

Flexibility in K-12 Schools: Change Is Here to Stay

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SCHOOL ARCHITECTS have come to recognize that the only certainty in K-12 education is change.

Six years ago C. Herbert Paseur, writing about "Flexibility in School Plant Design" (SPS BT 1-38) allowed as how the term meant three things: expansibility for exterior changes; versatility for multifunction; convertibility for interior changes.

In those days, educators were not demanding "instant convertibility," believing its disadvantages outweighed the advantages. Paseur did, however, predict that this balance could easily be reversed, and how right he was.

So often educators tell us: "Next year we have planned an educational program that requires these kinds of spaces, but we're not sure of the program's success, so give us flexibility if our experiment bombs."

Or they might say: "Give us flexibility in spaces, both large and small, because we aren't certain that our staff will successfully adapt to team teaching and/or large-group instruction, and we may revert to the traditional self-contained classroom."

The educators demand flexibility without really knowing what it is. "Give me flexibility and I don't have to make up my mind."

The exciting departure from the traditional double-loaded and rigid cell block of rectangular classrooms constitutes an unprecedented challenge to the school architect, who must meet the demand for large unobstructed areas which are readily divisible into smaller spaces and/or, vice versa, which remain well heated, ventilated and lit—and be created at no increase in construction cost.

Architects and their engineers over the years have learned to know, love and depend upon fixed columns and interior walls, having found them most convenient for such mundane purposes as 1) supporting the building's roof, 2) space for water supply, vents, heating and ventilating ductwork, electrical conduit, convenience outlets, light switches, clocks, 3) space for chalk and pinning board, casework and 4) elements that effectively, if rigidly, visually and acoustically separate one space from another.

Notwithstanding the minor problem created by our educator friends' recent demands, all of us have enthusiastically tackled the challenge. Some have met it in a manner that

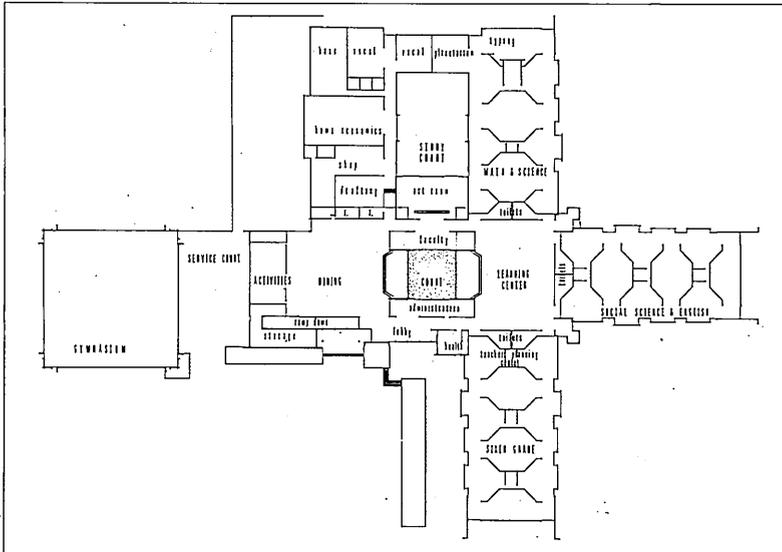
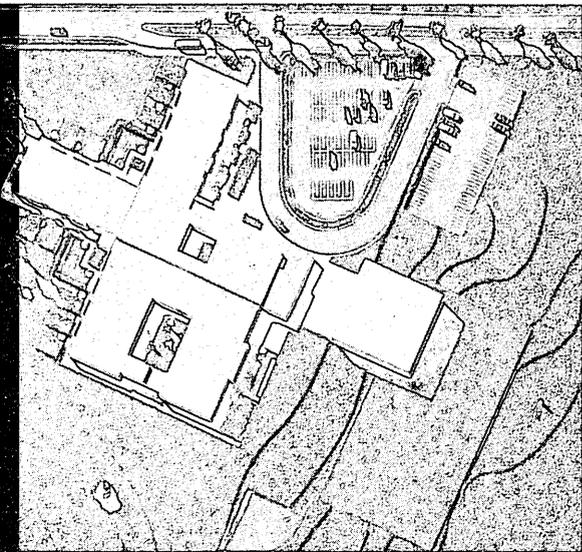
has not only created a new and better teaching and learning environment but, in the process, has produced some distinguished architecture.

Our teammates in the construction industry—the manufacturers—have, through the architects, received the educators' message none too soon and have been most cooperative in developing new and superior products and systems that broaden the architects' palette at this time of revolution in school plant needs.

Much incentive to our nation's manufacturers has been stimulated by the School Construction Systems Development program (SPS BT 1-57), under the sponsorship of the Educational Facilities Laboratory, which has called upon industry to develop structural, integrated lighting-heating and airconditioning, and movable and relocatable wall components as tools for the architect.

Acoustical problems created by the demand for spaces in which several activities can be carried on simultaneously are being resolved rapidly by the successful development of appropriately rugged carpeting that, before long, need not be surreptitiously termed "acoustical flooring." Carpeting in schools is fast losing its "luxury" connotation

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Barrington Middle School utilizes demountable partitions which permit 12 typical double-loaded corridor classrooms, or rooms of any size, shape or arrangement to be established after the overall area is completely finished.

as experience has proven that its initial cost is more than offset by reduced maintenance of the floor surface itself, falling furniture and falling students and teachers. Experience has strongly indicated that student behavior in carpeted spaces is favorably affected.

Response to the demand for segmented movable walls that can be readily moved by a slightly built teacher, and whose construction and closure design creates sound separation equal to or better than the average fixed partition, has been heartening in that architects are besieged by manufacturers whose movable walls have a higher decibel rating, operate more readily and cost less than their competitors' products.

It is incumbent on the architect, however, to recognize that a movable or demountable wall is only as effective, acoustically, as the construction around it, as sound travels efficiently through heating and lighting plenums above hung ceilings, in and out of adjacent windows and through poorly insulated floors.

School design has survived the dictum of not so long ago that nat-

ural north light was good, bilateral natural lighting was even better and trilateral natural lighting involving skylights was the ultimate.

Windowless or virtually windowless learning spaces abound in many of our new schools notwithstanding the protests of those who see nothing sacrilegious in a pleasant view or an occasional weather report, provided direct sunlight is screened out and room darkening can be readily achieved.

Chicago architect Spencer B. Cone AIA has the following to say about flexibility in K-12 schools:

"There is probably more usable flexibility for most administrators in having as much total space as their dollar will buy rather than in trying to expand small areas by the use of movable walls, etc. When budgets are tight, I am an advocate of trading high-cost finish and gadgetry for as much space as I can obtain. I often hear or read that students and teachers take special pride in fine, expensive buildings. I can rationalize without difficulty, however, that the teaching-learning process does not deteriorate in a workshop atmosphere, provided criteria for adequate lighting, ventilating and acoustical requirements are met, and it does not follow that there will be a loss of pride in the school.

"I find that most administrators and architects do not have a specific program or specification for flexibility. They are only aware that they might be caught with their pants down if they can't claim to have it in their new buildings. I am sure that many have not adequately an-

alyzed the cost of measures they took to obtain flexibility.

"I also have found that teachers, like most people, tend to avoid manual labor and, either through dislike or laziness, will not make proper use of built-in flexibility if it requires extra effort or time on their part—unless, of course, they are compelled to do so. Consequently, many ideas that look good on paper may go begging in actual practice and are probably a waste of construction dollars."

Cone & Dornbusch's Barrington (Ill.) Middle School, which utilizes SCSD's components, aptly practices what the architect preaches in that maximum open areas are provided, thus facilitating many configurations of interior spaces utilizing demountable partitions. Twelve typical double-loaded corridor classrooms or rooms of any shape, size and arrangement may be set up *after* the large (11,000 sq. ft.) area is completely finished, including carpet or other finish floor covering.

Flexibility was the prime motivation in the creation of Troy High School in Fullerton, California, as designed by William E. Blurock & Associates. Troy's Principal Webster D. Wilson, after living in the school for two years, has the following to say:

"The demountable partition is the best way to provide the potential for flexibility in an education program. It avoids the permanency of solid walls; it avoids the permanency of 'movable' walls. The latter will open or close but are fixed at one point and thus are inflexible.

"Ideally, a school building should

be outwardly esthetically pleasing, but inside it should be devoid of all permanent partitions. Thus, the community, parents, staff and students can be proud of its appearance, and at the same time the educational program can be developed unhampered by the restrictions of room sizes and locations.

"At Troy High School we have more flexibility in our buildings than we have used so far. In our first year of operation, we have left out some partitions, installed some half partitions and made some minor modifications to satisfy our educational program.

"In the 1965-66 year, our present buildings are overcrowded with the addition of 500 new students; therefore, we are moving partitions to create smaller areas for smaller groups and larger areas for larger groups. Next year we will change partitions again to provide improved educational experiences.

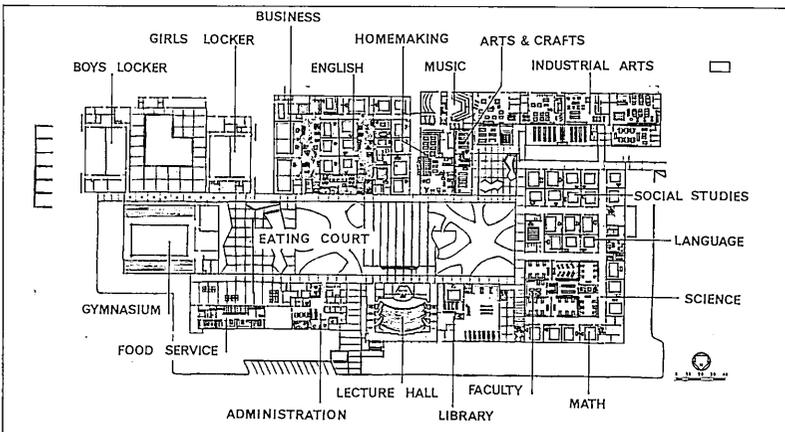
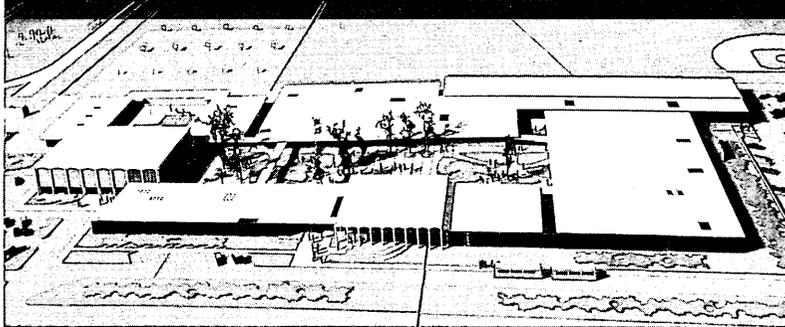
"We estimate that it costs about \$100 to move a full-size partition, which indicates that we can make all of the necessary changes this year for about \$2000.

"All of these building modifications for next year have been a result of careful study on the part of departments and administrators and the educational programs they have developed. We do not have to say, "We'd like to try this, but we can't because of fixed walls.

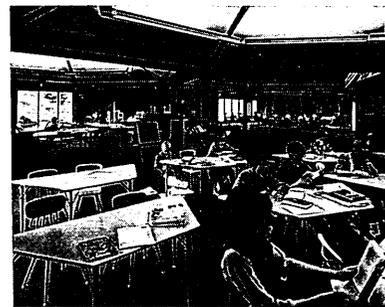
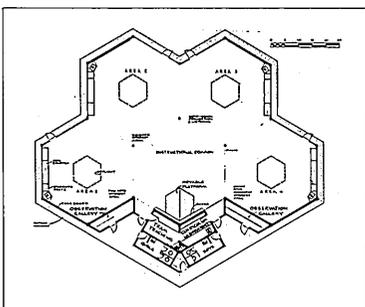
"In an educational world where there is constant improvement in materials, methods and techniques, it is essential that building flexibility be provided. As our educational program improves, we will be able to provide the building facilities for that program. At Troy we're ready for whatever improvement the future suggests in education."

An example of the demand for change and flexibility at elementary school level recently emerged from the Reed Union School District's Granada School in Marin County, California, where the administrators summarily tossed out conventional classroom construction to fulfill their "basic and crucial commitment" to promote better teaching. To accomplish their objective they set out to organize instruction on an individualized basis, stressing three important aspects:

- *Nongrading* of the child's placement, advancement pattern and curriculum.
- *Multiaged grouping* of children in instructional families of 100-120 learners.
- Deployment of adults on the basis



Troy High School, which finds it has more flexibility than it has used thus far, continues to move partitions to accommodate an increasing enrollment.



Granada School employs the cluster plan, but movable walls between the learning areas as originally designed were omitted for budgetary factors.

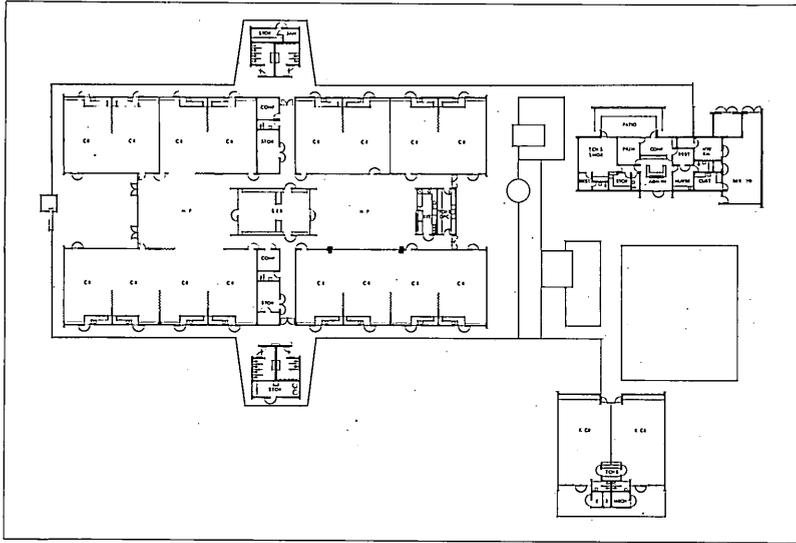
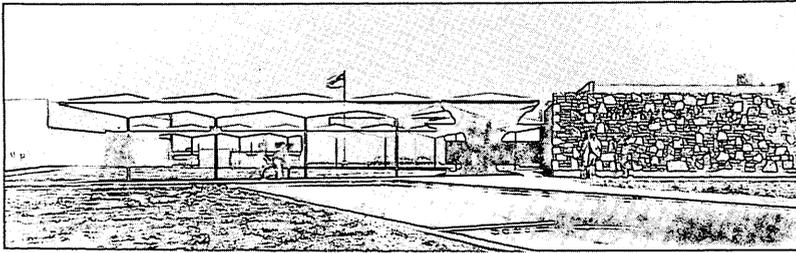
of teacher teams with shared responsibilities for the strategies used in each instructional family.

Architects Callister & Rosse developed the cluster plan consisting of four learning areas, a common instruction area, team planning center, curriculum laboratory and observation rooms, all to house a "family of 100-120 students." Movable walls between the learning areas were the victim of a budget limitation and were deleted in favor of carpeting throughout, a successful alternative.

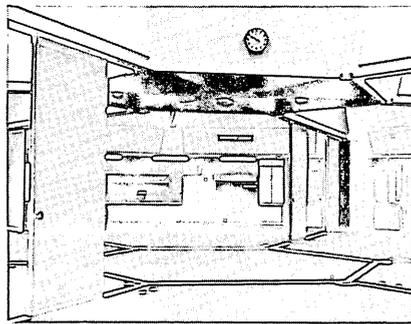
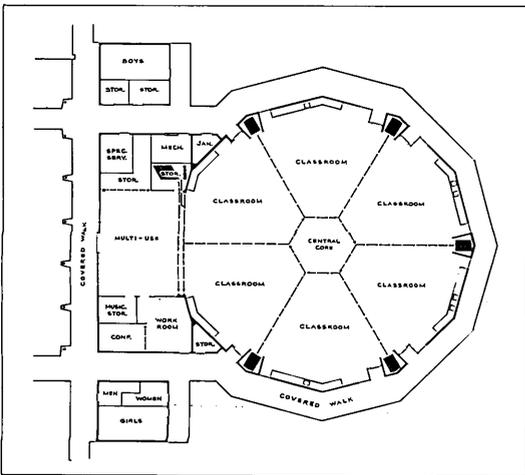
Architect Lee B. Kline's Kil-

lian School in La Puente, California, complies with a program in which flexibility of space is basic.

For Grades 1, 2, and 3, the classrooms are arranged in series of twos, so that two teachers at a grade level may work together as the educational program emerges for the children in these rooms. In the upper grades—4, 5 and 6—a greater participation of teachers is visualized. The classrooms have been designed for four teachers to work together or for individual self-contained classrooms, as the occasion demands. Teachers have been



Killian School teams up flexible programming with movable partitions between classrooms themselves, and demountable walls between classrooms and multipurpose areas. The building is windowless except for the patio wall.



Wolfe Grade School is a clear-span building which can boast that all its interior walls are movable and "disappearable," providing six self-contained classrooms or any combination the program requires.

encouraged to expand their instruction area, particularly at the upper grade level, through the proximity of the multipurpose area to their basic classroom space. The library has been located so that it is accessible from either multipurpose area and has two walls of glass.

Movable partitions, both of heavy construction and of light wood folding panels, have been employed. All other partitions between classrooms and the multipurpose areas have been constructed of demountable wall. The building has the potential of being adaptable to any changes that the education program might dictate.

The structure also contains a teachers' workroom, a food-service center, counseling rooms, storage rooms, a dining area, an instructional multipurpose area and a patio to provide an outdoor classroom. The building is completely airconditioned. All classroom areas, as well as the multipurpose area, are carpeted. The building is windowless, except for the wall adjacent to the patio, which is glare-reducing glass. With the use of movable walls and interior glass, a spacious view is provided anywhere from the interior of the building. Flexible programming has proven mandatory and goes hand in hand with any so-called "flexible" school.

Typical of an elementary district which builds in small increments is the Kentfield District's Wolfe Grade School, also in California, which departed from its master plan to construct, in lieu of a conventional multiuse building, a structure which completely fulfills the demand for the self-contained classroom and *total* "instant flexibility."

Architects Corlett & Spackman have designed a circular clear-span building that truly runs the gamut that all interior walls are movable and "disappearable," thus providing 1) "instant flexibility," 2) six self-contained classrooms, 3) any combination of classrooms and 4) view of a speaker from any point in the instructional space.

So long as the educational process undergoes change, flexibility of interior space will be essential to a school that functions properly. Certainly the inevitability of a facility becoming outmoded is substantially reduced by the advent of flexibility.

This, then, is an interim report (as is any study that deals with housing for education), and we are derelict if we do not continue to seek better ways of meeting the ever-changing needs of education. ■