

## GROWTH & CHANGE

### SUMMARY

The four schools we examined, though their designs span only a period of 10 years (1960-1970), are a remarkable reflection of changes in education during that period. This section of the 'Functional Factors' report documents changes in the design of these schools.

Accommodation and facilitation of change is the time dimension of function. Four major types of functional change should be anticipated in design:

- Increasing standards and criteria
- new philosophies and concepts
- changes in technology
- changes in legal opinion and legislation

The changes that are documented in this report should instill some respect for time in those responsible for designing and new facilities - both architects and their clients. Certain attributes of a building are especially critical in order to avoid functional and economic obsolescence.

- **GENEROSITY.** Optimally sizing a room, storage, and even services to exactly meet today's needs will hasten the onset of obsolescence in capacity and use.
- **FLEXIBILITY.** Allowing for the removal, alteration and relocation of walls and services
- **EXPANSION.** Accommodation for building additions with minimum disruption

- INTERCHANGEABILITY. Providing parts of the building which can be replaced with other components

Providing these attributes not only facilitates modification of a building's function but also responds to a change in function - for instance, if enrollment in a school declines, the building can be easily converted to another use, thus retaining economic value.

## CHANGES IN STANDARDS

### DISPLAY AND STORAGE

Display and storage needs increased greatly during the decade examined in this study (see p. A-6 and B-2). The growth in educational materials and equipment has been substantial and even the figure recommended for storage (p. B-3), adequate for today's needs, will be unsatisfactory in 5 years.

### LIGHTING

Standards for the quality and quantity of natural and artificial light have been changing and based on work now in progress, will continue to change during the coming decade.

Older school buildings depended on large expanses of window for lighting and ventilation. With the common use of mechanical ventilation for heating and cooling and high output artificial lighting in schools, windows are literally no longer required. Window configurations should now be based on other criteria.

The large windows at the Parkside and Smith schools cause more problems (p. A-3; C-2) than they provide amenity. At Richards however, the window is generally used to create a place in a corner of the classroom and at Mt. Healthy only 2 of 6 class areas in a 'cluster' have large amounts of glass.

The quantity of artificial illumination in each school is now adequate. Parkside did not meet accepted quantity standards and the addition of a row of lighting remedied this problem. Recent thinking, however, which has not yet evolved into practice, emphasizes the quality of lighting - especially the importance of contrast. If this concept were applied to Parkside's original

lighting configuration along two walls of the room - it could well be superior to the 'improvement' which was made.

CHANGES IN AREA

LIBRARY

The libraries in the schools studied are the best measure of change in areas for different activities.

The Parkside school design was based on the concept of the classroom library. As concepts in this area changed, a central activity area was easily converted into a well located, if small library (612 square feet).

SIZE OF LIBRARY

PARKSIDE	612 Sq. Ft.
RICHARDS	1050
SMITH	2000
MT. HEALTHY	1560

As shown in the accompanying figure the trend towards larger library areas is generally consistent. An elementary school in this district, completed in 1974, has a library substantially larger than any of the schools in this study.

## PHILOSOPHICAL AND CONCEPTUAL CHANGES

### TRADITIONAL & 'OPEN' SCHOOLS

The four schools clearly reflect the basic philosophical change from regimented to independent and 'open' education in elementary schools.

The Parkside school is in the tradition of the decades of earlier school buildings preceding it - typical 30 by 30 foot classrooms marching along corridors. This was the expected configuration at the time (1960) it was designed.

The Richards school reflects an abortive attempt to modify this concept and leans toward a 'team teaching' configuration. Originally, the two classrooms on the main corridor were to be combined into a double, team taught room, combined with the single 'outrigger' classroom to form a teaching cluster. While the concept was rejected, the original plan remains - with the double classroom sundered. Only the outdoor courtyard, which in fact is unused, is actually shared in plan. The wall separating the two classrooms is non-bearing and if the original concept was to be rejuvenated, this wall could be easily removed.

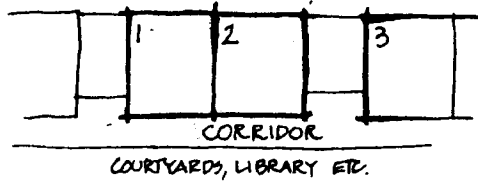
By 1969 the Smith school was able to incorporate the team teaching concept using the double and single classrooms originally proposed at Richards. The concept goes even further - 2 grades share a cluster which contains a pair of double and single classrooms.

The most recent school, Mt. Healthy, is entirely 'open'. Each cluster of 2 grades has 6 potential class areas only one of which is clearly separated. Unlike any of the previous schools all students in a cluster, or any smaller number, can be com-

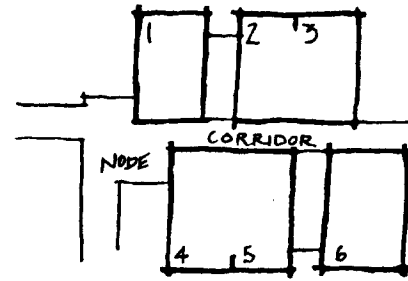
'BUILDINGS IN USE' STUDY

GROWTH AND CHANGE

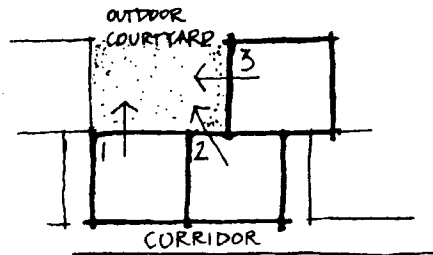
CHANGES IN EDUCATIONAL PHILOSOPHY REFLECTED IN BUILDING



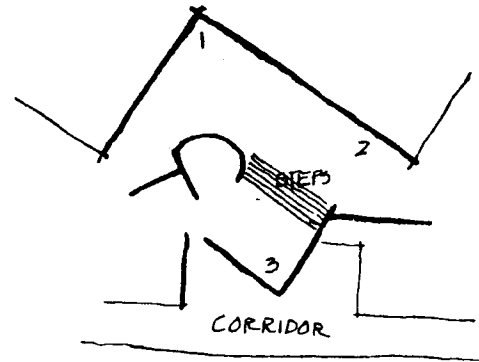
PARKSIDE SCHOOL 1962  
TRADITIONAL CLASSROOMS ALONG A  
CORRIDOR.



SMITH SCHOOL 1969  
ROOMS 2/3 & 4/5  
ARE DOUBLE CLASSROOMS. 6 CLASSES SHARE  
THIS 'CLUSTER'



RICHARDS SCHOOL 1966  
IN THE ORIGINAL  
CONCEPTION CLASSROOMS 1 & 2 WERE TO BE  
COMBINED TO MAKE A DOUBLE ROOM.



MT HEALTHY 1972  
AREAS 1, 2 & 3 ARE  
'OPEN' TO EACH OTHER  
THOUGH 3 IS A HALF LEVEL ABOVE. OTHER  
CLASS AREAS ARE ALSO OPEN TO EACH OTHER.

bined in one area. Without walls around class areas, easily moveable furnishings and no assigned desks, freedom for independent action is reinforced by the design.

#### LIBRARY

Not only is the area of the library (p. E-4 ) increased but its importance and location has also undergone conceptual rethinking.

In the earlier schools, with the exception of Parkside where the library was located in the only available area, the location of the library vis a vis the classrooms is not critical. Both Richards and Smith have their libraries as far from the central locus of the classrooms as is possible. At Mt. Healthy the opposite is true - the 'resource center' (library) is centralized. The main corridor 'spine' passes directly through it and provides a maximum of contact for students with this function. In a subsequent facility - the Fodrea Elementary School - the resource center becomes the central focus of the school and the classrooms surround it, almost subserviently.

#### MUSIC AND ART

The Parkside school, the earliest, did not include these functions in program or design - all subsequent schools have dedicated areas for them. Presently at Parkside ad hoc measures are used. Art activities take place in classrooms - the art teacher moving materials to each room. Music takes place on the stage of the multi-purpose room.

### GYM/CAFETERIA

The concept of a multipurpose room for eating, recreation, meetings, presentations and dramatics evolved into the more satisfactory, if more expensive, separate gym and cafeteria. The earlier schools, Parkside and Richards, have the multipurpose room; the more recent schools separate these functions. Presentations and meetings can occur in either gymnasium or cafeteria; Smith school uses the gym while Mt. Healthy uses the cafeteria.

## CHANGES IN TECHNOLOGY

### EQUIPMENT

The quantity of audio-visual equipment has greatly increased in elementary schools during the past decade. Supports for the use of such equipment in the older schools - room darkening capability, outlets and storage, are not present. The more recent schools do support the present equipment but future technology may make these schools obsolete also.

While augury is not part of this study, enough prototypes and installed systems of television, individualized teaching mechanics, and computer terminals already exist to assure one that at least some of this technology will be used in elementary education. A major consideration in accommodating this change is the capacity to provide these services to many parts of the teaching areas via cables. Only Mt. Healthy, with an accessible ceiling and a most compact plan, seems to respond to this possibility.



### LEGISLATIVE AND LEGAL CHANGES

This area is not a part of the 'Buildings in Use' examination per se, however, because it has become critical after many years of dormancy it is now an important consideration in growth and change and necessitates some commentary.

Three areas of legislation seem most relevant in terms of their ramifications on school facilities - provisions for access by the handicapped in public buildings; provisions for accommodating special education students in schools; and energy conservation provisions. We have not specifically examined the progress of this legislation in Indiana, however, very strong national trends in these areas are present and will soon be common. Often buildings must be retrofitted to include these changes.

### FINDINGS

Findings in the area of growth and change must be based on the relatively short experience with this phenomenon in the schools studied and with some prediction of how these facilities can respond to the changes over the next 20-40 years. The criteria used are those identified earlier - generosity, flexibility, expansion and interchangeability. None of the schools are literally planned for growth and change. Notwithstanding this, however, their characteristics can inhibit or facilitate their functioning over time.

PARKSIDE. Parkside's design was originally generous enough in area to accommodate the addition of a library, the commonly seen small groups in circulation areas and a variety of activities in the Forum. Its lack of bearing walls and other encumbrances

can in the future, easily allow very open education. Even the courtyards can be utilized in the future with some provision for enclosure. Expansion, if necessary, can be clearly accommodated by extending existing corridors and adding areas. Interchangeable components are at a minimum - as they are in all the schools. Introducing additional utilities, teaching machines for example, may be difficult.

RICHARDS. Richards is presently the most 'taut' school examined. It has the least area to accommodate growth. East-west bearing walls restrict change but north-south walls can be easily removed opening classrooms as originally conceived. The courtyards, heretofore unused, have potential for additional area if covered. Utilities and services could be distributed by using the space between the hung ceiling and the roof.

SMITH. The 'Nodes' and corridors at the Smith school have been used to supplement the existing teaching area. There is, however, no additional 'slack' area for future use and no easy way of providing this area at Smith. The existing columns can support additional floors, however the circulation to these floors - if the ramps continued upwards - would be cumbersome and not at all proximate to the classrooms. In terms of flexibility, some openness is provided by the double classroom but additional open areas are difficult to develop - the bathrooms divide the classrooms in one direction and solid concrete bearing walls in the other. The aesthetic of exposed pipes and utilities in this school makes the addition of services most easy.

MT. HEALTHY. This school is the most open and is the most responsive to change. Mobile bookshelves and storage units are already used frequently to respond to the differing area needs. Expansion can clearly be accomplished by extending the 'spine' if another cluster were appropriate. Like Smith the exposed utilities facilitates additional services or the relocation of existing ones.