GRANITE STATE

ARCHITECT

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ARCHITECT

VOLUME 11 NUMBER 4 OCTOBER 1965

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Front Cover: Light shining through a clerestory window in the Kennett High School, Conway, N.H., casts an interesting pattern on the wall and floor of the new addition, which was designed by Frank Kennett, Jr., AIA, of North Conway. Photograph by Jon Hardie.

Convention Notice!

The New Hampshire Chapter, American Institute of Architects, will hold its annual convention on Friday, November 12, 1965, it is announced by Chapter officers.

Convention activities are expected to commence at 4:00 P.M. with a Business Session, followed by a Social Hour and Dinner with Bernard Boutin, former mayor of Laconia, N.H. as guest speaker. Mr. Boutin is presently serving as executive vice president of the National Association of Home Builders and prior to this was GSA Administrator.

The Convention will feature an exhibit of New Hampshire architectural work and an award will be made for the best work as well as for outstanding workmanship on a contractor, subcontractor and individual basis.

The meeting is open to the public, and will be held at the Concord Historical Society Building, Concord, New Hampshire.

GRANITE STATE ARCHITECT is published bi-monthly under the direction of the President and Board of Directors of the New Hampshire Chapter, American Institute of Architects, and is the official publication of that Chapter. Advertising rates furnished upon request.

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Notes And Comments

At the spring meeting of the New Hampshire Chapter of the AIA, the subject matter was Schools, a topic of enormous concern to architects, school administrators and boards, and to the layman. The principal speaker, Dr. Nicholas Englehardt, specialist in school design, was joined on a panel by Damon Russell of the New Hampshire Department of Education and Richard Noyes of Jaffrey, and later the meeting was thrown open for questions from the floor.

Perhaps it is pertinent to note the words of Dr. Englehardt.

"Your job is a difficult one . . . school construction . . . because you must satisfy folks from the State Department of Education, you must satisfy the State Fire Marshall's office, you must satisfy the State Department of Health, you have to work with the local school boards, the superintendent of schools, local administrators and teaching staffs, you have to work with custodians and maintenance staffs, and, most important, you have to satisfy the local taxpayer. And one of the best measures of your success is the time you're invited back to do an addition to a job you've done previously.

"Perhaps you know the story of the school board in Maryland that decided its district needed a new school. After a lot of discussion, the Board passed the following resolution: BE IT RESOLVED that this school district shall have constructed a new school building; BE IT FURTHER RESOLVED that in view of the increasing cost of materials the new building shall be constructed of materials now in the existing building; AND BE IT FURTHER RESOLVED that to avoid interruption of school facilities that the old school building shall be continued in use until the new school building is ready for occupancy.

"Your task is often no more difficult than this. But this is a field full of difficult tasks, full of assignments that require much patience and many long hours. This is your responsibility, your challenge.

"A school is designed to provide an opportunity for students to learn. It must create this atmosphere . . . bring about an environment in which they can learn . . . the building should enhance the program and not stand in the way of learning.

"A lot of changes have taken place in education, are taking place, and will certainly continue to take place. You must take into consideration four very important qualities [each new school building should possess]: flexibility, expandability, durability, and accessibility.

"It is my philosophy that school structures must meet the needs of the changing educational program. It is not enough to build classrooms and try to fit a program into them afterward. This is a waste of your efforts and the local people's tax money.

"In New Hampshire much [innovation] is taking place in the field of school construction, but we need even more innovation. Already in the elementary schools we see centralized libraries, functioning as more than merely a collection of books. The library is becoming the core of the ele-

mentary school; it includes audio equipment (tape recorders, phonographs, and so on) and visual equipment (television, film strips, and the like).

"Also, in an elementary school with as many as 500 students we must take into consideration location for guidance services . . . administration suites with space enough for a full-time administrator for every 300 students . . . remedial reading . . . physical education facilities with showers . . . in the larger schools specialized areas for science, languages, and so on. And recently there is the question of [room] flexibility . . . classrooms with folding partitions between them. How many rooms can we put together?

"In the secondary schools we have the same problem of library orientation. This has resulted because this nation has had not only a population explosion but an education explosion. Do you realize what we've learned in the last ten or twenty years? It's been fantastic. This new knowledge is a real burden to our library areas. In secondary schools we need teacher resource areas . . . and teachers' professional libraries. The large auditorium has gone out because it is not economical to provide. We should concentrate more on the little theater concept, even to a capacity of five or six hundred. We should be dividing rooms for individual and group research, for seminars. In the area of physical education we should be including corrective gyms, the gymnasium-laboratory idea.

"We as architects must share the blame in not introducing some of these innovations sooner. When is the decision made as to what will be constructed? These are questions you must answer. When you develop first estimates, do you include all of these supportive educational spaces? Or do you include only the bare necessities? When you submit your first schematics do you include all of the supportive education spaces? Or do you include just the minimum number of classrooms needed? When you're working with a school board and they start saying they're going to cut costs, do you express the importance of these additional educational services? Or are you immediately ready to compromise?

"The process of bringing about change in school construction is very complex, local people look to architects for advice.

"You are the professional. Often innovations are impossible because the original estimates were not adequate.

"We need specialists in the area of school design. We need architects willing to accept the task and responsibilities involved in designing schools which meet the needs of [this changing educational program]. We have architects in New Hampshire who have already been involved in bringing about new and better designed schools. We have proof in New Hampshire that school districts want to build good schools, with these innovations. It is up to us to make these things happen."

Precisely.

And that is not to say that the job is easy. For there is a reluctance to change, a suspicion of things new, a near-sighted frugality which grasps the

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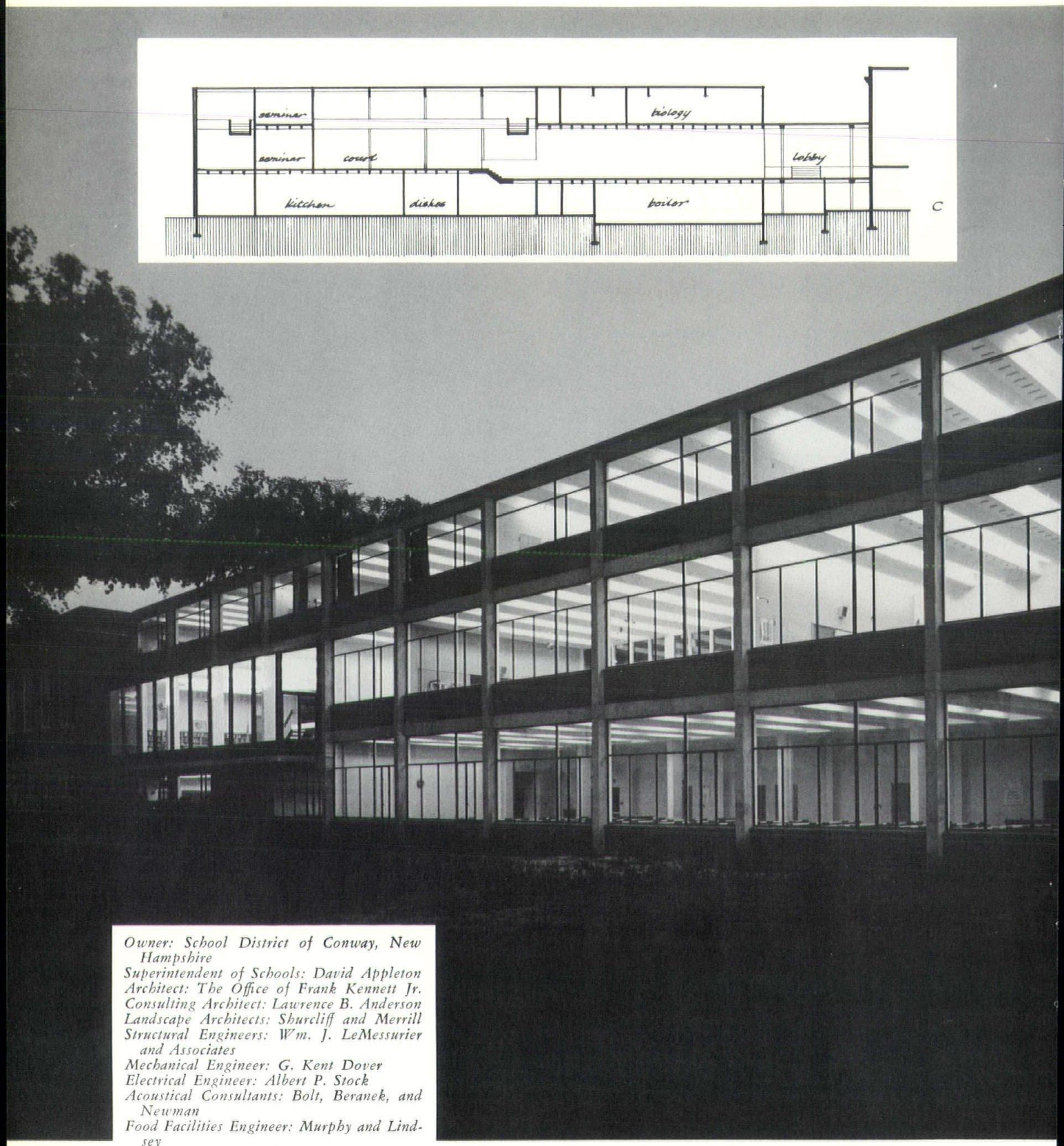
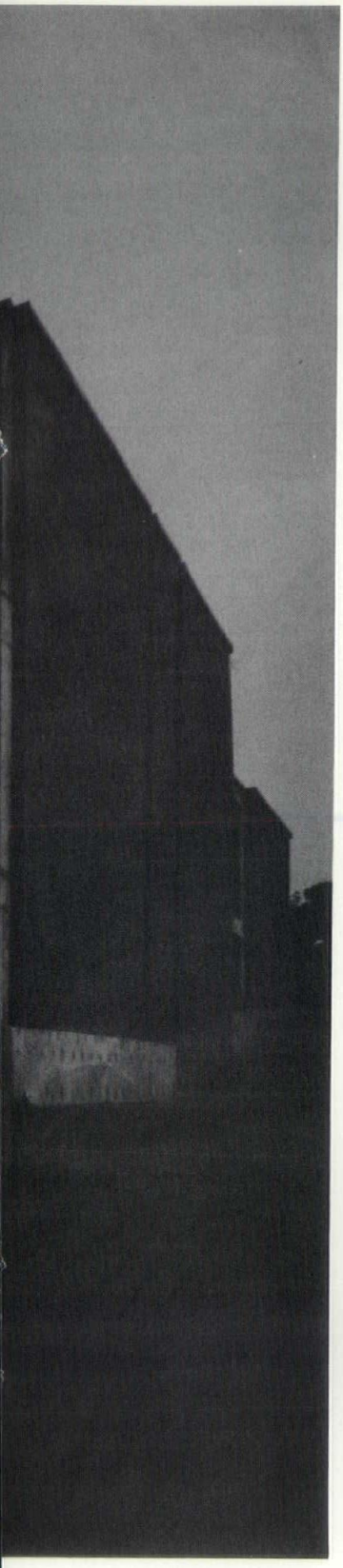
School Addition in the North Country



Owner: School District of Conway, New Hampshire
Superintendent of Schools: David Appleton
Architect: The Office of Frank Kennett Jr.
Consulting Architect: Lawrence B. Anderson
Landscape Architects: Shurcliff and Merrill
Structural Engineers: Wm. J. LeMessurier and Associates
Mechanical Engineer: G. Kent Dover
Electrical Engineer: Albert P. Stock
Acoustical Consultants: Bolt, Beranek, and Newman
Food Facilities Engineer: Murphy and Lindsey
General Contractor: Winston P. Titus
Photographer: Dick Smith



Students from Conway, North Conway, and surrounding villages and towns are attending classes in a handsome new addition to Kennett High School on Main Street in Conway. Designed by Frank Kennett, Jr., for whose grandfather the original building was named, the new wing is the first major improvement at the school since 1938.

The School District of Conway faced a problem familiar to school administrations, namely children were being packed into inadequately equipped facilities at both junior and senior high school levels. The district needed not only more space but different space, designed and equipped to use modern teaching methods and to take future educational developments in stride. The addition to Kennett High School was thus conceived as a special facilities building, to contain a library, a lecture theater, science and language laboratories, a business suite, a new wood shop, a few classrooms, a cafeteria and kitchen, and something harder to define, built-in adaptability to new ideas in teaching.

Along with a carefully worked out and demanding program, the Conway School Board and Superintendent David Appleton gave the architect an unusual gift, in the form of instructions to use his own judgment, and that of his consultants, on all decisions which the architect properly should make. They also respected his conviction that a school building could itself teach something about organization and integrity, and about color, texture, and light.

The office did research which included wide reading, visits to other schools, and conferences with teachers, school administrators, and professional advisers from the State Department

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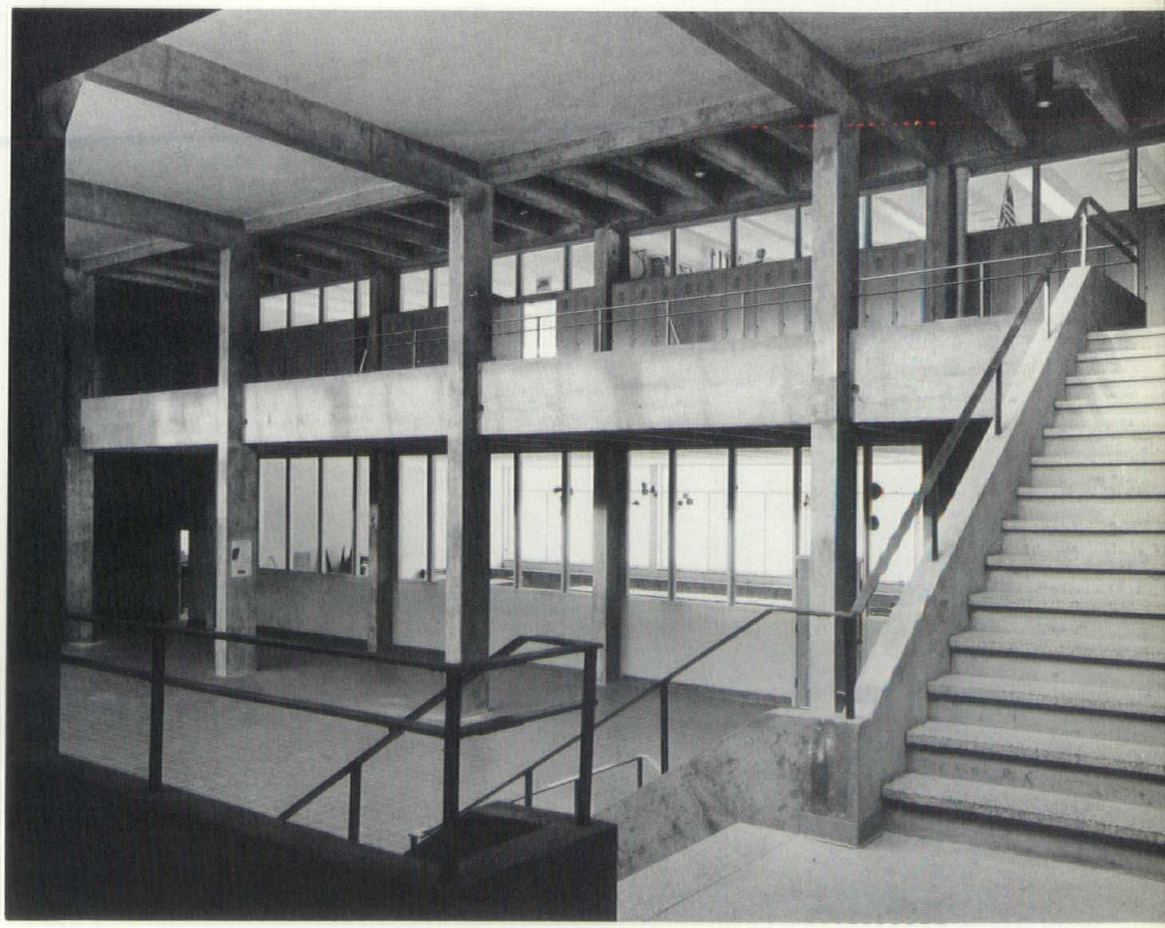

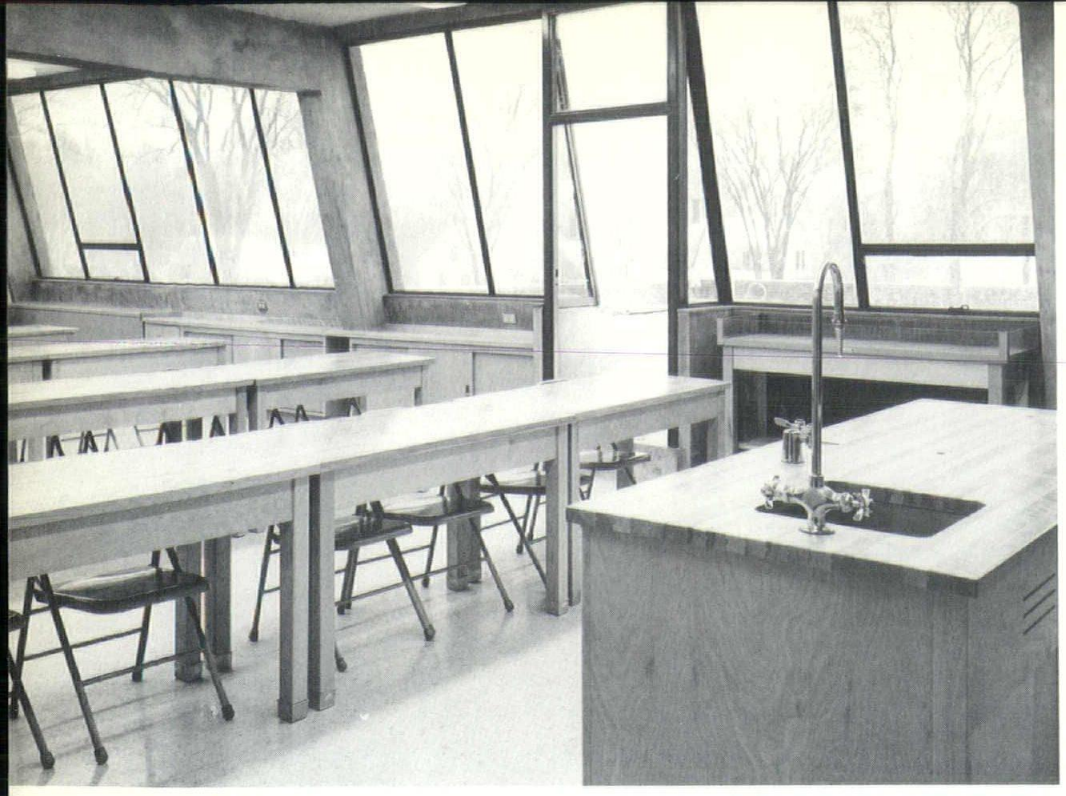

of Education, all of whom Mr. Kennett found to be eager and occasionally excited to share knowledge from their experience. Mr. Appleton participated in these conferences and was always ready to help when his advice was needed. The School District fortunately had been able to buy land to the west and adjacent to the existing school.

The original building is a dignified neo-Georgian edifice set back from the street, which the architect wished to complement, not dwarf. To this end the new wing was kept low and modest in front and the two elements were linked by a one-story glass lobby which also serves both the existing auditorium and a bridge which meets an existing central stair landing. As the section drawings show, the many-level scheme is well suited to the site, which falls off toward a spectacular view of the Presidential Range. Academic classrooms which are curtained, and the closed lecture theater, face the south; and science laboratories, art and drafting rooms, library, cafeteria, study hall, and wood shop take advantage of the north light and view. No classroom faces either east or west, where sunlight is hardest to control.

Mr. Kennett now wishes they had built the lobby roof of a material lighter than concrete to make more tenuous the connection between the new wing and the old, but because of its south clerestory and the treatment of the east wall of the new building as exterior even within the lobby, the roof seems to float between the main masses. The lobby thus becomes an airy space of light and glass, an effective foil to the dark hall through which one turns to the heart of the school.

The central court is a place for meeting friends, rehearsing plays, practicing cheerleading, having a sock hop, a formal dance, a science fair, or setting up an art exhibit. To the architect it was a way of bringing south sunlight into the core of the building and resolving a difficult circulation problem. To the educators it has become one of the major contributions to flexibility of scheduling.

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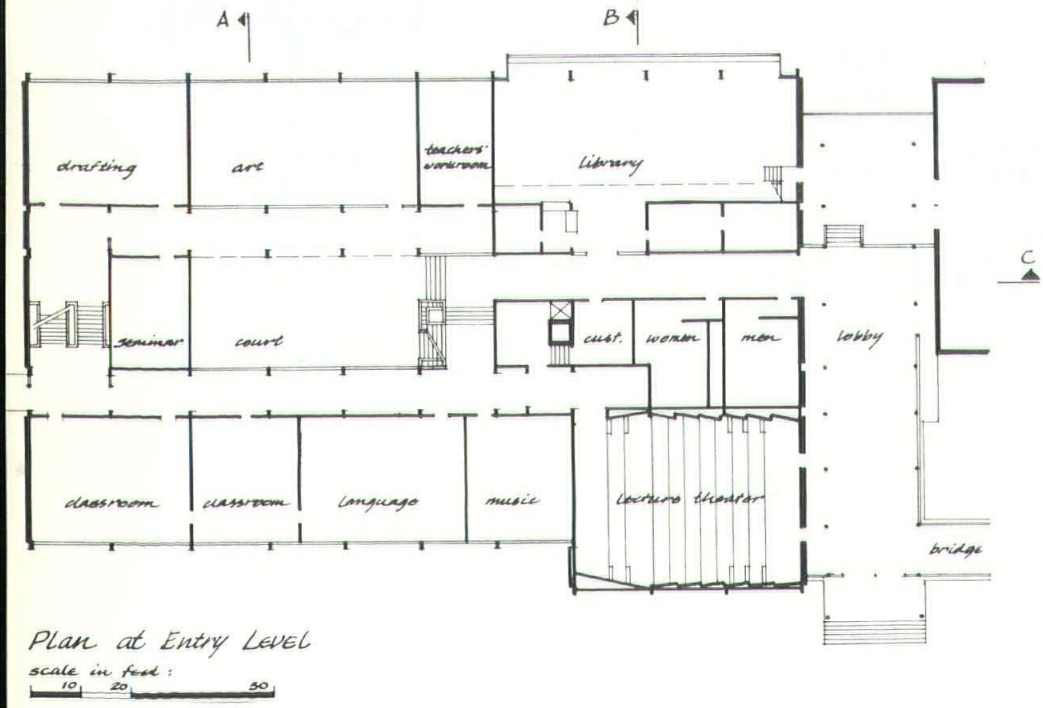


Plan at Entry Level

Robert O. Moulton, School Principal, says it is one of the most useful spaces he has. To the students it is the center of all activity, and because its existence is only hinted at on the exterior, it is a place private to its users though available to all of them.

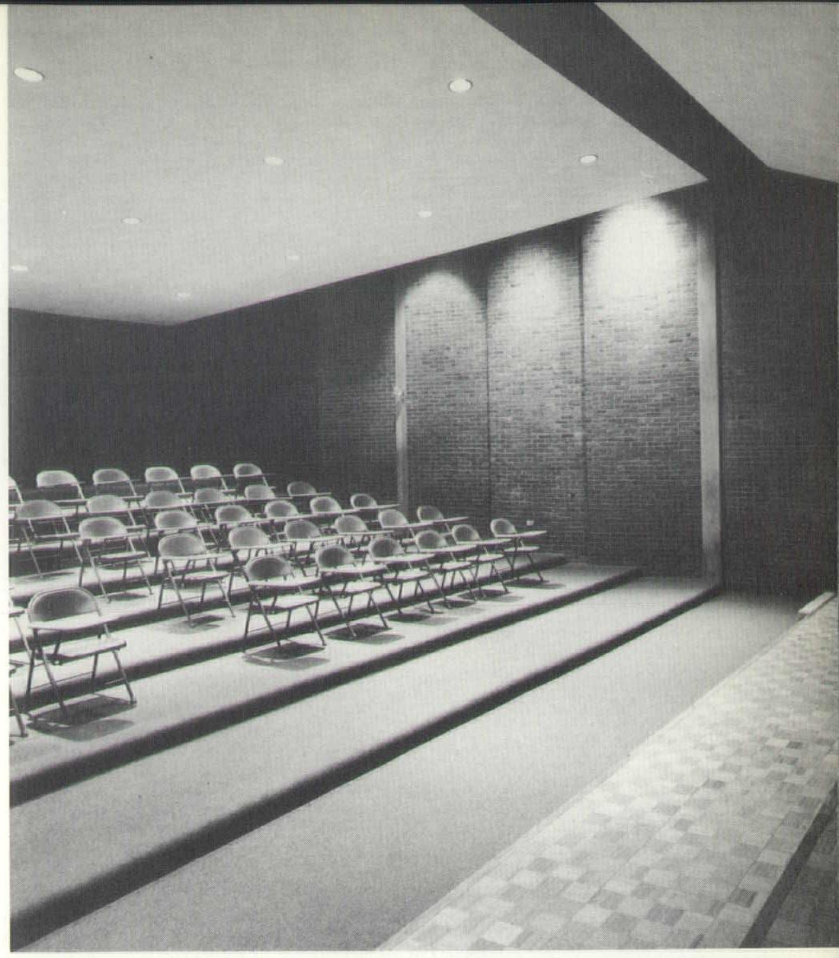
The natural materials in the court make it seem an exterior space itself, outside the formal teaching areas and yet enclosed by them. The quality of light is almost mysterious because of the amber glass in the sloping window, and this color enhances the richness of the brick, concrete, and quarry tile. To the north, open the windows of the art room where something is always going on. Other glimpses of light appear from an open classroom door or from the entrance lobby, while behind the brick screen an interior meeting room borrows light.

A concrete stairway cast as bridges from level to level is sized to the traffic which will use it, narrowing as the flights go upward, or widening on the way down.

Broad stairs from the court lead down to the cafeteria-study hall, which looks out over a gently rolling terrace to the mountains. Teachers have a separate small dining room with a warm cork floor, and the kitchen is separated from the study hall by a sand-filled block partition to minimize distracting noises.

The wood shop is just across the receiving entrance from metal and automobile shops in the original building. Continuous bus ducts at the ceiling permit the rearrangement or addition of electrically-operated tools. The boiler room and other service spaces share the lower level.

The first corridor open to the court is on the next landing. Student lockers are recessed between columns to be inconspicuous and out of the way. The school already owned excellent language laboratory equipment which was relocated in a room on this floor. Because this equipment had proved its usefulness, the program is expected to expand, and conduit to carrels on the library mezzanine will allow them to be used with headphones at a later date. The business education suite on the floor above also has conduit concealed to permit the use of dictation tapes or other electronic equipment. The music room, also on this level, is adjacent to the lecture theater where it can share storage facilities and is convenient for rehearsals. The carpeted floor is structurally isolated from the rest of the building, and the plaster walls and ceiling are hung on resilient clips. This room within a room means that a student can practice his tuba while classes go on relatively undisturbed all around him.



Back at the court level, the art room has an ideal high ceiling and northern exposure, and takes part of its light and spatial feeling from the court itself. Students work on some projects in the court, sketching under the interested eyes of passersby. A quiet corner by the library provides space for a workroom for teachers.

The science laboratories share the top level with one of the seminar rooms and two classrooms intended now for the study of mathematics and later for possible conversion into additional science facilities. In planning this area, the architects received invaluable assistance from the teachers who would use it and from Howard Wagner at the State Department of Education. The laboratories are separated from each other but are interconnected by well-equipped preparation rooms. The biology room is almost a greenhouse itself, facing south under the sloping windows, and from it a door goes to the roof of the lecture hall where students may set up a weather station or a telescope. An animal room and a small darkroom complete the science facilities.

Although the architects felt that some fine laboratory furniture was available, stock cabinets did not allow maximum use of the spaces. The architects designed, detailed, and wrote comprehensive specifications for equipment tailored specifically for this installation. Cabinets and table frames are of white maple with a clear finish. In the physics laboratory work surfaces are laminated of edge grain birch with a simple oiled finish, which is matte, non-conductive, and practically indestructible. Although, of course,

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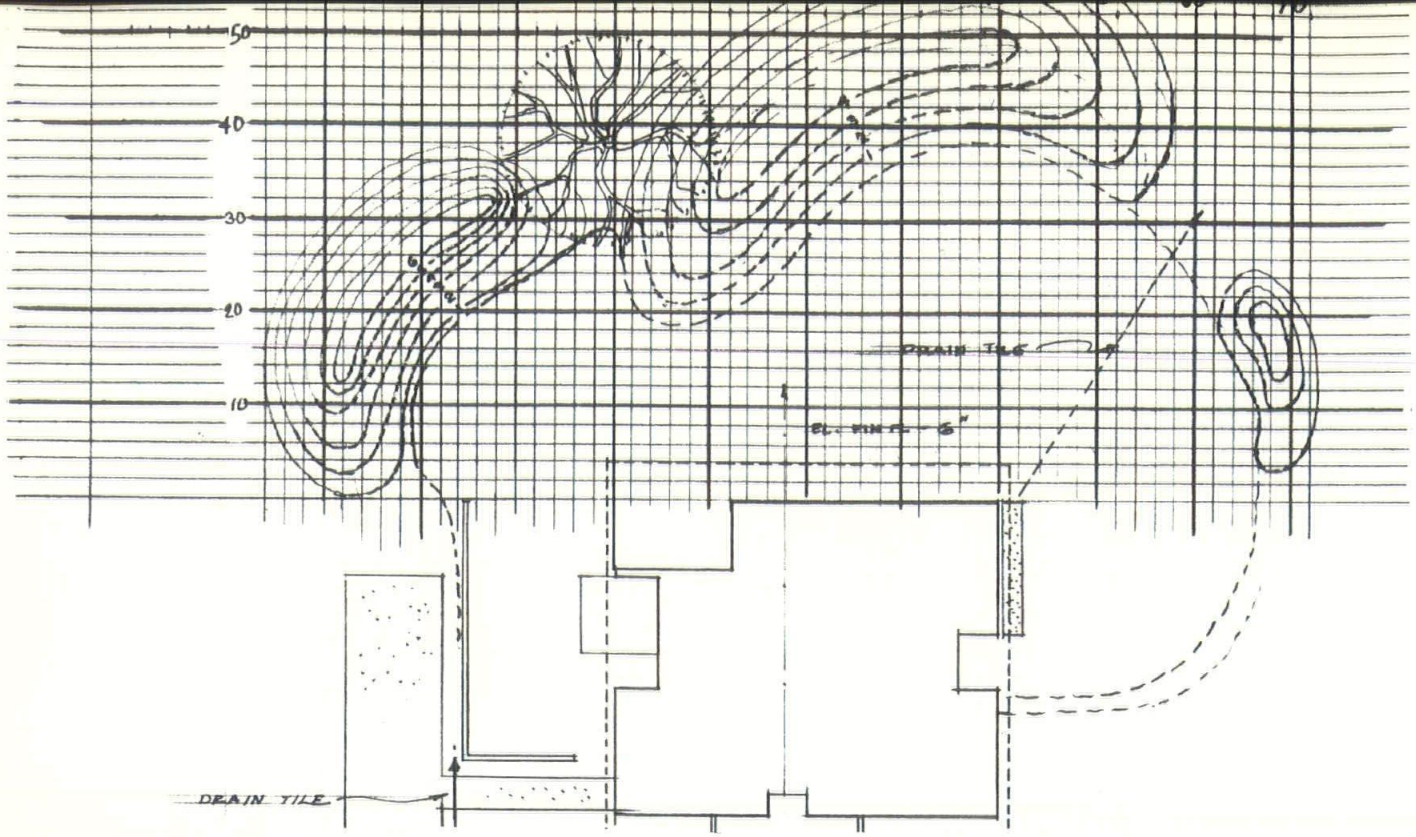
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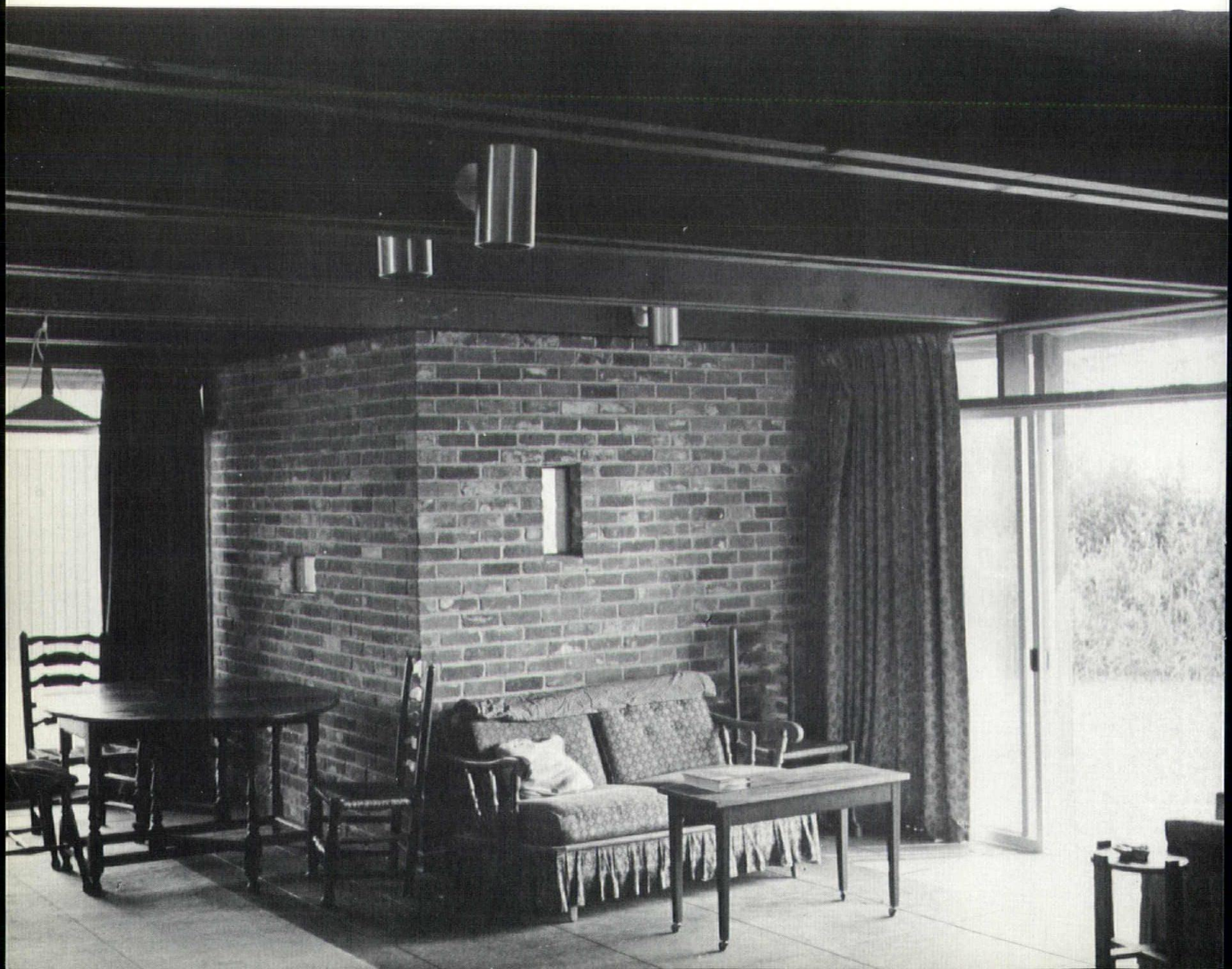

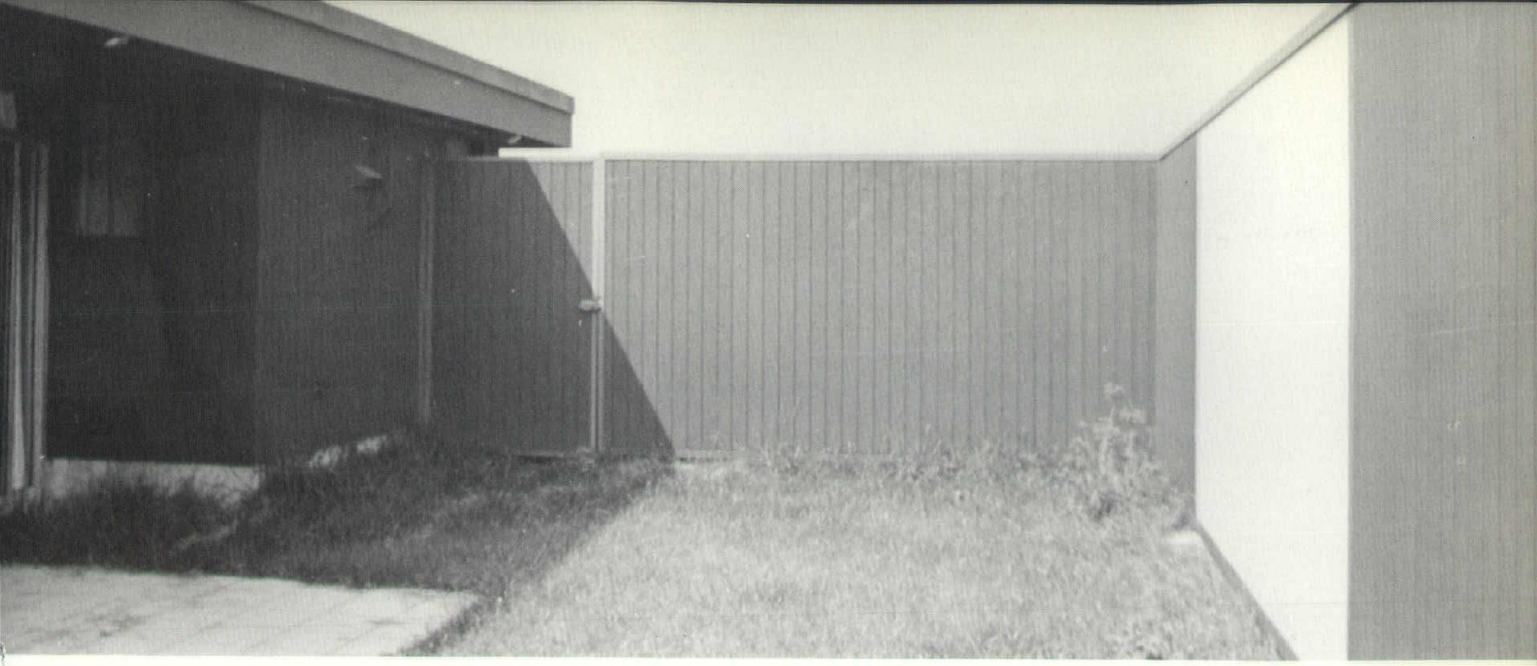

Privacy on a Corner Lot

Private Residence — South Amherst, Mass.
Architect — James and Garland
Contractor — George Buczalas, So. Amherst, Mass.
Photographer — Jon Hardie

Topographical plot plan shows position of house on corner lot and use of earth mounds to effect privacy at rear of structure.

Wood screening provides element of privacy at rear of house forming a private area outside dining patio.

Living-dining area in home has exposure to outdoors through glass sliding walls leading onto a dining patio (left) with wood screening and onto landscaped grounds (right) with earth mounds providing screening.

Designed for use by a single, elderly lady with many special requirements, the Corbishley House in South Amherst, Mass., is full of surprises.

Outwardly unimposing and restrained due to the need for privacy on an open corner lot, the $16,500 structure is characterized by screens and an enclosed high courtyard. The basic construction is of block and Texture 1-11 plywood; and living, service and recreation areas are clearly defined by the activity pattern of an elderly lady.

The front entrance is a small court with exterior facing of Texture 1-11 stained a dark color; the inner facing of the court is untextured and painted white. This contrast effect is repeated in other areas of the house and is complemented by skylights and triple-section glass doors.

The front entrance court which has a central area of inlaid brick, tends to concentrate the south light and can be said to "prewarm" the arriving guest. This is an important factor in view of the relative barrenness of the site.

Narrow windows, the height of the front door, transmit light into the foyer, and Texture 1-11 is used inside the house to create a continuity of texture pattern as well as for economy.

The foyer provides a focal area for the visitor and provides direct access to the three main areas of the house. On the left is a very compact U-shaped kitchen with pantry, which can also be entered through a mud-room-service entrance on the side of the house, which is more commonly used by the resident and frequent visitors.

The kitchen has a skylight and opens onto the dining area and an enclosed dining patio. It should be noted here that excellent use is made of brilliant saturate areas of color which are accentuated by the skylight and minimize the smallness of the kitchen area.

To the right of the foyer is a bathroom and bedroom. Although the bath has no outside wall with its usual window area, it gets outside lighting, and a feeling of spaciousness, from a skylight placed over the tub-shower.

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Left: Compact kitchen provides plenty of work space and wall and base cabinet storage.

Left bottom: Kitchen area is two steps above dining area in service section of the house. Steps at left of photo lead to entry foyer. Note wall storage recessed in utility room wall.

The effect on entering from the darker foyer is startling since the skylight provides both opportunity for light and creates a feeling of more size than actually exists. Included in the kitchen-bedroom axis are the heating and water heating units as well as closet space and household storage area.

This kitchen-bedroom axis is set apart from the dining-living area through the use of Texture 1-11 and the entire unit is further separated from the dining-living slab by the height of one step.

The first real spatial experience the visitor obtains is this one step down combined with an open dining-living area with glass doors leading to the outdoors.

It should be noted that the desire for privacy and for open areas of sunlight have been met largely by site orientation. While offering a seeming unbroken, windowless face to the open corner traffic, the Texture 1-11 represents an area used least during daylight hours, and within this "box", the kitchen receives morning and noonday sunlight from the skylight and from the dining terrace.

The living-dining area is characterized by the use of differing size grids inscribed in the slab floor and by a large fireplace on the western wall.

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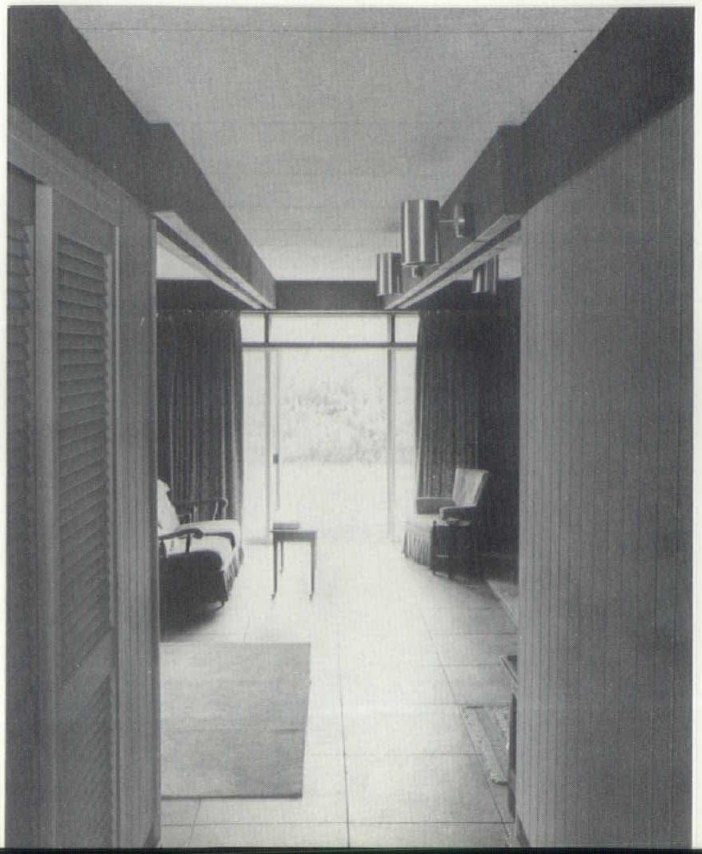
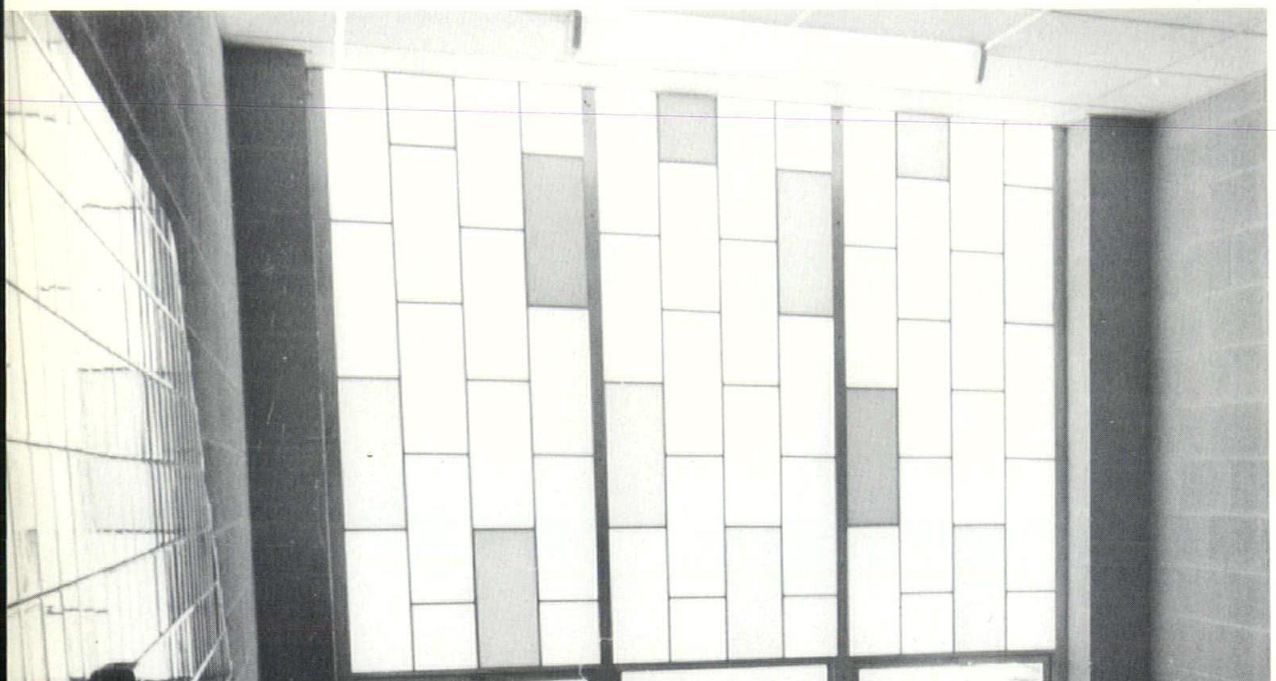


Right top: Texture 1-11 forms wall surface in entry foyer with bath to the right, kitchen ahead and access to living area at right past bathroom.

Right bottom: This is the view from front entry foyer. Note double joist construction in ceiling area forming semi-concealed lighting and wiring channel.

Oyster River School — A Cooperative Effort



Kalwall panels in wall provide pleasing tern and light wi opening area complete outdoors. Vent port low allow air circul

Durham is a community which focuses on education. When it was necessary to build a new school, many willing, interested, and intelligent citizens served long hours on a Study Committee to determine the requirements of the community and its education program. They worked closely with all involved members of the faculty and administration, and in close cooperation with their architect, Irving Hersey of Durham.

The result of this community effort is the Oyster River High School, a comprehensive school with facilities for 400 students from Durham and the cooperative school district of which it is a part. Since it is almost inevitable that the school will, in the not too distant future, require an addition, both building and site were designed with this eventuality in mind.

The building is roughly T-shaped, with most of the classrooms housed in the stem of the T. It is at this end of the building that future additions would be constructed. The cross-part of the T houses the gymnasium and the cafetorium; between them is a stage, capable of being used for either room. Such an arrangement, of course, greatly increases the flexibility and functionality of both rooms.

The administrative quarters are set apart, at the left of the main entrance, served by the terrazzo-paved main lobby. Here are walnut panelled offices for the principal and vice-principal, secretarial and guidance offices, a conference or activity room, and the nurse's room. To the right of the lobby is the cafetorium, and beyond it the gymnasium. It is possible, by locking the lobby's fire doors, to restrict public access to the rest of the building, while allowing full use of the gymnasium and cafetorium for public functions.

Locker rooms off the gymnasium and kitchen and service areas off the cafetorium complete this section of the building.

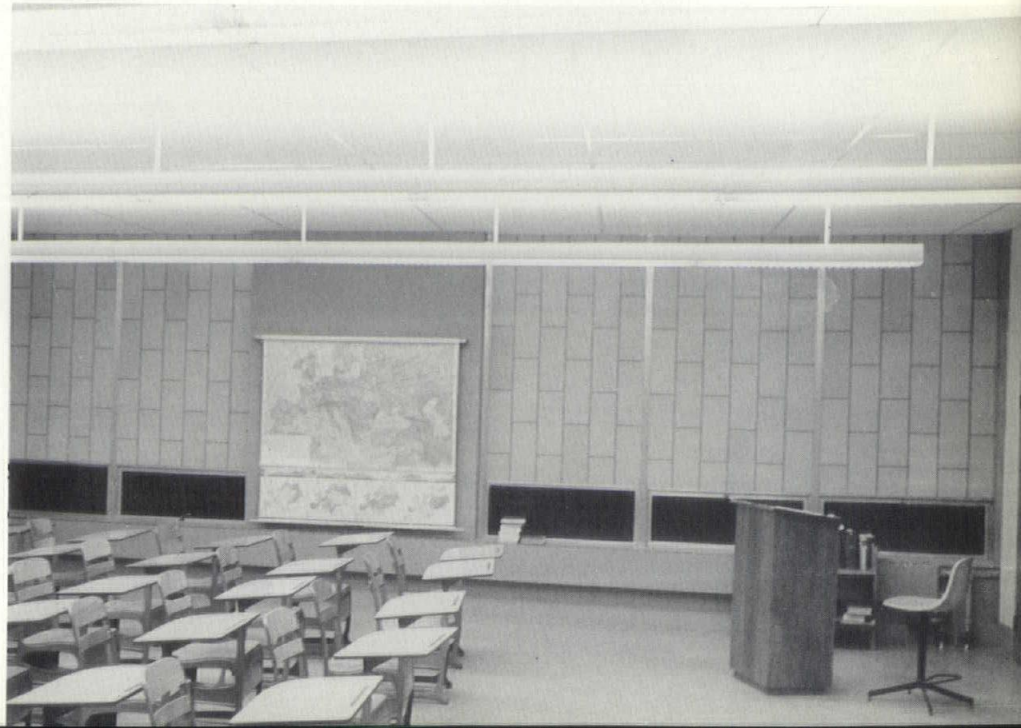
Perhaps the dominating feature in the school's construction is the extensive use of Kalwall panels. The building is set high on an almost treeless site, where there is no shade. The Kalwall panel so diffuses the light that despite the building's open location, no curtains are used anywhere in the building.

The pre-constructed Kalwall curtain walls have been provided with small areas of transparent glass, in many cases movable sash, which provide

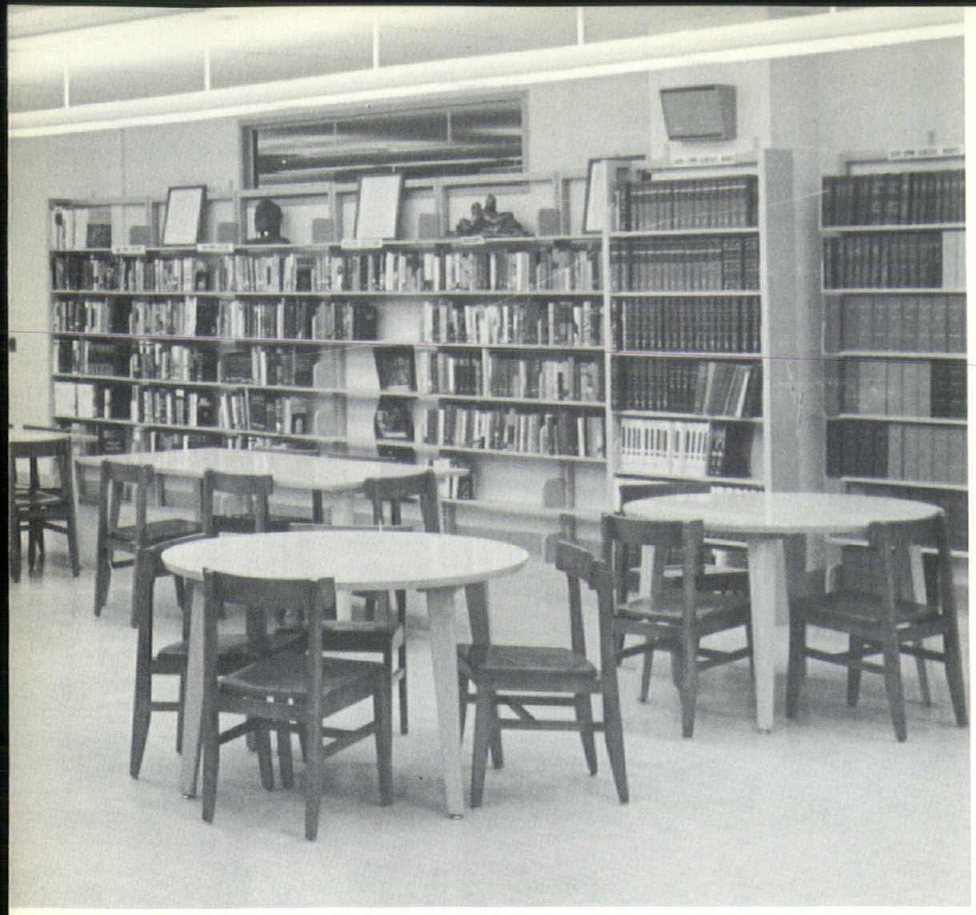
Continued on Page 20

Aspect of plastic panel areas from onlooker is pleasing. Darker panels are colored.

r River School — Durham, N. H.
itect — Irving Hersey
ractor — Fred I. Merrill, Portland, ine
ographer — Jon Hardie



A typical classroom with louvered fluorescent ceiling fixtures and lecture-type podium desk for instructor.

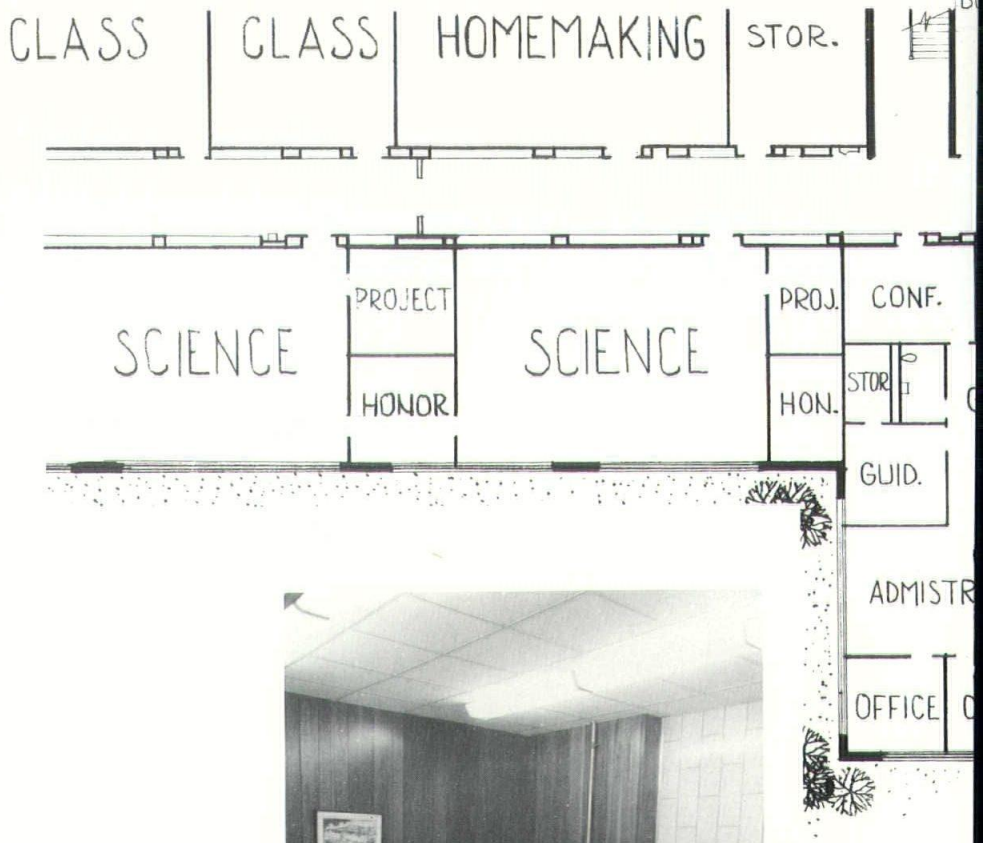


Library scene

in the gymnasium are excellent, despite its large size, and comments that it is possible that the exposed structure contributes to this excellence.

Along the classroom corridors clerestory windows permit the passage of light from classrooms to hallway; at the end of the second floor hallway a large panel of Kalwall at the stairwall permits natural lighting of both stairwell and hallway. Along the length of this second floor hall, domed skylights introduce additional natural lighting.

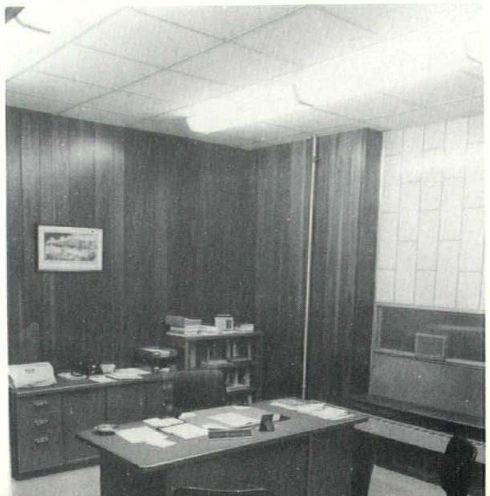
Throughout the building an attempt has been made to group together those classrooms which complement each other. Social studies and humanities are taught in rooms near each other and near the library. Fine arts are grouped near the auditorium. The sciences and mathematics are near each other, although the location of math rooms permits some flexibility. Shop areas are adjacent, with access to the parking area for delivery purposes.

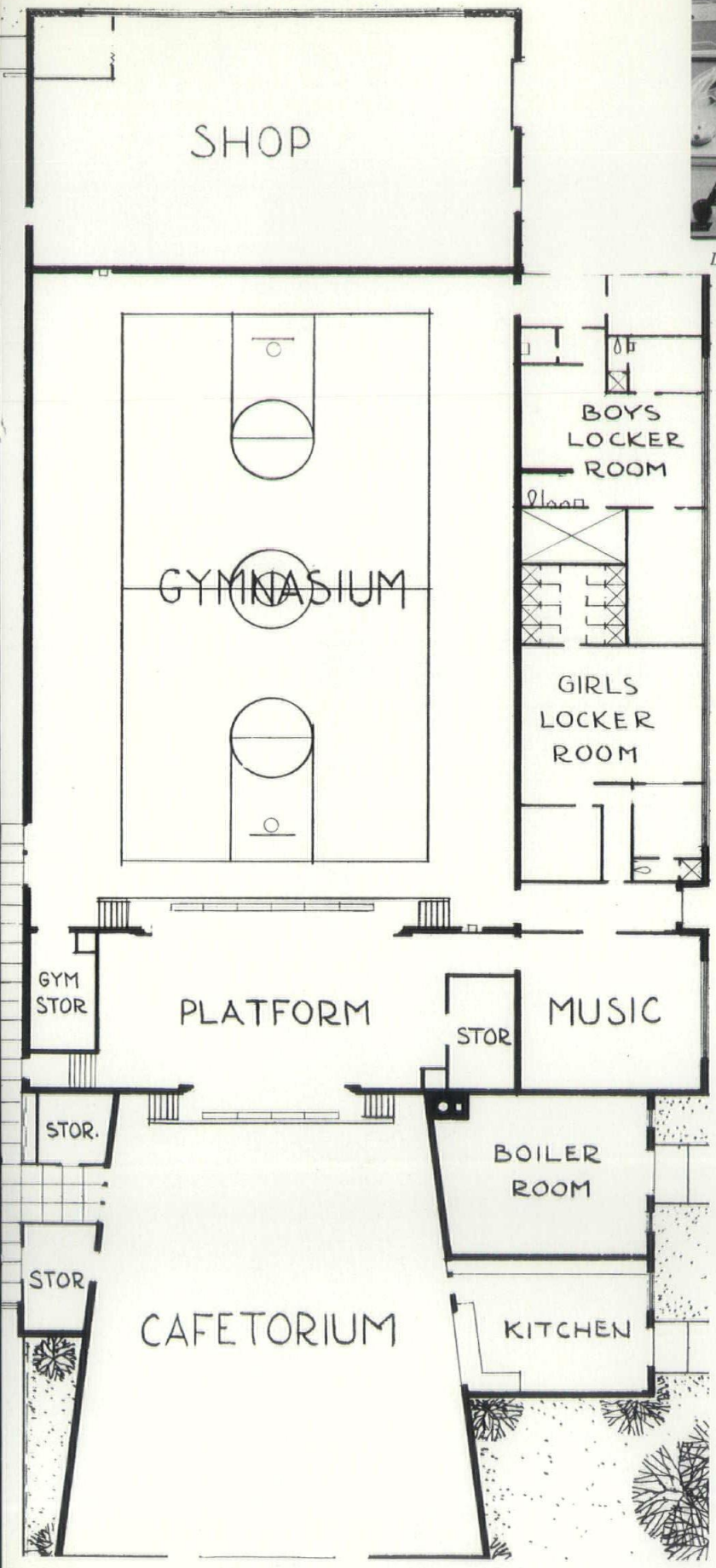


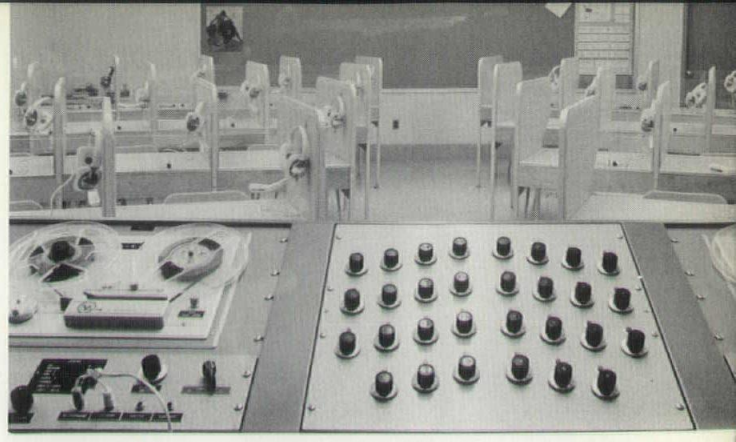
visibility for the students while seated at their desks. The Kalwall panels have inset panes of various colors, with their duller sides turned to the exterior of the building, their bright sides to the interior. On the exterior also are large blocks of grey-green at the base of the panels, a color which is repeated throughout the school.

The main entrance is approached under a canopy of steel framing and decking, which covers the sidewalk at the front of the building and the entry way to the lobby. As one enters the school, the wall of the cafetorium is at his right. Since the cafetorium was designed to be wider at its far end than at the stage end, the wall slants away from the walk, lending visual interest.

Beyond the lobby, the corridors are floored with resilient tile; their walls have dadoes of brown ceramic tile topped by masonry 'block; ceilings throughout are of acoustic tile. In the gymnasium the structural ceiling is exposed. The architect notes that acoustics







Language lab

In the Oyster River High School there are no "home rooms"; each student has a locker which contains his equipment. Each teacher has a desk of his own, but that desk may be in a room devoted to teacher's offices instead of in a specific classroom. Between each pair of science laboratories are two rooms; one provides space for a teacher's office and library; the other is a small research and experiment room in which advanced or highly motivated students may conduct long-term experiments without fear of having them touched by other students or the necessity for removing them to provide space for others.

This type of arrangement allows for great flexibility in size of classrooms and in equipping them. Each room is designed specifically for the classes which will be taught in it, allowing the same kind of specialization in academic studies which has long been accorded to shop and home economics rooms.

Without the necessity for providing a desk for every child or a room for every teacher, space is used to maximum efficiency and utility. In addition, the separate teacher's offices permit them to be used for conferences and guidance periods without disturbing a class or study period in progress. And the requirements of the various departments are met to a greater degree insofar as classroom equipment and size were concerned.

A case in point may be the desire of the science department to have greater blackboard space than is usually available; the answer is provided in the form of a sliding chalkboard, offering 24 feet of chalkboard in 12 feet of wall space.

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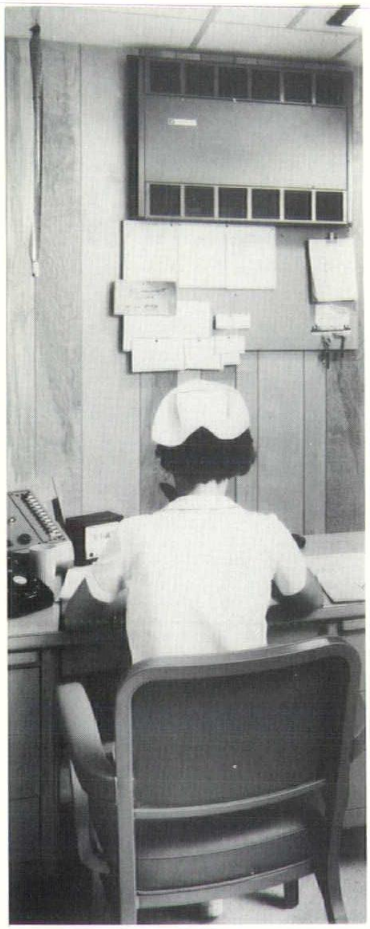
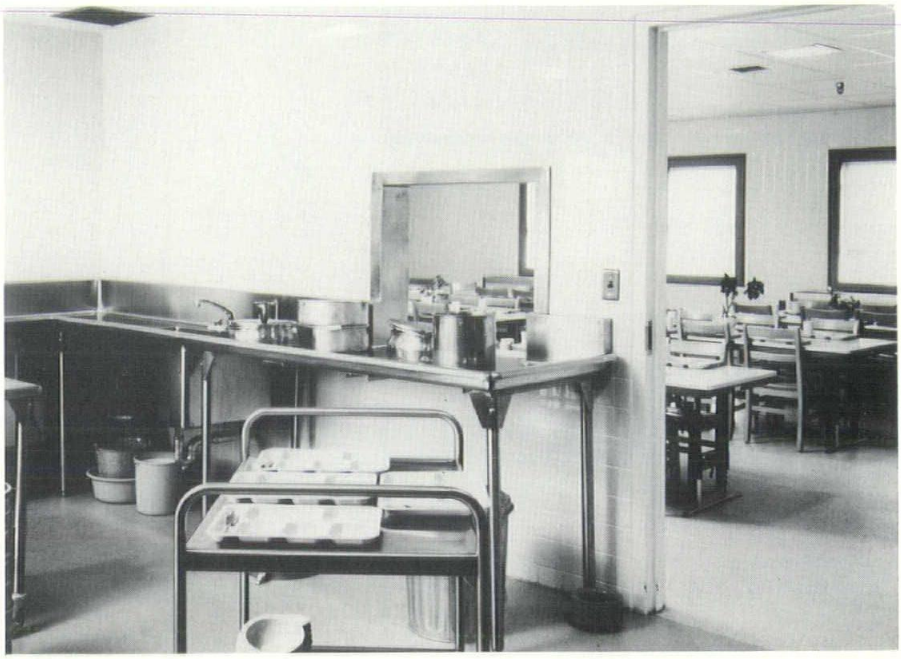
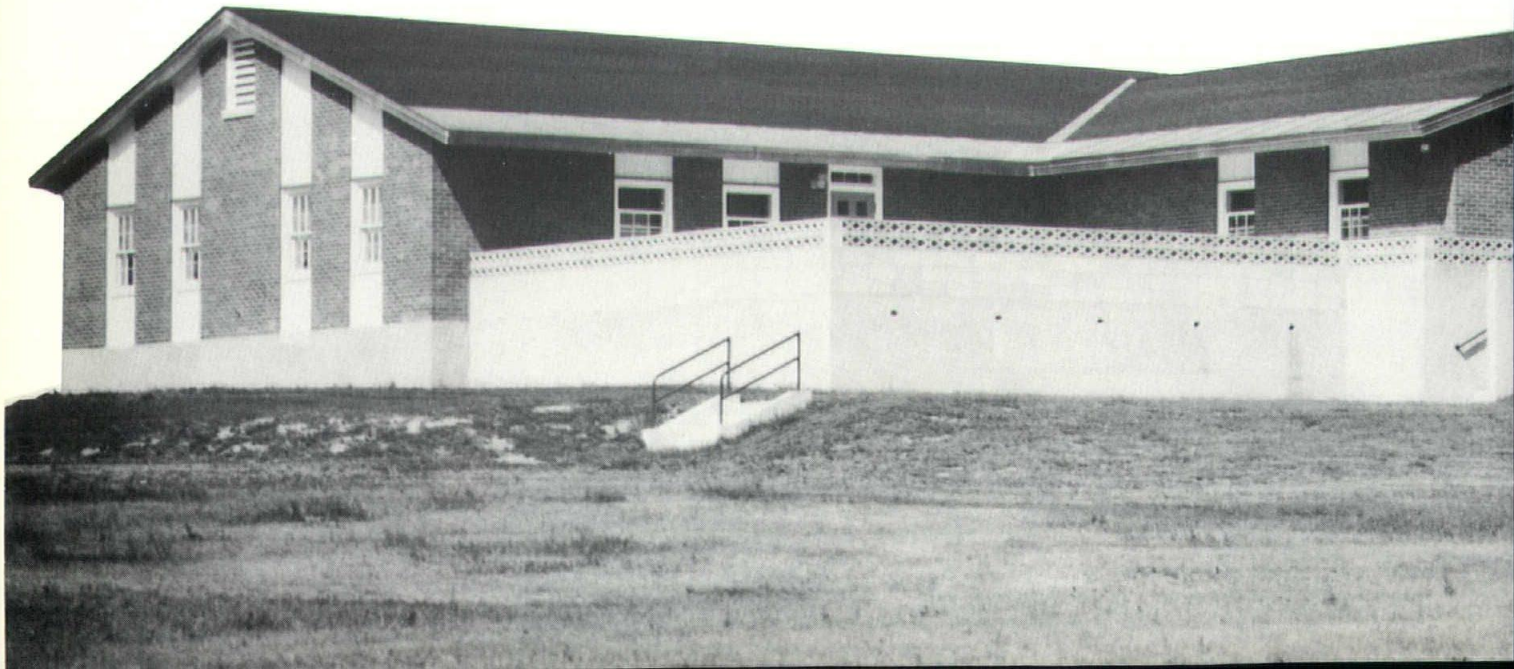
King Nursery Building at Laconia State School





Above: Serving kitchen in new King Building at the Laconia State School. Food is prepared in main kitchens and transported to these kitchens for serving to wards. Floor to ceiling tile and stainless steel serving areas reduce maintenance.

The King Nursery Building — Laconia State School
Architect — Andrew Isaak
Contractor — Titus Construction Co. Inc., Laconia, N. H.
Photographer — Walt St. Clair



"The slow child's tragedy is not his slowness, of which he may be quite unaware, but the attitude of other people toward it and their demands upon him. His feelings are the same as those of other children, and like them he can be hurt and ashamed, proud and self-confident.

". . . if we expect him to do only what he can do, if we praise him for achievements which may be small in themselves but are great for him, if we make him feel loved and certain of his own place which nobody else can fill, he can be as happy as any normal intelligent child."

These words are from the program used at the dedication of the John W. King Nursery Building at the Laconia State School, and surely this building has been designed by Architect Andrew Isaak as a very special place for the slow children who live in it, designed to their scale, with their needs in mind. And, consistent with the demands of economy, designed to make children happy.

The exterior of the building is brick; the windows are accented by the introduction of white-painted vertical wood panels, reminiscent of normal residences. The windows themselves are double-hung, multiple-paned, mullioned, again residential in feeling. The roof is peaked.

But, as in all such institutional buildings, compromises must be made to conform with the requirements of the children who are to live there. Inside the "homey" windows are locked steel security screens, serving to protect the panes of glass and to restrict the children's operation of the windows.

Inside the building, the child-like touches have been more severely restricted, again because of the requirements of the children and their program, and because of economy. The rooms are, however, light-filled through the many windows; the colors are light and attractive; the scale is comfortable.

The building is designed with a central core, containing medical quarters, administrative quarters, and a dining room and service kitchen, as well as space for heating and ventilating equipment.

Since this building, like all others at the Laconia School, is served by a central heating plant, there is no furnace in the building; however, the piped-in steam is converted to hot water and, in addition, the continually circulating air is heated and reheated. Special equipment changes the air in the entire building at least six times an hour. This constant exchange of air takes place with almost no draft, through a complex air intake, preheating and reheating system. Entering air is first preheated to a 60-degree level and then sent through ducts to the wards where reheaters raise the temperature to the level required.

Just as the building requires no furnace; it also does not require elaborate kitchen facilities since all food is centrally prepared and delivered to the building ready for consumption; therefore, the kitchen is used primarily as a dish-washing and service center.

On each side of the central core is a corridor which leads from one side of the building to the other, from the door at one side to its counterpart at the other. Along each of these corridors are the many closet and storage areas which are necessary for the building, and from each of them two of the building's four wards may be reached.

These wards are identical; each of the two wings of the building is identical, containing two wards. The children who live in the King building are assigned to wards by approximate mental age, ranging from those who must be in custodial care, to those who can and do learn to care for themselves and enjoy the world around them.

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Rear view of new King Building showing double-tee design. Each ward is a self-contained unit with sleeping, recreation and dining facilities.

Each ward is divided into three distinct rooms: a play area, a dormitory, and a bathroom section. Each ward also contains an "isolation room," a small space devised for occupancy of one child who may be temporarily too disturbed to live comfortably with the others. This glassed-in room, too, is well-lighted, similar to the larger rooms shared by all the children.

All sections of the ward may be seen from a central, raised observation area where the attendant is stationed. Each pair of wards is so designed that the glassed-in attendant stations are adjacent, providing access from one ward to another and allowing one attendant to supervise two wards in the event of an emergency. The attendant stations have their own toilet facilities and are provided with intercommunication equipment to the central administrative office. Architect Isaak regards this ease of visual supervision as one of the key design features of the building.

Most important also is the new type of flooring used in the King building; the introduction of this flooring is part of the Laconia School's continuing search for floor materials which can withstand the extreme demands made on them by incontinent or destructive children. Up to this

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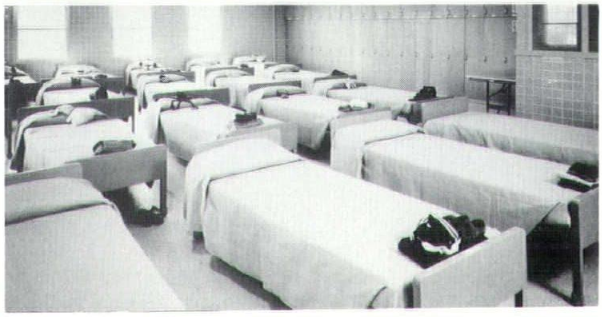
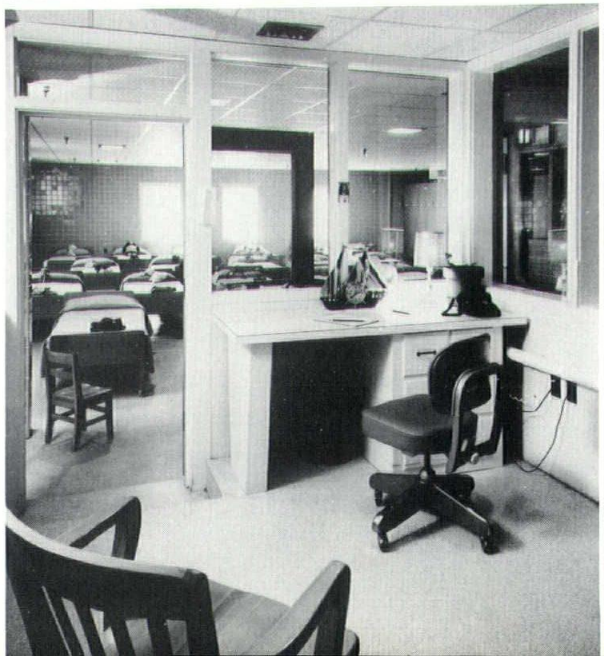
Dining area is light and homey with floor-to-ceiling tile for ease of maintenance.



Sleeping quarters with personal lockers along wall to rear and supervisory office at far right.



This supervisory office is glass-enclosed so nurse can watch two wards. Offices interconnect.

Keene Married Students' Apartments

Married Students' Apartments — Keene State Teachers College
Architect — John Holbrook
Contractor — MacMillin Co. Inc., Keene, N. H.
Photographer — Jon Hardie

The Married Students Apartments at Keene State Teacher's College, Keene, N. H. were initially designed to accommodate a greater number of students, but budget limitations required a number of sacrifices to be made. Built at a cost of $16.51 per square foot, the $350,000 structure houses 32 couples. There are four double bedroom units per floor in the central unit and six singles per floor on each side of the U-shaped central court, and to comply with Keene's off-street parking law, a large parking area is provided in the rear.

The site chosen for the complex is part of the river flood plain encompassing a large part of the city. As a result, foundation work called for 40-foot pilings. Good use has been made of the sloping site to provide a spacious wash and drying area below the central unit, and to give some idea

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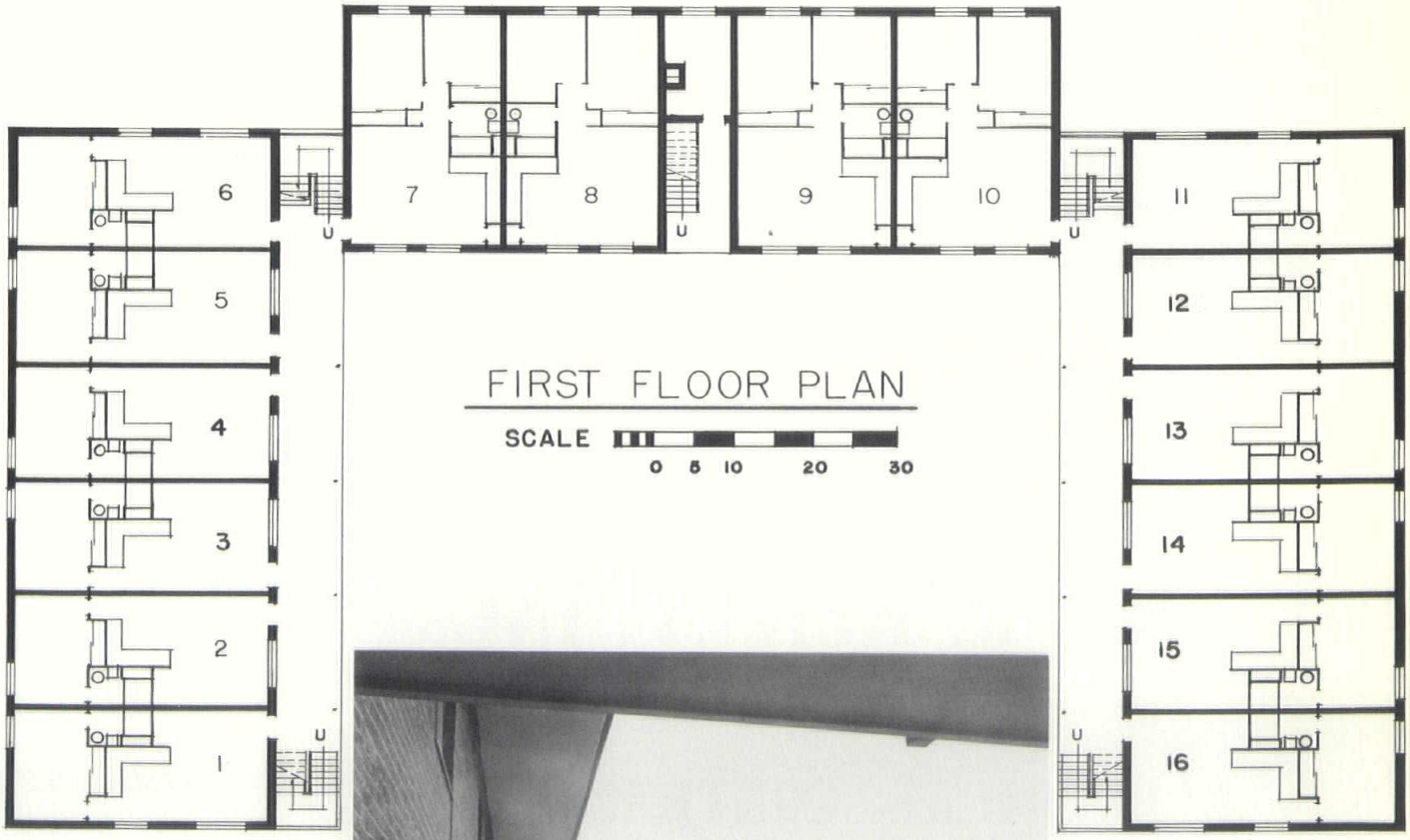
The U-shaped building forms a play area for children and all living rooms face onto the quadrangle.

A fairly sharp drop-off at rear of building enabled architect to provide laundry and utility space on lower level of main structure. Parking area is at rear of building.



Top: A typical kitchen showing work area and storage space. All appliances are provided.

Below: Another view of quadrangle showing setback from street and outside sitting area provided by second floor balcony.

North Country School

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you can abrade it, the mark hardly shows because it is wood all the way through, and the tops can be sanded down and re-oiled with very little trouble after a few years of rugged physics experiments. The biology laboratory, less subject to violent wear and tear but more to spilled liquids, has the same birch tops with a chemical resistant finish, while tops in the chemistry laboratory are soapstone to withstand more severe chemical attack. All sinks are of a special chemical resistant stainless steel, since here especially, both the architect and the school board wished to provide an installation that would last a lifetime, with little maintenance. Furnishings in the preparation rooms are also custom made for each space using the same materials.

The lecture theater, library, and main toilet facilities are located on the entrance level so that the public may use them on occasion. Heating and ventilating units for the library are suspended in the high ceilinged service spaces across the hall to eliminate machine noise in the library.

Superintendent David Appleton wanted the library to be "the most beautiful room in the school." The architects share his belief that a love of reading is basic to learning and that a student should be both respectful toward and comfortable with books. Low ceilinged entry and service areas open out into a reading room with the dignity and grace of a two story space, permitted by careful study of the changing levels. A simply detailed bay window the length of the room looks through the arms of a venerable elm tree to the mountains. The mezzanine over the workrooms and entry is lined with books and will be furnished with study carrels to allow individuals to carry out research projects uninterrupted. The library is carpeted for quiet, ease of care, and above all, for comfort. Chair scraping noises almost disappear. The student can sit on the floor with a magazine or relax on the windowseat which has radiation behind it (to keep the glass from feeling cold on his neck).

Kennett's office designed much of the library furniture. Table tops are the same oiled edge grain birch used in the physics laboratory. This informal workshop-like texture does not seem incongruous, having at once a solid Yankee practicality and an inviting warm richness of color and

pattern. Some of the Titus Construction Company's best work can be seen in the care used installing and finishing book shelves made to order by John F. Chick and Son, a local firm.

Library lighting was chosen after the architects made a study model and tried a number of different fixture shapes and lighting patterns. The luminaire selected is a linear, predominantly indirect light source, suspended from ceiling pans so that the shadow of the fixture falls exactly at the corner of the rib. Normally finished in satin aluminum, they were painted matte white especially for the job, and at last report the manufacturers were so pleased with their appearance that they have decided to make matte white the standard finish.

The lecture theater opens to the entrance lobby at the rear, and to a lower level at the stage. The hall is designed for the eventual use of riser-mounted tablet arm chairs which will seat one hundred twenty-six persons. The stepped floor allows each person a clear view of a speaker, science demonstration, or screen. Sound is directed

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by hung plaster panels at the ceiling and by angled brick walls, and is absorbed by the carpeted floor and dark painted Tectum panels at the rear of the hall. This treatment is so successful that speech at ordinary conversational level can be heard by everyone whether it is a lecture from the stage or a question from the floor. Slide and movie projectors will be mounted in a console at the rear, together with tape decks, turntable, and light controls. All of these can be controlled from both front and rear of the room. A preparation room off the stage has access to the dumbwaiter from the science floor so that a laboratory cart can be wheeled in for a demonstration.

This room is already being used for lectures, team teaching of mathematics, classes requiring visual aids, testing, chorus and band rehearsals, and the omnipresent meetings. New possibilities for use of the space continue to arise.

William L. Thoen, of LeMessurier Associates, worked closely with the architects from the very beginning. A reinforced concrete structural system was developed which would allow for the future flexibility which both client and architect felt so important. Essentially a cast-in-place concrete rib floor system, all vertical loads are carried by the columns, so that partitions can be taken down or put up as the need arises. To simplify formwork and detailing, columns and floor systems were designed to keep the same dimensions throughout the building and only the reinforcing steel was varied to meet different load condi-

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Cooperative School Effort

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A significant part of this approach to total curriculum requirements may be found in treatment of library facilities. Mr. Donald Summer of the office of Irving Hersey points out that it was only four years ago that libraries were listed as a requirement by the State Board of Education, but that they are now, under the stress of the current drive for education, becoming important as "research centers." In this role, they demand a central position in the building, accessible to all students. Mr. Summer says, "Libraries used to be a place where the librarian guarded the books. Now they are resource centers, where individual study habits can be encouraged. What better place to study than in a library?"

The library in the Oyster River High School is on the second floor of the classroom wing. Large and spacious, it provides glassed-in office space for the librarian, and many tables for students.

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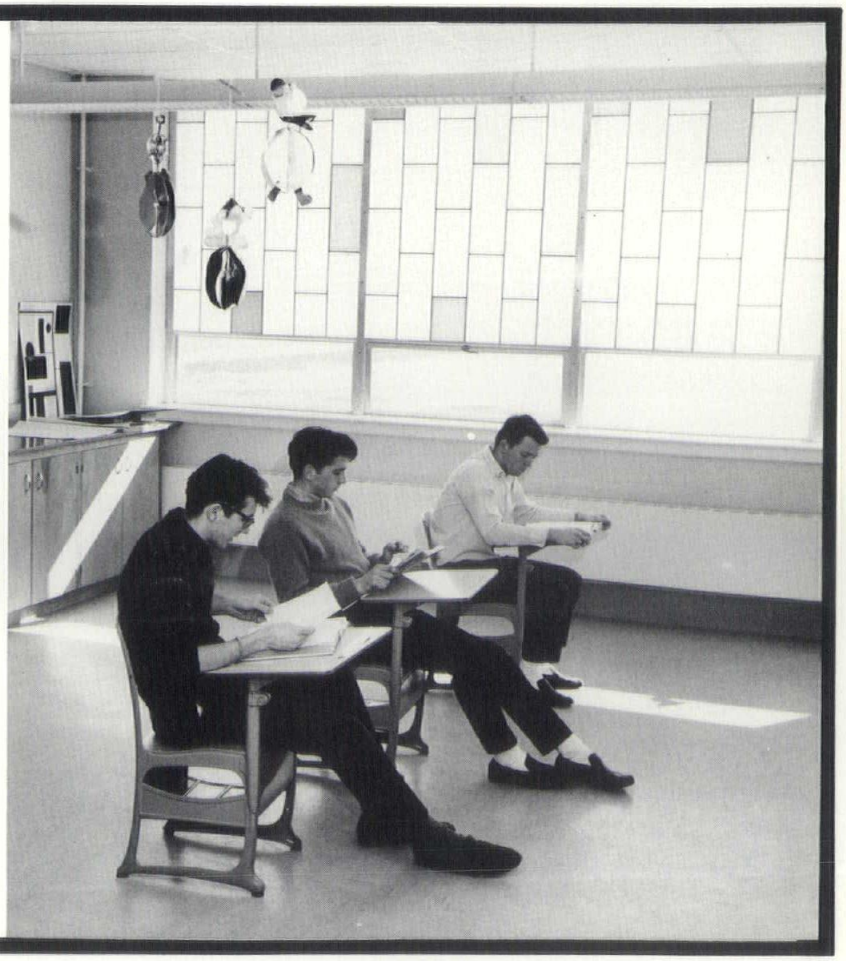

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Other facilities include completely equipped art rooms, typing rooms, a language laboratory, physics, biology and chemistry laboratories, a music room, and home economics facilities.

The various rooms are painted different colors to add visual interest as the students move from class to class. One wall of the cafetorium is entirely of shadow-block, adding an interesting effect to a long windowless wall surface.

The architect considers the structure of the building quite typical of multi-floored school construction. The foundation is reinforced concrete with floor slabs on grade. Framing is steel columns and beams. Walls are 4″ of face brick with 8″ of masonry block backing. Interior partitions are of masonry block. The second floor and roof are supported by bar joists, and the roof is precast concrete decking, covered with bonded tar and roofing.

Staff Addition

Jon Hardie of Lunenburg, Vermont has joined the staff of GRANITE STATE ARCHITECT as Associate Editor.

Mr. Hardie, a practising architectural photographer, has done graduate study in regional development and community planning. He brings to the magazine a sensitive photographic eye as well as an appreciation of contemporary architecture with first-hand experience in the problems of urban renewal.

By combining these interests and abilities, we hope to see growth in continuity and sensitivity in the future development of the GRANITE STATE ARCHITECT.

North Country School

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tions. The Titus Construction Company made all the forms except those for the foundation in their carpentry shop. They were solidly built of new plywood, sanded and lacquered between concrete pours, and can be used over and over again.

Distances between columns in each direction are multiples of eight inches so that walls are built between columns without cutting block. Floor levels are spaced apart by multiples of block height, and the typical floor system is sixteen inches deep, so that walls can be built to the ceiling or by the whole story. This was not as easy to work out as the architects at first hoped, since people must walk from level to level on stairs with a riser near seven inches. Concrete ribs or joists, each capable of carrying a masonry partition, are spaced five to a bay at 38.8 inches, which was economical structurally but brought interesting comments from the workmen. It is, however, a useful module for both present and future flexibility: walls spaced at three ribs form a comfortable office; walls at four ribs, as in the physics preparation room, an ample service space; at five, a seminar or conference room; at ten, a generous classroom. The music room is seven structural modules long; the laboratories are thirteen.

The concrete structure is nearly always exposed. Both ceilings and columns are left as natural concrete in the corridors and in the central court. In the classrooms ceilings are painted white and columns painted with the walls for greater light reflectance. With no hung ceilings, much of the piping was also exposed and had to be located carefully to be as inconspicuous as possible. Laboratory waste lines which show on the library ceiling were made of glass piping which has a thinner wall and neater joints than other corrosion resistant materials. Special pains were required in concrete finishing and painting. Mr. Kennett believes, however, that these disadvantages were far outweighed by the advantages of an exposed concrete structure. Sound is baffled some-

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what by the ribs themselves, and absorbed in non-combustible foamed glass tiles glued directly to the top of the pan. The ribs help shield the light source from the student's view. Where the concrete is left natural, no painting will ever be necessary. Because nothing will burn but the chairs and tables, the building qualifies for the lowest possible insurance rate and a recurring cost is thus cut to a minimum.

The building is heated by forced hot water, with north and south exposures zoned separately, using unit ventilators in all teaching spaces except the wood shop. Air intake grilles for these units were made to order in lengths that are multiples of the structural module. All units were prepared with drain pans, condensate piping was installed and all lines were insulated for future cooling. If, as seems probable, these facilities are used on a twelve month basis in the near future, no existing equipment or piping will have to be altered or replaced; only a chiller need be installed in the space reserved for it in the mechanical room. This system also required few ducts, a real advantage since mechanical services are not covered by hung ceilings.

Mr. Stock and the architects decided early to use the lighting to help define the different kinds of spaces. He recommended the use of a simple 2 lamp fluorescent fixture for classrooms and laboratories, where high intensities were required. Recessed incandescent downlights and wall washers in the lecture theater, where variable intensities were needed according to use; and surface downlights in corridors, where low intensities were desired for contrast. Fixtures were selected after search and trial. A full size mock-up of a ceiling section was built in the architect's office, large enough to permit installation of two luminaires, each in its own structural module. Over a period of several weeks, various fixtures were examined and observed, both for appearance and for low brightness, which Mr. Kennett considered especially important. The luminaire selected, and used throughout, is a simple, shallow, rectangular prism made by Smithcraft.

Married Students Apartments

Continued from Page 25

of the grade of the slope, it should be noted that up to eight feet of fill was required in the central court area.

The Married Students Apartment Building is functional and highly efficient, and has a reinforced concrete foundation with masonry bearing walls. The second-floor is bar-joist and the roof is formed of hollow-core, pre-stressed and precast slabs with built-up tar and gravel surface.

The three buildings were originally designed as separate units, but have been joined by semi-enclosed stairways providing direct access to the rear parking area. These glassed-in stairwells offer the only dramatic touch to the structure, which was conceived and constructed on a limited budget.

The U-shaped central court provides a play area for children clearly visible from all apartments, and important consideration where young families are concerned.

There is a total of 21,196 square feet of apartment space providing year 'round housing for married students who work in the Keene area during the summer months when school isn't in session.

Each of the apartments is a duplicate of its neighbor and each has bedrooms at the rear of the building with bathroom connecting the kitchen and dining-living area. Bathrooms are fully tiled and kitchens are L-shaped with all appliances provided. The dominant feature of the living area is a large picture window with side vents and all sash are aluminum for easy maintenance.

The larger apartments are located at the rear of the building, and since couples with children are more apt to have the double bedroom units, this means that these apartments are farther from the main road. To meet budget requirements, all units are duplicates and plumbing has been stacked with a corresponding savings in construction and installation costs.

Privacy on a Corner Lot

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The eastern inside corner with two 16″ portals resulted from a particular request of the owner who wanted an enclosed porch that would receive the full morning sun. This tends to limit the dining area and amplify a darkened corner and fireplace wall. The owner, a pianist, has placed a baby grand piano near the glass door-wall on the western exposure so that while all activity areas are clearly defined, access to all other areas is readily accomplished.

Important to the development of privacy are two built-up earth areas noted on the plot plan. Originally the house had a clear southern view and exposure, but a large housing project interfered and the two landscaped mounds screen the two terraces from the development. Wood screens and the earthen mounds eliminate the need for curtains, however, if the owner desires curtains, clerestory windows provide natural light.

I feel moved to comment that in spite of the designed aspects of privacy, the owner had elected to install heavy floor-to-ceiling drapes which limit and constrict the open court areas and adversely affect the spatial experience offered by the glass door-walls.

The ceiling roof is a unitized fibreglass bonded interior finish-insulation and exterior surface. It is supported by pairs of 3 x 12's spaced in individual units to provide semi-enclosed electrical wiring channels. The pairing of the rafters provides a stronger visual impact that would be provided by single units at closer intervals.

Heating is forced warm air with outlets, that pre-heat the floor slab, placed directly below the glass-door areas for more effective convection.

Lighting, which is important in this structure, is mainly of spot-flood type pointing out and defining specific features; and providing secondary dramatic effects at night. The south, south-east and south-west walls are of block faced internally with brick for texture and color and providing relief from Texture 1-11 surface in the service-sleeping wing.

Notes and Comments

Continued from Page 7

moment's economy instead of long-haul savings on maintenance. It is the architect's job to overcome all these, and build a school which reflects changes already in practice, as well as provides a fertile ground for developments in the years to come.

Dr. Englehardt said further, "We think there is an abstract value named beauty, that isn't a carpet or color, but is form, proportion, and scale, and that it is universal from the beginnings of Western civilization." The embodiment of that beauty in all construction, and certainly in school construction is also the architect's responsibility, one that often, perhaps always, require that he educate those with whom he is working.

But the result is worth every hour of struggle: a handsome school, durable, flexible, conducive to study. And every child who learns more easily, whose sensitivities are sharpened, whose aims are moved higher because he studies in a school conducive to his education . . . every child who laughs down the hallway is part of the architect's responsibility, and part of his satisfaction in a job well done.

King Nursery Building

Continued from Page 24

time, no flooring has been found which has a life span of more than five years.

The flooring in the King building is Torginol, a seamless poured flooring material with a textured appearance.

Its tough surface is thought to be impervious to acids, alkalis and solvents, while resistant to dirt and moisture.

The flooring is poured directly over the poured concrete slab which serves as the foundation for the building. Walls are concrete block.

Architect Isaak emphasizes that Superintendent Arthur E. Toll and Business Manager Ramsey Willett were well versed in the requirements of the youngsters to be housed in the King building and offered invaluable assistance. They, like Architect Isaak, consider that the surroundings in which a child lives may well serve as a stimulus to his rehabilitation.

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