry interior walls, 20-year built-up roof, mineral tile acoustical ceiling, solid core doors, lobby and entrance porches heavy flagstone, glazed corridor wainscots, toilet floors and wainscots ceramic tile, solid brass hardware, stainless steel kitchen equipment, vinyl tile floors, hardwood floors at gymnasium and shops.

Educational spaces provided for, exclusive of administrative and circulation requirements, include the following: 37 regular classrooms, 4 science rooms, 2 art rooms, 3 homemaking rooms, 1 metal and crafts —1 industrial arts—1 printing and textile, double gymnasium divided by automatic folding doors, boys' and girls' lockers, special exercise room, combined fixed seat sloped floor auditorium with stage and cafeteria with automatic folding doors, teachers' dining room, music suite, exhibit hall, library and student activity room.

The accompanying architect's perspective illustrates how the three story academic building is flanked by the gymnasium and auditorium on opposing ends.

The office of Robert A. Green is Architect for the new one and one-half million dollar campus expansion program for the Orange County Community College located in the City of Middletown, New York, and has received commissions for twenty-three schools in Westchester County in the past eight years.

HOW TO ANSWER CRITICS OF SCHOOL COSTS

By Robert T. Clark, A.I.A.
Chairman, Public Relations Committee
Central New York Chapter, A.I.A.

Critics of school construction costs resort to isolated projects and distorted conclusions to undermine the school building programs sorely needed throughout America today.

Consequently, grave harm is done to the educational opportunities of our children, to school administrators, to boards of education, to reasonable taxpayers who seek the truth, and to our architectural profession.

Illustrations of recent attacks directed at educators and architects are the following:

"Must Schools Be Palaces" by Dorothy Thompson in the August 1957 issue of "Ladies Home Journal."

"Do School Pupils Need Costly Palaces" by Holman Harvey in the September 1957 issue of "Reader's Digest."

Questions asked by Dave Garroway on his morning T. V. program, September 2, 1957.

"School Costs Study," an editorial in the September 2, 1957, Syracuse, New York, "Post Standard."

Realizing that counter-measures must start in individual school districts where voters have an opportunity to register a direct "yes" or "no" on school modernization and expansion proposals, the Central New York Chapter of the American Institute of Architects has prepared a list of recent sources to which members of the chapter and others may turn for examples of the economy and good judgment that go into current school design and construction.

The Central New York Chapter has compiled a list consisting of articles in national professional magazines and made available to the members, a "letter to the editor" written by the Chapter's Committee on School Buildings, headed by F. Curtis King of Syracuse, and the Chapter's Public Relations Committee, headed by the author.

The Chapter is pleased to place its findings at the disposal of architects everywhere, but it cautions that the material should be used only where and when local conditions demand a debate on building costs.

Source Material

Refer to the following material when your editor questions a building appropriation, when a taxpayer asks "why" at a school meeting, or when a leaflet is circulated by opponents prior to a school bond vote:

"A.I.A. Memo" dated December 16, 1957. The third and fourth pages of this issue of the Memo lists many sources of factual information on school costs.

"Stretching the School Building Dollar," September 1957, The American Association of School Administrators, Washington 6, D. C. With text and graph it shows that communities are receiving "more mileage out of the school building dollar than people . . . . . are getting out of the dollars they spend for nearly any other product." The article also declares: ". . . . . a good look at the facts reveals that they (schools) have been planned with a careful eye to economy as well as to usefulness and pleasing appearance."

A speech by W. Tjark Reiss, senior architect, Division of School Buildings and Grounds, State Education Department, at the annual convention of the New York State Association of District Superintendents of Schools, Cooperstown, New York, September 13, 1957. His theme: Modern New York State public schools reflect economy in space, design, materials and maintenance. "The debt service for a new building represents only a small part of the increase in the total tax rate. Most of the increased tax rate goes for current expenses. This matter cannot be too strongly stressed in the presentation of a bond issue to the people."

"Must Schools Be Shacks?" by Peter Prouse, assistant to the executive director, NSBA, in the October 1957 issue of "The American School Board Journal." He writes a direct rebuttal to the stories by Miss Thompson and Mr. Harvey.

"School Cost Rise Halts" in the October 17, 1957 issue of the "Engineering News-Record." The article points out that "Costs of new elementary K-6 schools in New York State appear to halt their 18 month rise which began in the third quarter of '55 . . . ." It adds: "Costs of secondary schools . . . . show a similar trend. It is apparent that New York taxpayers are getting their money's worth when buying new schools in 1957. This is because the median cost of new schools has not risen as rapidly as basic costs of construction materials and labor . . . ."

"Planned Propaganda," a feature written by Arthur H. Rice for the October 1957 issue of "The Nation's Schools." He effectively refutes the misleading impressions left by Miss Thompson, Mr. Harvey and Mr. Garroway.

"The School Building Situation" by Walter D. Cocking, editor of "The School Executive," in the November 1957 issue of "The School Executive." He poses the question: "Shall we build the schools we need or shall we sacrifice the educational opportunity of today's children?" He urges construction of the schools, and outlines way of providing them.

A leaflet, *"Economies in Schoolhouse Construction,"* published by the Empire State Chamber of Commerce. It summarizes ways to save money and at the same time build better schools.

Suggestions from Mr. Purves

Mr. Edmund R. Purves, F.A.I.A., executive director of the A.I.A. in Washington, D. C., wrote to the author in September 1957, offering these suggestions:

> "In addition to taking steps to counteract the susceptibility of editors to articles expressing ill-founded bias against the design and building of schools befitting the needs and standards of education in the United States, we are planning to turn public interest in such articles to our advantage. This can be done in your area, as well as elsewhere across the nation, by architects explaining to educators, PTAs and taxpayer groups, as well as to newspaper editors, the basics of

(Continued on Page 44.)

THE OCTAGON FAD

INSTALLMENT II

By Carl F. Schmidt

Very few octagonal houses were built that followed generally all the recommendations of Fowler. The idea of the entrance into the basement is rarely found. Locating the kitchen in the basement and the dining room on the first floor was tried in probably ten percent of the octagons. It was not a new idea since it was popular in the south from Savannah to New Orleans. It took time to send a large meal to the floor above with an inadequate dumb-waiter. Some of the houses were encircled with a one-story porch, very few had a two-story porch. Most of them had a porch across three of the eight sides, and a rear porch across one side and some had no porches. Less than fifty percent of the octagons had central stairhalls. Many of the houses were small, with sides less than sixteen feet long, in which it was not practical to have a central stairhall.

The octagonal house plan illustrated in "A Home for All" published 1854, as the residence of John J. Brown, Williamsburgh, New York, was very popular. This plan provided two nearly square rooms through the center of the house and the remaining space on each side was used for the stairhall on one side and a small bedroom, closet and pantry on the other.

Although never suggested by Fowler, many of the octagons had a rectangular projecting wing in which were located the kitchen, pantry and store rooms.

The "gravel" or "grout" wall, over which Fowler waxes enthusiastically in the book published in 1853, is made by mixing sand, gravel, small stones, as well as some large stones with lime. Oyster shells, slate chips, brick bats, furnace cinders, or anything hard would answer the purpose just as well as stones, said Fowler. He advises that the materials be mixed wet in a mortar-bed, first the lime and then add the sand, coarse gravel, small stones, brick bats and slate chips. When thoroughly mixed, the material was deposited between wood plank forms, the thickness of the wall. The form boards were from twelve to eighteen inches high, secured to vertical standards. After the material was allowed to dry for twenty-four hours, the form boards were raised and again secured to the standards and the next layer of wall poured. The durability of the grout walls depended on the plaster applied on the exterior of the walls. It consisted of a coat of common plaster similar to the scratch-coat applied to interior walls, and a hard finish coat containing some plaster of Paris, as well as indigo lampblack or other coloring matter. It was then often scored or marked off to imitate stone jointing.

When the finish coat breaks or flakes off from the grout walls, water and the action of freezing and thawing can easily attack the softer grout walls and it will rapidly deteriorate. But many houses with this type of walls are still standing and are in good condition.

When Fowler said that—Goodrich was the original discoverer of the gravel or grout wall, he was very much misinformed. The Romans were familiar with pozzolano concrete, made with a natural cement. As early as 1796 James Parker of England obtained a patent for the manufacture of a cement, and a cement was made in the United States as early as 1818, with the discovery of a natural cement rock near Chittenango, New York, by Canvass White, an engineer on the Erie Canal. A cement mill was built in Rosendale, New York, as early as 1828.

A type of wall called "pise" made of rammed earth or adobe has been used in Europe for several hundred years. In England it was called "cob." The walls were made of clayey, somewhat sandy, loam and vegetable earth. Sometimes it was mixed with milk of lime instead of water. The walls were built with wood plank forms, and covered with a lime and sand plaster just as Fowler suggested for his gravel wall. There certainly were immigrants from Europe who could have given Fowler all the information necessary to build this type of wall.

Another type of wall that Fowler recommended in his books was the "board wall," and we find examples of it in localities where lumber was cheap. It was built of boards of various thicknesses, from one to two inches, and they were about four and six inches wide. The boards were laid flat alternately, starting with a six-inch-wide board and then a four-inch-wide board

and nailed down solidly, letting alternate boards overlap at the angles. Interior partitions were built up in the same manner and at the same time as the exterior walls, letting a board project every few rounds into the exterior walls and nailed to it. Lathing is omitted on both exterior and interior partitions because the plaster is forced into the one inch deep recesses and clinches into these openings. The same result can be achieved by using boards of equal widths and staggering them, laying one board out about three-quarters of an inch, and the next in the same distance, thereby forming the same recesses for the plaster to clinch.

There are other suggestions in his books very interesting to us today, but they were not original with Fowler because they are also found in builders' handbooks of that time. He advocates that each room should have its ventilator, and that the ventilator should open at both the bottom and top of the room, so as to carry off any bad air which may settle at the bottom or rise to the top. The ventilators should be provided with registers, so that their action may be under control. The vents should be carried to the top of the house just under the eaves where they can be opened between the rafters and thus the bad air cast out of the building. A box or round stick six to eight inches in diameter is pulled upward through the walls as the grout walls are poured, leaving flues or vents in the wall. Similar ducts can be built into the walls to be used as speaking tubes.

(More)

Another real necessity for a good house Fowler suggests is the installation of an indoor water-closet. "And under the stairs is just the place for one, its contents passing down one of those chimneys, into a receiving box in the basement, made tight and easily cleaned, and the closet itself ventilated into an adjoining chimney." — "To squeamish maidens and fastidious beaux this point is not submitted, but matrons, the aged and the feeble, are asked is not such a closet a real household necessity and luxury? Yet it need be used only in cases of special need, the one generally used being outside, as usual."

There were other men besides Fowler who were advocates of the octagonal plan, and some architects who published books on residential and cottage building, included plans of this type. Samuel Sloan, the famous architect from Philadelphia, published a book in 1852. It contained the plans of a large house very similar to the one he designed for Dr. Haller Nutt, in Natchez, Mississippi.

"The American Cottage Builder" was published by John Bullock in 1854. He not only repeats Fowler's reasons for the superiority of the octagonal plan, but says that an octagonal house looks well from all sides and offers much less resistance to the wind. Along the coast from North Carolina to Maine one often hears that the octagonal form was chosen because it had much less resistance to the wind.

Zephaniah Baker of Worcester, Massachusetts, who built several octagonal houses, published his book, "The Cottage Builders' Manual," in 1856.

In the book of plans, "The Economic Cottage Builder," published by Charles Dwyer in 1856, there is an octagonal one story cottage with an encircling porch.

Stories that have been handed down say that some people built octagonal houses to eliminate the howling of the winds around a right angle corner, others just wanted something new or to be different. On several occasions we did hear that the builder used the octagonal form so that the devil could not corner him.

There was also some opposition to the building of the octagonal house. Builders knew that it took more time to frame an octagonal house and in spite of Fowler's arguments about the increased floor area in proportion to length of exterior walls, it was difficult to properly arrange the rooms around the angles. The editor of "Moore's Rural New Yorker" in 1860 writes as follows: "With the octagon and six-sided houses we were never much pleased, and never recommended such to our readers. They require more labor in their construction than square buildings of the same dimensions; and it is difficult to arrange the rooms in a desirable form without loss of space . . ."

Most of the octagonal houses were very simple, none had an elaborate entrance which we associate with the Post-Colonial or Greek Revival styles. Generally, in the cornice the crown moulding and facia projects from about fourteen to thirty inches beyond the wide plain frieze. Rarely do we find an architrave member below the frieze. Often simple sawed wood brackets support the overhanging cornice, and only occasionally do we find elaborately carved wooden brackets. Of course, there are a few exceptions as "Longwood" in Natchez, Mississippi, the Armour-Carmer House at Irvington, New York, and the Richards House in Watertown, Wisconsin, which were large well designed, elaborate mansions. Usually, the interiors were very simple without wood carvings, ornamental plaster ceilings, or moulded cornices. The spacious rooms had high ceilings, were well lighted, with heavy and often crude mouldings around the doors and windows.

The people who built the eight-siders were individualists and did not care if their house was the only one of that type in the community. They would not cling to the traditional ideas or customs, but were bold experimenters. Let us read some of the truths of beauty that Fowler, the "high priest of phrenology," expounded in his books. "And here let me develop the law which governs this whole subject of taste and beauty. Nature furnishes our only patterns of true ornament. All she makes is beautiful, but mark, she never puts on anything exclusively for ornament as such. She appends only what is useful, and even absolutely necessary, yet so appends it as that all necessary appendages add to beauty."

"The beauty of a house is scarcely less important than its room. True a homely but convenient house is better than a beautiful but incommodious one, yet beauty and utility, so far from being incompatible with each other, are as closely united in art as in nature; they are inseparable. It is hardly possible to have a truly handsome house without its being capable of being made as handy inside as it is beautiful outside; nor can a homely-looking house well be made convenient. I repeat, beauty and utility are as closely united in architecture as they are throughout all nature. If, therefore, the square or winged form of house is best, it will look best, and if it is the most beautiful, it can be made the most comfortable.

"Form embodies an important element of beauty. Yet some forms are constitutionally more beautiful than others. Of these the spherical is more beautiful than the angular, and the smooth and undulating than the rough and projecting. — Hence a square house is more beautiful than a triangular one and an octagon or duodecagon than either.

"Since, then, the octagon form is more beautiful as well as capacious, and more consonant with the predominant or governing form of Nature—the spherical —it deserves consideration."

The distinctiveness of the design and the reasons Fowler presented in his books appealed to many people. The decade between 1850 and 1860 was the age of the octagons. Eight-sided houses, school houses, barns, carriage houses, smoke houses, chicken houses, bath houses and even an octagonal blacksmith shop was built. There were also many other architectural appendages built in the octagonal form and are still being built, as judges' stands at race tracks, garden houses and pavilions on fair grounds. In Alabama and Mississippi there are many houses with octagonal towers. Some are the same height as the house, two stories; others are carried a story higher. They are said to have been influenced by the octagonal pilot houses on the Mississippi River steamboats.

(Continued on Page 46.)

LEGISLATIVE COMMITTEE REPORT

Because of the numerous inquiries received at the headquarters office of N.Y.S.A.A. as to the disposition of many architectural bills that were introduced in the 1958 session of the Legislature, the Legislative Committee is pleased to submit the following summary of the more important measures which the Committee considered and received. First we report the result of major bills which were defeated or killed in Committees of the Legislature:

(1) The engineering corporation bills by Milmoe and Manley. Defeated. We had opposed them.

(2) The proposed amendment to the Education Law that would have eliminated the architect's seal and the $10,000 provision, leaving only the 30,000 cubic foot requirement. This is the bill that first passed the Assembly, then reconsidered and debated and, due to the efforts of our executive director, was recommitted to the Rules Committee where it remained to the end of the session. We had opposed this bill.

(3) The Goddard Resolution No. 95, which would have set up an architectural section in the Education Department and sidetracked the private architect in the preparation of plans for various types of schools. Defeated in Rules Committee. We had vigorously opposed this bill.

(4) All the bills which would have waived qualifying examinations for registration and licensing of architects were defeated. We had opposed all of them.

(5) The bills permitting licensing and registration of landscape architects never got out of committee. We had approved of the legislation "in principle."

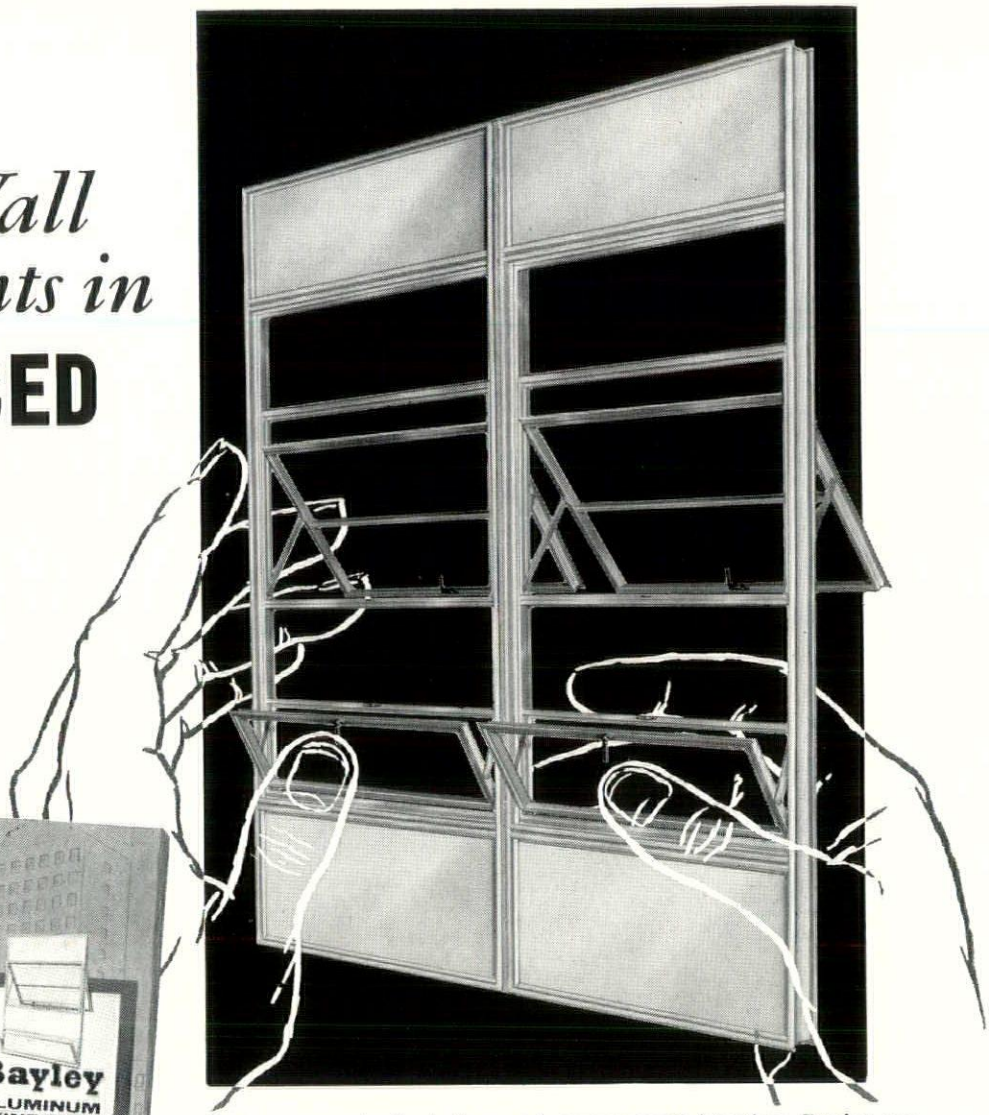
(6) The bill that would have given the State Labor Department jurisdiction in all areas of the state on industrial and mercantile buildings was defeated in committee. Because of the conflict between the Labor Department and the State Building Code Commission, we had supported this measure as a temporary expedient until these differences were resolved.

The Governor took action of the following bills, which had been approved by the Legislature:

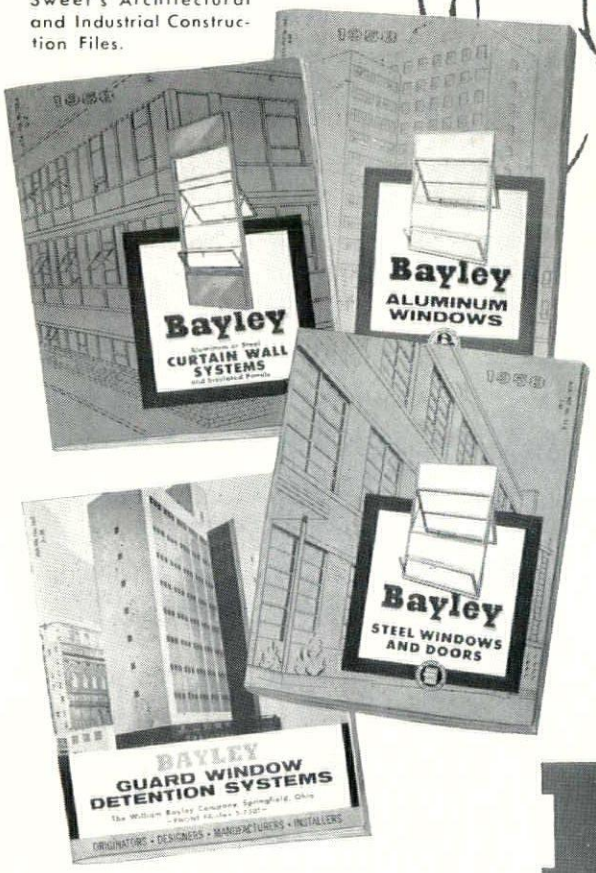
Senate Int.	*Print*	*Assembly Int.*	*Print*	*Subject*	*Action*
		165	4909	(Penal Law, (institution, (fire-escapes	Vetoed by Governor
1026	1973			(M.D. Law, (heights, (ownership	Chapter Law 44
		1255	4842	(M.D. Law, (heights, (ownership	Chapter Law 833
1037	3198			(M.D. Law, (stairs, (width	Chapter Law 131
1038	4256			(M.D. Law, (sprinklers, (exceptions	Chapter Law 941
		1264	4846	(M.D. Law, (alcoves, old- (law buildings	Vetoed by Governor
1029	1032			(M.D. Law, (motor (vehicles area	Chapter Law 414
		1272	1272	(M.D. Law, (stairs, inside (stairs	Chapter Law 103
1350	4319			(M.D. Law, (doors, (openings	Chapter Law 541
		1715	4621	(M.D. Law, (stairs, tene- (ments, alter- (ations	Chapter Law 438
1033	3821			(M.R. Law, (Firemen, (inspections	Chapter Law 355
		1273	S4308	(M.R. Law, (Railings, (openings, (roof	Chapter Law 406
943	946			(Education Law, (engineers, (licenses	Chapter Law 23
1183	4483			(Housing (Authority, re- (organization	Chapter Law 916
		1406	1408	(City Law, (outdoor (advertising	Vetoed by Governor
		1574	4772	(Village Law, (building (inspectors	Vetoed by Governor
		1854	4615	(Town Law, (planning (board plats	Chapter Law 761
		2166	3953	(Municipal (Law, slum (clearance (hearing	Chapter Law 243
1810	A4960			(Health Law, (kerosene (heaters	Chapter Law 883
		2345	2391	(M.R. Law, (water closets, (ventilation	Chapter Law 284
2281	2395			(M.D. Law, (stairs, fire- (protection	Chapter Law 479
2292	2406			(Judiciary Law, (out of state (attorneys	Vetoed by Governor
2336	4457			(M.R. Law, (walls, fire- (resistive 2- (story dwellings	Chapter Law 797
		2820	2903	(Tax Law, (Multiple (Dwelling (exceptions	Chapter Law 967
		2994	3101	(Labor Law, (unemp. ins. (bldg.	Chapter Law 889
		3176	3284	(Education Law, (licenses, (qualifications	Chapter Law 180
		3138	S4546	(State Agencies (rules, codes (compile	Vetoed by Governor
		3328	3465	(Town Law, (zoning law (revisions	Vetoed by Governor

(Continued on Page 47.)

Put Your Curtain-Wall Requirements in EXPERIENCED HANDS . . .



THESE FOUR CATALOGS show how Bayley can work with you on both steel or aluminum windows and curtain wall systems for buildings of all types. Copies will be gladly sent on request—or see Sweet's Architectural and Industrial Construction Files.



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PART II

THE TOPOGRAPHIC SURVEY

The first basic tool required by the design team prior to commencement of work is a good topographic survey. The designer should be in a position to advise the client as to his exact survey needs, justify the cost of same, and specify the exact requirements to the surveyor by means of a check list.

The above is necessary for the following reasons:

1. Many surveyors in a client's territory are well experienced in boundary work but have had little experience in the type of topographic survey required for a large project such as a central school or industrial concern involving many thousands of dollars in earthwork and drainage.

2. A topographic survey can have a different meaning to each of several surveyors—depending on background experience, training, etc.

3. The topographic survey is the *basic* research data on which a project is conceived, and a design conceived on incomplete, vague or inaccurate data can prove costly to the client and embarrassing to the designer.

4. The topographic survey is the basis for the bidding and construction documents. Incomplete, vague or inaccurate data can lead to terrifying extras. When one considers that a 6″ discrepancy over 5 acres amounts to approximately 4000 cubic yards, the accuracy of the "topo" becomes a must. Many of the central schools in upstate New York develop thirty to fifty acres.

Based on the above, the following is suggested as a check list, that sent to a surveyor, should *help* to clarify the needs of a project.

CHECK LIST OF INFORMATION NEEDED ON SURVEY MAP

The following information is needed on this survey:

Scale 1″= Scale varies depending on size of site.
North Point
Date
Surveyor's name and license number

I. *Boundary Surveys*—shall show the following information:
   - a—Bearings and distances of all property lines and adjacent right of way. Precision shall equal 1/3000 or better.
   - b—All easements, if any, across property to be shown.
   - c—Total acreage of tract.
   - d—Corners shall be staked with iron pins and marker stakes shall be provided.

II. Topographic Surveys—shall show the following information:
   - a—*Horizontal Control*—by co-ordinate point method.
     1. 50′0″ grid to cover the entire site from an established base line (stakes for grid to be left in the field) *plus additional points necessary to locate all breaks in grade.* Precision shall equal 1/500.
     2. Locate the following details from the grid:
        - a—Buildings—state type of structure.
        - b—Drives, walks, curbs, and culverts—indicate type and surface materials.
        - c—Stream, ponds, wells, springs—describe if necessary.
        - d—Existing trees (over 6″) give species and diameter.
        - e—Fences, hedgerows and edges of wooded areas.
        - f—Public roads, through or adjacent to property—give bearing and distance of tangents and all curve data.
        - g—Locate rock outcrops, if any.
     3. Utilities:
        - a—Locate all underground utilities on or within a reasonable distance of property; show all valves, M. H., connections, etc.
        - b—Locate power and telephone poles on or adjacent to site.
        - c—Give pressure of water and gas lines.
   - b—*Vertical Control*—describe bench mark source and datum.
     1. Location of additional Bench Marks set by surveyor on property to complete survey.
     2. Elevations at 50′0″ co-ordinate points and other ground points to nearest 0.1 of a foot. Show all spot elevations. Show contours, *one foot interval.*
     3. Elevation of all structures to nearest 0.01 of a foot.

     Elevations required:
     1. Existing buildings—first floor, basement floor, ground grade at corners, steps and entrances.
     2. Roads and drives—along center line sufficient to show profile.
     3. Trees at base; high and low side if on slope.
     4. Inverts at sewers and culverts.
     5. Finished grade of all M.H., valve boxes, grade slabs, steps, etc.
     6. Proposed profile by city ordinance, if any, of plotted but undeveloped streets.

III. Surveyor may be required to locate proposed building in the field, giving ground elevation at corners and breaks in grade to facilitate footing design.

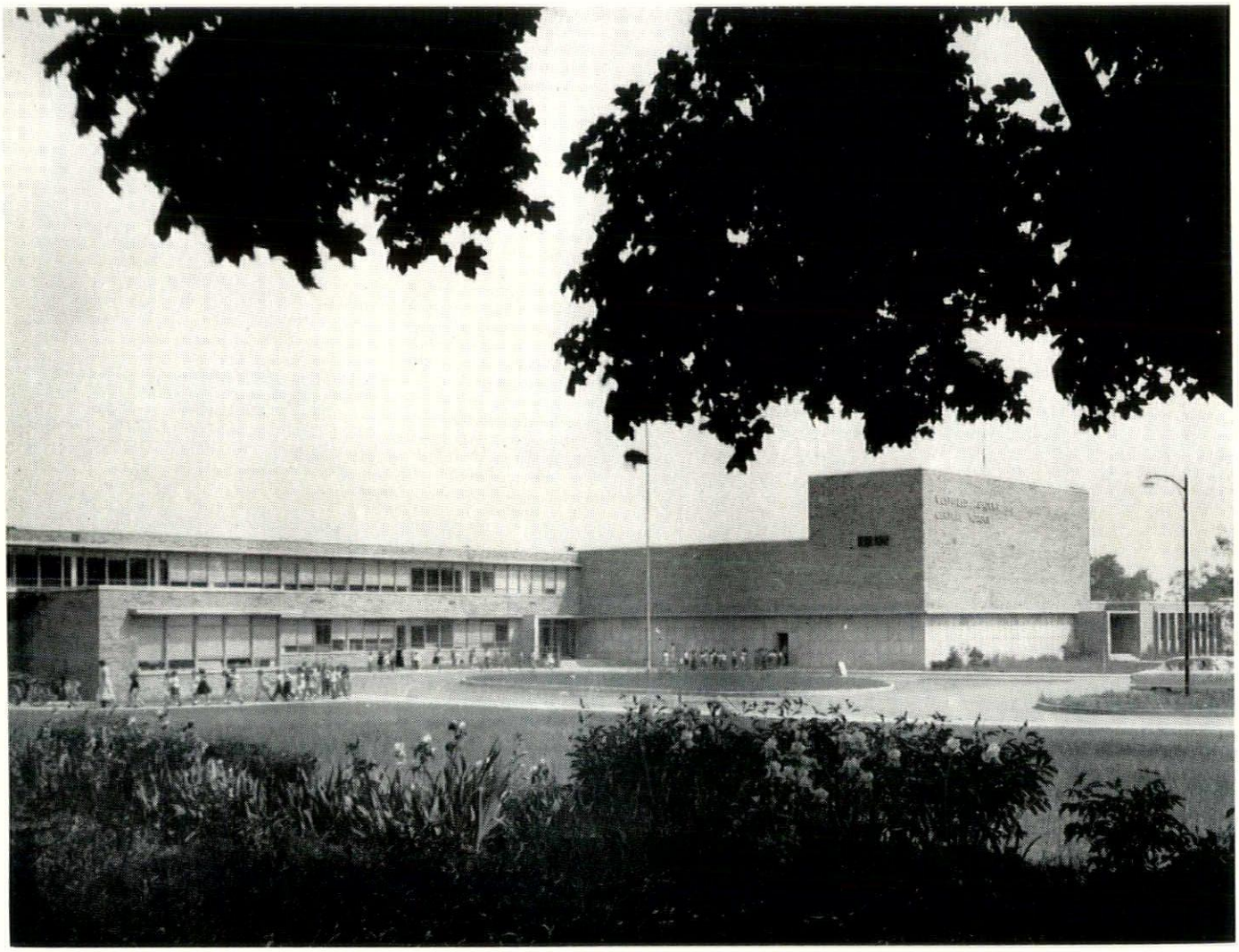
IV. *Remarks*

Questions often arise as to the need for this apparent maze of information. The following may help clarify and justify some of the items.

*A. This writer has learned *never* to trust ground surveys that show contours only. The spot elevations taken by the surveyor are the only check the designer has. The spot elevations allow the designer to check both the interpolation of the surveyor—and also the liberties taken in the name

*Aerial photogrammetric surveys are an exception.

(Continued on Page 46.)



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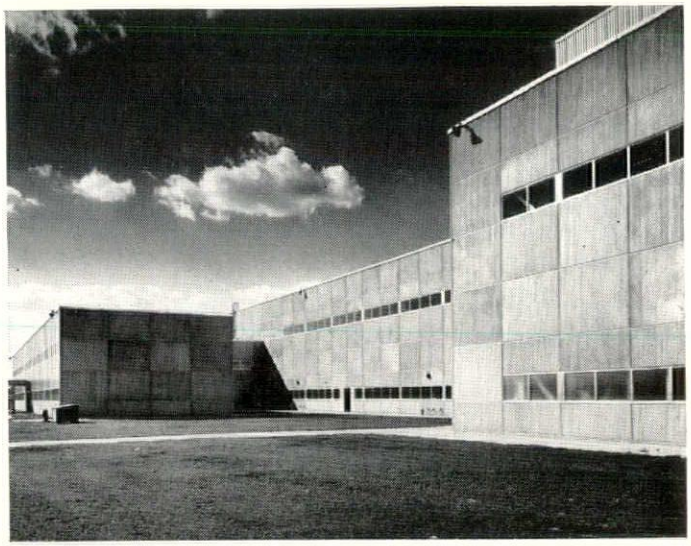

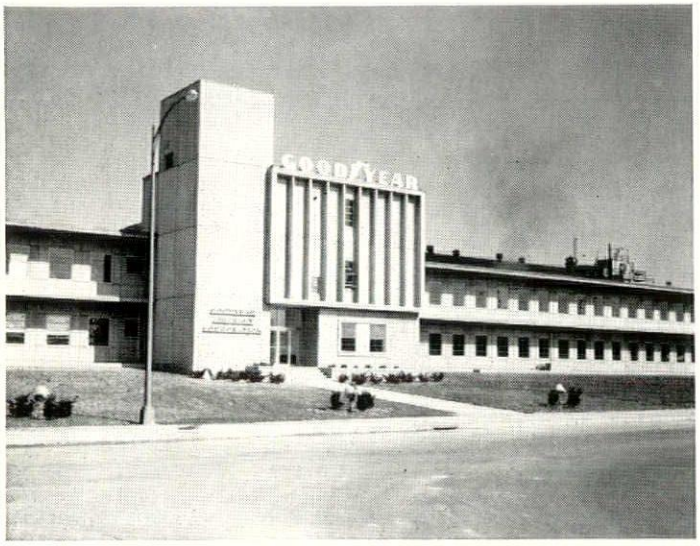

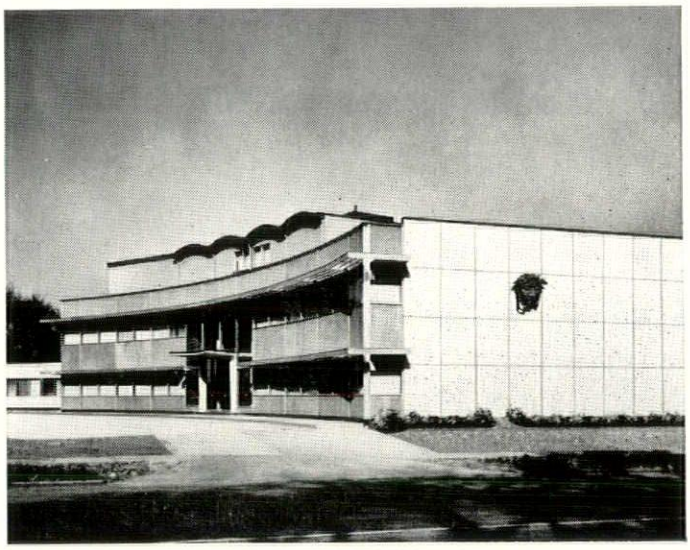

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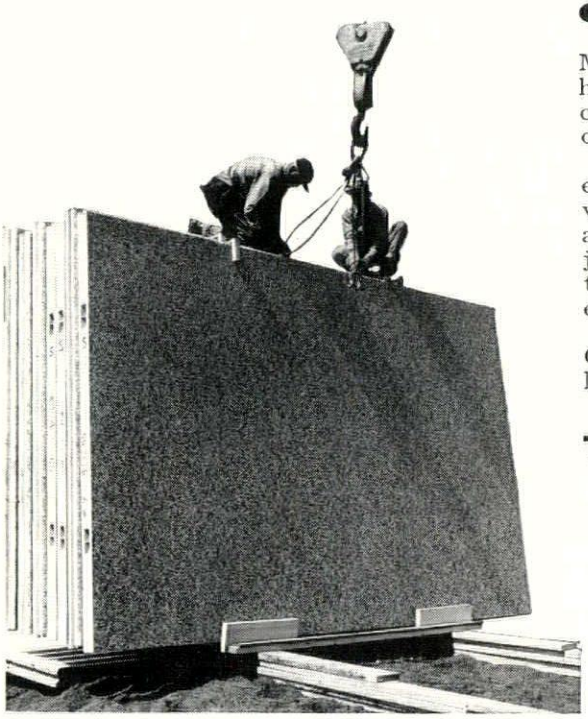

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SUBSURFACE CONSIDERATIONS

by

LOUIS J. GOODMAN[1]

Part II

METHODS OF UNDERGROUND EXPLORATION

Introduction

This is the second of a series of articles dealing with the field and laboratory investigations which are essential to an intelligent and satisfactory foundation selection and design. The field and laboratory investigations required to obtain the necessary information are called the subsurface investigation program. These articles are being presented concurrently with a series of articles by James E. Glavin, ASLA, on land planning. Topics that will be covered in this series of articles include methods of underground exploration (including depth and spacing of test borings), soil identification and soil classification, purpose of laboratory tests, foundation types for difficult sites, soil modification techniques (including vibroflotation) and earthwork control.

The first article was of a very general introductory nature and appeared in the March-April issue of the *Empire State Architect*. This article will concern itself with methods of underground exploration, spacing and depth of borings and boring reports.

Methods of Preliminary Underground Exploration

The primary aim of preliminary explorations is to obtain an approximate picture of the underground conditions at a nominal cost. A reconnaissance consisting of a geologic study and a site inspection should be made first to estimate the soil conditions so that a satisfactory and economical method of preliminary exploration is selected.

The most common and in many cases the best method of preliminary exploration is the dry-sample type of test boring. This is a combined operation consisting of drilling to open a hole in the ground and driving a sampling spoon at the bottom of the hole to obtain a sample that is suitable for visual examination and for water content and classification tests. The hole is generally advanced by washing inside a driven casing or by using an auger. This operation is applicable in both cohesionless and cohesive soils and is the most reliable of the inexpensive methods. Additional valuable information is provided by measuring penetration resistance of the sampling spoon. The number of blows required of a specified weight of hammer falling a specified distance to drive the sampler 1 foot is an indication of the density of cohesionless soils and of the consistency of cohesive soils. The penetration test which is generally accepted as standard in the United States consists of a 140 pound hammer falling 30 inches to drive a 1.4 or a 1.5 inch I.D. sampling spoon. This record is so important that it should be specified as a part of the work. Also, in view of the fact that considerable data relating soil density, consistency and strength to the standard penetration test have been collected, the use of other procedures is not desirable. Resistance data from this method of sampling can be used by a qualified person to estimate bearing capacities.

The soil auger is the simplest equipment for making a shallow hole in the ground. Several different styles of augers are available, varying from devices resembling a carpenter's tool to the post hole auger which consists of two curved blades which retain the soil as it is cut. Rotation of the auger loosens the soil and samples are recovered from material brought up on augers when removed to the surface. The post hole auger is a very effective type of auger and is available in sizes from 2 to 12 inches in diameter. Hand-operated augers can be used to reach depths as great as 20 feet whereas motor-driven augers are available which are capable of drilling holes in some soils as deep as 30 to 40 feet in a matter of minutes. Auger borings are used principally in dam site exploration and in highway and airfield work. They can be used in many cohesive and cohesionless soils above the ground water table.

Test pits afford an excellent means of shallow exploration where conditions are favorable for excavation since the soils can be inspected in place in their natural condition. Arrangement, uniformity and inclination or dip of the strata is readily disclosed by an inspection of the sides of the pit.

Sounding rods or probing rods have been developed for determining the consistency of cohesive deposits or the relative density of cohesionless deposits. This method of investigating subsoil conditions is based on measuring the resistance of the soil against penetration of a device known as a penetrometer and may be accomplished by dynamic or static tests. As a general rule, dynamic penetration tests are preferable in cohesionless deposits and static tests in cohesive materials. Until recently, no soil samples could be taken by this method.

The Apfel-Goodman[2] penetrometer was recently developed to sound between boring locations and to probe excavations for footing foundation purposes. The penetration test is dynamic in nature, consisting of a 35 pound weight falling 30 inches to drive a rod and recording the blows per foot for several feet or more penetration. It can be noted that the driving energy is ¼ that from the standard penetration test. Experience to date has been such as to demonstrate that a 35 pound weight can be easily handled by one man. The driving rod can be either standard A- or E-rod with a solid drive end or A-rod with a standard sampling spoon. The apparatus has been used with considerable success for probing excavations prior to the pouring of footing foundations, to determine whether or not there are any loose or soft locations. Another application that appears to have merit is that of obtaining resistance data along with samples which can be used to afford indications of the allowable bearing capacities of soils at shallow depths.

Geophysical exploration[3] based on seismographic or electrical resistivity methods have been employed

[1] Associate Professor of Civil Engineering, Syracuse University Consulting Soils Engineer

[2] "Subsurface Explorations with the A-G Soil Penetrometer" by L. J. Goodman, E. T. Apfel and Capt. H. W. Graves, Public Works Magazine, December 1957.

[3] "Geophysical Exploration" by C. A. Heiband, Prentice-Hall, 1940

(Continued on Page 41.)

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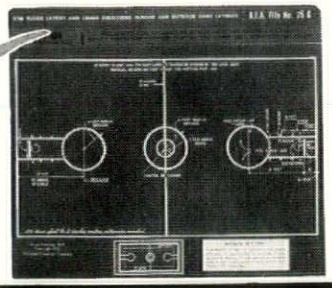

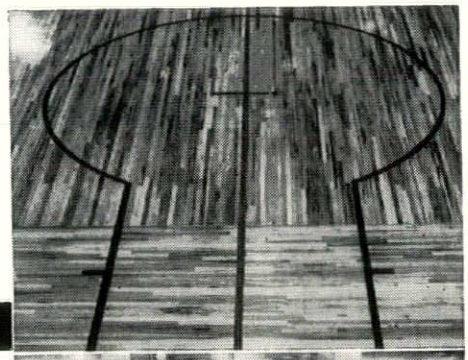

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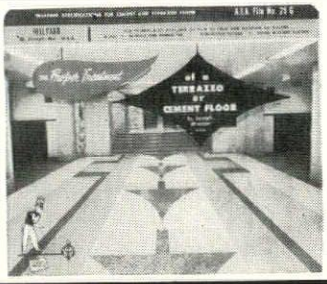

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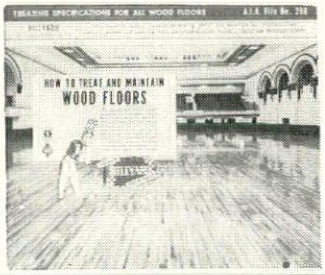
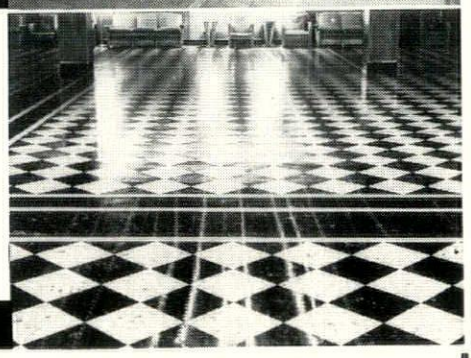


WOOD FLOORS



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SUBSURFACE CONSIDERATIONS *(Continued)*

in various fields of engineering for more than 25 years. These methods have been used considerably in recent years for preliminary investigations of dam sites and for highway work. When properly correlated with the results of a few check borings, both refraction seismic and earth-resistivity methods have been found to be useful, rapid and economical in obtaining preliminary information on the depth and nature of subsurface formations.[4] The seismic method is based on the principle that sound travels more rapidly through dense materials than through loose materials. Velocities as high as 18,000 to 20,000 feet per second have been recorded in dense, solid rock while velocities as low as 600 feet per second have been found in loose sand. The electrical method consists of the measurement of changes in the electrical resistance of the soil. Dense rock has a very high electrical resistivity and soft, saturated clay has a low resistance.

When a soil boring is stopped abruptly by some obstruction and the hole is not very deep, offsets should be made to determine whether a boulder or bed rock is present. If obstructions are still encountered, rock drilling should be done. A commonly accepted basis for making core borings is when a material is encountered which takes more than 60 blows of a 140 pound hammer falling 30 inches to drive a 1.4 or 1.5 inch I.D. sampling spoon 1 foot. Resistance data of this magnitude is generally termed refusal and ordinary earth drilling tools are unsuited for further exploration. Specifications usually call for minimum coring of 5 or 10 feet. If there is evidence of deep weathering or solution channels, deeper coring until sound rock is encountered may be necessary, especially if the structure is to be founded on rock. The soundness of the rock is determined by the core recovery, which is a ratio of the length of core obtained to the distance cored. In sound rock, a recovery of over 80 per cent is expected. Diamond drilling is the most advisable of the different ways of taking core borings.

The results of the preliminary underground exploration may indicate the need for additional detailed data before a safe or economical design can be made. The detailed investigation has as its objective accurate data on the engineering properties of the critical soil strata. This can be accomplished by undisturbed sampling along with the necessary laboratory tests and/or field tests on the soils in place. However, it is emphasized that the experience of the writer in over 100 underground exploration projects has been such that the results of the preliminary exploration, if interpreted properly, give all the information needed for foundation choice and design purposes in the majority of cases.

A summary of basic data relative to the various sampling methods as prepared in tabular form by H. A. Mohr is given in Table 1.[5]

Spacing and Depth of Borings

No definite rules can be established for the spacing and depth of test borings since they depend not only on the type of structure, but also on the uniformity of the soil deposit. Ideally, a preliminary estimate of the spacing and depth of borings should be made based on a reconnaissance which will determine the probable nature of the deposit. As outlined in the March-April article, the reconnaissance consists of a geologic study and a site inspection. Then the actual program of soil exploration should be developed as subsoil information is compiled. For example, if loose or soft material is encountered within the depth of significant stress due to the loaded area, the boring should be continued until 15 consecutive feet of 15 to 20 blow material has been drilled below the weak deposit. Borings which are stopped before this information is obtained are of little value. The thickness of the weak layer is necessary if a settlement study is to be made and adequate information on the underlying stronger material is necessary if it is desired to consider the use of piles. Also, on sites where subsoil conditions are erratic, strategically located test borings with intermediate subsurface soundings would probably suffice for most projects, resulting in economies in both time and money.

The following spacings and depths are recommended as a guide in planning a preliminary soil exploration program:

Type of Structure or Project	*Spacing of Borings*	*Depth of Borings*
1. One-story buildings*	75-100 ft.	20 to 30 feet minimum below foundation level with at least one deep boring to search for hidden weak deposits.
2. Multi-story buildings*	40-50 ft.	For a heavily loaded structure, the deep boring should go to a depth approximately twice the width of the structure or rock whichever comes first.
3. Highways (subgrade)	500 ft.	3-5 ft. minimum below subgrade
4. Earth dams	100 ft.	40 to 50 ft. minimum or 10 ft. into sound rock, whichever comes first
5. Borrow pits	100 ft.	10 to 20 ft.

*For buildings of ordinary size, the first boring should be drilled to a depth within which the stress caused by the structure might cause excessive settlement.

Boring Report

The records of subsurface investigations and sampling operations should be clear and accurate. The boring report should contain the following information if it is to be of value:

1 — Starting grade of each boring with reference to an established base.
2 — True cross section of ground showing depth of all strata boundaries below the starting grade.
3 — Elevation and depth of ground-water level and any unusual water conditions. Elevation of ground-water level when first encountered and at 24 hours after completion of the boring should be reported.
4 — Number of blows per foot of casing penetration together with the weight and distance of hammer fall and the same data for driving the sampler.
5 — Proper identification and classification of each different type of soil encountered.
6 — Record of every trial or uncompleted boring.
7 — Plot plan showing location of each boring with reference to definite survey lines.
8 — Identification as to project, owner, engineer or architect, location and date.

An article on soil identification and soil classification will appear in a later issue.

[4] "Seismic Explorations Save Money" by E. T. Apfel and L. J. Goodman, Public Works Magazine, May 1955

[5] This table is taken from "Exploration of Soil Conditions and Sampling Operations" by H. A. Mohr, Soil Mechanics, Series 21, Third Revised Edition, Publication 376 of the Graduate School of Engineering, Harvard University, November 1943.

Note: Test rods, jet probings, geophysical methods, and so forth are not included in this table, because no samples are obtained.

OUR KIND OF ENGINEER

Of all the engineering specialists who serve the building industry, plumbing engineers probably receive the least public recognition of their contributions.

Several months ago, we published an article on the new Plumbing Standards of the State Building Construction Code. (See our November-December issue, pages 24, 26.) The name of Louis S. Nielsen, the plumbing engineer of the State Building Code Commission, was mentioned as one of the principal authors of those standards. Who is Lou Nielsen?

Nielsen's Background

Father-son partnerships are not unknown in the profession of architecture; several, in fact, are very well known indeed. Plumbing engineering is not as old a profession as architecture; but family practices in the plumbing field are common. As in other fields, the sons of master plumbers, too, are most likely to go into their fathers' business.

Lou Nielsen's father, Peter Nielsen, was a master plumber and contractor in Brooklyn for many years. His brother is also in the plumbing business.

In the middle 1920's, the National Association of Master Plumbers established a four-year plumbing and heating scholarship in the engineering school of Carnegie Institute of Technology open to sons of master plumbers. Funds for the scholarship were received from master plumbers, materials manufacturers, and contractors in the plumbing industry. It is worth noting, incidentally, that the plumbers' association was one of the first organizations of its type to recognize the advantages of higher technical education to its industry.

Lou Nielsen became the first holder of this national engineering scholarship at Carnegie Tech. During the summer months of his undergraduate years, he worked at plumbing jobs selected by the scholarship committee. After his graduation in 1930, Nielsen was awarded a fellowship for plumbing and heating research at the Virginia Polytechnic Institute.

In 1945, Nielsen received his license as a professional engineer. He has done layout and design of plumbing and heating and fire protection systems, and has been an inspector and examiner of plumbing plans for the City of New York. He has given courses in plumbing theory and design, and shop instruction in other plumbing subjects. He has taken an active part in the affairs of plumbers' organizations.

Nielsen was a field representative in the U. S. Government survey of cross connections in federal buildings in New York and Detroit which resulted in improved methods of protecting potable water supply systems in buildings against contamination through cross connections, interconnections and back siphonage. That survey also brought a number of new plumbing code provisions for the protection of public health.

For several years he gave lecture courses at the New York Structural Institute for architects preparing for the State Board and National Board examinations. These lectures on plumbing, sewage disposal, gas piping, standpipe and sprinkler systems were based to a consider-

able extent on Nielsen's own field and laboratory research work.

This was the background of education and experience that Lou Nielsen brought to the State Building Code Commission six years ago. Nielsen had scored highest on civil service examinations for Senior Plumbing Engineer and for Associate Plumbing Engineer. He later scored third highest on a civil service examination for Assistant Technical Director.

(Continued on Page 49.)

DIRGE FOR DAMES WOT MARRY ARCHITECTS

By Norma Procopicw

Now listen to me, Sister,
'Cause I'm a-preachin' true,
Dese here architects
With horn-rimmed specs
Will be the ruin of you.

Dey done got the brains
Ta whirl ya a-spinnin'
So yer head gets no vacation . . .
What with lookin' at houses
And choiches and what not,
You're jest one mess of obfuscation.

And odd, Oi, Sister!
When God made this species
Ta inhabit this heah terrain,
He jes' laughed and He howled
Ta think of the women who'd marry
This mighty unusual strain.

But don't let it joil ya . . .
'Cause way down beneath dey
Is a right and a dandy fine crew,
And as lovers
Ya couldn't do better,
Dey is superior tru and tru.

And wait till ya marry
And sets up yer home!
Pink coitains and knickknacks, ya say?
Whadaya crazy? No, Sister,
It's mobiles and Eames chairs
And yer house is a brilliant display
Of what yer genius created
One poetic, inspiring day!

God help ya!
But happy? No questions!

As people, Oh, honey!
Dere's is a nomenclature dat
Jest don't fit a conventional list,
Wich ya'll soon learn and sadly discern
Is known as In-DI-VID-UUU-A-LIST!!

Takes time to adjust
But, believe me, it's woith it,
In twenty years he'll fulfill his intention
He'll jest about fill ya
With Mies, Wright and Miller
Till EVEN YOU
Thumb ya nose at convention.

Beans to Colonial, Gothic and Tudor!
It's all such tiresome cliche
YOUR man'll larn ya
There's nothin' like livin'
The unsurpassed, modern way.

So don't let it getcha,
Don't even conjecture,
Ya're doomed, Baby,
And ain't got no choice,
Ya're stuck with a member
Of gay Architecture
Wat the hell . . .
It could be woise!

school design in terms of local educational needs and the proper relationship of the architect to everyone involved in any program of school construction."

Mr. Purves further stated: "Both the A.I.A.'s public relations counsel and staff public relations coordinator are intensifying their work with national media to increase understanding of the role of the architect in the nation's school construction crisis."

Letter to the Editor

The Central New York Chapter has developed the following "letter to the editor" for mailing to newspapers or to be used as the basis for personal discussion with an editor.

The text of the letter follows:

December 20, 1957

Dear Editor:

The average bill for educating each child in New York State public schools in the fall of 1957 was around $564, compared with $386 in 1951.

This increase, as reported in statistics released by the New York State Education Department, is explained by two factors:

(a) In 1951-52, the impact of the tremendous increase in our birth rate immediately after the war was only beginning to be felt and most schools were still able to operate in buildings constructed in the 1930's, or in many cases in buildings 50 to 60 years old. This meant that they were carrying little or no debt service.

(b) But since 1952, post-war babies have been entering school age, making it necessary to rapidly expand our school plants during a period of inflation when all costs of operation are rising rapidly.

Five years ago, carrying charges for buildings, including debt payments and interest on bonds, represented 8.2 cents out of every dollar spent to educate a child. In 1956-57, after the great expansion in educational facilities, the cost for the same service was 16.4 cents. In 1951-52, salaries for teachers and custodial staffs accounted for 57.5 cents of the education dollar. In 1956-57, salaries represented 66 cents on the school dollar.

We all agree that teachers merit their additional income and an increasing school population demands more schools. As a consequence, salaries now take 2/3, and building costs 1/6 of the school tax dollar.

The low percentage of the average school budget that goes toward school construction also is reflected in another manner:

The average cost per square foot for schools built in New York State during the summer months of this year is $18.20. This represents both small and large projects.

References to schools in this state costing less, such as one in Ardsley in the Hudson Valley, should quote the year of construction. The Ardsley school was built for $13.70 per square foot in 1952! Buildings in Onondaga County and its adjacent area were built for this price in the same year.

For years, architects have used multipurpose rooms, special materials, prefabricated parts and other economies to reduce school construction expenses. They design from a program set up by the State in consultation with local authorities. Large cities, such as Syracuse, determine their own facility needs.

Architects, being taxpayers and parents as well as professionally trained experts in building, work seriously to maintain school costs at as low a level as is possible consistent with reasonable maintenance costs and permanence of construction.

ENTER, THE CONSULTING ENGINEER

By Malcolm B. Moyer

Time was when an Architect invited Contractors to submit bids on a plant to heat his newly designed building "to 70 degrees with zero outside." The Contractor had to guarantee to do this with a system of his own design.

In general, this got satisfactory results unless the competition became so keen that some sharp shooter would stretch his flexible conscience to the end of its elastic limit, bid low, and install a job which could not possibly heat the place.

With the advent of the Webster and Dunham traps on radiators, and the so-called "Proprietary systems," sales engineers then began to design the complete systems as a favor intended to place the Contractor under obligation to buy.

Next, these engineers began to court the favor of active Architects, and prepared drawings which were incorporated in the set which covered the job. But when the Architect found rival sales engineers going to his clients and aiding certain favored contractors to offer a cheaper system of a "different" design, the letting of a heating contract became one of exasperation and frustration. The owner was very much interested in "saving money" and usually viewed with suspicion the fact that the Architect had incorporated something different in his specifications which was higher priced. To eliminate this possibility, the Consulting Engineer, specializing in heating became established and the relationship between the Architect and "his consultant" broadened and has grown more cordial as time has passed.

At present, the Consulting Engineer is called upon to make estimates, frequently to "sit in with" the client, to advise concerning heating, to evaluate salesmen's claims concerning new products, prepare fully, detailed drawings and ample specifications, which are bound in with the Architect's own paragraphs. Every Contractor bids on the same work. The Engineer usually attends the bid opening and reviews the figures. On an "over run," he redesigns his work to get lower figures, usually without extra remuneration. Gradually, this kind of service has spread to designing plumbing and electrical systems, and frequently, outside sanitary work. Structural engineers are quite as frequently employed by Architects as Consultants.

What the ultimate will be must depend largely upon results. Consulting Engineers have sprung up in increasing numbers. Their ultimate success will largely depend upon how indispensable they can become. Not everyone who "hangs out his shingle" is destined to succeed.

Cheerful cooperation, the slapping on of the "Extra ounce" of service when it is needed are the necessary ingredients to a lasting friendly relationship with a select group of Architects. The greatest benefit which a well trained engineer can be to his Architectural associate is in the final operation of his work.

Broad experience and unfailing determination to "make the job work" when initial troubles arise makes the difference in Engineers.

Truly, the Consulting Engineer has entered. How long he stays "in" depends upon his service to the Architect.

of interpolation. One instance comes to mind in which a surveyor interpolated between two spot elevations three hundred feet apart. The explanation offered was that "the piece of ground is really level." A resurvey clarified the situation to the extent that the normal surface drainage pattern was determined.

Flat ground, if anything, justifies more "shots" than less, for obvious drainage reasons, and shots should be extended outside the property lines somewhat.

B. Many surveys have come across this desk showing contours, but little else. Horizontal items 2 and 3 add up to a substantial list that may influence a design—or the cost, depending on the disposition of such items.

C. The most frustrating topo, I think, was the one needed for an addition to an existing building. The job was an excellent one—except that the first floor elevation of the building to be enlarged was missing.

The topography of the ground is a fascinating thing, and on a map it stimulates the imagination. The designer need not start with a blank sheet of paper and a set of room requirements. He can "work from the outside in" so to speak. He can determine from the topo map "that this area lends itself to the play fields, this to the parking, this to the entrance drive, therefore the gym should relate to the play fields, therefore the classroom wing can relate here, etc., etc.," and the design process is on.

A wise man once said that "the design is only as good as the research that goes into the problem." To the planning team, one of the problems is the site to be developed. The research is carried on by the surveyor and related to the designers in the form of the topographic map. This map will be only as good as *you* demand that it be.

OCTAGON FAD *(Continued)*

Here and there octagon houses have been built since the passing of the octagon era. An octagon house was built in Arcade, New York, in 1920 and Mr. Haines built his octagon house near Hilton, New York, in the early 1920's.

At the Century of Progress Exposition in Chicago in 1933, George Fred Keck, a Chicago architect designed "The House of Tomorrow." It was a twelve-sided three-story structure with a central core containing the stairs, utilities and ducts. All the rooms radiated from the central portion. The exterior walls were glass. The third floor was smaller than the second permitting an encircling deck or porch, a development of the cupola. Keck spent his boyhood in Watertown, Wisconsin, and was familiar with the famous octagon house there built by John Richards.

1958 CONVENTION

ROCHESTER, N. Y.

OCTOBER 16-18

Senate Int.	Print	Assembly Int.	Print	Subject	Action
		3546	4858	(M.D. Law, (Buffalo, (variance (approvals	Chapter Law 867
		3492	4194	(Fallsburg (Municipal (terminal	Chapter Law 840
3112	3392			(Town Law, (deputy bldg. (inspectors	Vetoed by Governor
		3172	3921	(Town Fire (Dept. Bldg. (inspections	Chapter Law 762
3095	3375			(Town Law, (bldg. permits	Chapter Law 334
3100	3380			(M.D. Law, (motor vehicles, (storage	Chapter Law 747
		3766	4024	(M.D. Law, (cellar apart- (ments	Vetoed by Governor
		4230	S4482	(M.D. Law, (towers, (widths	Chapter Law 859
Resolution 124 by Mitchell				(Housing & (M.D. Law, (study, (continue	Adopted
1428	3681			(Weighlock (Museum Bldg. (Syracuse	Vetoed by Governor
2956	4109			(Housing Law, (Municipal (debt excess	Chapter Law 963
3711	4433			(M.D. Law, (Hospital (Quarters	Chapter Law 900
		1857	4760	(Housing (Companies (Mtg. loan (interest	Chapter Law 958
		2660	2734	(Public (Housing (Tax (exemptions	Chapter Law 591
		3095	4856	(Curbs, Walks (probable use	Chapter Law 911

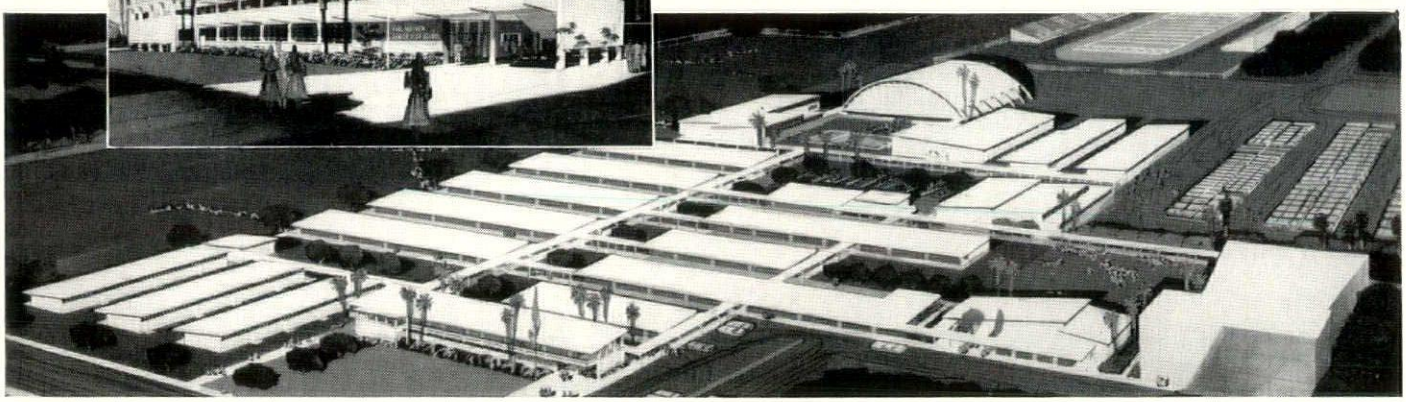
We wish to conclude the report with this suggestion:

To those organizations which felt strongly about bills that either died in Committee or were vetoed, please communicate with the Legislative Committee well in advance of the 1959 session so that we may ascertain why the legislation failed. After discussion and consideration we will attempt to have the bills reintroduced next year. SEND US YOUR RECOMMENDATIONS ON LEGISLATION AS SOON AS YOU CAN.

Again, we wish to thank all the members of the Legislative Committee and our constituent organizations for their fine support and cooperation which has made possible a most successful legislative year.

Respectfully submitted,
Matthew W. Del Gaudio, Co-chairman
Richard Roth, Co-chairman

Left: Architectural detail points up large fenestration areas which permit generous use of natural light. *Below:* Panoramic sketch shows large land space covered, which dictated the use of vacuum pumps to aid in steam distribution. Harry T. MacDonald, Los Angeles, is the architect and Storms and Lowe, Los Angeles, are the mechanical engineers.

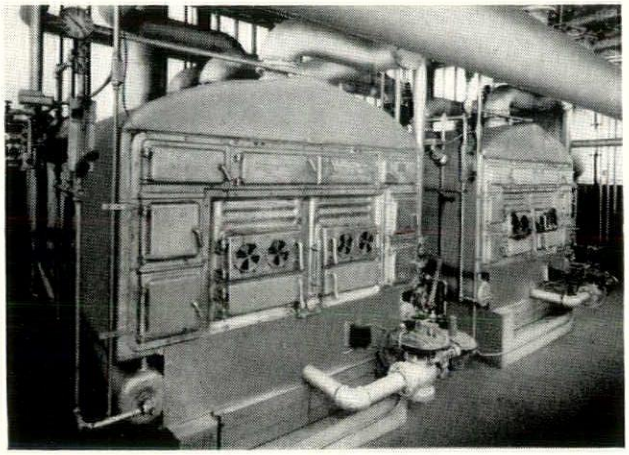


14 buildings in the Earl Warren High School are heated by 2 H. B. Smith Boilers

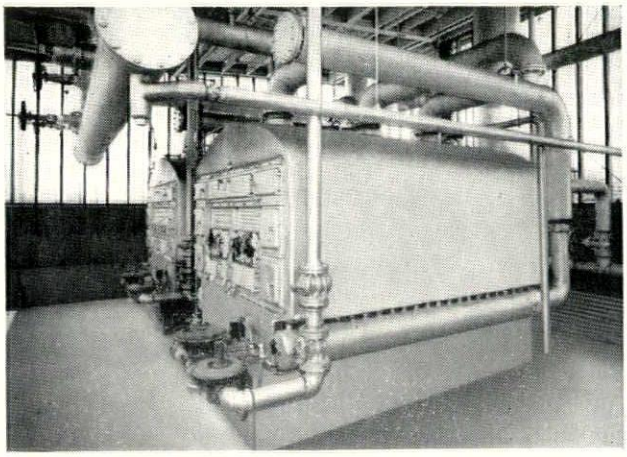
The Earl Warren Senior High School is the pride of the Downey Union High School District of Downey, California. It should be — it's one of the most modern schools in the world! The architect's drawings above show the vast area covered, the orderly layout of the buildings, the fresh architectural approach and the generous recreational facilities.

Two No. 60 20-section H. B. Smith boilers supply adequate heat and domestic hot water for the 14 buildings now standing. Boiler room space has been provided for two more boilers which will be added when nine or ten new buildings are erected. The two boilers now in service are fired by natural gas. The heating medium is steam, circulated through underground conduit to the various buildings. Automatic vacuum return pumps are placed at critical locations throughout the plant.

Consulting Engineers Storms & Lowe, Los Angeles, did not hesitate to specify H. B. Smith cast iron boilers for this huge task. For many years H. B. Smith boilers have set performance records in schools, churches, hospitals, stores and other commercial and industrial buildings.



Here are two views of the No. 60 H. B. Smith boilers, showing the orderly, compact installation. Observe that only a very small percentage of costly building space had to be allotted to the school's boiler room, as H. B. Smith boilers have integral water tubes which do not require periodic replacement.



H.B. Smith

CAST IRON BOILERS

H. B. SMITH COMPANY, INC., WESTFIELD, MASSACHUSETTS • Established 1853

OUR KIND OF ENGINEER
(Continued)

Plumbing Standards of the State Code

Since then, the Commission has issued a State Building Construction Code in three portions, applicable respectively to one- and two-family dwellings, multiple dwellings, and general building construction. The Commission also prepared a Code Manual, which describes and illustrates acceptable ways of satisfying the performance requirements of the Code. As the plumbing engineer of the Commission's technical staff, Nielsen has, of course, participated in the preparation of both the Code and the Manual.

Before new plumbing standards could be written, an intimate knowledge of other such standards was essential. Analyses and reevaluations of those standards were needed. More logical arrangements of content were required. Working drafts were then developed and circulated among outside experts for their opinions and suggestions. In these activities, Nielsen's wide experience and knowledge of the plumbing field were indispensable.

The Commission's technical staff includes architects as well as engineering specialists in every phase of building construction; and although Nielsen has been principally concerned with the plumbing provisions of the state code, his collaboration with architects and engineers specializing in many varied fields has given him an uncommon appreciation of the problems of integrating plumbing with the requirements of space, structure, fire safety, and other equipment in buildings.

Such problems, of course, are primarily the responsibility of architects. But the architect's task is simplified considerably if the engineers with whom he works have a better understanding of the problems of coordinating the work of all the specialists who contribute to the design and construction of buildings.

A comparison of the new plumbing standards with most plumbing codes now in use reveals this clearly. In using many of these plumbing codes, one is often struck by an apparent isolation in them of the plumbing services. It is almost as if the plumbing equipment and systems were to be designed to operate outside or independently of buildings or other equipment.

In contrast, the provisions of the plumbing standards of the state code are everywhere related to buildings and the uses to which buildings are put. There is a separate chapter, for example, on "Minimum Plumbing Facilities" for buildings of every type. There is evidence on every page of an awareness that it is the requirements of buildings and their users which determine the requirements for plumbing. Such an appreciation that the whole is greater than any of its parts is, unfortunately, not universal among engineering specialists in the building industry.

In a field which is vitally important to architects, Lou Nielsen is our kind of engineer.

1958 CONVENTION

ROCHESTER, N. Y.

OCTOBER 16-18

NEW PRODUCT

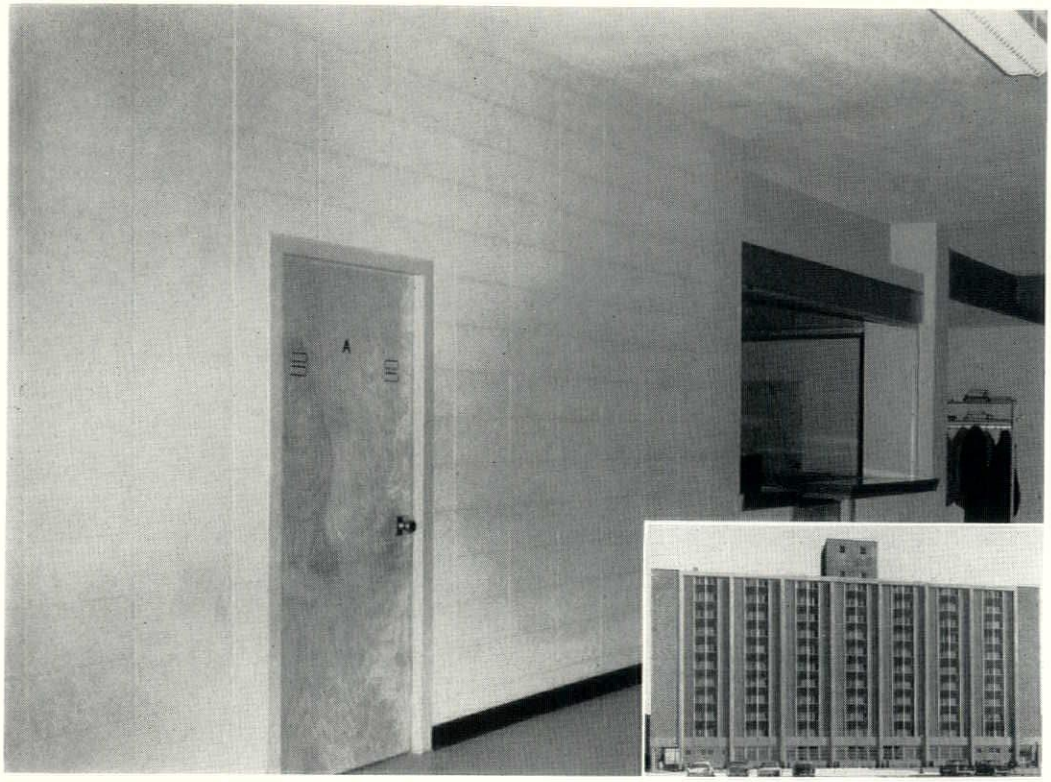
Wood has been added to aluminum to create a new concept in aluminum railing design. Blumcraft of Pittsburgh has combined the warmth and elegance of natural-finished wood with the structure of aluminum to develop their new post style No. 170.

A choice of select birch or American walnut trim is available to the Architect to relate the railing design to the surrounding decor and color. The wood-trimmed post will be furnished to the metal fabricator in rubbed-satin finish. All of the Blumcraft adjustable features are contained in this post, which can be used with any of the stock handrail shapes.

Blumcraft railings have received enthusiastic reception by Architects throughout the western hemisphere for all types of structures. By making their components available to all metal fabricators, Blumcraft has provided the architect with the element of competitive bidding that is required for public projects as well as for private work.

With the advent of the Low-Cost Tube-Line the architect now has available two price lines of Blumcraft railings. A survey which Blumcraft made among fabricators in various parts of the country indicates that Tube-Line is in a price range of aluminum pipe railing. The De Luxe Line, because of its labor saving adjustable features, is less costly than a quality custom-built railing.

1958 CONVENTION
ROCHESTER, N. Y.
OCTOBER 16-18



Concrete Masonry Units, exposed and painted, are shown in the main floor corridor of the University Tower dormitory at the University of Buffalo. Inset, is the imposing structure. Architect: James, Meadows, & Howard, Buffalo; contractor: Siegfried Construction Co., Inc., Buffalo; Concrete Masonry Units supplied by Anchor Concrete Products, Inc., Buffalo.

CONCRETE MASONRY UNITS . . .
Ideal for Schools

Exposed and painted CONCRETE MASONRY UNITS are used throughout the interior of the new 11-story University Tower dormitory at the University of Buffalo in Buffalo, N. Y.

A variety of pleasing colors are used in the Dormitory, achieving a textured surface in color which adds to the decor. The main floor corridors are painted a buff, with a deep red used on the Blocks around the elevator entrance. A buff color was used on the exposed Blocks in the large dining halls, while green, yellow, and buff predominate on each of the other floors.

Not only are a wide variety of patterns available with attractive Concrete Masonry Units, but they are fire-safe and they have a high value in sound insulating efficiency and sound absorption.

Concrete Blocks are economical to use and maintenance costs are low.

Write for suggested patterns today.

ALFRED, N. Y.
Southern Tier Concrete Products Co.

AUBURN, N. Y.
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BROOKLYN, N. Y.
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BUFFALO, N. Y.
Anchor Concrete Products, Inc.

COOKSVILLE, ONT.
Argo Block Co., Ltd.

ELMIRA, N. Y.
Elmira Block, Inc.
Latta Brook Corp.

FALCONER, N. Y.
Marietta Concrete Corp.

GLENS FALLS, N. Y.
Dempsey's Concrete Products

HAMILTON, N. Y.
Cossitt Concrete Products, Inc.

INWOOD, L. I., N. Y.
A. Pollera & Sons

JAMESTOWN, N. Y.
Hildom Cinder Block Co.

LOCKPORT, N. Y.
Frontier Dolomite Concrete Products Corp.

PATCHOGUE, L. I., N. Y.
Allco Concrete Products Co.

PHELPS, N. Y.
Phelps Cement Products, Inc.

ROCHESTER, N. Y.
Comac Builders Supply Corp.
Domine Builders Supply Co., Inc.
Flower City Builders Supply Corp.
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ROME, N. Y.
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SMITHTOWN, N. Y.
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Andrew Susco & Son

THOROLD, ONT.
Thorold Concrete Block Co., Ltd.

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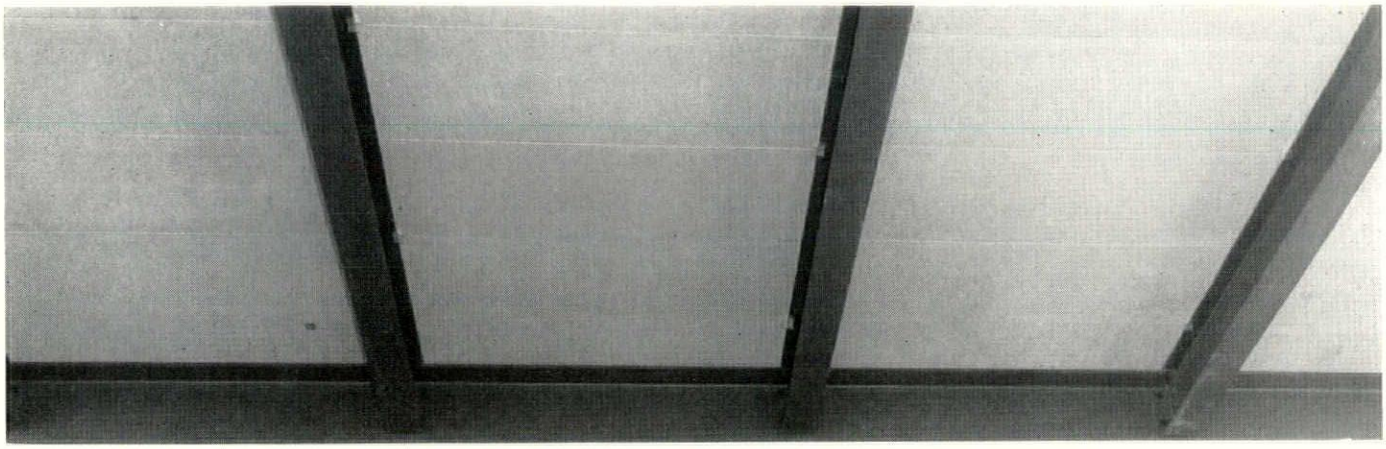
Taylor Concrete Products, Inc.

NEW YORK STATE *Concrete Masonry* ASSOCIATION, INC.

HEADQUARTERS OFFICE: 1 NIAGARA SQUARE, BUFFALO 2, N. Y.

PERMALITE Precast Insulating Roof Slabs With Built-In Insulation For Economy in New High School Project



Three inch thick precast PERMALITE Precast-Lightweight Insulating Roof Slabs were used on the Sweet Home Central High School, Amherst, N. Y., over a 12,000 sq. ft. area. The precast PERMALITE slabs are shown in place. The ease with which they are installed is also shown. Stanley Podd, Buffalo, was the architect; the John W. Cowper Co., Inc., Buffalo, the contractor.

PERMALITE, made of perlite aggregate, is an outstanding **Precast-Lightweight Insulating Roof Slab** that requires no additional application of insulating material.

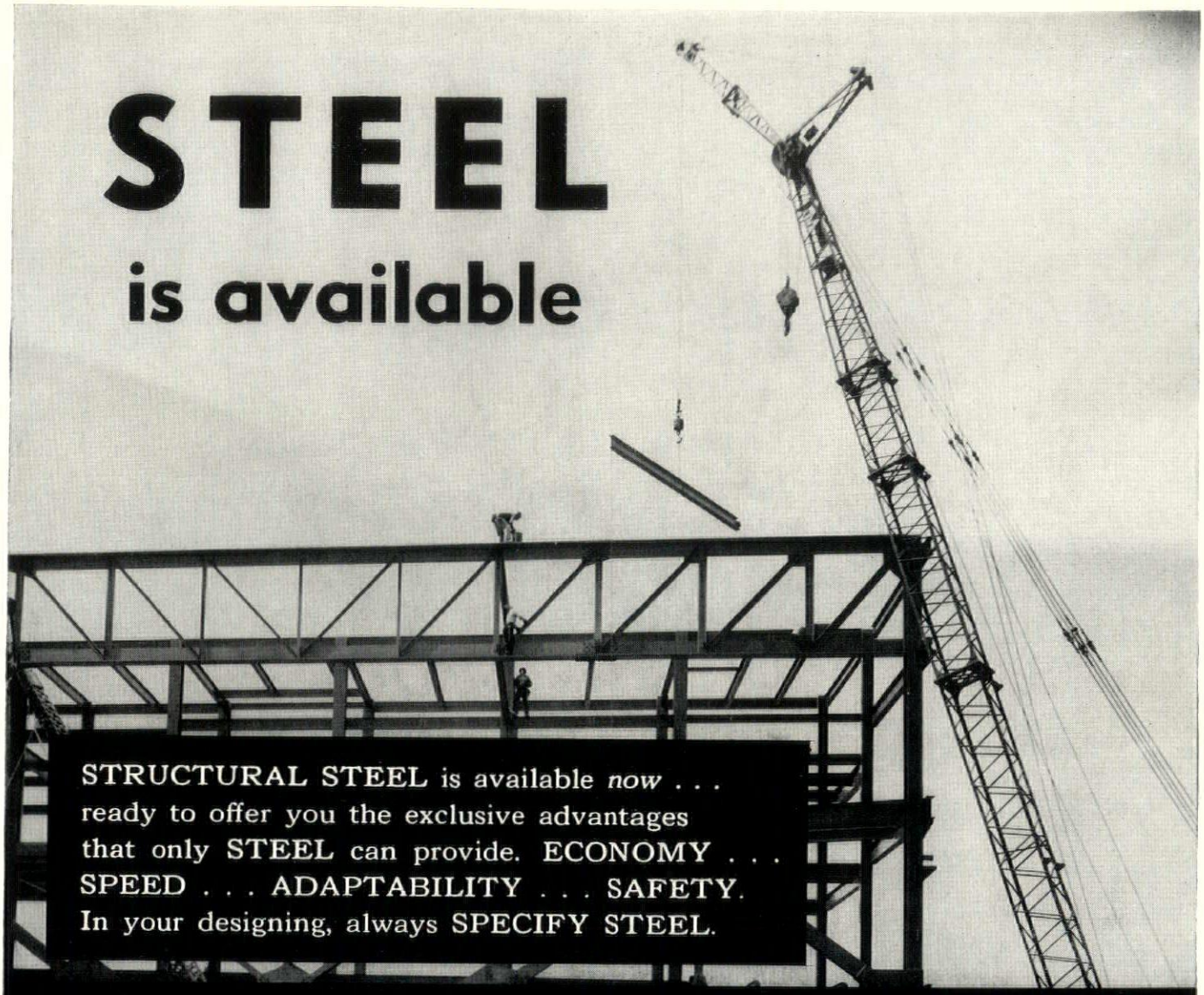
With a "U" factor of thermal conductivity equal to .21, the 3" thick PERMALITE Precast-Lightweight Insulating Roof Slabs may be installed quickly and efficiently in all types of weather. There are no costly delays that may be attendant with other types of roof materials. They have a weight of 10 lbs. per sq. ft.

Sawing, cutting and nailing may be done on the job with ordinary tools. Expensive hoisting and handling equipment is not necessary at the jobsite, assuring lower erection costs.

PERMALITE requires no painting and gives a high light reflectivity.

PERMALITE precast slabs were used on 12,000 sq. ft. in the project shown here. In the Junior High School addition to Maryvale High School, Cheektowaga, more than 40,000 sq. ft. of PERMALITE Precast-Lightweight Insulating Concrete Roof Slabs were used. Foit & Baschnagle, Buffalo, were the architects; Carpenter & Skaer, Buffalo, the contractor.

BUFFALO PERLITE CORP. **100 SUGG RD., BUFFALO 25, N. Y.**



HENGERER AMHERST STORE, BUFFALO, NEW YORK.
James, Meadows and Howard, Architects. The Raymond Loewy Corporation, Industrial Design Consultants. Tiede-Zoeller Tile Corporation, Tile Contrac
Tile Description: Gray Granite, White, Cascade, Buff, Dusky Peach and Ivory in 1 3/16" Squares. Color Plate 377.

You have, of course, noted the increasing use of ceramic tile on exteriors. Here is another excellent example of the design and color potential of ceramic tile, and of its unsurpassed practicability for walls in heavy traffic areas.

You will find our Design Department at Olean helpful in creating special treatments in ceramic mosaics. Let them help you with your next project.

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