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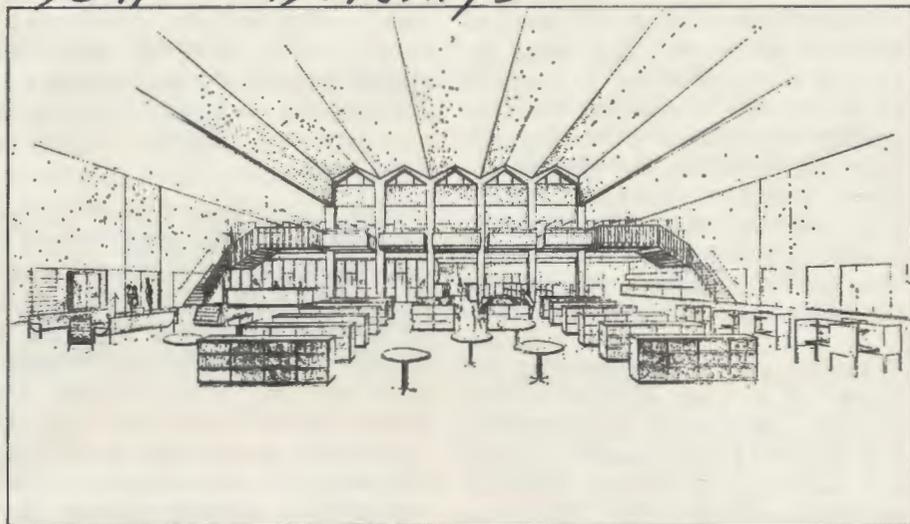
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# SCHOOL ARCHITECTURE

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*School Buildings*



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# SCHOOL ARCHITECTURE

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Ninety percent of my 30 years of architectural practice has been devoted to school planning. It has been an interesting, stimulating, and absorbing experience. Educators are constantly searching for ways to improve education. In part, this is prompted by the ever-increasing amount of knowledge which must be absorbed by the children in a decreasing time period.

Another reason for improving the process is a more efficient use of teachers — *particularly the specialists*. The supply of good teachers is limited; the supply of children shows no appreciable rate of decline. Therefore facilities and teaching methods must be reevaluated constantly in order to maintain an efficient educational enterprise which satisfies the needs and potential of all children and which satisfies the communities' educational aspirations.

This growth in new school planning and the reasons for it have prompted innovations in both planning and teaching. Whether architecture is responsible for innovative teaching or whether good teaching is responsible for innovative architecture is a never-ending debate. No doubt one inspires the other. Whether related to schools or other buildings, the practice of architecture is primarily oriented to-

ward solving problems. Architects try to plan buildings which satisfy the client's demands for the building, i. e., the function, and which provide atmosphere and character related to this function.

Good architecture of itself does not guarantee good teaching. While it may contribute to innovative ideas, the ideas must be an integral part of an existing program if they are to stimulate more sophisticated solutions in architecture. It is, therefore, important to understand each role, the contribution each makes to the total task, and the sequence of events which results in the ultimate solution. It is obvious from the preceding that successful planning demands a *team* approach.

## The Planning Team

The planning team concept can be an enriching and ennobling experience for all concerned when all members of the planning team understand and *remember* what their special contribution to the task is expected to be. In addition, they must remember to treat each other with respect and courtesy.

There are practical limits to the number of people or groups which may comprise an effective planning team. To guarantee full representa-

tion, the team can sometimes be constituted in a manner that will allow various individuals and groups to contribute *at different stages* in the development.

While the team planning concept can be applied to many kinds of problems, it is most often applied to schools and hospitals. Public involvement is directly related to public interest. Since we are dealing here with schools, let us examine the school planning team in greater detail.

### Education Planning

Good administration demands that specific ground rules be adopted when a team is organized. These rules should define the role of each participant and, as far as possible, establish a beginning and an end date for participation. Ultimately, the decisions must be made by the "decision makers" — those individuals who by election or appointment are charged with this responsibility. The collective name for this group is usually "The Board."

Let us assume that the board has initiated demographic studies and has developed population trends and projections, and that these data point to an emerging problem. If this is discovered 5 years in advance of the problem, and if solutions are sought and acted upon immediately, it can be assumed that new facilities will be ready to absorb the "crunch" when it occurs.

As soon as it recognizes a problem of this type, the board should select an architect, charge its administrators to organize a team, and set all wheels in motion to resolve a foreseeable difficulty.

The board should be the founder of the *Team*. As a policy-making group it may insert itself into any por-

tion of the team's work at any time. It should receive periodic reports from the team, and should ultimately act on the team's recommendations in any one of the following directions:

1. By rejecting the recommendations
2. By changing the direction or the magnitude of the team's original charge
3. By adopting the findings of the team and by seeing them through to completion in all of their stages.

### Team Members

It should be strongly emphasized from the outset that the architect is an important member of the team and should be a full-time participant from the team's inception. Other key members are the school administrators, facilities consultants, curricular consultants, and sometimes equipment consultants.

Other groups or individuals participate in the team to a greater or lesser degree, depending on particular circumstances. These people are:

1. Department heads
2. Faculty members
3. Citizen committees representing a cross section of the community
4. Students
5. Community officials

Each member of the planning team should be expected to contribute along the lines that are clearly defined but flexible enough to allow a total interrelationship within the team.

The school administrators and their consultants define the educational needs and aspirations of the community for the team in a compilation labeled "Educational Program Specifications" (EPS). The faculty assists the administration in developing the EPS by analyzing and defining the

tools and environment required for their specific discipline. The faculty should be encouraged to evaluate the *total* program. It is a human characteristic to overemphasize that which interests us most.

Students are asked to react to the proposed educational program and to participate in planning sessions with the staff. Some of the finest suggestions have come from students. Sometimes they can cut right to the heart of the matter and offer solutions which are stunning in their simplicity and suitability. Student and faculty participation eases the strain of moving from old to new, and should result in long-term benefits as facility is tested against program.

A participating lay advisory committee will allow the community to become involved in the development of the EPS. Since the school serves the total community, reflects its commitment to education, and is dependent upon it for support, it follows that community involvement in planning is essential.

### **The Architect's Role**

The architect's task, in simple terms, is to design a building which:

1. Satisfies the educational program
  2. Relates to the special demands of the site, and
  3. Is budgeted according to the community's financial resources.
- (It is possible that budgetary limitations may enforce compromise on educational aspirations.)

The architect is essentially a problem solver. The team identifies the problem, the architect devises alternative schematic methods as solutions to the problems. At first the schematics are broad brush strokes, which use diagrams to group related building functions to one another and to

the site. The various schemes are evaluated until a satisfactory relationship is formed which satisfies all aspects of the program. Solving the functional aspects of a building can be done in varying degrees of competency by many people — nonarchitects included. The architect's special training, experience, and talent qualify him to incorporate an additional ingredient — aesthetics — which I describe as a happy mixture of "firmness, commodity, and delight" fixed in complete balance. To some it means "soul" in a building. It is the fitness of things, all merging so that the physical environment does not intrude upon the function, but is in harmony with it. It is humane in its awareness of human scale for both child and adult. In its proper location, it provides serenity and surprise.

Ultimately, the architect must coordinate the efforts of many technicians so that all of the myriad components go together in an orderly, useful fashion.

### **Role of the Program**

The heart of the facility to be designed is the philosophy of the developed EPS. Some facilities which are frequently found in today's educational specifications (and which demonstrate the new philosophical approach) follow:

1. Spaces for independent study, which can be interspersed throughout the building and/or in a central library resource area. The whole concept of independent study involves the student's access to all the instructional resources of the facility.
2. Dialog areas, where a student may communicate in one-to-one situations with his teacher or with another student. The theory

that students learn more from each other than from their teachers, is thus given its chance to work.

3. Seminar room, where small groups of 6–12 students may participate in discussion of a subject with a teacher.
4. The traditional classroom seating about 25 students. (This facility is used less and less today. Some educators feel it should comprise as little as 25 percent of the total plant.)
5. Large group assemblies, where 75 to several hundred students may assemble to hear a lecture by an excellent teacher.
6. Areas specifically designed to develop minority group relationships with the total student body. (These may be inside or outside the school.)
7. Opportunities for work-experience so that the student can put his knowledge to a test.
8. Homogeneous groupings – to allow all students to relate to one another as they will in later life.
9. A flexibility of design – to allow for much space that can be adapted readily from small room to seminar room to classroom and even to large grouping. It should allow readaptation to future programs without costly alterations.
10. An expansion of the concept of educational facilities so that the student will consider these facilities to be his entire community – and will use this community for his learning experiences. Broader educational concepts must be formulated before any

conclusion of a more specific nature, as outlined above, can be resolved.

### Community Involvement

The community might be so constituted that the continuation of the neighborhood school concept will come under sharp criticism because of its tendency to perpetuate polarity. Although polarity implies involvement, it is a *unified*, directed involvement that leads to productive education.

Most school districts are beginning to see that they are responsible for a greater commitment to community involvement. Each community must use ingenuity to tailor its educational model so that it will serve the varying learning styles of all the students. Thus the school, open day and night, becomes the center of community life. In this concept special care must be taken to humanize or personalize individual facilities within the school so that young and old are attracted to the school and can find opportunities to get to know each other.

As was mentioned previously, communities can exercise great imagination in establishing their educational models. Some recognizable models are:

1. The scattered-site plan or campus plan, with centrally located core facilities.
2. The parkway concept. This is being tried with some success and interest in Philadelphia and Chicago. Students literally use all the facilities, banks, stores, office buildings, churches, and museums as their school – moving freely from place to place as the lesson plan demands.

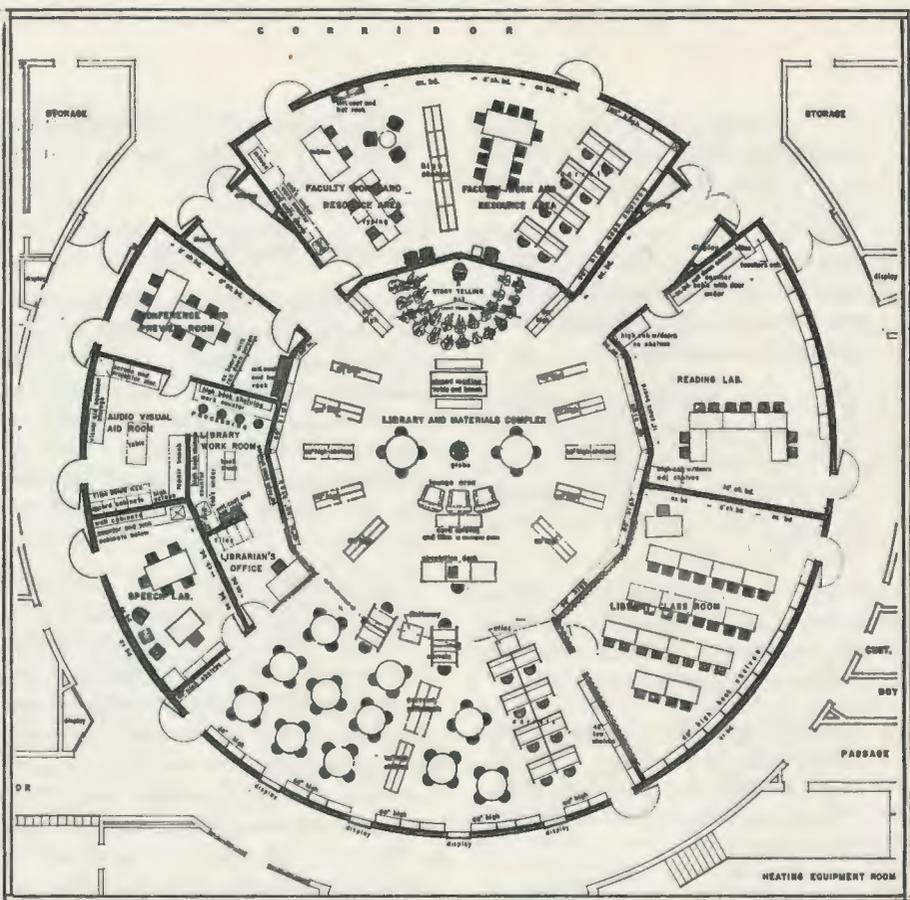


Figure 1

3. Magnet school concept. A school where special emphasis is placed on one discipline and others are slanted heavily to serve that discipline. (Ex.: commercial science, performing arts, languages.) These would draw students from many schools in the district for specialized instruction.

4. Mall concept. A school modeled largely on the concept of a multiple shopping mall under one roof. The "mall" in the school is used for circulation, common lecture theaters, service areas, instructional media centers, etc.

No doubt there are other educational models, and all who are interested in education must continue to

search and explore. No one can afford to consider our present knowledge as being the terminus. More knowledge, new discoveries, lie ahead.

### Personalized Schools

As more specific concepts and goals are developed, all of the team members need to remember that children need the feeling and experience of success, that school should be a center for personal adjustment with facilities for special guidance available to all. In some cases, good arguments could be advanced for multicertification of teachers in order to keep teacher and student together for longer periods of time.

Both the broad and the specific concepts have been a great challenge to the school architects to provide facil-



ities which will enhance rather than hinder educational programs. Dramatic changes in school design and construction have been brought about by the following:

1. *The Learning Resource Center.*

This area encompasses all of the facilities known to the school library of yesteryear. In addition, it expands the program greatly and, in fact, includes a massive core of the media necessary to the independent study program. A typical elementary school library would now include a fully carpeted reading area, a tiered storytelling corner, book stacks, electrified and nonelectrified carrels, librarian's office and work room, audiovisual storage and preparation area, several conference rooms, a speech laboratory, professional library and work rooms, seminar rooms, a remedial reading classroom, and a library instruction room.

One example of the elementary learning resource center was recently completed at the Melvin H. Kreps Elementary School in the East Windsor-Hightstown Regional School District in New Jersey (Figure 1). This comprises an area of over 3,000 square feet.

A feature of this library is the storytelling pit at one end of the main reading area. This comfortable, carpeted area has found great favor with the students.

An even greater sophistication of the learning resource center is found at the secondary level. Besides the aforementioned carpeted reading areas, carrels, stack area, and librarian's office and work room, you will also find a dial access system and, for each discipline, a specific independent study area, a teacher's learning center

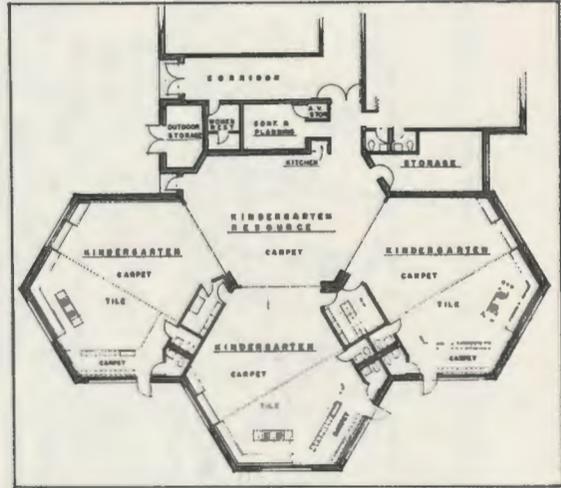


Figure 3

(or department office), a materials preparations room, a seminar room, and a periodicals storage space.

The resource center in the expanded facilities of the Columbia High School of the South Orange-Maplewood, N. J., School District is an example of this sophistication. (Figures 2a and 2b)

2. *Open Space.* This relatively new concept of loft space leaves behind the confined restrictions of the four-walled classroom, the so-called self-contained unit that serves 25 to 30 pupils with one teacher.

Partition walls are coming down. Allotments of truly open spaces which are capable of assembling a large number of students (600 or more) in a variety of groupings are now being

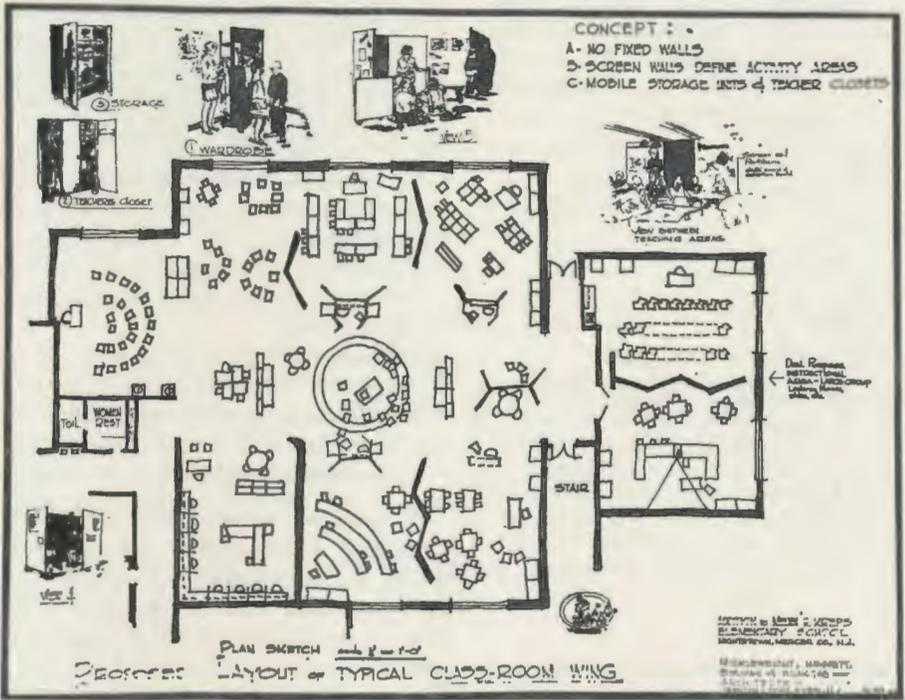


Figure 4

created. They have the following characteristics:

- a. No fixed partitions. These are replaced by movable walls (more expensive) or vision screens on wheels comprised of chalkboards, tack boards, or cabinets.
- b. Acoustical treatment of the space to reduce noise to the level of tolerance
- c. Carpeted floors
- d. A year-round ventilation system

On the elementary level the Kreps School offers an ideal kindergarten solution of three hexagonal pods, all uniting in a general commons area (Figure 3). Here the pupils meet and associate with 74 of their fellow classmates, instead of the 24 in their immediate grouping. They also have an advantage of relating to one of three

teachers rather than to just one. The commons area is used jointly for a variety of purposes. Here team teaching has an opportunity to begin functioning at the lowest formal level of instruction.

Educators have observed that the open-space concept in the elementary grades aids discipline and provides the child with a greater awareness of his attitudinal relationship towards his classmates.

At the Middle School level an even greater area of open space is devoted to a larger number of grades, permitting a vertical or horizontal structure of 8 groups over a span of 3 grades. Figure 4 suggests a variety of groupings for independent study, seminar, traditional class structure, and large-group instruction. These groupings may be altered at any time of the day. Pupils or teachers may easily

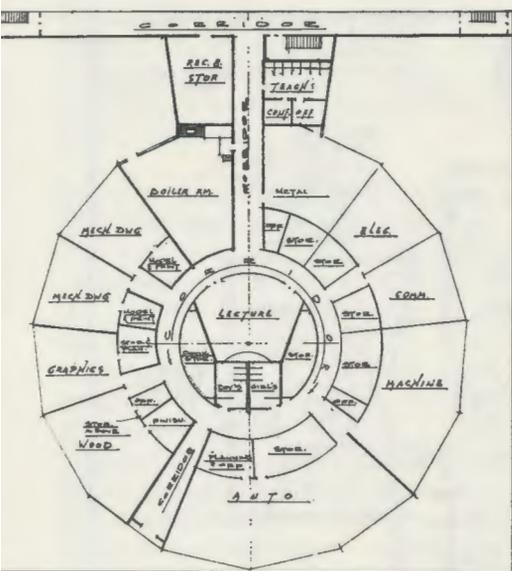


Figure 5

wheel the partitions into the next pattern of arrangements.

**3. Vocational Instruction Areas.** In recent years much attention has been focused on the prevalent theory that a college education should be the goal of every high school student. This theory has been advanced on two grounds: (a) a guarantee of material success and (b) the insurance of a more elevated social status. That this theory was based on a false premise and that it fostered a disruptive elitism in the secondary schools can be seen by the change in guidance policies which is reversing this trend. Vocational training is being held in the same esteem as professional training. In some schools vocational facilities are given prestige locations in an effort to erase the stigma attached to a non-college-oriented curriculum; thus many secondary schools are recognizing that a great number of high school students need a terminal program which trains them in areas other than the college preparatory subjects.

Much larger spaces are now being devoted to this type of training through the creation of well-equipped laboratories for use in studying the following and many others (Figure 5):

- Computer — Data Processing
- Business Machines
- Graphic Arts
- Construction Trades
- Nursing
- Electronics
- Automotives
- Communications
- Architectural and Engineering
- Drawing
- Vocation Example

**4. Relating to the Site and Surrounding Community.** In an era which is characterized by a great concern for man and his environment, it is interesting to note that there is a parallel concern for larger school sites. This emphasis on more outdoor space is the result of several factors, among which are these:

- (a) Need for more outdoor space to fulfill state demands for physical education.
- (b) Need for more parking spaces for faculty and community.
- (c) Reaping the rewards (or miseries) of past mistakes of acquiring too little land when it was available only to find it is unattainable when needed.
- (d) Finally, there is a growing body of thought which advocates that students at all levels should have a class-oriented exposure to nature. Students should become more familiar with plant identification, erosion problems, stream pollution, and other problems of ecology with which they will have to cope in later years.

Thus the architect is called upon to assist in the site selection and to

develop the full school site as an educational experience and to relate this total educational facility to the surrounding community, realizing fully that the student's education will expand from the confinement of the structured walls to include the practicality of work experience in American society. This concept has become prevalent in our programmed educational goals of today.

As educational concepts have come to place more and more emphasis on individualized approaches to education, architectural changes have taken place to accommodate them and to enhance their possibilities for success.

The human spirit is flexible and

more versatile than we imagine. It can overcome and survive poor teaching and bad architecture. This is not a justifiable excuse for either. Community, administrator, teacher, parent, and architect have a responsibility to themselves and to future generations to avoid the perpetuation of mediocrity.

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