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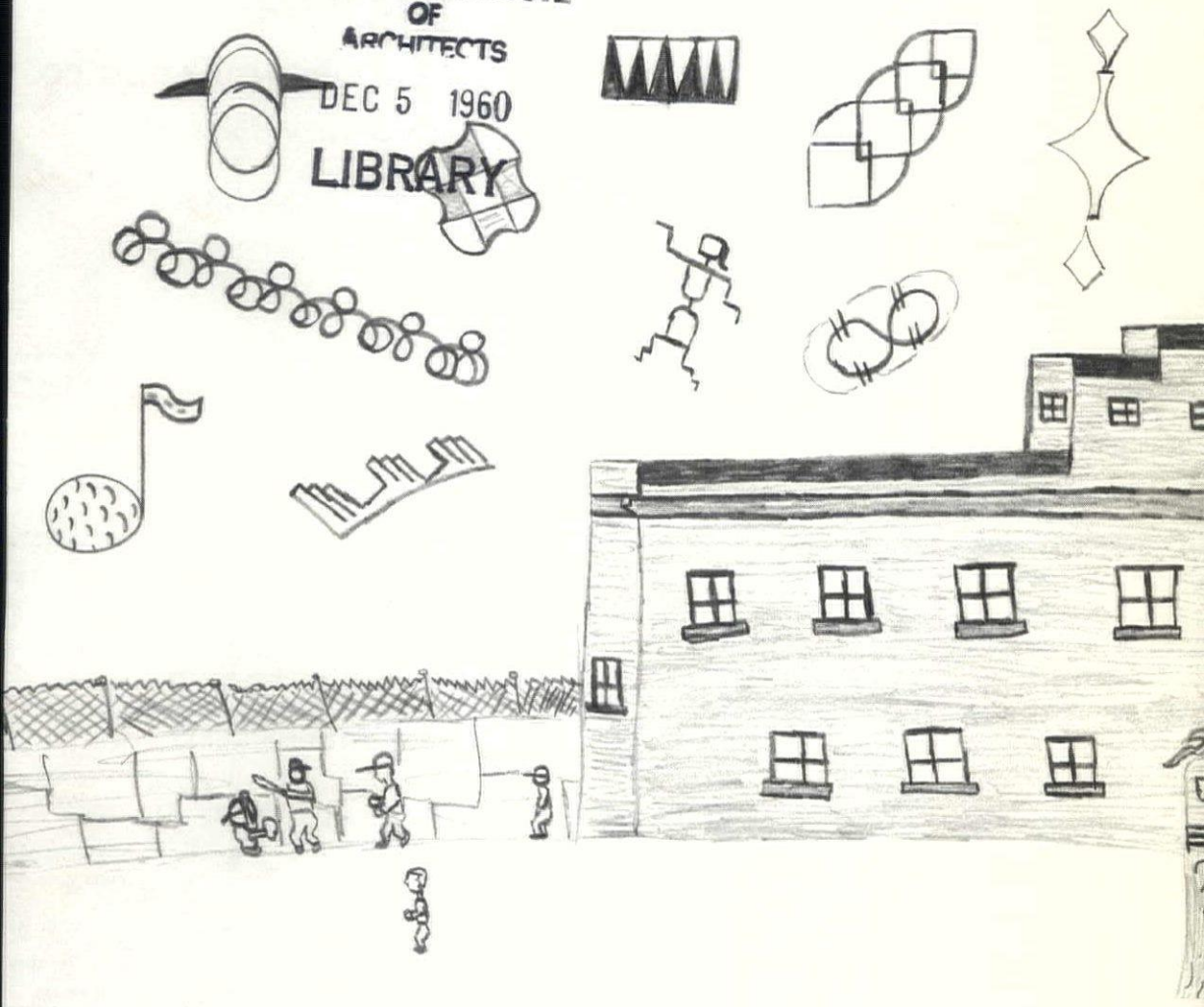
New Hampshire ARCHITECT



OFFICIAL PUBLICATION

New Hampshire Chapter of the American Institute of Architects

School Issue

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New Hampshire ARCHITECT

VOL. 12 NOVEMBER, 1960 NO. 4

SCHOOL ISSUE

Construction of new schools and additions to existing school facilities, has continued at a rapid pace during the past twelve months. High schools, elementary schools and dormitories, either completed or under construction during the past year, are presented in this, the seventh annual School Issue of New Hampshire Architect.

According to Paul E. Farnum, deputy commissioner of education, New Hampshire architects have a substantial list of proposed school buildings on their drawing boards, which should be under construction early in 1961.

Through the cooperation of the construction industry, this issue is made possible. School officials in every city and town in New Hampshire have looked to the annual issue since its inception in 1954.

COVER PICTURE

Art and Architecture to a fifth grader

New Hampshire Architect is published monthly, under the direction of the president and board of directors of the New Hampshire Chapter, American Institute of Architects, to promote the objectives and public relations of the chapter. Advertising rates furnished upon request.

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The President's Message

PLANNING FOR SCHOOL BUILDINGS

Good citizens of towns and cities who ally themselves with the cause for better education are very likely to find themselves appointed to building committees for new schools.

What should be the first objective of such a committee? To evaluate needs? To explore standards? To determine cost? As an ultimate goal, all of these things are required, but should not be undertaken without professional help.

The first objective of the committee should be local statistical work, such as population growth, average income, assessed values, and the existing school system.

The committee should then ask the town for the appropriation of a fixed sum to retain the services of a conscientious architect. This appropriation should be available early in the committee's work of evaluation of the statistics to determine needs. This sum may be deducted from the Architect's fee, should he later be retained to design the building.

Free advice from qualified or unqualified sources is usually worth what it costs — nothing. The locality must avoid mistakes of over or under building, and inadequate site. Buildings must be related completely to local needs which have been competently projected into the future.

Asking the right questions will, in large part, determine the right answers. A thorough program investigation in words, should always precede a plan solution in dimensions. Program studies, leading toward a specified building proposal to the taxpayers, must be characterized by care and competence in their preparation.

The building committee can most successfully reach the best solution for the locality by close cooperation with their architect. The architect can serve best if retained early.

E. H. Hunter

NEW ENGLAND REGIONAL COUNCIL AIA ANNUAL FALL MEETING A REAL SUCCESS

If you, as a member of the American Institute of Architects, New Hampshire Chapter, or any other chapter of the Institute, did not attend the New England Regional Council, American Institute of Architects, at Bald Peak Colony Club, October 14 and 15 you should have misgivings about your ability to foresee "a good thing."

Ask anybody, anybody who attended, and they will be pleased to tell you of magnificent scenery and surroundings, good food and drink, sociability, and speakers at the regional seminar who had advice and matters of interest for todays practicing architect.

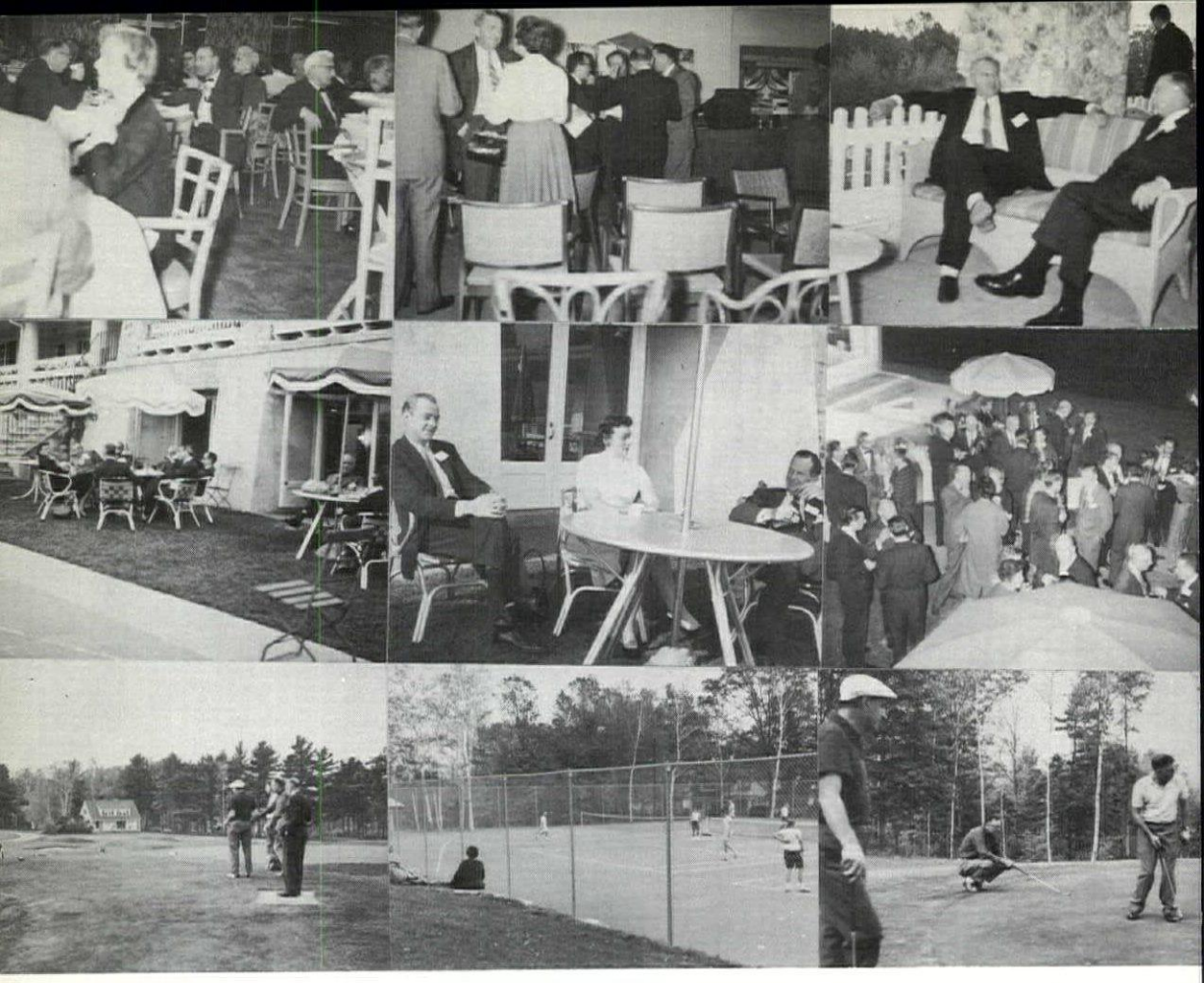
The agenda for the annual fall meeting was as follows:

1. Secreteary-Treasurer's report.
2. Regional Director's report.
3. Introduction of Executive Director Edmund R. Purves.
4. Report from Chapter Presidents.
   Maine — Eaton W. Tarbell
   New Hampshire — Edgar H. Hunter, Jr.
   Vermont — Andrew A. Titcomb
   Massachusetts State Association — Leo A. Whelan
   Western Massachusetts — Donald S. Gilman
   Central Massachusetts — Charles W. Dingman
   Connecticut — Richard D. Butterfield
   Rhode Island — Lloyd H. Turoff
5. Reports from members of national committees.
6. Nomination of Regional Director for 1961-1963.
7. Election of Secretary-Treasurer.
8. Election of Judiciary Committee membership.
9. Appropriation for Boston Arts Festival for 1961.
10. Announcement of Fall Meeting in 1961.
11. Other Business.

Speakers were Willis Mills, AIA, Stamford, Conn. who served as moderator for the seminar, Jim Hunter, 2nd Vice President, AIA, John Bolles, well known architect from San Francisco, and John Burchard, Dean of Humanities, Massachusetts Institute of Technology.

Sports activities, golf and tennis, sight seeing foliage trips, gift shopping and plain old chatting occupied spare moments for architects, wives and guests. Highlight of the meeting was a cocktail party, with the AIA eagle, ice carved, as the centerpiece of the refreshment table.

The genuine expressions of pleasure and satisfaction voiced by people from near and far is a "pat on the back" for New Hampshire chapter, regional council delegates and all others who contributed to the success of this event.



INFLUENCES WHICH ARE CHANGING THE STATUS QUO

Excerpt from an address by James Hunter, FAIA, and Second Vice President, American Institute of Architects, to the New England Regional Council, American Institute of Architects.

In the considered judgment of this committee the long-range effectiveness of The American Institute of Architects cannot be evaluated, nor can constructive changes be suggested, without full consideration of the ethics, objectives, and methods of practice of the individual architect in this changing society.

In our opinion, the following trends and projections can, have, and will change architectural practice:

a. Social Influences:

Our social structure must change as our population "explodes." Our population will have doubled by 1999. We will then need as many more buildings as now exist and we will have replaced more than half of the now existent buildings. This time is only one "forty-year mortgage" away. Twice as much raw land will have been urbanized and the problems of transportation and communication proportionately increased.

Such a concentration of urbanization can mean only more and more regulation, control, direction, and influence by local, state, and federal governments. The workings of our democratic process will, certainly, be more and more influenced by pressure groups and "organized fronts" in order for the common man to obtain his political, social, and economic objectives.

With more government needed to control such a density of population, we can expect, surely, more broad-scale planning by government for the use of our natural resources, our social pattern, our economy, our land use, and even our physical facilities in order to adjust the explosion of population to the land.

Will such an increase in activity on the part of government mean that it will eventually take over architectural functions — land planning, design of housing, schools, federal and state buildings, urban renewal developments?

Are we as a profession qualified to cope with such broad-gauge planning problems? Do we know enough about land use and economics to be able to hold ourselves out as professionally competent to handle them? Are we established in the minds of the "organized fronts" as the proper vehicle to do them?

b. Technical Influences:

Our technological advances, together with our expanding industrialization, are creating drastic changes in manufactured building materials, marketing methods, and construction techniques, as well as our own concepts of design.

Already, industry is providing the market with prefabricated building elements as well as total buildings and design services which are in whole or in part in direct competition with the existing practice of architecture.

Are we actually qualified as designers to cope with this technical advance? Is our position in this picture still that of "the master builder"? Is there danger of our becoming captive to the industrialist as an assembler of pre-designed parts over which we have no design control? Is the "total man-made human environment" to be a willy-nilly, unplanned result of the business entrepreneur's activity and exploitation?

c. Cultural Influences:

Our cultural concepts are obviously changing with our rising standard of living and the leisure time that the shortened work week provides. Cultural growth and an increased interest in the environmental arts have historically accompanied a high standard of living and leisure time.

This matter of wealth and leisure as a social force is subject of a **Life** magazine special edition (December 28, 1959) in which the points of view of business, education, and planning are set out by

(Continued on Next Page)

Devereux Josephs, of the New York Life Insurance Co.; A. Whitney Griswold, President of Yale, and Victor Gruen, architect and city planner. They express concern for our "artistic competence," our "esthetic powers" and the sordidness of our "public living standards" at the expense of "our possessions." **Life's** is only one of many such expressions.

This concern and this awareness are encouraging — our society is ready for leadership; it needs leadership to show the way.

Is the architect associated in the minds of the public as the creator of the environment for the "good life"? Is the architect considered to be an "artist"? Is the profession maintaining its historic role of "impresario of the arts"? Is a building thought of as the vehicle for the disciplined expression of the painter, the sculptor, the artist? Should "art" not be of the architecture — of the total physical environment — an integrated part of the "good life"? Is our society at last aware of the "mess" it lives in?

d. Economic Influences:

With the private fortune being supplanted by the corporate wealth of the nation, we can expect the financing of buildings as well as large-scale projects to be accomplished by government or "corporate client" to whom the packaged product, more often than not, becomes more important than the ways or means of attaining it.

No longer are architects asked to design for the needs or tastes of the individual. Seldom are the needs or tastes of the individual, as a client, expressed in our architecture. The client is no longer a person — he has become a committee, a board, an agency. We must learn to know our new client.

With our increased wealth and in order to keep an expanding economy, business entrepreneurs have invented, fostered, and sold to the public the "package deal" as a marketing device which extends from the frozen TV dinner through every facet of our economic life, including prenatal medical care and investment portfolios.

Industry and commerce have accepted the "package deal" as a device for the construction of buildings particularly where lease-back and other legitimate tax evasion are involved.

The "package dealer" has forced an inroad into the practice of architecture which has caused the profession considerable concern.

In answer to a questionnaire sent out by **Architectural Forum** in the fall of 1958, some 2,000 architects expressed grave concern while only 56 said that "the package dealers are unimportant."

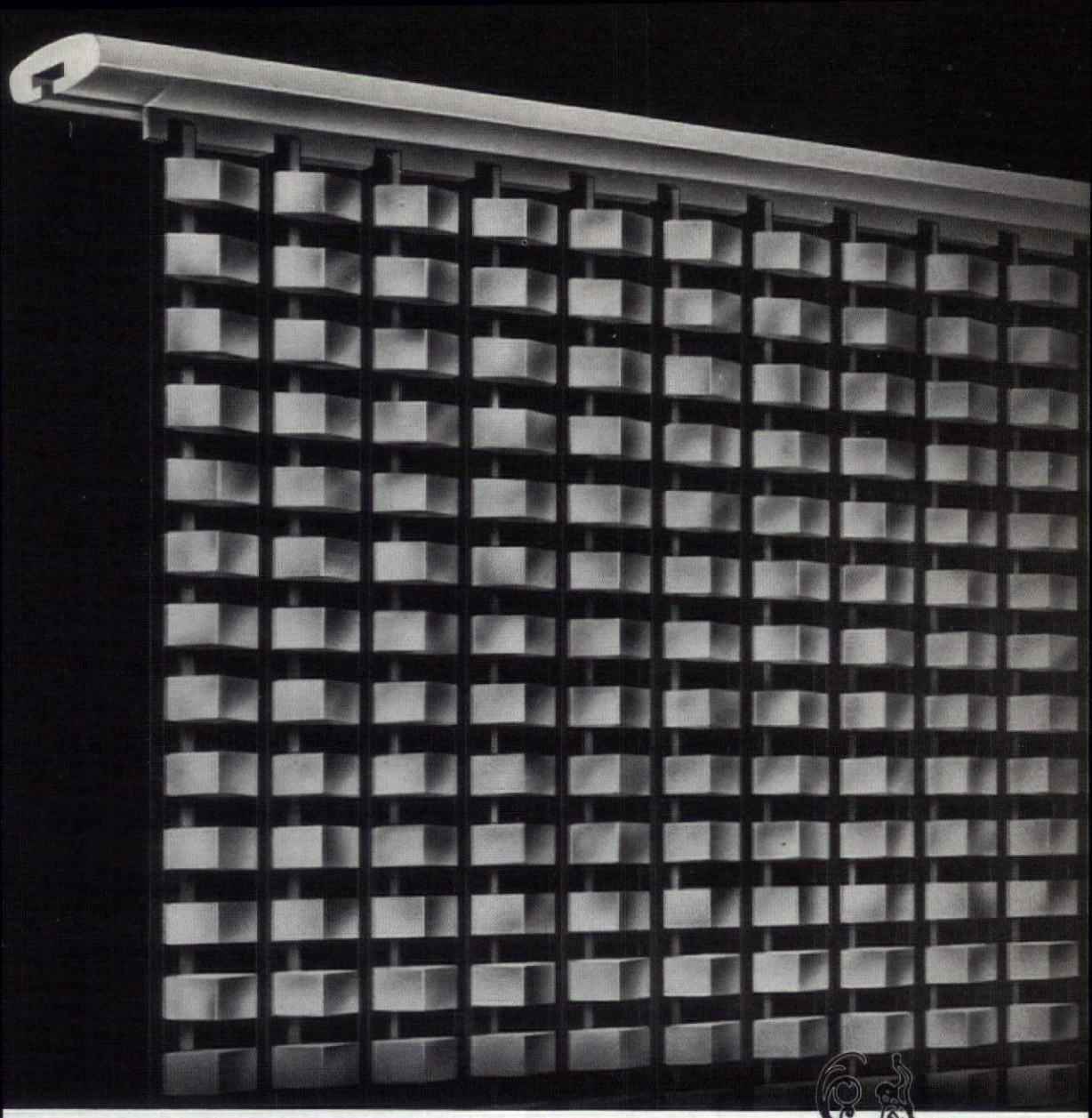
Can the architect compete against such a device? Is his fate that of becoming captive to the promoter? Is his position as agent of the client unacceptable? Should the architect become a package dealer himself? Is he equipped technically to do this? Does he know about economics and building finance?

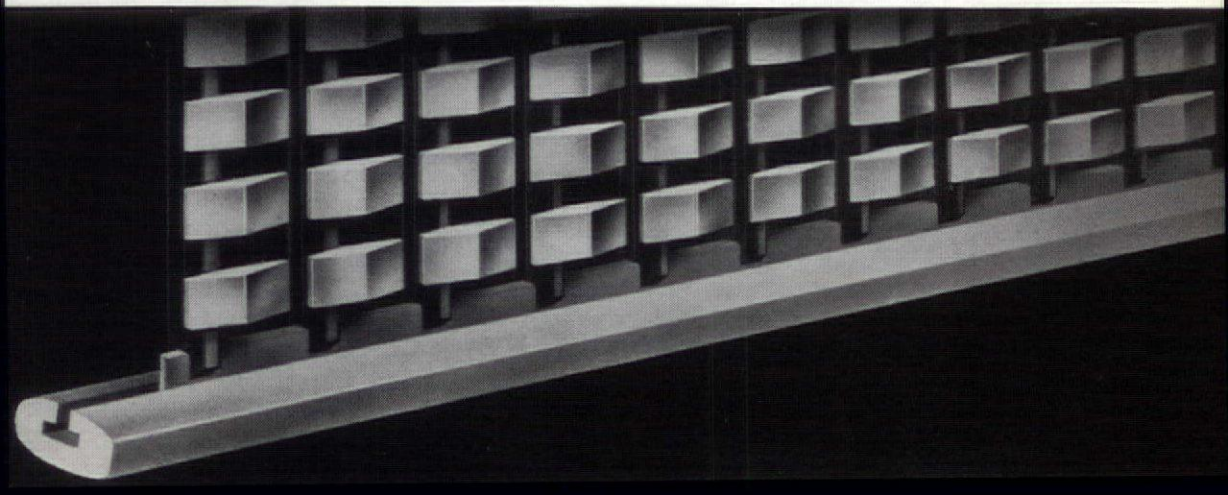
Conclusion

We believe that never before has such a challenge faced the profession. The total environment produced by architecture in the next forty years can become greater than the Golden Age of Greece, surpass the glory of Rome, and outshine the magnificence of the Renaissance.

Such an era is possibe, **provided the architect assumes again his historic role as the master builder.** In such a role he must retain the basic control of design not only of individual buildings but of all design involved with man-made environment.

We believe that today the architect while enjoying the highest professional status in history, may be losing rather than gaining ground. In our opinion, we must re-define the objectives and responsibilities of the profession of architecture to embrace the control of the design of the total "man-made physical environment" re-orienting the profession so as to expand its horizons and its standards and methods of practice; and urge every architect to assume community leadership in all matters which influence or determine the planning and development of his community, in close cooperation with his fellow architects. Such leadership should be expanded into regional, state, and national areas of influence as appropriate



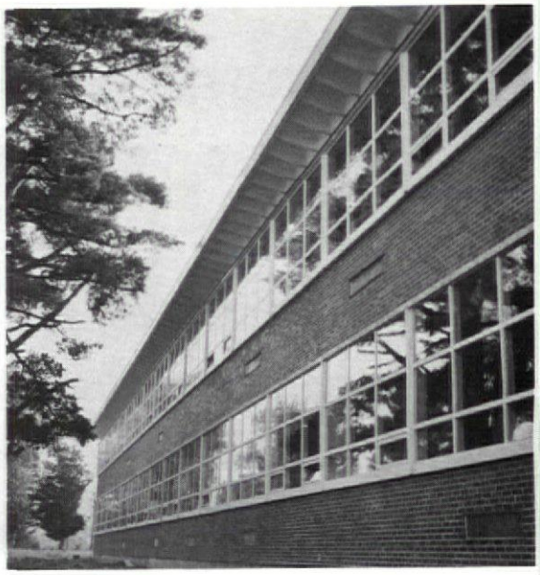


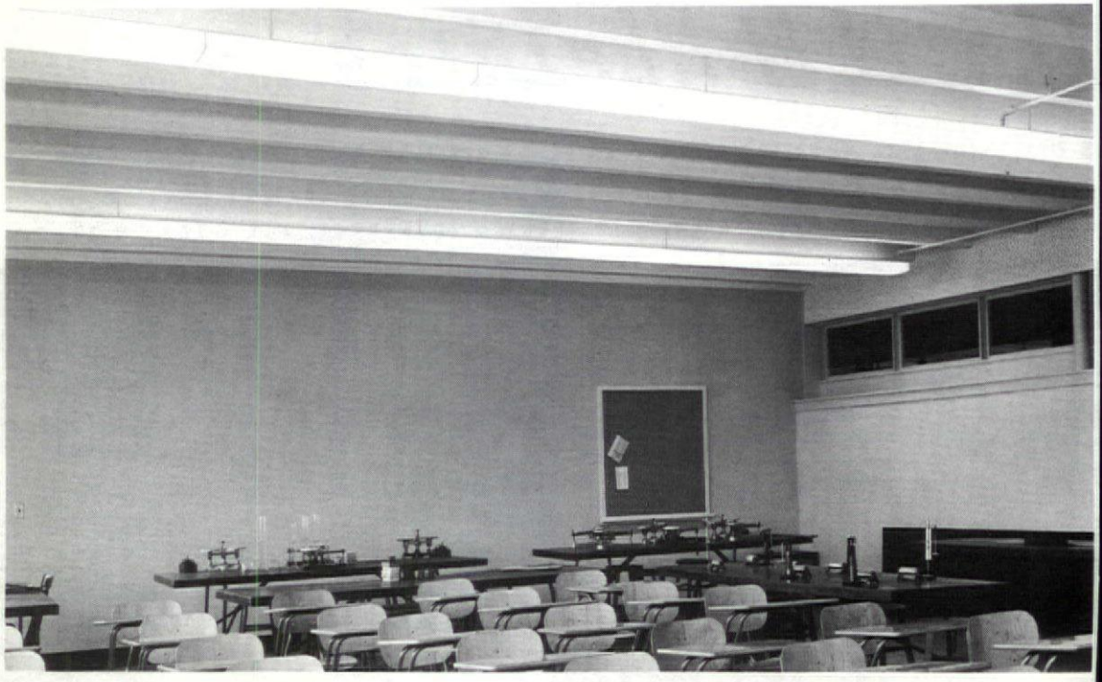
KEENE, N. H. COMPANY PLAYED LEADING ROLE IN CONSTRUCTION OF NEW SCHOOL PLANT IN COMMUNITY

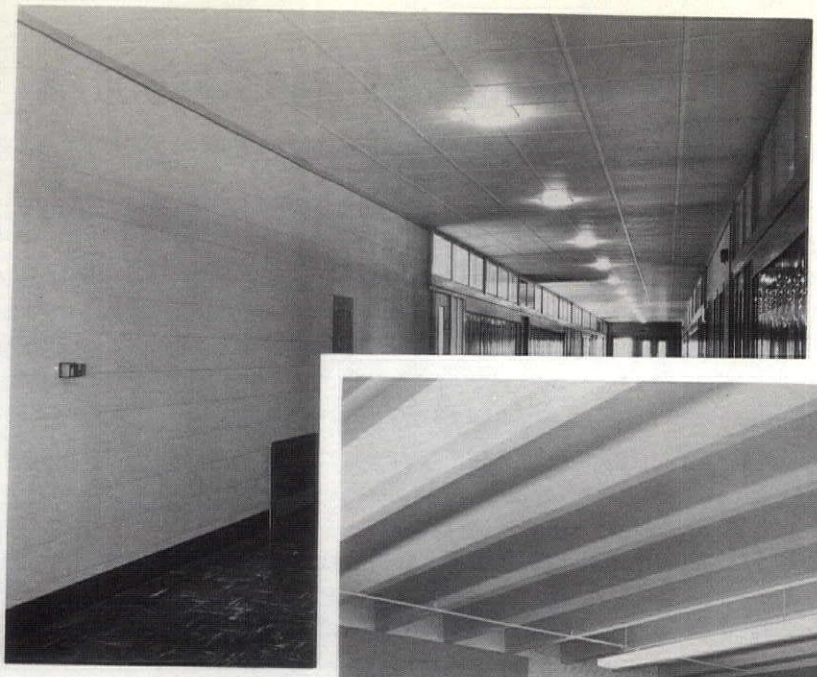
The high school at Keene, N. H., recently completed, was given strength and momentum in more than one way by the firm of Arthur Whitcomb, Inc.

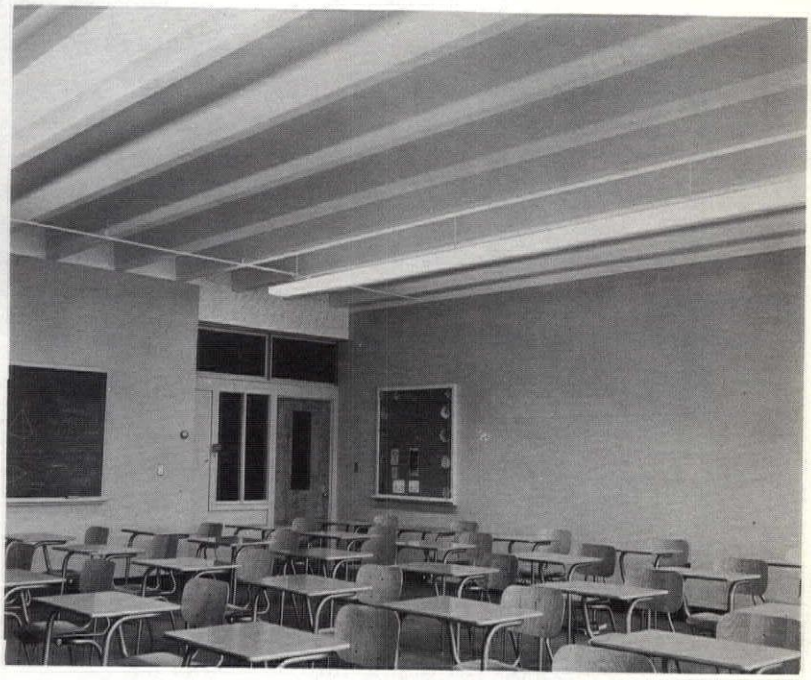
The company, manufacturers and suppliers of concrete block for the new school at Keene, also figured prominently in its construction as distributors of precast double T beams. In eleven days a total of 1048 Tons of beams were set in place for floor and roof space. These 1048 ton of beams covered an area of 41,940 square feet. The beams on the second floor were designed to carry a concentrated load where masonry partitions came, to leave an unobstructed area below.

The people at Arthur Whitcomb, Inc. are well versed in modern construction techniques, particularly in the use of concrete block and T beams. The story they can tell of this school with 875 students, and designed for 1250, with its cost saving features of rapid construction, fire resistance, and consequent insurance savings make an interesting item for consideration by interested groups.









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THE ARCHITECT'S ROLE IN A SCHOOL BUILDING PROGRAM

By Stephen P. Tracy, AIA, of the firm of TRACY & HILDRETH, Nashua, N. H.

The function of the architect in a school building program is frequently not completely understood by members of school boards or building committees. Inasmuch as the success of a building project depends so heavily upon close team work on the part of the school people and the architect, it is important that the relationship of the architect be clearly known at an early stage. This relationship can be best explained by answering those questions which frequently are asked when the employment of an architect is being discussed.

Are the Services of an Architect Essential?

The American Institute of Architects has issued a document giving the following reasons for employing an architect:

1. As in matters of health, one needs a Doctor and in legal matters one needs a Lawyer, so in the matter of building, with its infinite variety of modern facilities for comfort and health, and its claim for beauty, one needs the Architect.
2. The Architect has expert knowledge of building materials and construction methods, and how best to plan for the installation of plumbing, heating, lighting, and insulation.
3. A building is a better investment if well planned and attractive in appearance. The trained Architect can make it so.
4. Both Owner and Builder depend on competitive bidding for fair prices. Fair competitive bidding depends on complete drawings and specifications drawn by an Architect.
5. The Owner needs the supervision of an advisor, unbiased by commercial considerations, to pass on the quality of the materials and workmanship going into his building.
6. The Owner's interests are best served by the Architect who has devoted years to special training for his work and, therefore, must be more intelligently qualified than any one whose principal concern is with other interests and obligations.
7. From start to finish of a building operation the Architect is the Owner's professional adviser and representative — in assistance in drawing contracts, complying with building codes and lien laws, certifying building charges, and seeing throughout that the Owner gets what he pays for.
8. Architectural services are a small fraction of the total cost of a building. A good Architect often saves the Owner a sum much larger than his fee.

Laymen, entrusted with the wise expenditure of public funds for school building purposes, can hardly be expected to rely upon their own limited knowledge and experience in such a complex field, and therefore almost without exception seek the counsel of the professional in the building industry — namely, the architect.

What Services Does the Architect Render?

The architect's services are personal services in the same sense that the professional services of a lawyer or a physician are personal services. He has nothing to sell except his own time, his ideas, his skills, his experience and his advice. He and his staff provide these aids in part through the media of drawings and specifications, but he does not sell blueprints which are merely the instruments of service, the architect's means of expression. The architect's many services include the following:

1. **Conferences.** He discusses with the superintendent of schools, the building committee and with the educational consultant (if one has been engaged) the ed-

ucational requirements of the building. It is the responsibility of the local group to prepare a detailed definition of the problem in terms of such things as numbers of pupils to be accommodated, the curricula to be offered, the specialized facilities to be provided, and innumerable other basic planning factors. The architect, however, recognizes the close relationship between educational programs and the structure that implements this program and he therefore assists in clarifying the statement of educational requirements to be met and special desires to be satisfied. These preliminary conferences then are important in providing a means of coordinating the efforts of the educator and the architect. The team work resulting from these preliminary discussions often determines the caliber of the final building.

2. **Site Inspections.** He inspects with the local group those building sites which may be under consideration, and assists in the comparative evaluation of the possibilities. Here again cooperative action is needed because the committee can determine such factors as transportation costs, land values, direction of community growth, etc. while the architect can advise on such matters as topography, drainage, orientation, size and shape.

3. **Preliminary Studies.** The architect prepares schematic drawings showing recommended solutions to the problem until a general agreement on a solution has been reached. He then prepares preliminary sketches of the approved basic solution together with an outline specification describing the structural systems and the materials to be used. These preliminary sketches normally consist of floor plans, elevations, a rendered perspective view, and a preliminary site plan. Since these preliminary studies establish the character of the eventual building, the importance of thorough review of this preliminary work cannot be overemphasized.

4. **Preliminary Cost Estimates.** Preliminary cost estimates are of necessity only approximations inasmuch as final determinations of structure, mechanical equipment and materials have not been made at this early stage. The architect, however, draws from his experience and knowledge of building costs to furnish cost estimates which are meaningful in terms of preparing budgets and determining whether the project costs will come within the allotment of funds available. These preliminary cost estimates may result in a revision of the preliminary sketches or even a modification of the original educational program proposed.

5. **Reviews by Authorities.** The architect confers with such authorities as the State Departments of Education, Health and Fire Marshal to insure compliance with the recommended standards and requirements of these agencies. The need for an early review by such agencies is obvious.

6. **Working Drawings & Specifications.** The architect prepares the working drawings and specifications which constitute the contract documents from which contractor's bids are secured and from which the building is constructed. The drawings incude site plan, floor plans, elevations, sections, details and other features as well as the plumbing, heating, electrical and other mechanical and structural work. The specifications prescribe the materials to be employed and the workmanship expected of the contractor.

7. **Contract Documents.** The architect assists in the preparation of instructions to bidders, forms of proposal and forms of contract with the contractor selected to construct the building.

8. **Supervision.** The architect assumes general supervision of the entire project including the checking of shop drawings and samples of materials, inspecting the work periodically, assisting in expediting the progress of the work, and making reports to the Owner.

9. **Administration.** It is the architect's responsibiiity to keep complete accounts of the contractor's work and to issue certificates of payments to be made by the Owner to the contractor. He assumes full responsibility for the general administration of the business aspects of the project until the acceptance of the building by the Owner.

10. **Owner's Agent.** Throughout the period of construction the architect acts as the owner's agent, thus relieving the

superintendent of schools and the building committee of many time-consuming and difficult duties.

This summary of the architect's services does not completely cover the entire scope of his activities. He gives advice on a multitude of matters such as color selections, choice of educational equipment, maintenance operations, and insurance problems. In brief he is a planner, a designer, a financial advisor, an expeditor, a supervisor, and an administrator. It is highly important therefore that he command the respect and confidence of all other members of the team if a successful project is to be achieved.

When Should The Architect Be Retained?

The preceding description of the architect's services should make it apparent that he should be retained at an early stage. To receive full benefit of the architect's advice he should be employed in the preliminary planning stage, before a site has been chosen, before a building budget has been prepared and before unalterable decisions have been made as to the size and character of the building.

It follows that one of the earliest steps to be taken by a school district is the appropriation of funds for engaging an architect at least for the preliminary studies.

How Should the Architect Be Selected?

The selection of an architect for a building project is as difficult as the selection of a new superintendent of schools. In both instances there are often many candidates and a thorough review of their experience and qualifications is essential. The following methods of selection are employed:

1. **Direct Selection** is the method usually employed when one retains a lawyer or doctor, on the basis of reputation or recommendations of friends. This involves going to the person or firm of your choice and employing them as the architect. This is the simplest and fastest method but is subject to the danger of overlooking an equal or better firm about which you happen to have little or no knowledge.
2. **Design Competition** may be employed for large or important work or for relatively small jobs if limited to a few invited competitors. Excellent results are possible with this method, if the building committee feels that the time, expense, and possible loss of local service are justified. If a competition is held, it should follow the detailed procedure as published by the American Institute of Architects, of which the principal features are:
   - That there be a professional advisor
   - That all submissions be anonymous
   - That the winners be chosen by a jury of at least three persons, two of whom are architects
   - That the winner be retained as architect for the project
3. **Indirect Selection** is the method usually employed when hiring either a new superintendent of schools or an architect. It may require the committee members to spend considerable time interviewing candidates, investigating qualifications, inspecting examples of the work of the architects being considered and evaluating the results. Although there is no standard procedure prescribed, the following guides may be found helpful:

First, it is important that the selection committee establish the criteria which should be used in the selection. Among such criteria are the following:

1. Experience in school design.
2. Technical knowledge needed to plan a complex building and to secure the best results without waste of either space or money.
3. Executive ability to assume effective administration of the project.

4. Personality and attitudes which will instill confidence, assure cooperative action from others, guarantee insistence on the proper performance of contracts.
5. Imagination and enthusiasm which will result in imaginative, esthetically-satisfying and thoroughly-studied designs.
6. Honesty and integrity to insure that public funds are placed in reliable hands and are effectively and economically used.

Secondly, to make the selection procedure as objective as possible, a questionnaire may be submitted to all candidates. This procedure eliminates the possibility that the selecting committee may be swayed by eloquent salesmanship, prejudice, political influence, or any factor unrelated to the fundamental criteria described above. It places all candidates on equal ground and is an initial aid to impartial evaluation. A typical Questionnaire appears at the end of this article. A review of the questionnaires submitted will enable the committee to weed out those candidates who appear to be least qualified and to concentrate its attention on those two or three whose competence appears to be outstanding.

Third, those candidates who have been retained for further consideration should be again interviewed individually by the committee. Definite appointments should be made for such interviews and a reasonable time (approximately one hour) allowed for discussion. It is important that all candidates be presented with the same set of facts, and be asked the same set of questions. These interviews will bring forth details of the training and experience of each candidate now shown in the questionnaire and will enable the committee to form some judgment of his personality, his forth-rightness and the degree of interest and enthusiasm shown for the project. Interviews usually give opportunity for each candidate to display photographs or other illustrations of his work and to explain any special philosphy or any unusual procedures he may employ in his practice.

Finally, a thorough investigation of the candidates should include visits to schools designed by them. Not only does this enable the committee to evaluate the character of the buildings themselves, but it also offers an opportunity to talk directly with school authorities about their experience with each of the candidates.

Once an architect has been chosen, the selecting committee should notify all candidates of the decision made.

What About Professional Ethics?

All professional groups subscribe to codes of ethics which govern their conduct. The architects' code of ethics is contained in the "Standards of Professional Practice" issued by the American Institute of Architects. Although this document is too lengthy to be included here, a few excerpts significant to the relationship between the building committee and the architect are noted, as follows:

1. The profession of architecture calls for men of the highest integrity, business capacity, and artistic and technical ability. An Architect's honesty of purpose must be above suspicion; he acts as professional adviser to his client and his advice must be absolutely unprejudiced; he is charged with the exercise of judicial functions as between client and contractors and must act with entire impartiality; he has moral responsibilities to his professional associates and subordinates; finally, he is engaged in a profession which carries with it grave responsibility to the public. These duties and responsibilities cannot be properly discharged unless his motives, conduct and ability are such as to command respect and confidence.
2. An architect is remunerated for his services solely by his professional commission, salary, or fee and is debarred from any other

source of compensation in connection with the works and duties which are entrusted to him.

3. An architect may propose to a possible client the service which he is able to perform but shall not, except under unusual circumstances, offer this service without compensation.
   An architect shall not submit free sketches except to an established client.
4. An architect shall not knowingly compete with a fellow architect on a basis of professional charges, nor shall he offer his services in a competition with others except as provided in The Institute's Competition Code.

An awareness on the part of school committees of the existence of these principles of ethical practice is important. Ignorance of their existence has prompted some committees to request free sketches from candidates for an architectural commission. Such solicitations of free services obviously embarrass the architect inasmuch as they constitute requests that the architect engage in unprofessional conduct. The architect whose integrity is beyond reproach must refuse to render such free services. A committee should not consider such a refusal an act of discourtesy or evidence of lack of interest; on the contrary the committee should be favorably impressed by this evidence of his regard for high standards of conduct.

What Fees Do Architects Charge?

There is no prescribed standard fee for the architect's services. The New Hampshire Chapter of the American Institute of Architects has adopted a Schedule of Recommended Minimum Fees which names a fee of not less than 6% of the building construction cost. In some instances the architect may be employed to prepare the specifications and help with the purchase of the classroom furniture exclusive of the built in equipment usually in the general contract. It should be understood between the owner and architect what arrangement has been made for the travel expenses of the architect between his office and the job. Architects may charge higher fees depending upon the nature of a particular project or upon the policies of their own offices. The cutting of fees is almost certain to be accompanied by a reduction in the quality of service rendered.

Is a Contract with the Architect Necessary?

Although a verbal contract may be perfectly legal, a written contract is a more specific way to define the terms and conditions of the architect's employment. "The Standard Form of Agreement between Owner and Architect" issued by the American Institute of Architects is the form of contract most frequently employed. It clearly defines such things as the services to be rendered, the terms of payment, the matter of reimbursements, the responsibilities of the owner, and many other provisions. If these matters are made parts of a written agreement, the chances of subsequent disputes or misunderstandings are greatly reduced.

A copy of this Standard Agreement can be secured upon request of any architect, and it is advisable that the building committee and its legal counsel review this document carefully.

It is hoped that this description of the architect's role in a school building program may serve to create a better understanding of the profession and a fuller appreciation of the architect's services. The success of any school project depends upon the efforts of hundreds of people, each skilled in the performance of some phase of the work to be done. The school board, the building committee, the superintendent of schools, the educational consultant, the architect and the building contractor all have important roles to play. If mutual confidence and understanding exist among these groups and individuals and if all cooperate, then the community's interests will be well served.

QUESTIONNAIRE

1. Name of Firm
   Address of Firm
2. **Personnel**
   a. Registered Architects
   b. Draftsmen (not registered)
   c. Clerical
   d. Other

   _____
   Total Personnel
3. **Top Personnel**
   a. Training & experience of first man
   b. " " " " second man
   c. " " " " third man
   d. " " " " fourth man
4. When was firm organized?
5. If selected, would firm be immediately available to provide necessary architectural services?
6. Do you engage outside consultants? Name them and the function each performs for you.
7. What volume of construction was handled by your firm in the following years?

	School	Other	Total
1959			
1958			
1957			
1956			

8. What is the dollar volume of work currently on your boards?
9. Attach list of schools which you have designed, giving dates, locations, approximate costs, names of references.
10. Attach list of special buildings other than schools which you have designed, giving same information as above.

Signed .....

Date .....

Note: Please do not send photographs, illustrations, brochures or other similar material at this time. Such material may be solicited at a later date.

INSPECTION TOUR BY ARCHITECTS OF CONCRETE BLOCK HOUSE AT LYNNFIELD

A tour of the concrete block house at 37 Apple Hill, Lynnfield, Massachusetts was held on November 15. Sponsors of the tour for architects and guests was the Duracrete Block Co.

An enthusiastic group gathered at the Duracrete plant, travelled to The Colonial Inn, on Route 128 where a luncheon was provided by the host firm. After luncheon the party was given a conducted tour of the site by Emil Hanslin, representative of the Robert P. Stone Co., real estate agents and developers, who played an important role in the birth and development of this fabulous house.

Royal Barry Wills, AIA member, and nationally known for his design, was the designer of this beautiful home.

SUGGESTIONS FOR PLANNING INDUSTRIAL ARTS EDUCATION FACILITIES FOR SECONDARY SCHOOLS

By Nicholas J. Hondrogen
Director of Trade and Industrial Education
State Department of Education
Concord, New Hampshire

If we follow some of the guiding principles for industrial arts education as indicated in the 1960 edition of the Evaluative Criteria of the National Study of Secondary School Evaluation, we would have to consider the following statement in planning necessary physical facilities; "Industrial arts activities are, in general, exploratory in nature and continue to be exploratory until pupils require more specialized training in vocational trade and industrial education. When satisfactory vocational facilities are not available the industrial arts department must assume some responsibility for this specialized training."

Until such time as there is provided an opportunity for more high school youth in the State to acquire specific vocational trade and industrial education which is preparatory training for skilled workers, we must continue to consider the establishment of adequate physical facilities to meet the exploratory function of industrial arts.

Architects, school administrators, and school boards should seriously consider the forty checklist items which appear under Part III, Physical Facilities, of the Industrial Arts Section D-11, of the 1960 Evaluative Criteria, [1] prior to embarking upon a program for remodelling present facilities or constructing new ones.

Listed below are some excerpted checklist items for considering adequate industrial arts physical facilities as they appear in the 1960 Evaluative Criteria:

> ...Industrial arts shops are appropriately located as a unit for students as well as for adult evening classes. Outside entrances are provided for the handling of supplies, and projects.
>
> ...An average of 100 square feet of floor area is provided per student in industrial arts shops. (Machine and auto programs may require additional space while drawing and electronics may require less.)
>
> ...Room or school-shop proportions are within 1:1½ proportions; minimum width is 30 feet. All areas of the shop may be observed by the teacher from any position.
>
> ...Floors are in good condition and are suited to the area in which they are located; precautions are taken against slippery floors with machine areas receiving special attention.
>
> ...Exhaust ventilation equipment is available in areas producing excessive heat, fumes, gases, and dust.
>
> ...Where needed, adequate and properly located gas, water, electrical, and compressed air facilities are provided.
>
> ...Each school-shop facility has a minimum of two entrance-exit doors with a width of 36 inches or more.

[1] National Study of Secondary School Evaluation, 1785 Massachusetts Ave., N. W. Washington 6, D. C.

. . . Ceiling height is appropriate, i. e., between 12 feet and 24 feet in all school shops and drawing rooms; and where applicable, ceilings are constructed of a material having a high coefficient of sound absorption.

. . . A ventilated fire-resistant cabinet is provided for the storage of combustible materials. A metal, self-closing container is provided for soiled rags. Each shop is equipped with appropriately located fire extinguishers of correct type and size.

. . . School shop contains a convenient and centrally located tool and supply center and where applicable, an adequate number of well-laid-out tool panel areas for special tools.

. . . Safe storage is provided for all supplies; storage area accommodates full-length stock and all appropriate materials.

. . . Storage areas are provided for student projects under construction as well as for articles in the assembling and finishing stages.

. . . Equipment is arranged with reference to the sequence of operations and their relationship to other areas. Adequate clearances, commensurate with the function of the machine, are provided around all equipment.

. . . The school shop has approximately one-third more work stations than the maximum class enrollment in order to provide needed flexibility. Ample aisle space is provided.

. . . A finishing area with the following characteristics is provided in each shop where the facility is important: adequate in size, appropriately located, properly lighted and ventilated, easily supervised, and relatively free of dust.

. . . A demonstration and discussion area, with space for each student, is provided in all shops.

. . . Selection of tools and machines is based on their instructional value.

. . . There is a quantity and variety of tools, instruments, and equipment to meet the needs of the industrial arts program.

. . . Unit-type machines with self-contained motors are used throughout the industrial arts program; equipment is adapted to the size and maturity of the student, i. e., height from the floor to the working surface of a machine, size of a machine, horsepower, speed, and capacity.

. . . Conveniently located and appropriately painted switches or control boxes are provided on all power machines. These are easily accessible from the position of the operator.

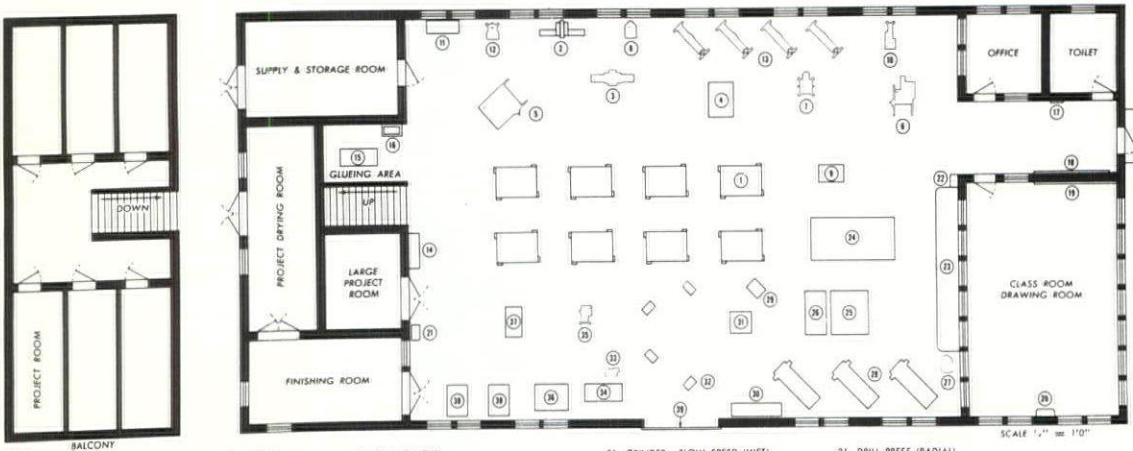
. . . A master electrical panel is conveniently and centrally located in each shop. All machines, wired in with building, are provided with disconnect switches and have controls providing undervoltage and overload protection. All machines are grounded.

. . . Industrial arts shops are clean and neat; good planning and organization are in evidence.

In planning industrial arts facilities in New Hampshire secondary schools, two types of programs are usually considered. The general shop in which several activities are offered in one room usually is found in smaller schools. The unit shop in which each activity is separately taught in several rooms may be found in the larger school systems.

GENERAL SHOP

Through the courtesy of the Rockwell Manufacturing Company we have reproduced the grand award winner of the Delta School Shop Planning Contest which is a general shop for a senior high school, grades 10-12, based on a plan submitted by Anton M. Sevak, El Campo, Texas.



1. 4-STUDENT WORK BENCHES
2. CUT-OFF SAW (RADIAL ARM – 12")
3. 8" JOINTER
4. 30" PLANER
5. 10" TILTING ARBOR SAW
6. 20" BAND SAW
7. SHAPER
8. 14" DRILL PRESS
9. MORTISING MACHINE
10. 24" JIGSAW
11. BELT SANDER
12. DISK SANDER
13. 12" WOOD LATHE
14. WOODWORKING TOOL CABINET
15. GLUEING TABLE
16. JANITORS SINK
17. DRINKING FOUNTAIN RECESSED IN WALL
18. BULLETIN BOARD
19. BLACKBOARD
20. WASHSTAND
21. GRINDER – SLOW SPEED (WET)
22. ELECTRICAL PANEL (MASTER SWITCH)
23. ELECTRICAL WORK BENCH
24. SHEETMETAL BENCH
25. 4' SHEETMETAL SHEAR
26. 4' SHEETMETAL BREAK
27. 14" DRILL PRESS
28. 12" METAL LATHES
29. ARBOR PRESS
30. METALWORKING TOOL CABINET
31. DRILL PRESS (RADIAL)
32. ANVILS
33. GRINDER
34. WELDING BOOTH
35. METAL CUTTING BAND SAW
36. MILLING MACHINE
37. POWER HACK SAW
38. SHAPER (METAL)
39. SLIDING DOOR

This is a one-teacher shop and provides students exploratory opportunities in woodworking, sheet metal, general metalwork, electricity, and machine shop.

The shop proper, without the surrounding rooms, measures 46 feet by 65 feet. It is the opinion of competent authority that the project storage area, materials space, and finishing rooms, as provided for in the plan, are essential to the development of orderly shop and work habits. The estimated cost of all shop equipment as contained in the plan is $29,000.

It should be emphasized here that this plan is merely reproduced as a guide and represents a consensus on the part of five outstanding specialists in the aspects of industrial arts and vocational education as representing sound general shop facility layout.

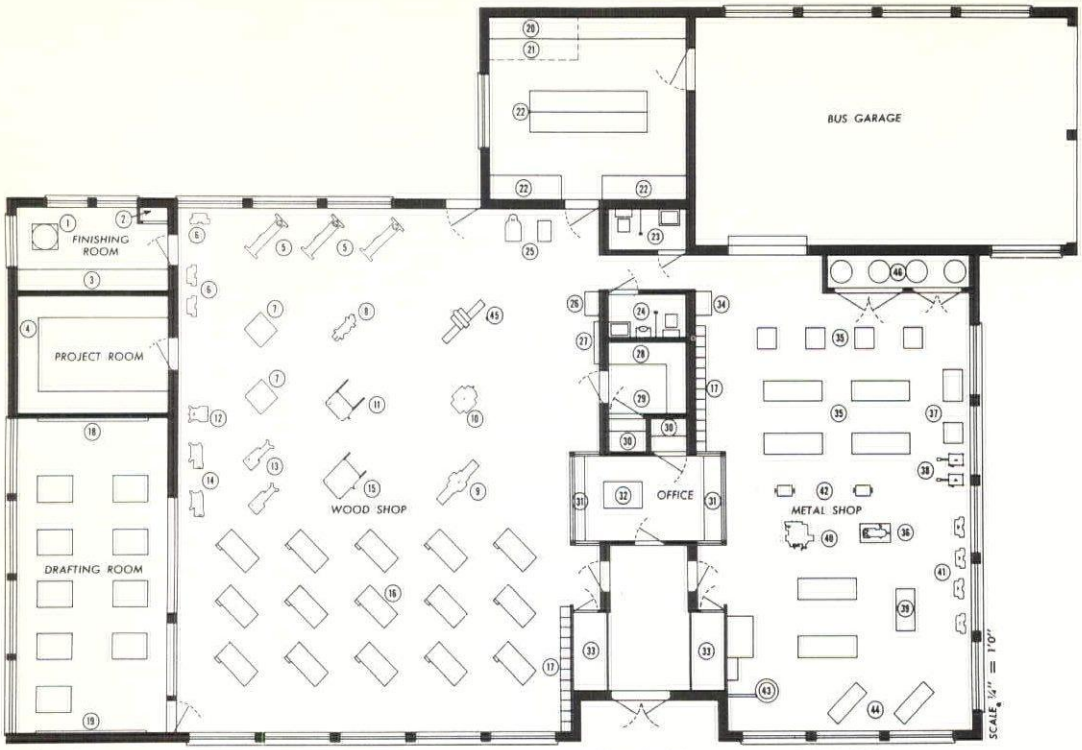
Local school authorities should explore this and other successful plans in arriving at a decision for the establishment of a facility that will meet their community needs.

Size of enrollment, type of program needed, available financial effort are some of the factors to be considered before construction commences.

UNIT SHOP

As a guide for planning unit shops we have reproduced the runner-up to the Grand Award Winner in the Delta School Shop Planning Contest which is designed to serve a four-year high school, grades 9-12, and is based on a plan submitted by E. A. Miller, Jal, New Mexico.

• NEXT PAGE



1. FINISH TABLE
2. CABINET
3. DRYING TABLE
4. PROJECT STORAGE
5. 12" LATHES
6. GRINDERS
7. SHAPER
8. 6" JOINTER
9. 8" JOINTER
10. PLANER
11. TILTING TABLE CIRCULAR SAW
12. DISC SANDER
13. SCROLL SAWS
14. BAND SANDERS
15. TILTING ARBOR CIRCULAR SAW
16. SHOP DESKS
17. LOCKERS
18. BLACKBOARD
19. BULLETIN BOARD
20. WOOD STORAGE RACK
21. OVERHEAD PLYWOOD STORAGE
22. WOOD STORAGE
23. GIRL'S REST ROOM
24. BOY'S REST ROOM
25. DRILL PRESSES
26. WASH SINK
27. CLAMP RACK
28. TOOL PANEL
29. TOOL STORAGE
30. SHELVES
31. BOOK STORAGE
32. DESK
33. PROJECT DISPLAY CASES
34. WASH SINK
35. METAL DESKS
36. METAL SHAPER
37. ARC WELDER
38. ARC & SPOT WELDER
39. DRILL PRESS
40. TOOL CUTTER & GRINDER
41. GRINDERS
42. FLOOR BUFFING MACHINES
43. FOUNDRY
44. METAL LATHES
45. RADIAL ARM SAW
46. GENERATOR ROOM

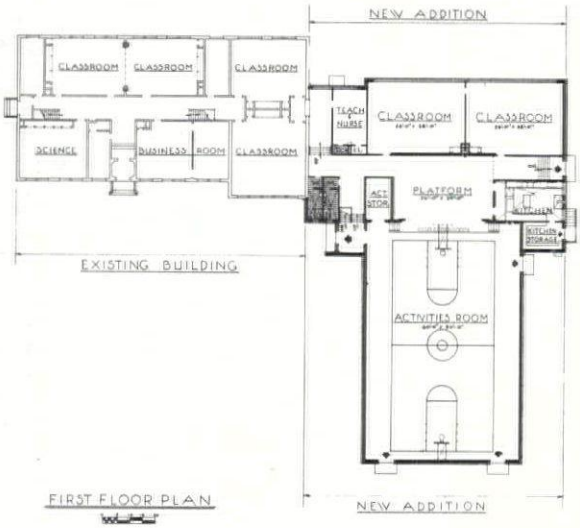
The units offered are drafting, wood, and metals, and is a two-teacher arrangement.

The metal shop is 28 feet by 47 feet; the wood shop, 40 feet by 52 feet. The over-all building measures approximately 72 feet by 98 feet. Estimated costs for the equipment listed are $22,000.

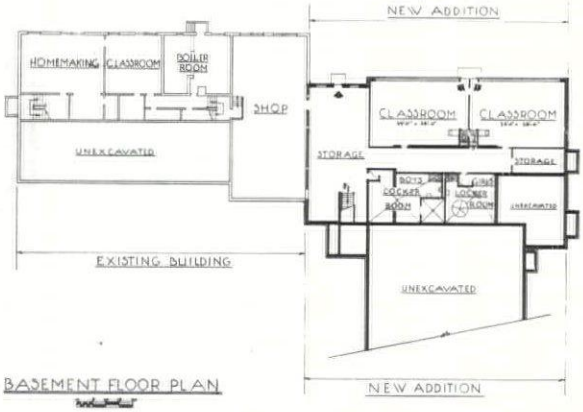
Here again adaptation of the arrangement indicated should be made in light of local needs, and all aspects thoroughly explored before any plan is adopted.

We have several instances of the results of poor planning, when physical facilities for industrial arts are constructed without consideration first being given to the type of program to be offered, and to the equipment necessary to operate the program.

We strongly urge local groups to consult competent authorities, on the State level or in communities throughout the State who operate successful industrial arts programs before committing to facility construction.



FIRST FLOOR PLAN



BASEMENT FLOOR PLAN

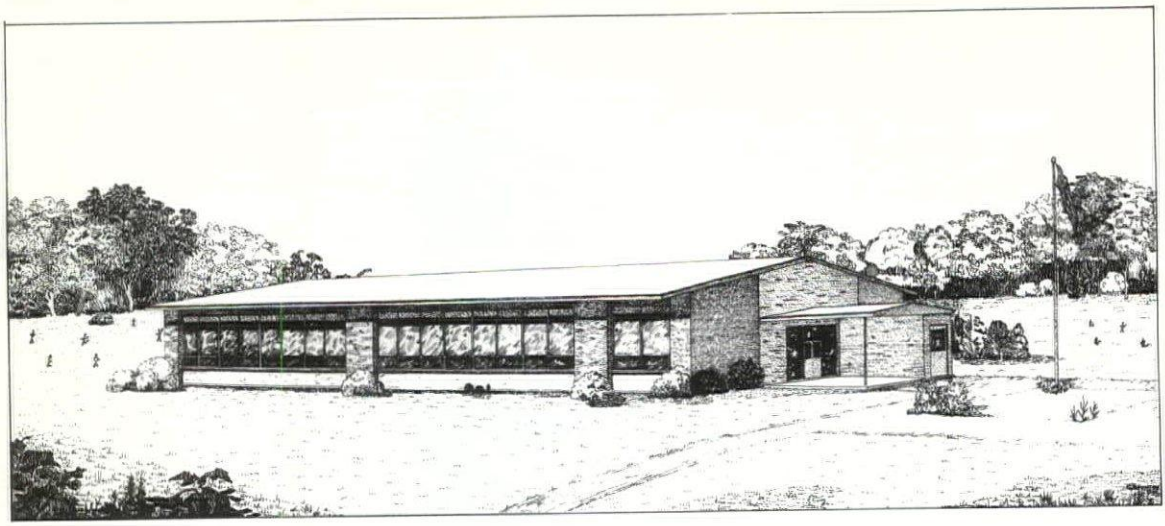
HIGH SCHOOL ADDITION, ANDOVER, N. H.

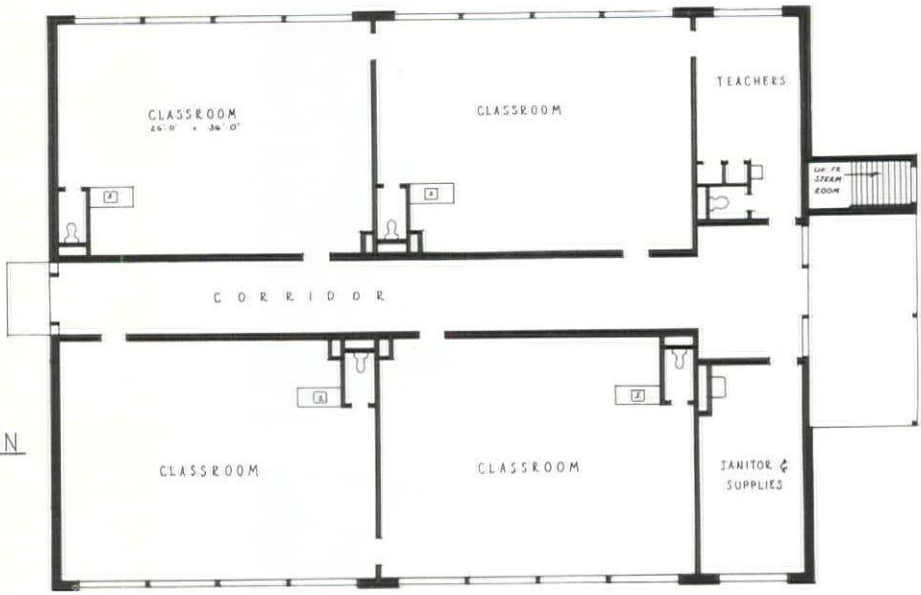
DESCRIPTION:
Reinforced Concrete Foundation — Reniforced, Dampproofed, Concrete Floor Slabs on Grade and Concrete Slab on Steeltex over Bar Joists; Structural Steel Frame; Precast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash; Exterior Walls Face Brick with Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Asphalt Tile Floors in Classrooms, Corridors and Offices; Wood Floor in Gymnasium and Platform; Steel Interior Doors and Frames; 33 Plumbing Fixtures; Four Zone Forced Hot Water Heating System with New Boiler; Forced Ventilation; Incandescent Fixtures; Electric Fire Alarm and Program Systems.

ESTIMATED COST OF BUILDING — $140,000.00
TOTAL VOLUME: 255,564 cu. ft.— TOTAL FLOOR AREA: 15,844 sq. ft.
— CEILING HEIGHTS: Basement 9'-0"; First Floor 9'-4"; Activities Room 18'-0"

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.

ELEMENTARY SCHOOL, ASHLAND, N. H.





FLOOR PLAN

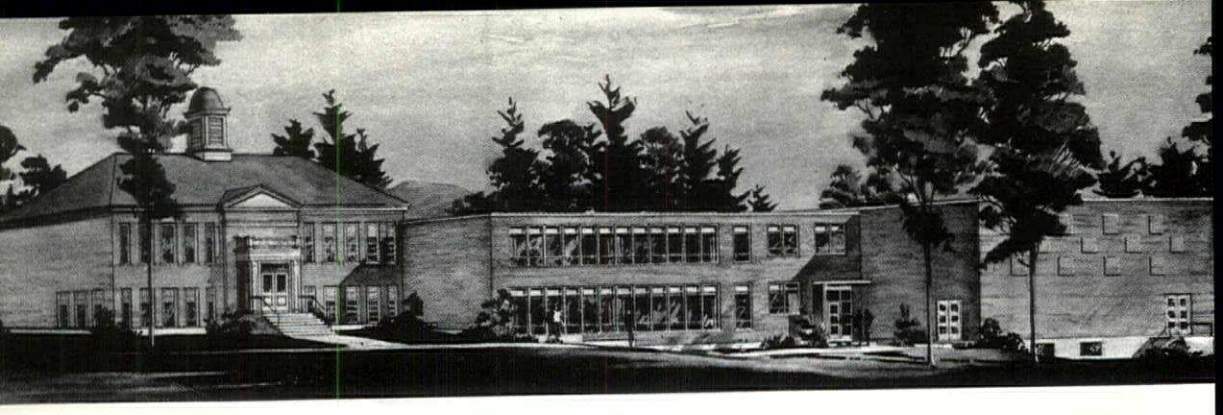
DESCRIPTION:
Foundations — Poured Cement; Exterior Walls — Brick and block face with block back-up, blocks painted; Interior Partitions—Blocks painted with glazed tile dado 4'-6" high in Corridor and structural glazed tile cove base throughout; Floors — Concrete slab on grade, except structural slab over Pump Room, asphalt tile covering with rubber tile in Toilets; Ceilings — Acoustical plaster on metal lath and metal suspension; Roof — Low pitch wood frame, plywood deck, 1½" rigid insulation, 20-yr. steep roof asphalt and gravel, copper flashing; Aluminum Sash; Slab doors and steel frames; Heating — Low pressure steam in underground conduit from central boiler plant, fin radiation in rooms, unit heaters in corridor, electric heaters in toilets, zone control, mechanical ventilation; Plumbing — City water and sewer; Individual classroom toilets, sink and drinking fountain in each classroom; Fire extinguishers; Electric: Incandescent lighting. All fixtures and clocks included. Fire alarm system and telephone. Note: All mechanical work sized and planned for five additional classrooms, gang toilets and more administration area.

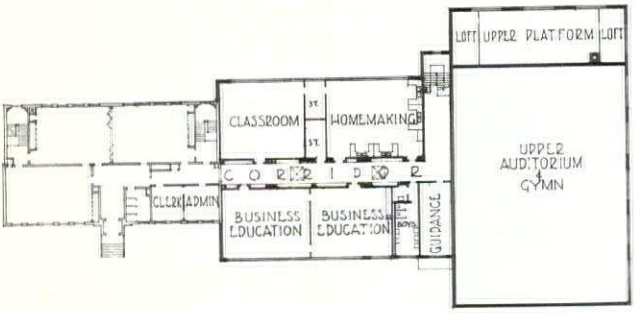
ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$51,535.00	71.8	$ 7.77	$ .564
HEATING, PLUMBING	15,652.00	21.8	2.36	.171
ELECTRICAL	4,566.00	6.4	.69	.050
TOTAL COST OF BUILDING	$71,753.00	100.0	$10.82	$ .785

TOTAL VOLUME: 91,430 cu. ft.— TOTAL AREA: 6,632 sq. ft.—CEILING HEIGHT: 10'-0"— DATE OF BIDS: December 1, 1959.

Gordon R. Ingram, Architect

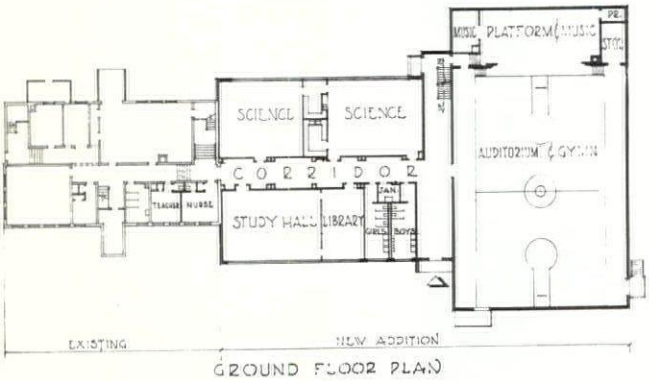
JAMES P. LEIGHTON & SON, CENTER HARBOR, N. H.
GENERAL CONTRACTOR





FIRST FLOOR PLAN

BASEMENT PLAN



GROUND FLOOR PLAN

HIGH SCHOOL ADDITION, BELMONT, N. H.

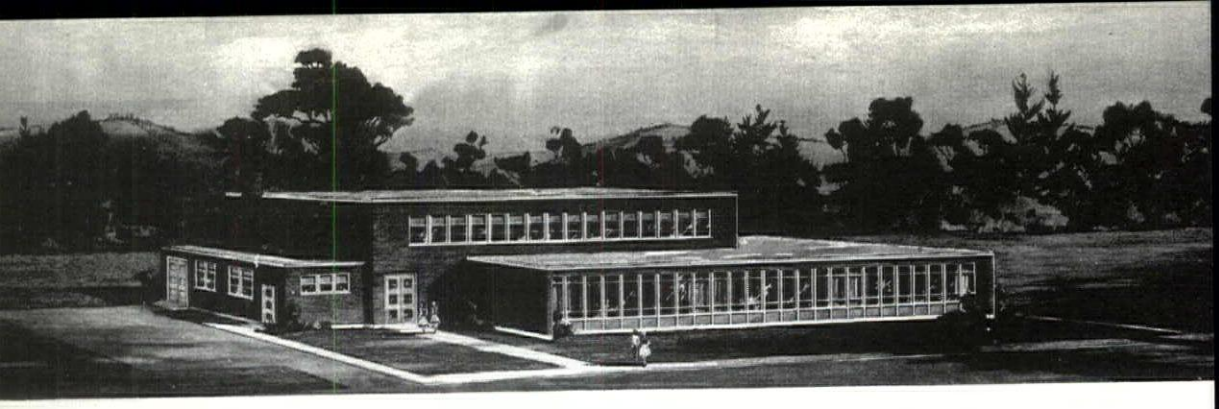
DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs on Grade, Concrete Slab on Steeltex over Steel Joists, Wood Floor over Wood Frame in Gymnasium; Structural Steel Frame; Precast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash; Exterior Walls Face Brick With Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Asphalt Tile Floors in Classrooms, Corridors and Offices, Wood Floor in Gymnasium and on Platform; Steel Interior Doors and Frames; 66 Plumbing Fixtures; Six Zone Forced Hot Water Heating System; Forced Ventilation; Incandescent Fixtures; Electric Fire Alarm and Program Systems; Television Hook-Up.

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$184,041.00	74.4	$ 6.67	$ .327
PLUMB., HEAT., VENT.	49,069.00	19.8	1.78	.087
ELECTRICAL	14,298.00	5.8	.51	.026
TOTAL COST OF BUILDING	$247,408.00	100.0	$ 8.96	$ .440

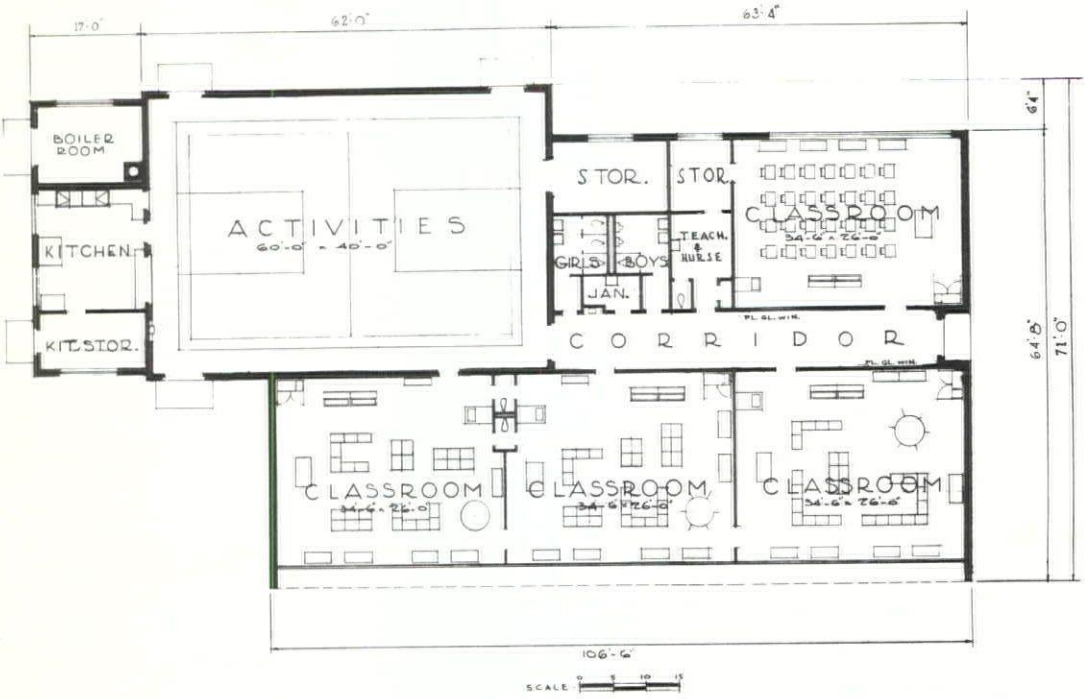
TOTAL VOLUME: 562,200 cu. ft.— TOTAL FLOOR AREA: 27,609 sq. ft. — CEILING HEIGHTS: Basement 9'-2"; Gymnasium 19'-0"; Ground Floor Classrooms 10'-0"; First Floor Classrooms 9'-4"

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.

WINSTON P. TITUS, LAKEPORT, N. H.
GENERAL CONTRACTOR



DANVILLE ELEMENTARY SCHOOL, DANVILLE, N. H.



DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs; Structural Steel Frame; Pre-cast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash and Curtain Wall; Exterior Walls Face Brick with Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Asphalt Tile Floors in Classrooms, Corridors and Offices; Grease-Proof Asphalt Tile Floor in Activities Room and Kitchen; Steel Interior Doors and Frames; Twenty-Three Plumbing Fixtures; Three Zone Forced Hot Water Heating System; Forced Ventilation; Incandescent Fixtures.

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$63,704.00	73.6	$ 7.38	$ .474
PLUMB., HEAT., VENT.	19,171.00	22.1	2.22	.143
ELECTRICAL	3,700.00	4.3	.43	.027
TOTAL COST OF BUILDING	$86,575.00	100.0	$10.03	$ .644

TOTAL VOLUME: 134,363 cu. ft.— TOTAL FLOOR AREA: 8,633 sq. ft.
— CEILING HEIGHTS: Classrooms 10'- 0"; Activities Room 18'- 0"

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.

ANDRE COURCHESNE, MANCHESTER, N. H.
GENERAL CONTRACTOR

PLANNING A HOMEMAKING DEPARTMENT IN NEW HAMPSHIRE

By Lois M. Perham
Director of Home Economics Education
State Department of Education
Concord

Home Economics has broadened its program to meet the needs of families in this rapidly changing world. Homemaking education is devoting more time to the application of knowledge and the defining of values and goals. Less time is spent in the production of skills. Principles are taught in laboratory facilities rather than techniques. More opportunities are given to test merchandise, to make comparisons, evaluate costs in relation to use of resources, and to measure satisfactions. Facilities for teaching are being changed too.

In New Hampshire, the usual homemaking unit consists of a one teacher department where certain basic competences are developed, based on the consideration of problems in the areas of

- Family Food, Clothing and Housing
- Care and Guidance of Children
- Management of resources (skill, time, money, etc.)
- Maintenance of health and care of the sick
- Understanding of personal and family relations

Each of these areas require special materials and storage space.

The All Purpose Room

Since the majority of homemaking programs are family centered, the all purpose room is particularly suited for New Hampshire. It is useful for exploratory courses and tends to reduce departmentalization into unrelated subject matter.

The all purpose room is not intended to permit teaching unrelated subjects simultaneously. It does enable the teacher, carrying on several classes a day, to teach different areas to successive classes.

Atmosphere

It is desirable to stimulate the atmosphere of home in the department but not at the expense of teaching effectiveness. The use of color, plants, and decorative objectives can reflect community taste. Furniture should be consistent with teaching needs that is, designed for education and durable. The rooms should include new developments in equipment, representing todays' concept of making the home livable, comfortable and attractive.

Planning a good homemaking department is important. The finest facilities cannot cover up for poor planning. The services of the architect, superintendent and the classroom teacher are needed. In this manner, all factors such as teaching techniques and needs, curriculum flexibility, building design and construction, pupil traffic flow, educational goals, school population and others are considered.

Location

A homemaking department located on the first floor has the following advantages

- less expensive for installation of utilities
- better location for delivering service
- better location for removal of wastes
- more accessible for use of adult classes
- keeps home economics in closer relation to the school as a whole

Room layout

In the plan for an all purpose room, below, various work and storage centers are in detail. This plan allows for multiple use of space and for storage needs for each activity located near point of first use. The plan is adequate in equipment, storage, and space for 16 pupils.

Food and Nutrition Center

The four unit kitchens are equipped for planning, preparing and serving meals. One of these units should include 8 - 10 linear feet of counter space, 1 sink, 1 range, chairs and tables accessible to kitchen, facilities for drying towels, base cabinets with shelves and drawers for utensils, silverware, linen and towels and wall cabinets above the counters. A light is needed over each sink and enough electrical outlets to carry the maximum load for an entire class.

Food storage facilities include one large refrigerator, a cabinet for food staples

and canned goods and a freezer. These are accessible to all units.

Provision should be made for gas and electric stoves, providing opportunity for instruction in both types of equipment.

Partitions between unit kitchens are not recommended. Those which extend more than 8-10 inches above work surfaces shut out light and are hindrance to good supervision.

Clothing Center

The clothing area contains 8 machines and benches which are placed near the windows to allow for maximum natural lighting. Electrical outlets serve 2 machines. Additional cutting area is found in the unit kitchen as each work table is located near each unit. The ironing boards can be used in the unit kitchens. A folding door allows for privacy in the dressing room. The full length mirror for fitting is made by attaching to mirror doors. The triple mirror effect is made by placing mirrors on three adjacent storage doors. The door on the left is hung to open from the left to right, the door on the right opens from right to left.

Tote tray storage is provided for pupils' sewing supplies and notions, and garments under construction.

Laundry Center

This is large enough to accommodate the entire class for demonstration. It contains a washing machine and dryer. The same floor space is used for the food and nutrition area.

Teaching Center

The teaching center is large enough for an entire class to participate. It includes a desk for the teacher, teacher storage, chalkboard and chairs and tables. Provision is made for pupil bookstorage near the door.

Living Center

The living center is large enough for the entire class. It offers facilities such as a divan, upholstered chairs, bookcase, lamps, tables and chairs. The area has many uses — child study, housing and home furnishings and home care of the sick.

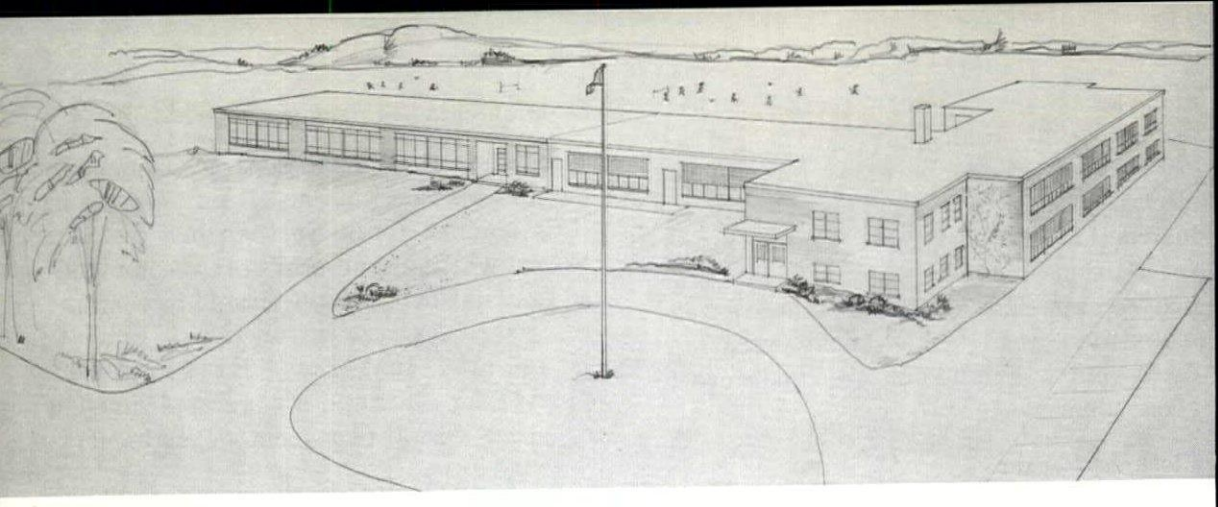
Departments for larger schools

A two or three room department usually has more space than an all purpose room. It is planned for more than one teacher. Rooms which are adjacent are recommended as it is sometimes desirable to combine the rooms for certain functions. Since it is essential that the total department provide for all areas, a suggested division of space for a two room department is

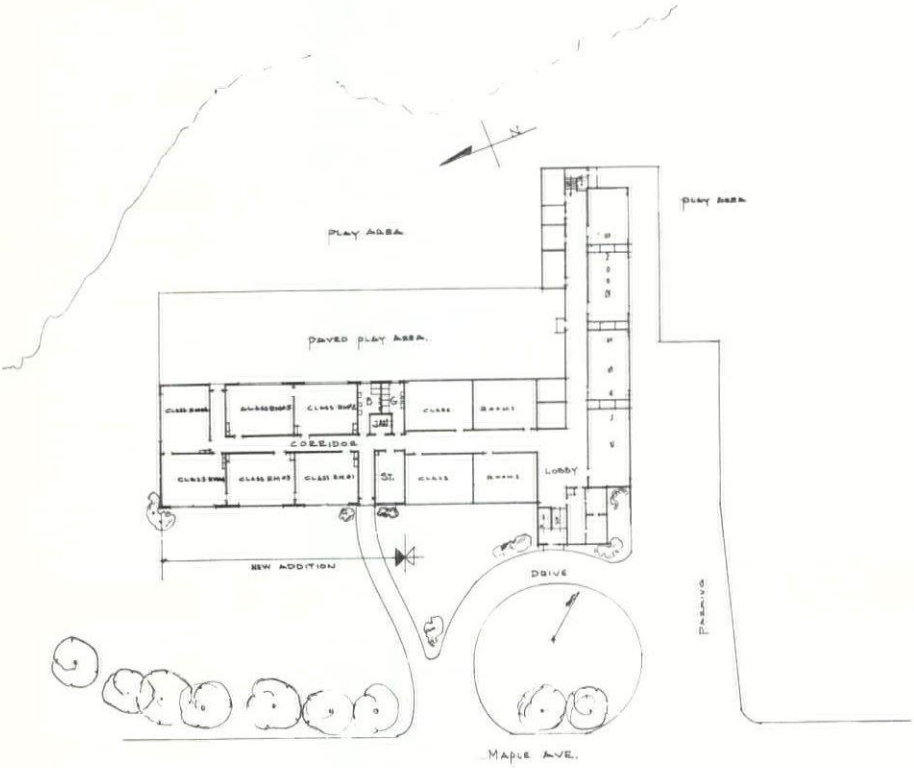
1. A room for foods, home management and laundry
2. A room for home nursing, child development, social living center, home furnishings, and clothing.

Each of these rooms should be equipped with storage facilities, illustrative materials, equipment, and supplies needed for the area for which the room was planned.

See Plan and Legend for this story on pages 58 and 59.



ADDITION TO MAPLE AVENUE ELEMENTARY SCHOOL
GOFFSTOWN, N. H.



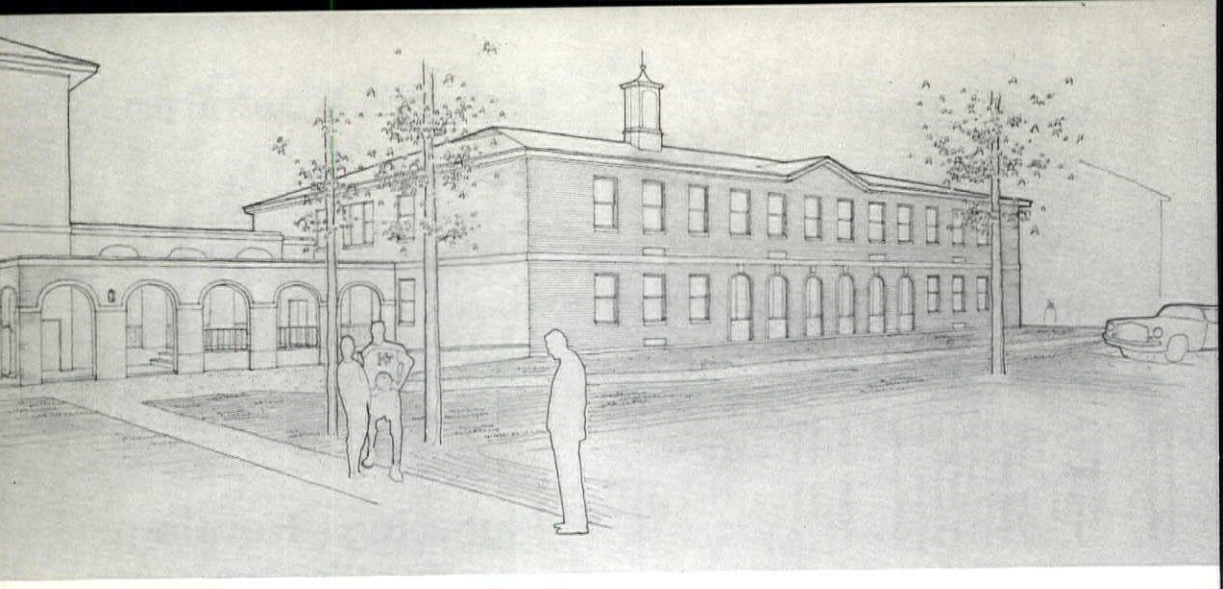
DESCRIPTION:
Footing and Foundation — reinforced concrete; Exterior Walls — brick veneer and Norlite block; Interior Partitions — Norlite block; Floors — reinforced concrete slab on grade, finished with asphalt tile, toilet rooms, ceramic tile; Roof Construction — structural steel frame, steel joists, precast insulating roof deck, bonded built-up roofing; Windows — aluminum sash; Ceilings — incombustible acoustical tile; Heating — extension of existing steam system, individual room control; Plumbing — standard fixtures, sink cabinets in classrooms; Electrical — fluorescent lighting in classrooms; Ventilation — mechanical in classrooms, toilet rooms and storage room; Sitework — paved play area and walk.

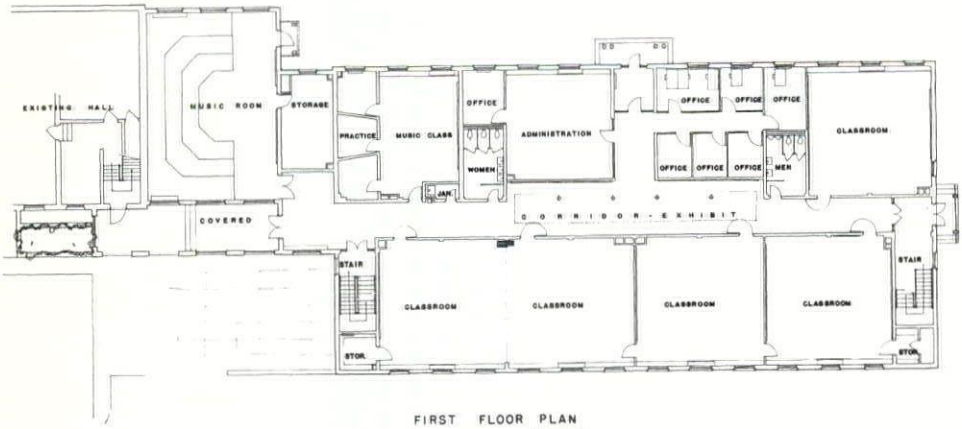
ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*
STRUCTURE	$70,266.00	75.	$ 8.85
PLUMB., HEAT., VENT.	17,650.00	18.	2.13
ELECTRICAL	6,640.00	7.	.83
TOTAL COST OF BUILDING	$94,556.00	100.00	$11.81

TOTAL AREA: 8,000 sq. ft.— DATE OF BID: June 14, 1960.

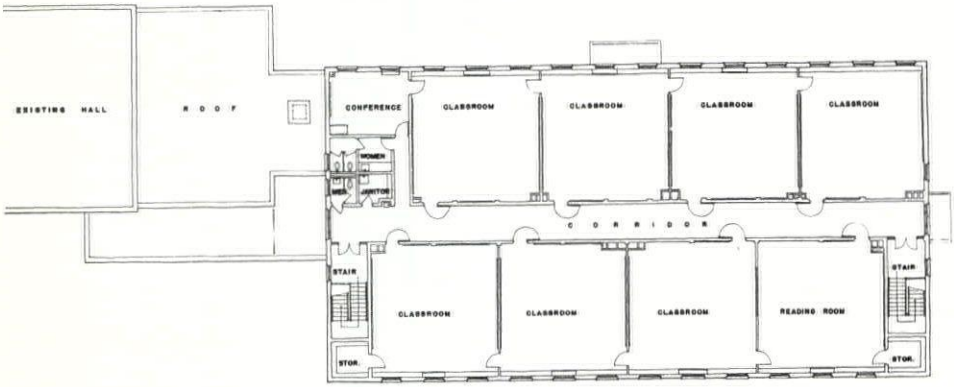
Alexander J. Majeski, A.I.A., Architect - Bedford, N. H.

AMOSKEAG CONSTRUCTION COMPANY, GOFFSTOWN, N. H.
GENERAL CONTRACTORS





FIRST FLOOR PLAN



SECOND FLOOR PLAN

CLASSROOM BUILDING FOR KEENE TEACHERS COLLEGE,

The requirements of a program for the classroom building specifically dictated the plans, i. e. classrooms, lecture rooms, music suite, offices with access to the double corridors give the building its basic shape.

After several campus and land use studies, it was felt the core of the campus should be a definite quadrangle. To develop the quadrangle, the classroom building was attached to the existing classroom building, Parker Hall. The problems of architectural compatibility in the attaching to an existing building are obvious.

The exterior is brick, wood trim, heavy asphalt shingle and tar and gravel roofs. Vinyl tile floor covering over concrete floors, concrete block and ceramic tile walls provide low maintenance. Full acoustical treatment for the music suite isolate the sounds from the remaining building.

Koehler and Isaak, A.I.A., Architects, - Manchester, N. H.

THE MacMILLIN CO., INC., KEENE, N. H.

GENERAL CONTRACTOR

The MacMILLIN COMPANY, Inc.

Builders

SKILL RESPONSIBILITY INTEGRITY

THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA

A G C

REG. U. S. PAT. OFF.

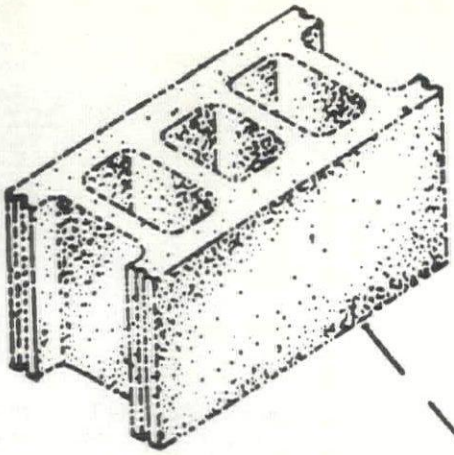
KEENE, N. H. **ELmwood 2-3070**

WE commend the Educators, Committee Members and Planners who formulate plans and facilities for the Education of Young America.

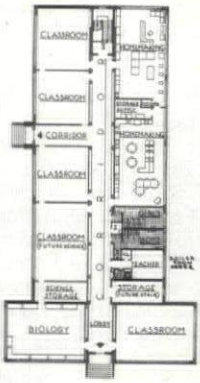
WE are proud of our achievement as Builders and Contractors whereby the Youth of New Hampshire are better served for their future tasks, through proper education, in modern schools.

GENERAL CONTRACTORS

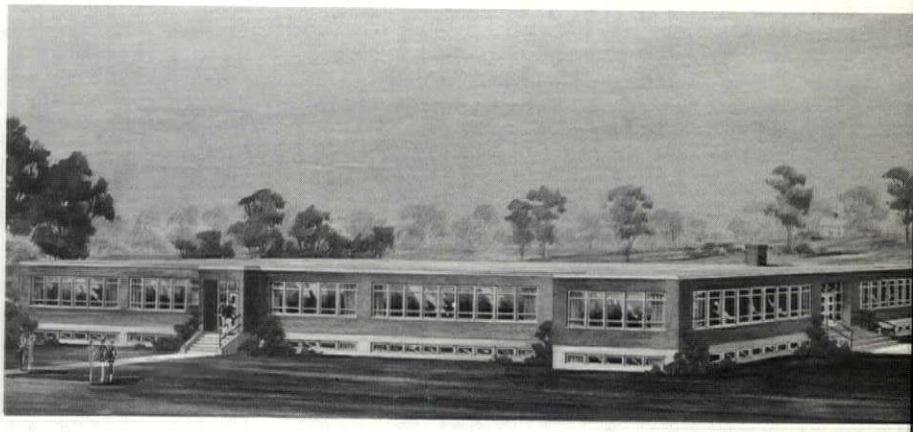
KEENE TEACHERS COLLEGE, CLASSROOM BUILDING
MILLER STUDENT CENTER, KIMBALL UNION ACADEMY
NORTHWOOD ELEMENTARY SCHOOL



DURACRETE



FIRST FLOOR PLAN

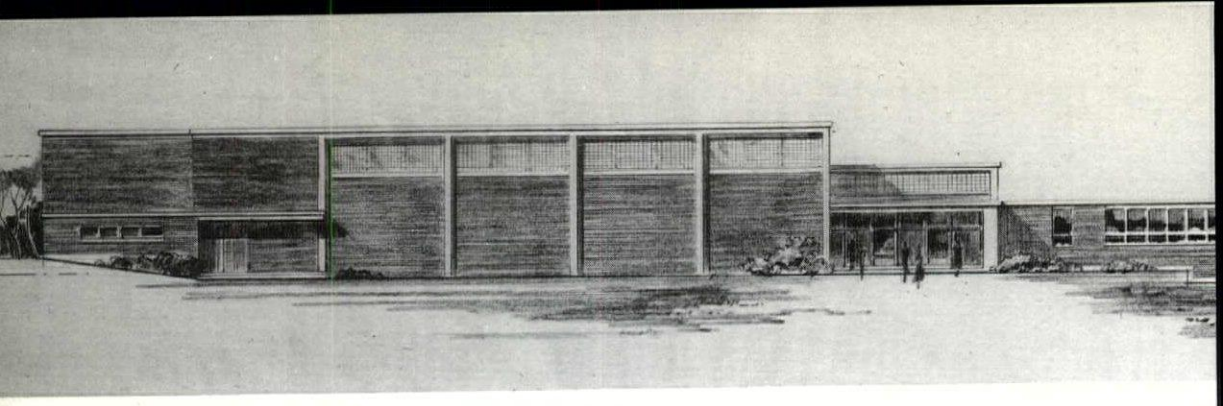


HIGH SCHOOL CLASSROOM BUILDING, KITTERY, MAINE

DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs; Structural Steel Frame; Roof: Reinforced Concrete Slab on Steeltex Framed for Future Second Floor; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Galvanized Steel Sash; Exterior Walls Water Struck Face Brick With Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Ceramic Tile Corridor and Toilet Room Dadoes; Ceramic Tile Floors in Toilets; Asphalt Tile Floors in Classrooms, Corridors and Offices; Built-in Lockers; Fibre Glass Draperies; Steel Interior Doors and Frames; Vinyl-Asbestos Floor Tile in Laboratories; Thirty-Nine Plumbing Fixtures; Two Zone Forced Hot Water Heating System With Individual Room Controls. Forced Ventilation; Intercommunication Sysem; Electric Fire Alarm and Program System and Television Hook-Up; Incandescent and Fluorescent Fixtures.

ESTIMATED COST OF BUILDING — $140,000.00
TOTAL VOLUME: 157,452 cu. ft.— TOTAL FLOOR AREA: 12,200 sq. ft.
— CEILING HEIGHT: 10'- 0"

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.

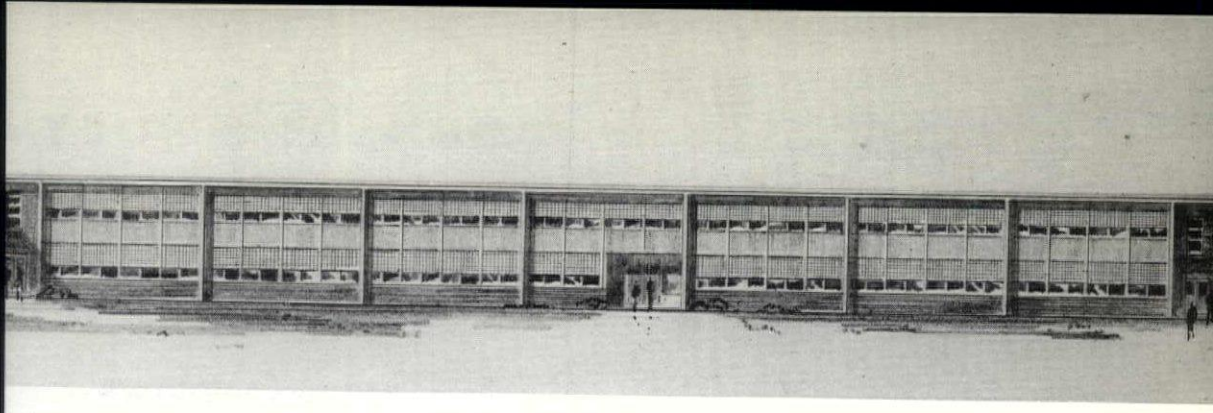


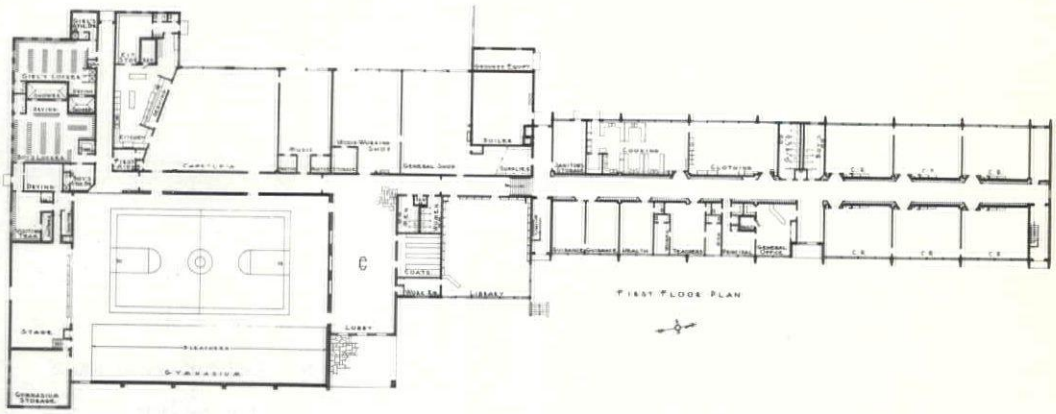
NEW JUNIOR HIGH SCHOOL, LACONIA, N. H.

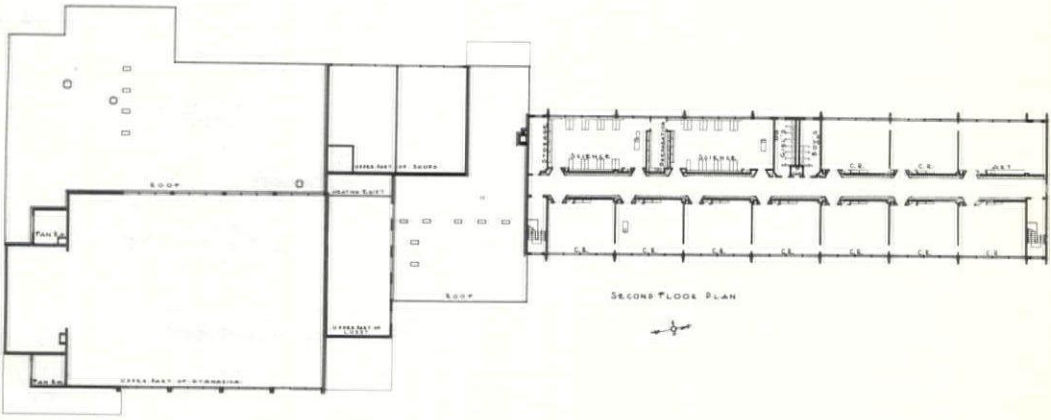
CONTENTS — SCHOOL PORTION
15 Classrooms—25′ x 32′-10″ with Teacher's Closet, Book Counter & Built-in Storage; 1 General Office — 16′-8″ x 25′ with Counter, Public Space, Vault and 2 Store Closets; 1 Principal's Office — 11′-8″ x 16′-3″ with Coat Closet, Toilet and 2 Storage Closets; 1 Teacher's Room — 16′-10″ x 25′ with separate Men's and Women's Rest Room and Toilets; 1 Health Room — 16′-3″ x 25′-0″ with Toilet; 2 Guidance Rooms — 16′-3″ x 25′; 2 Home Economics Rooms — Clothing — 25′ x 50′; Cooking — 25′ x 49′-6″ with 5 Cooking Cubicles; Store Room — 8′ x 8′-10″; 2 Science Rooms — 25′ x 48′ and 25′ x 50′; 1 Preparation Room — 11′ x 25′; 1 Art Room — 25′ x 42′-6″ with Closets; 1 Library — 43′ x 48′— Shelving 6000 books with Work Room — 8′-6″ x 17′-6″ — Desk and Delivery; 1 General Shop — 33′-9″ x 50′-8″ with Toilet and Storage Space; 1 Woodworking Shop — 33′-9″ x 50′-8″ with Storage; 2 Book Storage Rooms — 9′ x 25′; 1 Janitor's Storage Room — 16′ x 25′; 2 Janitor's Closets; 2 Boys' Toilets — 10′ x 25′; 2 Girls' Toilets — 10′ x 25′; 1 Boiler Room — 29′ x 35′ with Built-In Incinerator; 1 Grounds Equipment Room — 10′ x 29′; GYMNASIUM PORTION — 1 Lobby — 32′ x 75′ with Coat Room — 21′ x 21′ with Public Toilets — Men's and Women's; 1 Ticket Booth; 1 Public Telephone Booth; 1 Gymnasium-Auditorium — 90′ x 124′-6″; Basketball Court — 50′ x 88′; Bleachers — Seating Capacity, 1280; Auditorium — Seating Capacity, 1400; Banquet Seating Capacity, 1000; 22′-0″ Clearance under Concrete Girders; 1 Stage — 30′ x 50′ with 36′ width proscenium; 1 Gymnasium Storage Room — 26′ x 29′; 1 Boys' Physical Education Director's Room — 11′-6″ x 13′ with Toilet, Shower and Closet — Viewing Basketball Court; 1 Visiting Team Room — 14′ x 24′ with Gang Showers and Toilet; 1 Drying Room— 13′ x 18′-6″; 1 Boys' Locker Room — 23′ x 39′-6″ with Gang Showers, Drying area and Toilet; 1 Towel Room — 6′ x 8′—serving both Boys and Girls; 1 Girls' Locker Room — 20′ x 39′-6″ with Gang Showers, 2 Individual Showers and Toilet; 1 Girls' Athletic Director's Room — 10′ x 12′-6″ with Shower and Toilet; 1 First Aid Room — 10′ x 10′ with Store Closet; 1 Cafeteria — 50′ x 60′— Seating Capacity, 300; 1 Kitchen and Serving Area — 24′ x 40′, Food Storage — 14′ x 25′, Walk-in Refrigerator, 8′ x 11′, Help's Toilet, Janitor's Closet and Helps' Locker Area; 1 Music Room — 25′ x 41′, 2 Practice Rooms — 8′ x 9′, 4 Janitor's Closets.

CONSTRUCTION MATERIALS:
Footings and Foundations — Concrete, reinforced; Outside Walls — Waterstruck Brick backed up with concrete block; Framing — Entirely Fireproof — Prestressed Concrete, 2nd Floor and Roofs, double-tee prestressed concrete,Prestressed Girders, beams and slabs, Precast Concrete, outside and inside columns; First Floor Construction — concrete slab on earth, reinforced and waterproofed; Spandrels between Floors — two-story school portion — Insulated, corrugated aluminum panels; Windows — Aluminum projected sash and aluminum ribbon windows with glass block; Roofing — Tar and Gravel, 20 year bond over insulated concrete and fibre glass; Flashing — 16 oz. copper; thru-wall to be fabric; Interior Partitions — Concrete Block, painted; Corridor Walls — Glazed tile dado at height of built-in recessed lockers (620 lockers); Lobby Walls — Duraglaze concrete block; Flooring — Plastic Tile, Slate and Ceramic Tile, Gymnasium and Stage Floor, Wood; Door Bucks and Trim — 16 Gauge metal; Ceilings — Double-tee concrete acoustically treated, Corridor Ceilings, acoustical tile; Doors — Outside, 2¼″ white pine, painted, Inside, Solid core flush veneer; Heating — Forced Hot Water, vulcan radiation, zone and temperature controlled; Ventilation — Classrooms, Gymnasium, Cafeteria, Locker Rooms, etc., to be ventilated by electrically operated fans, galvanized iron ducts; Plumbing — Standard school requirements, meeting all State plumbing codes; Electric — Wiring, Romex; Shops to have aluminum plug-in busway; Fixtures — Incandescent and Fluorescent.

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$ 726,961.00	74.0	$10.32	$ .56
HEAT., VENT., PLUMB.	150,000.00	15.5	2.17	.12
ELECTRICAL	105,800.00	10.5	1.46	.08
TOTAL COST OF BUILDING	$982,761.00	100.0	$13.95	$0.76
Grading, Drives, Walks and Parking Area	13,430.00			
Kitchen Equipment included	6,109.00			
TOTAL AMOUNT	$1,002,300.00			





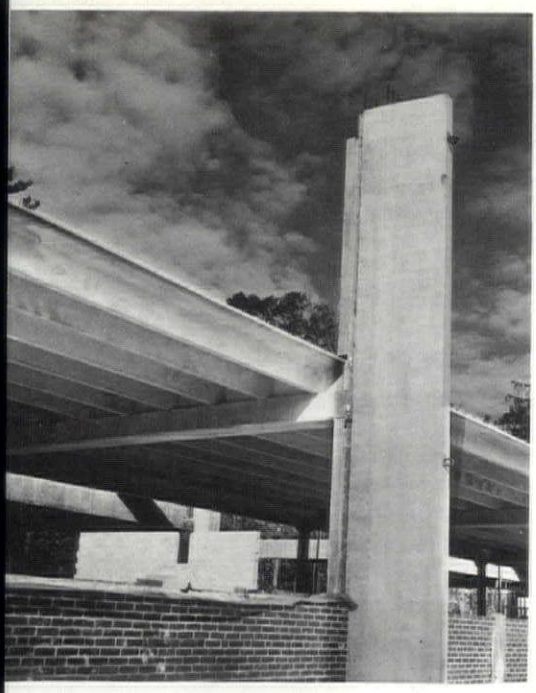


TOTAL VOLUME: 1,296,273 cu. ft.— TOTAL AREA: 70,400 sq. ft.— BID OPENING: July 7, 1960 — CLASSROOM CEILING HEIGHT: 9'- 8"— GYMNASIUM HEIGHT: From floor to bottom of prestressed concrete girders - 22'- 0"—

Alfred T. Granger Associates, A.I.A., Architects and Engineers
Hanover, N. H.

HARVEY CONSTRUCTION COMPANY, MANCHESTER, N. H.
GENERAL CONTRACTOR

SUPERINTENDENT OF SCHOOLS: KENNETH L. SHERMAN



ACONIA JUNIOR H. S., LACONIA, N. H.
Alfred Granger & Associates
Architects and Engineers
Hanover, New Hampshire

Harvey Construction Co., Inc.
Manchester, New Hampshire

The picture at the left shows architectural use of the precast concrete structural frame. The first floor prestressed inverted tee beams and double-tee slabs can be seen in place, for the classroom section. The two story columns are exposed concrete and give the building an air of strength and beauty. The roof beams and floor slabs are yet to be erected.

The prestressed concrete double-tee slabs will be given a coat of acoustic paint for the interior finish. Interior walls are concrete masonry with exterior walls aluminum and glass block curtain wall.

Prestressed concrete makes this building architecturally attractive, fireproof, blast resistant and reduces maintenance to the lowest possible cost.

Structural Concrete maintains engineering offices in Laconia with production facilities in Franklin, N. H. Structural Concrete produces columns, beams, floor and roof slabs for buildings, piling, bridge girders, curbing and other miscellaneous products. Prestressed concrete is particularly adaptable to long spans and heavy loads with a minimum depth of section.

S.C.C. CORP.

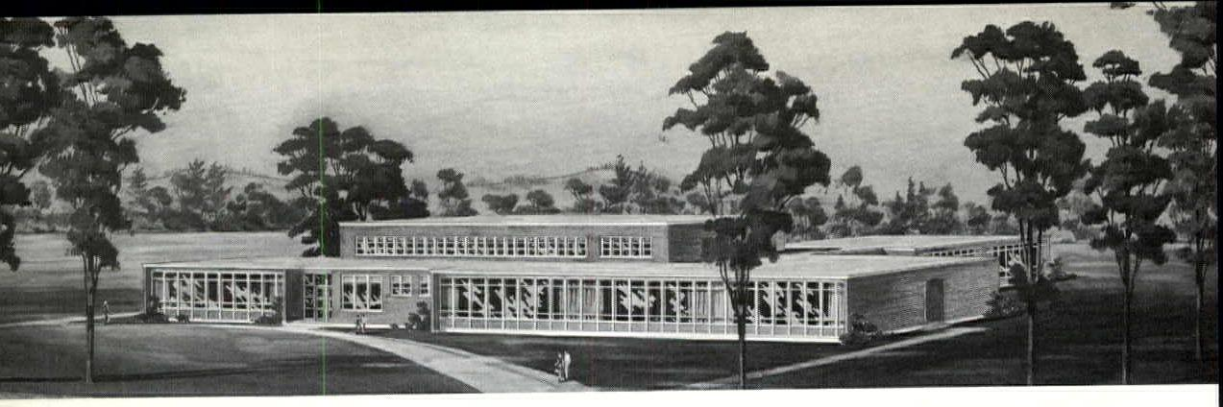
Structural Concrete Corporation

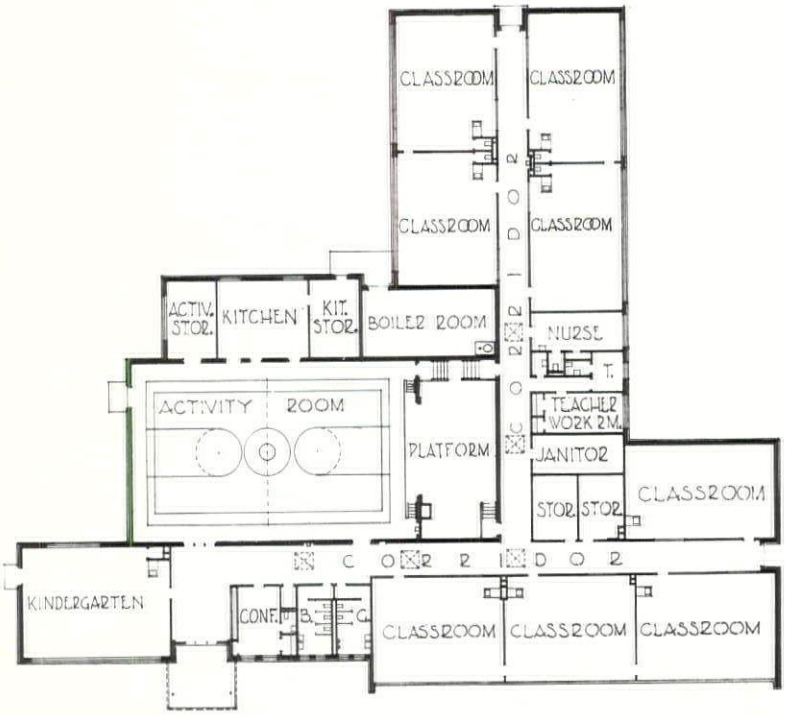
Precast and Prestressed Concrete Products

LAKEPORT P. O. Box 132 LACONIA, N. H.

• *Economical* • *Fireproof* • *Attractive*

hollow core slab
flat slab
inverted beam
ledger beam
channel slab
piling (bridges)
single tee
folded plate
rectangular beam
double-tee slab





FLOOR PLAN

OYSTER RIVER COOPERATIVE SCHOOL, LEE, N. H.

DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs; Structural Steel Frame; Pre-cast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash and Curtain Wall; Exterior Walls Face Brick with Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Ceramic Tile Corridor and Toilet Room Dadoes; Ceramic Tile floors in Toilets; Asphalt Tile Floors in Classrooms, Corridors and Offices Vinyl-asbestos floor in Activities Room; Woo Floor on Platform; Steel Interior Doors an Frames; Stainless Steel Kitchen Equipment Forty-two Plumbing Fixtures; Forced Hot Wate Heating System with Individual Room Controls Gas-Fired Incinerator; Forced Ventilatior Electric Program and Fire Alarm Systems an Television Hook-up; Incandescent and Fluores cent Fixtures.

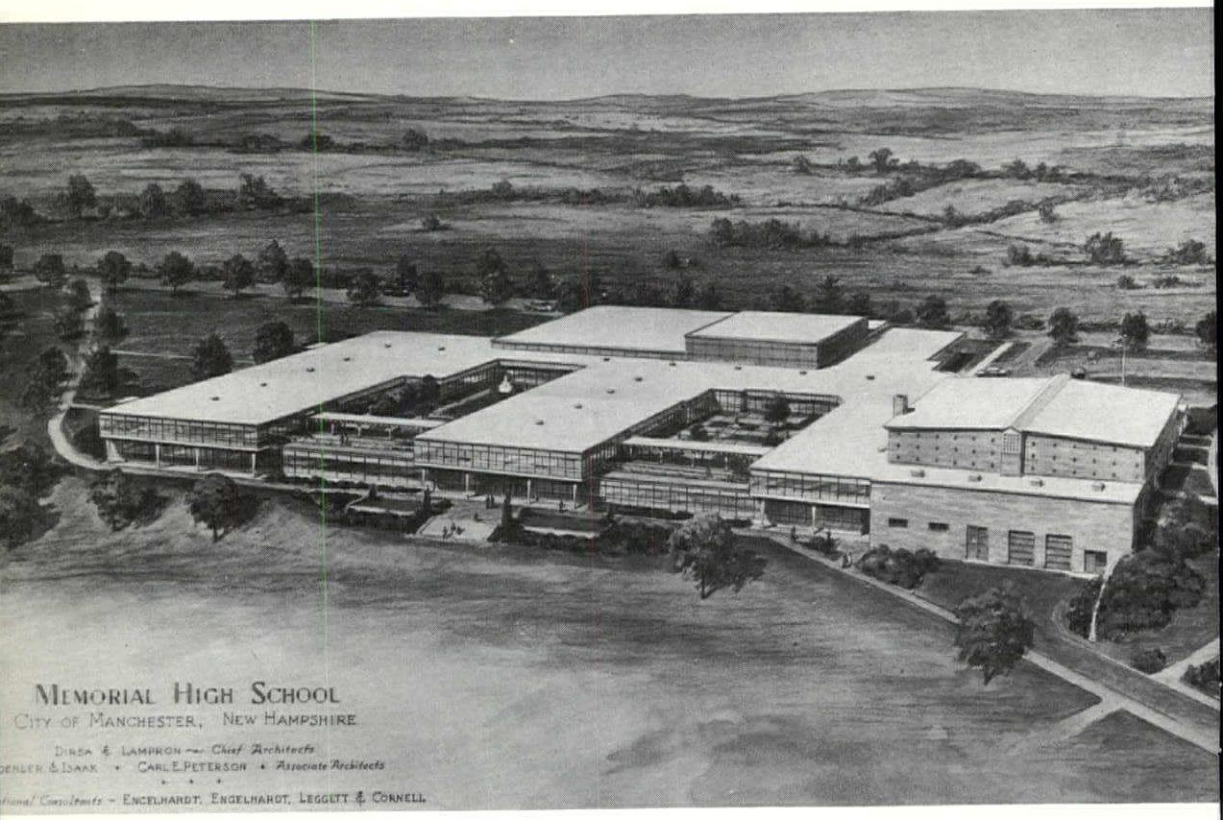
ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. F*
STRUCTURE	$182,957.00	76.5	$ 8.77	$ .563
PLUMB., HEAT., VENT.	46,060.00	19.3	2.21	.141
ELECTRICAL	10,060.00	4.2	.48	.031
TOTAL COST OF BUILDING	$239,077.00	100.0	$11.46	$ .735

TOTAL VOLUME: 324,934 cu. ft. — TOTAL FLOOR AREA: 20,862 sq. ft.
— CEILING HEIGHTS: Classrooms 10'- 0"; Activities Room 18'- 0"

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.

ADRIEN A. LABRIE, INC., LITCHFIELD, N. H.
GENERAL CONTRACTOR

MEMORIAL HIGH SCHOOL, MANCHESTER, N. H.



DATE OF BID: September 3, 1959.
DATE OF OCCUPANCY: September 6, 1960.
DATE OF DEDICATION: November 11, 1960.
CONSTRUCTION COST: $2,267,123.00.
This school is designed for occupancy by 1600 students.

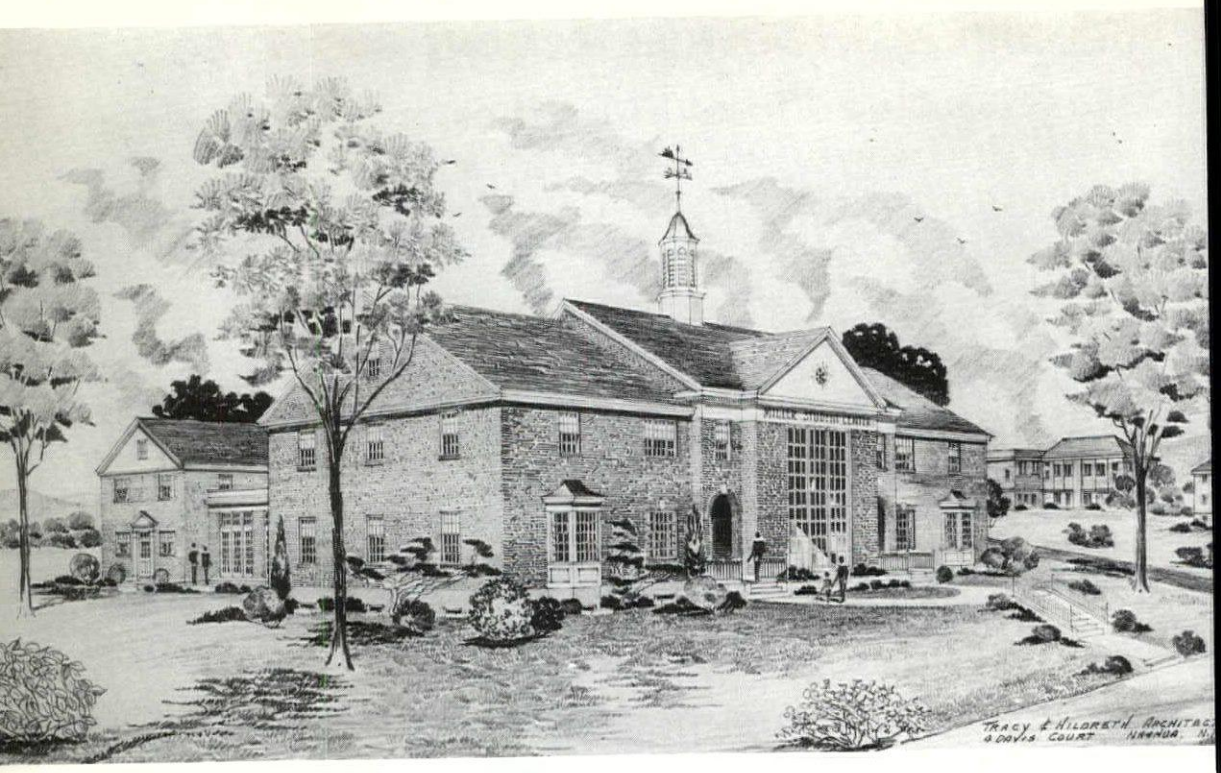
DIRSA & LAMPRON, AIA CHIEF ARCHITECTS
814 Elm Street, Manchester, New Hampshire

KOEHLER & ISAAK, AIA
CARL E. PETERSON, AIA
} Associate Architects

EDUCATIONAL CONSULTANTS: Engelhardt, Engelhardt, Leggett & Cornell

DAVISON CONSTRUCTION COMPANY, INC.
GENERAL CONTRACTORS

Publishers Note: Memorial High School, New Hampshire's largest and most modern will be featured in the February issue of New Hampshire Architect with pictures and plans.



MILLER STUDENT CENTER, KIMBALL UNION ACADEMY, MERIDEN, N. H.

Miller Student Center is now under construction at Kimball Union Academy. This private secondary school for boys was founded in 1812, and the design of the building is dictated by the traditional Georgian Colonial architecture of the existing buildings on the campus. The building is unique in the wide range of functions which it provides for students, for faculty, for staff and for alumni. A brief description of its floor plans will demonstrate its versatility.

On the first floor are located a large Student Lounge, Administrative Offices, Faculty Offices and Conference Rooms and a Dining Hall, together with food preparation and storage areas.

In the basement one finds a Music Department with library, office, listening rooms and practice room; a Lecture Hall seating 150; a Vault; Student Publications Office; Student Workshop; a Photographic Dark Room, the Boiler Room and various storage spaces.

On the second floor the central feature is an Alumni Lounge which can be subdivided by a folding partition into two smaller units. Flanking this alumni lounge on one side is a Kitchenette, the Alumni Records Office, and a Classroom. On the other side of the lounge are Faculty offices and Student Activities Rooms. Over the Kitchen are living accommodations for the kitchen staff.

Special features include a Language Laboratory, summer air conditioning of the Lecture Hall, acoustically treated Music Rooms, built-in mail boxes, solid oak trusses in the Dining Hall and up-to-date kitchen, baking, refrigeration and dishwashing facilities.

Foundations are concrete and exterior walls are brick. The structural systems employed are (1) steel joists with concrete slabs in the front section of the building, (2) reinforced concrete in the kitchen areas in the rear section, and (3) wood trusses in the central dining hall section. Windows are wood, double-hung units in general. Floorings include asphalt tile, vinyl tile, quarry tile and ceramic tile. Ceilings are acoustical tile except that plaster occurs in the kitchen, toilet rooms, staff quarters and certain other spaces. Wall finishes include painted masonry block, plaster and wood veneers.

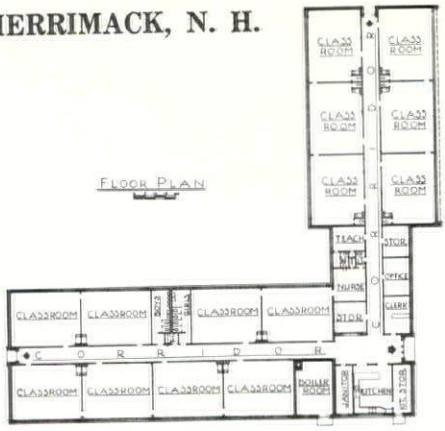
The building has its own heating system served by an oil-fired hot water boiler. The building is divided into four separate zones, each with its own circulator. The dining hall is heated by radiant panels in the floor slab. Other rooms are heated by unit ventilators, finned tube radiation, baseboard radiation and unit heaters.

Tracy and Hildreth, A.I.A., Architects - Nashua, N. H.

THE MacMILLIN COMPANY, INC., KEENE, N. H.

GENERAL CONTRACTOR

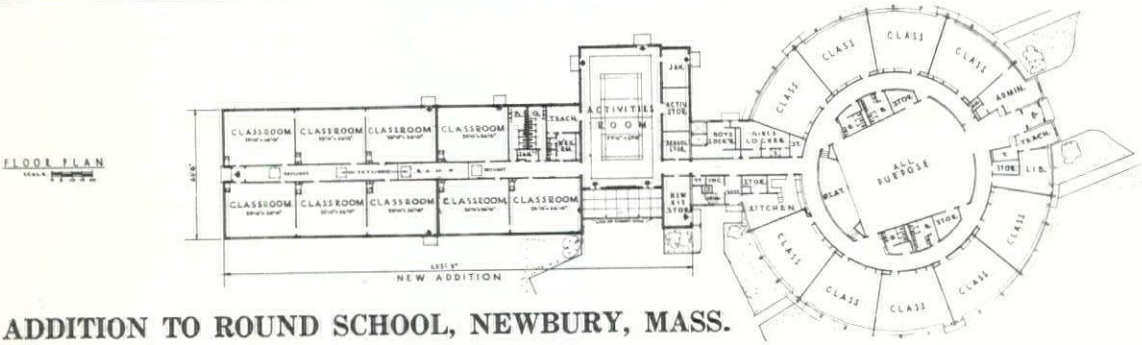
JAMES MASTRICOLA ELEMENTARY SCHOOL, MERRIMACK, N. H.



DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs; Structural Steel Frame; Precast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash and Curtain Wall; Exterior Walls Face Brick with Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Asphalt Tile Floors in Classrooms, Corridors and Offices; Steel Interior Doors and Frames; 51 Plumbing Fixtures; Four Zone Forced Hot Water Heating System; Forced Ventilation; Incandescent Fixtures; Electric Fire Alarm and Program Systems.

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$162,940.00	77.2	$ 7.98	$ .614
PLUMB., HEAT., VENT.	37,900.00	18.0	1.86	.143
ELECTRICAL	10,144.00	4.8	.50	.040
TOTAL COST OF BUILDING	$210,984.00	100.0	$10.34	$ .797

TOTAL VOLUME: 265,174 cu. ft.— TOTAL FLOOR AREA: 20,400 sq. ft.
— CEILING HEIGHT: 10′- 0″



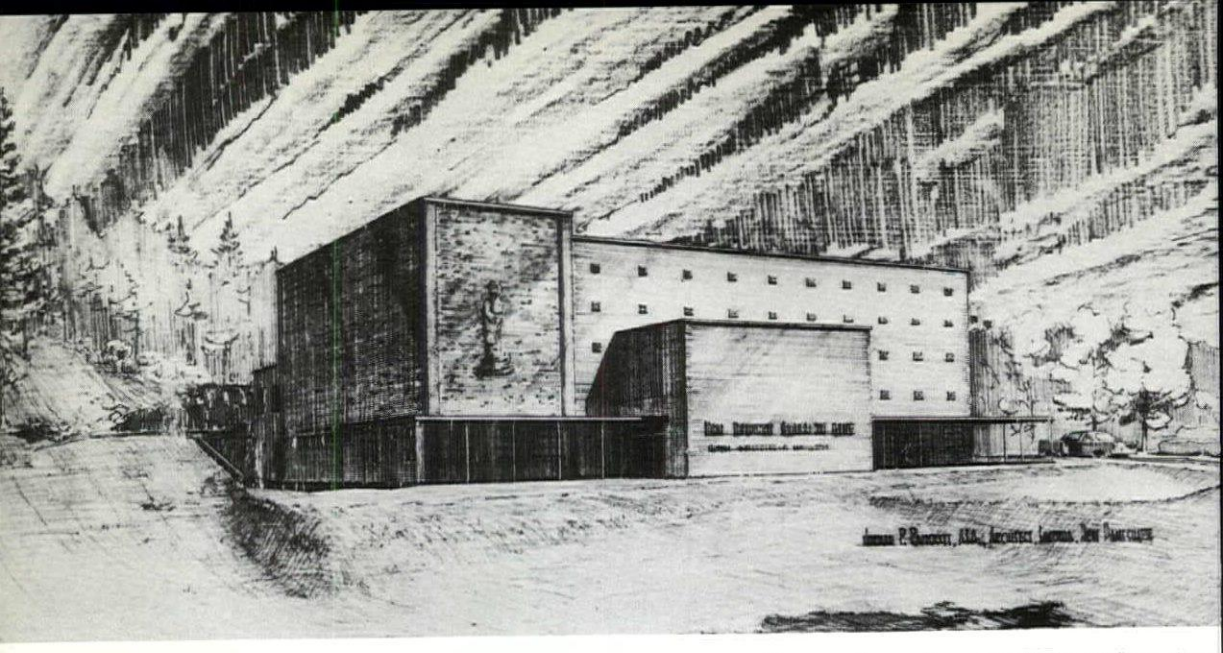
ADDITION TO ROUND SCHOOL, NEWBURY, MASS.

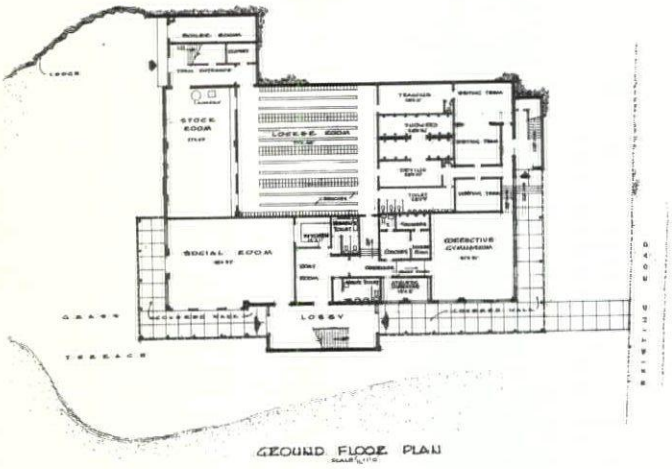
DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs; Structural Steel Frame; Pre-cast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash; Exterior Walls Face Brick with Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Ceramic Tile Corridor and Toilet Room Dadoes; Ceramic Tile Floors in Toilets; Asphalt Tile Floors in Classrooms, Corridors and Offices; Vinyl-Asbestos Floor in Activities Room; Steel Interior Doors and Frames; Slate Chalkboards with Aluminum Frames; Sixty six Plumbing Fixtures; Forced Hot Water Heating System with Individual Room Controls off New Boiler and Unit Ventilators in each Classroom and the Activities Room; Forced Ventilation; Audio-intercom System; Electric Fire Alarm and Program Systems; Television Hook-Up; Incandescent Fixtures.

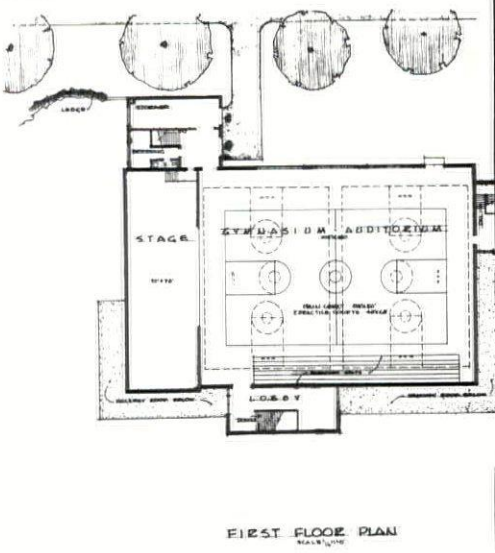
ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$168,764.00	70.0	$10.72	$ .774
PLUMB., HEAT., VENT.	56,570.00	25.0	3.58	.259
ELECTRICAL	15,800.00	5.0	1.02	.072
TOTAL COST OF BUILDING	$241,134.00	100.0	$15.32	$1.105

Includes renovations in existing building.
TOTAL VOLUME: 218,165 cu. ft.— TOTAL FLOOR AREA: 15,737 sq. ft.
— CEILING HEIGHTS: Classrooms 10′- 0″; Activities Room 14′- 10″

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.







GYMNASIUM-AUDITORIUM, NEW HAMPTON SCHOOL, NEW HAMPTON, N. H.

Bids will be taken and construction of the building commenced late in 1960. In the fall of 1961 it will be ready for use by the boys who attend this private preparatory school.

Foundations are concrete piers and bearing walls resting on rock. The site is sloping and three of the ground story walls are above ground and are reinforced concrete. The walls of the upper story are Norlite blocks faced with brick. Translucent wall panels occur over some of the entrances.

The ground floor rests on gravel fill. For the upper floor the framing is concrete, wood joists, and steel beams. Steel columns support steel roof trusses on which are laid matched plank, insulation, and tar and gravel roofing with aluminum coping.

Flooring in the lower story and stair halls includes ceramic tile, plastic flooring, and colored concrete. Maple flooring will be used in the gymnasium and fir flooring on the stage.

Hard plaster and acoustical treatments are used on the ceilings. Both acoustical tile and smooth tile are used on the gymnasium ceiling with special acoustical treatment on the wa opposite the stage.

The heating and ventilating system includes two pipe vapor system. Returns go to condensat pumps. The boiler is a steam generator. In th system are unit ventilators, unit heaters, radia tion, and mechanical exhausts. Fuel is to be N 4 oil stored in a 6670 gallon oil tank.

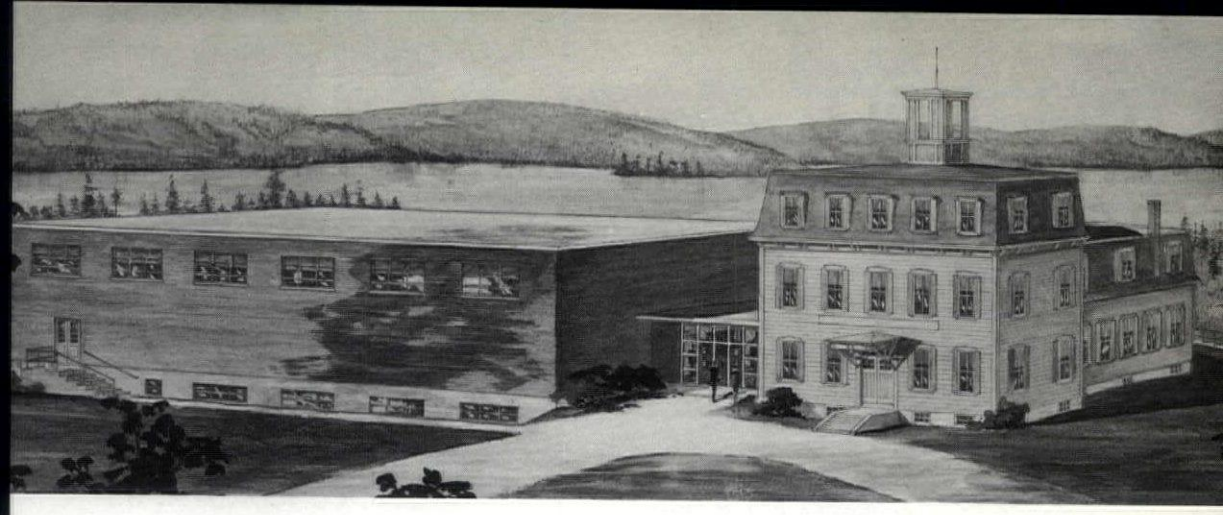
Water is supplied by the municipal wate system. Sewage discharges into a septic tan and a new filter bed. Cold water will go to a water closets, urinals, lavatories, and sinks. I the boys' shower room, 2 shower heads are fe cold water only, with tempered warm wate only supplied to the other shower heads. In th coaches' locker room warm and cold water go t all shower heads. An automatic soap syste supplies both shower rooms.

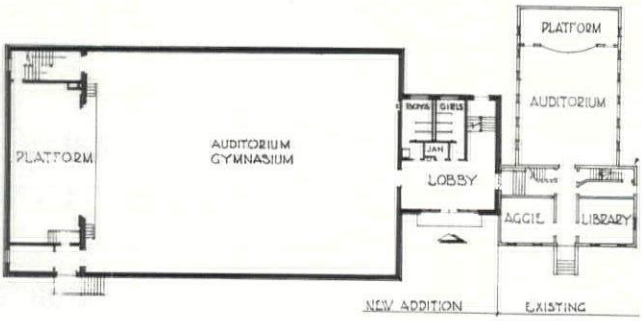
Electricity is supplied from the municip power system. Lighting fixtures in general a recessed incandescent. Provision has been mad for extensive additions to the stage lighting.

Folding bleachers are used. Two of the s basket ball stops are retractable.

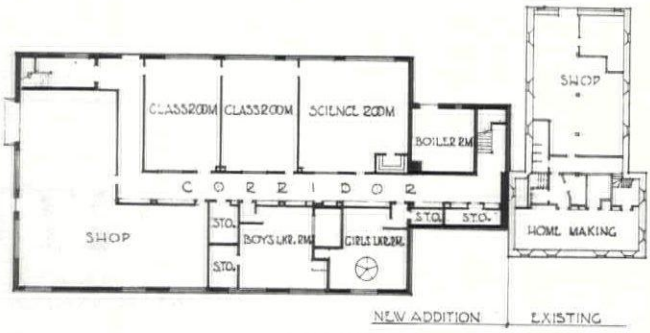
TOTAL AREA: 26,825 sq. ft.— TOTAL VOLUME: 520,915 cu. ft.

Norman P. Randlett, A.I.A., Architect - Laconia, N. H.





FIRST FLOOR PLAN



BASEMENT PLAN

COE-BROWN ACADEMY, NORTHWOOD, N. H.

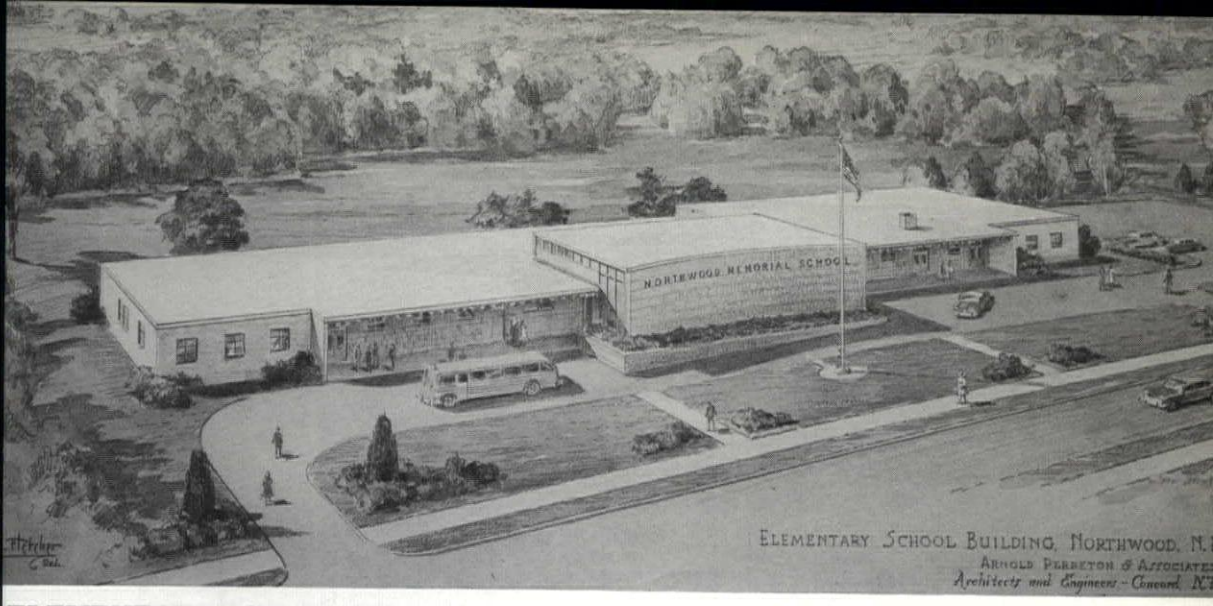
DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs on Grade at Basement and over Bar Joists and Steeltex at Lobby and Toilets; Structural Steel Frame; Precast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash; Exterior Walls Face Brick with Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Ceramic Tile Floors in Toilets; Asphalt Tile Floors in Classrooms and Corridors; Rock Maple Floor in Gymnasium over Wood Floor Frame; Steel Interior Doors and Frames; Thirty-one Plumbing Fixtures; Forced Hot Water Heating System with Complete New Heating System for Existing Building; Forced Ventilation; Electric Fire Alarm System; Incandescent Fixtures.

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$142,686.00	78.2	$ 7.02	$ .557
PLUMB., HEAT., VENT.	31,493.00	17.2	1.55	.123
ELECTRICAL	8,250.00	4.6	.41	.032
TOTAL COST OF BUILDING	$182,429.00	100.0	$ 8.98	$ .712

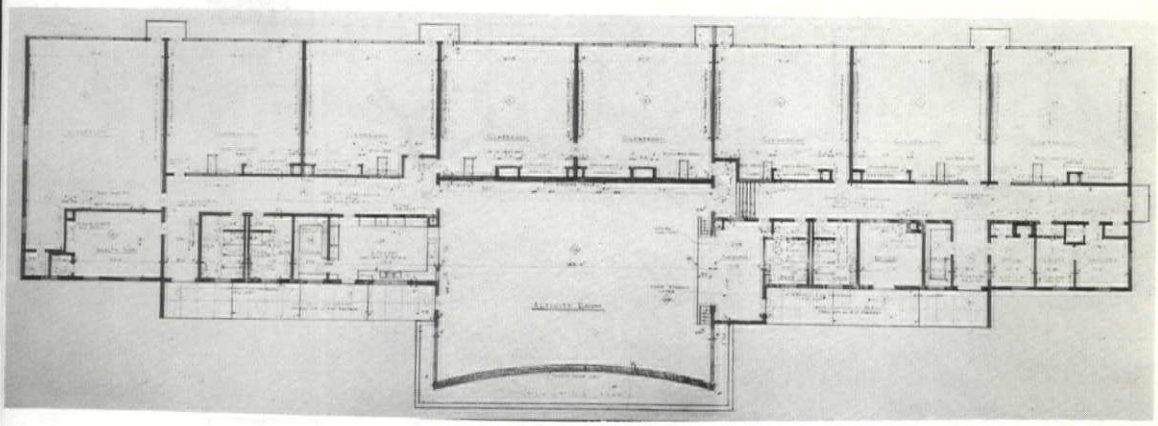
TOTAL VOLUME: 256,094 cu. ft.— TOTAL FLOOR AREA: 20,300 sq. ft.
— CEILING HEIGHTS: Basement 9'- 2"; Gymnasium 18'- 0"

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.

WINSTON P. TITUS, LAKEPORT, N. H.
GENERAL CONTRACTOR



ELEMENTARY SCHOOL BUILDING, NORTHWOOD, N. H.



DESCRIPTION:

This school building is now under construction. It will provide 8 classrooms with 960 sq. ft. each, all on the South side; an activity room with 2700 sq. ft. not including the stage, centrally located to upper and lower classrooms and directly accessible from the driveway; ample kitchen, teacher's room, office, health room, boiler room, supply and service rooms are provided; the toilets are arranged in two sections to serve the lower and upper grades separately; covered porches for bus loading directly accessible to both lower and upper grades are provided; facilities are planned for expansion.

This building is fireproof construction throughout and will have a four hour fire rating. The construction includes concrete footings; foundations walls of Formbloc filled with structural concrete; exterior walls are Formbloc filled with insulating concrete and of conventional concrete blocks; all painted; Front section of building to be finished with granite and facing tile veneer at a later date; exterior classrooom walls are Kalwall to provide thermal and sound insulation, and eliminate glare; Fiber glass sections in activity room, and aluminum sash elsewhere, concrete slab on grade with asphalt tile floor; interior partitions and bearing walls concrete block painted; double tee pre-stressed concrete slabs with insulating concrete topping, and a 20 year bonded tar and gravel roof; wardrobe sections, cabinet sinks, and aluminum framed chalk and tack board are provided in each classroom, some left partially unfinished until a later date; zoned hot water heating system, mechanical exhaust ventilation, fluorescent fixtures in classrooms and incandescent elsewhere; Kohler plumbing fixtures, concrete septic tank and perforated pipe disposal field for 12 classrooms.

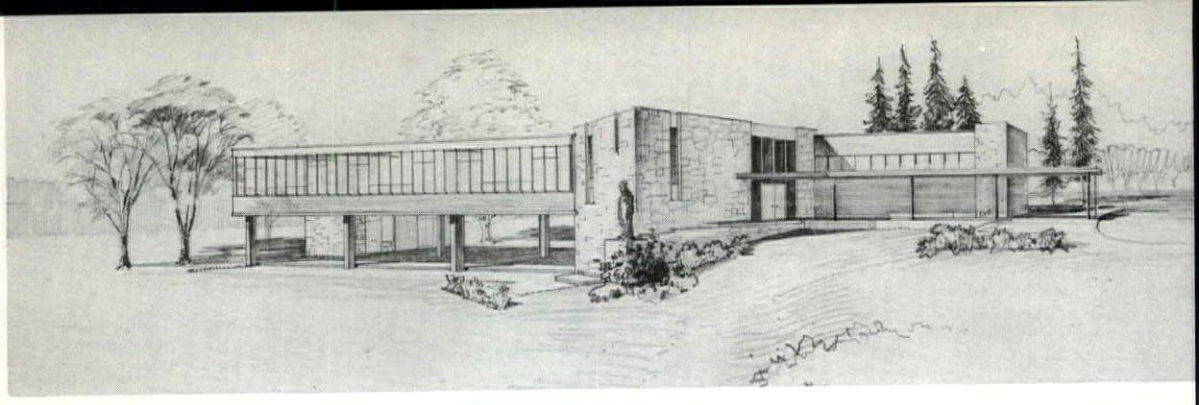
ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. Ft.*
STRUCTURE	$117,677.00	72.8	$ 7.54	$ .518
PLUMB., HEAT., VENT.	32,000.00	19.8	2.05	.14
ELECTRICAL	12,000.00	7.4	.77	.052
TOTAL COST OF BUILDING	$161,677.00	100.0	$10.36	$0.71

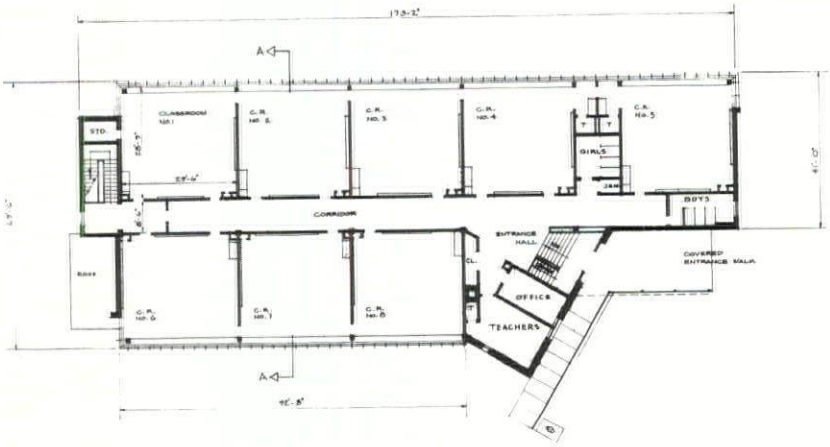
BIDS: August 1960 — FLOOR AREA: 15,000 sq. ft.— VOLUME: 226,350 cu. ft.

Arnold Perreton & Associates, A.I.A., Architects - Concord, N. H.

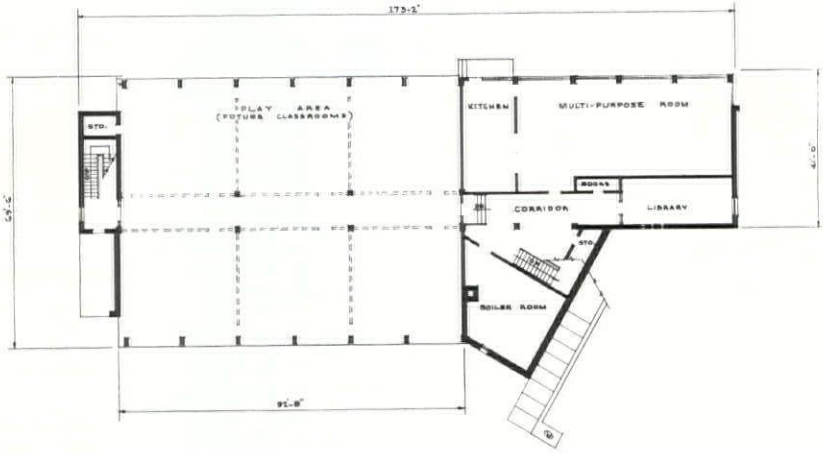
THE MacMILLIN COMPANY, INC., KEENE, N. H.

GENERAL CONTRACTOR





FIRST FLOOR PLAN



GROUND FLOOR PLAN

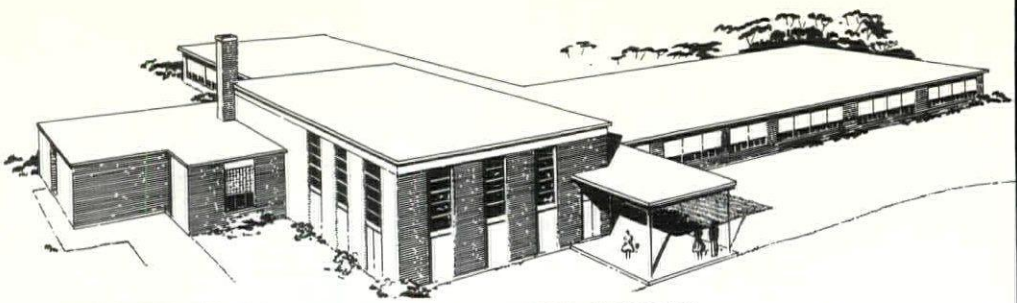
ST. PATRICK'S SCHOOL, PELHAM, N. H.

This school for St. Patrick's Parish in Pelham, New Hampshire, is designed to fit into a small hillside; the main entrance facing a beautifully landscaped open air shrine which is adjacent to the church. The building contains eight classrooms on the upper level, and as the needs of the parish grow, can expand to 14 classrooms by use of the open area on the ground level. In the meanwhile this area will be used as a covered play area in inclement weather. The construction materials were carefully worked out with Rev. George R. Kilcoyne, the pastor, with an eye towards ease of maintenance. Construction is of steel and concrete with masonry walls. Foundations are reinforced concrete. Interior corridor walls are glazed concrete block and floors are vinyl tile. Other interior walls are painted block. Ceilings are acoustical tile with fluorescent lighting used throughout. Windows, are aluminum sash. Doors are flush type hung on metal frames. Roof is tar and gravel on Insulrock decking. Heating — forced hot water, zoned.

Koehler and Isaak, A.I.A., Architects, - Manchester, N. H.

CARON CONSTRUCTION CO., INC., MANCHESTER, N. H.

GENERAL CONTRACTOR



MARY C. DONDERO MEMORIAL ELEMENTARY SCHOOL
ELWYN PARK — PORTSMOUTH, NEW HAMPSHIRE

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu.*
STRUCTURE	$240,858.00	75.8	$ 9.74	$ .57
PLUMBING	17,974.00	5.6	.72	.04
HEATING AND VENTILATING	40,760.00	12.7	1.62	.09
ELECTRICAL	18,870.00	5.9	.77	.04
TOTAL COST OF BUILDING	$318,462.00	100.0	$12.85	$ .76
Site Preparation, Finish Grading, Roads and Walks:	17,400.00			
TOTAL CONSTRUCTION COST:	$335,862.00			

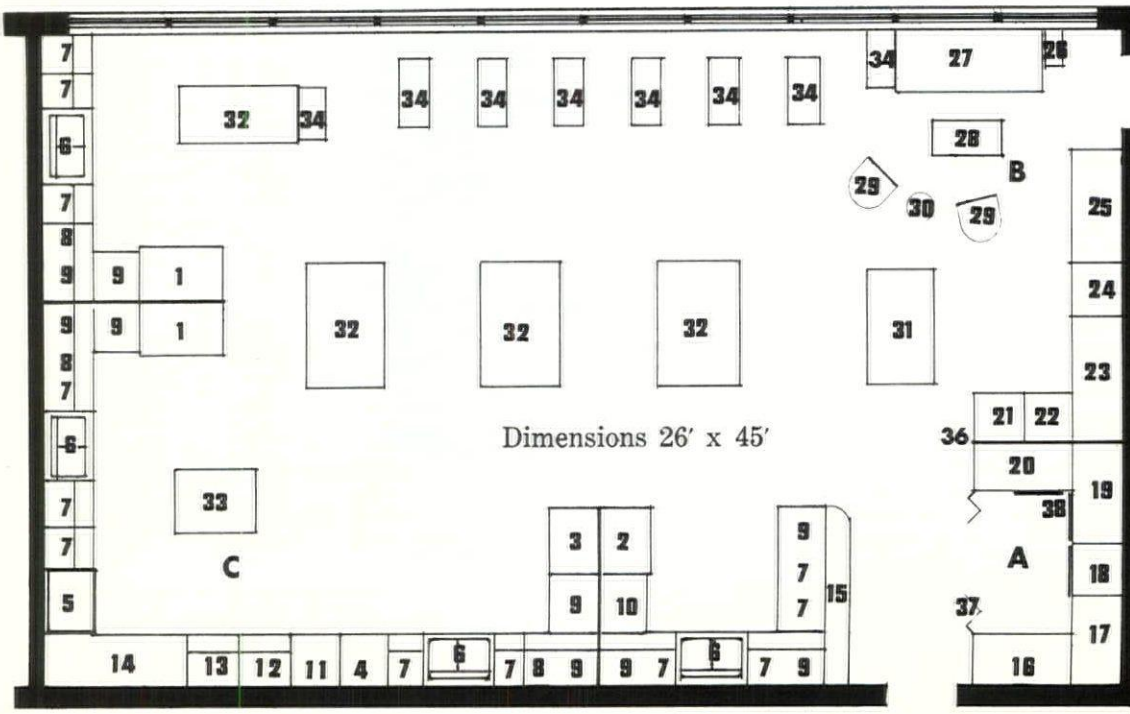
TOTAL VOLUME: 418,797 cu. ft.— TOTAL AREA: 25,551 sq. ft.— BID OPENING: December 10, 1959—CLASSROOM HEIGHT: 10'- 0"—MULTI-PURPOSE ROOM HEIGHT from floor to bottom of trusses, 17' - 9".

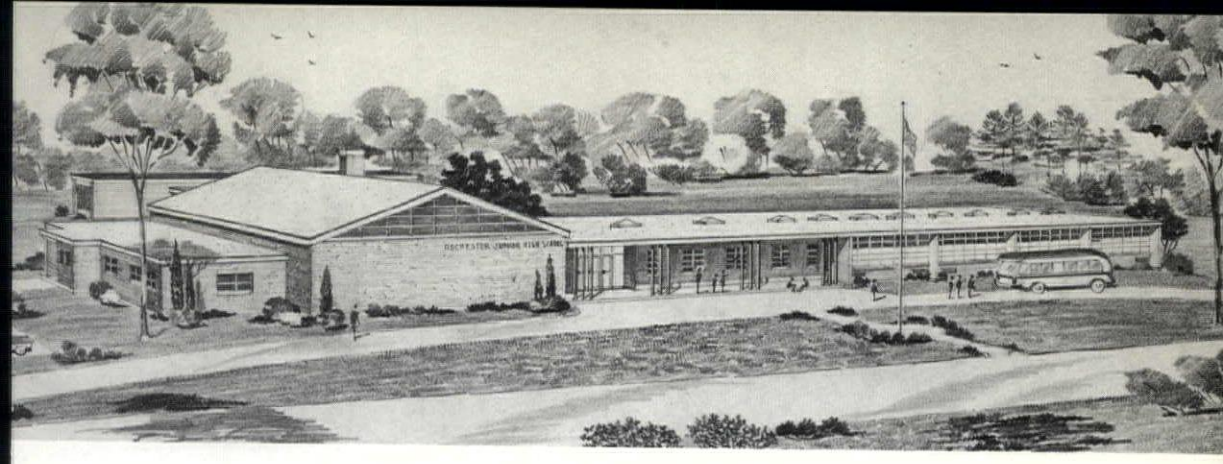
SUPERINTENDENT OF SCHOOLS: Raymond I. Beal.

Alfred T. Granger Associates, A.I.A., Architects and Engineers
Hanover, N. H.

THE MAXAM COMPANY, INC., PORTSMOUTH, N. H.
GENERAL CONTRACTOR

By Lois M. Perham, Director Home Economics Education, State Department of Education





ROCHESTER JUNIOR HIGH SCHOOL, ROCHESTER, N. H.

To meet the pressures of increasing enrollments in its high school and its elementary schools, the City of Rochester will construct a new Junior High School. It has been designed for future expansion providing additional classrooms, another home economics room, and another industrial arts shop. The initial stage will accommodate approximately 500 pupils.

The building in its first stage will provide the following facilities:

Multi-Purpose Room seating 650 as an auditorium and 350 diners at folding in-wall tables. A Stage which will also serve as a Music Classroom with off-stage rooms being used as dressing rooms and music practice rooms. Kitchen, dishwashing and food storage facilities. Locker and shower rooms for boys and for girls with adjacent offices for physical directors. A combination Library and Audio-Visual Room which will also be available for use as a meeting room for community groups. An Administrative Suite with general office, principal's office, guidance office, health room and work room. Teachers' Rooms and storage and supply rooms. Fourteen Classrooms. Two Science Rooms. An Industrial Arts Room. A Home Economics Room. Toilet Rooms, janitor's Rooms and Boiler Room.

The structure and materials employed include the following:

Foundations — concrete; Exterior Walls — brick with masonry block backers; Windows — aluminum awning; Roof Framing — steel rigid bents over Multi-Purpose Room, long-span steel deck elsewhere; Floors — concrete slabs with ceramic tile in Toilets and Showers, and asphalt tile elsewhere; Ceilings — exposed Tectum in Multi-Purpose Room; plaster in Toilets, Showers and Kitchen; acoustical panels elsewhere; Walls— structural glazed tile in Toilets, Shower Rooms, Kitchen and as wainscots; painted masonry block elsewhere; Plumbing — toilet room fixtures, showers, janitor's sinks, laboratory sinks, kitchen equipment, drinking fountains, roof drainage system; Heating — oil-fired boiler, forced hot-water system, unit ventilators in classrooms, fresh air unit in Multi-Purpose Room, zoned automatic controls, mechanical ventilation, incinerator; Electrical — fluorescent lighting generally using troughs of steel deck as troffers, fire alarm system, clock-and-program system, telephone system, television system for Multi-Purpose Room and Library, signal system.

Tracy and Hildreth, A.I.A., Architects - Nashua, N. H.

HARVEY CONSTRUCTION CO., INC., MANCHESTER, N. H.

GENERAL CONTRACTOR

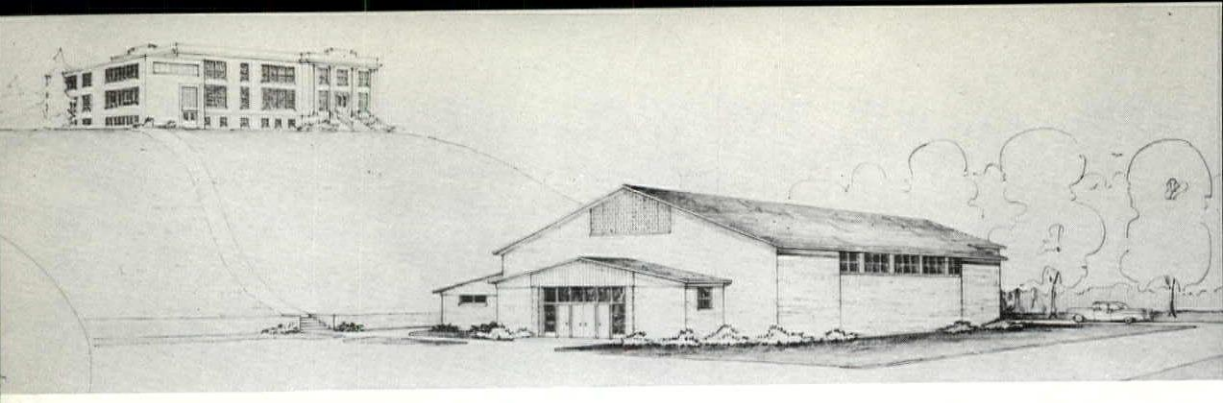
LEGEND

1. Gas range
2. Electric range
3. Range top
4. Wall oven (storage under)
5. Refrigerator with freezer compartment — 30° wide
6. Double sink — 30″
7. Base Cabinet — 18° x 24″
8. Base Cabinet — 13″ x 24″
9. Base Cabinet — 24″ x 24″
10. Base Cabinet — 27″ x 24″
11. Food Storage — 24″ x 24″
12. Washer — 26″ x 24″
13. Drier — 26″ x 24″
14. Utility Cabinet — 48″ x 24″
15. Shelves for pupil's books
16. Tote Box Cabinet — 62″ x 24″
17. Garment Storage — 42″ x 24″
18. Garment Storage — 24″ x 24″
19. Storage for bulky equipment, general storage
20. Illustrative material — 60″ x 24″
21. Teacher's case — 42″ x 22″
22. Child care storage — 18″ x 22″
23. Storage for roll away equipment, home furnishings, etc.
24. Home Nursing storage — 24″ x 24″
25. Tote box storage — 60″ x 24″
26. Lamp table
27. Divan
28. Coffee table
29. Easy chair
30. Lamp
31. Teacher's desk
32. All purpose table — 40″ x 60″
33. Utility table — 30″ x 40″
34. Sewing machine
35. Bulletin board
36. Chalkboard
37. Folding door
38. Mirror (attached to door)

A. Dressing area
B. Family living, discussion, h. nursery, h. furnishings, F. H. A. area
C. Laundry center

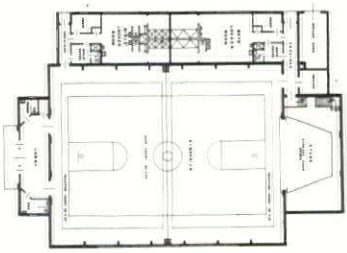
Other centers overlap and use the whole room for the activity.

Note: 1. Wall cabinets above
Base cabinets are 15″ wide
2. Heights of work surfaces vary from 30″ or 35″



AUDITORIUM-GYMNASIUM BUILDING, SUNAPEE, N. H.

DESCRIPTION:
Laminated wood arches for gym and wood rafters for other sections; concrete block and brick exterior walls; concrete block backup and interior partitions; concrete slab floors; plank deck on wood arches, board deck on wood rafters; maple floor in gym, anti-bacterial concrete in locker and shower rooms, asphalt tile in corridors and lobby, oak floor on stage; painted wall finish; acoustical tile ceilings; plexiglas windows; San-pan panel in front gable; asphalt shingle roof; forced hot water heat with wall-hung fin type radiation, and unit heaters; incandescent electrical fixtures; first quality plumbing fixtures.

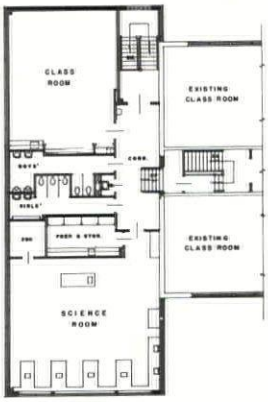


ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. F*
STRUCTURE	$107,662.00	78.0	$6.79	$ .29
HEATING, PLUMBING	22,765.00	16.0	1.43	.06
ELECTRICAL	7,623.00	6.0	.49	.03
TOTAL COST OF BUILDING	$138,050.00	100.0	$8.71	$ .38

TOTAL VOLUME: 370,000 cu. ft.— TOTAL FLOOR AREA: 15,855 sq. ft. — DATE OF CONTRACT: May, 1960.

ADDITION TO CENTRAL SCHOOL, SUNAPEE, N. H.

DESCRIPTION:
New Second Floor Rooms added over existing Basement and First Floor; Exterior Walls — concrete block and brick veneer; Roof Frame — bar joists; Roofing — 20-year bonded roof on Porex roof plank; Floors — asphalt tile over existing concrete roof slab; Interior Partitions — Wood Studs plastered; Stairways — Steel with concrete treads; Special Floors — Ceramic Tile; Special Wainscots — Desco-Glaze; Windows — Andersen wood units; Light Panel — Kalwall; Doors and Frames — wood; Ceilings — acoustical tile; Toilet Partitions — metal; Counters — wood with plastic laminate surface; Heating — extension of existing system using wall hung fin type radiation; Ventilating — mechanical exhaust system; Plumbing — First quality fixtures, copper, cast iron and Duriron piping; Electrical — fluorescent fixtures.



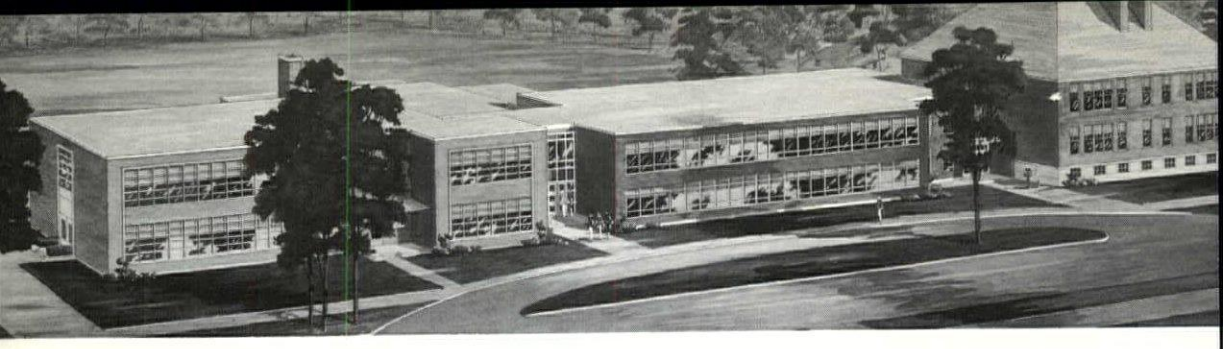
SECOND FLOOR PLAN

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu.*
STRUCTURE	$36,896.74	74.8	$11.64	$ .93
PLUMB., HEAT., VENT.	9,390.00	19.0	2.96	.24
ELECTRICAL	3,074.00	6.2	.98	.08
TOTAL COST OF BUILDING	$49,360.74	100.0	$15.58	$1.25

TOTAL VOLUME: 39,600 cu. ft.— TOTAL FLOOR AREA: 3,168 sq. ft. — CEILING HEIGHT: 10'- 0"— DATE OF CONTRACT: April, 1960.

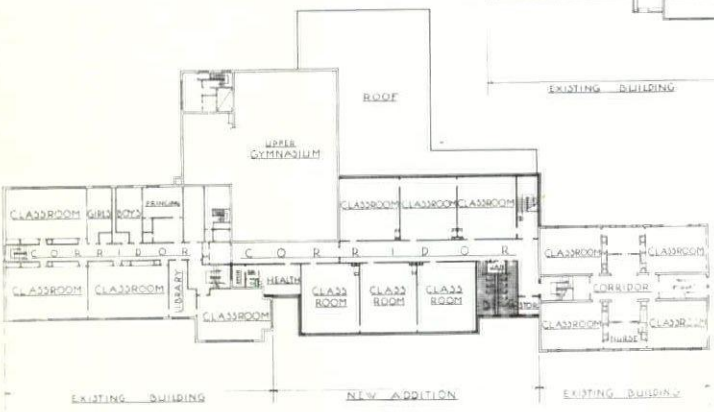
Edward B. Miles, A.I.A., Architect, - Exeter, N. H.

DOUGLAS E. PAGE, CLAREMONT, N. H.
GENERAL CONTRACTOR



ADDITIONS AND ALTERATIONS TO SPAULDING AND MEMORIAL SCHOOL BUILDINGS, SALISBURY, MASS.

FIRST FLOOR PLAN



SECOND FLOOR PLAN

DESCRIPTION:
Reinforced Concrete Foundation — Reinforced, Dampproofed, Concrete Floor Slabs on Grade and on Steeltex at Second Floor; Structural Steel Frame; Pre-cast Concrete Insulating Roof Decking; Twenty-Year Bonded Roof; Lead Coated Copper Flashings; Aluminum Sash; Exterior Walls Face Brick with Cinder Tile Backing; Cinder Tile Interior Partitions; Acoustical Tile, Plastered and Structural Ceilings; Ceramic Tile Floors in Toilets and Quarry Tile Floor in Kitchen; Asphalt Tile Floors in Classrooms, Corridors and Office Vinyl-asbestos floor in Cafetorium and Platform Steel Interior and Exterior Doors and Frame Slate Chalkboards with Aluminum Frame Sixty Plumbing Fixtures; Forced Hot Wat Heating System with Individual Room Contro off New Boiler and Unit Ventilators in ea Classroom and the Activities Room; Forc Ventilation; Gas-Fired Incinerator and Fluore cent Fixtures.

ITEM	*Cost*	*% of Total Cost*	*Cost Per. Sq. Ft.*	*Cost Per Cu. F*
STRUCTURE	$181,762.00	65.5	$ 8.03	$ .336
PLMBING	23,085.00	8.3	1.02	.043
HEATING & VENTILATING	54,700.00	19.6	2.42	.101
ELECTRICAL	18,000.00	6.6	.79	.033
TOTAL COST OF BUILDING	$277,547.00	100.0	$12.26	$ .513

TOTAL VOLUME: 541,055 cu. ft.— TOTAL FLOOR AREA: 22,627 sq. ft. — CEILING HEIGHTS: First Floor 11'-9"; Second Floor 10'-6"; Cafetorium 11'-2"

Irving W. Hersey Associates, A.I.A., Architects - Durham, N. H.

CLEMENZI CONSTRUCTION CO., INC., BEVERLY, MASS.
GENERAL CONTRACTOR

NEW HAMPSHIRE ARCHITECT

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