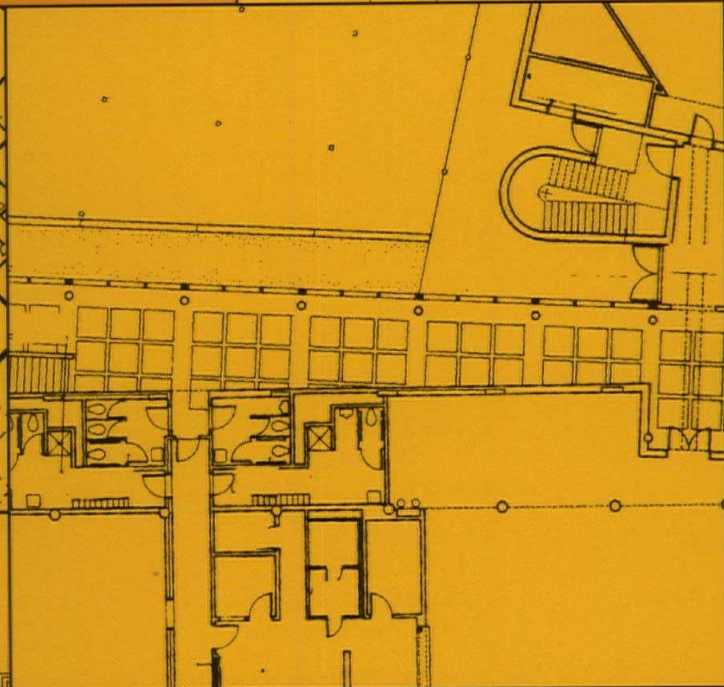
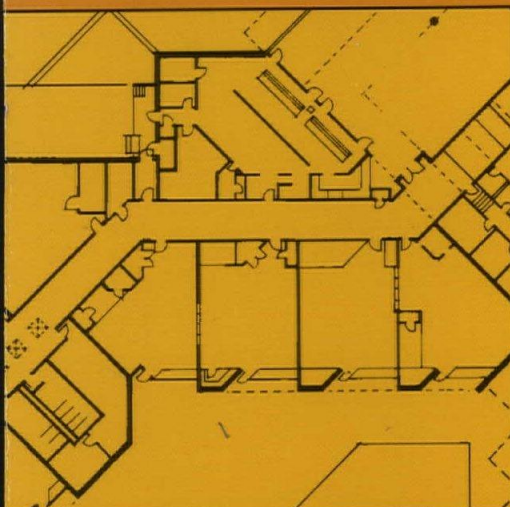
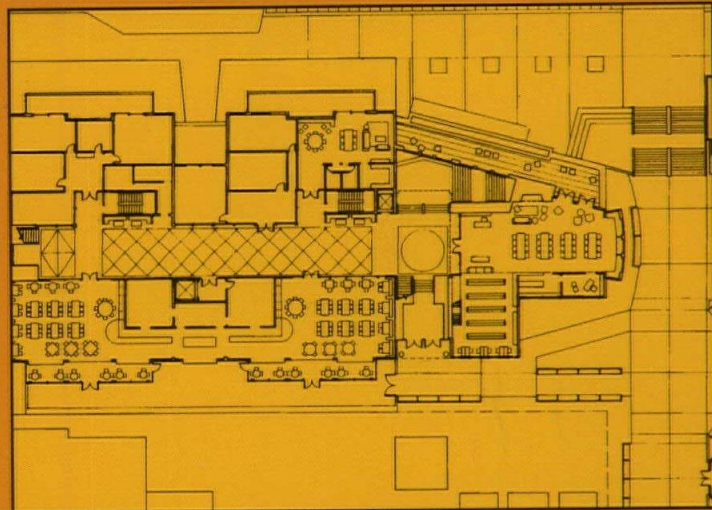
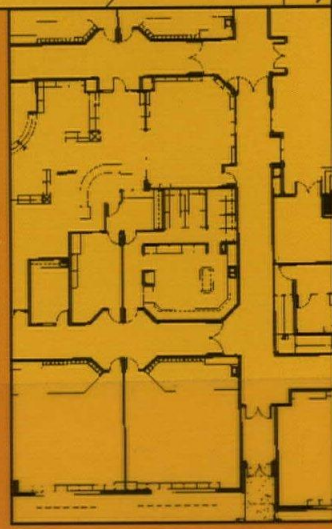
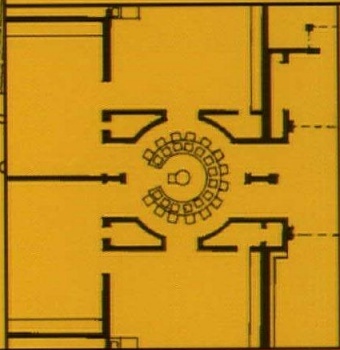


# P A

PROGRESSIVE  
ARCHITECTURE



Schools



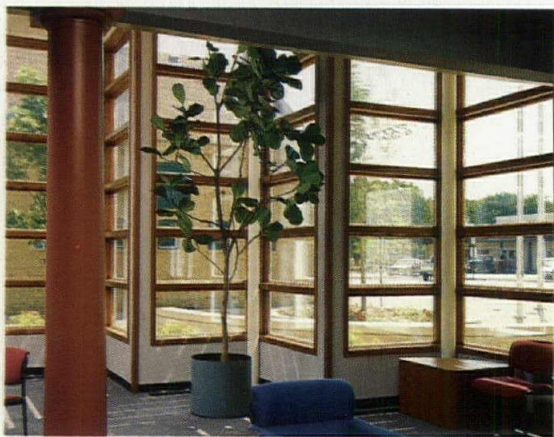
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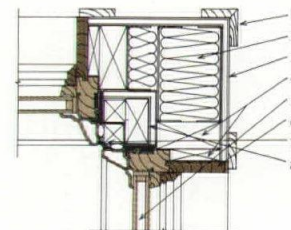


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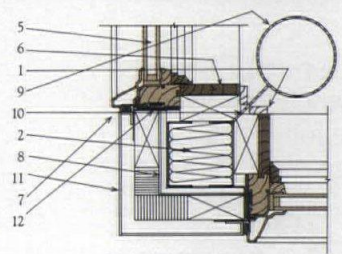


INSIDE CORNER DETAIL

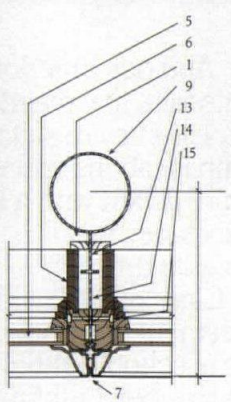
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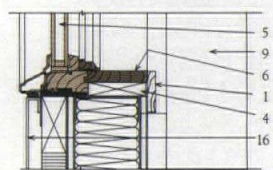
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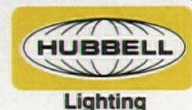
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Just what is *Plans*? This is the first issue of what will be biannual supplements to P/A's regular issues, examining specific plan types of buildings for which there is a demand in the professional marketplace. A primary goal of *Plans* is to be a useful information source in this restricted economic climate. It is intended as a generator of ideas among various client groups – for example, public policy-makers, managing boards, and administrators – to stimulate their imagination, opening the way for a constructive dialogue with architects.

*Plans* is obviously also directed to our regular audience, the architectural professional. Here are some current idea and direction opportunities from which designers may wish to draw cues; examples shown are neither all-encompassing nor solutions that can be applied by rote for any given program or client.

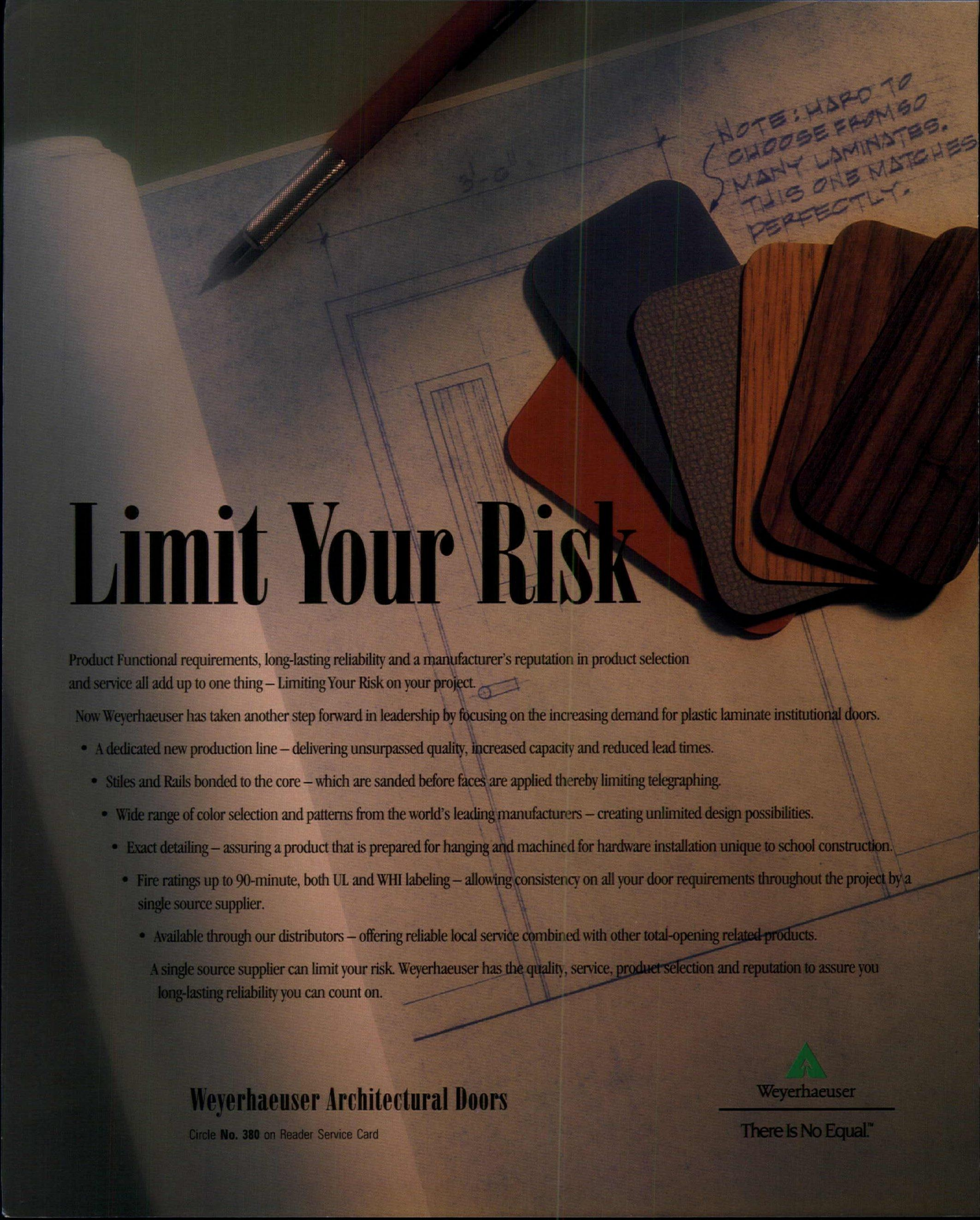
The initial issue is dedicated to the subject of schools; it is limited to those serving grades kindergarten through twelve, a scope that is manageable in a single issue. All architects for whom schools have been a valued source of work saw in the late 1970s and the 1980s an unprecedented drop in the demand for educational facilities. But demographics and educational philosophies have a way of changing everything. The number of school projects under way is on the rise once more, so schools are again a viable building type for architects.

As is obvious from some of the comments accompanying this issue, school planning is far from a static or formulaic process. Manifestations of increasing computer usage in education, new program enrichments, ecological considerations, and the extended use of physical plants have just begun to appear in some of the schools in this issue. As these factors have increasing influence on school facilities planning – and they will – school designs will continue to evolve.

We sincerely thank everyone who submitted work to us for consideration, and we regret that the necessary selection process and available space leaves us unable to use some very fine material. As a means of making certain cogent comparisons, *Plans* editor Clay Miller has grouped the plans by type, according to circulation patterns and disposition of elements.

Our next *Plans* investigation will take up the subject of small-scale medical facilities, and we will welcome submissions from our audience. Material should be sent to P/A *Plans*, P.O. Box 1361, Stamford, CT 06904. We trust that you, the reader, will find significant value in these supplemental editions. Your comments, and submissions, are welcome at P/A.

**James A. Murphy, FAIA** Editorial Director, P/A *Plans*

An architectural drawing of a door is shown with a pen resting on it. Several samples of plastic laminate in various colors and patterns (wood grain, solid colors) are placed over the drawing. A handwritten note in the upper right corner reads: "NOTE: HARD TO CHOOSE FROM SO MANY LAMINATES. THIS ONE MATCHES PERFECTLY." The drawing includes technical lines and a small detail of a hinge.

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## CLUSTER

## DOUBLE CORRIDOR

## COURTYARD

## URBAN BLOCK

## CAMPUS

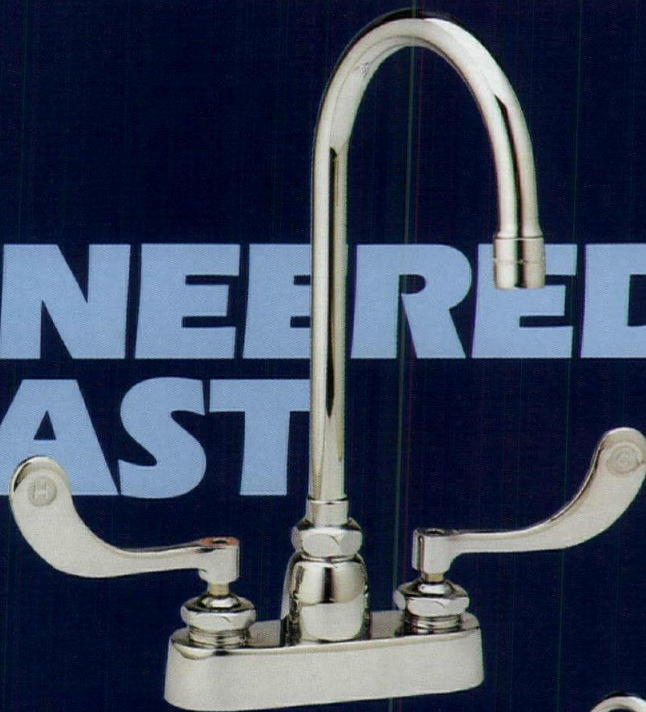
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# ENGINEERED TO LAST

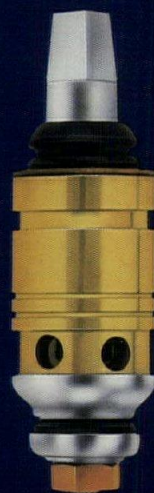


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In spite of rapid developments in electronic media, the need for greater energy efficiency, and changes in school use (daycare, community-sharing), the design of schools in recent years has been marked by a conservative retrenchment. Unusual forms have been discarded for conventional classroom buildings in an effort to return to fundamentals, as largely defined against the schools of the 1960s and 1970s – now considered by many administrators and architects to be the time when school building went awry. Although contemporary schools are often designed in opposition to the earlier projects, the experiments of that period – new classrooms, teaching methods, curricula, and building technologies – continue to have an impact on current school design. The tension between the risks of innovation (embodied in the shortcomings of 1960s schools) and the constraints of traditional planning provides an illuminating critical framework for new school design.

School buildings in the 1960s and early 1970s not only proliferated, because of the tremendous demand, but were also of a high standard. Resources provided by groups like the Educational Facilities Laboratory (EFL) – a national research fund sponsored by the Ford Foundation – focused critical attention on school design. As a result, new organizational methods found their spatial and technological counterparts, producing unprecedented teaching environments. However, teaching and design ambitions were not always rewarded with success.

Popular architectural history has it that designs of the 1960s were as naive as the “failed” student movements of the same period. Developed about the concept of “team teaching,” the open classroom offered space to be divided and subdivided as need demanded. In an article on schools entitled “Reality Killed Design,” in the *New York Times* of August, 1991, the author maintains the “open classroom sounded like a good idea, [but] faced with the realities of maintaining classroom discipline and reducing distractions. . . the open classrooms failed, [and] officials of the Board of Education returned to traditional classroom design.” Crucial to this criticism is the conclusion: traditional classrooms will resurrect design from its prideful death.

The question is whether, after having known the open classroom, we can return to the traditional classroom. What has been hailed as a return to traditional strategies in school design often reveals just plain caution. As evident as the fabled traditional classroom in recent school building designs is the (often disguised) impact of open planning. The open classroom not only survives in various forms (especially in the cluster plan type, p. 33), but many designs experiment with flexibility in other parts of the school, such as the areas between classrooms, for teaching and playing. Wary of the mistakes of the recent past, contemporary designers attempt to reconcile the security of traditional designs with the challenge to provide for change, and to inspire. In these designs, experiments of the past persist. **Clay Miller**

*The author is a graduate of Duke University and Yale University, School of Architecture, and editor of Perspecta 29, The Yale Architecture Journal.*

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# WHITHER THE LITTLE RED SCHOOLHOUSE?

Certain school plans have imprinted themselves upon our collective memory, and these archetypes form the raw material for communities, educators, and architects planning schools today. The first schoolhouses generally shared a common, although haphazard plan type: a single rectangular room, with windows and a door along three sides of the building, and benches, chairs, and desks hugging the periphery. The teacher's desk sat on a small platform either at the center of the room or along the fourth wall, upon which hung a blackboard. The wood-burning stove took the alternate position to that of the teacher.

In the mid-19th Century, reformers such as Henry Barnard and Horace Mann rallied for more hygienic and efficient standardized plans: individual desks, arranged in rows two feet apart, now filled the room, with separate entrances for boys and girls at the rear. Windows also occupied the upper two-thirds of one wall, directing shadowless light over the left shoulder of the pupils and onto their schoolwork (1).

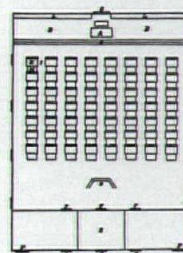
Urban grade schools multiplied and combined this plan. Each classroom operated as if an isolated school. Little attention was paid to administrative or collective functions beyond the provision of a basement playroom. In high schools, laboratories stood side-by-side with classrooms. While their regularly spaced windows suggested repetitive cellular units inside, the complex functions of 19th-Century urban schools distorted the logic of the plan (2).

By the turn of the 20th Century, the schoolhouse had grown so disorganized that reformers renewed their calls for improvement. Accepting the classroom layout as a given, architects tried to create a coherent architectural whole, with bilateral symmetry and over-scaled entrances, and with common facilities providing monumental volumes to anchor the building (3). This plan type lasted through the 1930s and the many schools funded by the PWA, whose exteriors were often cloaked in historically symbolic styles: Colonial Revival, Mission Revival, Classical Revival.

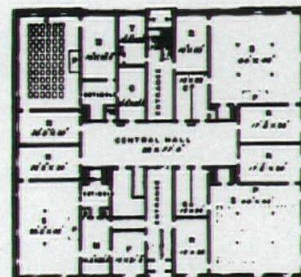
A group of architects in the 1930s, however, protested this attention to image over plan. In January 1935, Richard Neutra called for the redesign of "the basic unit of education – the individual classroom." In a Neutra school, the classroom became an "activity room," expanding to accommodate simultaneous projects. Student desks were detached from the floor, allowing flexible seating arrangements, and the teacher's desk came down from its platform. Windows reached the floor, and single-story rooms opened to exterior classroom spaces. The most acclaimed school of this progressive mode is the 1940 Crow Island School, by Eliel and Eero Saarinen, J. Robert F. Swanson, and Perkins, Wheeler & Will (4). With its series of single rooms, each with open floor space and direct access to the outside, Crow Island returned to the little red schoolhouse of America's collective memory.

**Amy Weisser**

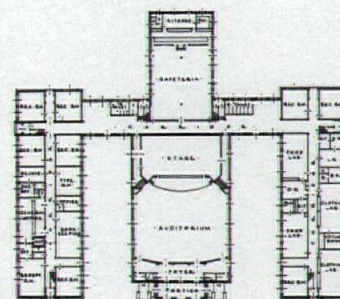
*The author is a Ph.D. candidate in Art History at Yale University.*



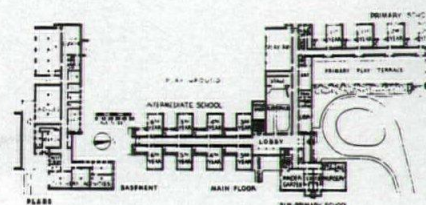
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## CORRIDOR

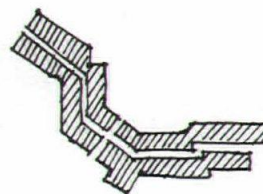
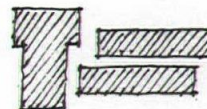
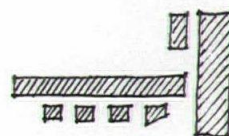
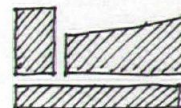
The corridor type remains one of the most straightforward arrangements of the classroom building. This type – fundamentally the linear assembly of traditional classrooms along a hallway – has several advantages: clarity of organization, ease of natural lighting for the classrooms, and control of access to facilities. The simplicity of the corridor organization makes the school easily legible and controllable. The challenges presented by the type have to do with differentiating program elements, providing for a variety of spatial experiences, and accommodating change over the life of the building.

Among the projects presented here, the corridor is used in many different ways to organize the program. In some, the corridor draws distinctions among activity zones within the building. For instance, in City View Elementary, the corridor separates academic from non-academic functions. In the Wareham High School, one side of the corridor serves more permeable elements, while the other side houses service functions. More often, the corridor, lined with classrooms, is used as an element in itself: connecting larger program elements or, as with the Pleasant Lake Elementary, fanning out from the building's hub. The gymnasium/assembly hall, grouped with the other non-regular spaces, commonly secures one end of the linear corridor scheme, such as in the Whiteley and College Park schools. In contrast, Sunderland and Cresthill elementaries anchor both ends of the school with public spaces, ensuring full and active use of the corridor's length.

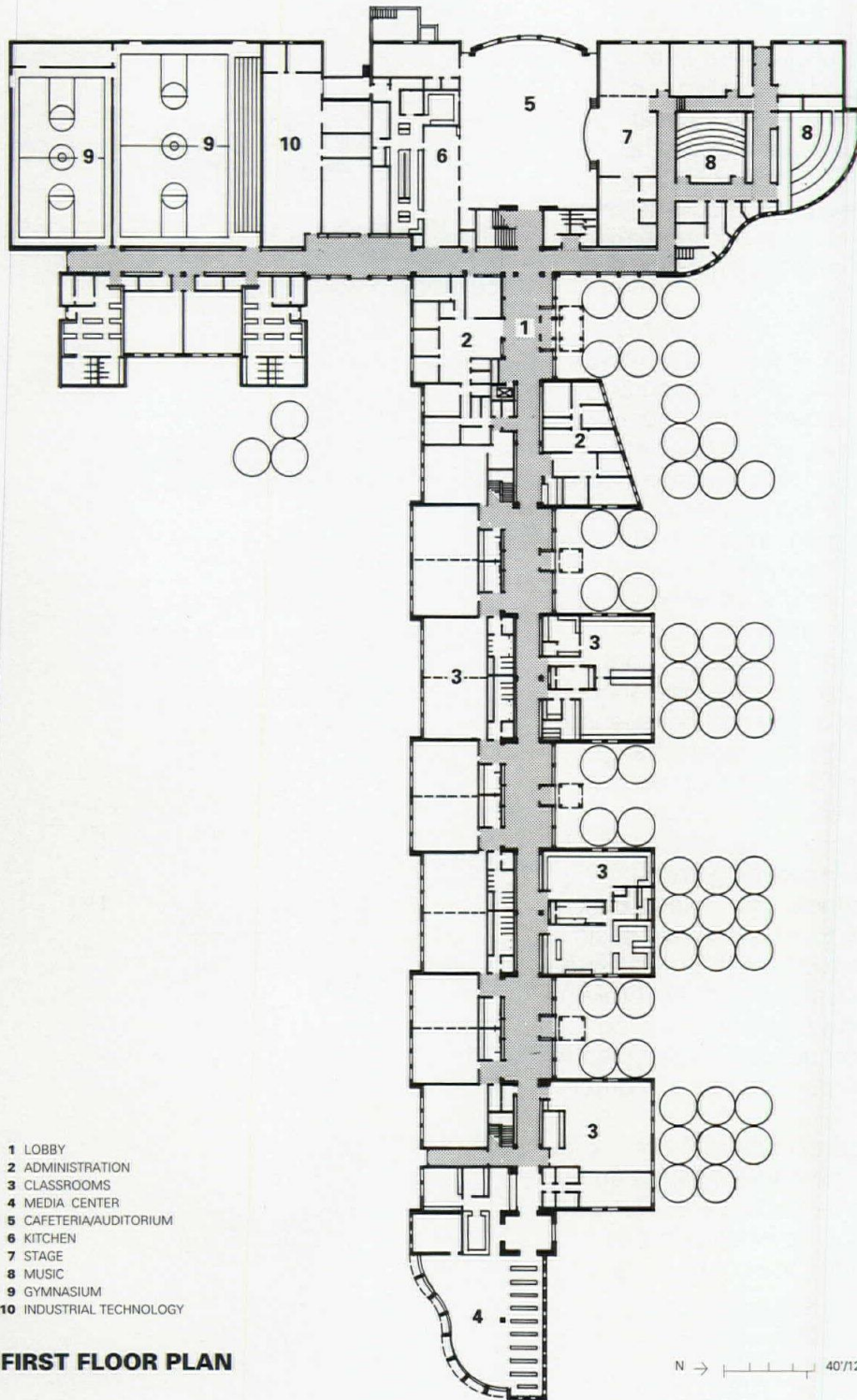
Variations on the simple corridor are many; the passages change over their lengths to combat relentlessness. In Cresthill Elementary, the corridor contracts and expands, corresponding with outdoor courtyards and signaling classroom entries. Similarly, the animated Rochester Elementary corridor broadens to form teaching areas. Staggered to signal services and secondary entries, the College Park corridor combines with skylights to add variety to an otherwise basic diagram. Triangular commons punctuate the corridor of the Clara Byrd-Baker School, and in the Wareham High School, the corridor is broken to create an ample entry lobby between building masses. (Marking moments in the program by modulating the corridor is not restricted to the corridor type. Many of these strategies will surface again in other school types shown later.)

Often double-loaded corridors curve or bend to construct figures in plan. In the Oakridge and Forestdale Schools, the corridor forms an L about the entry. Classrooms of the Stow-Munroe School are arranged along its curved spine, and the Blue Haze School uses two double-loaded volumes, connected by a bending corridor, to construct its careful symmetry.

- 12 **Cresthill Middle School**, Highlands Ranch, CO
- 13 **Frank C. Whiteley School**, Hoffman Estates, IL
- 14 **Winchester-Thurston School**, Hampton, PA
- 16 **College Park Elementary**, Indianapolis, IN
- 17 **Wareham High School**, Wareham, MA
- 18 **City View Elementary**, Worcester, MA
- 20 **Rochester Elementary No. 8**, Rochester, NY
- 21 **Sunderland Elementary**, Sunderland, MA
- 22 **Meriwether Lewis Elementary**, Albemarle County, VA
- 23 **Oakridge and Forestdale Schools**, Sandwich, MA
- 24 **Stow-Munroe Falls High School**, Stow, OH
- 25 **Clara Byrd-Baker Elementary**, Williamsburg, VA
- 26 **Pleasant Lake Elementary**, Walled Lake, MI
- 27 **Blue Haze Elementary**, White Settlement, TX
- 28 **Trinity School**, Atlanta, GA



# CRESTHILL MIDDLE SCHOOL



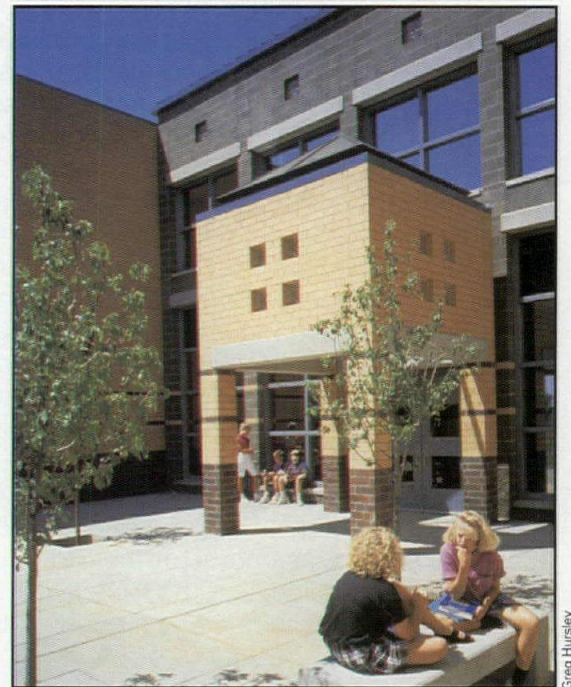
- 1 LOBBY
- 2 ADMINISTRATION
- 3 CLASSROOMS
- 4 MEDIA CENTER
- 5 CAFETERIA/AUDITORIUM
- 6 KITCHEN
- 7 STAGE
- 8 MUSIC
- 9 GYMNASIUM
- 10 INDUSTRIAL TECHNOLOGY

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**Area:** 124,800 square feet  
**Cost/Square Foot:** \$75  
**Completion:** August 1991  
**Client:** Douglas County School District, Re.1

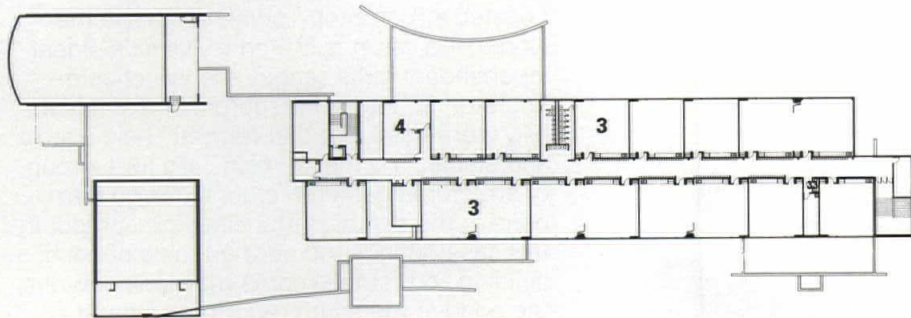
The Cresthill Middle School in Highlands Ranch, Colorado, consists of two perpendicular corridors. The east/west corridor connects the performance arts rooms, cafeteria/auditorium, and gymnasium. The longer, north/south corridor serves two stories of classrooms, running from the cafeteria/auditorium on one end, to the media center/library on the other. One enters facing the administrative offices, next to the trapezoidal counseling offices, where the corridors meet in a double-height entry hall. Varied educational areas are located along the major corridor between primary program elements, ensuring full use of the corridor's length. A continuous band of core classrooms, which one reaches through a zone of services and vertical circulation undulates to the west; intermittent "exploratory classrooms" attach to the east. The resulting "entry houses" along the project's eastern length provide a wealth of natural light as well as a physical and visual connection between indoor circulation and the courtyards outside.



ENTRANCE

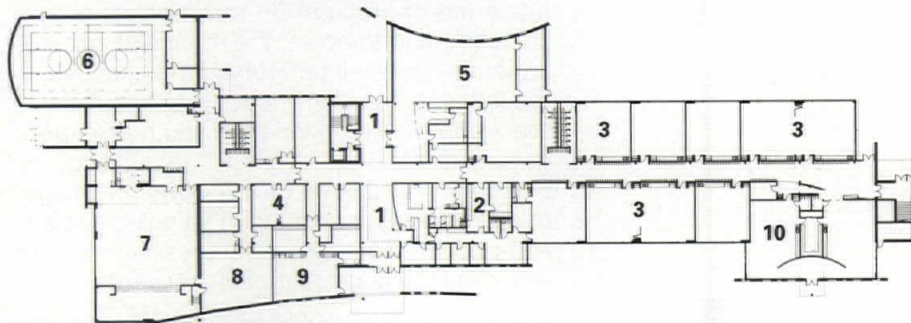
# FRANK C. WHITELEY SCHOOL

**Architect:** O'Donnel Wicklund Pigozzi and Peterson Architects, Deerfield, IL.  
**Design Team:** John Hammond, *Project Architect*.  
**Capacity:** 700 students, Kindergarten through grade 6  
**Size:** 70,300 square feet  
**Cost/Square Foot:** \$79  
**Completion:** September 1989  
**Client:** Community Consolidated School District #15



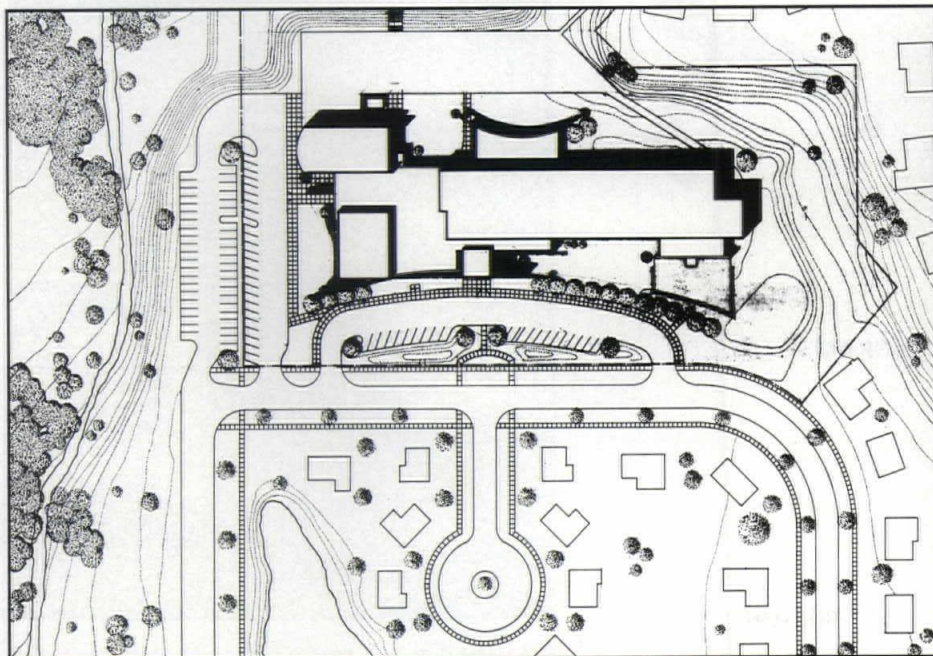
**SECOND FLOOR PLAN**

- |                     |                 |
|---------------------|-----------------|
| 1 LOBBY             | 6 GYMNASIUM     |
| 2 ADMINISTRATION    | 7 MULTIPURPOSE  |
| 3 CLASSROOM         | 8 MUSIC         |
| 4 SPECIAL EDUCATION | 9 ART           |
| 5 RESOURCE CENTER   | 10 KINDERGARTEN |



**FIRST FLOOR PLAN**

N ← 40'/12m



**SITE PLAN**

N ← 100'/30m

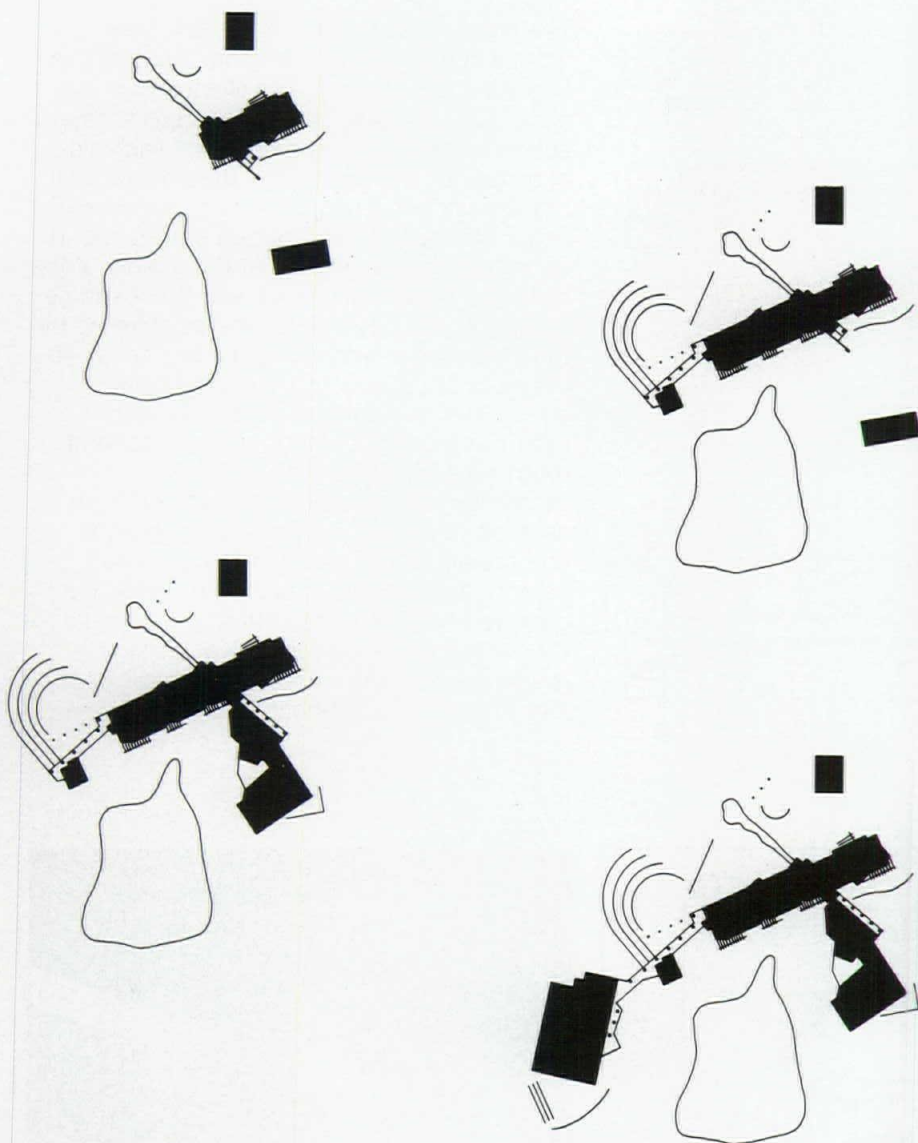
The planning strategies of the Whiteley School in many ways resemble those of the City View Elementary, also illustrated in this issue. Conventional classrooms, each measuring some 900 square feet, line each side of a corridor and establish a datum which is modified or broken in order to accommodate larger portions of the program or to respond to certain site conditions. At the middle of the building, the administration and the resource center project beyond the line established by the classrooms, announcing the entrance. At the front of the building, a curved brick screen wall truncates the art and music rooms and cuts a corner out of the assembly room's stage. While the City View Elementary's curved wall shapes the main assembly space and serves as an integral component of the plan, here, the curved screen wall abruptly cuts the floor plan in a gesture toward a larger urban planning idea; the arc follows an access drive which is roughly concentric with the cul-de-sac opposite the school's entrance.



**ENTRANCE**

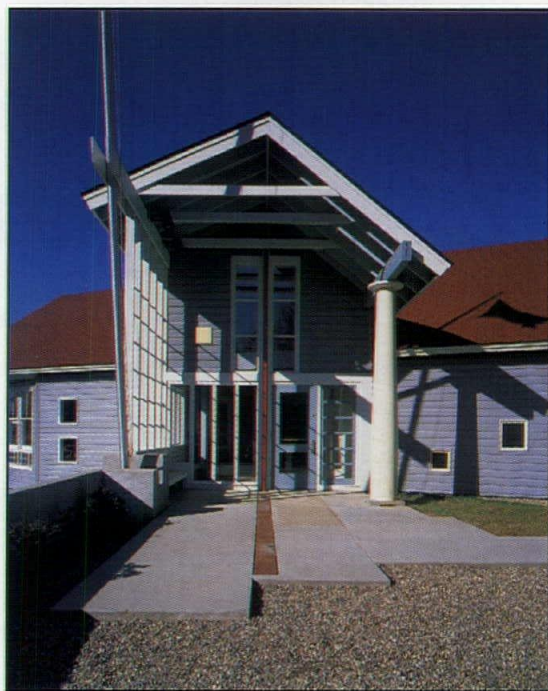
# WINCHESTER - THURSTON SCHOOL

**Architect:** Bohlin Cywinski Jackson, Philadelphia, PA.  
**Design Team:** Peter Q. Bohlin, FAIA, Jon C. Jackson, AIA, *Principals in Charge*; C. Roxanne Sherbeck, AIA, *Project Manager*;  
Karl A. Backus, AIA, Lisa M. Hayes, RA, Rebecca L. Boles, RA.  
**Capacity:** 120 students, kindergarten through grade 5  
**Area:** 8570 square feet  
**Cost/Square Foot:** \$105  
**Completion:** October 1990  
**Client:** The Winchester Thurston School.



**SITE DIAGRAMS**

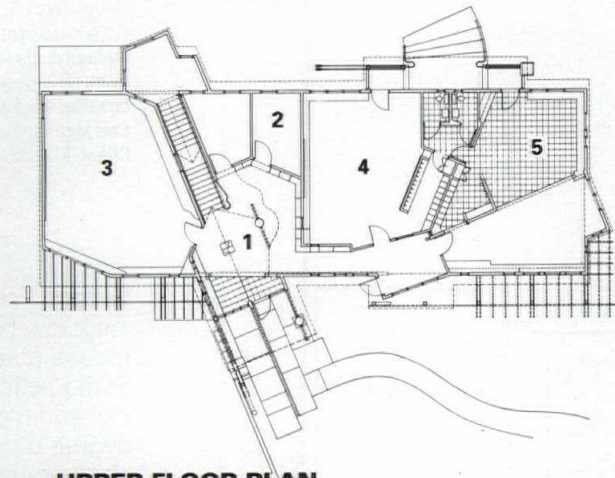
Located in Hampton Township, this is the North Hills campus of Pennsylvania's oldest independent girl's school, the Winchester-Thurston School in Pittsburgh. The site is a hilly, semi-rural plot that formerly held a farm and stable. The master plan calls for a group of structures gathered around a large farm pond at the center of the site. The corridor in this case defines the northern side of each building so that the rooms may look down to the pond at the south. An utterly simple premise, five rooms lining a hallway, is modified by angles and shifts that defer to site conditions, accommodate views, direct movement, and differentiate between separate areas of program. At these points of adjustment in the plan, the means of construction reveals itself: for example, above the lobby, the ceiling is cut away to exhibit the wood trusses. Along the south side, pergolas embellish the twists in the building. Elaboration of this sort transforms the image of a simple farmhouse, with shingled gables and clapboard siding, into something that will spark the imagination of its inhabitants.



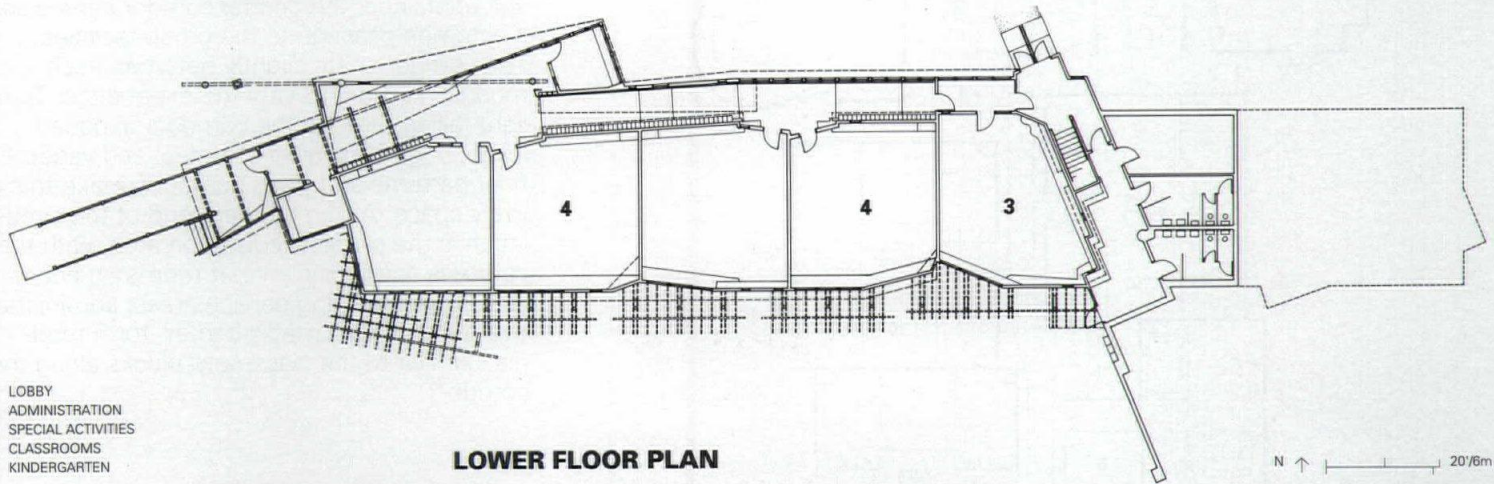
**ENTRANCE**

Photos: Karl Backus





**UPPER FLOOR PLAN**



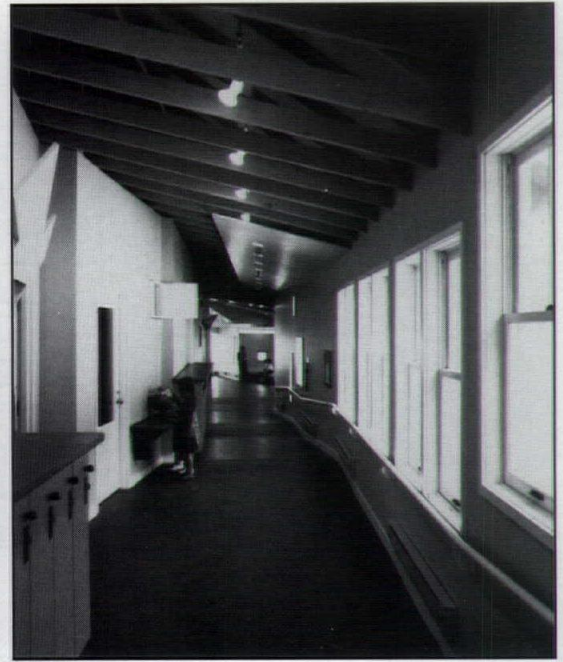
**LOWER FLOOR PLAN**

- 1 LOBBY
- 2 ADMINISTRATION
- 3 SPECIAL ACTIVITIES
- 4 CLASSROOMS
- 5 KINDERGARTEN

N ↑ 20'/6m



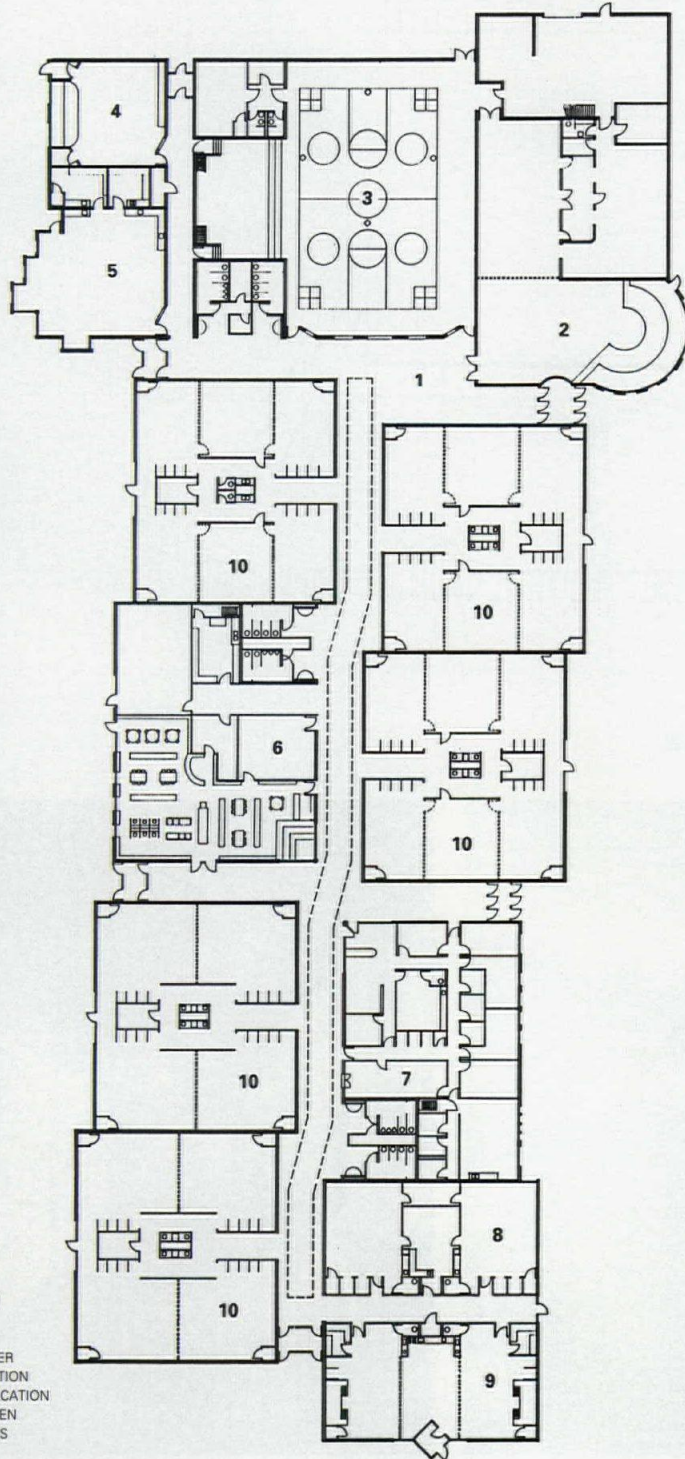
**VIEW TO NORTH**



**CORRIDOR**

# COLLEGE PARK ELEMENTARY SCHOOL

**Architect:** B.A.S.E. Architects, Indianapolis, IN.  
**Design Team:** Richard W. Bay, *Principal in Charge*; Mark R. Bay, *Project Architect*.  
**Capacity:** 600 students, kindergarten through grade 5  
**Area:** 65,938 square feet  
**Cost/Square Foot:** \$75  
**Completion:** August 1988  
**Client:** Metropolitan School District of Pike Township

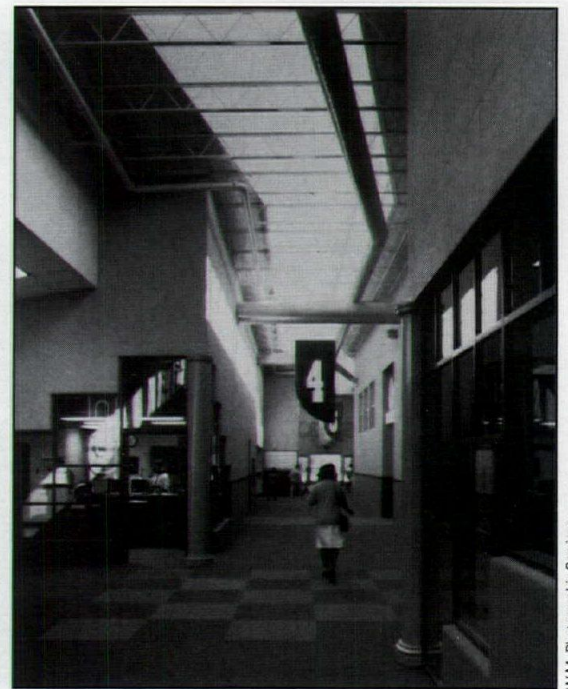


- 1 LOBBY
- 2 CAFETERIA
- 3 GYMNASIUM
- 4 MUSIC
- 5 ART
- 6 MEDIA CENTER
- 7 ADMINISTRATION
- 8 SPECIAL EDUCATION
- 9 KINDERGARTEN
- 10 CLASSROOMS

**FIRST FLOOR PLAN**

N → |-----| 40'/12m

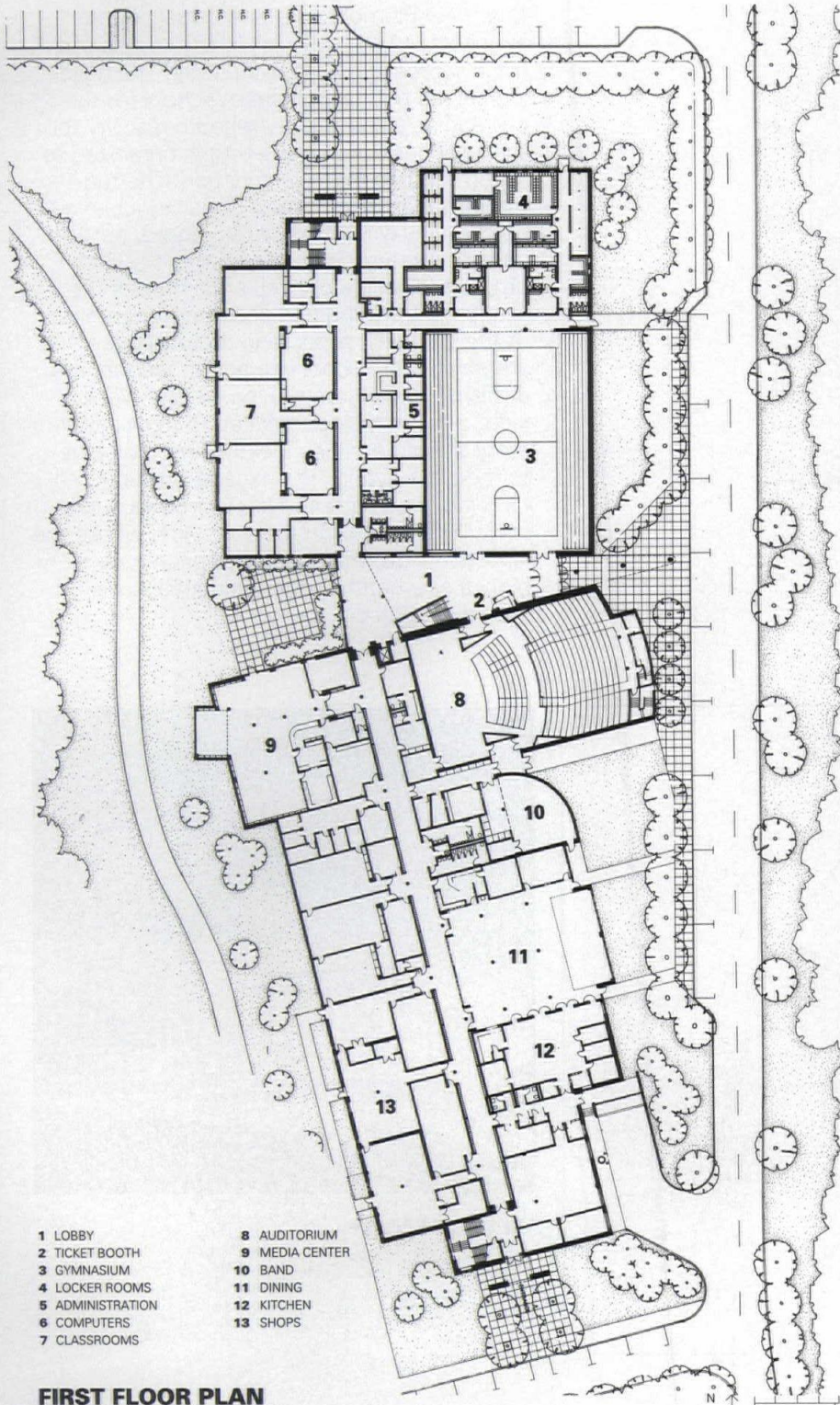
College Park Elementary in Indianapolis is a long, low building surrounded by berms that reduce potential tornado damage. Each grade of the school is housed within its own module, and movable partitions allow for a great degree of flexibility in operation. Two to six classrooms, varying in size from 600 to 1,800 square feet, can accommodate changing teacher/student ratios. Since each grade is self-contained, the central corridor serves as a common passage to the group facilities. The corridor shifts slightly between each module, in order to vary the experience. The light falling through the corridors exposed joists, brightly colored columns, and varied floor patterns and glass partitions make this a lively space. At the western end of the circulation is the physical education area, with the cafeteria and music and art rooms on either side. The remaining service areas, administrative offices and a media center, form modules similar to the classroom blocks along the corridor.



**MAIN CORRIDOR**

# WAREHAM HIGH SCHOOL

**Architect:** HMFH Architects, INC., Cambridge, MA.  
**Design Team:** Steve Friedlaender, *Partner in Charge*; Mario Torroella, *Design Partner*; Steven Millington, *Project Manager*; Alan DeHaan, Robert Pahl, Vasilios Valaas.  
**Capacity:** 850 students, grades 9 through 12  
**Area:** 135,000 square feet  
**Cost/Square Foot:** \$101  
**Completion:** June 1991  
**Client:** Wareham Public Schools



Wareham High School stands between a cranberry bog and a tidal estuary on the Massachusetts coast. The building appears as two separate buildings which turn away from one another. An outdoor courtyard and a double-height lobby occupy the crevice between the two wings. The gymnasium, the library, and a large theater surround this pivotal space in order to be equally accessible to all points. From the lobby, a corridor bisects each wing, leading to a stair and a covered entrance. On the second level, skylights punctuate the corridor at the entries to the classrooms. Classrooms line up to face the water's edge, and consequently the façade is quite regular, an almost uninterrupted surface. In a common strategy with corridor schemes, the classrooms are neatly ordered on one side, while the non-academic spaces are grouped adhoc on the other side. Volumes less in need of a view, such as the theater and the gym, occupy the side opposite the direction of interest, and the more frequented spaces, in need of natural light, take the preferred orientation.

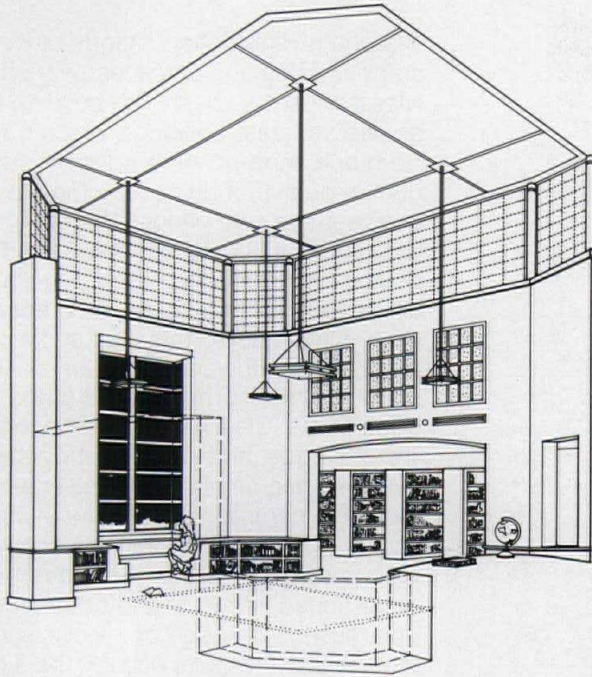


**VIEW FROM EAST**

Sam Sweezy

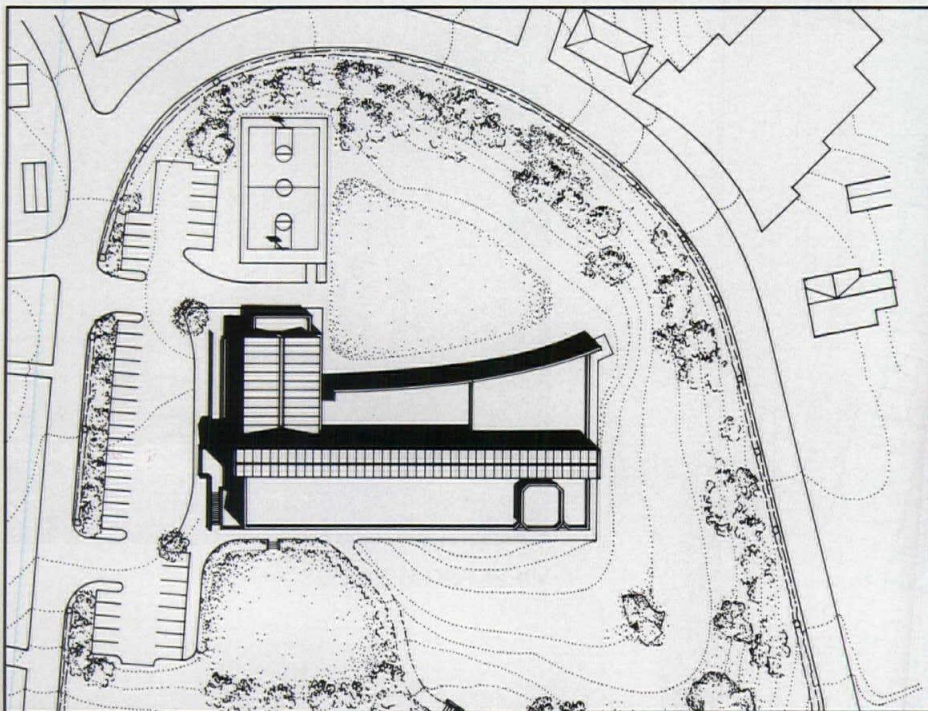
# CITY VIEW ELEMENTARY SCHOOL

**Architect:** TAMS, Boston, MA.  
**Design Team:** Barbara Manford, *Project Manager*; Chris Iwerks, *Project Designer*; Margaret Sledge, *Project Architect*; Shannon Scarlett.  
**Capacity:** 625 students, pre-school through grade 6  
**Area:** 70,000 square feet  
**Cost/Square Foot:** \$98  
**Completion:** March 1991  
**Client:** City of Worcester



**LIBRARY**

City View Elementary stands, as its name suggests, on a highly visible site on top of a hill in Worcester, Massachusetts. The building serves both as a magnet school for the city and as a community resource facility for the local neighborhood, and it is organized to accommodate this dual function. The rudimentary plan diagram is a classic double-loaded corridor, with stairs at either end, but the specific strategy is unique to this site and program. The line of circulation divides the academic from the non-academic segments of the program, separating those spaces that are strictly for school use and those that are available to the community. On the west side, classrooms are stacked to form a four-story structure which looks down the slope to the city beyond. This façade is monumental, with large flattened bay windows and a tower-like library. On the east side, where the land levels off, the building appears one story high, a size befitting the residential scale of the neighborhood.



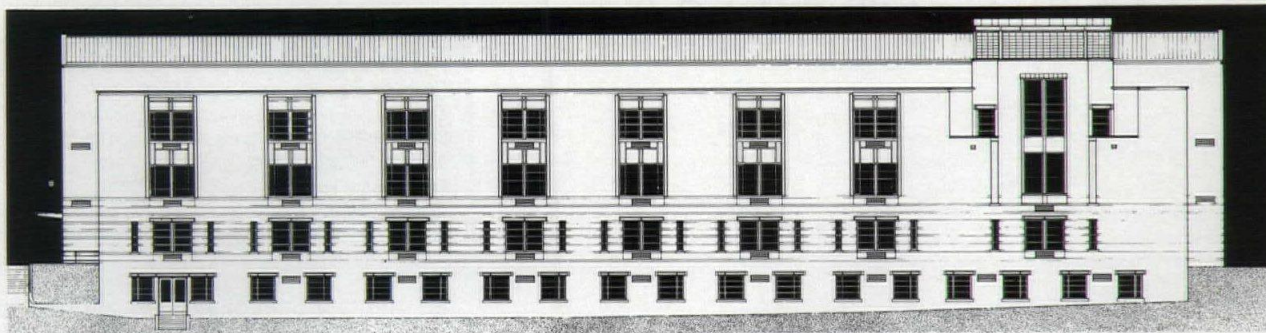
**SITE PLAN**

N ← ———— 100'/30m

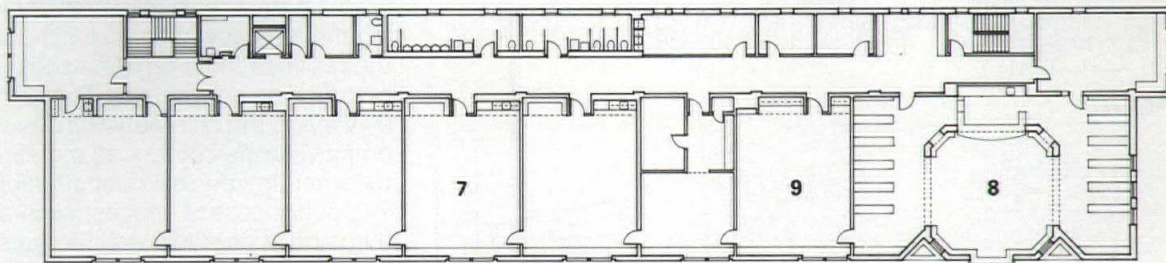


**VIEW OF ENTRY**

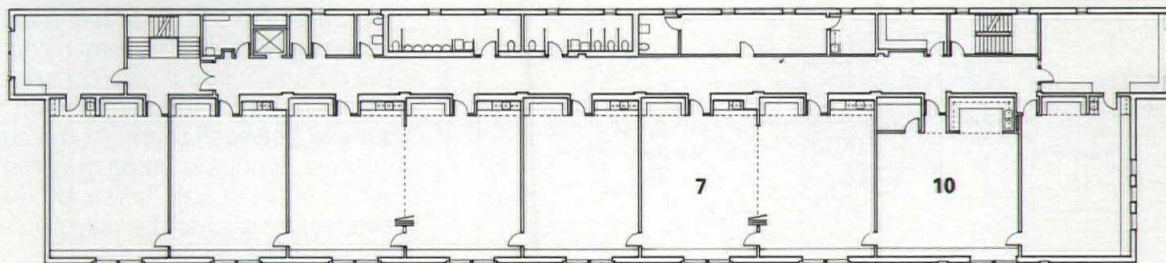
Chuck Choi



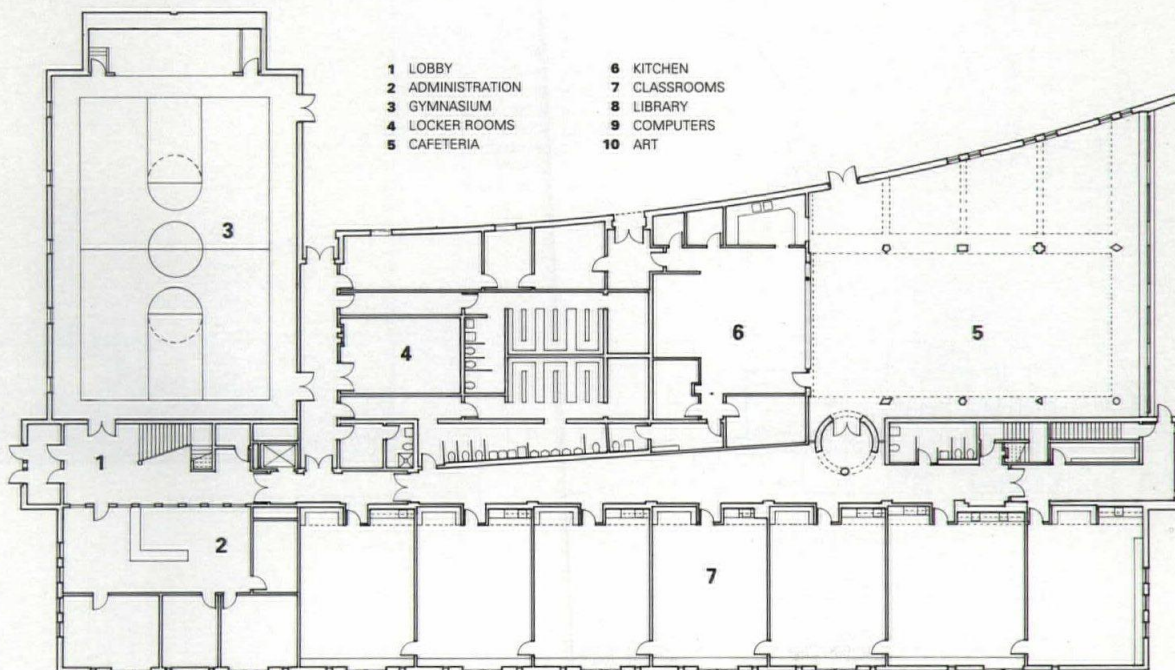
**WEST ELEVATION**



**THIRD FLOOR PLAN**



**SECOND FLOOR PLAN**



**FIRST FLOOR PLAN**

N ← 40'/12m

# ROCHESTER ELEMENTARY SCHOOL NO. 8

**Architect:** Cannon Planning, Architecture and Engineering, Grand Island, NY.

**Design team:** Mark R. Mendell, *Officer-in-charge*; Hans Kullerkupp, *Project Manager*; Seung-Hong Park, *Designer*; Bruce Randall, *Structural Engineer*; Frank Smaak, *Mechanical Engineer*; Robert Fretz, *Electrical Engineer*; Dudley West, *Cost Estimator*.

**Capacity:** 800 students, pre-school through grade 5

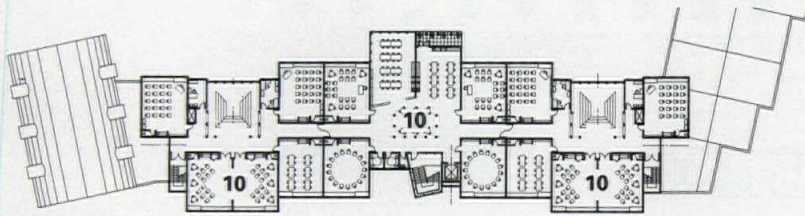
**Area:** 85,000 square feet

**Cost/Square Foot:** \$88

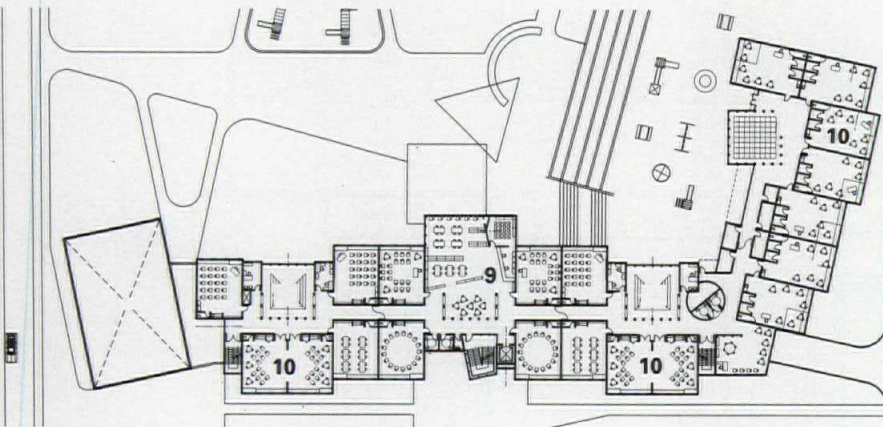
**Completion:** Fall 1993

**Client:** Rochester City School District

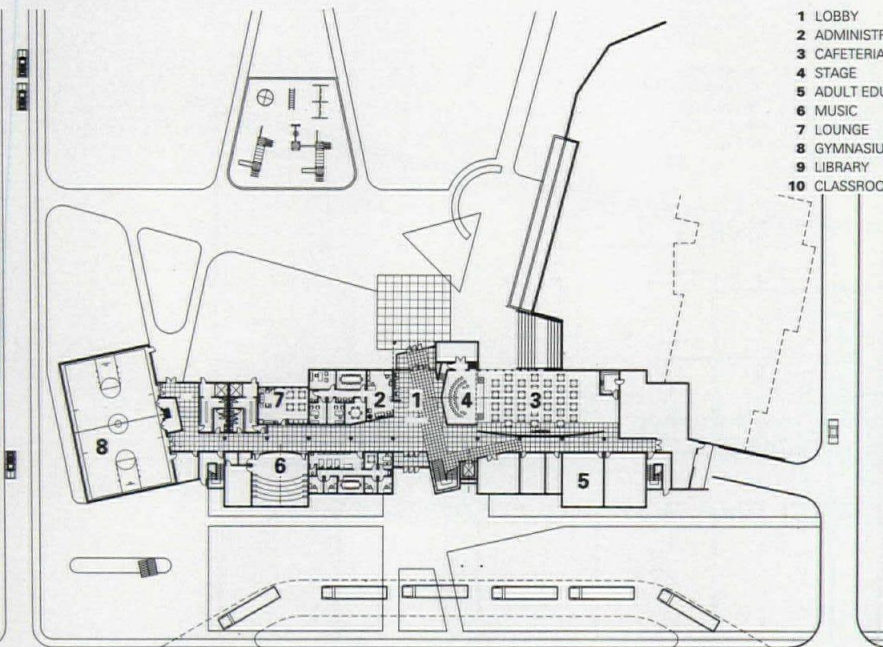
Elementary School #8 was commissioned to replace the Rochester School Board's oldest facility. The architects' objectives were to accommodate 800 students and a flexible program on a relatively small lot without losing the intimacy of a small school. In addition, the facilities must remain accessible to the surrounding community. These aims are met by varying the plan between levels and by employing the corridor as a means of tying together an informal configuration of spaces. The public-access spaces, such as the auditorium and adult-education facilities, are confined to the ground level. A large lobby at the center feeds into a wide corridor linking the gymnasium at one end with the cafeteria at the other. On the second and third levels, groups of classrooms, organized according to the different grades, are conceived as "neighborhoods" with the corridor acting as an avenue between them. At the center of each of these groups is an open common space which serves as an "alternate learning area" and looks out onto the playgrounds and gardens behind the school.



THIRD FLOOR PLAN



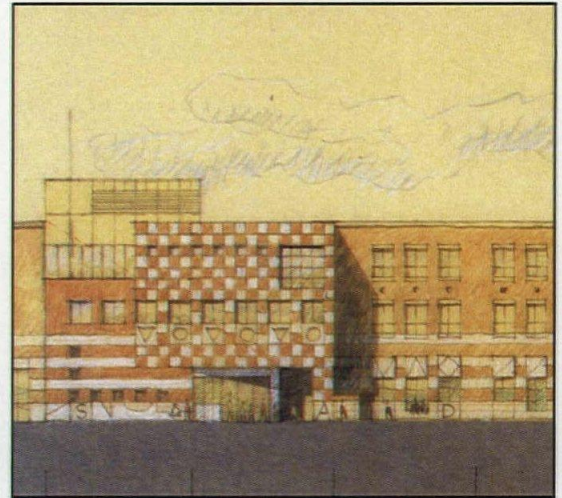
SECOND FLOOR PLAN



- 1 LOBBY
- 2 ADMINISTRATION
- 3 CAFETERIA
- 4 STAGE
- 5 ADULT EDUCATION
- 6 MUSIC
- 7 LOUNGE
- 8 GYMNASIUM
- 9 LIBRARY
- 10 CLASSROOMS

FIRST FLOOR PLAN

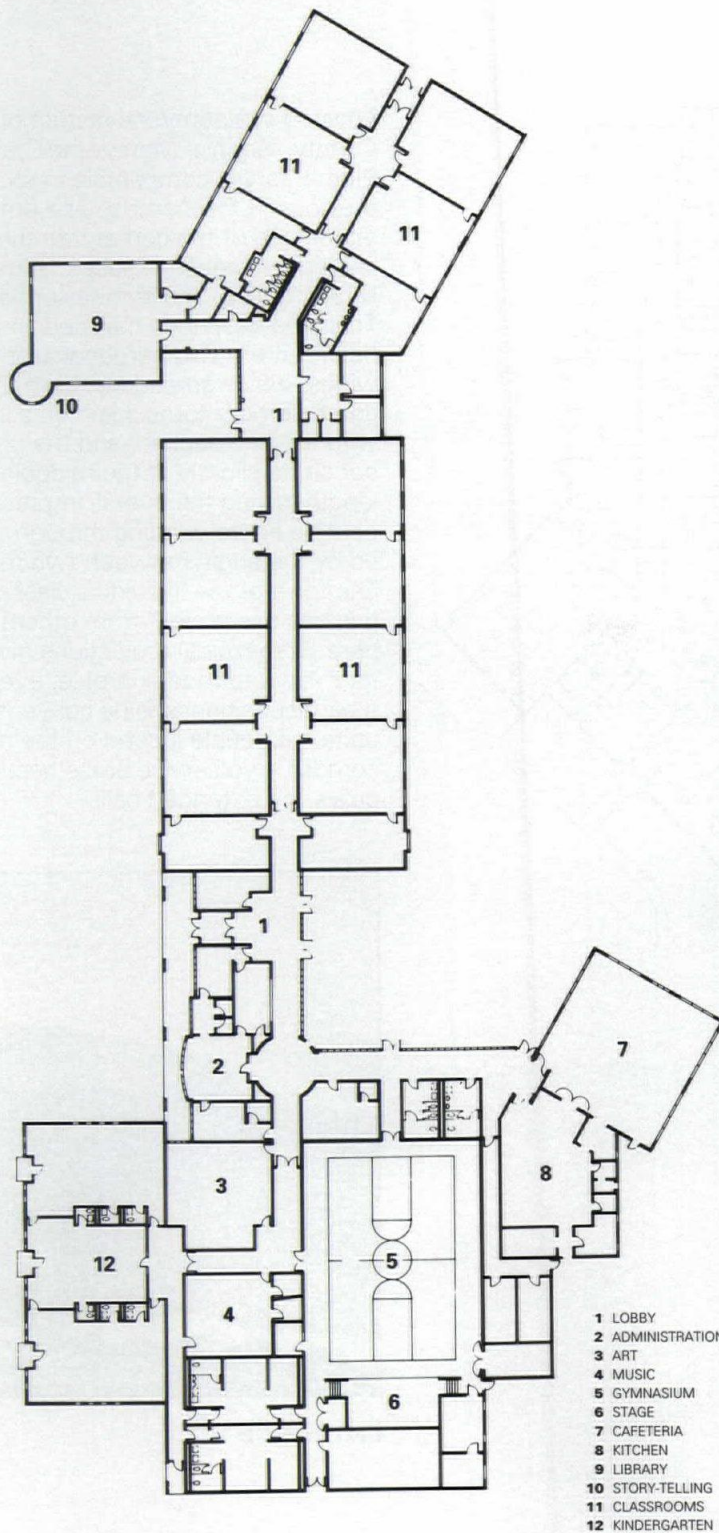
N ← 40'/12m



WEST ELEVATION

# SUNDERLAND ELEMENTARY SCHOOL

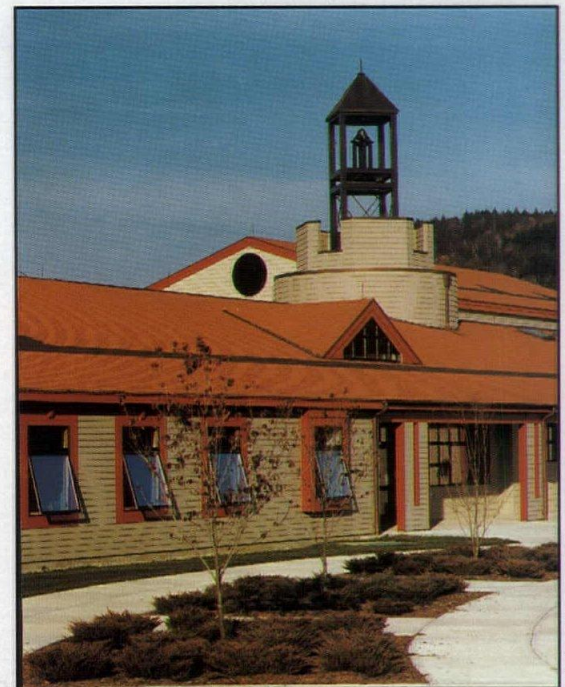
**Architect:** Earl R. Flansburgh + Associates, Inc., Boston, MA.  
**Capacity:** 350 students, kindergarten through grade 6  
**Area:** 41,500 square feet  
**Cost/Square Foot:** \$114  
**Completion:** June 1989  
**Client:** Town of Sunderland



FLOOR PLAN

N → 40'/12m

Sunderland Elementary replaces an outmoded facility in rural Massachusetts. One of the chief aims was to reflect the historical architecture of this area. In homage to the once agrarian community, the library resembles a "tobacco barn silo," the cylindrical corner turret containing a storytelling room. The kindergarten classrooms are individually gabled as "houses" to mimick the residential scale of neighboring structures. The cafeteria's large windows and cupola give it the look of a traditional carousel house. The corridor plan scheme also contributes to this representational agenda. The dual hallways merging at a circular tower are meant to emulate Sunderland's two main roads, which intersect at a bell tower. Two large volumes balance the two ends of the corridor. In this case, the gym is at one end, while at the other end a group of classrooms drifts from the spine. The library, kindergarten area, and the cafeteria, modelling the building to appear as a collection of separate structures, form a kind of educational village.



ENTRANCE

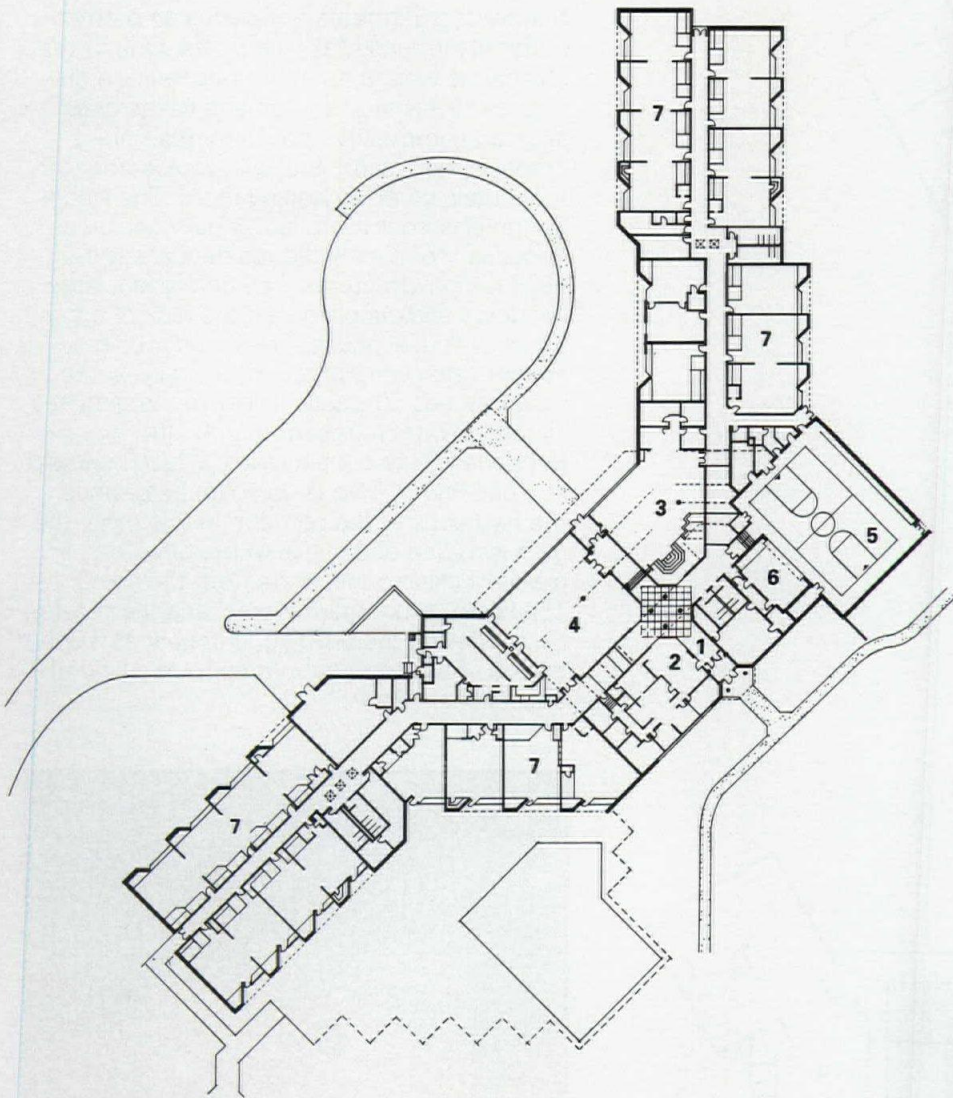
# MERIWETHER LEWIS ELEMENTARY SCHOOL

**Architect:** Smithey & Boynton, Roanoke, VA.  
**Design Team:** Ken Motley, FAIA, *Principal in Charge*; Butch Traylor, AIA, *Project Manager*; Peggy Van Blaricom, ASID, *Interior Designer*.  
**Capacity:** 600 students, kindergarten through grade 5  
**Area:** 7,000 square feet  
**Cost/Square Foot:** \$65  
**Completion:** August 1988  
**Client:** Albemarle County Public Schools

P/A Plans

Progressive Architecture 3,92

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## FLOOR PLAN

- |                  |              |
|------------------|--------------|
| 1 ENTRANCE       | 5 GYMNASIUM  |
| 2 ADMINISTRATION | 6 STAGE      |
| 3 LIBRARY        | 7 CLASSROOMS |
| 4 DINING         |              |

Located in a semirural district of Albemarle County, Virginia, Meriwether Lewis Elementary is comparable in strategy to the previous "L" schemes. One enters from either side of the corner into the midst of the shared and service spaces: administration, library, dining, and gymnasium/assembly. This area describes the median angle between the two perpendicular classroom wings, which spread out from the center. The south corridor turns again on a line parallel with the hub section, and the northwest corridor shifts slightly at the midpoint along its length, giving the overall impression of a serpentine figure winding through the site, created by the angle between two major roads. The form of the individual classroom distinguishes this project from others described here. Trapezoidal projections give each classroom an unorthodox profile, even though their disposition is fairly conventional. The units are double-loaded on the modulated corridor, two service areas occurring midway down the extended halls.



ENTRANCE

James Adcock



# OAKRIDGE AND FORESTDALE SCHOOLS

**Architect:** HMFH Architects, INC., Cambridge, MA.  
**Design Team:** John Miller, *Partner in Charge*; Mario Torroela, *Design Partner*; Hagay Dvir, *Project Manager*; Philip Lewis, Hunter Crabtree, Paul Dawson.

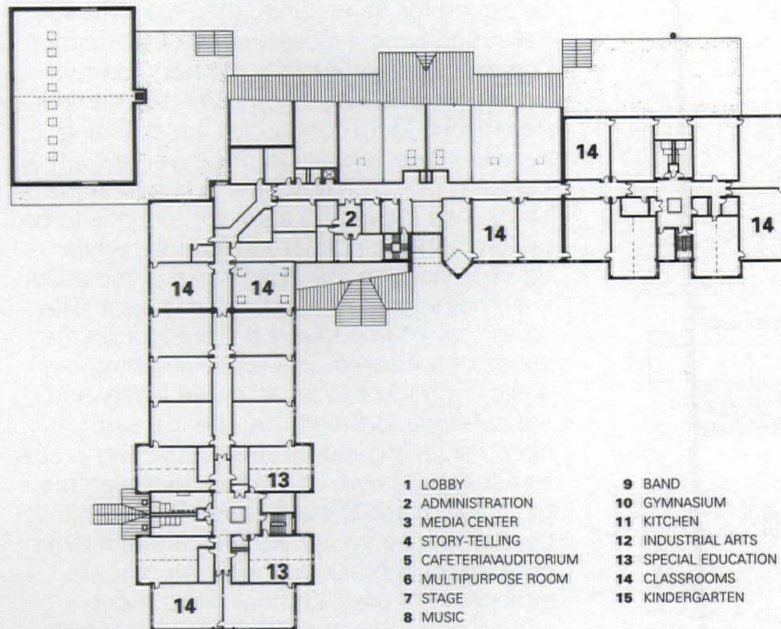
**Capacity:** 780 students, kindergarten through grade 8

**Area:** 121,450 square feet each

**Cost/Square Foot:** \$99

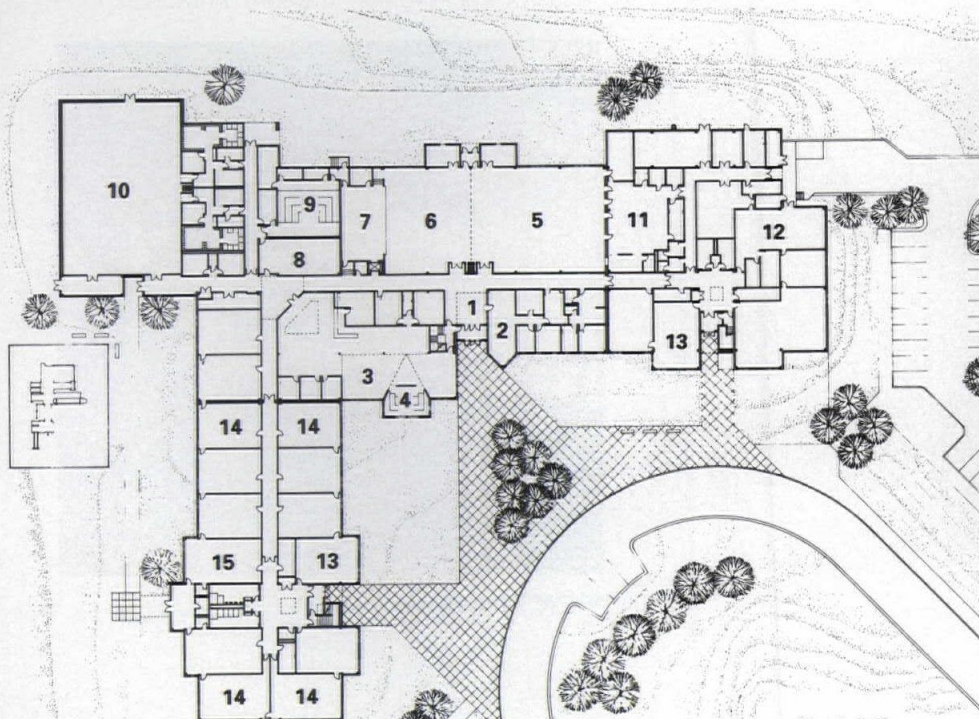
**Completion:** January 1990

**Client:** Town of Sandwich Public Schools



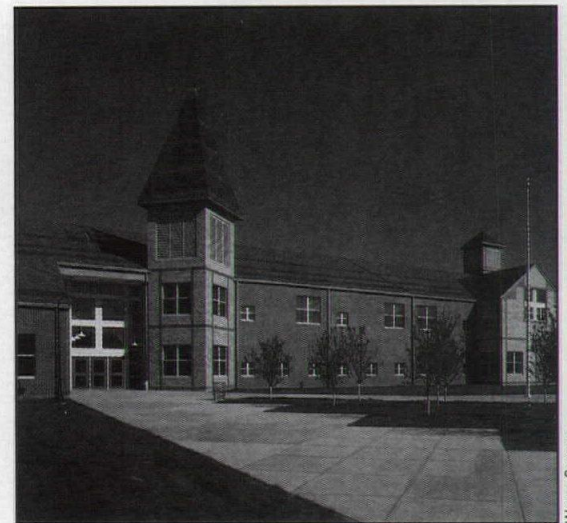
**SECOND FLOOR PLAN**

The Oakridge and Forestdale Schools are two identical facilities commissioned to alleviate overcrowding in the school system of Sandwich, Massachusetts, on Cape Cod. In each project, an "L"-shaped plan divides grades K-6 and 7-8 into separate wings, with shared functions located at and around the intersection. Here is the double-loaded corridor in its most straightforward and least varied state. At the meeting between the perpendicular wings, the hallway briefly swells into a two-story space overlooking the library/information center. Most of the formal variety occurs at the perimeter of the plan, where gabled rooms extend like dormers to reduce the overall scale of the roof line. At the entrance, the reception area and teacher's lounge form a rotated tower topped by a high-pitched pyramidal roof and an iron weathervane. Cupolas, as well as the tower, serve the heating and ventilating systems. The figure of the plan and the variegation of its edge vaguely recall traditional collegiate architecture of New England.



**FIRST FLOOR PLAN**

N ← 40'/12m

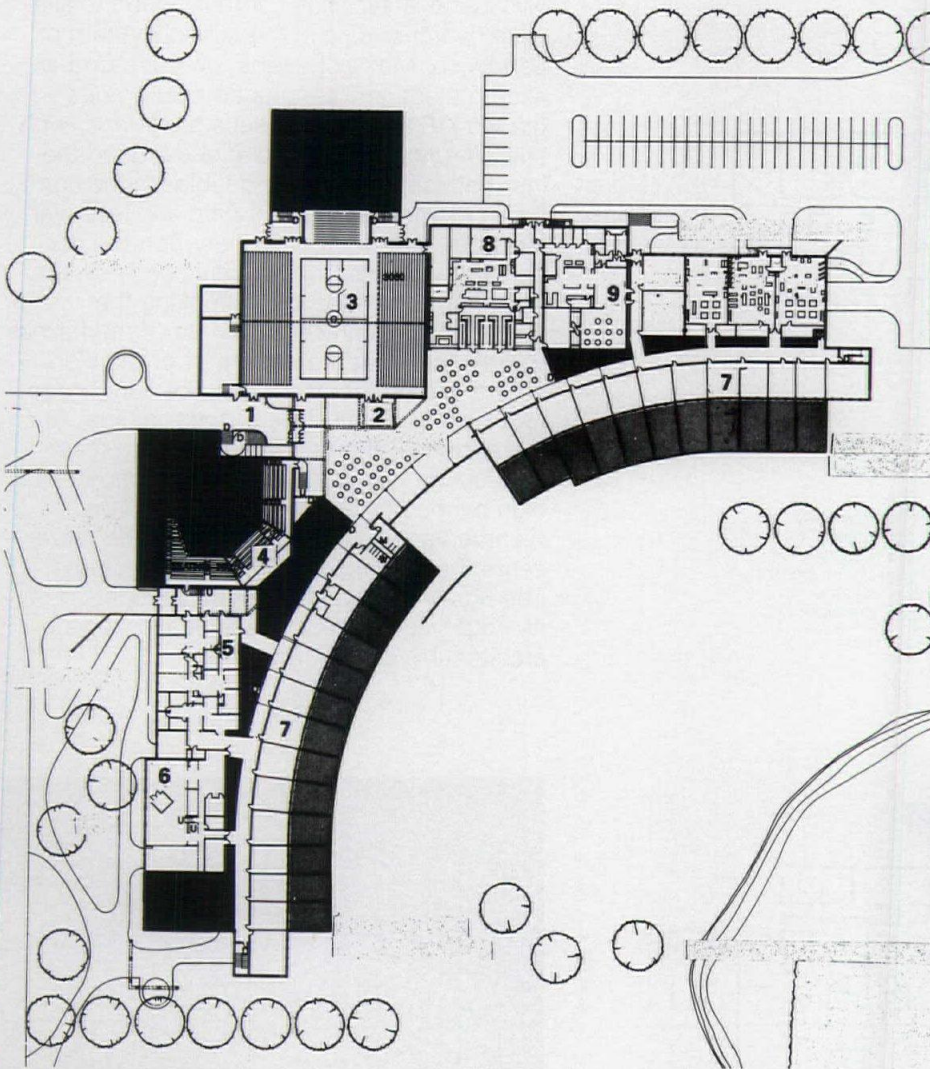


**ENTRANCE**

# STOW - MUNROE FALLS HIGH SCHOOL

**Architect:** Richard Fleischman Architects, Inc., Cleveland, Ohio.  
**Capacity:** 1800 students, grades 9 through 12  
**Area:** 180,000 square feet  
**Cost/Square Foot:** \$57  
**Completion:** September 1987  
**Client:** Stowe City Schools

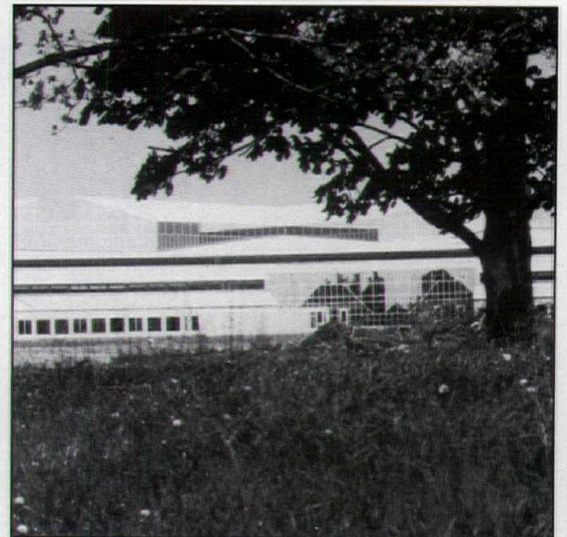
P/A Plans



**UPPER FLOOR PLAN**

- |                  |                   |
|------------------|-------------------|
| 1 ENTRANCE       | 6 ART             |
| 2 CAFETERIA      | 7 CLASSROOMS      |
| 3 GYMNASIUM      | 8 KITCHEN         |
| 4 AUDITORIUM     | 9 INDUSTRIAL ARTS |
| 5 ADMINISTRATION |                   |

Designed for Stow, Ohio, the Stow-Munroe Falls High School recalls some of the corner corridors seen previously. Rather than two intersecting hallways, however, the corridor here is one long, continuous arc spanning between two wings. On the lower level, the northern face of this school is buried in the earth. This allows the service functions to be heated and cooled more efficiently, while downplaying the imposing scale of the building. The programmatic division is clear. The small classrooms follow the corridor on the inside of the curve. The remaining program areas, with the exception of the library and the cafeteria, orthogonally line the earth-bound side, expanding and contracting in size as needed. Above, one enters between the gymnasium and the auditorium to the midpoint of the curve, where the cafeteria looks out through a break in the classrooms. To either side of the cafeteria, the corridor serves as a balcony to the public areas below. In this way, the corridor provides both the primary means of circulation and the dramatic focus of the irregular, interior commons.



**VIEW TO NORTH**

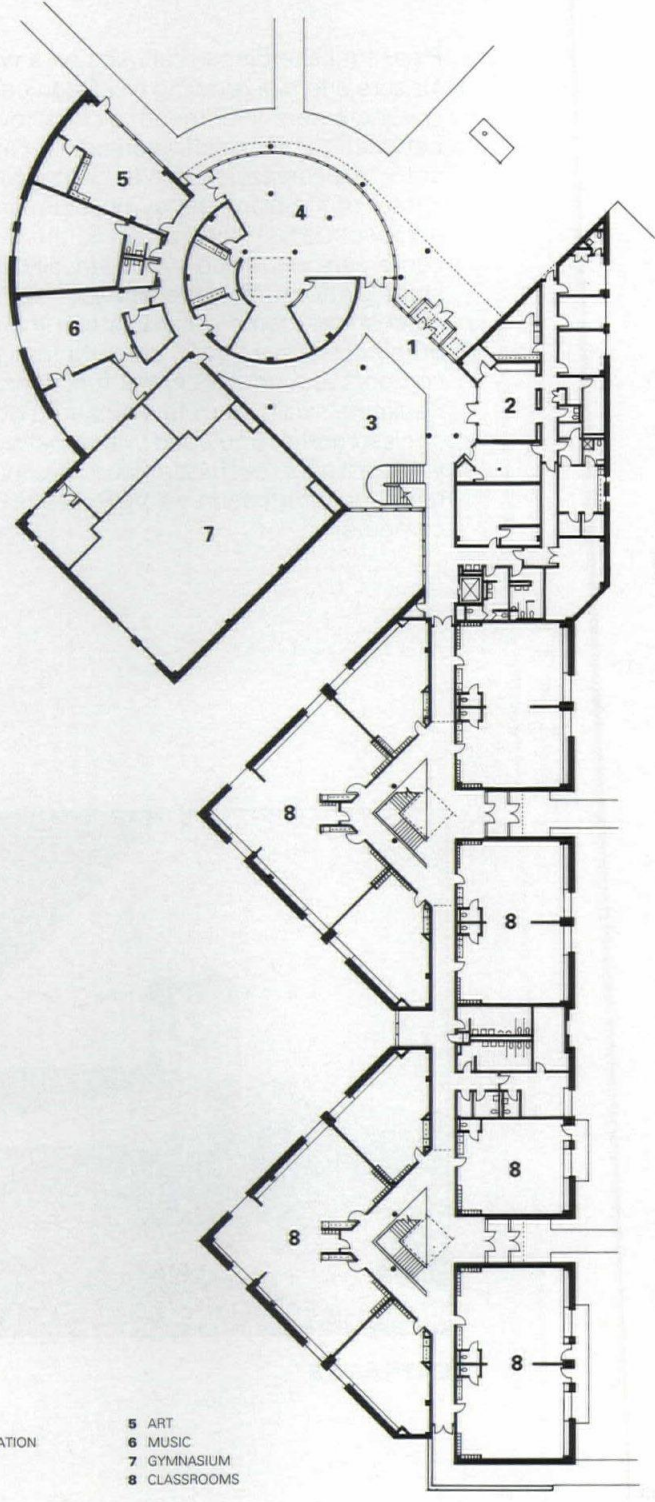
Richard Fleischman

Progressive Architecture 3.92

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# CLARA BYRD-BAKER ELEMENTARY SCHOOL

**Architect:** Smithey & Boynton, Roanoke, VA.  
**Design Team:** Ken Motley, FAIA, Principal in Charge; John Dreiling, AIA, Project Manager; Ben Motley, AIA, Project Designer.  
**Capacity:** 600 students, kindergarten through grade 5  
**Area:** 66,000 square feet  
**Cost/Square Foot:** \$64  
**Completion:** September 1989  
**Client:** Williamsburg/James City County Public Schools



- 1 LOBBY
- 2 ADMINISTRATION
- 3 DINING
- 4 LIBRARY
- 5 ART
- 6 MUSIC
- 7 GYMNASIUM
- 8 CLASSROOMS

**FIRST FLOOR PLAN**

N > 40'/12m

Byrd-Baker Elementary in James City County, Virginia, consists of three building groups connected by a corridor. A semicircular volume provides for the entry and non-academic program elements, while classrooms are organized into two triangular clusters. Kindergarten and first grade classes line the northeast side of the corridor. The upper grades form triangular blocks facing to the south and west. In each of the academic clusters, classrooms group around a central stair contained within a triangular common that serves as a foyer opposite the student entrance. At the corridor's northwest end, administrative offices and lower-level classrooms open into the lobby and double-height dining area. This area of the building acts as a spacious, informally arranged common, where several programmatic requirements come together. Here the art room, music room, and gymnasium circle the library, which looks through a curved, glazed wall to the public entrance court. At the center is a skylit assembly space with a small, amphitheater-like platform of seating.

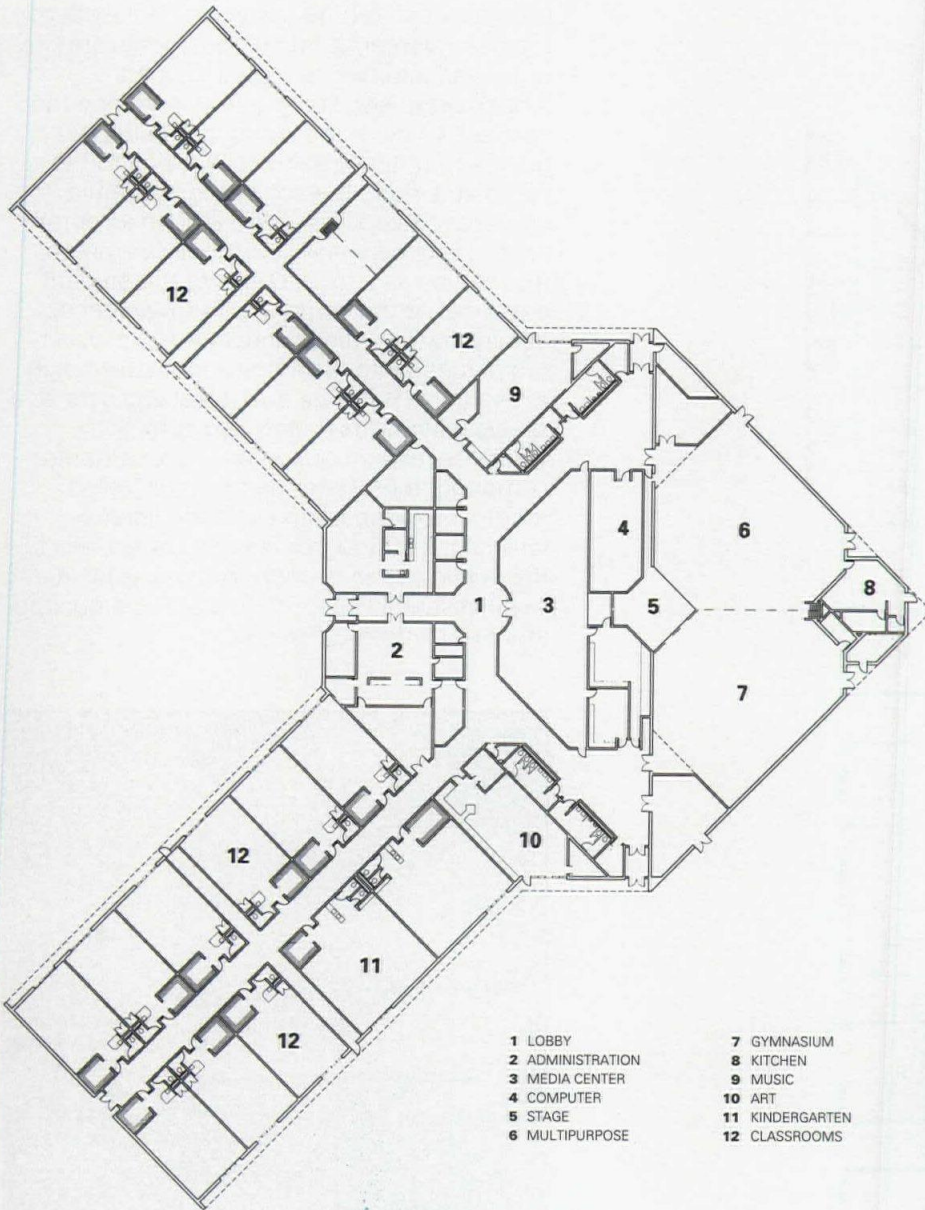


**VIEW FROM WEST**

# PLEASANT LAKE ELEMENTARY SCHOOL

**Architect:** TMP Associates, Inc., Bloomfield Hills, MI.  
**Capacity:** 550 students, kindergarten through grade 6  
**Area:** 67,400 square feet  
**Cost/Square Foot:** \$80  
**Completion:** August 1990  
**Client:** Walled Lake Consolidated School District

Pleasant Lake Elementary sits on a wooded, 18-acre site in a growing Michigan community. One enters underneath a clock tower, between the administration areas. Facing the entry, the trapezoidal media center forms the center of the plan. The gymnasium and multi-purpose rooms, located behind the media center, are organized symmetrically about the stage platform. Storage, services, and mechanical rooms accumulate at the edges of the octagonal figure, creating triangular corridors around the central functions. Radiating axially from this hub are two arms of classrooms. Equipped with a networked video monitor, each classroom is capable of receiving information via VCR, cable TV, or computer.



- |                  |                 |
|------------------|-----------------|
| 1 LOBBY          | 7 GYMNASIUM     |
| 2 ADMINISTRATION | 8 KITCHEN       |
| 3 MEDIA CENTER   | 9 MUSIC         |
| 4 COMPUTER       | 10 ART          |
| 5 STAGE          | 11 KINDERGARTEN |
| 6 MULTIPURPOSE   | 12 CLASSROOMS   |

**FLOOR PLAN**

N ← ———— 40'/12m

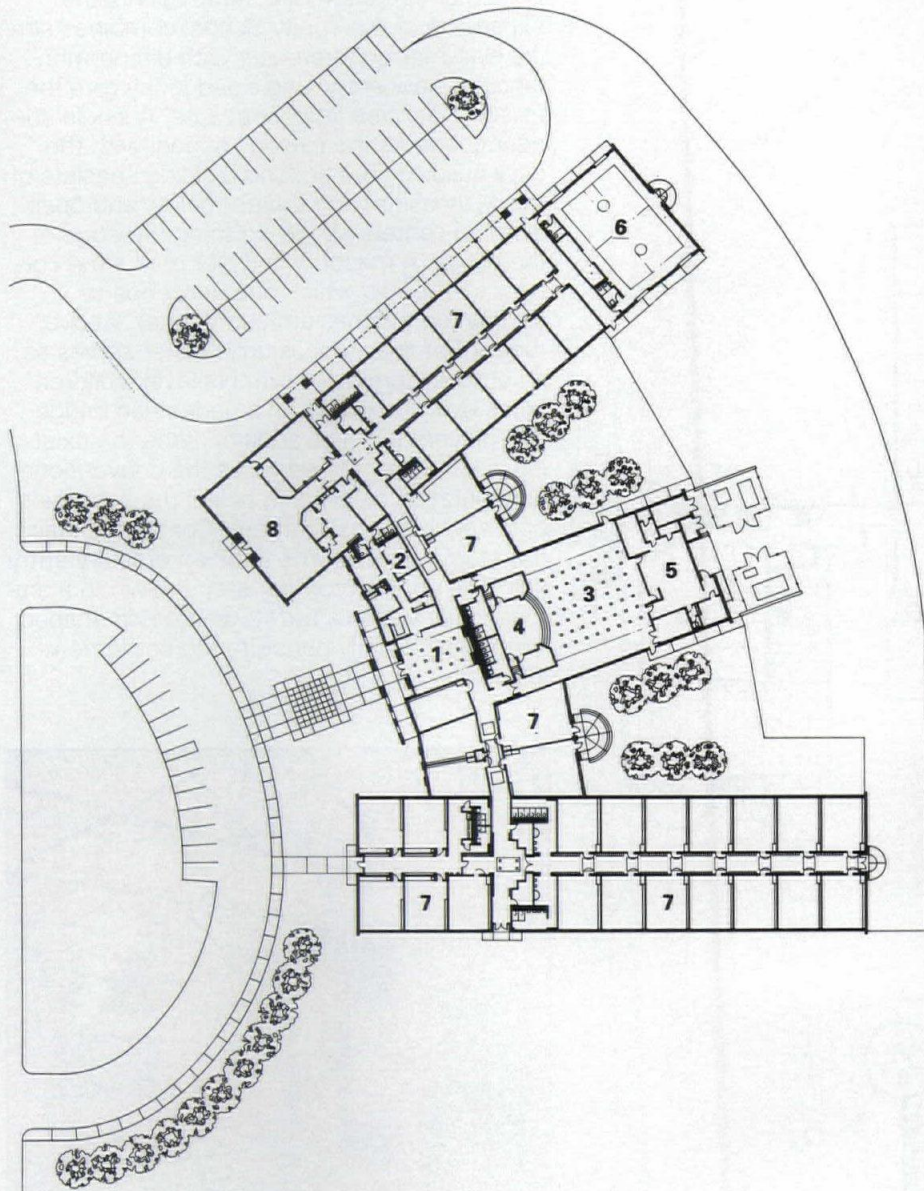


**ENTRANCE**

Gary Quesada

# BLUE HAZE ELEMENTARY SCHOOL

**Architect:** Hahnfeld Associates, Fort Worth, TX.  
**Design Team:** Lee Roy Hahnfeld, *Principal-in-Charge*,  
 David Stanford, *Project Designer*.  
**Capacity:** 700 students  
**Size:** 59,000 square feet  
**Cost/Square Foot:** \$48.00  
**Completion:** July 1988  
**Client:** White Settlement Independent School District



**FLOOR PLAN**

- |                  |              |
|------------------|--------------|
| 1 ENTRY          | 5 KITCHEN    |
| 2 ADMINISTRATION | 6 GYMNASIUM  |
| 3 ASSEMBLY       | 7 CLASSROOMS |
| 4 STAGE          | 8 LIBRARY    |

The Blue Haze Elementary in White Settlement, Texas, consists of three buildings connected by a curving corridor. To the north, one is composed of classrooms in the middle and the gymnasium and library at either end. To the south, turned 45 degrees, is a bar of classrooms the same size. At the bisecting angle, a central bar contains the cafeteria/assembly hall. Special classrooms open to tree-lined courts on either side of the entry, providing for art, music, and computers. The allocation of the program succeeds in adapting the symmetrical arrangement to the site. The north bar breaks the overall symmetry of the school, balancing between the formal entry and the bus drop-off. With the placement of the gymnasium and library, the design locates logical secondary entries, enlivening the corridor and easing public access. Kindergarten through third grade classes are removed to the southern wing, while the fourth and fifth grade classes occupy the more public zone between the library and the gymnasium.



**ENTRANCE**

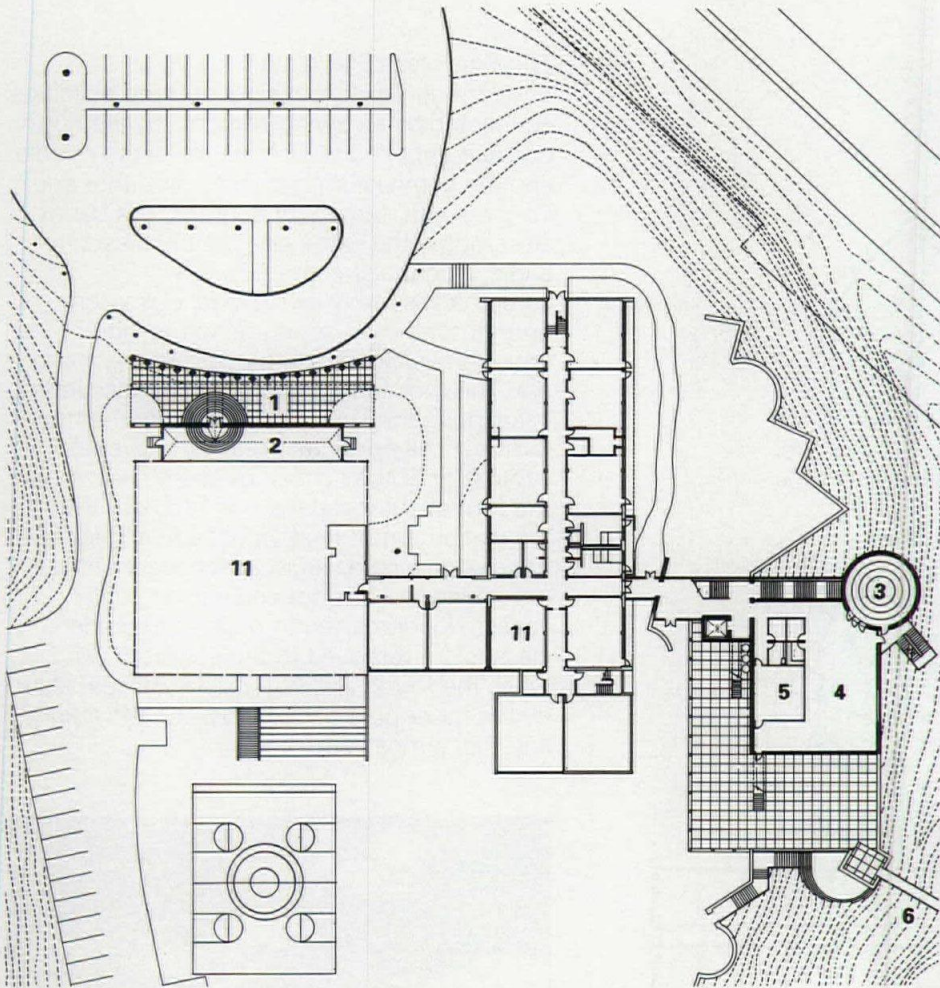
# TRINITY SCHOOL

**Architect:** Lord, Aeck & Sargent, Atlanta, Georgia  
**Design Team:** Betsy Beaman, Allen Duncan, Michael Few, Jimmy Hawkins, HarrietLeavens, Larry Lord, Terry Sargent, Howard Wertheimer.  
**Capacity:** 500 students  
**Size:** 30,000 square feet  
**Cost/Square Foot:** \$107  
**Completion:** 1986  
**Client:** The Trinity School

P/A Plans

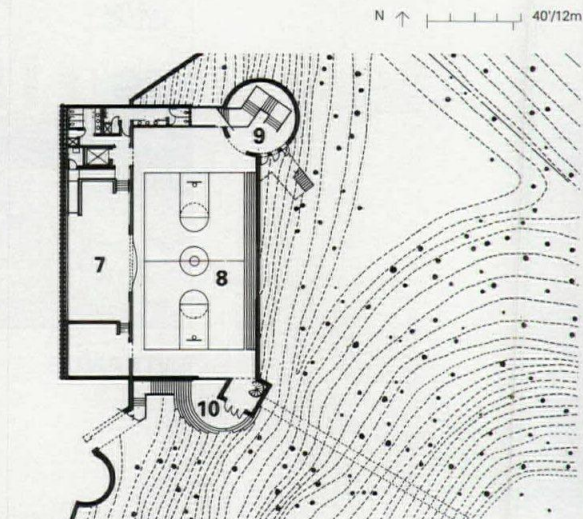
Progressive Architecture 3.92

28



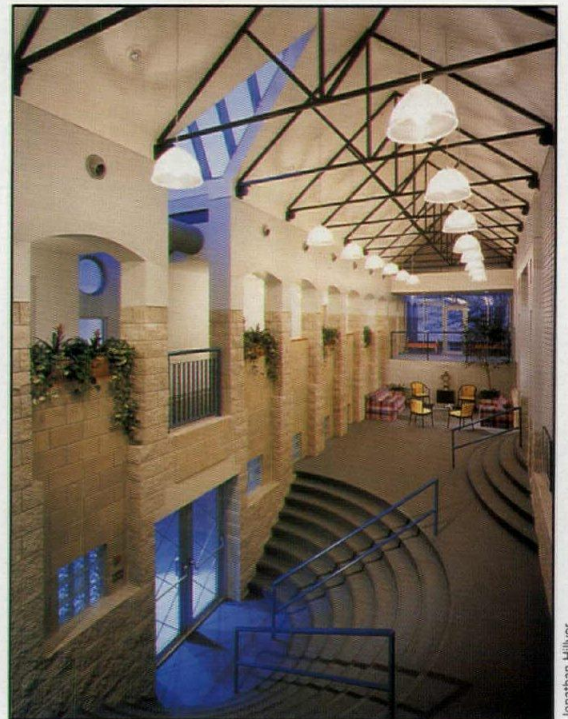
**UPPER FLOOR PLAN**

- |                  |                 |
|------------------|-----------------|
| 1 OUTDOOR LOGGIA | 7 STAGE         |
| 2 LOBBY          | 8 GYMNASIUM     |
| 3 MEDIA CENTER   | 9 ROTUNDA       |
| 4 ACTIVITIES     | 10 AMPHITHEATER |
| 5 CONFERENCE     | 11 EXISTING     |
| 6 BRIDGE         |                 |



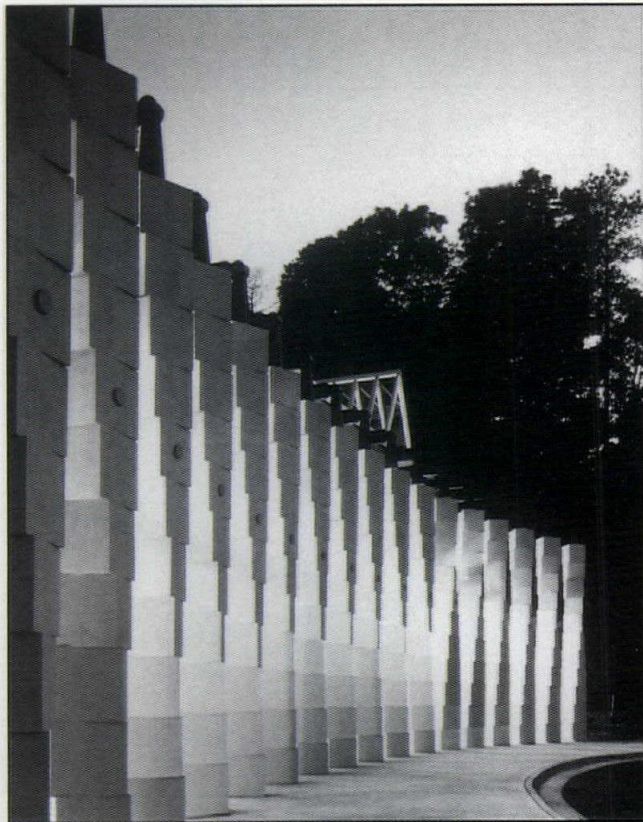
**LOWER FLOOR PLAN**

Poised on the edge of a steep ravine, the expansion of the Trinity School combines simple plan-making strategies with uncommon fancy. A new entry loggia and lobby give the existing facilities an upbeat aura. A single corridor connects the existing school with the new building. The second building consists of the gymnasium and theater below and open learning centers above, forming the edge of the gorge. A masonry cylinder marks the corridor's end, into which one descends to access the gymnasium and theater. Above, the roof of the gymnasium/theater serves as an outdoor terrace. From this level, children cross over the gorge on a pedestrian bridge to a playground. The addition lures the existing school over the edge, as the conventional configuration of the plan belies the scheme's bold sectional arrangement. Concentric stairs transform what seems to be an ordinary entry hall. The primary corridor steps down to a dramatic stair within a turret, where odd shaped windows playfully puncture the battlement-like walls.



**ENTRY LOBBY**

Jonathan Hillier



ENTRY COLONNADE



ROTUNDA AND GYMNASIUM

Photos: Jonathan Hlyer

P/A Plans

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## CLUSTER

- 34 **Fort Stevens Elementary**, Yelm, WA
- 35 **Rising Star Elementary**, Shawnee Mission, KS
- 36 **Oak Ridge Elementary**, Souderton, PA
- 38 **Holland Middle School**, Holland, MI
- 39 **Deerwood Elementary**, Rosemount, MN
- 40 **Worthington Park Elementary**, Worthington, OH
- 41 **Bluffsvew and Slate Hill Elementaries**, Columbus, OH
- 42 **Chapman Hills Elementary**, Orange, CA

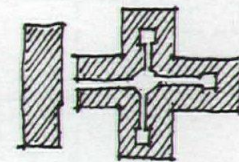
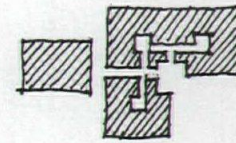
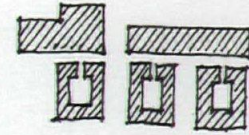
In the cluster type the classrooms are arranged in groups, or clusters, around a common area. This approach frequently incorporates open classrooms, where operable partitions allow the teachers to change the size and arrangement of teaching areas. As a result, the cluster school is one of the more flexible forms of classroom design.

The creation of common spaces allied with classroom clusters gives the school a more intimate spatial quality and each student, a greater sense of identity; each student affiliates with a group of classrooms, workrooms and/or common area. The Holland Middle School groups conventional classrooms around enclosed work spaces; whereas the irregular classrooms of some schools assemble around open work spaces. In the Fort Stevens and Oak Ridge schools, conventional classrooms surround large group areas, each supplied with its own services and entries. A double-height, circular computer area forms the center of each of the Chapman Hills Elementary clusters, with the common area serving as a dramatic space and shared resource.

While these schools can be economical to build because much of the program can be provided for within large spans, the density of the classroom arrangement can result in confusion. Therefore, circulation is a difficult formal problem for this type. In most of the schemes presented here, the clusters form repeating modules, with hallways secondary to the geometry of the blocks. Worthington Park Elementary and the Bluffsvew and Slate Hill Schools use a triangulated, three-classroom module. Rising Star Elementary is built with six-sided half-octagons. As with the double corridor type, the absence of natural light can be disorienting, so in most of the projects below, skylights have been used to introduce light into the middles of the buildings.

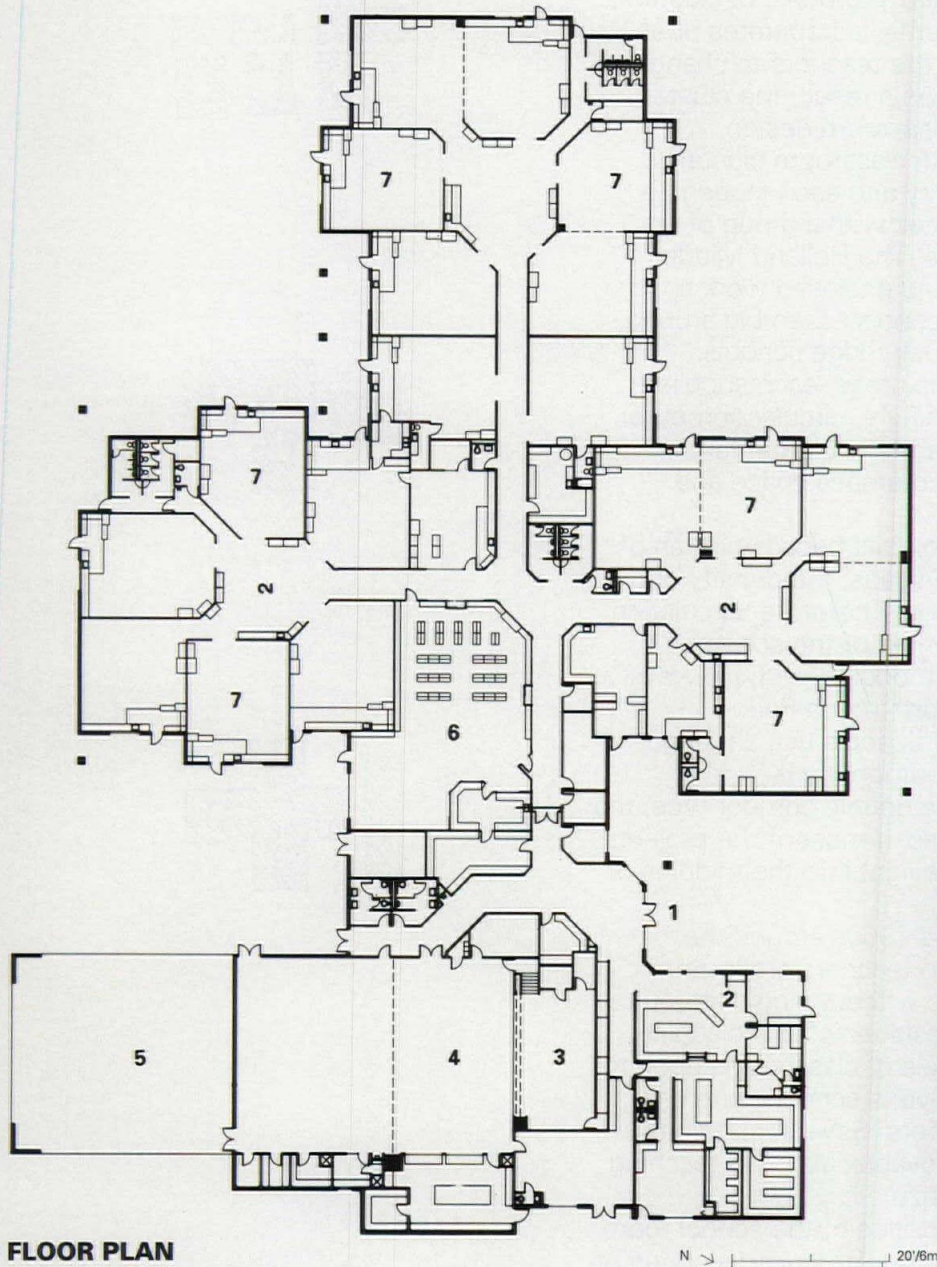
The open classroom was developed in the 1960s around the concept of team teaching, a method in which teachers organize activities and student groups of various sizes without a rigid structure. Many of the projects presented here carry residues of this planning approach. In Deerwood Elementary, two levels of classrooms open to the central library. In Rising Star and Fort Stevens schools, one can double the classroom size by collapsing dividers. Several partitions in the Bluffsvew and Slatehill clusters are removable, allowing teaching areas to vary from one to six classrooms in size.

If the open classroom changed the possibilities of the school room to include flexibility, fluidity, and freedom, it also introduced a series of risks: disorganization, disorientation, and noise. Today, educators and designers disagree over the effectiveness of the open classroom; yet as these projects show, interest in these flexible teaching environments still lingers.



# FORT STEVENS ELEMENTARY SCHOOL

**Architect:** Erickson McGovern Architects, Tacoma, WA.  
**Design Team:** John Erickson, Partner in Charge; Tzzy Wong, Project Architect.  
**Capacity:** 550 students, kindergarten through grade 5  
**Area:** 42,000 square feet  
**Cost/Square Foot:** \$81  
**Completion:** January 1991  
**Client:** Yelm School District #2



**FLOOR PLAN**

- 1 ENTRANCE
- 2 ADMINISTRATION
- 3 STAGE
- 4 GYMNASIUM
- 5 PLAYSHED
- 6 LIBRARY
- 7 CLASSROOMS

Fort Stevens Elementary, located in rural Washington State, is a one-story brick structure with low-pitched roofs and deep eaves. While the planning resembles other projects discussed in this issue, the elevations reflect the influences of regional style. In this case, the plan strategy resembles the Oak Ridge School, in that the classrooms are separated into three wings which are each centered on a shared activity space. Here, however, rather than attaching to a linear corridor, the three blocks are connected by hallways that cross next to the library. Clusters of classrooms form a figure around the library, and one enters between this group and the gymnasium/assembly area; however, the offset hallways deemphasize the center of this project, producing instead a series of centers of equal importance that open onto the classrooms. Rather than establishing a core of services, the location of bathrooms and entries at the ends of the halls reinforces the radial disposition of the clusters.

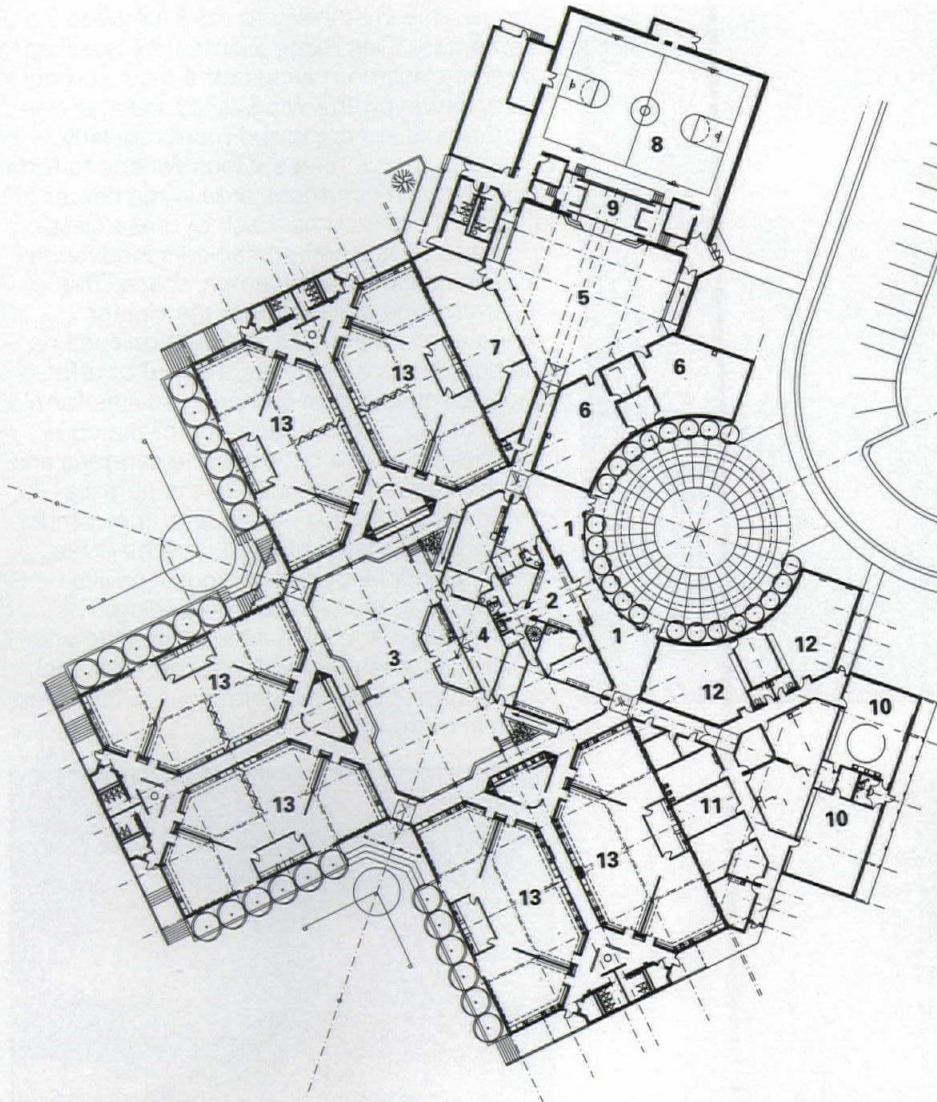


**ENTRANCE**

# RISING STAR ELEMENTARY SCHOOL

**Architect:** Hansen Midgley Niemackl Architects, Overland Park, Kansas.  
**Design Team:** William P. Midgley, *Principal and Designer*; Frank B. Sotolar, *Project manager*; John Hansen and Doug Blessman, *Design Technicians*.  
**Capacity:** 750 students, kindergarten through grade 6  
**Area:** 80,000 square feet  
**Cost/Square Foot:** \$65  
**Completion:** September 1990  
**Client:** Shawnee Mission Public Schools, Dr. Raj K. Chopra, Superintendent

P/A Plans



## FLOOR PLAN

- |                  |                      |
|------------------|----------------------|
| 1 LOBBY          | 8 GYMNASIUM          |
| 2 ADMINISTRATION | 9 STAGE              |
| 3 LIBRARY        | 10 KINDERGARTEN      |
| 4 COMPUTERS      | 11 SPECIAL EDUCATION |
| 5 CAFETERIA      | 12 ART               |
| 6 MUSIC          | 13 CLASSROOMS        |
| 7 KITCHEN        |                      |

Rising Star Elementary displays great facility with classroom cluster plan-making. The library and administrative offices form the center of the school, around which three eight-classroom pods are evenly arranged. One enters between two special service wings into a circular entry plaza. The circular plaza leads directly to the administrative core, which leads in turn to the classroom clusters. These clusters have operable partitions to allow flexible use of the area. The strong axial plan permits the incorporation of special program functions (at 45 degrees to the core) without the formal disintegration common in cluster schemes. This strategy gives the school a surprising amount of coherence without simple, linear hallways. The network of corridors provides both legibility and variety in the spaces between clusters. It also gives the clusters equal proximity to both the library/computer core and play areas. The underfloor duct system, giving central computer access to all instruction areas, is here made a spatial theme.



ENTRANCE LOBBY

Progressive Architecture 3.92

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Architectural Photographs/Tom Sanders

# OAK RIDGE ELEMENTARY SCHOOL

**Architect:** Breslin Ridyard Fadero Architects, Allentown, PA.  
**Design Team:** Robert J. Breslin, *Partner in Charge*; Michael Ackerman, Joseph Biondo, *Project Designers*; William J. Stank, *Project Manager*; Bruno Bianchini, *Specifications Writer*.

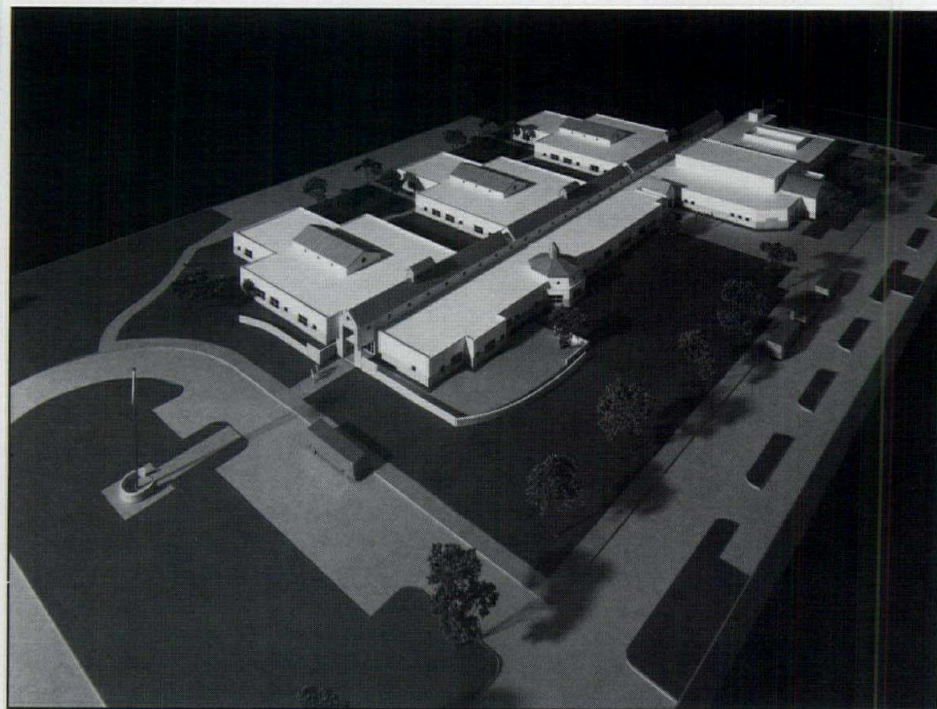
**Capacity:** 675 students, kindergarten through grade 5

**Area:** 67,000 square feet

**Cost/Square Foot:** \$110.50

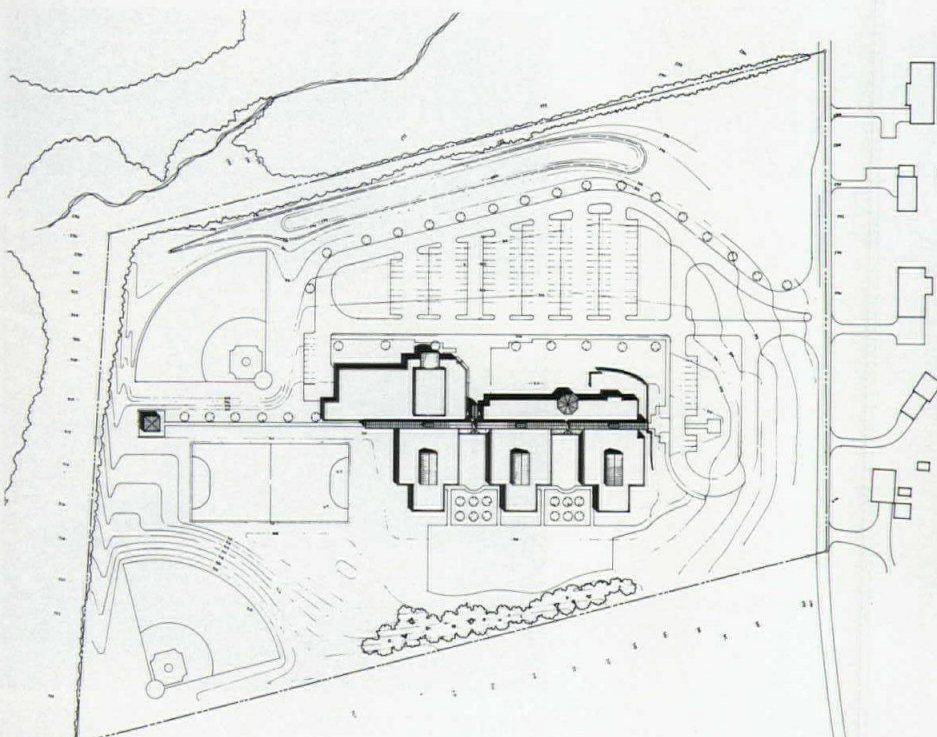
**Completion:** August 1990

**Client:** Souderton Area School District

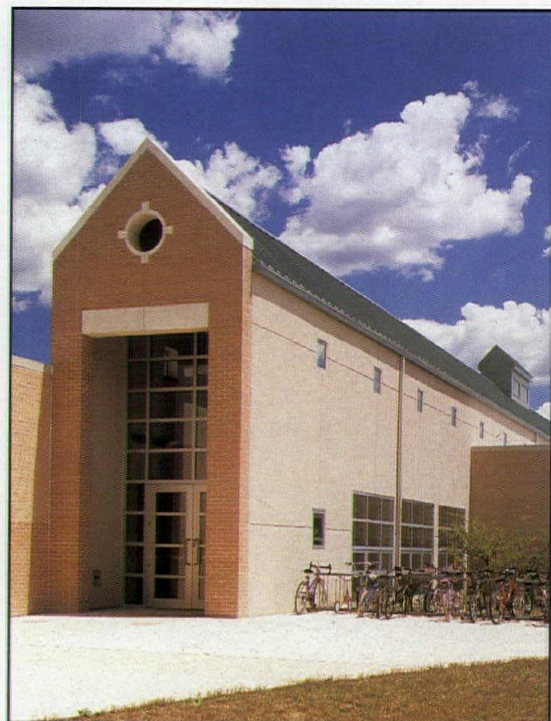


Comparable in strategy to the Blue Haze Elementary, Oak Ridge Elementary consists of three classroom wings off a main corridor. Here, however, the wings are parallel to one another and are organized more regularly. The circulation in these wings widens to form a clerestoried commons area in the center of a block of classrooms. Each of these classroom blocks is a self-contained school, with its own utilities and assembly space. This illustrates one advantage of the cluster scheme, eliminating an absolute reliance on the corridor as a continuous space of reference. Large program gathering spaces form a group at the northwestern end of the corridor, divided in two between the cafeteria and the theater/auditorium. All of the non-academic areas line this east side of the corridor. The most figurative of these spaces is the library, a cupola-topped octagonal pavilion embedded in the face of the building. The main hallway is a tall, gabled colonnade with punched clerestory windows and, over each of the three classroom entrances, a cupola to bring in more light.

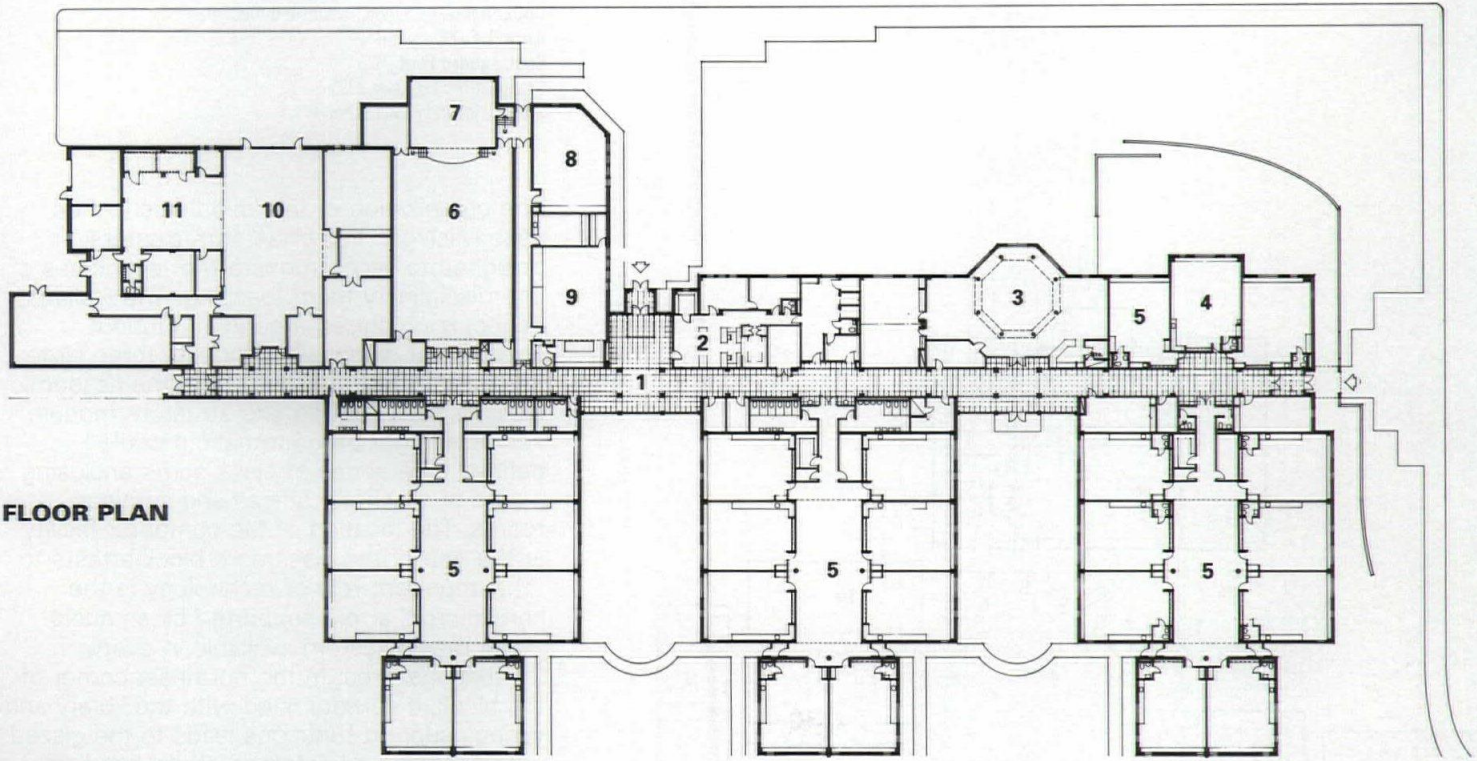
MODEL



SITE PLAN



ENTRY



**FLOOR PLAN**

- |                     |              |
|---------------------|--------------|
| 1 LOBBY             | 7 STAGE      |
| 2 ADMINISTRATION    | 8 MUSIC      |
| 3 LIBRARY           | 9 ART        |
| 4 KINDERGARTEN      | 10 CAFETERIA |
| 5 CLASSROOM         | 11 KITCHEN   |
| 6 MULTIPURPOSE ROOM |              |

N ↖ 40'/12m



**CORRIDOR**

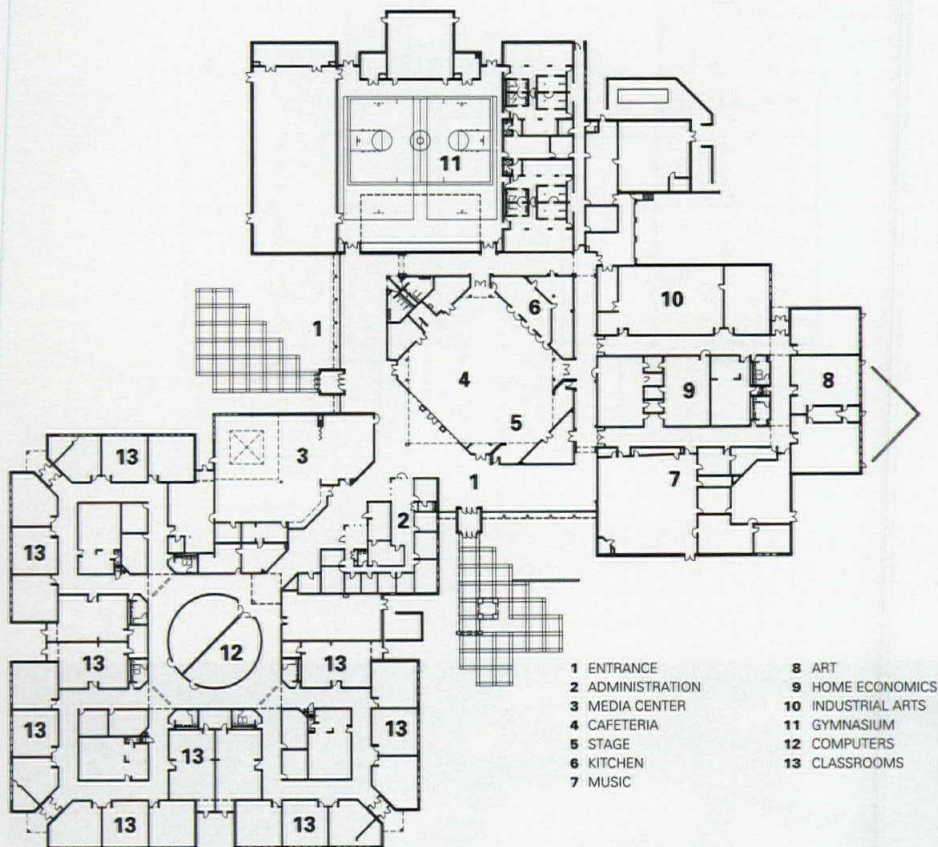


**VIEW FROM WEST**

# HOLLAND MIDDLE SCHOOL

**Architect:** Kingscott Associates, Inc., Kalamazoo, MI.  
**Design Team:** Brooks Godfrey, AIA, *Project Director*; James Robinson, AIA, *Design Architect*; Lee Andrea, AIA, *Project Architect*; Heidi Compher, *Interior Designer*; Lynn Hartman, *Job Captain*; John Tremore, PE, *Structural Engineer*.  
**Capacity:** 800 students, grades 6 through 8.  
**Area:** 135,000 square feet  
**Cost/Square Foot:** \$73  
**Completion:** February 1991  
**Client:** Holland Public Schools

The organization of this middle school on Lake Michigan has classroom clusters designed to accommodate the techniques of interdisciplinary team teaching. The Holland School is organized around a "student street" that diagonally connects three large blocks of different activities. In the academic block, a thirty-foot square structure module serves a larger programmatic module defined by a series of classrooms enclosing a core of teachers' offices and seminar rooms. The location of the computer facility at the hub of the classroom block attests to "the important role of technology in the curriculum," a role supported by an audio-visual media system available in every instructional area. In the northeast corner of the block, a corridor lined with the library and various support functions leads to the glazed entry lobbies and cafeteria at the heart of the building. Flanking two sides of the cafeteria are two additional instructional blocks containing, respectively, physical education and unified arts facilities.



**FLOOR PLAN**

N ↑ 40'/12m

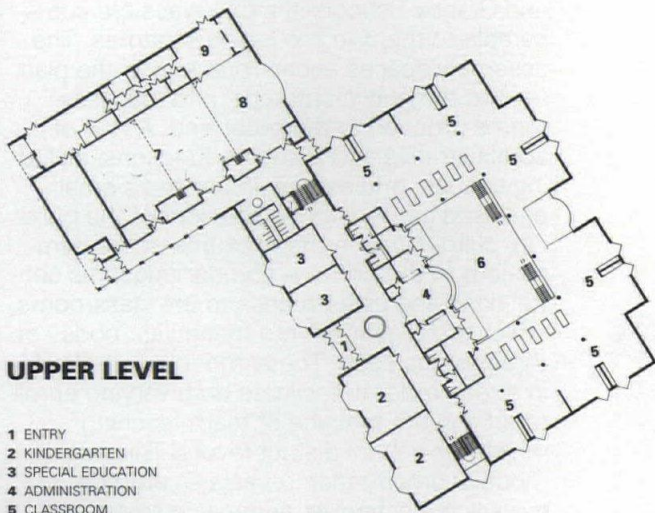


**ENTRANCE**



# DEERWOOD ELEMENTARY SCHOOL

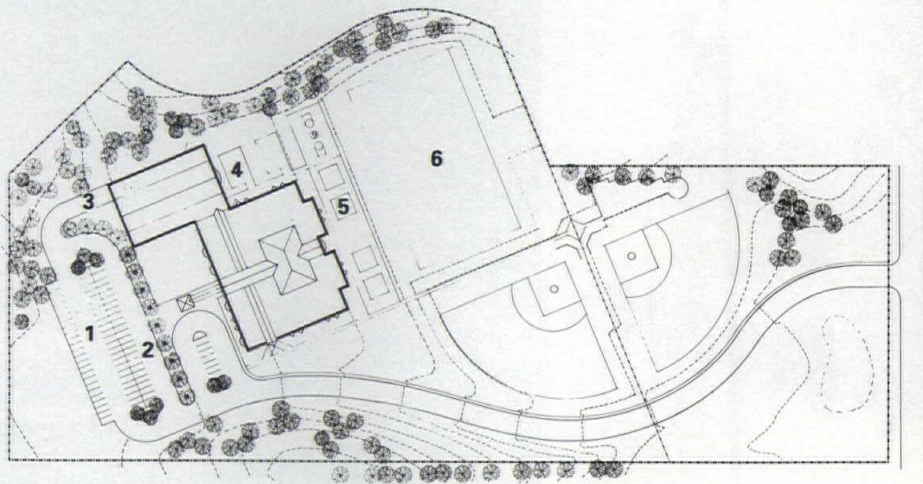
**Architect:** Hammel Green and Abrahamson, Minneapolis, Minnesota  
**Design Team:** Kurt Rogness, Ted Rozeboom, Ted Butler, Tom Johnson, Peter Graffunder.  
**Capacity:** 750 students, in grades K-5  
**Size:** 78,000 square feet  
**Cost/Square Foot:** \$70.50  
**Completion:** 1989  
**Client:** Independent School District #196, Rosemount, Minnesota



## UPPER LEVEL

- 1 ENTRY
- 2 KINDERGARTEN
- 3 SPECIAL EDUCATION
- 4 ADMINISTRATION
- 5 CLASSROOM
- 6 LIBRARY
- 7 GYMNASIUM
- 8 CAFETERIA
- 9 KITCHEN

N → 40'/12m

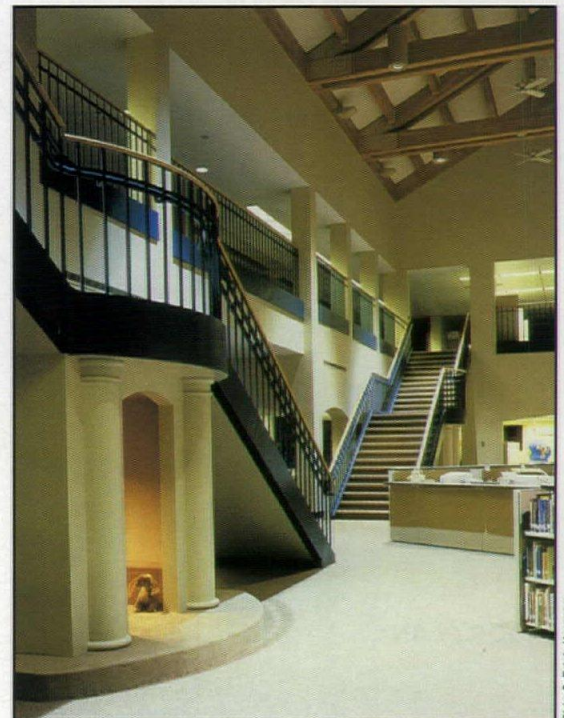


## SITE PLAN

- 1 PARKING
- 2 BUS DROP OFF
- 3 SERVICE
- 4 TERRACE
- 5 COURTS
- 6 PLAYING FIELDS

N → 200'/60m

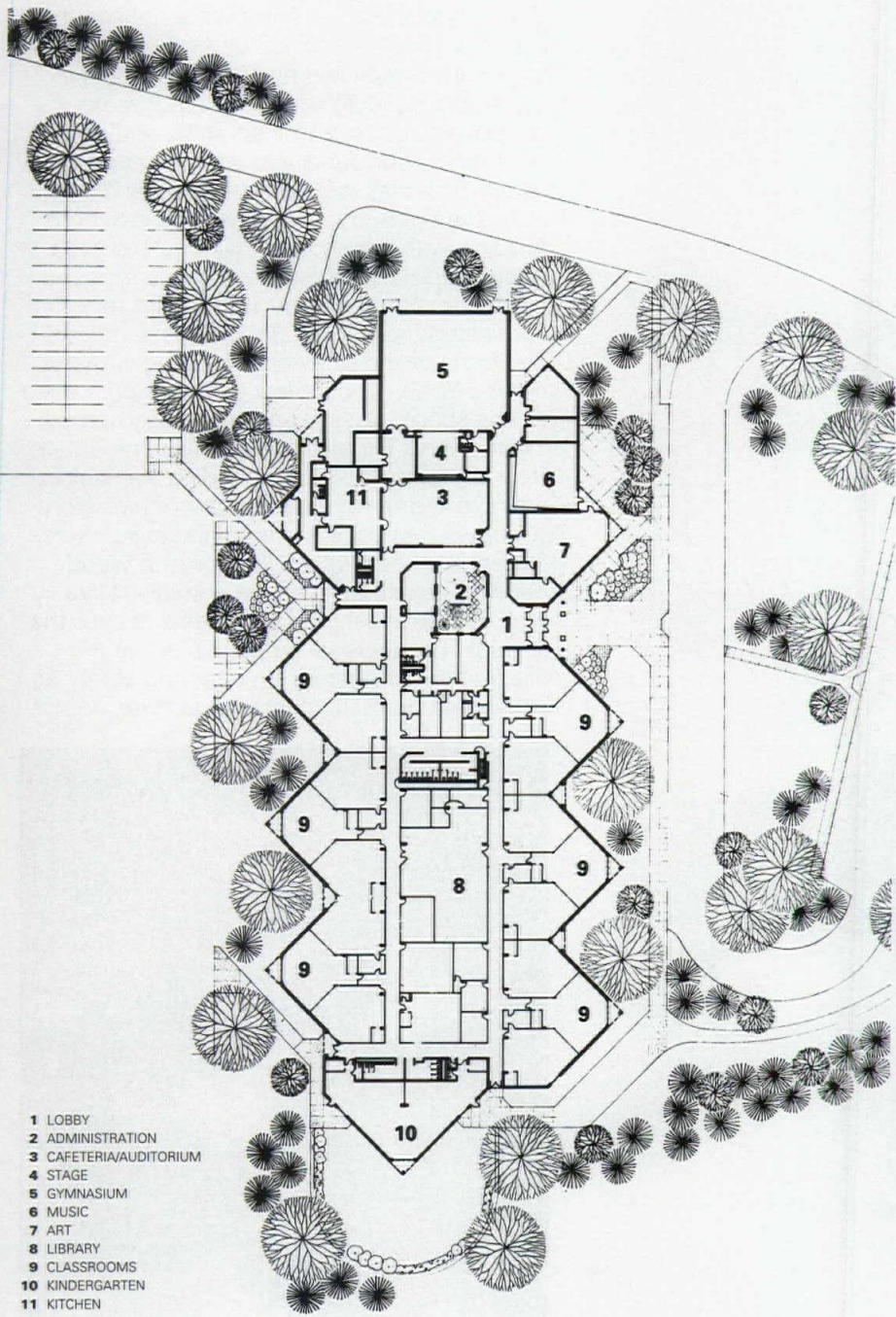
This school in Eagan, Minnesota houses the districts's program for emotionally and behaviorally disturbed children. The plan of the classroom building consists of four areas: special education, administration, and open classrooms surrounding a double-height library. The main corridor runs perpendicular to the line of entry, connects the classroom building with the athletic building, and separates special education classrooms – closed classrooms on the entry side – from the administrative offices. Behind these offices, the focus of the classroom building is the central library. Two levels of classrooms open to this space: classrooms and library combining to form a large balconied hall. One enters from the upper level, descending via flanking stairs to the library floor in front of two-story windows, opposite the administrative offices. Exposed wood trusses support the wood ceiling. Projecting from the administrative wall, the attendance office presides over the interior. The unusual openness of the classroom arrangement makes the library an active and dramatic center of activity.



LIBRARY

# WORTHINGTON PARK AND GRANBY ELEMENTARY SCHOOLS

**Architect:** S.E.M. Partners, Columbus, OH.  
**Design Team:** William Prenosill, *Principal in Charge*; Richard Corrigan, *Project Manager*.  
**Capacity:** 500 students, kindergarten through grade 6  
**Area:** 59,000 square feet  
**Cost/Square Foot:** \$67  
**Completion:** August 1988  
**Client:** Worthington City Schools

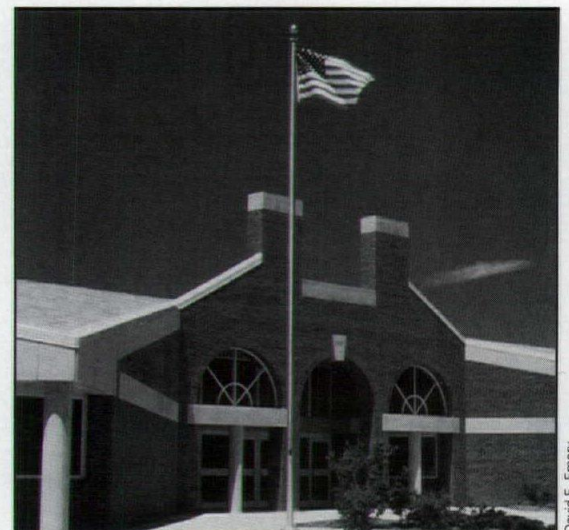


- 1 LOBBY
- 2 ADMINISTRATION
- 3 CAFETERIA/AUDITORIUM
- 4 STAGE
- 5 GYMNASIUM
- 6 MUSIC
- 7 ART
- 8 LIBRARY
- 9 CLASSROOMS
- 10 KINDERGARTEN
- 11 KITCHEN

**FLOOR PLAN**

N 40'/12m

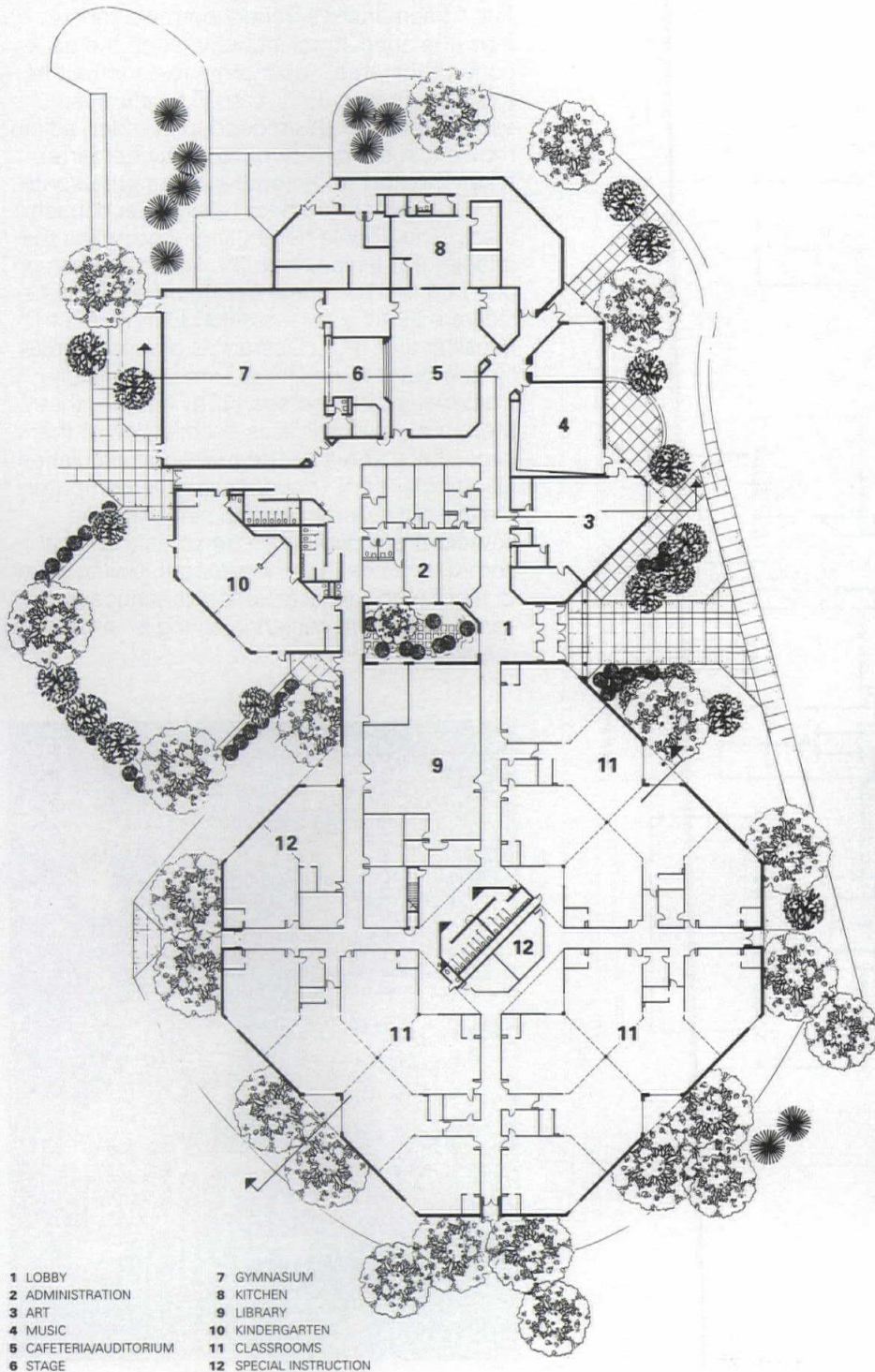
Two identical facilities for a rapidly growing community in Ohio, the Worthington Park and Granby Schools in many ways are comparable to the two preceding schemes. The assembly spaces anchor one end of the plan, next to the public entrance, and the classrooms proceed to the other end. A row of administrative and resource functions, including utilities, offices, the library and a small enclosed garden, forms the core of the building, culminating in the brick box of the gymnasium to the north. A corridor rings this central band and gives access to the classrooms, which are organized into triangular "pods" of three rooms each. These modules are flexible in size in order to facilitate both varying enrollment and the practice of team teaching, which the school district favors. This use of modular organization reveals an attitude toward the school as an organic spatial system, an approach to plan-making which might conflict with the architects' stated contextual aims; the elevations are designed to "provide exterior harmony with the community's colonial setting."



**ENTRANCE**

# BLUFFSVIEW AND SLATE HILL ELEMENTARY SCHOOL

**Architect:** S.E.M. Partners, Architects, Columbus, OH.  
**Design Team:** William Prenosill, *Principal in Charge*;  
 Richard Corrigan, *Project Manager*.  
**Capacity:** 500 students per building, kindergarten through grade 6  
**Area:** 61,500 square feet per building  
**Cost/Square Foot:** \$80  
**Completion:** November 1990  
**Client:** Worthington City Schools



- |                        |                        |
|------------------------|------------------------|
| 1 LOBBY                | 7 GYMNASIUM            |
| 2 ADMINISTRATION       | 8 KITCHEN              |
| 3 ART                  | 9 LIBRARY              |
| 4 MUSIC                | 10 KINDERGARTEN        |
| 5 CAFETERIA/AUDITORIUM | 11 CLASSROOMS          |
| 6 STAGE                | 12 SPECIAL INSTRUCTION |

## FLOOR PLAN

40/12m

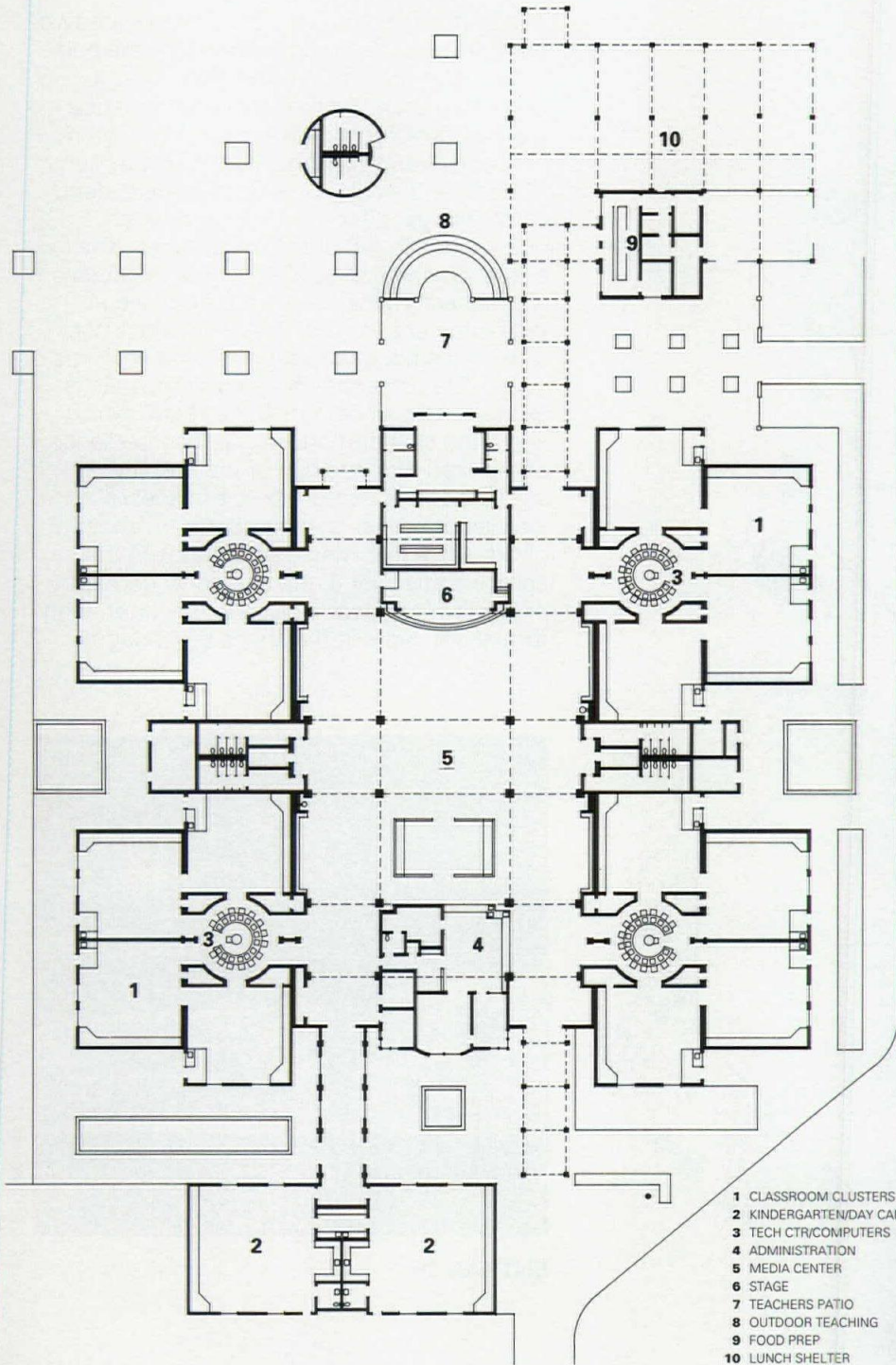
The Bluffsview and Slate Hill Schools are two identical projects commissioned for the public school system in Worthington, Ohio. In these two projects, the architects continue themes explored earlier in the Worthington Park and Granby Schools for the same client. A tripartite, flexible classroom module identical to that used for the earlier projects defines the kernel of the current plan. The academic and non-academic spaces occupy two separate wings, with the entrance at their intersection. The classroom block consists of a strict geometric and programmatic order. The octagonal footprint of the plan is divided into four sectors by hallways which serve the cluster modules. At the intersection of the corridors, the hub of the building, a skylit node surrounds a core of "special instruction areas" and restrooms. The clarity of the academic wing disintegrates in the administrative wing, the octagonal geometry of the former decomposing in the latter, with formal left-overs in the shape of 45-degree angles.



ENTRANCE

# CHAPMAN HILLS ELEMENTARY SCHOOL

**Architects:** Dougherty & Dougherty, Newport Beach, CA.  
**Capacity:** 608 Students, Kindergarten Through Grade 6.  
**Area:** 37,700 Square feet.  
**Cost/Square Foot:** \$129  
**Competition:** August 1991  
**Client:** Orange (CA) Unified School District



- 1 CLASSROOM CLUSTERS
- 2 KINDERGARTEN/DAY CARE
- 3 TECH CTR/COMPUTERS
- 4 ADMINISTRATION
- 5 MEDIA CENTER
- 6 STAGE
- 7 TEACHERS PATIO
- 8 OUTDOOR TEACHING
- 9 FOOD PREP
- 10 LUNCH SHELTER

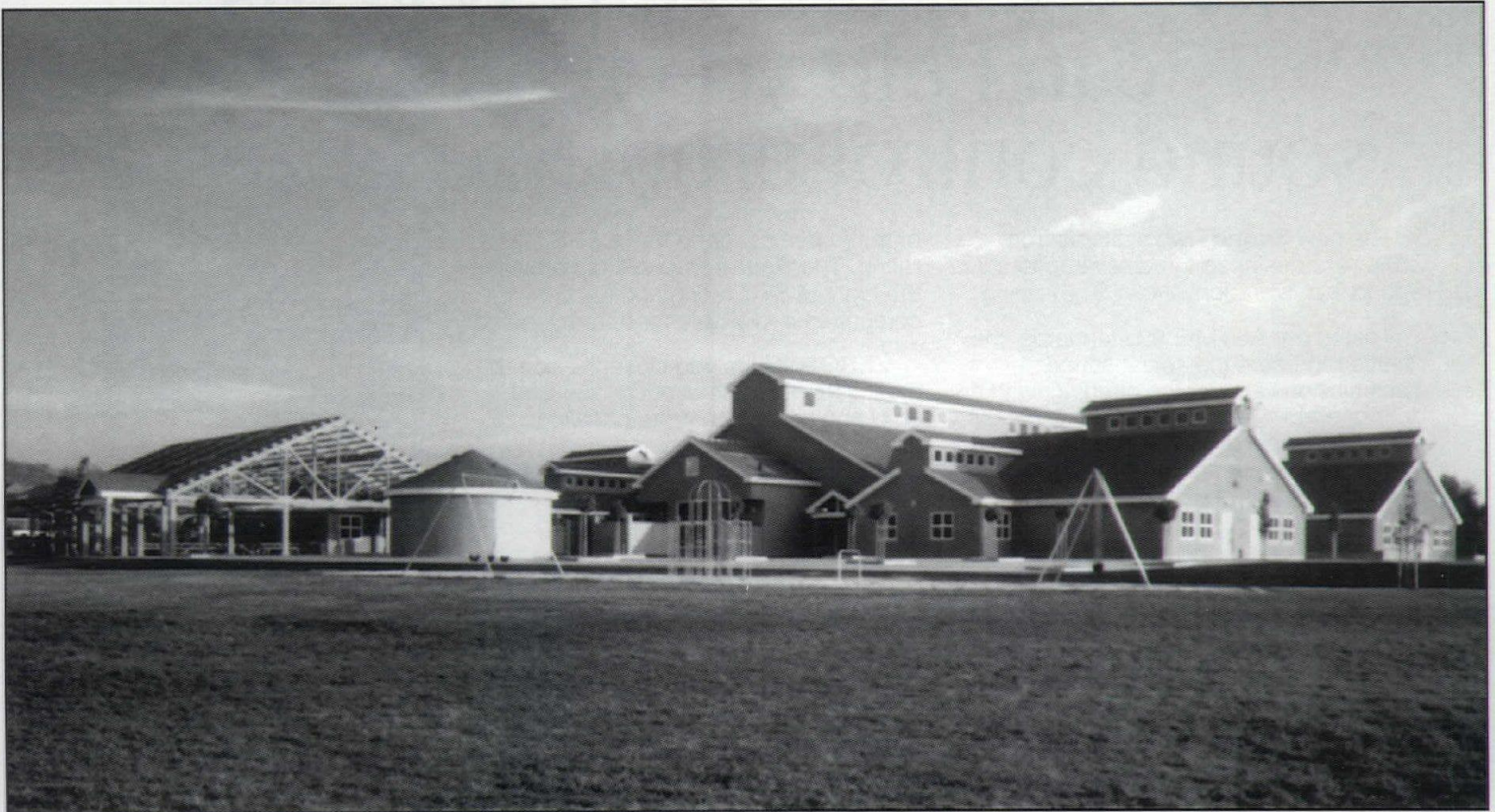
The Chapman Hills School borrows forms from the agricultural industry (once the backbone of the area's economy) to construct its teaching spaces. Four barn-like volumes, each containing an embedded cylinder, adjoin the central shed. A two-room Kindergarten takes the form of an outbuilding to the south. To the north are outdoor teaching and lunch areas. The double-height library occupies the middle of the plan, with the administration on one end and the stage on the other. To either side are attached classroom clusters, each consisting of four classrooms around a circular computer area. The scheme is distinct from many of those seen previously in that there are no corridors as such; aisles of the large space serve as the means of circulation. Opening directly to the library, the computer areas – tall cylinders which celebrate the computer's crucial role – serve as technical common spaces for the clusters. Giving form to technological accessories continues within each classroom, each containing a "multi-media wall."



**MEDIA CENTER**

**FLOOR PLAN**

N ↑ 40'/12m



VIEW FROM NORTHWEST

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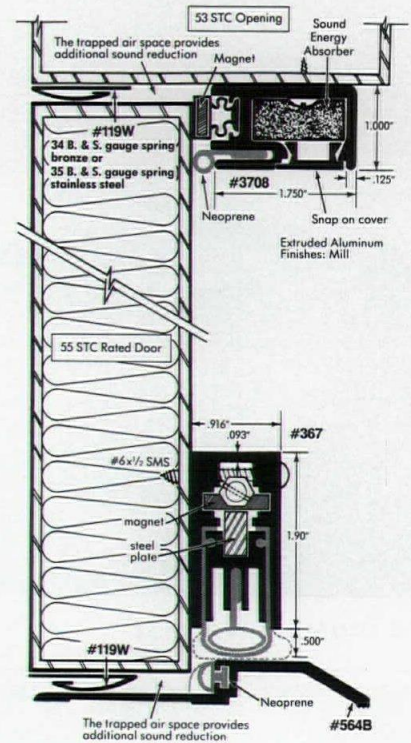
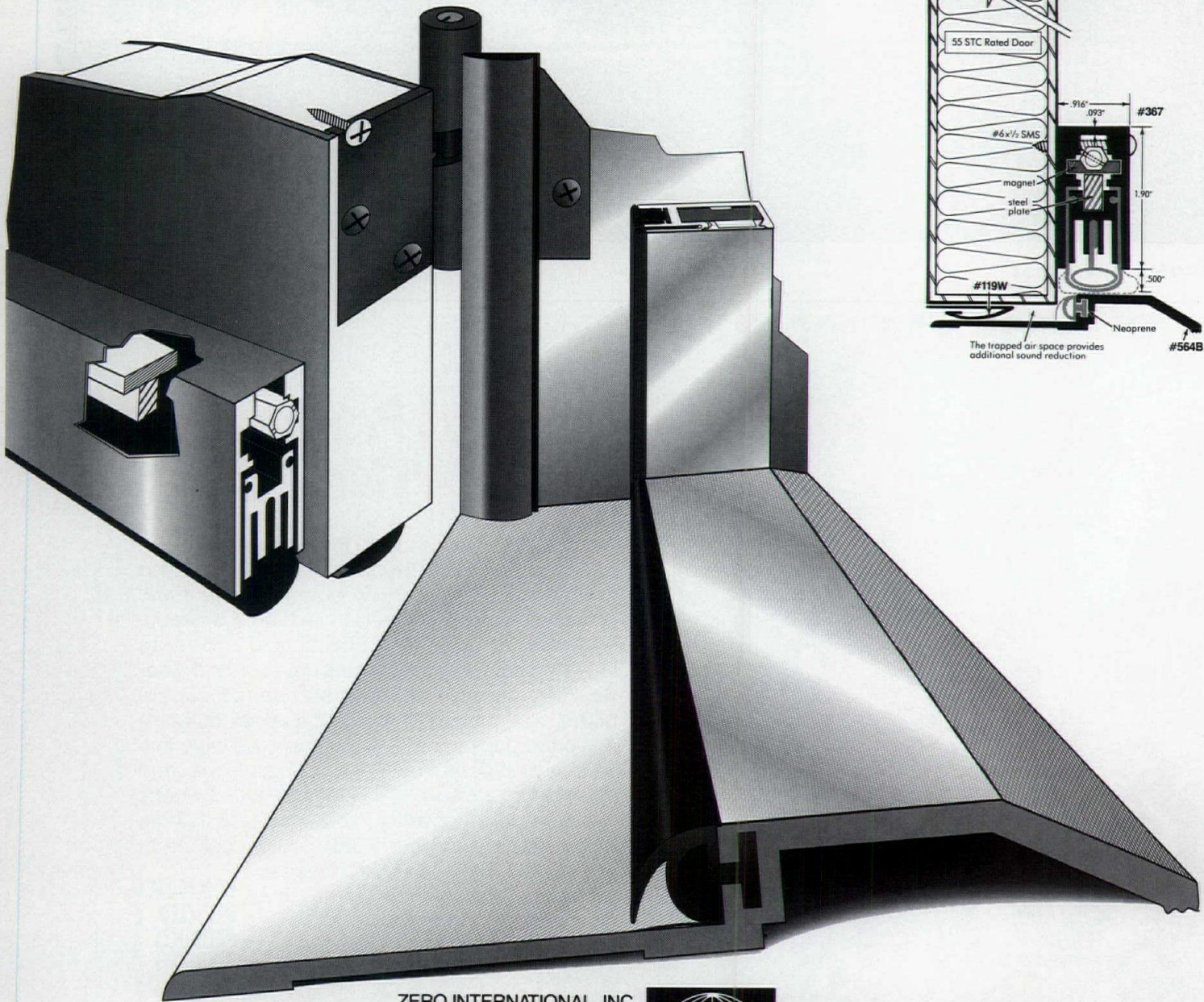
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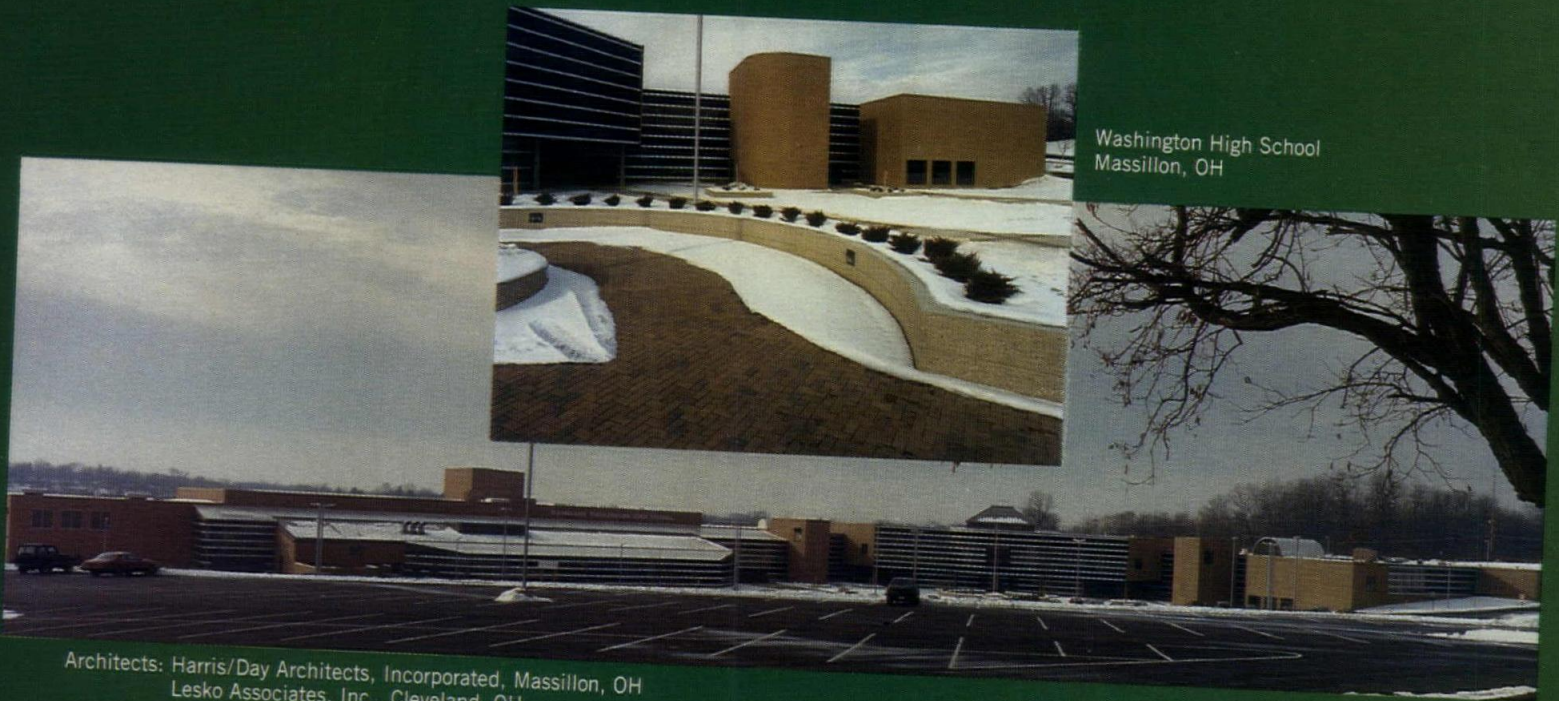
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Massillon, OH



Architects: Harris/Day Architects, Incorporated, Massillon, OH  
Lesko Associates, Inc., Cleveland, OH

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## DOUBLE CORRIDOR

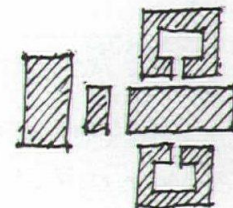
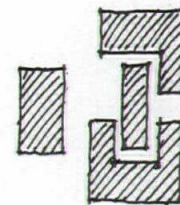
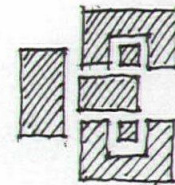
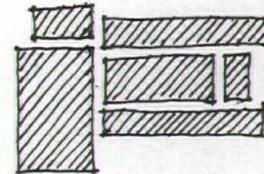
- 48 **Penn High**, Penn/Harris/Madison, IN
- 50 **New Futures School**, Albuquerque, NM
- 51 **Grace Abbott Elementary**, Millard, NE
- 52 **Blair Middle School**, Blair, NE
- 53 **South Washington County Elem.**, S. Washington County, MN
- 54 **Narrows View Intermediate**, Tacoma, WA
- 55 **Cherry Tree Elementary**, Carmel, IN
- 56 **H. Wayne Hendrick Middle School**, Plano, TX
- 57 **Sun Valley Elementary**, Birmingham, AL

The double corridor plan type provides economy and flexibility with an emphasis on interior space. Made up of continuous, enclosed areas, this type can be built quickly and can accommodate a variety of organizations. Typically, two parallel corridors give access to two program zones. The major zone consists of classrooms, library, and administration. The gymnasium, cafeteria, assembly, kitchen, lockers, and kindergarten make up the minor zone.

In many double corridor types the arrangement of the classrooms is suggested by the linear corridors. For example, in the Narrows View Elementary, classrooms line the perimeter; parallel corridors create a central band of the entry, administration, and media center. In other double corridor schools, classroom arrangement is independent of the corridors. In Blair Middle School and South Washington County Elementary, for instance, corridors connect classroom clusters. Double corridor design seems one of the preferred methods for organizing such cluster projects, lending formal discipline to the open classroom approach. Whether classroom arrangement is linear or clustered, the consistent overall symmetry of these double corridor projects combats disorientation within the large interiors.

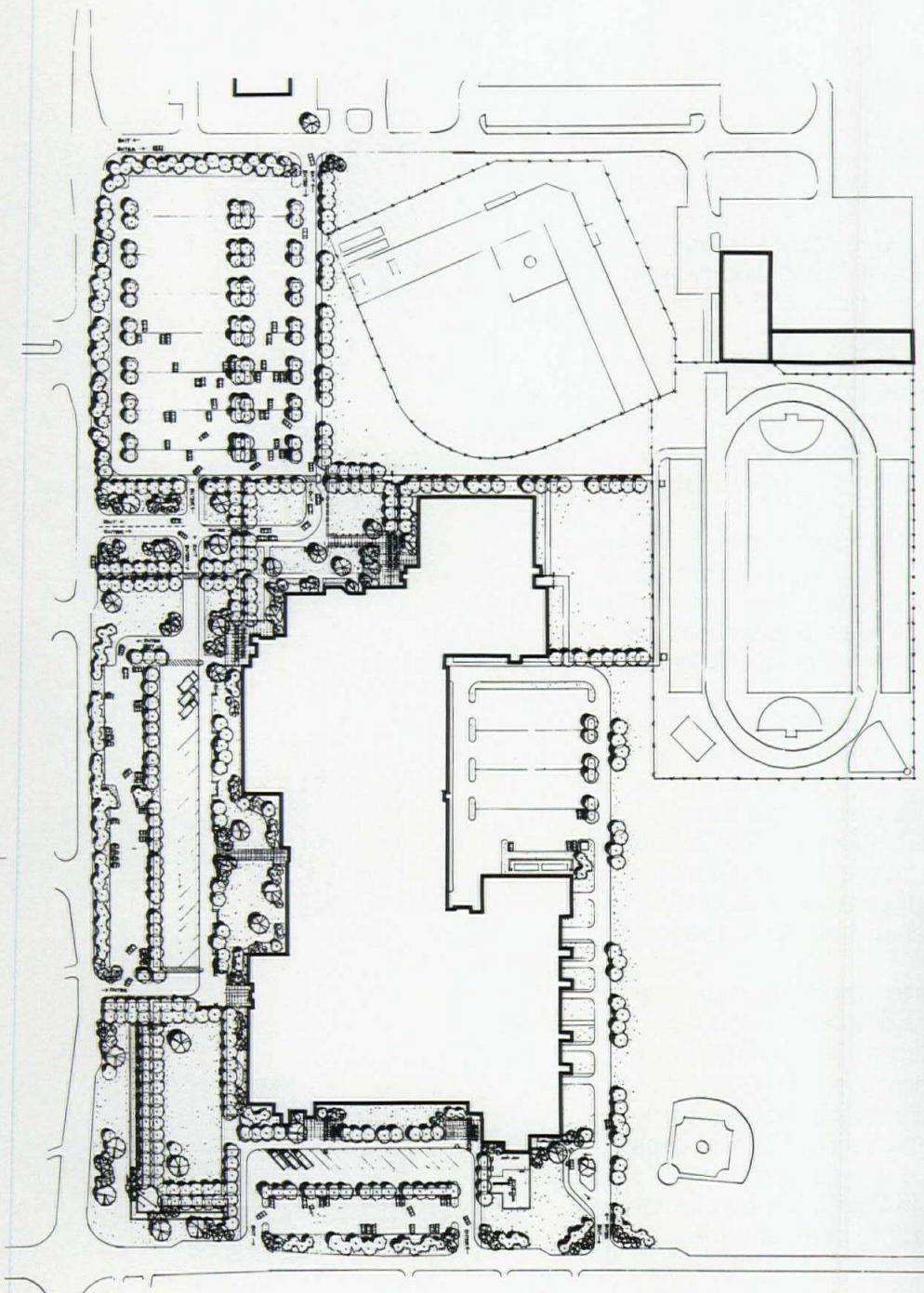
A double corridor school's unified space reduces the amount of exposed perimeter, making this a good type for harsh climates. None of the projects shown here incorporates exterior spaces such as lunch shelters, play sheds or story areas, seen in courtyard type schools. These designs also stand removed from the landscape. This interiority is not limited to the program. Formidable in size, double corridor plans prove difficult to integrate aesthetically into the suburban built environment. The depth of these buildings makes small scale fenestration and traditional detailing hard to achieve.

A problem posed by this strategy is how to introduce natural light to the middle of the volumes. The designs here propose a variety of solutions to this problem. Many schools, such as South Washington Elementary, introduce skylights central to the classrooms' common areas. As in a shopping mall, Hendrick Middle School creates a two-story top-lighted common. Narrows View Intermediate School uses skylights and dormer windows to light the central section. Light monitors run the full length of the corridors in Sun Valley Elementary, where three parallel monitors collect light for the entry and the resource center.

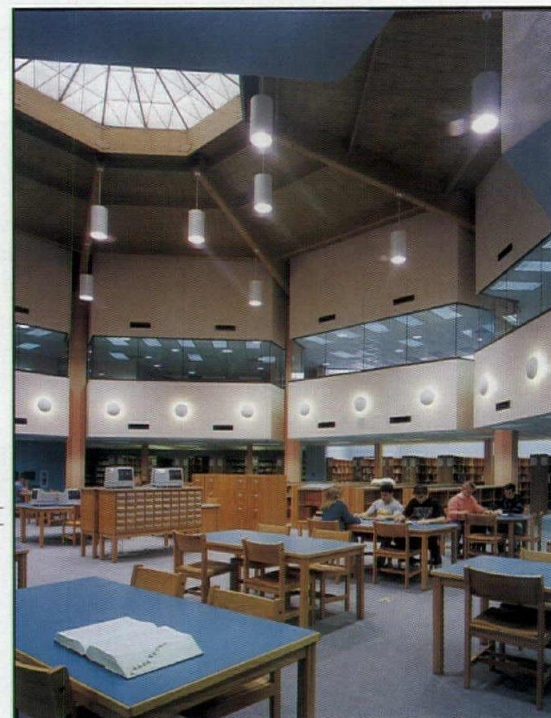


# PENN HIGH SCHOOL

**Architect:** Greiner, Inc., Grand Rapids, MI.  
**Design Team:** William Stevenson, *Project Manager*; Ron Duimstra, *Project Architect*. HMFH Architects, Inc., *Associate Architects*, Stephen Friedlander, *Project Designer*.  
**Capacity:** 2700 students, grades 9 through 12  
**Area:** 460,000 square feet  
**Cost/Square Foot:** \$81  
**Completion:** August 1990  
**Client:** Penn-Harris-Madison School Corporation



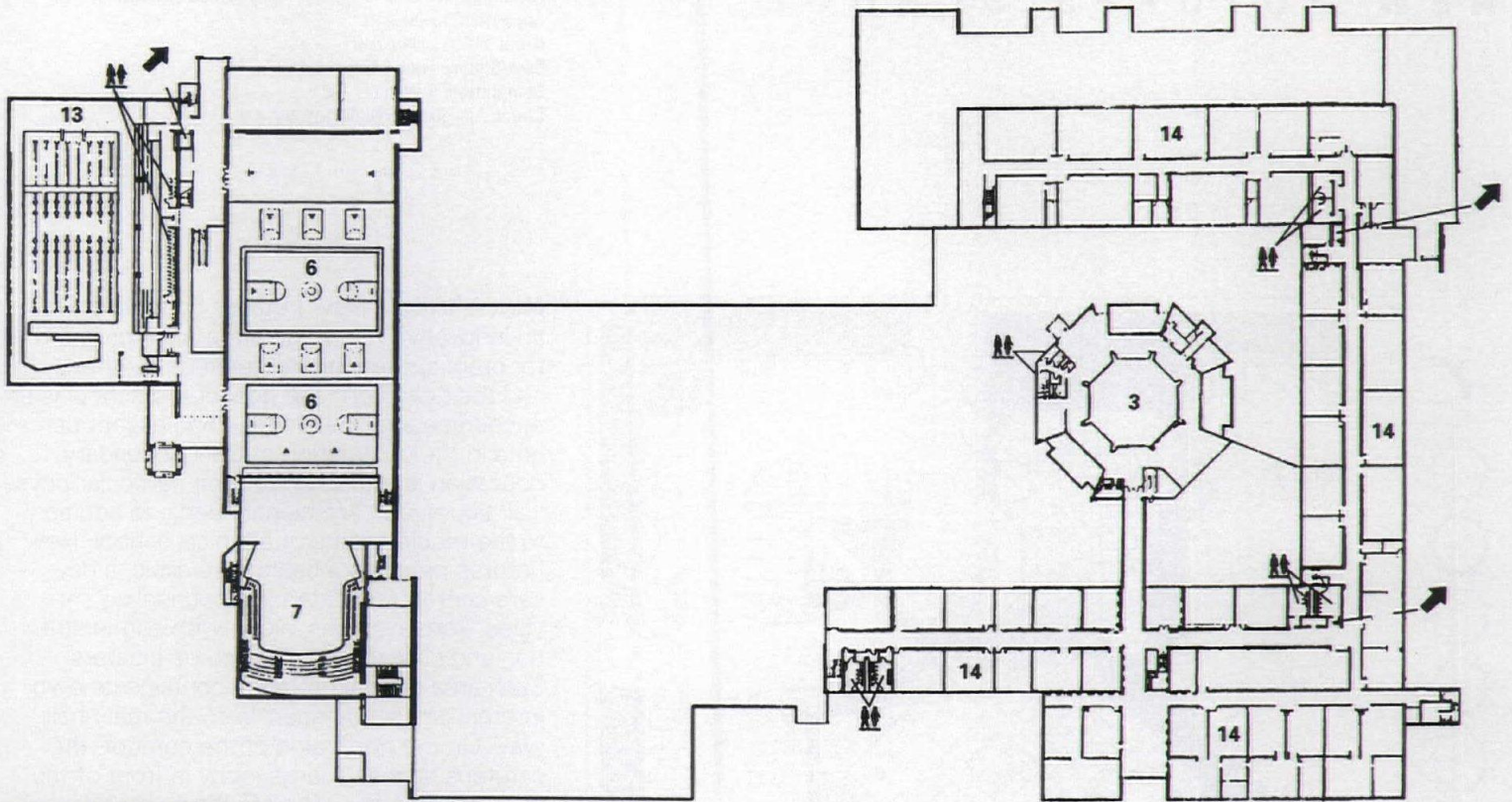
Penn High School in Indiana expands an existing building to become almost half a million square feet in size. The program is divided between an academic sector and a physical education and performing arts wing. These two-story ends adjoin the cafeteria in the middle. Facilities include two gymnasiums, an olympic-sized pool, two theaters, a scene shop, a dance studio, a day-care center, and a bookstore. The academic spaces cloister around a central media center. The library supports a "computer voice-data video interface" which can access, via satellite, other resources around the country, including the Library of Congress. Every classroom connects to this telecommunications system and carries an arsenal of audio-visual appliances. The school combines state-of-the-art technology with a strikingly medieval cloister scheme, evident on the second level, where the octagonal media center stands free as a kind of chapel at the center of the court.



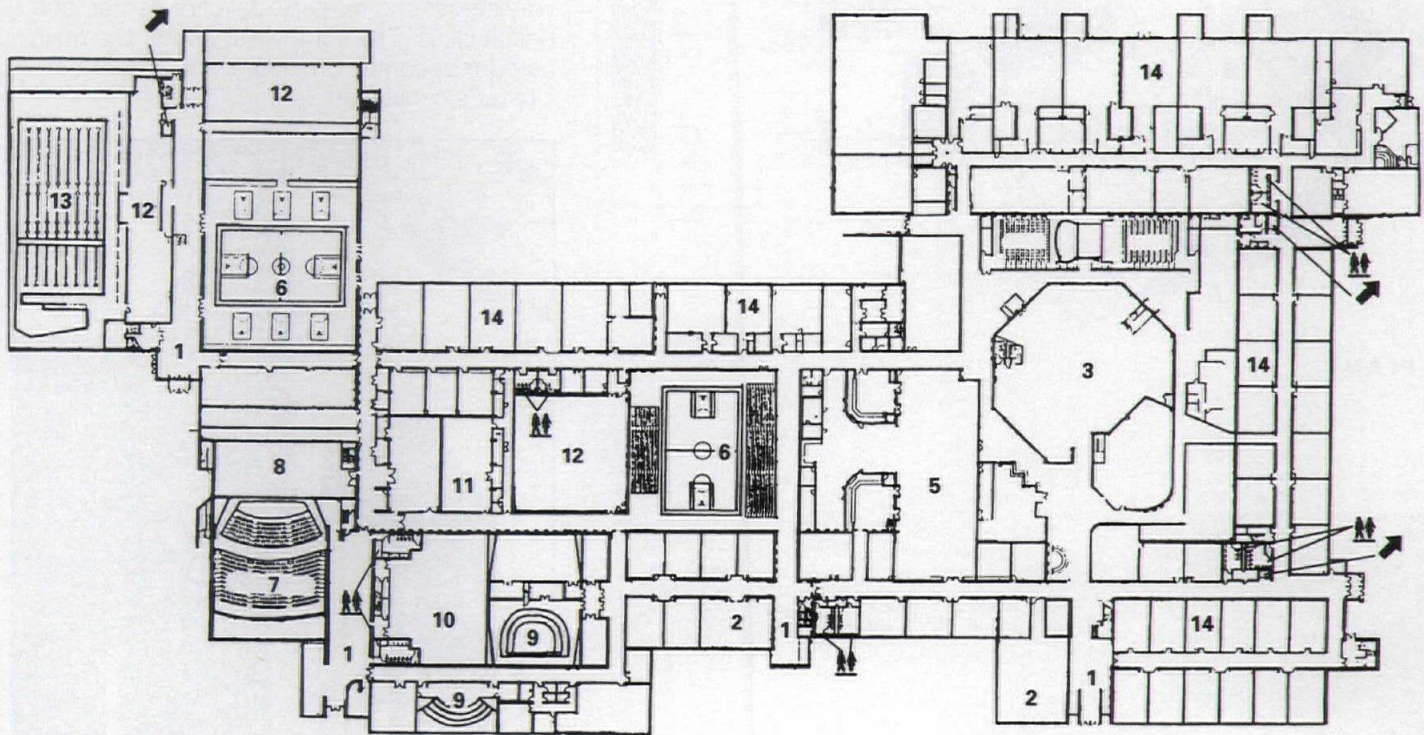
**MEDIA CENTER**

**SITE PLAN**

N → 200/60m



**SECOND FLOOR PLAN**



**FIRST FLOOR PLAN**

- |                  |                   |
|------------------|-------------------|
| 1 LOBBY          | 8 STAGE           |
| 2 ADMINISTRATION | 9 REHEARSAL       |
| 3 MEDIA CENTER   | 10 STUDIO THEATER |
| 4 BOOKSTORE      | 11 DANCE          |
| 5 CAFETERIA      | 12 LOCKER ROOMS   |
| 6 GYMNASIUM      | 13 POOL           |
| 7 AUDITORIUM     | 14 CLASSROOMS     |

N ↑ 100/30m

# NEW FUTURES SCHOOL

**Architect:** Dekker & Associates P.C., Albuquerque, NM.

**Capacity:** 230 students

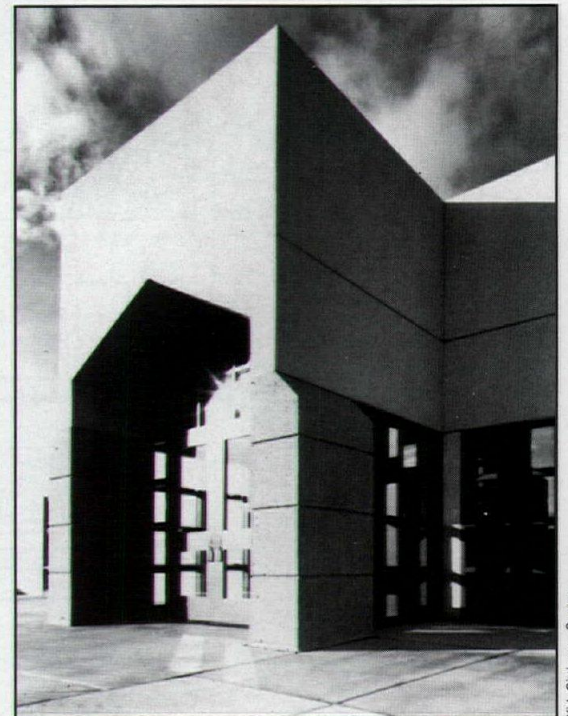
**Area:** 30,000 square feet

**Cost/Square Foot:** \$45

**Completion:** September 1988

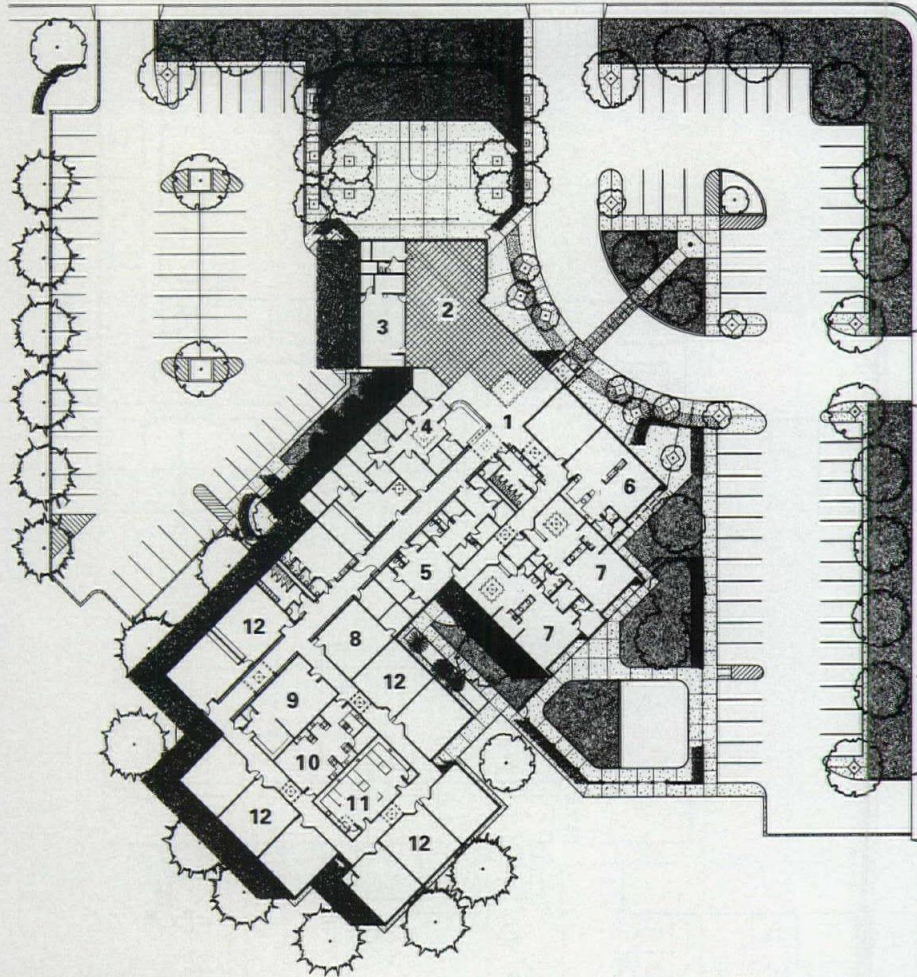
**Client:** Albuquerque Public Schools

New Mexico's New Futures School serves an innovative role as an alternative program for pregnant teenagers, teenage mothers, and their children. The goal of the school is to encourage and assist these adolescent parents in the completion of their secondary education and to cater to their particular physical, social, and emotional needs. In addition to the requirements of a typical school, New Futures provides a healthcare clinic, a day-care center, and extensive counseling services. These spaces, along with administration and classrooms, form three clusters. Each area of concentration contains its own internal circulation apart from the main hallway. On the north side of the corridor, the cafeteria acts as a large lobby in front of the attendance office. The offices surround a small, skylighted common area that is the hub of the administration and faculty. On the opposite side of the corridor, an ancillary hallway serves the nursery, daycare center, and health clinic. The southwest end of the main corridor becomes one leg of the academic cluster's circulation.



**ENTRANCE**

Kirk Gittings - Syntax



**FLOOR PLAN**

- |                  |               |
|------------------|---------------|
| 1 ENTRANCE       | 7 DAY CARE    |
| 2 CAFETERIA      | 8 LIBRARY     |
| 3 KITCHEN        | 9 BUSINESS    |
| 4 ADMINISTRATION | 10 HOME ARTS  |
| 5 HEALTH CLINIC  | 11 SCIENCE    |
| 6 NURSERY        | 12 CLASSROOMS |

N ↑ 40'/12m

# GRACE ABBOTT ELEMENTARY SCHOOL

**Architect:** Zenon-Beringer & Associates, Omaha, NE.

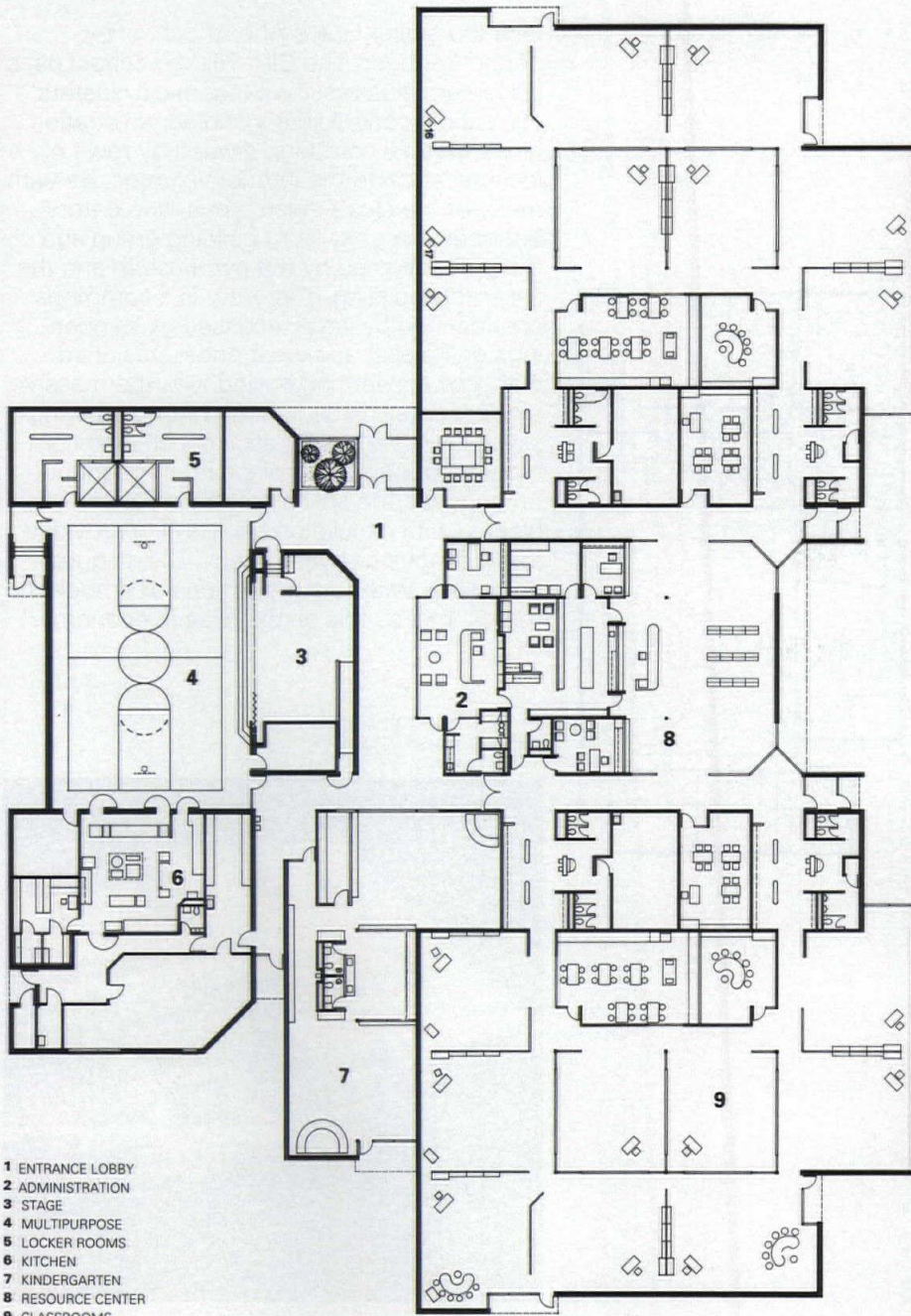
**Capacity:** 500 students

**Area:** 50,450 square feet

**Cost/Square Foot:** \$36

**Completion:** July 1981

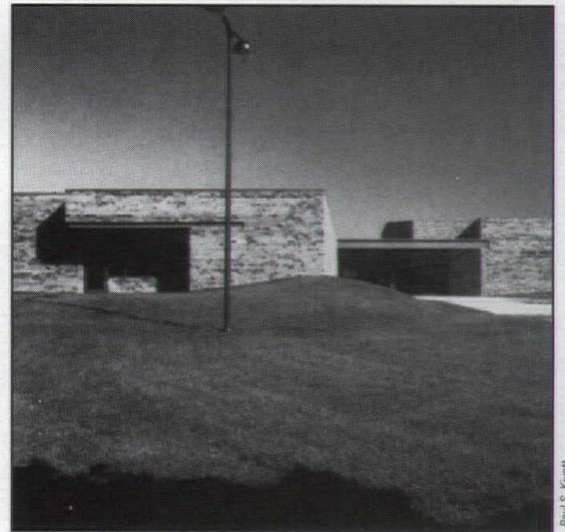
**Client:** Millard Public Schools



**FLOOR PLAN**

N → 20'/6m

The Grace Abbott Elementary, a prototype for the Millard Public Schools in Omaha, Nebraska, combines cluster classrooms with double corridor organization for a compact and economical school design. The overall diagram, with classrooms and circulation abutting two sides of the administration and resource center, resembles the planning strategies of Cherry Tree elementary and Hendrick Middle School (illustrated elsewhere in the issue); however, in this project, the classrooms are in the form of large open clusters, or "learning pods." The western entry, opposite the kindergarten rooms, separates the main building from the gymnasium/assembly area. The spare brick volumes are arranged with an upset symmetry. The perimeter walls form heavy, disjointed corners, allowing light in the openings between. The resource center retreats under a deep overhang. In contrast with the structure's massive outlines, demountable partitions define teaching areas within.



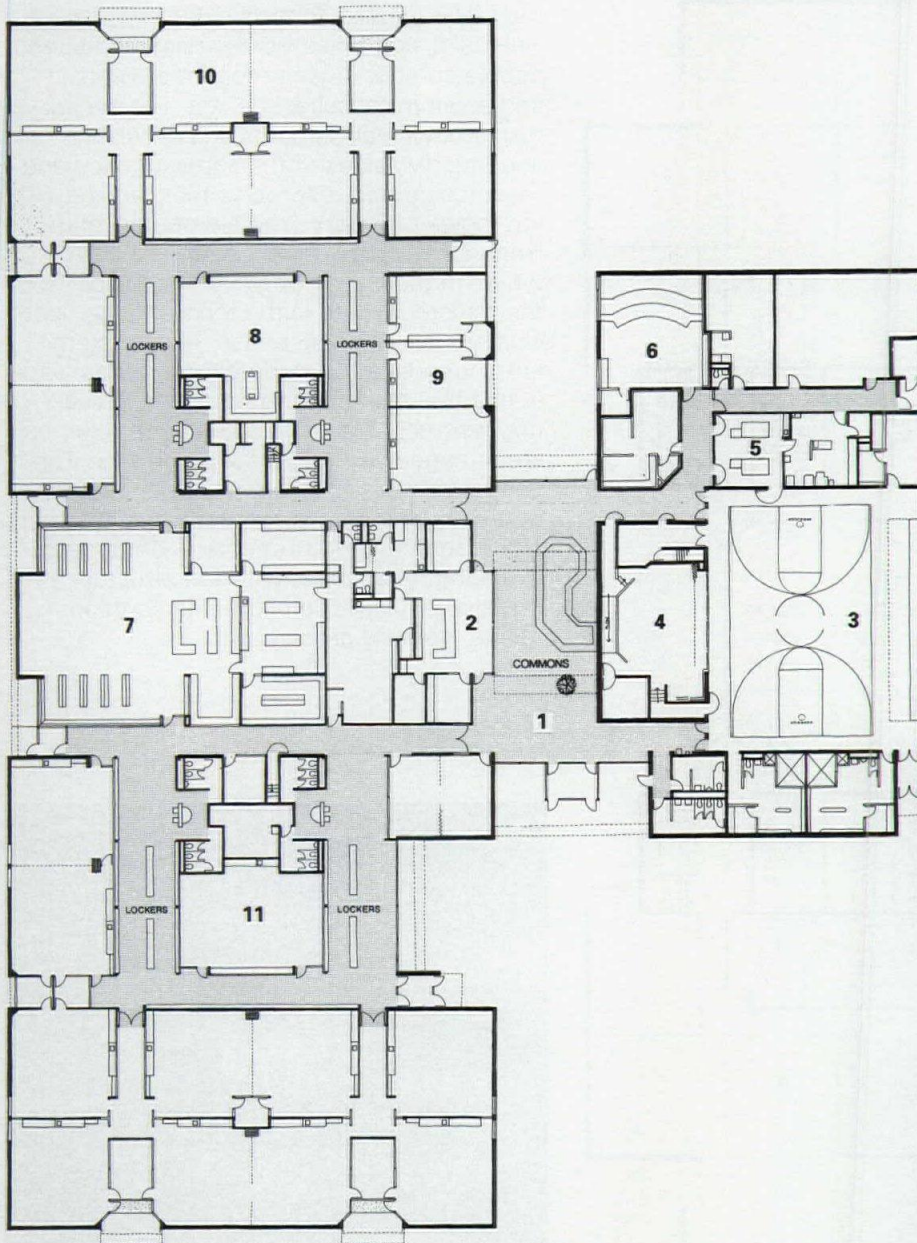
**VIEW FROM WEST**

Paul S. Knett

# BLAIR MIDDLE SCHOOL

**Architect:** Zenon-Beringer & Associates, Omaha, NE.  
**Capacity:** 550 students  
**Area:** 63,500 square feet  
**Cost/Square Foot:** \$59.00  
**Completion:** March 1990  
**Client:** Blair Public Schools

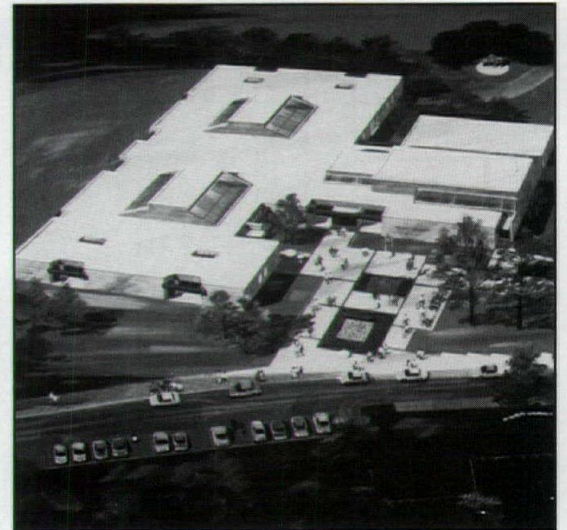
P/A Plans



Like the earlier Grace Abbott School by Zenon-Beringer, The Blair Middle School uses classroom clusters. Two identical clusters surround a central library and administration block. Double corridors, divided by rows of lockers, encircle the interior volumes. As with many of the cluster-plan types, one enters between the classroom building group and the group formed by the gymnasium and the assembly building. The entry is a commons area defined by large recessed glass openings on its east and west ends. Designed with few conventional windows, the massive blocks contain large light monitors, allowing skylit interior areas for art, speech, and computer instruction. The planning throughout emphasizes the solidity of the program blocks, with circulation and lighting provided in the spaces between them. The singular enclosure, with few projections or embellishments, makes this an exercise in economy.

Progressive Architecture 3.92

52



VIEW FROM EAST

## FLOOR PLAN

N → 40'/12m

- |                  |                     |
|------------------|---------------------|
| 1 LOBBY          | 7 LIBRARY           |
| 2 ADMINISTRATION | 8 ART               |
| 3 GYMNASIUM      | 9 SPECIAL EDUCATION |
| 4 STAGE          | 10 CLASSROOMS       |
| 5 KITCHEN        | 11 COMPUTERS        |
| 6 MUSIC          |                     |

# SOUTH WASHINGTON COUNTY ELEMENTARY SCHOOL

**Architect:** Armstrong Torseth Skold and Rydeen Inc., Minneapolis, Minnesota.

**Design Team:** James Rydeen, *Principal in Charge*; John C. Anderson, *Project Manager*; Thomas Hendrix.

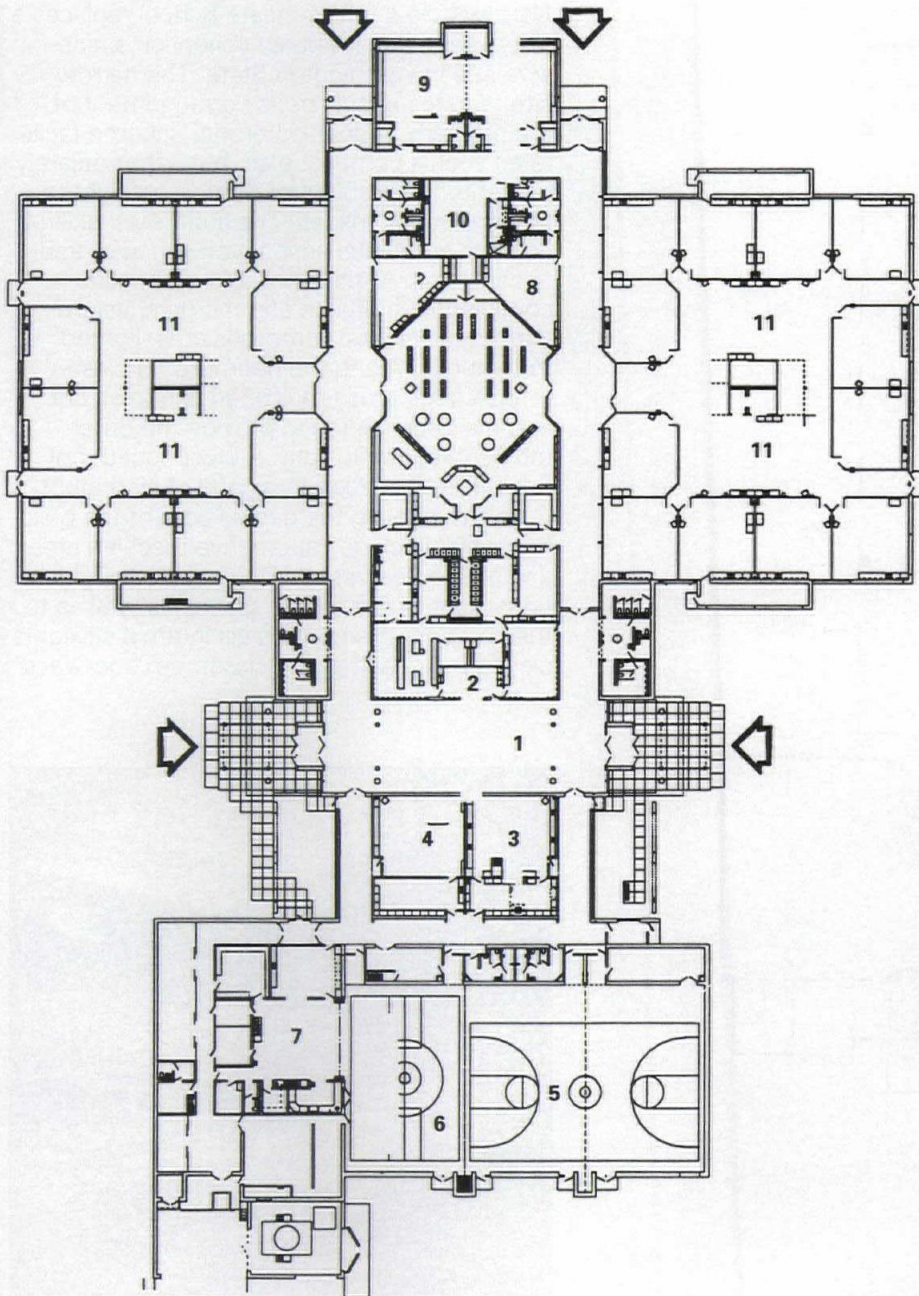
**Capacity:** 750 students, kindergarten through grade 5

**Area:** 90,000 square feet

**Cost/Square Foot:** \$72

**Completion:** September 1991

**Client:** South Washington County Schools Independent School District #833



## FLOOR PLAN

- |                  |                      |
|------------------|----------------------|
| 1 ENTRANCE LOBBY | 7 KITCHEN            |
| 2 ADMINISTRATION | 8 LIBRARY            |
| 3 SCIENCE        | 9 KINDERGARTEN       |
| 4 MUSIC          | 10 SPECIAL EDUCATION |
| 5 GYMNASIUM      | 11 CLASSROOMS        |
| 6 CAFETERIA      |                      |

N ↑ 40'/12m

This project for three prototype schools in South Washington County employs the well-proven strategy of surrounding administrative and special facilities with more conventional classrooms. Two corridors spanning the length of the building flank a central band formed by the library, arts labs, and administration. The entrance on either side leads to an open reception area adjacent to the administration. In one direction lie the gymnasium and the cafeteria, and in the other, the academic spaces. Next to the library are the two classroom wings, each consisting of a large common space surrounded by up to twelve rooms divided by demountable partitions. The flexibility of spatial sizes in these areas promotes both individual class instruction and team teaching. The architects characterize the building's features in urban planning terms: they refer to the two main corridors as "Parkways," and to the transverse entry hall as a "Concourse." Such labels suggest an expansive conception of the school as a kind of cultural microcosm, a city unto itself.



**ENTRANCE**

Ralph Berlovitz

# NARROWS VIEW INTERMEDIATE SCHOOL

**Architect:** BLR+B, Burr Lawrence Rising + Bates Architects, Tacoma, WA.  
**Design Team:** Thomas L. Bates, *Principal in Charge*; Dennis C. Cabba, *Project Architect*.

**Capacity:** 550 students, grades 5 through 7

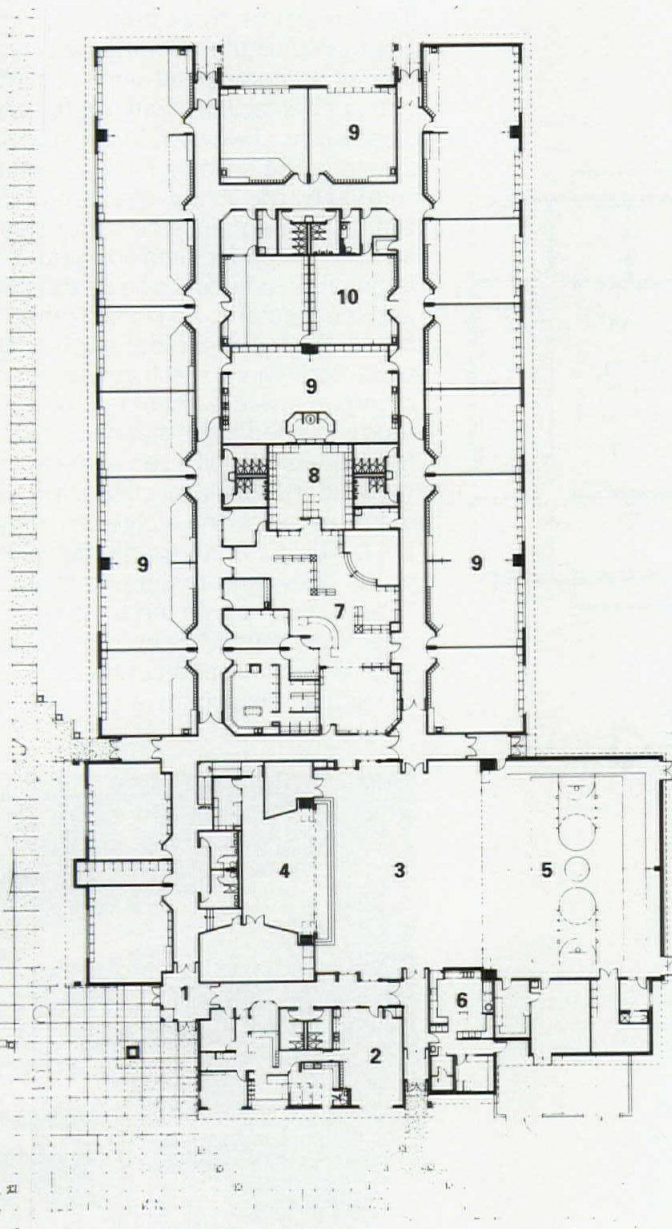
**Area:** 50,400 square feet

**Cost/Square Foot:** \$80

**Completion:** August 1990

**Client:** University Place School District

Narrows View Intermediate School replaces a forty-year old elementary school on a nine-acre site in Washington State. The narrow site requires a fairly dense arrangement of the program. A double corridor scheme facilitates such a compact plan, but it immediately presents the problem of how to get light to the innermost spaces. The architects' skillful solution combines an innovative use of traditional forms. At the front end of the site, administrative offices and the gymnasium surround a central commons area, lighted from above. Along the perimeter of classrooms, large cross-mullioned windows cut into the cedar siding to provide the outer rooms with ample light. A low-pitched roof rises from this edge to a band of clerestory windows serving the gabled core of the building, which includes alternative teaching areas and a resource center. Dormers bring additional light to the center spaces as well as to the corridors themselves via internal skylights placed over each of the classroom doorways.



## FLOOR PLAN

- 1 ENTRANCE
- 2 ADMINISTRATION
- 3 COMMONS
- 4 STAGE
- 5 MULTIPURPOSE ROOM
- 6 KITCHEN
- 7 LEARNING RESOURCE CENTER
- 8 COMPUTERS
- 9 CLASSROOMS
- 10 SPECIAL EDUCATION



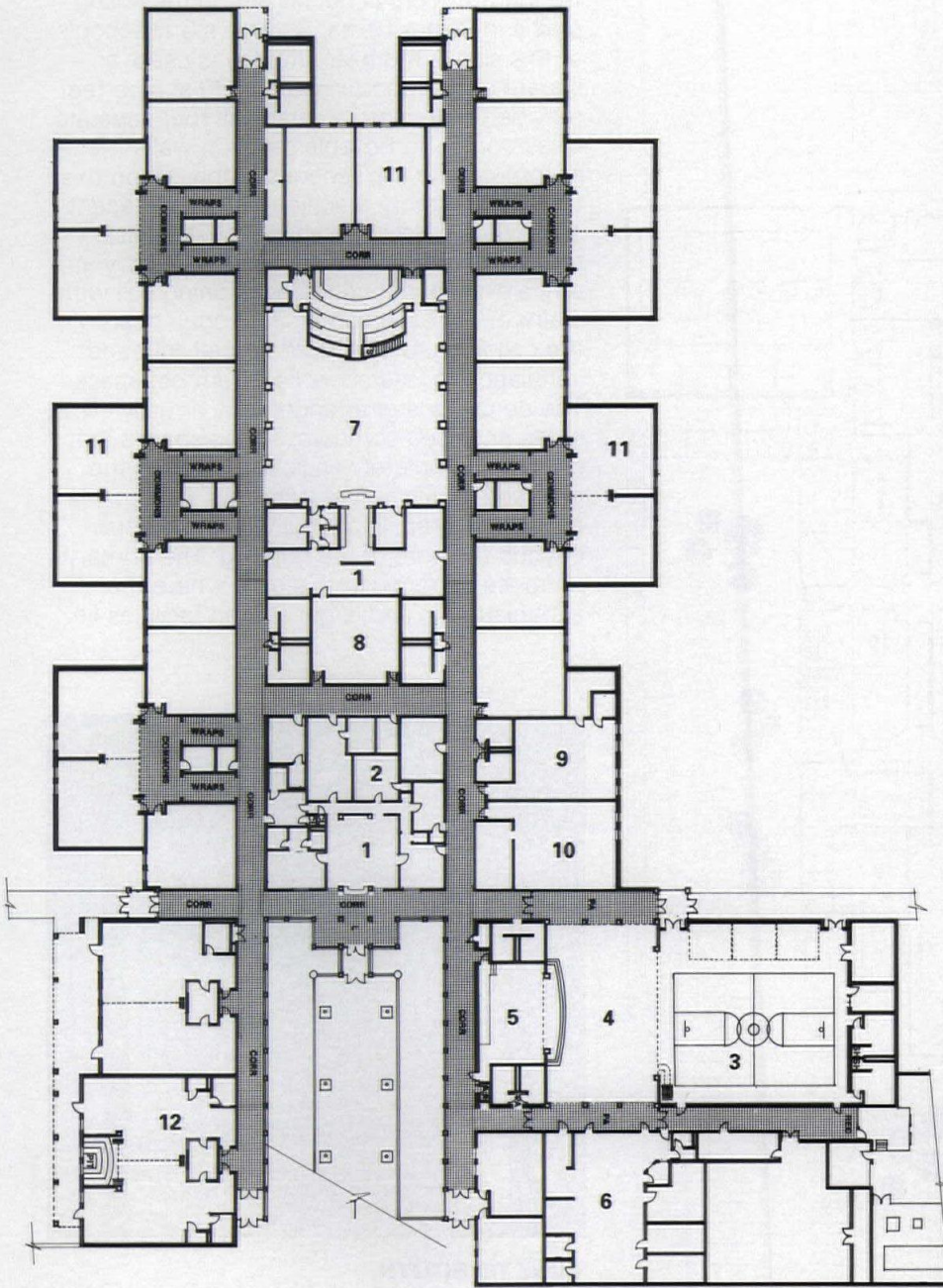
COMMONS

Kit Burns



# CHERRY TREE ELEMENTARY

**Architect:** Fanning/Howey Associates, Celina, OH.  
**Capacity:** 840 students, kindergarten through grade 5  
**Area:** 93,500 square feet  
**Cost/Square Foot:** \$75  
**Completion:** August 1989  
**Client:** Carmel Clay Schools, Robert D. Hartman, Superintendent

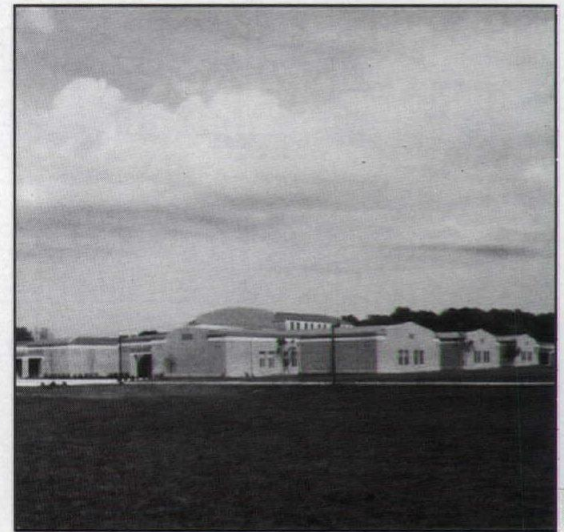


**FLOOR PLAN**

N → | 40/12m

- |                        |                 |
|------------------------|-----------------|
| 1 LOBBY                | 7 MEDIA CENTER  |
| 2 ADMINISTRATION       | 8 COMPUTERS     |
| 3 GYMNASIUM            | 9 ART           |
| 4 CAFETERIA/AUDITORIUM | 10 MUSIC        |
| 5 STAGE                | 11 CLASSROOMS   |
| 6 KITCHEN              | 12 KINDERGARTEN |

Cherry Tree Elementary in Carmel, Indiana, picks up many of the themes and strategies of the preceding projects. The larger, shared facilities, such as the gymnasium and cafeteria/auditorium, lie at the front of the building in order to facilitate public use. These spaces combine with the kindergarten wing to enclose a tree-lined entry court. Two glazed corridors look onto this court and continue inside as the building's chief organizational feature. Just inside the entrance, a block of administrative offices surrounds an open reception area. Beyond this area, a media and resource center forms the core of the school. The library is spacious, a double-height room with exposed wood trusses. A colonnade on the perimeter and a band of clerestory windows accentuate its open, airy character. Typically, the academic classrooms circle the library to define the outer edge of the building. These are organized into clusters which the architects refer to as "suites": four rooms gathered around a common area attached to the main corridor.



**VIEW FROM WEST**

ARTOG

# H. WAYNE HENDRICK MIDDLE SCHOOL

**Architect:** JPJ Architects, Inc., Dallas, TX.  
*Design Team:* Paul G. Putty, Jr., AIA, Principal in Charge; David L. Atteberry, AIA, Design Architect; Michael Johnson, AIA, Project Architect.

**Capacity:** 1500 students, grades 6 through 8

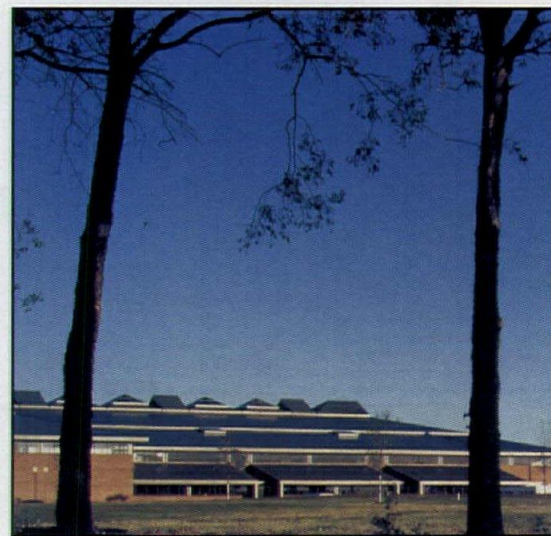
**Area:** 135,000 square feet

**Cost/Square Foot:** \$55

**Completion:** August 1987

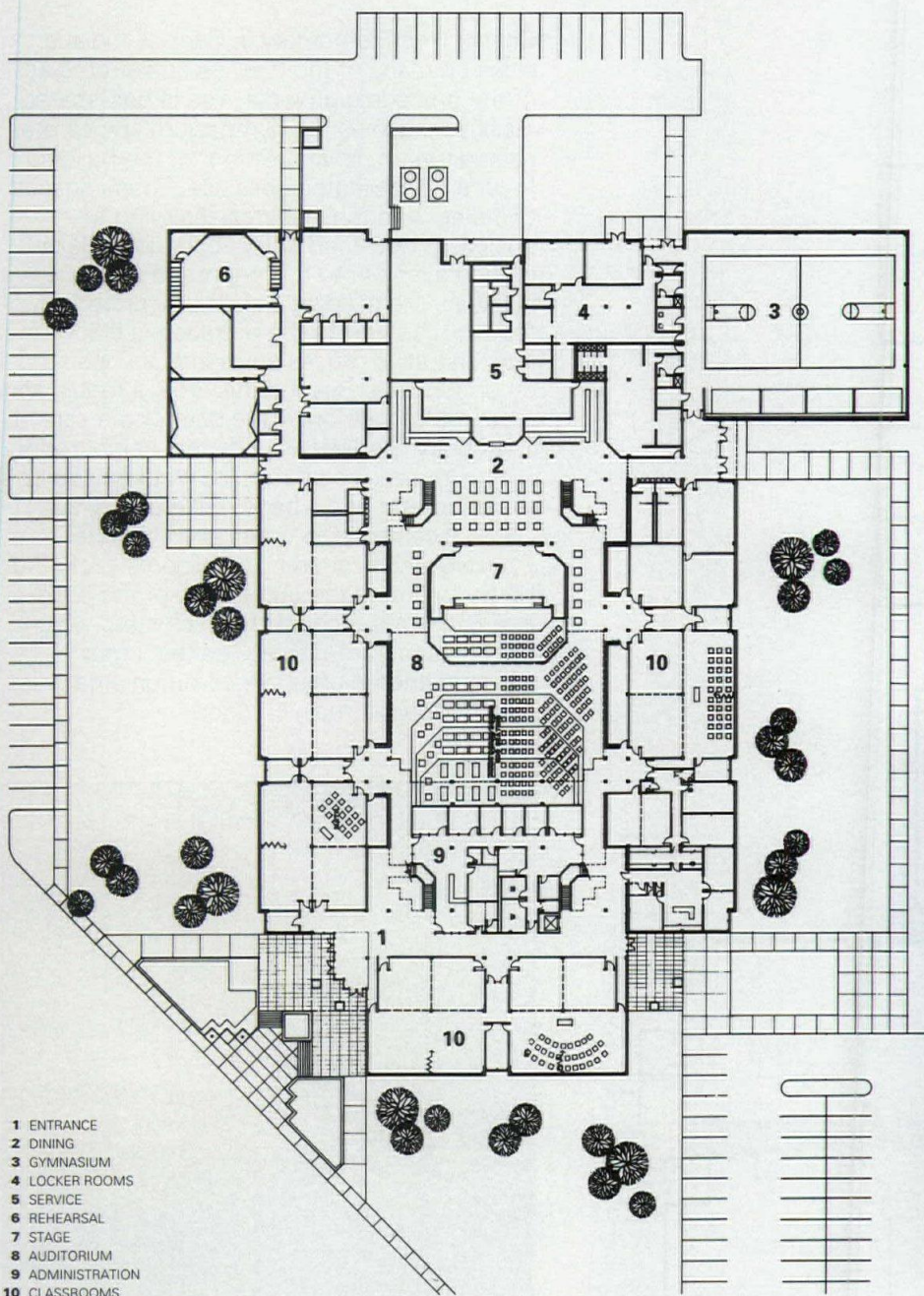
**Client:** Plano Independent School District, H. Wayne Hendrick, Superintendent.

Hendrick Middle School is set on the rolling prairie in Plano, Texas. As with many schools of this size, a modular strategy is used: a square unit of approximately 360 square feet may be divided into as many as four separate classrooms. Removable partition walls accommodate the school's emphasis on this type of laboratory teaching, following recent state-wide curriculum changes. The classroom modules collect around a two-story atrium, a skylit auditorium, and a dining hall with stairwells at each corner. This open heart of the building provides both natural light and ventilation for the school's innermost spaces. The dense cluster arrangement virtually eliminates enclosed corridors. Those spaces that must be completely enclosed, such as the gym and music rehearsal rooms, fall outside the central area, in a wing which projects beyond the core of the building. The primary entrance is placed at this end, where the administration and larger shared facilities lie.



**VIEW TO SOUTH**

R. Greg Hulseby



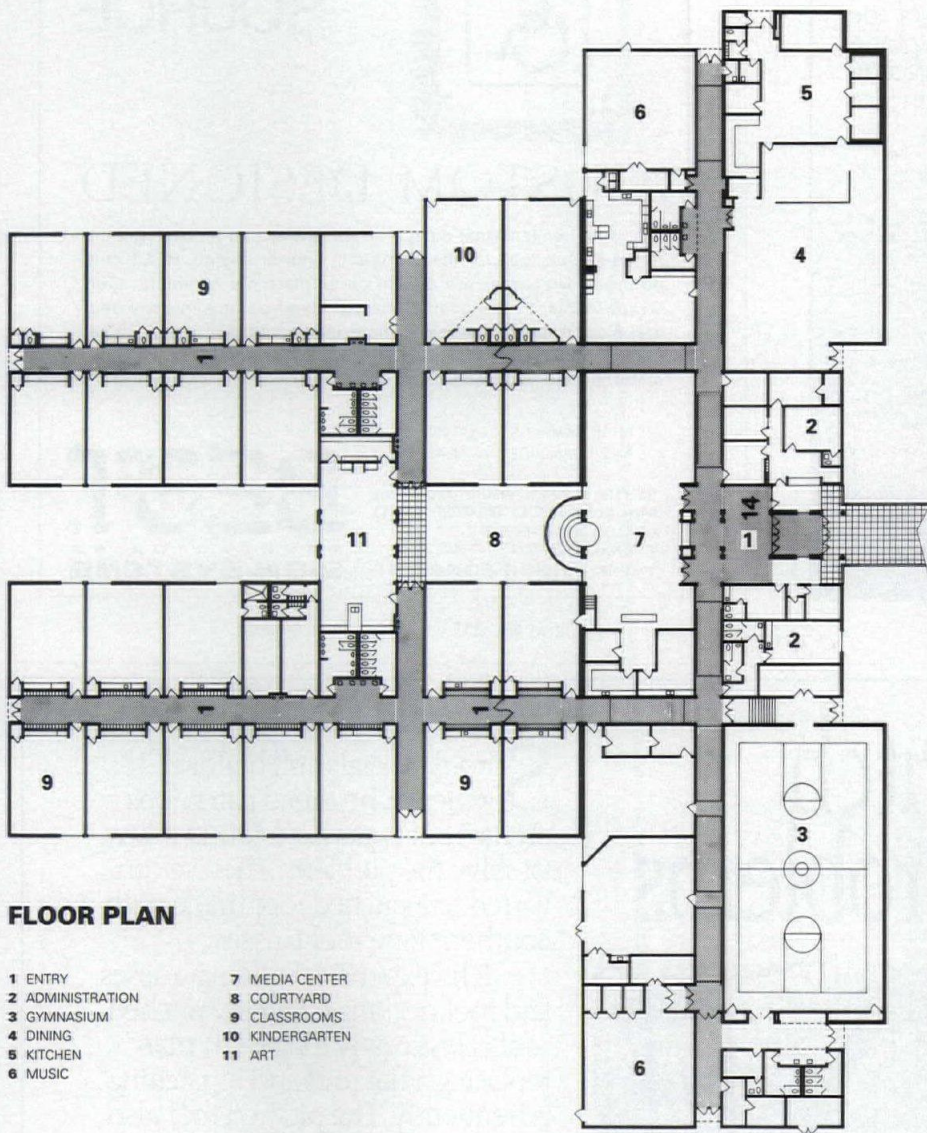
- 1 ENTRANCE
- 2 DINING
- 3 GYMNASIUM
- 4 LOCKER ROOMS
- 5 SERVICE
- 6 REHEARSAL
- 7 STAGE
- 8 AUDITORIUM
- 9 ADMINISTRATION
- 10 CLASSROOMS

## FLOOR PLAN

N  40'/12m

# SUN VALLEY ELEMENTARY SCHOOL

**Architect:** Davis Speake & Assocs, Birmingham, AL.  
**Design Team:** Neil E. Davis, *Principal-in-Charge*; Brad Patterson, Bertram Silman, Elaine Young.  
**Capacity:** 600 students, in grades K-4  
**Size:** 62,400 square feet  
**Cost/Square Foot:** \$56.00  
**Completion:** January 1990  
**Client:** Birmingham City Board of Education

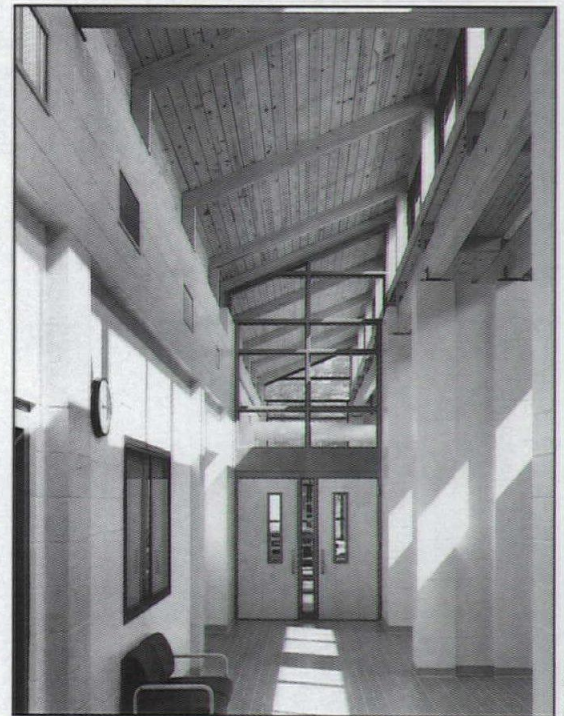


## FLOOR PLAN

- |                  |                 |
|------------------|-----------------|
| 1 ENTRY          | 7 MEDIA CENTER  |
| 2 ADMINISTRATION | 8 COURTYARD     |
| 3 GYMNASIUM      | 9 CLASSROOMS    |
| 4 DINING         | 10 KINDERGARTEN |
| 5 KITCHEN        | 11 ART          |
| 6 MUSIC          |                 |

N < ————— 40'/12m

The Sun Valley School is like many double-corridor schemes presented in this issue; however, continuous light monitors and natural wood finishes distinguish the corridors in this project from the others. The symmetrical arrangement places the administration between the gymnasium and dining hall, to either side of the entry. Two corridors of classrooms extend behind, the library, commons areas and special classrooms between them. Beyond, the corridors define a narrow exterior courtyard. Each corridor is topped by a continuous north light monitor. Parallel to these, a group of three monitors light the center of the school, running from the entry lobby to the rear courtyard. The even light, reflected off the warm finishes of the wood clad monitors, makes the halls and central areas bright and comfortable. Selection and treatment of other materials add to this atmosphere. Concrete block walls are carefully detailed, and exposed ductwork passes neatly through the halls. Emphasis on interior lighting and surfaces, rather than exterior polish, gives the school a casual, if humble, air.



CLERESTORIED CORRIDOR

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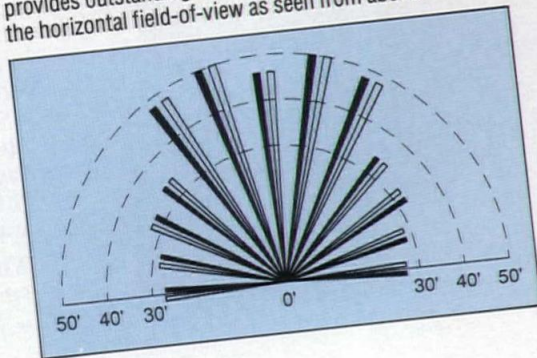
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The angle in technology integration.

Covered by one or more of the following patents: U.S. Patents #4,590,866, #4,755,009, #4,869,564.  
Canadian Patent #1,236,872. © Nova Office Furniture, Inc. 1991

With the growing utilization of the computer in the classroom, Nova offers institutions the ability to truly integrate technology into the teaching process.

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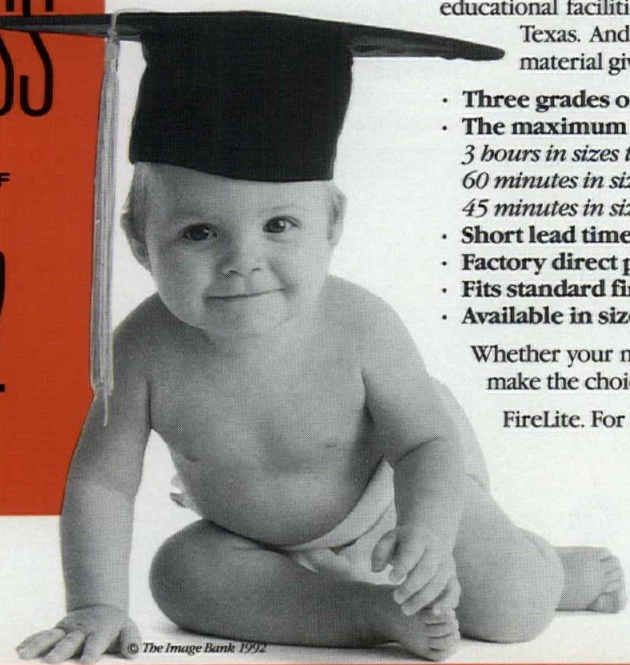
Classroom curriculum can flow uninterrupted because of the desk's unobstructed view. Nova's design provides teachers with the flexibility to teach multiple subjects, with or without the use of a computer. And, teacher/student interaction is greatly improved through enhanced eye contact.

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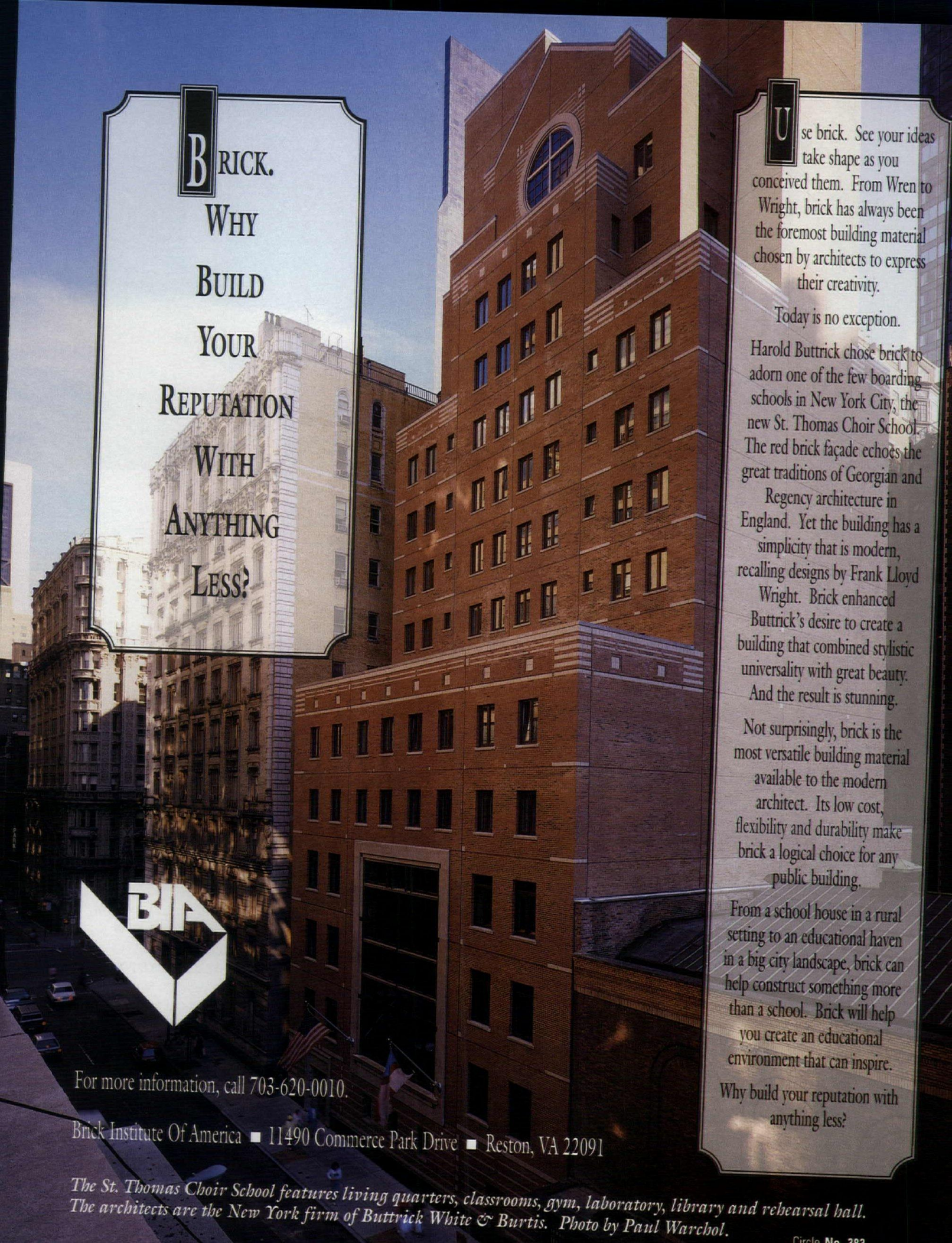
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*The St. Thomas Choir School features living quarters, classrooms, gym, laboratory, library and rehearsal hall. The architects are the New York firm of Buttrick White & Burtis. Photo by Paul Warchol.*

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Harold Buttrick chose brick to adorn one of the few boarding schools in New York City, the new St. Thomas Choir School. The red brick façade echoes the great traditions of Georgian and Regency architecture in England. Yet the building has a simplicity that is modern, recalling designs by Frank Lloyd Wright. Brick enhanced Buttrick's desire to create a building that combined stylistic universality with great beauty. And the result is stunning.

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Bobrick protects washrooms from vandalism.**



All hardware is heavy-gauge, type 304 satin finish stainless steel. 1. Full length hinge with 12-point attachment. 2. Full height channel secures panel to stile. Full height angle brackets attach panel to wall. 3. Latch slides on nylon track for ADA compliance. 4. Keeper attaches to stile, concealed or through-bolted. 5. Stops prevent door from being "kicked out." © 1992 Bobrick Washroom Equipment, Inc.

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Bobrick compartments incorporate new heavy duty hardware, and smooth, scratch and graffiti-resistant surfaces that wipe clean. And, DuraLine is available in a great selection of colors, and provides a 10-year limited warranty.

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## Washroom Equipment

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## COURTYARD

- 64 **George Washington Carver Elem. School**, Santa Ana, CA
- 65 **Mary T. Murphy and Mary Tisko Schools**, New Haven, CT
- 66 **Anna Marie Jacobson Elementary School**, Chandler, AZ
- 67 **Dr. Martin Luther King, Jr. Elementary**, Santa Ana, CA
- 68 **Trabuco Mesa Elementary**, Mission Viejo, CA
- 69 **Jamul Middle School**, Jamul, CA
- 70 **Bay Farm Island Elementary**, Alameda, CA
- 71 **Century High School**, Santa Ana, CA

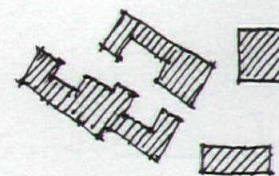
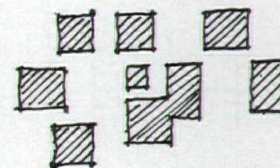
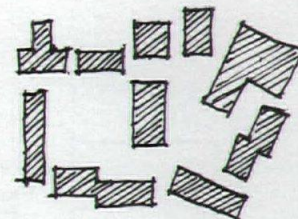
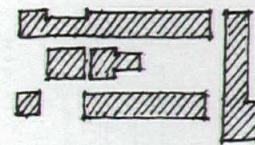
The return in recent decades to more conventional school building design brought with it renewed interest in more traditional plan types. Foremost among these is the courtyard type, for reasons that are clear. Not only does the courtyard hold an illustrious place in the tradition of academic building; it also provides a central space, a controlled play area, and a variety of color and light for adjacent corridors and classrooms.

This type is particularly popular in the Southwest where students and faculty can circulate outdoors throughout the school year. Many of the projects presented here have little or no internal circulation, using instead covered walks or uncovered courts. Unhampered by problems of heating costs and exposure, these designs often display a casual, roomy character. For example, Trabuco Mesa Elementary School is a loose collection of buildings around two courtyards. Bay Farm Island Elementary consists of several independent buildings – each with its own service core – around a central court. Portable classrooms, featured in the Jamul Middle School, emphasize the planning freedom that mild weather allows.

However, courtyards are not restricted to friendly climates. The Tisko and Murphy additions make courtyards between new and existing buildings in New Haven. The three-story classrooms of Primary/Intermediate 217 in New York City also assemble around a courtyard opening toward the East River. (See the urban block type.)

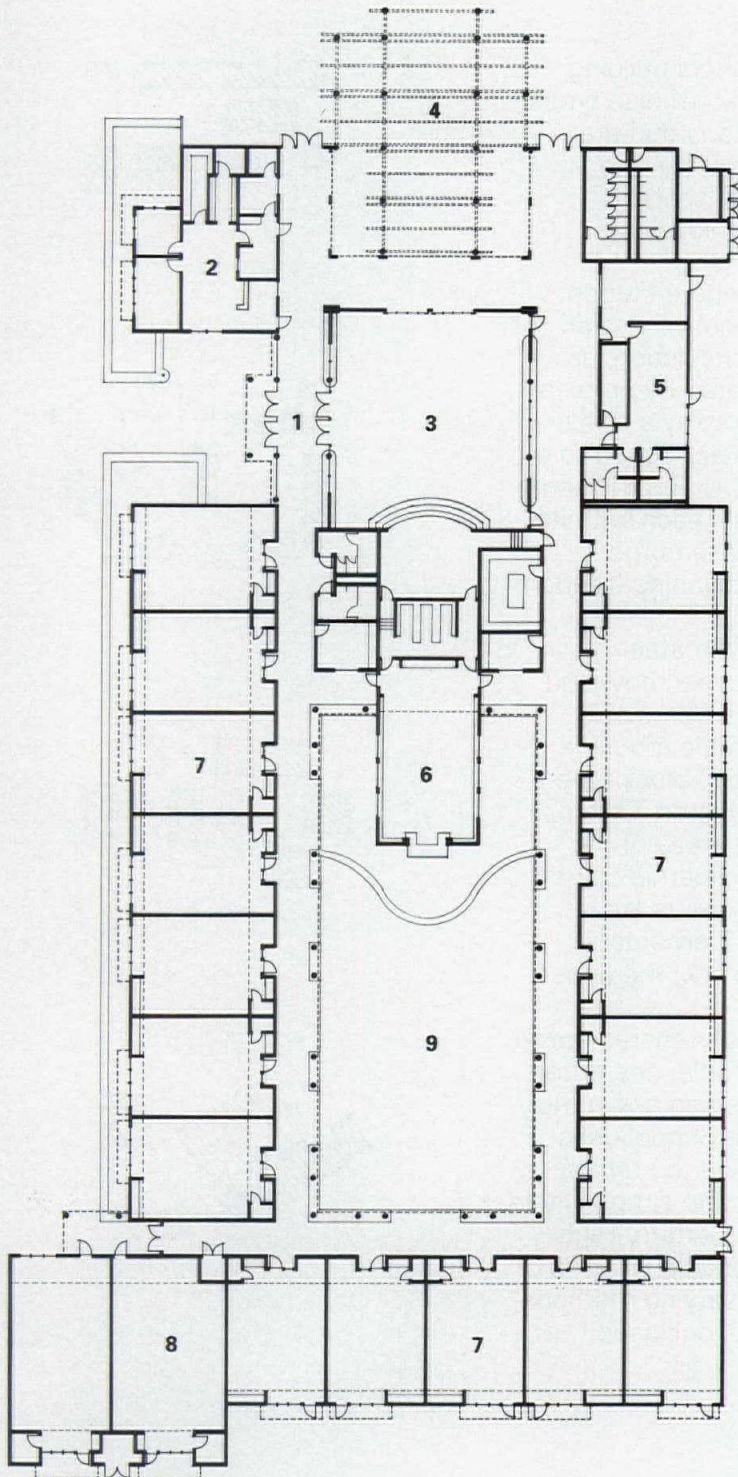
A number of projects form irregularly-shaped courtyards. Often contrasting geometries distinguish between different areas of the program. For instance, in the Jamul Middle School, academic courts are oriented to the cardinal points; the non-academic courts are oriented to the city grid. In the Anna Marie Jacobson Elementary School, the lower grade court is in line with the city block; the upper school court shifts toward the playing fields.

Defined by buildings that surround it, the courtyard is characterized by the way it is entered. In the Tisko and Murphy Schools, one enters either by passing through a formal lobby, or by proceeding down the new wing to the focal terrace. Similarly, the Prototype School uses gatehouses, formalizing the entry to the courtyard. (See the urban block type.) In the Anna Marie Jacobson Elementary, one simply filters through a series of buildings under covered walks. In Century High School, one enters the courtyard from parking lots above by means of a spiraling concrete stair/ramp. In these schools, the varying methods of access reveal that the courtyard can be a traditional enclosed common, an informal yard, or an unorthodox space.



# GEORGE WASHINGTON CARVER ELEMENTARY SCHOOL

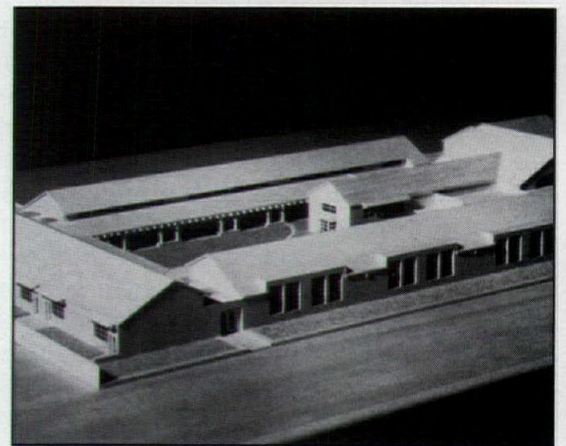
**Architect:** RTA/Blurock Architects, Inc., Costa Mesa, CA.  
**Capacity:** 585 students  
**Area:** 32,800 square feet  
**Cost/Square Foot:** \$115  
**Completion:** December 1991  
**Client:** Santa Ana Unified School District



**FLOOR PLAN**

N → 40'/12m

California's George Washington Carver Elementary is similar to other examples in this issue of double corridor and courtyard plan schemes. Compare this project, for instance, to JPJ's Hendrick Middle School and Fanning/Howey's Cherry Tree Elementary. In a common and effective approach, the larger, shared facilities occupy the center of the plan, the smaller classrooms forming the perimeter. While in the other schools, the classrooms surround an interior assembly space, at Carver they circle an exterior courtyard. It is as if the core of this building type has been hollowed out, so the corridor opens directly to the outside. The media center extends into the yard in a gesture reminiscent of the cloister scheme of Penn High School, also illustrated in this issue: the library becomes the literal and figurative center of the school. The back of the media center leads to a stage which serves the main assembly space, the multi-purpose room. One confronts this space first upon entering the school.

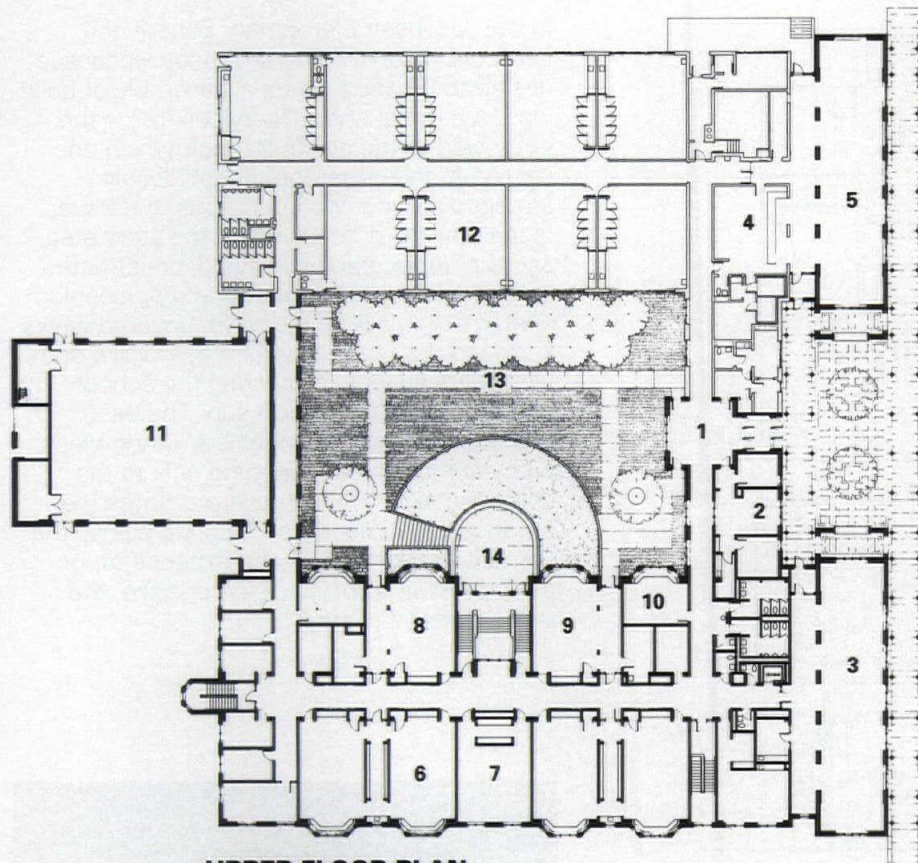


**MODEL FROM NORTH**

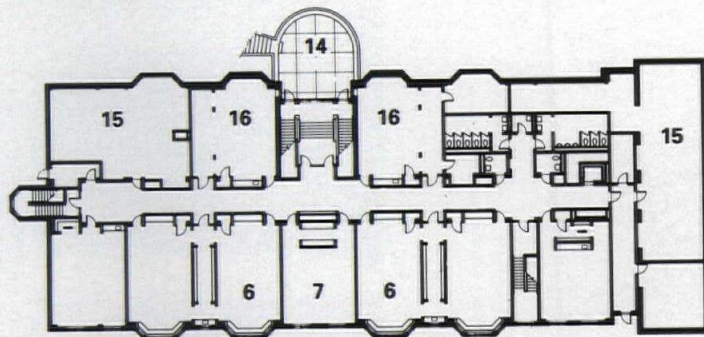
- 1 ENTRANCE
- 2 ADMINISTRATION
- 3 MULTI-PURPOSE
- 4 LUNCH
- 5 KITCHEN
- 6 MEDIA CENTER
- 7 CLASSROOMS
- 8 KINDERGARTEN
- 9 COURTYARD

# MARY T. MURPHY AND MARY TISKO SCHOOLS

**Architect:** Roth and Moore Architects, New Haven, CT  
**Capacity:** 450 students, kindergarten through grade 4  
**Area:** 13,800 square feet existing; 40,800 square feet added  
**Cost/Square Foot:** \$100, new construction  
**Completion:** January 1992  
**Client:** Town of Branford



**UPPER FLOOR PLAN**

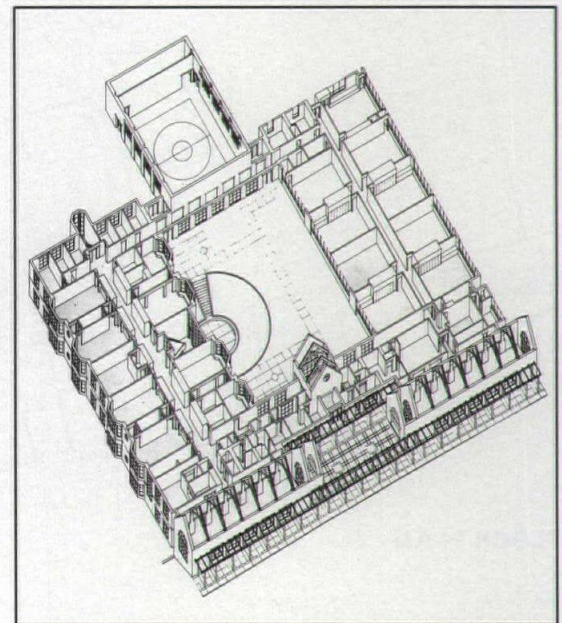


**LOWER FLOOR PLAN**

N ↑ 40'/12m

- |                  |                        |
|------------------|------------------------|
| 1 LOBBY          | 9 SCIENCE              |
| 2 ADMINISTRATION | 10 OFFICES             |
| 3 LIBRARY        | 11 MULTIPURPOSE ROOM   |
| 4 KITCHEN        | 12 EXISTING CLASSROOMS |
| 5 CAFETERIA      | 13 COURTYARD           |
| 6 CLASSROOMS     | 14 TERRACE             |
| 7 COMPUTERS      | 15 STORAGE             |
| 8 ART            | 16 MUSIC               |

These identical projects expand two twin existing schools by enclosing large courtyards between the old and new construction. In each project, the cafeteria and the library stand at the front forming an entry court between them. These gabled structures combine with a colonnaded walkway to form the façade. Inside these spaces, laminated wood scissor trusses, masonry walls, and arched mullioned windows create a traditional and intimate environment. From the entrance pavilion, one looks across the courtyard to the multipurpose room. In both projects, the new wing of classrooms echoes planning strategies of the existing schools. Classrooms open onto a double-loaded corridor, and transverse zones of utilities divide one room from the next. At the midpoint of the new hallway in the additions, a large stairwell provides access to an outdoor terrace and brings light into the corridor. Bay windows in the new classrooms contrast with continuous glazing in the old classrooms.



**AXONOMETRIC**

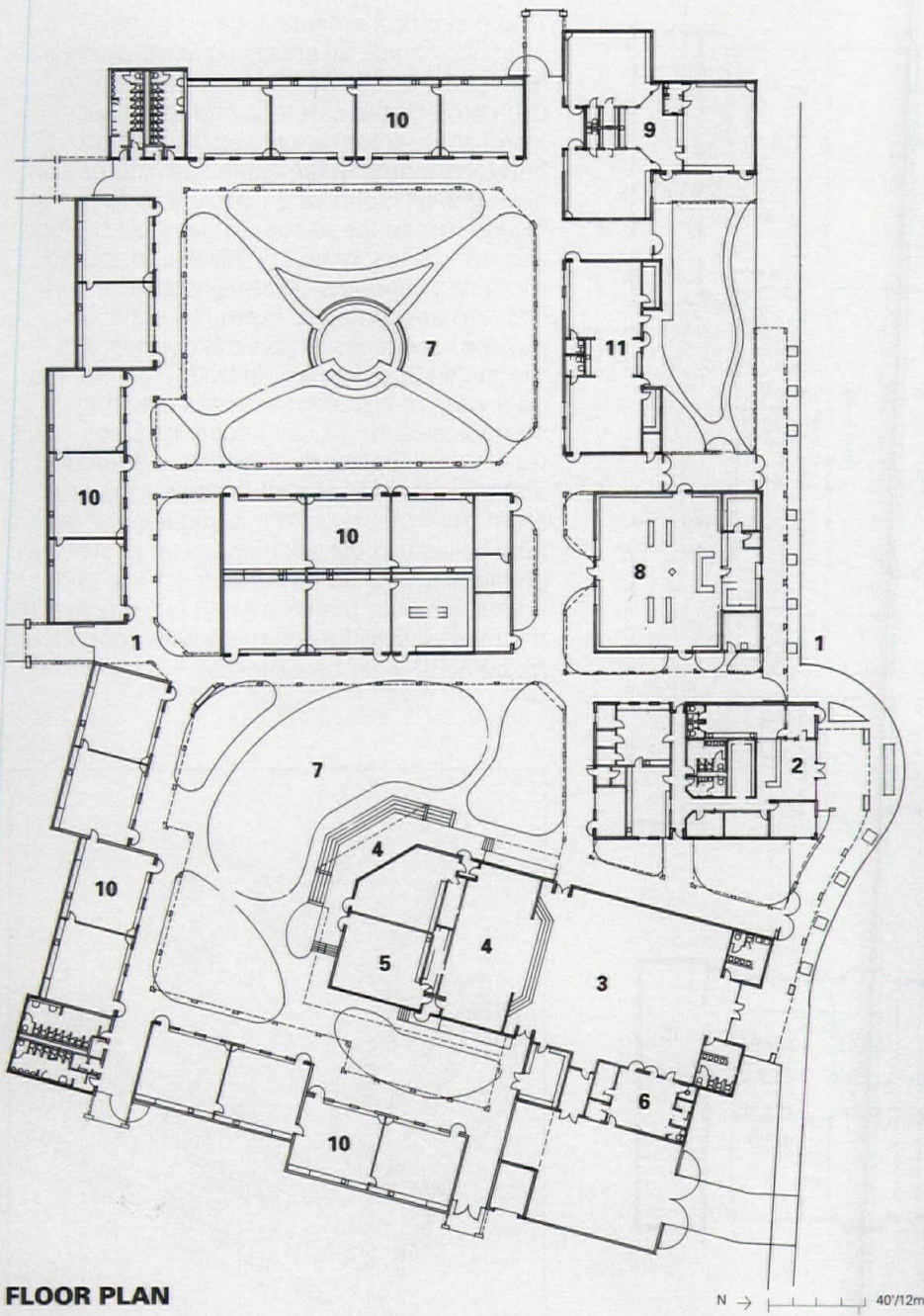
# ANNA MARIE JACOBSON ELEMENTARY SCHOOL

**Architect:** The Orcutt/Winslow Partnership, Phoenix, AZ  
**Design Team:** Herman Orcutt, *Partner in Charge*; Jon Benton, *Team Leader*; Katy James, *Project Manager*.  
**Capacity:** 660 students, kindergarten through grade 6  
**Area:** 56,000 square feet  
**Cost/Square Foot:** \$81  
**Completion:** August 1991  
**Client:** Chandler Unified School District, Dr. Howard Conely, Associate Superintendent

P/A Plans

Progressive Architecture 3.92

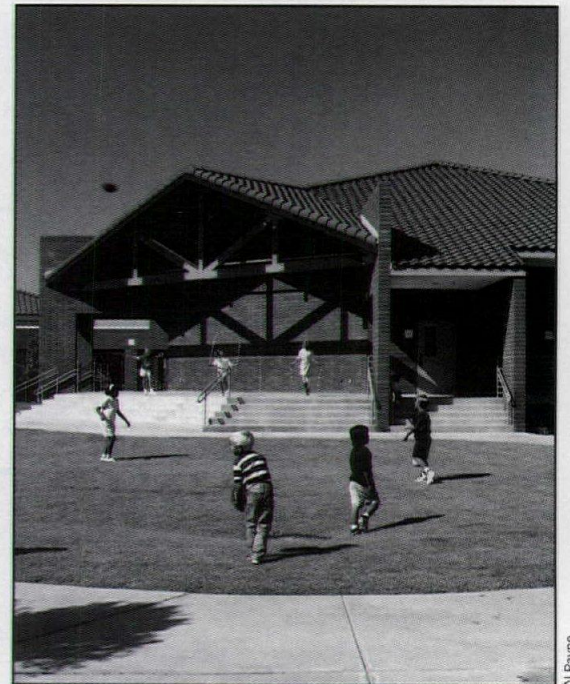
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## FLOOR PLAN

- |                  |                      |
|------------------|----------------------|
| 1 ENTRANCE       | 7 COURTYARD          |
| 2 ADMINISTRATION | 8 MEDIA CENTER       |
| 3 MULTIPURPOSE   | 9 KINDERGARTEN       |
| 4 STAGE          | 10 CLASSROOMS        |
| 5 MUSIC          | 11 SPECIAL EDUCATION |
| 6 KITCHEN        |                      |

In the Jacobson Elementary School, the Orcutt/Winslow Partnership uses landscape design to organize a casual assembly of buildings. A band of special services forms the entry side to the north, through which one passes to the classroom rings, loosely arranged around two courtyards: the lower grade courtyard, focusing on the story area, and the upper grade courtyard, constructed around a large amphitheater and proscenium platform. In place of hallways, covered walks surround the open courts. These walks double as sun shades, protecting the school buildings from the desert sun. The east, south, and west elevations are windowless, with each classroom opening only to the courtyard side. The campus promotes the outdoor amphitheater and story areas as the centers of attention, at the expense of, or perhaps in an effort to de-emphasize, the indoor assembly areas.

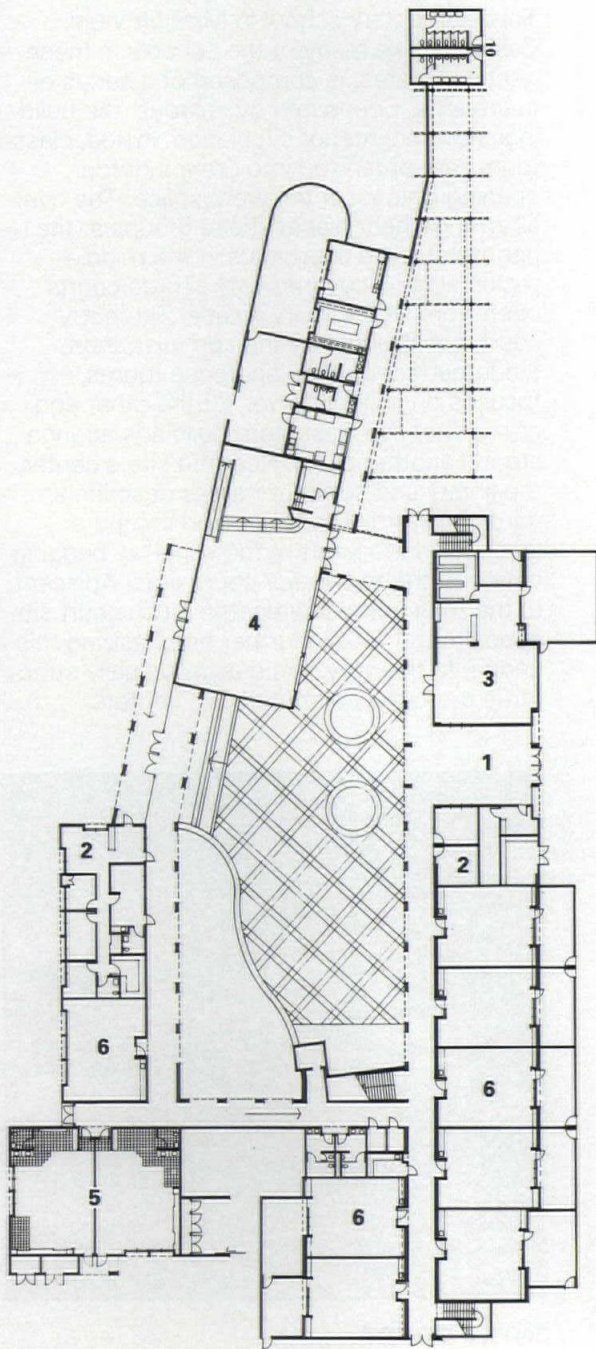


**COURTYARD**

Al Payne

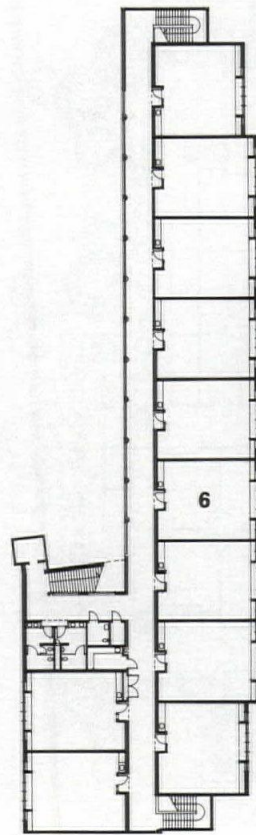
# DR. MARTIN LUTHER KING ELEMENTARY SCHOOL

**Architect:** RTA/Blurock Architects, Inc., Costa Mesa, CA.  
**Capacity:** 600 students  
**Area:** 35,400 square feet  
**Cost/Square Foot:** \$116  
**Completion:** September 1994  
**Client:** Santa Ana Unified School District



**LOWER FLOOR PLAN**

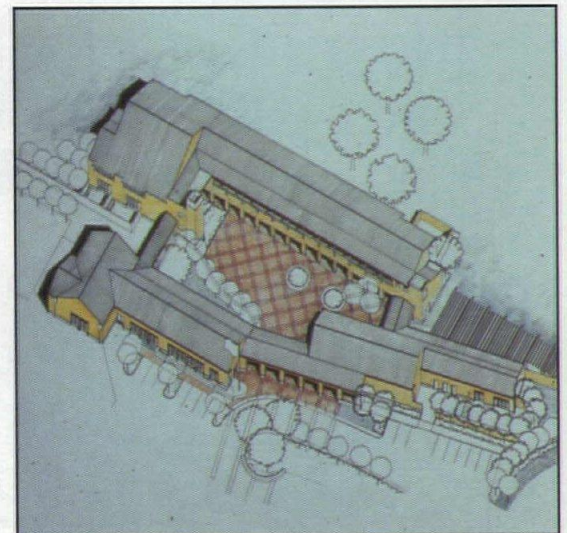
- 1 LOBBY
- 2 ADMINISTRATION
- 3 MEDIA CENTER
- 4 MULTIPURPOSE
- 5 KINDERGARTEN
- 6 CLASSROOMS



**UPPER FLOOR PLAN**

N → | 40'/12m

RTA/Blurock's Dr. Martin Luther King Elementary forms a courtyard with three volumes. Two blocks house classrooms and administrative offices, respectively, and the third holds the multiple-use facilities. A covered walk rings the courtyard, interrupted by the irregular angle of the multipurpose room. This volume and the piano curve of the patio to the east sculpt the edge of the courtyard; openings in the arcaded perimeter allow views. At a larger scale, the angle of the south wing provides plenty of room for parking and defers to the shape of surrounding streets by allowing the front of the school to be seen from the approach on either Graham Lane or Cubbon Street. Pitched roofs and small-scale fenestration suggest a similar consideration for context by helping the school blend in with its nearby residential neighbors. At the back of the building, a post-and-beam structure serves as a "lunch shelter" overlooking play areas on the northern edge of the site.



**AXONOMETRIC**

# TRABUCO MESA ELEMENTARY SCHOOL

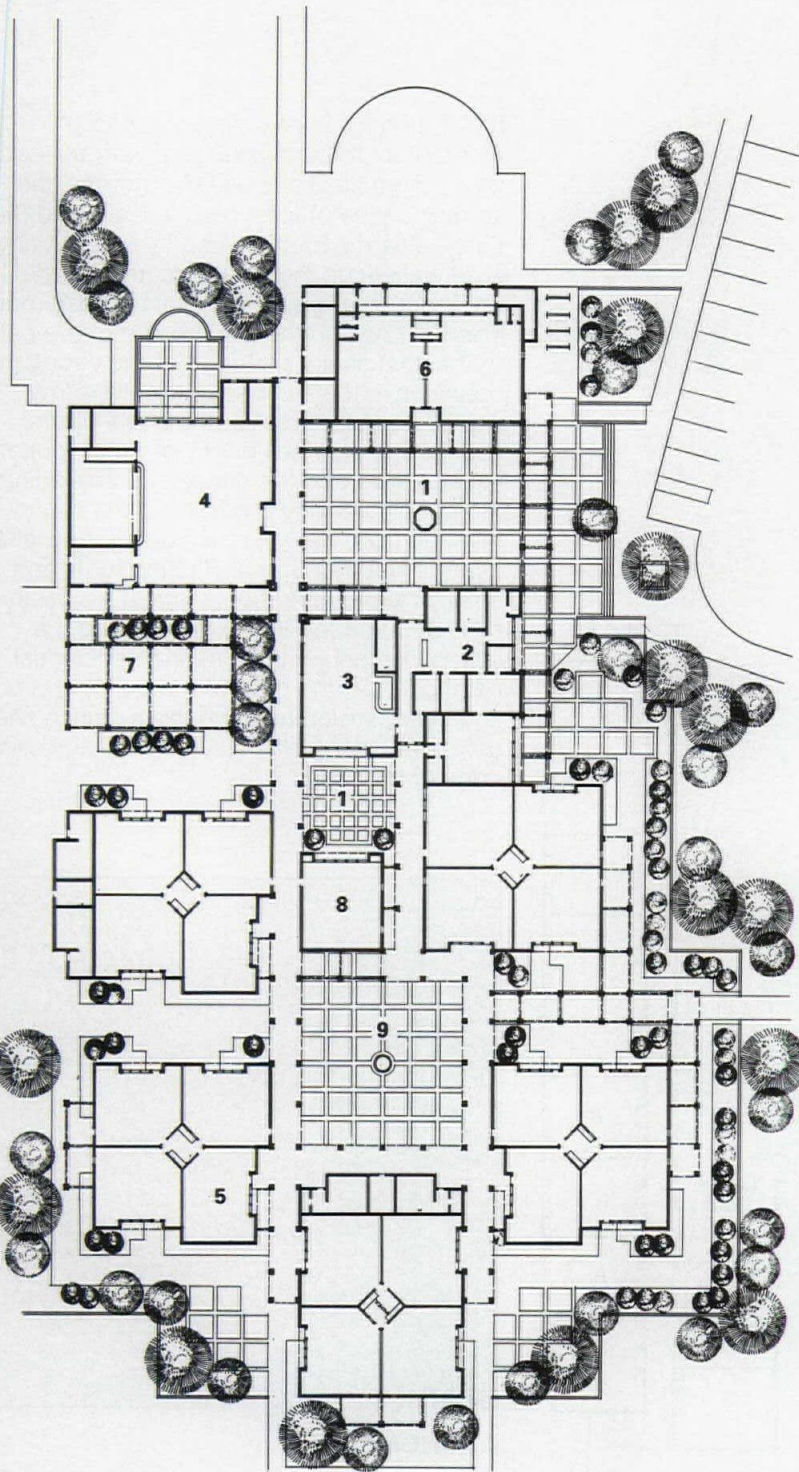
**Architect:** Neptune Thomas Davis, Pasadena, California.  
**Design Team:** William H. Davis, AIA, Principal-in-Charge;  
 Albert E. Duhaime, AIA, Designer.  
**Capacity:** 720 students, grades K-6  
**Size:** 39,468 square feet  
**Cost/Square Foot:** [total cost 6,220,000.00]  
**Completion:** September 1989  
**Client:** Saddleback Valley Unified School District,  
 Dr. Peter A. Hartman, Superintendent.

This elementary school in Mission Viejo, California, like many of the schools in these gentle climates, is composed of a series of courtyards. Connected by arcades, the buildings have no interior circulation. Inside, classrooms are organized into groups of four, opening onto a central work space. The overall arrangement places these groups at the perimeter, with courtyards in the middle region along a covered walk. Three courts open from this primary arcade. The entry court, constructed by the administration, Kindergarten, and multipurpose rooms, focuses on a small tower. At the other end of the site, five classroom buildings arrange around another court. Near the site's center, the library and computer areas describe a third courtyard. The library and computer areas form the heart of the scheme, bridging between the two major courtyards. Adjacent to the multipurpose area, the lunch court sits opposite the library, further emphasizing this bridge. In this way, the design casually structures the program around two centers.



ENTRY COURT

Tony O'Keefe



## FLOOR PLAN

N ← ———— 40'/12m

- |                  |                |
|------------------|----------------|
| 1 ENTRY COURT    | 6 KINDERGARTEN |
| 2 ADMINISTRATION | 7 LUNCH COURT  |
| 3 LIBRARY        | 8 COMPUTER     |
| 4 MULTIPURPOSE   | 9 COURTYARD    |
| 5 CLASSROOMS     |                |

# JAMUL MIDDLE SCHOOL

**Architect:** RTA/Blurock Architects, Costa Mesa, CA.

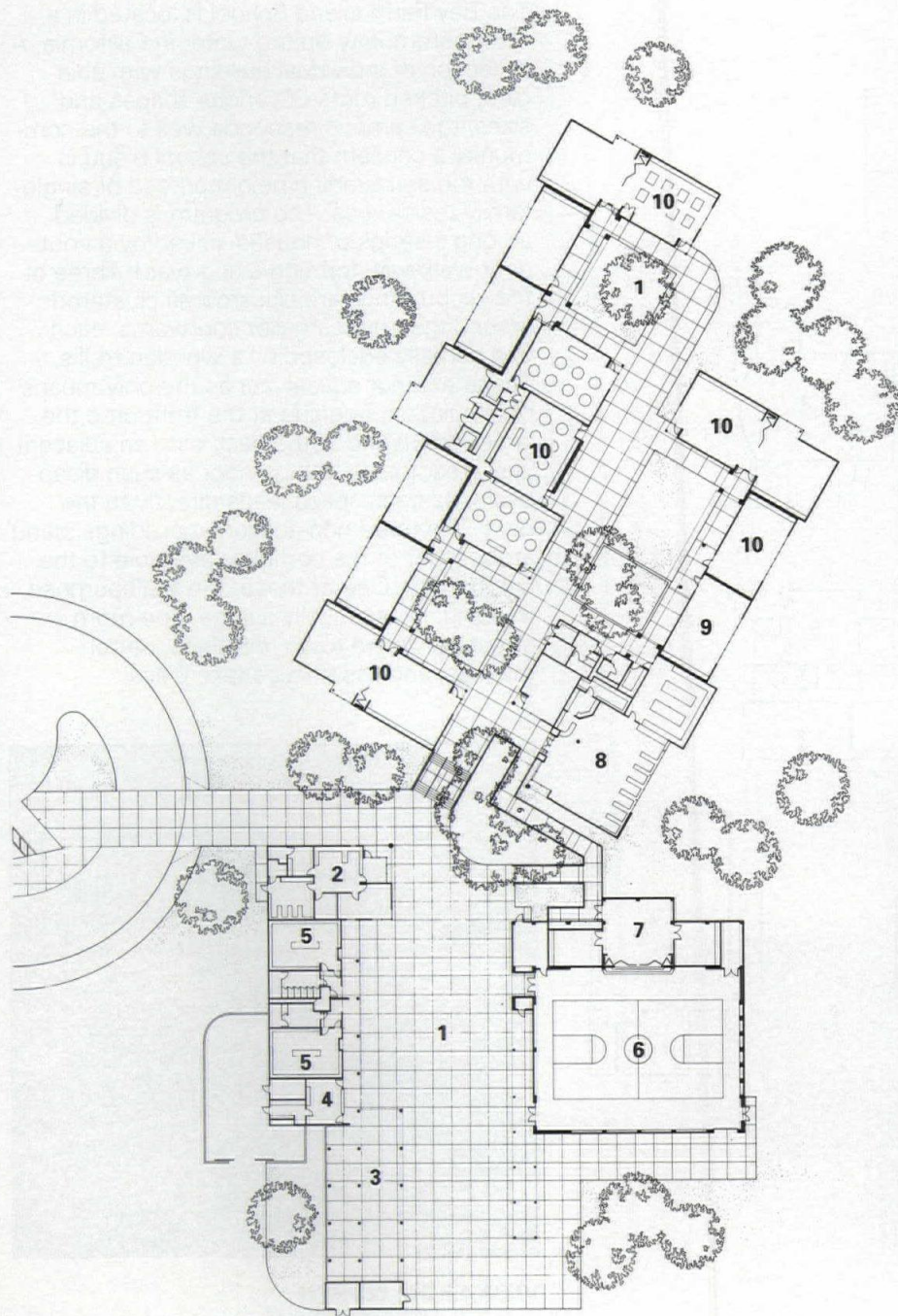
**Capacity:** 486 students

**Area:** 27,300 square feet

**Cost/Square Foot:** \$104

**Completion:** September 1991

**Client:** Jamul-Dulzura Union School District



In this school for the Jamul-Dulzura Union School District, RTA/Blurock assembles a series of courts to form a small campus. The school consists of two loosely configured areas, which pivot about the central library. The lower area is a plaza defined by the gymnasium to the north, and a block formed by the administrative offices, lunch shelter, and locker rooms to the south. The upper area consists of three inward facing "U" shaped courts that alternate on either side of a central exterior passage. The lower plaza provides a public focus for the school, while the upper courts serve the more intimate demands of the classes. Because the climate is mild, the architects have opportunities to employ uncommon strategies in the lower plaza to reduce the buildings' masses. The gymnasium/assembly hall, stands free of the locker rooms, permitting the hall to open on three sides. The outdoor lunch shelter opens to the plaza, making it an active public place.



**MODEL FROM SOUTH**

## FLOOR PLAN

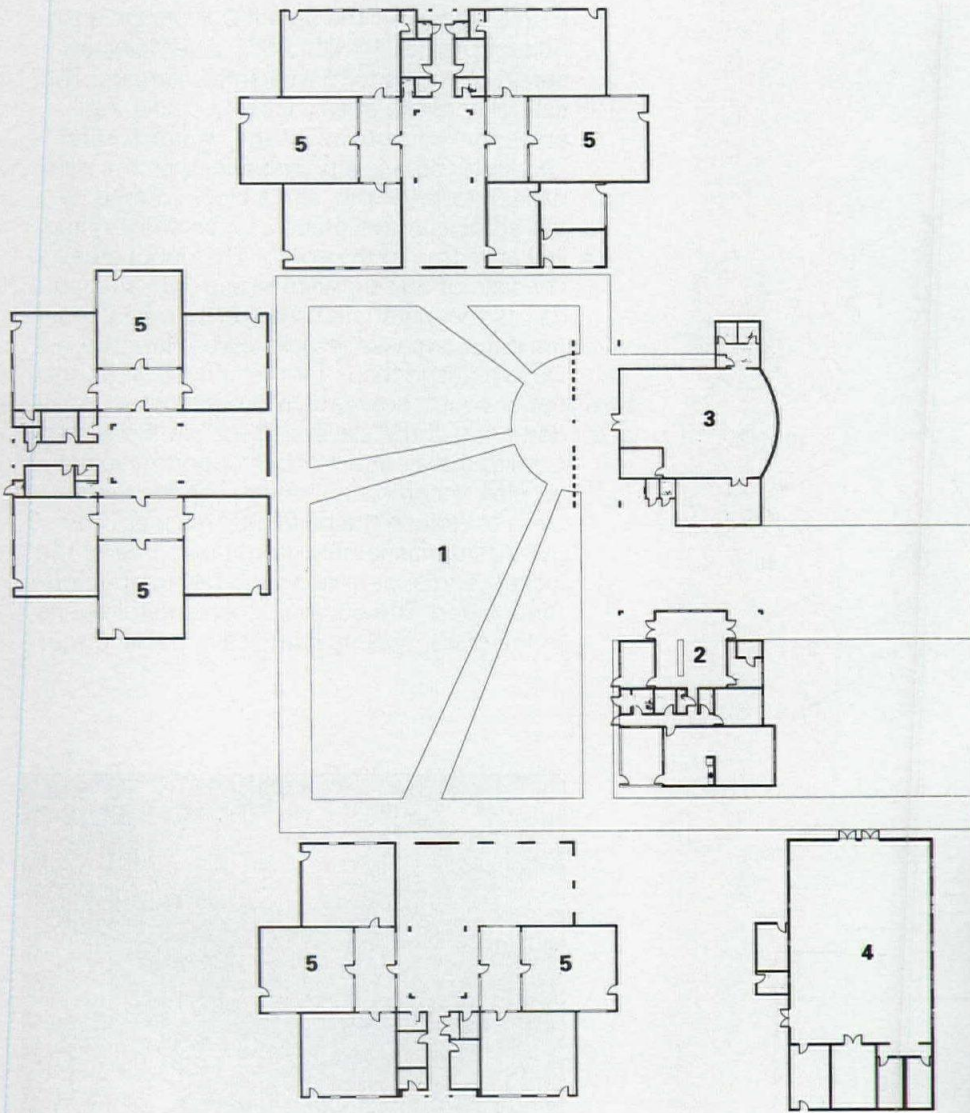
- |                     |               |
|---------------------|---------------|
| 1 COURTYARD         | 7 STAGE       |
| 2 ADMINISTRATION    | 8 LIBRARY     |
| 3 LUNCH SHELTER     | 9 COMPUTERS   |
| 4 KITCHEN           | 10 CLASSROOMS |
| 5 LOCKER ROOMS      |               |
| 6 MULTIPURPOSE ROOM |               |

N  40'/12m

# BAY FARM ISLAND ELEMENTARY SCHOOL

**Architect:** Deems Lewis McKinley Architecture, San Diego, CA.  
**Capacity:** 450 students  
**Area:** 30,000 square feet  
**Cost/Square Foot:** \$129  
**Completion:** September 1992  
**Client:** Alameda unified School District

P/A Plans



The Bay Farm Island School is located in a quiet community on the water in California. A collection of individual buildings with shingled, pitched roofs of various shapes and sizes, the campus responds well to the community's concern that the school blend in with the surrounding neighborhood of single-family residences. The program is divided among a series of houses, linked by an outdoor walkway, forming a courtyard. Three of the six buildings are classrooms clustered around their own smaller courtyards, each one partially enclosed by a wooden trellis. These exterior spaces act as the only means of circulation, opening at the front onto the larger green and at the back onto an adjacent play area. Inside, the corridor as such disappears, as each space leads directly to the next. The three non-academic buildings stand at the front of the complex, available to the community. One of these, the Multipurpose Building, is essentially a large, one-room structure where town meetings, performances, and assemblies take place.



VIEW FROM NORTH

## FLOOR PLAN

- 1 COURTYARD
- 2 ADMINISTRATION
- 3 LIBRARY
- 4 MULTIPURPOSE ROOM
- 5 CLASSROOMS

N ↗ |-----| 40/12m

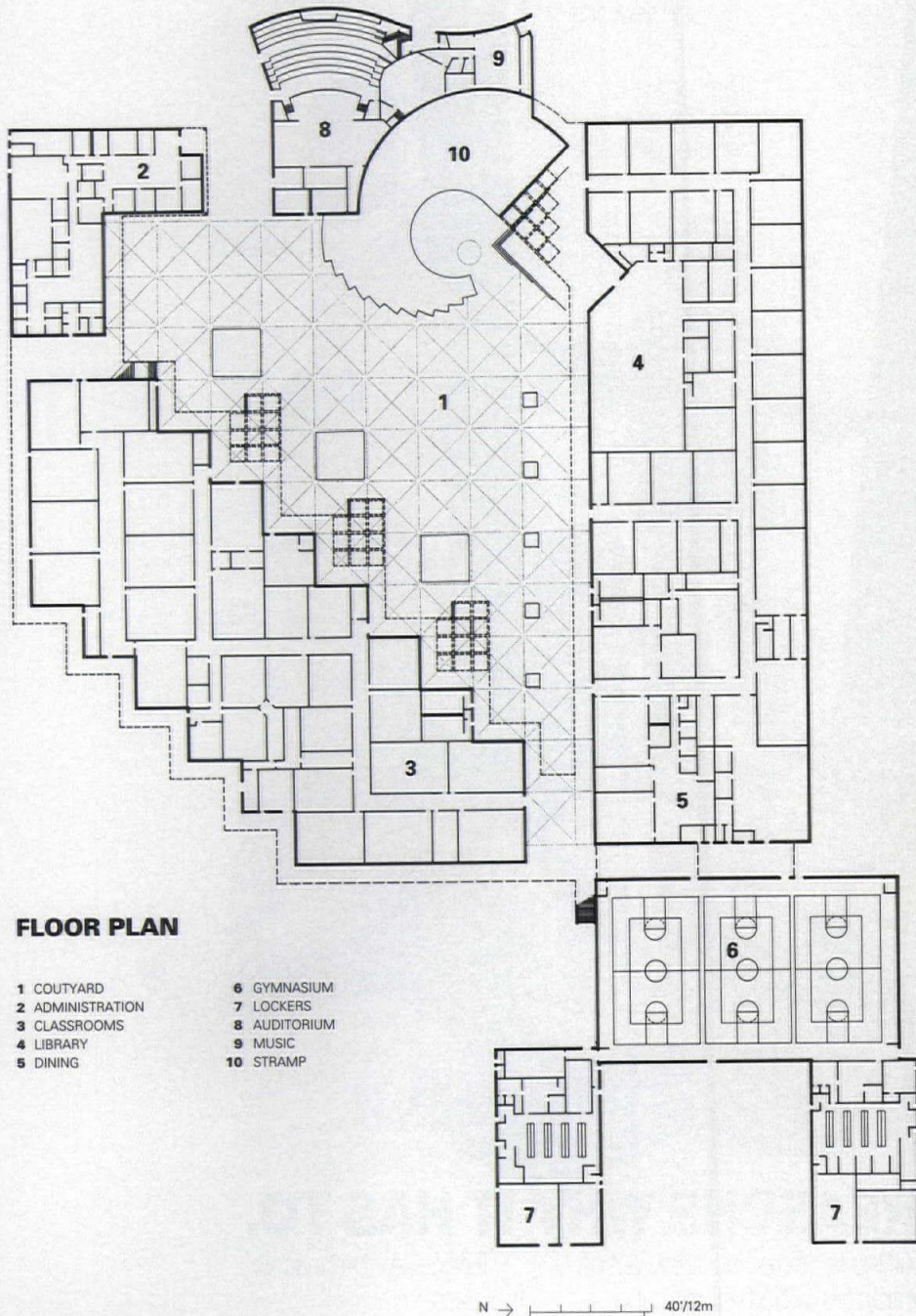
Progressive Architecture 3.92

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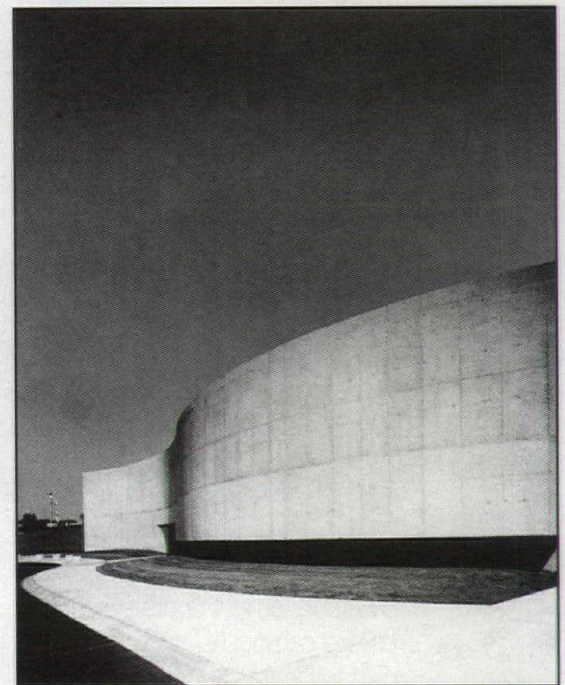


# CENTURY HIGH SCHOOL

**Architect:** Ralph Allen & Partners, Santa Ana, California.  
**Design Team:** Ralph Allen, *Principal Designer*; Michelle Pettit and Tom Nusbickler, *Project Architects*; David Brown, *Specifications*; Ron Crosthwaite, *Interiors*.  
**Capacity:** 1,800 students, grades 9 through 12  
**Size:** 154,000 square feet  
**Cost/Square Foot:** \$116.50  
**Completion:** September 1989  
**Client:** Santa Ana Unified School District



In the Century High School, the use of rooftop parking halves the necessary acreage of the school, contributing to its overall economy of design. Two groups of buildings – which correspond to two parking levels above – construct a triangular courtyard. An unusual stair/ramp connects these parking areas with the courtyard below, and serves as the courtyard's gathering place. To the north, a large block containing classrooms, shops, and cafeteria, is notched at the entrance to the library. Athletic facilities attach to the east, adjacent to the athletic fields. A block comprising more classrooms steps from the northeast to the southwest, its serrated edge punctuated by overhanging concrete shades. Two smaller buildings, the administration and assembly halls, define the southwest corner. While internal corridors supply access to classrooms in the blocks, most circulation takes place out of doors. Here the courtyard is drawn in a distinctly non-traditional manner. Deep overhangs suggest perimeter walks, and continuous glazing emphasizes coffered planes of concrete.



**AUDITORIUM WALL AT ENTRY**

# A FEW REASONS WHY A 350 TUFFLINE ENTRANCE LIVES UP TO ITS NAME.

A  $\frac{3}{16}$ " minimum wall thickness in door and frame

High performance welded door corner joinery

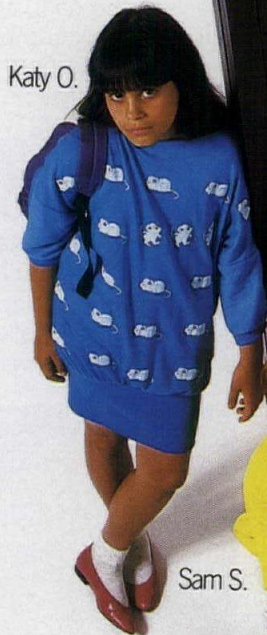
Security interlocks at door jambs

Rugged 2" deep stile sections

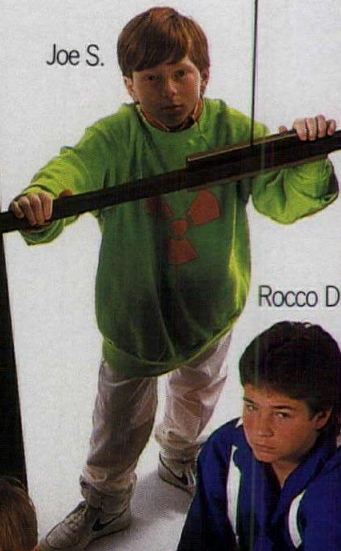
Heavy duty standard hardware designed for high abuse areas

Thru bolt and direct hardware attachment where applicable

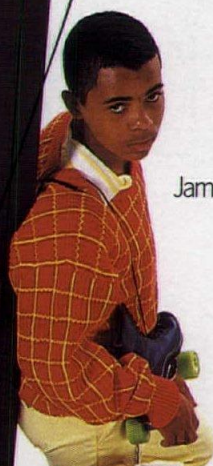
Heavy duty frame to complete the entrance package



Katy O.



Joe S.



James W.

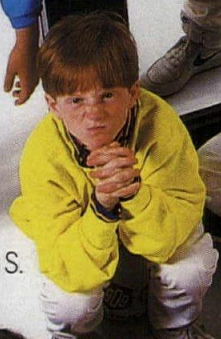
Rocco D'



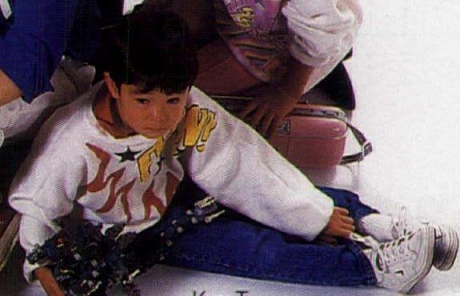
Sam S.



Betsy G.



Julie L.



Ken T.

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Architect:  
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University of North Carolina Center for  
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Photo: Mitch Snead

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## URBAN BLOCK

- 78 **Jean Parker Elementary**, San Francisco, CA
- 80 **Primary/Intermediate 217**, New York, NY
- 82 **Prototype School**, New York, NY
- 83 **Public School No. 5**, New York, NY
- 84 **Berkeley Carroll School**, New York, NY
- 85 **Stuyvesant High School**, New York, NY
- 86 **St. Thomas Choir School**, New York, NY
- 88 **Clinton School**, New York, NY

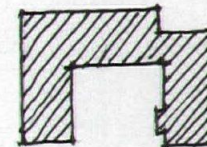
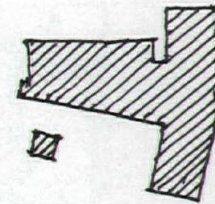
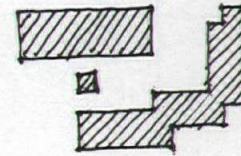
Often the design of a school in the city demands a degree of density that is not comparable with other school building types. The urban block faces all of the difficulties discussed above with few of the planning options; therefore, while many of the aforementioned strategies may be employed, the urban block remains apart from the other types.

Many of the urban schemes concentrate on the creation of exterior spaces. The courtyard, discussed above, is a pedigreed urban form, and from the beginning of the modern school, a recurring plan type. These urban courts, unlike their suburban counterparts, are usually not planted thoroughly if at all, for reasons which are telling. The courts are much smaller, and they are used more intensely.

Without the luxury of expansive grounds, many urban schools seem to extract space from the block. Built to replace a building damaged in an earthquake, the Jean Parker School creates a courtyard between its neighbors. The addition to the Berkeley Carroll School effectively sculpts a tight urban pocket to form an entry court. In the Clinton School, the building turns inward while creating a pedestrian passage, deflecting circulation within the block toward the position of the school.

Within their tight envelopes, urban designs attempt to give the schools spatial identity and variety. The struggle against the restrictions of an urban site is demonstrated most clearly by Stuyvesant High School. Building-like forms are pressed into the block, giving shape to the school. As these smaller buildings are expressed in section, their tops provide exterior courtyards reached from the upper floors. The Berkeley Carroll School creates loft-like classrooms on the top floor, reminiscent of turn-of-the-century urban studios. Coupled classrooms, with services between, develop an intimate scale in the Clinton School; in contrast, a large-scale three-story common area faces the entry court. Public School No. 5 groups classroom entries in fours, suggesting an urban cluster.

As these projects show, much of the interest to be found in an urban scheme is developed in section. This is especially true with the multi-story St. Thomas Choir School. On each floor a central space is developed around the vertical circulation. Beginning below with the gymnasium and assembly halls, the tower is capped by the school's double-height chapel.



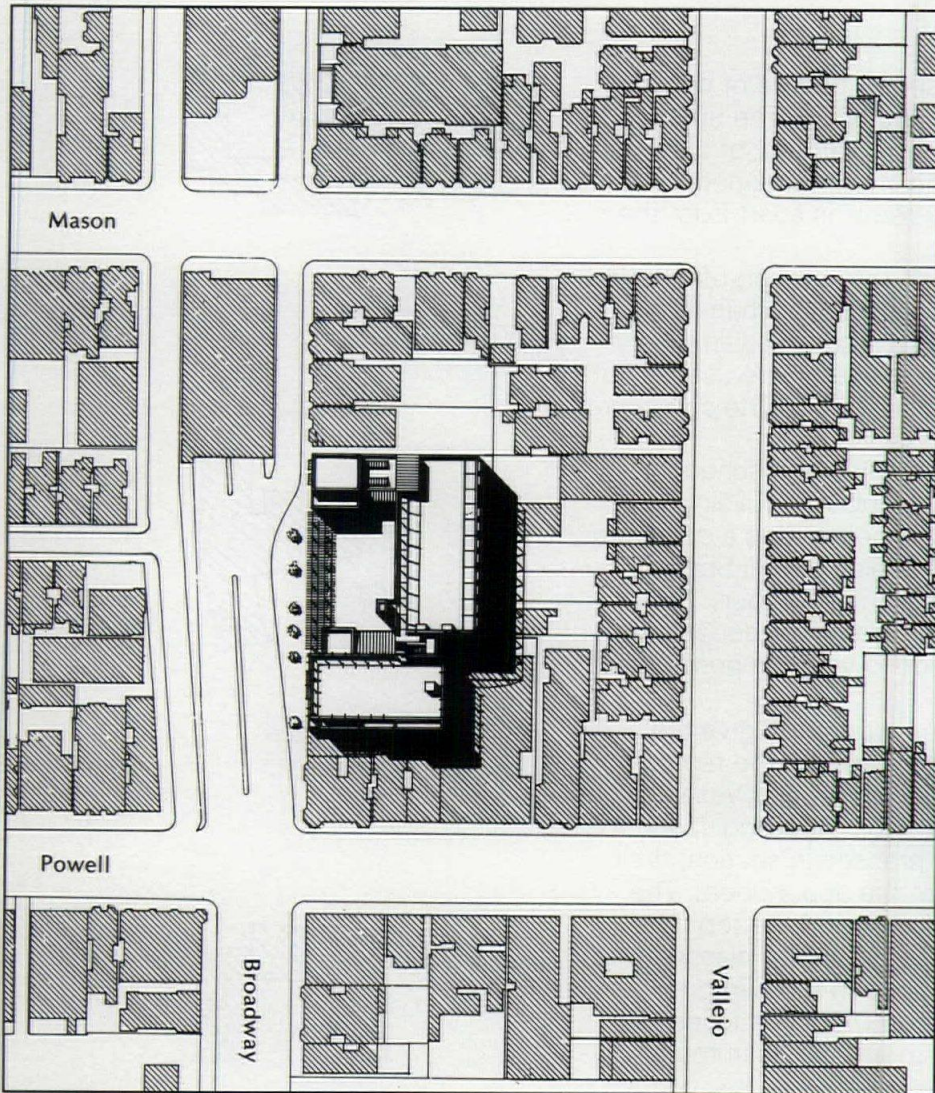
# JEAN PARKER ELEMENTARY SCHOOL

**Architect:** Reid & Taric Associates, San Francisco, CA.  
**Design Team:** Kiyoshi Matsuo, *Principal in Charge*; John G. H. Lum, *Designer*; Nancy Severns, *Project Manager*.  
**Capacity:** 550 students  
**Area:** 40,000 square feet  
**Cost/Square Foot:** \$227  
**Completion:** Fall 1993  
**Client:** San Francisco Unified School District

P/A Plans

Progressive Architecture 3.92

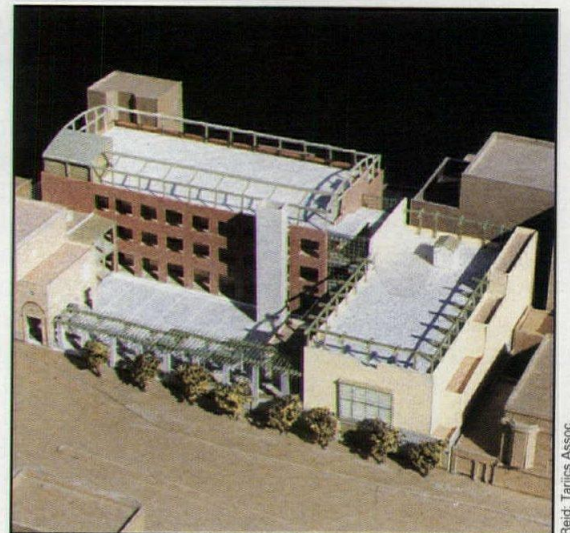
78



**SITE PLAN**

N → 100/30m

This small school on a tight urban site in San Francisco was designed to replace a school which was damaged in the 1989 Loma Prieta earthquake. The school is a modest arrangement of program blocks: the multipurpose hall to the east, the classrooms to the north and the library/administration to the west. Separated by the stairwells, these parts are organized around a south-facing courtyard. The organization emphasizes diagonal relationships, adding spatial variety to the rectilinear plan-making. The perimeter walk is parallel to the interior walk, yet one enters the first directly from the street in the southwest corner, while the second is entered directly from the garage in the northeast corner. Similarly, the entry is diagonally disposed to the elevator tower. Even the pergola which defines the street edge mounts upward from the entry gate to the multipurpose room. This quiet composition is complemented by delicate projecting windows on the entry and north façades, and strengthened by the deep relief of the open-air corridors.

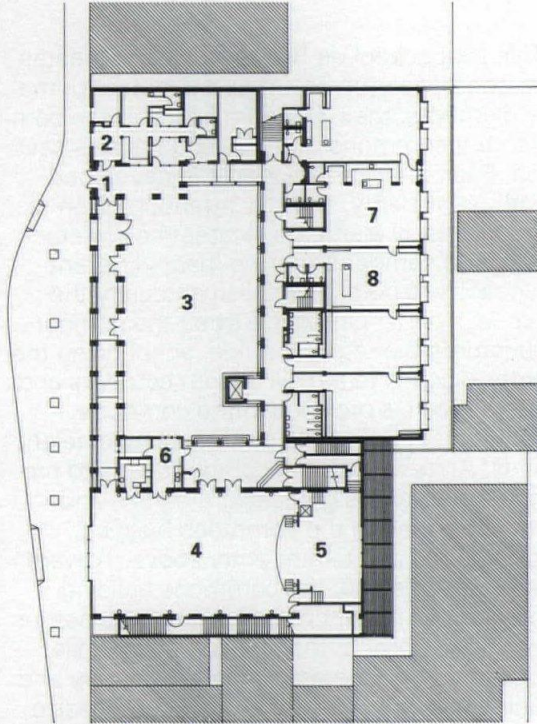


**MODEL FROM SOUTHEAST**

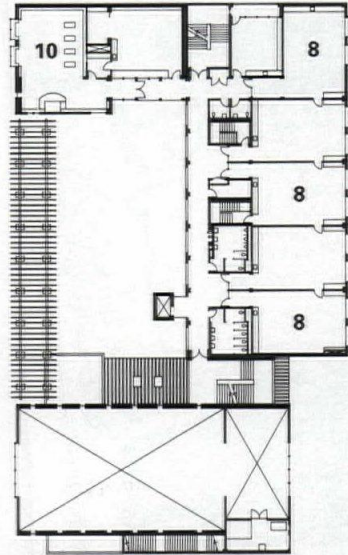
Reid, Taric Assoc.



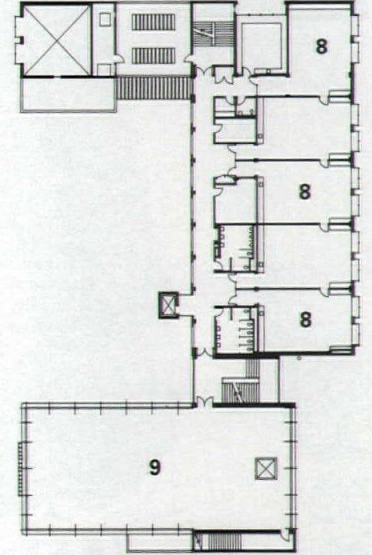
- 1 LOBBY
- 2 ADMINISTRATION
- 3 COURTYARD
- 4 MULTIPURPOSE ROOM
- 5 STAGE
- 6 KITCHEN
- 7 KINDERGARTEN
- 8 CLASSROOMS
- 9 PLAY DECK
- 10 LIBRARY



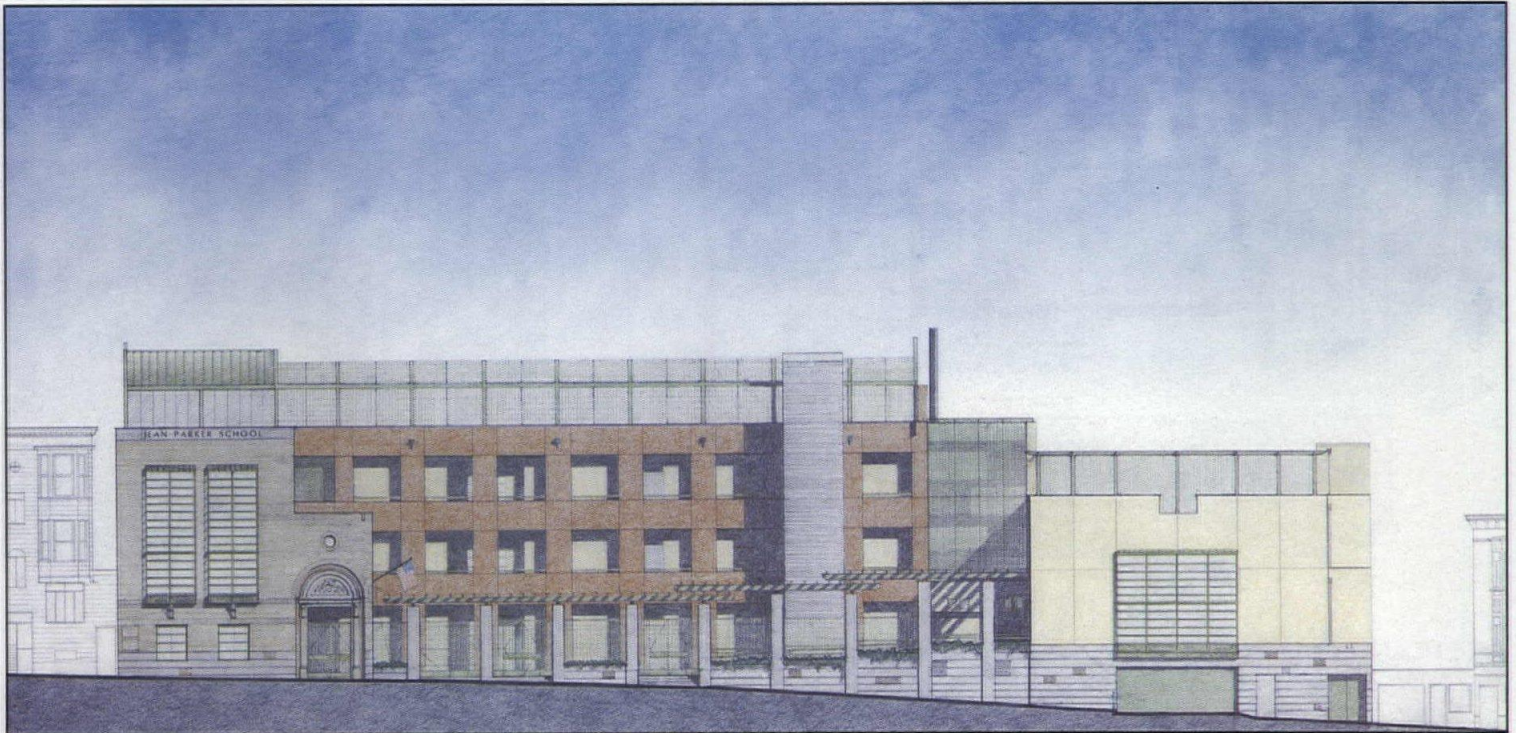
**FIRST FLOOR PLAN** N → 40'/12m



**SECOND FLOOR PLAN**

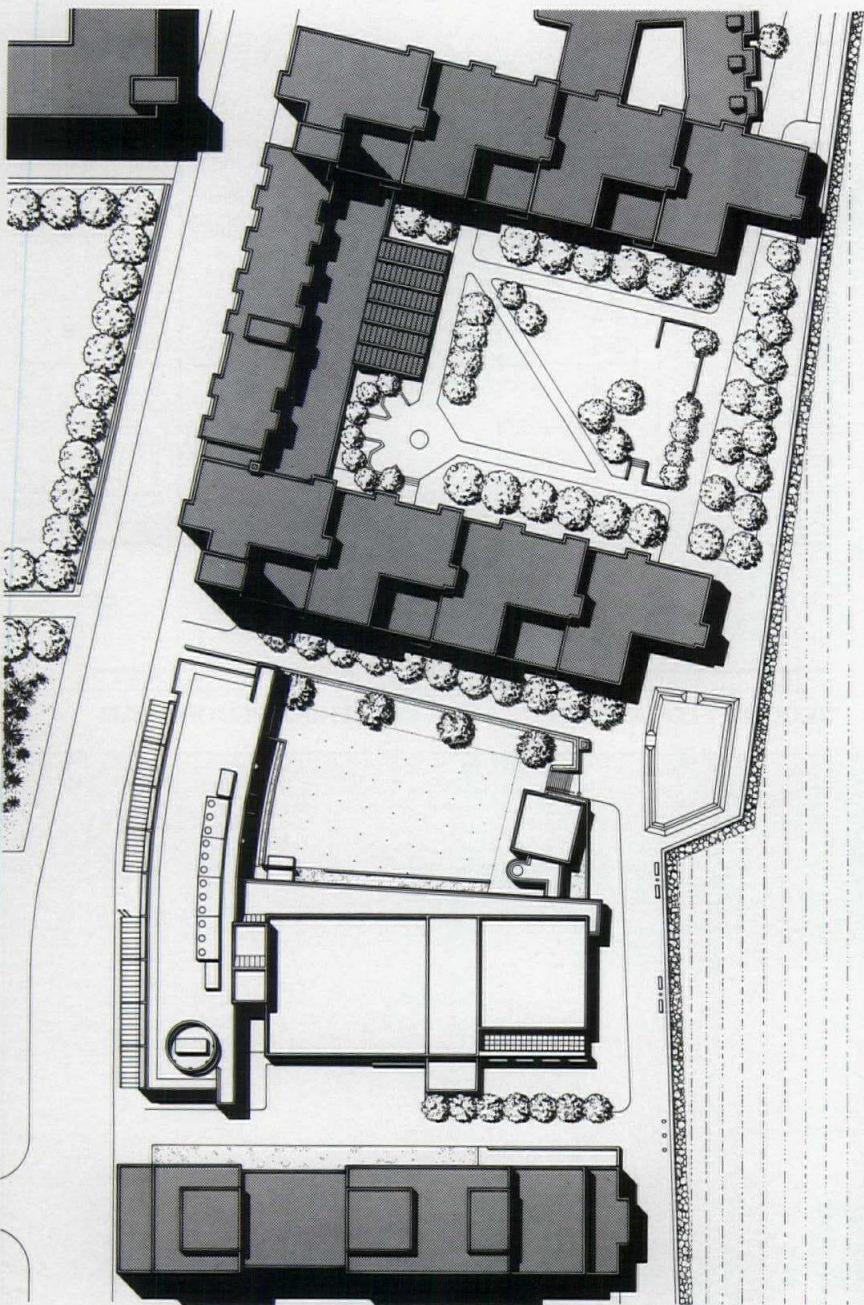


**THIRD FLOOR PLAN**



**SOUTH ELEVATION**

# PRIMARY / INTERMEDIATE SCHOOL 217

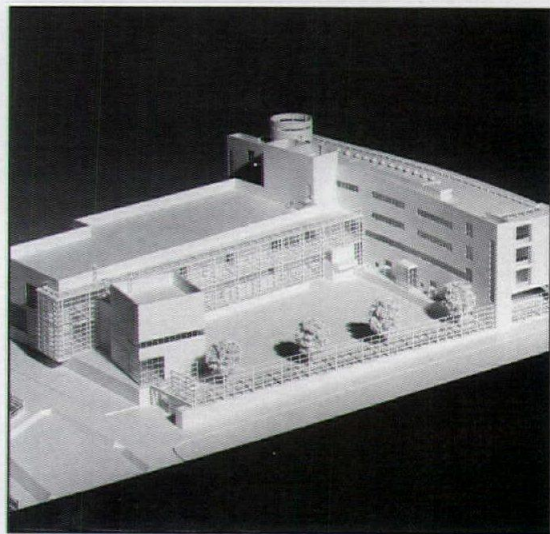


SITE PLAN

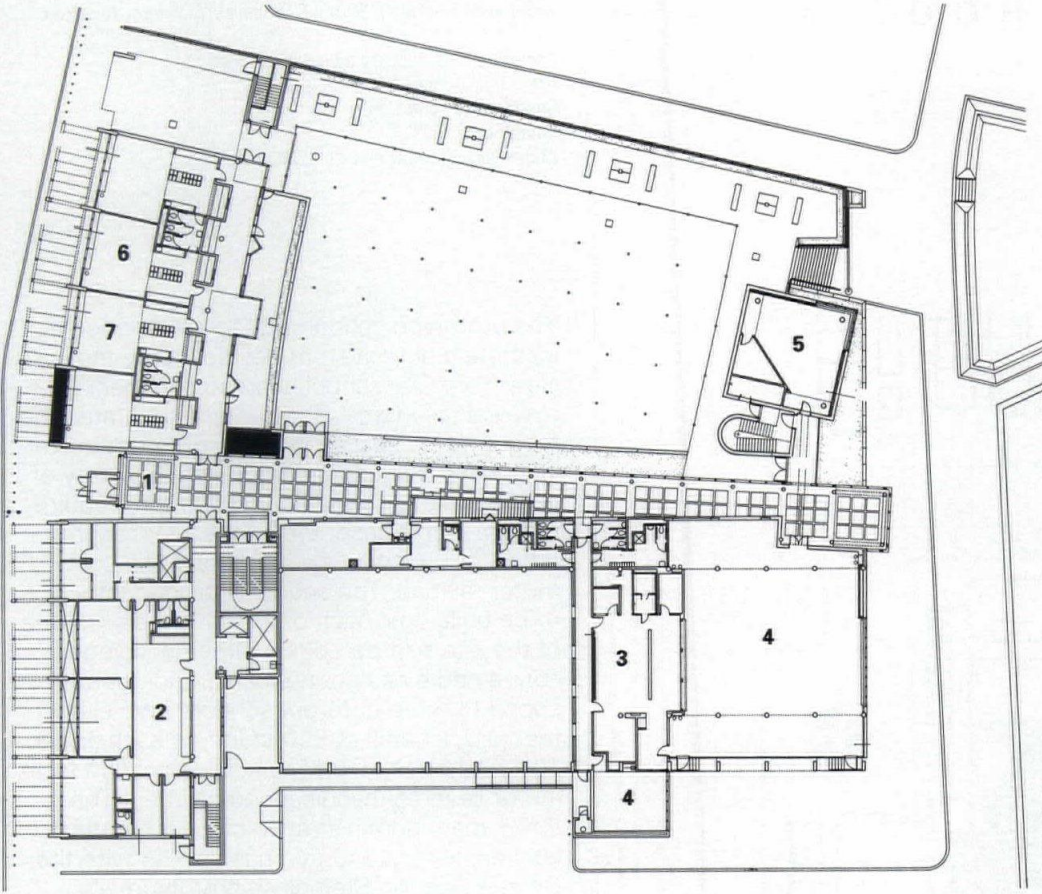
N ↓ 100'/30m

**Architect:** Michael Fieldman & Partners, New York, NY.  
**Design Team:** Michael Fieldman, *Partner in Charge*; Miles Cigolle, *Design Partner*; Ed Rawlings, *Project Architect*;  
 Clint Diener, Charles Morton, Norbert Holthausen, David Hendershot.  
**Capacity:** 849 students, kindergarten through grade 8  
**Area:** 95,000 square feet  
**Cost/Square Foot:** \$221  
**Completion:** May 1992  
**Client:** The New York City School Construction Authority

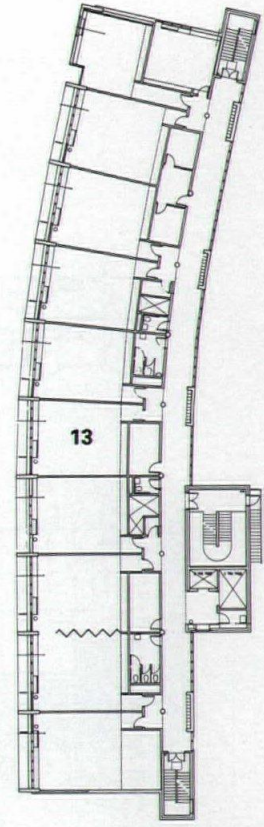
This pilot school on Roosevelt Island creates an energetic urban courtyard with four primary elements: the classroom building, the corridor, the commons building, and the arts pavilion. Each of the components is developed with great clarity, and this attention given to the individual elements excites their interaction. The corridor performs many different functions to both distinguish and unify the school's parts. On Main Street, the corridor punctures the regular facade, announcing the entry. Access to the classroom corridors and arts pavilion is provided in the corridor's penultimate bay, setting off its double height ends. At its center, the corridor opens to provide a stair to the gymnasium below, and attaches itself to the commons building, forming the auditorium entry above. Toward the corridor's end, the commons building infringes on its width. Competing geometries signal the entry to the arts complex, while they in turn cooperate to form the library and dining hall entry alcoves. As if to emphasize its independence, the corridor overhangs the building's western end.



MODEL FROM SOUTH

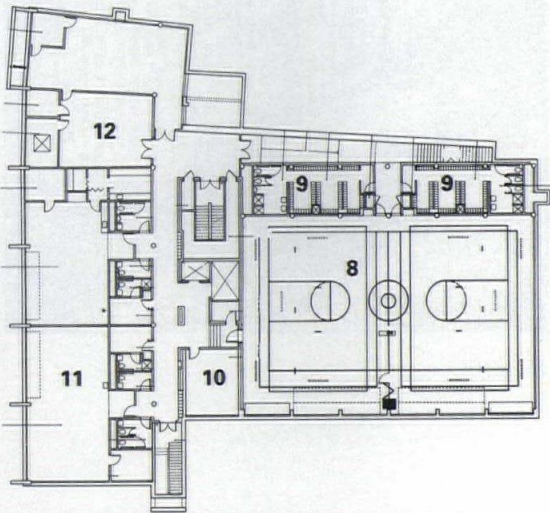


FIRST FLOOR PLAN

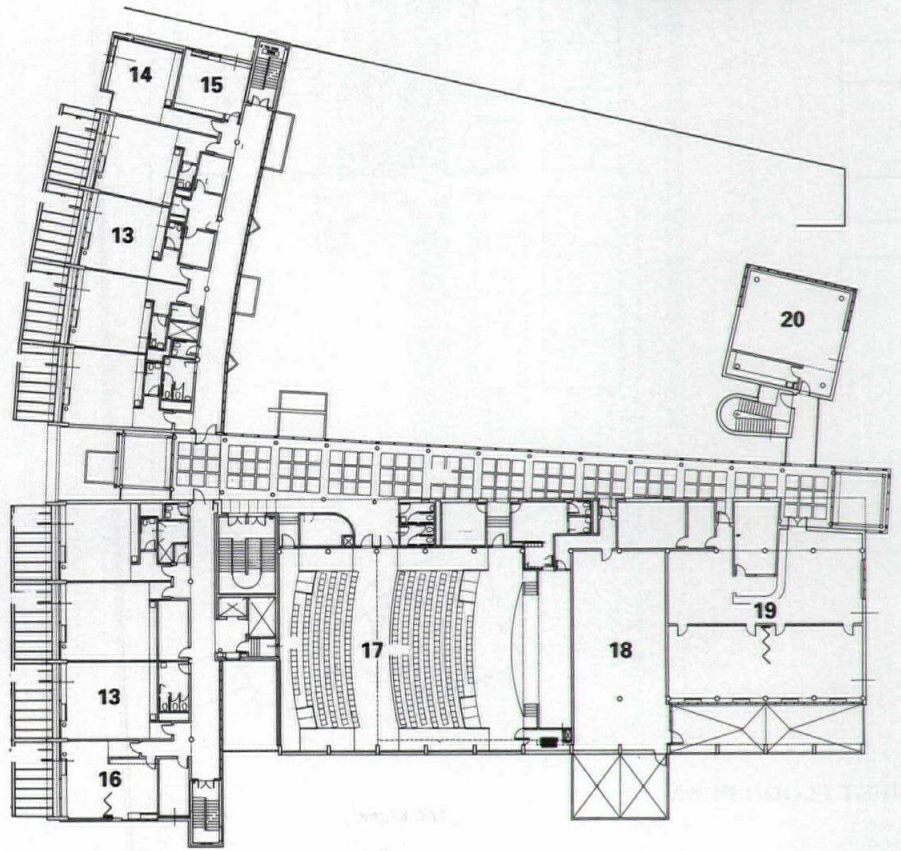


UPPER FLOOR PLAN

- 1 LOBBY
- 2 ADMINISTRATION
- 3 KITCHEN
- 4 DINING
- 5 ART
- 6 KINDERGARTEN
- 7 PRE-SCHOOL
- 8 GYMNASIUM
- 9 LOCKER ROOMS
- 10 BOOK STORAGE
- 11 SHOPS
- 12 SERVICE
- 13 CLASSROOMS
- 14 SPECIAL EDUCATION
- 15 RESOURCE
- 16 READING/SPEECH
- 17 AUDITORIUM
- 18 MECHANICAL
- 19 LIBRARY
- 20 MUSIC



LOWER FLOOR PLAN



SECOND FLOOR PLAN

N ↓ 40/12m

# PROTOTYPE SCHOOL

**Architect:** Ehrenkrantz, Eckstut & Whitelaw, Architects, New York, NY.

**Capacity:** 1200 students, pre-school through grade 5

**Area:** 140,000 square feet

**Cost/Square Foot:** \$242

**Completion:** 1993

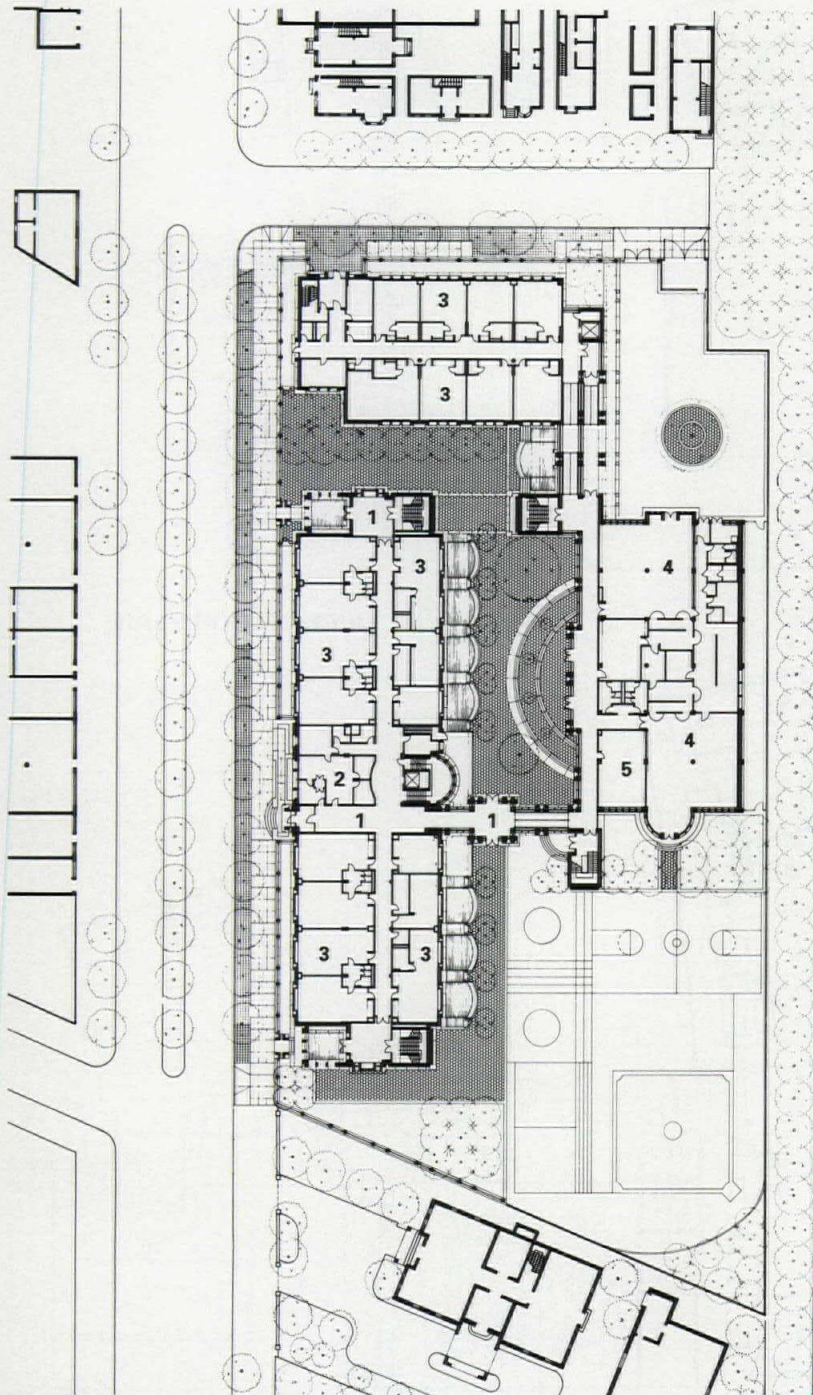
**Client:** New York City Board of Education

The prototype school was commissioned to institute a new system developed by the New York City school board and a special mayoral task force. The system separates the programmed spaces into five different building blocks that can be grouped in a variety of configurations to meet individual site requirements. In this case, the site is a fairly tight urban lot bound by two streets and a commuter railroad. The school is divided into three buildings, each of which faces onto one of the site's three edges. These buildings, connected by a continuous corridor, correspond to three different schools: two elementary schools of 550 students each and a 100 student, city-wide special education facility for severely handicapped children. The three share administrative offices, cafeteria, kitchen, library, and gymnasium. As with the Gruzen Samton Steinglass prototype, also discussed in this issue, the school's individual classrooms have an internal logic governed by specifics of function, while the overall floor plan derives from external dictates and opportunities of the particular site.



**MODEL**

Randy Schaeffer



## FIRST FLOOR PLAN

- |                  |             |
|------------------|-------------|
| 1 LOBBY          | 4 DINING    |
| 2 ADMINISTRATION | 5 AUXILIARY |
| 3 CLASSROOMS     |             |

N ← 40'/12m

# PUBLIC SCHOOL NO. 5

**Architect:** Gruzen Samton Steinglass, Architects, Planners & Interior Designers, New York, NY.

**Design Team:** Peter Samton, FAIA, Partner In Charge; George Luaces, AIA, Associate Partner/Project Architect; Yuh-Hwa Hung, Mani Muttreja, John Pease, Moses Ros, Martin Rotondo, John Soraci, Gariella Teodor, Deirdre Weeks.

**Capacity:** 900 students, pre-school through grade 5

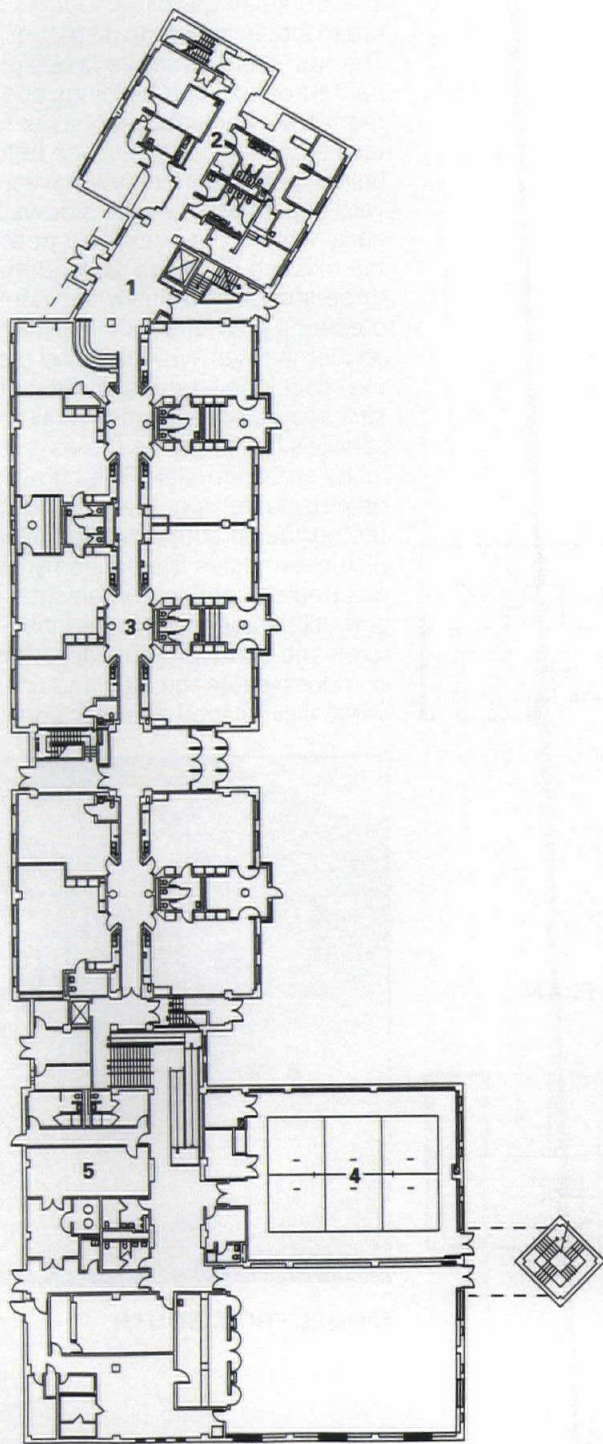
**Area:** 93,000 square feet

**Cost/Square Foot:** not available

**Completion:** January 1993

**Client:** New York City School Construction Authority

P/A Plans

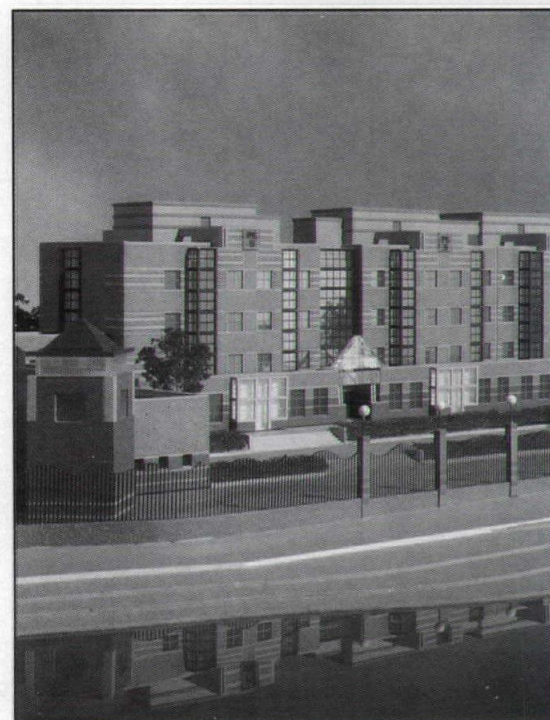


- 1 LOBBY
- 2 ADMINISTRATION
- 3 CLASSROOMS
- 4 GYMNASIUM
- 5 LOCKER ROOMS

FIRST FLOOR PLAN

N ← 40'/12m

Public School #5 on the northern end of Manhattan is one of the firm's several public school projects based on a prototype they developed for the New York City school system. The prototype consists of a flexible system of components, or "kit of parts," which may be adapted to the particulars of various sites and programs. The core of the plan is a repeatable module of four classrooms clustered around an "activity node," a swell in the corridor. This module itself breaks down into the "building block" of the school, the design of the individual classroom. Each classroom is a compact unit fulfilling a variety of functions. The features of the prototypical school reflect the architects' attitude that after much experimentation, design in general and particularly that of primary schools is "returning to basics." Such fundamentals include independent classrooms around a central corridor, high ceilings and low window sills, conveniently placed stairs, and conventional patterns of circulation.



MODEL FROM SOUTH

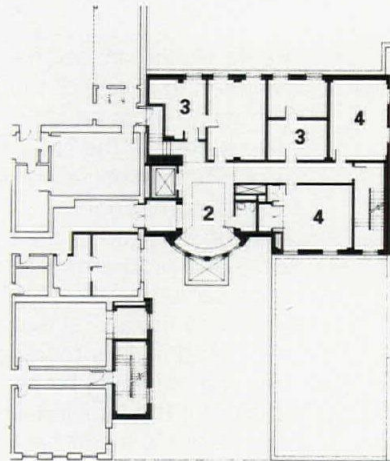
Progressive Architecture 3.92

83

Roy J. Wright

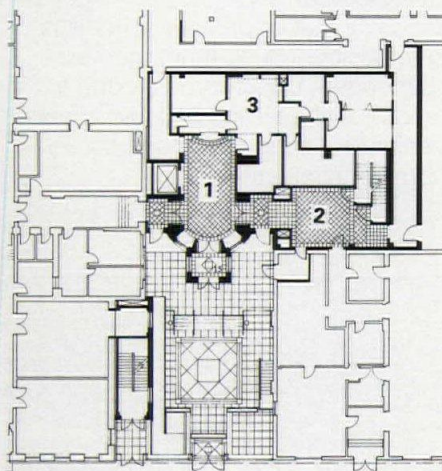
# THE BERKELEY CARROLL SCHOOL

**Architect:** Fox & Fowle Architects, New York, NY.  
**Design Team:** Bruce Fowle, *Partner in Charge of Design*; Tom Czarnowski, *Associate Partner in Charge*; Barbara Griffin, *Project Architect*; Jeanne Stoney, Elizabeth Wastler, Mauri Tamerin.  
**Capacity:** 320 students, grades 5 through 12  
**Area:** 12,000 square feet  
**Cost/Square Foot:** unavailable  
**Completion:** December 1991  
**Client:** The Berkeley Carroll School

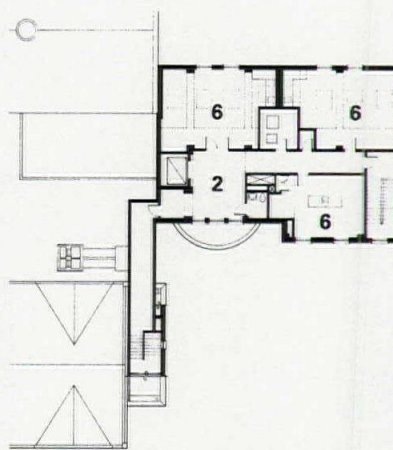


- 1 ENTRANCE LOBBY
- 2 LOBBY
- 3 ADMINISTRATION
- 4 CLASSROOM
- 5 LOCKERS
- 6 ART

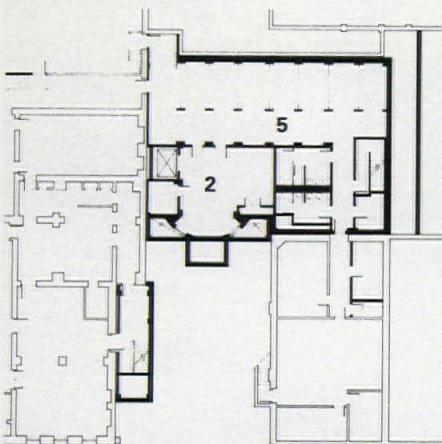
**SECOND FLOOR PLAN**



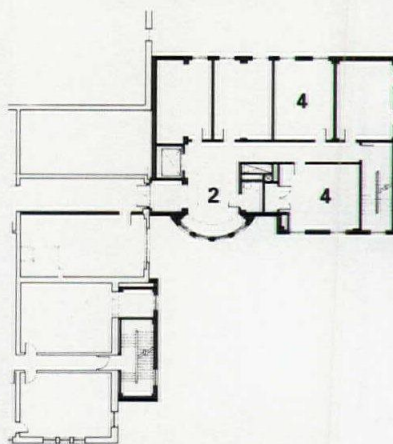
**FIRST FLOOR PLAN**



**FOURTH FLOOR PLAN**



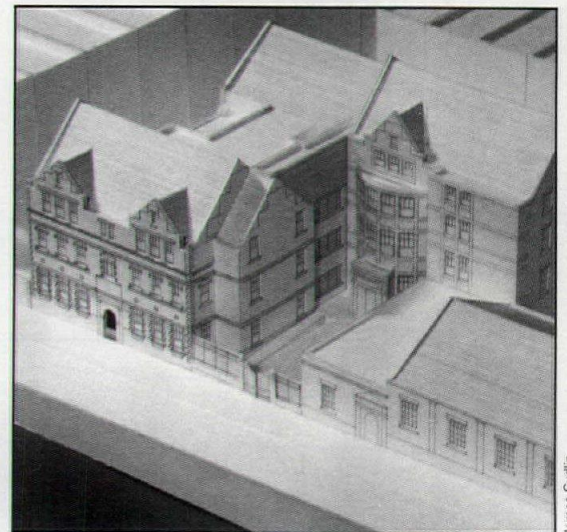
**LOWER FLOOR PLAN**



**THIRD FLOOR PLAN**

N 40/12m

The Berkeley Carroll School fits into a tight urban site in a historic district of Brooklyn. The four-story structure is designed to connect three existing buildings and to complement their neo-Jacobean style. Fox & Fowle take advantage of the space between the buildings to create a new paved entry courtyard separated from the sidewalk by an iron gate, which continues the street elevation of the existing buildings. Behind the court, a three-story bay window and gabled parapet present a new entrance façade for the school. A foyer with engaged piers leads to the main lobby, which, at the center of the site, allows equal access to all four of the school's buildings. To the east lies a second lobby and a fire stair. The administrative offices cluster together behind this area, at the northeast corner of the building. The floor plan exemplifies the economy of plan-making dictated by confined urban sites. The elevator and utilities open onto the lobby, which overlooks the courtyard outside. A double-loaded corridor bisects the plan and connects the vertical circulation at either end.



**MODEL FROM SOUTH**

James Cudlip

# STUYVESANT HIGH SCHOOL

**Architect:** Cooper, Robertson & Partners, New York, NY.  
**Design Team:** Alexander Cooper, FAIA, Partner in Charge; Roland Baer, AIA, Partner; Joe Lengeling, Senior Associate/Project Manager; Scott Newman, Assistant Project Manager; Paul Reiss, Associate; Albert Chan, Karen Fairbanks, Matthew Fowler, Jay O'Yang, David Sassano, Jann Wolff.

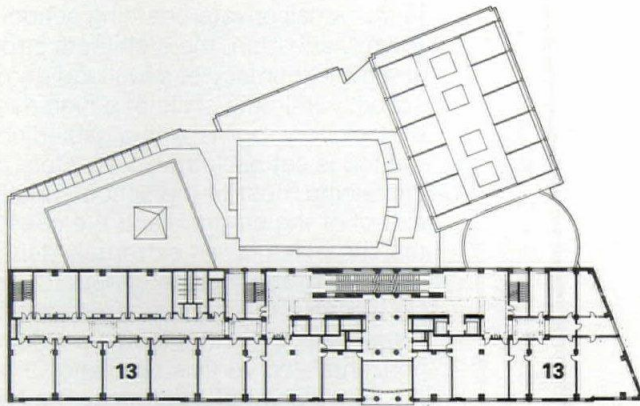
**Capacity:** 3000 students, grades 9 through 12

**Area:** 406,000 square feet

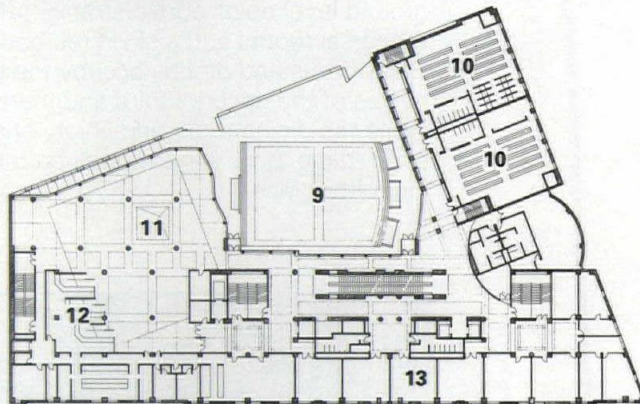
**Cost/Square Foot:** approx. \$230

**Completion:** September 1992

**Client:** The Battery Park City Authority and the New York City Board of Education

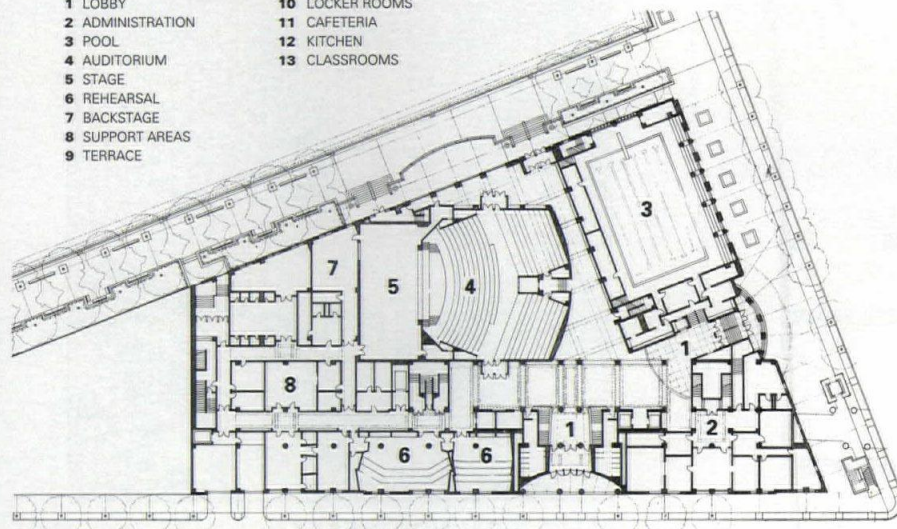


**TYPICAL UPPER FLOOR PLAN**



**FIFTH FLOOR PLAN**

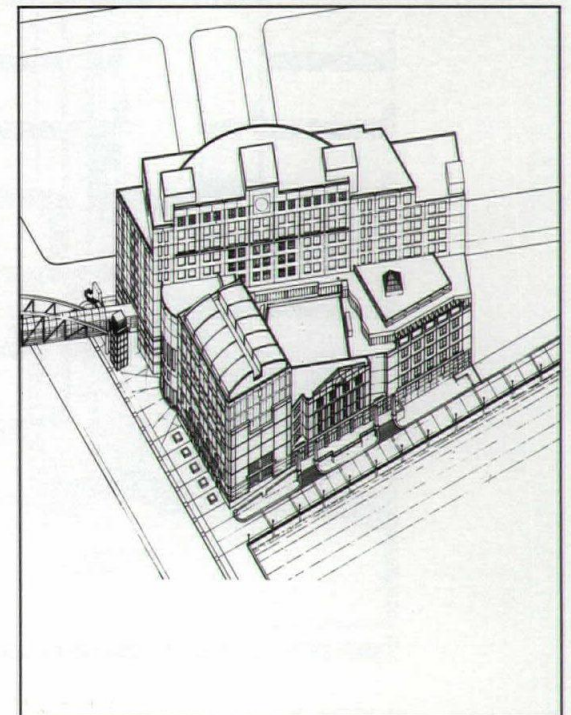
- |                  |                 |
|------------------|-----------------|
| 1 LOBBY          | 10 LOCKER ROOMS |
| 2 ADMINISTRATION | 11 CAFETERIA    |
| 3 POOL           | 12 KITCHEN      |
| 4 AUDITORIUM     | 13 CLASSROOMS   |
| 5 STAGE          |                 |
| 6 REHEARSAL      |                 |
| 7 BACKSTAGE      |                 |
| 8 SUPPORT AREAS  |                 |
| 9 TERRACE        |                 |



**FIRST FLOOR PLAN**

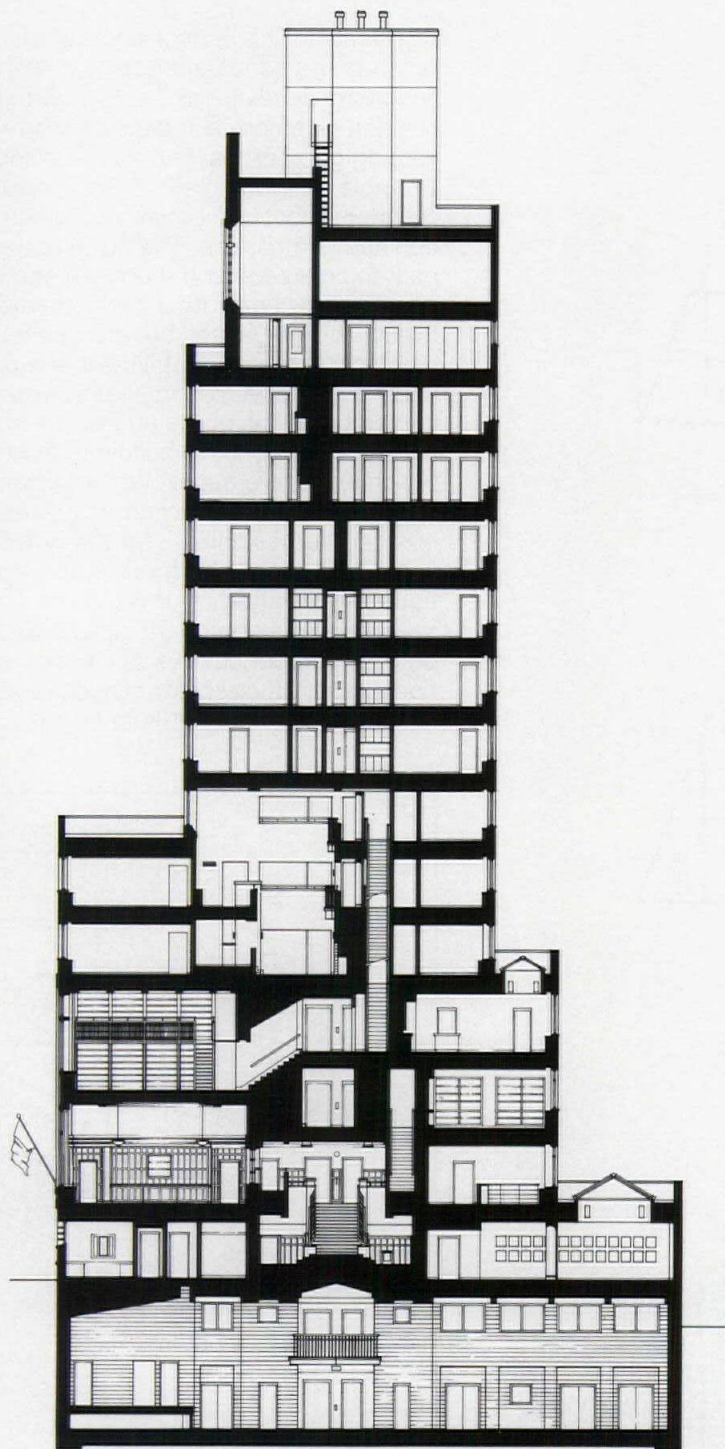
N  40/12m

Stuyvesant High School in lower Manhattan resembles a series of discrete buildings. The architects develop this strategy within, as circulation takes place in gaps between converging geometries. The east entrance, for example, lies within a five-story, columniated cylinder embedded between the administration and gymnasium. The north entrance is next to an arcade at the bottom of a four-story palazzo facade with a gabled parapet. Inside, this volume all but disappears, continuing only in the form of lines in the pavement. Here, one must navigate around the curved back wall of the auditorium. The south entrance is a concave hollow in the building which leads to a trapezoidal vestibule and the colonnade of the main corridor, where various geometries collide. On the fifth floor, the lunch room takes the form of an amorphous figure with shifted columns, a tilted pyramidal skylight, and a contoured glass wall that looks onto an outdoor courtyard. On the upper floors, a bar of classrooms rises several stories above the rest of the building.



**AXONOMETRIC**

# ST. THOMAS CHOIR SCHOOL



SECTION

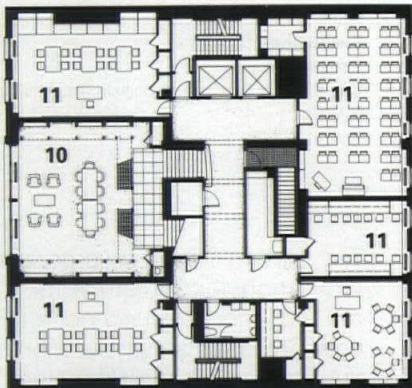
**Architect:** Buttrick White & Burtis Architects, New York, NY.  
**Design Team:** Harold Buttrick, *Partner in Charge*; Michael M. Dwyer, *Project Architect*; Peter W. Murray, *Job Captain*; William W. Brahan, Theodore A. Burtis, Kelli W. Dobbs, R. Wade Johnson, Timothy Nissen, Francesca Rogier, Robert S. Shedrofsky, William A. Halsey.  
**Capacity:** 50 students, grades 5 through 8  
**Area:** 80,000 square feet  
**Cost/Square Foot:** \$225  
**Completion:** Fall 1987  
**Client:** St. Thomas Church

In this small private boarding school in midtown Manhattan, the architects strove to attain the intimacy of a walk-up primary school within the scale of a high-rise. A tower of dormitory rooms with a gabled chapel at the top is set back from a six-story pedestal containing most of the school functions. The extent of the program and the constraints of the site make for an extremely dense plan. On each of the fourteen floors, the rooms circle a central main space. This space, typically a stair hall or elevator lobby, provides both horizontal and vertical circulation and acts as the plan's point of reference. The basement houses a large gymnasium and performance space with an overlooking mezzanine. The ground level holds administrative offices, rehearsal rooms and a skylit recreation area. Classrooms and offices occupy the back halves of the second, third and fourth stories, while the dining room and library share a large, triple-story window wall on the building's front face.



VIEW FROM NORTHEAST





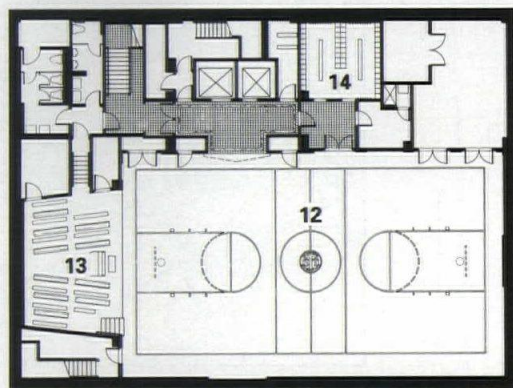
THIRD FLOOR PLAN



SECOND FLOOR PLAN

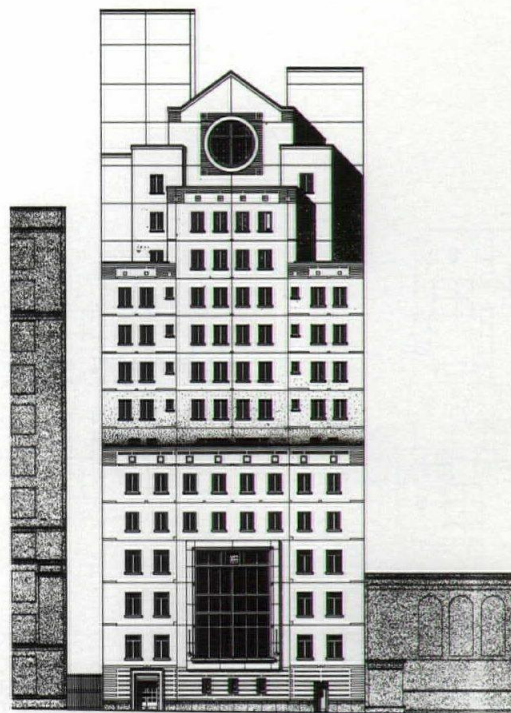


FIRST FLOOR PLAN

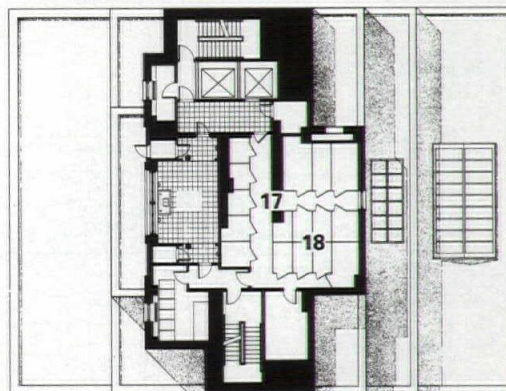


LOWER FLOOR PLAN

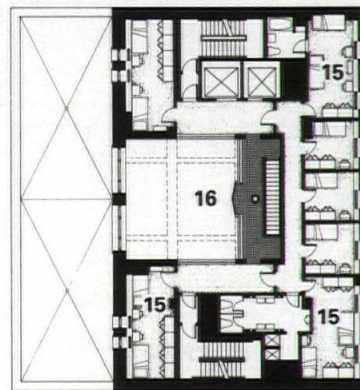
N ← 20'6m



ELEVATION



FOURTEENTH FLOOR PLAN

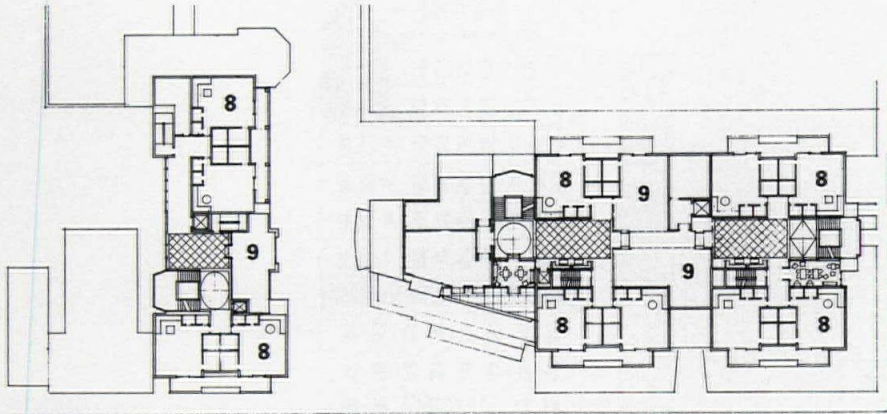


SEVENTH FLOOR PLAN

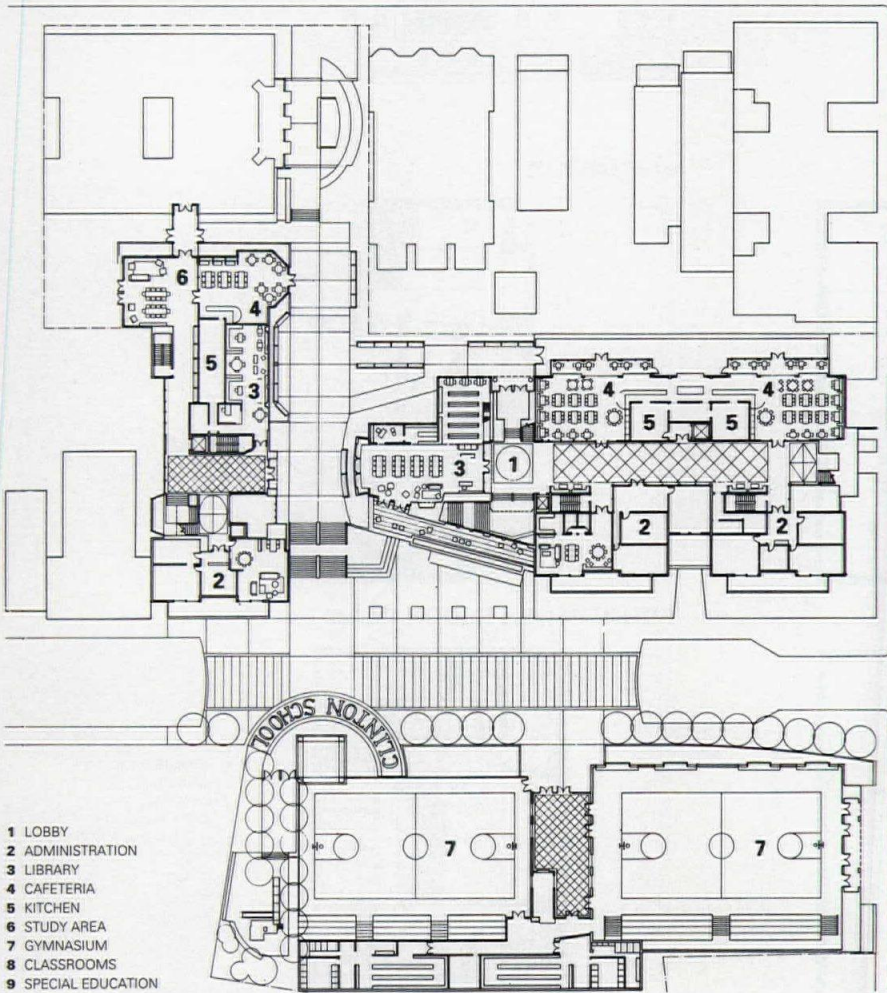
- 1 LOBBY
- 2 ADMINISTRATION
- 3 MAIN STAIR
- 4 REHEARSAL
- 5 RECREATION
- 6 HOBBY SHOP
- 7 DINING
- 8 LIVING
- 9 KITCHEN
- 10 ART/LIBRARY
- 11 CLASSROOM
- 12 GYMNASIUM
- 13 STAGE
- 14 LOCKER ROOMS
- 15 DORMITORY
- 16 GREAT HALL
- 17 CHAPEL
- 18 STORAGE

# CLINTON SCHOOL

**Architect:** The Hudson Studio, New York, NY.  
**Project Team:** Roy Strickland, August Shaefer and Caroline Carson.  
**Capacity:** 600 students, kindergarten through grade 12  
**Area:** 127,790 square feet  
**Cost/Square Foot:** N/A  
**Completion:** N/A  
**Client:** Public Education Association and the Architectural League of New York



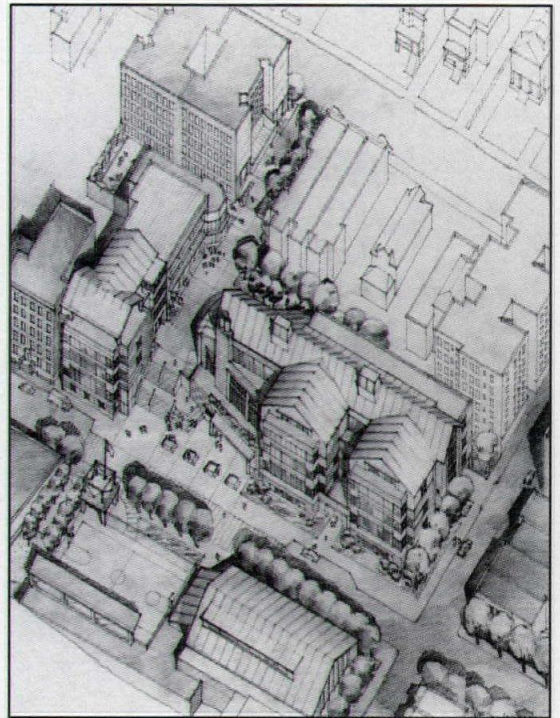
**FOURTH FLOOR PLAN**



- 1 LOBBY
- 2 ADMINISTRATION
- 3 LIBRARY
- 4 CAFETERIA
- 5 KITCHEN
- 6 STUDY AREA
- 7 GYMNASIUM
- 8 CLASSROOMS
- 9 SPECIAL EDUCATION

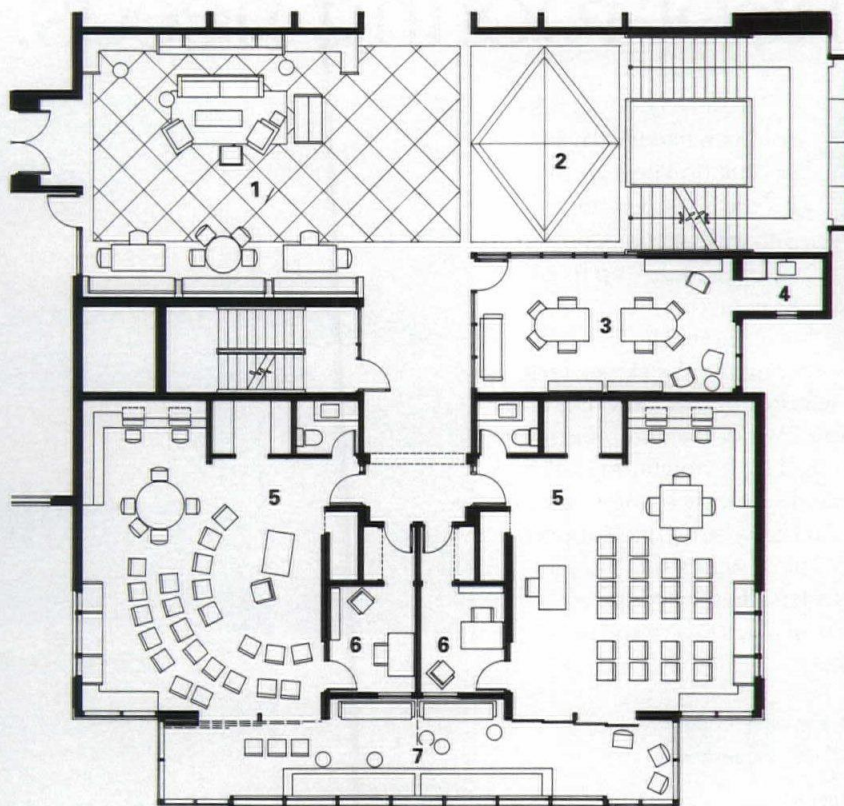
**FIRST FLOOR PLAN**

The Clinton School incorporates an elementary school for 250 students, a middle school for 150, and a high school for 200, on a site near Crotona Park in the Morrisania district of the Bronx. As part of the New Schools for New York Program, sponsored by the Architectural League and the Public Education Association, the project is conceived as a model educational environment: a small school that forms an integral part of its community. The Hudson Studio bases its response to this program on the concept of a "classroom suite." Within each of the building's three schools, a series of spaces creates a personal, house-like environment that will help socialize students and foster interaction with the faculty. The common space replaces the corridor as a kind of lobby and assembly room for each floor. Adjacent to this area is an enclosed common area for seminars and group study. Each classroom contains a teacher's office, private bathrooms, and computer stations.



**AERIAL PERSPECTIVE**

N > 40'/12m



CLASSROOM SUITE

N > 10'3m

- 1 COMMON SPACE
- 2 HALL
- 3 STUDY/DISCUSSION
- 4 KITCHENETTE
- 5 CLASSROOM
- 6 TEACHER'S OFFICE
- 7 TERRACE

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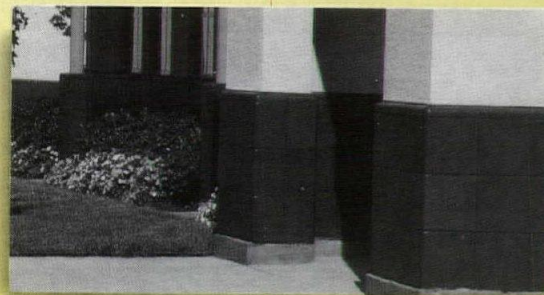
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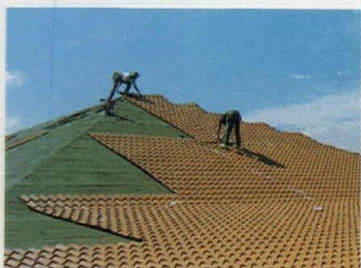
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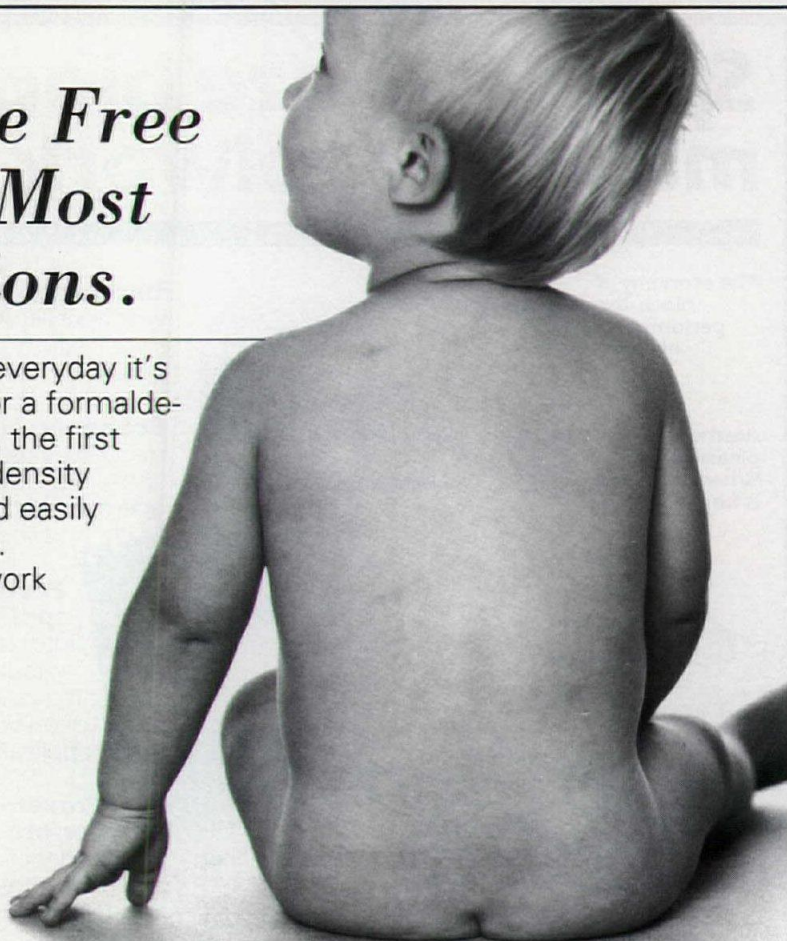
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## CAMPUS

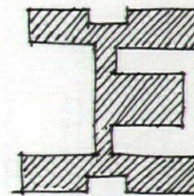
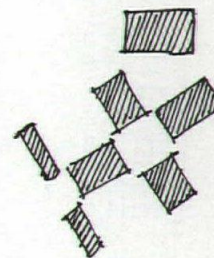
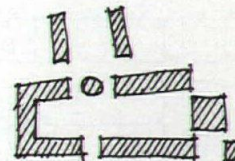
- 94 **Centennial High School**, Peoria, IL
- 95 **Lynwood High School**, Lynwood, CA
- 96 **Perry Community Educational Village**, Perry, OH
- 98 **Peggy Heller Elementary**, Atwater, CA
- 99 **Pleasanton Middle School**, Pleasanton, CA
- 100 **Ashtabula Senior High School**, Ashtabula, OH
- 101 **Capital High School**, Santa Fe, NM
- 102 **Desert View Elementary**, Sunland Park, NM

While the planning of a large educational complex involves many of the approaches introduced above – corridor, double corridor, cluster, and block – the campus type plan focuses on the creation of exterior spaces. The buildings that constitute the campus type are often straightforward, and the emphasis is on the relationship between the buildings rather than the buildings themselves. Although this emphasis on outdoor spaces closely resembles the kinds of plan making found in courtyard schemes, the scale of planning distinguishes the campus type from the courtyard type.

In a sense, the campus plan is a large courtyard type; it consists of several buildings around a series of courtyards. The Perry Community typifies the campus plan: four groups of buildings with courtyards cluster around the river, each providing for different uses. The high school and physical education center stand on one side of the river. A bridge spans the river and connects them to the middle school and grade school on the other side.

Organizing campus type schools can prove difficult since they involve such large areas. As tradition (since Jefferson) would have it, many campus designs use classical models of organization. The Pleasanton campus constructs a central green with formal walks in the form of two aisles, with the amphitheater and library flanking the central court. Squarely within the French Renaissance planning tradition, Desert View Elementary School and Capital High School use a classicized vocabulary and axial plan-making on a would-be grand scale. The resulting schools succeed in constructing powerful diagrams implying the exertion of their order over the surrounding terrain.

In contrast to these classical strategies, a few of the projects included here attempt non-classical arrangements. In the Perry Community, the three schools are skillfully constructed with similar elements to form a series of courtyards, while each establishes a separate organizational identity. From the elementary school to the high school, the building groups grow in size and complexity. The elementary encloses two small rectangular courtyards. The middle school forms an L-shaped court between the classroom wing and the shared activities. The high school, rotated 180 degrees from the middle school forms a larger L between the classroom wing and the theater. Long corridors align the groups and cement the composition. Similarly, Centennial High School constructs irregular courtyards, using space frames to cover the part of courts between buildings, protecting and defining the areas below.



# CENTENNIAL HIGH SCHOOL

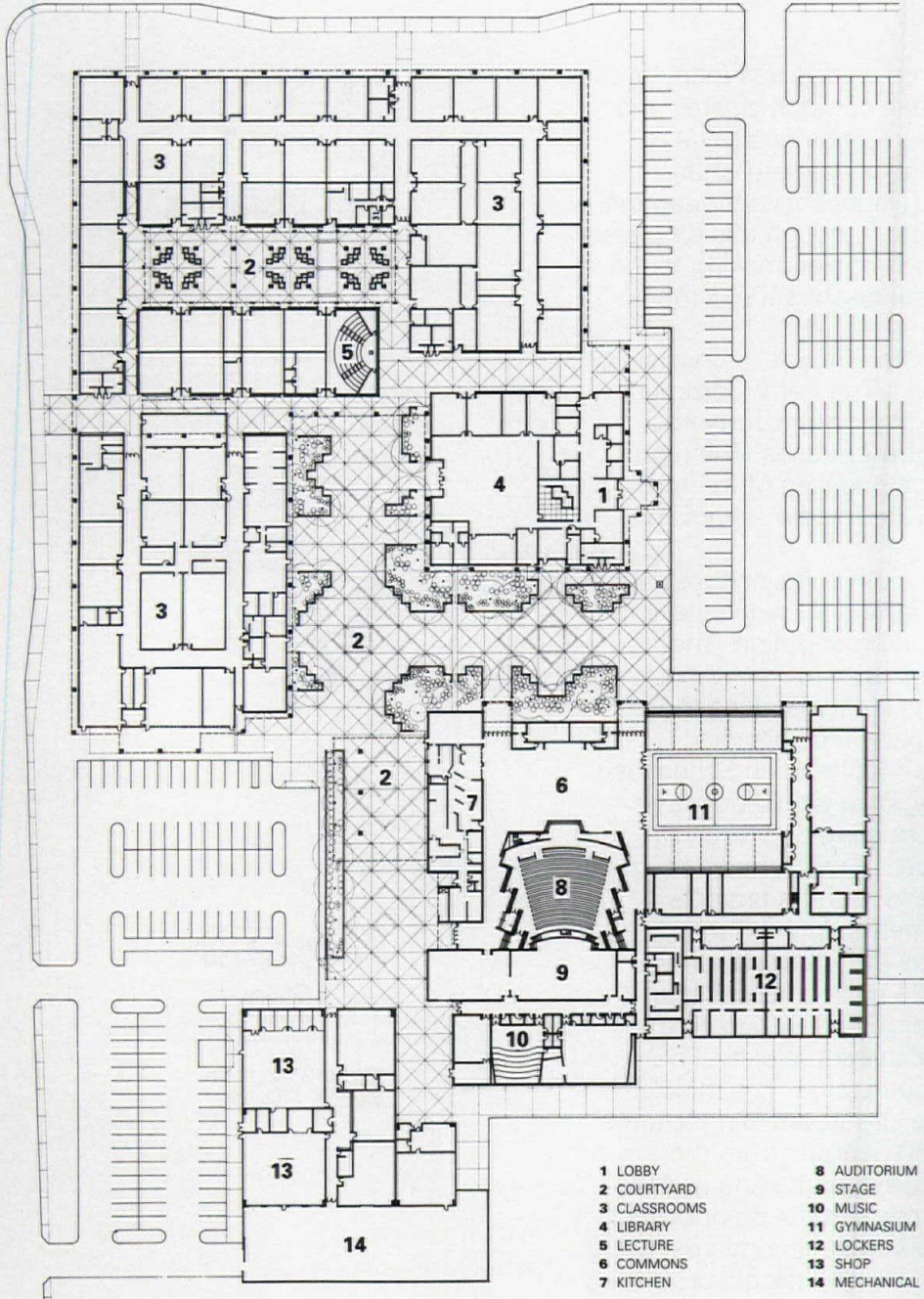
P/A Plans

Progressive Architecture 3.92

94

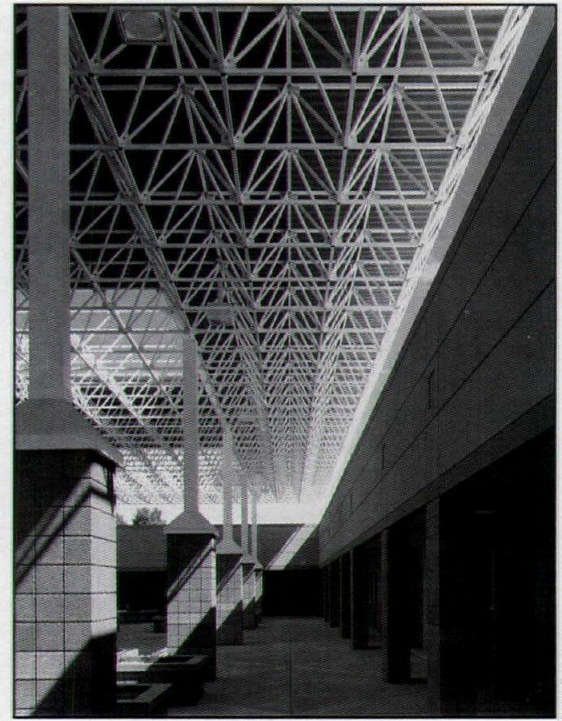
**Architect:** Howard Needles Tammen & Bergendoff, Phoenix, AZ.  
**Design Team:** Ross Jensen, AIA, Associate-in-Charge (retired), Jay Silverberg, Project Designer; Jack Mecham, Job Captain.  
**Capacity:** 2000 students  
**Size:** 225,054 square feet  
**Cost/Square Foot:** \$62  
**Completion:** June, 1990  
**Client:** Peoria Unified School District No. 11

An adaptation of the campus plan, this 2000-student school adopts colonnades and space frame canopies to provide shady areas usable in Arizona's milder seasons. Organized to respect the scale of the surrounding neighborhoods, lower-scale classrooms screen the larger-scale gymnasium, auditorium, and library/media center. The facility comprises six main buildings, with the shaded and landscaped courtyards serving as nodes for pedestrian activity. Low maintenance native plants were used for erosion control and water conservation on the grounds. To relieve increasing operating costs, alternative energy-saving devices were incorporated in the central plant, including an ice thermal storage facility capable of making 2700 ton hours of ice in order to offset peak cooling demand periods.



- |              |               |
|--------------|---------------|
| 1 LOBBY      | 8 AUDITORIUM  |
| 2 COURTYARD  | 9 STAGE       |
| 3 CLASSROOMS | 10 MUSIC      |
| 4 LIBRARY    | 11 GYMNASIUM  |
| 5 LECTURE    | 12 LOCKERS    |
| 6 COMMONS    | 13 SHOP       |
| 7 KITCHEN    | 14 MECHANICAL |

FLOOR PLAN



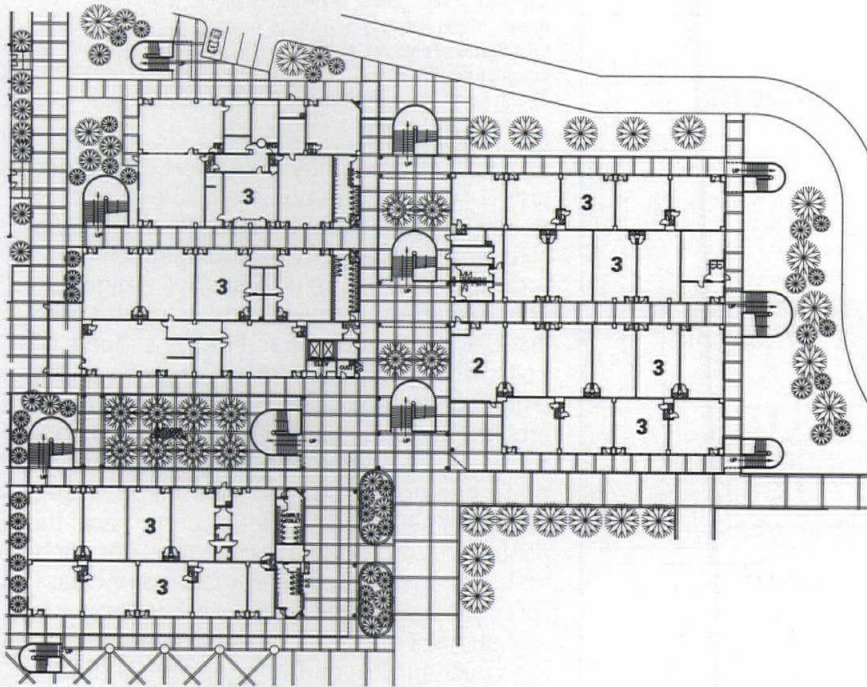
COURT SPACE FRAME

Mark Bosclair

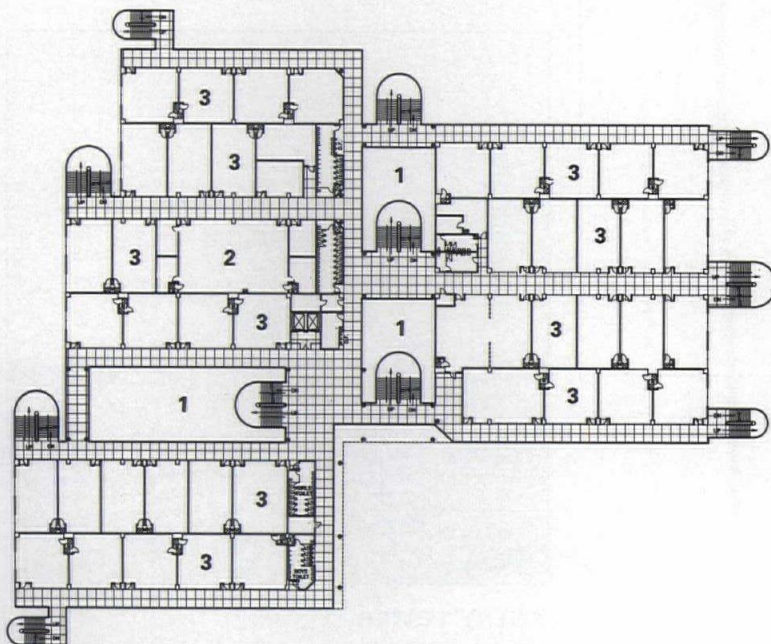


# LYNWOOD HIGH SCHOOL

**Architect:** Ruhnuu Ruhnuu Todd/Associates, Architects, Riverside, CA.  
**Capacity:** 300,000 students, grades 9 through 12  
**Area:** 77,600 square feet  
**Cost/Square Foot:** \$145  
**Completion:** June 1995  
**Client:** Lynwood Unified School District



**SECOND FLOOR PLAN**

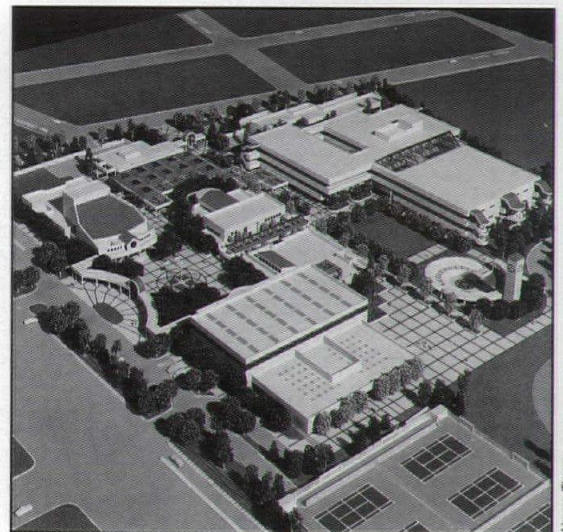


**FIRST FLOOR PLAN**

- 1 ATRIUM
- 2 OFFICE
- 3 CLASSROOMS

N ↓ 40'/12m

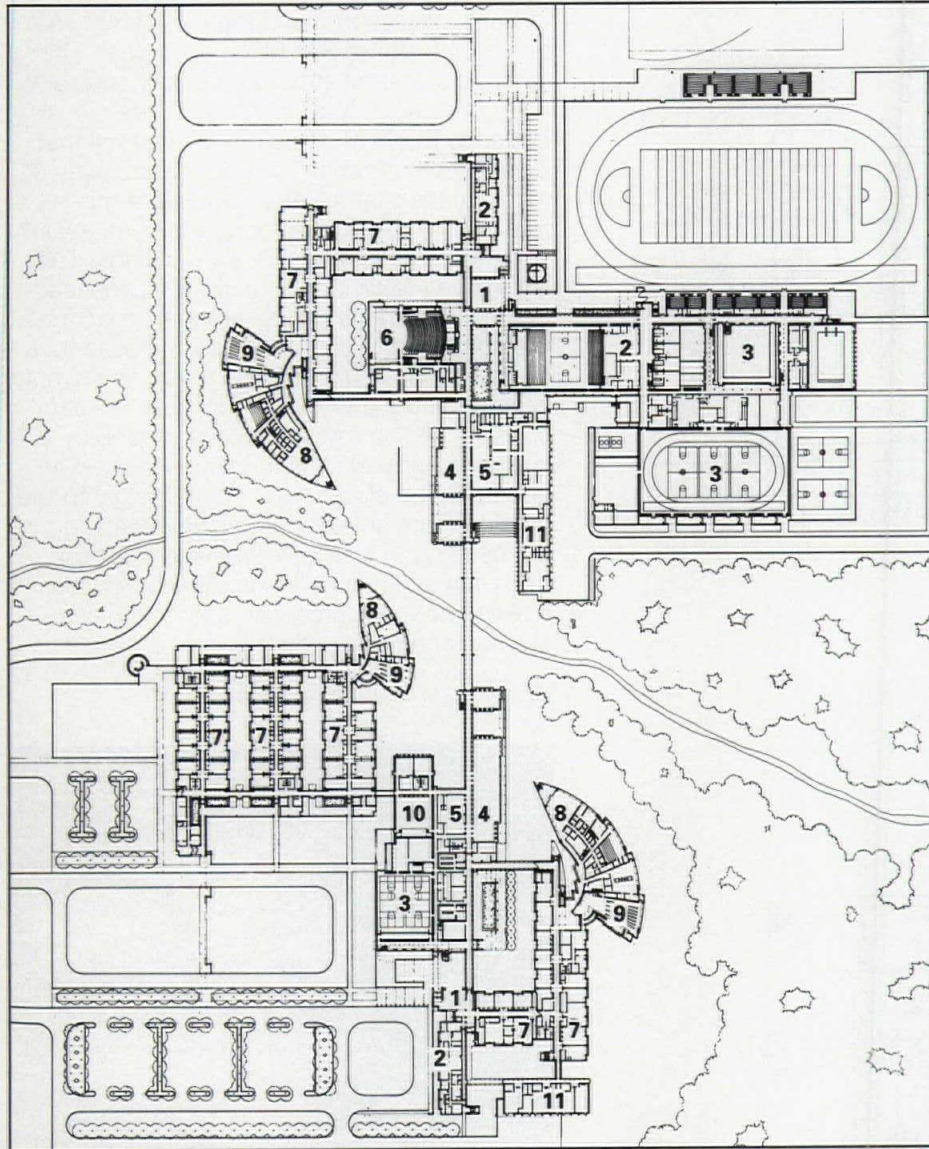
Lynwood High School is a very large complex of buildings accommodating over 3,300 students on a site of 300,000 square feet. The campus's several structures each house a distinct activity. A tall archway at the entrance marks the beginning of a mall that bisects the campus. Flanking the archway is a colonnade that fronts a large plaza surrounded by the arts building, the gymnasium, and the administration/library buildings. The latter two are divided by a skylit arcade leading to a commons and an amphitheater. To the south of the commons are the academic classroom buildings (shown here), five simple clusters under a common roof. Each cluster consists of two rows of rooms divided by a common party wall, with utilities located at one end. The classrooms open directly to the outside, onto an exterior balcony wrapping the building to provide minimal protection from sun and rain. The complex surrounds two atriums which contain stairs with semi-circular landings.



**CAMPUS MODEL FROM NORTHWEST**

Wayne Thom

# PERRY COMMUNITY EDUCATION VILLAGE



## FLOOR PLAN

N → 200' / 60m

- |                       |                    |
|-----------------------|--------------------|
| 1 ENTRANCE            | 7 CLASSROOMS       |
| 2 ADMINISTRATION      | 8 ARTS             |
| 3 ATHLETIC FACILITIES | 9 LIBRARY          |
| 4 DINING              | 10 MULTIPURPOSE    |
| 5 KITCHEN             | 11 INDUSTRIAL ARTS |
| 6 THEATER             |                    |

**Architect:** Burgess & Niple, Ltd., Painesville, Ohio, with Perkins & Will, Chicago, IL.  
**Design Team, Burgess & Niple:** Jerry L. Keltch, AIA, *Principal-in-Charge*; Raymond Bordwell, *Project Director*; Raymond Corby, RA, and John H. Fisk, AIA, *Project managers*; Joel R. Altland, John A. Butz, William Carlson, Steven Staats, Robert A. Tackett, William L. Thomae, Dena R. Traina, Edward D. Turner, John D. Williams. *Design Team, Perkins & Will:* C. William Brubaker, VFAIA, *managing Principal*; Ralph E. Johnson, AIA, *Design Principal*; James A. Toya, AIA, *Project Manager*; James G. Woods, AIA, and August Battaglia, AIA, *Senior Designers*; William Schmalz, *Technical Coordinator*; Robin Randall, Robert Tuggles, Jerry Johnson, Eric Spielman, Elisabeth Rakatselis, Milena Soltesz, Kyo Whang.  
**Capacity:** 4500 students, kindergarten through grade 12  
**Area:** 676,000 square feet  
**Cost/Square Foot:** not available  
**Completion:** 1995  
**Client:** Perry Local School District, Dr. Edgar Goodwin, Superintendent

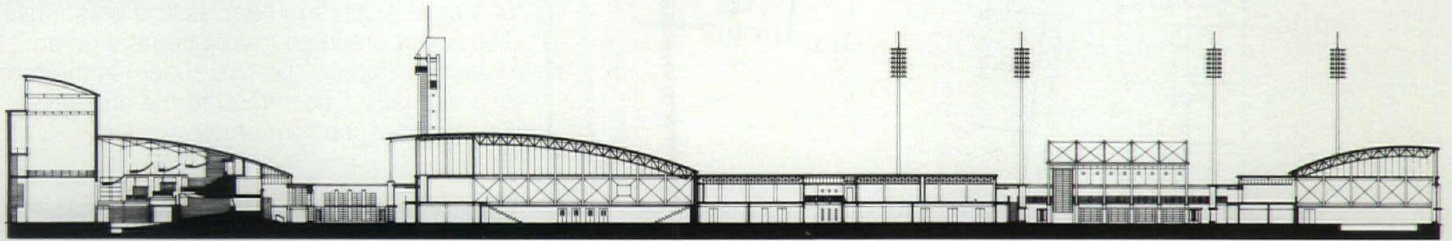
The Perry Community Education Village occupies a 160-acre site outside of Cleveland. The nearly 700,000-square-foot complex includes four large building clusters housing an elementary school, a middle school, a high school and a community fitness center with an adjacent stadium. Each of the schools is a self-sufficient facility, each a variation on the planning strategy governing the project. The architects devised an inventory of repeatable forms which correspond to different programmatic categories, such as instruction, assembly, and fine arts. This "kit of parts" was then adapted to meet the specific needs of each building. Each school is composed of classroom blocks divided by courtyards, assembly, and support areas, and a curvilinear arts pavilion which protrudes from one corner. Each classroom wing consists of a clerestoried, double-loaded corridor flanked on either side by a zone of utilities and storage.



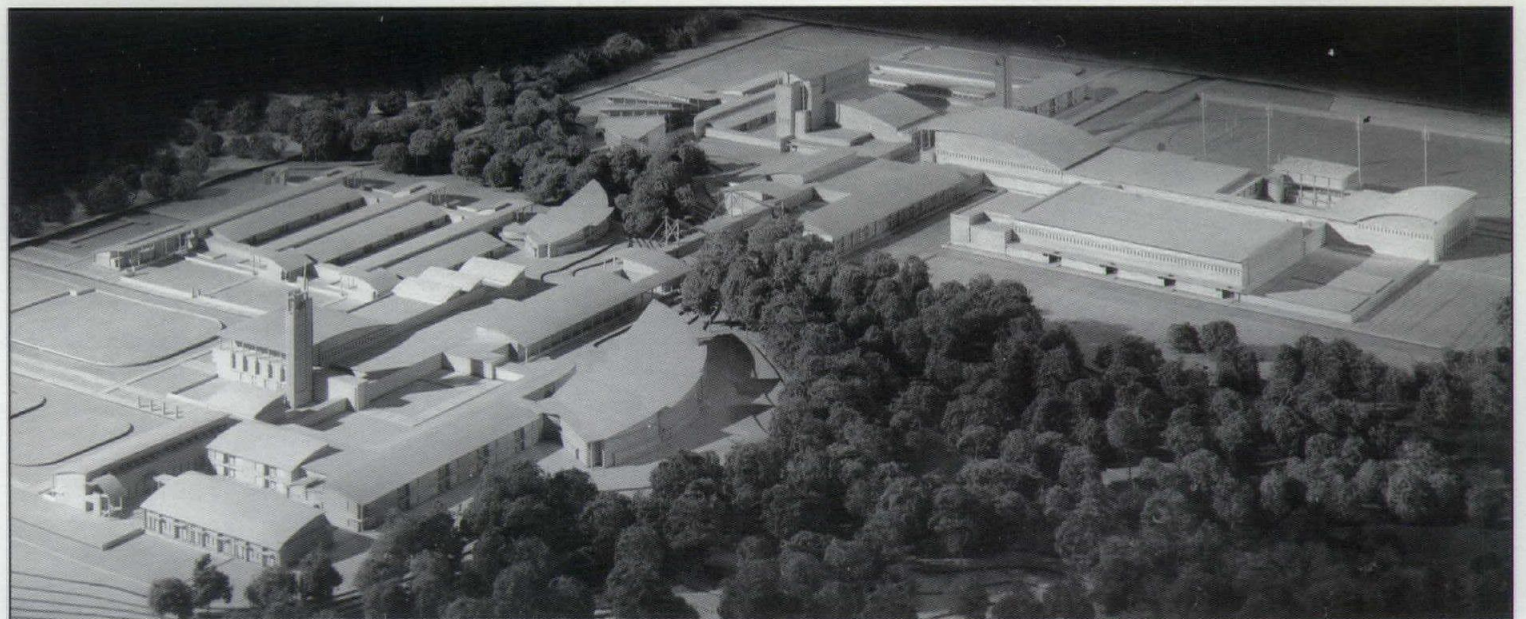
**ENTRY TOWER**



**PERSPECTIVE**



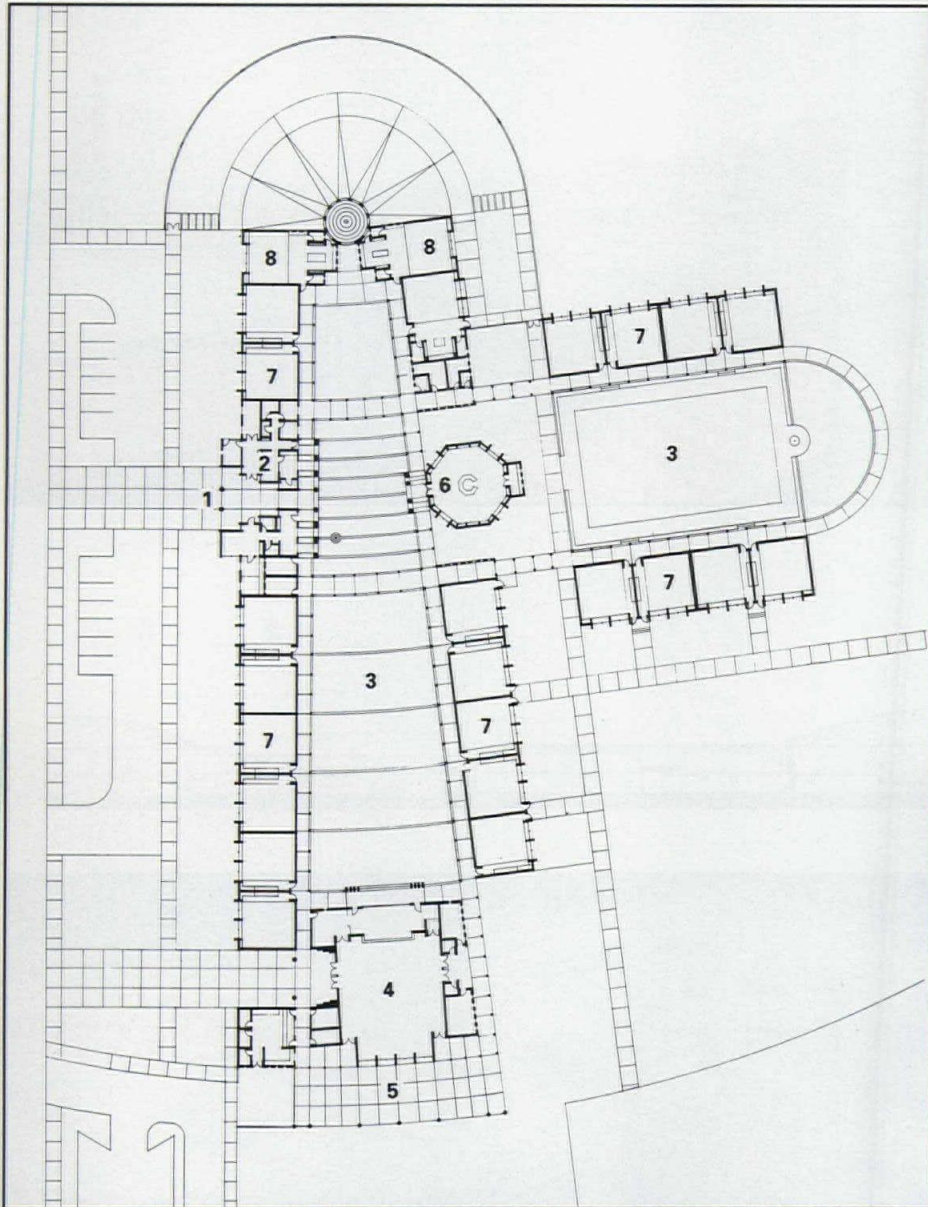
**SECTION**



**MODEL FROM NORTHEAST**

# PEGGY HELLER ELEMENTARY SCHOOL

**Architect:** Reid & Tarics Associates, San Francisco, CA.  
**Design Team:** Chuck F. Schrader, *Principal in Charge*; John G. H. Lum, *Designer*; Mike Beam, *Project Manager*.  
**Capacity:** 650 students  
**Area:** 39,000 square feet  
**Cost/Square Foot:** \$128  
**Completion:** Fall 1993  
**Client:** Atwater Elementary School District

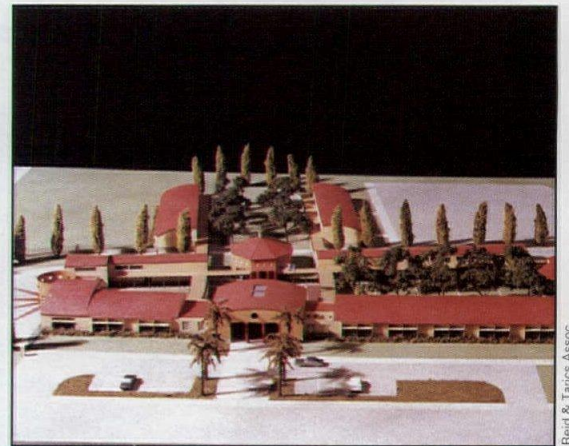


**FLOOR PLAN**

N → 40/12m

- |                     |                 |
|---------------------|-----------------|
| 1 ENTRANCE          | 5 LUNCH SHELTER |
| 2 ADMINISTRATION    | 6 LIBRARY       |
| 3 COURTYARD         | 7 CLASSROOMS    |
| 4 MULTIPURPOSE ROOM | 8 KINDERGARTEN  |

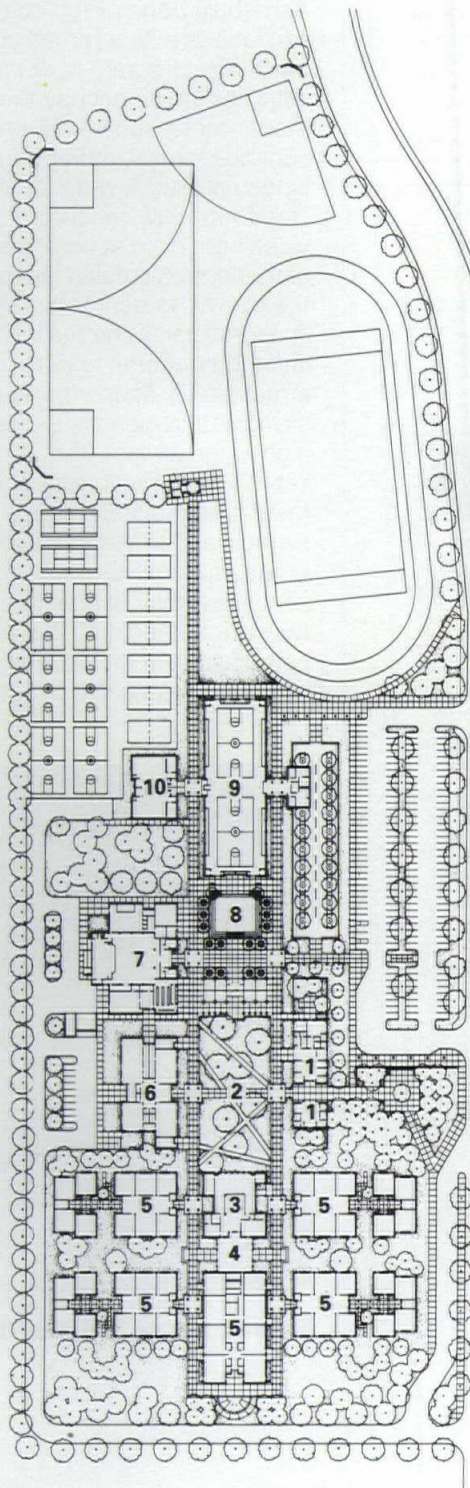
Occupying former agricultural land, Peggy Heller Elementary spearheads a new subdivision in Atwater, California. Like many of the projects exhibited here, this plan separates the special functions and assembly spaces from the regular fabric of classrooms. Linked by a continuous outdoor colonnade, the classroom blocks line a series of courtyards in which the administrative building, library, and multipurpose room stand as freestanding pavilions. The architects treat these pavilions as monuments within a scheme modeled in plan and image on the principles of a Renaissance ideal city. The major courtyard widens toward an outdoor stage in front of the assembly room to the east and hinges at the west end on an open-air "tempietto" which serves as a place for story-telling. The administration building, open through the center, is a vaulted, neoclassical gatehouse. The upper grade courtyard centers on an octagonal library, "whose shape, in the form of a baptistry," according to the architects, "symbolizes the font of knowledge".



**MODEL FROM SOUTH**

# PLEASANTON MIDDLE SCHOOL

**Architect:** Deems Lewis McKinley Architecture, San Diego, CA.  
**Capacity:** 1200 students, grades 6 through 8  
**Area:** 142,000 square feet  
**Cost/Square Foot:** \$108  
**Completion:** September 1990  
**Client:** Pleasanton Unified School District



- 1 ADMINISTRATION
- 2 MAIN COURTYARD
- 3 LIBRARY
- 4 GALLERY
- 5 CLASSROOMS
- 6 UNIFIED ARTS
- 7 MULTIPURPOSE
- 8 AMPHITHEATER
- 9 GYMNASIUM
- 10 LOCKER ROOMS

## FLOOR PLAN

N ↑ 100'/30m

As with their Bay Farm Island School, illustrated previously, Deems Lewis McKinley here take advantage of the warm Southern California climate to create a village of independent structures linked only by outdoor circulation. The resulting plan, an open, 27-acre campus of some 16 buildings, appears more like a college than a middle school. At the center is a large public green cut by diagonal walkways, and spread throughout the campus are a variety of more casual gathering places. The campus collects around a central bar of shared facilities on a north/south axis which includes the main green. A series of transverse axes attach the peripheral buildings to two covered walkways flanking the central spine. These cross axes divide the campus into three types of activity. At the south end, several classroom buildings gather around the library and gallery to form a quiet zone for study. At the center, a cross axis provides a formal entrance to the campus, and a public building forms a high-activity area as an interface with the community.

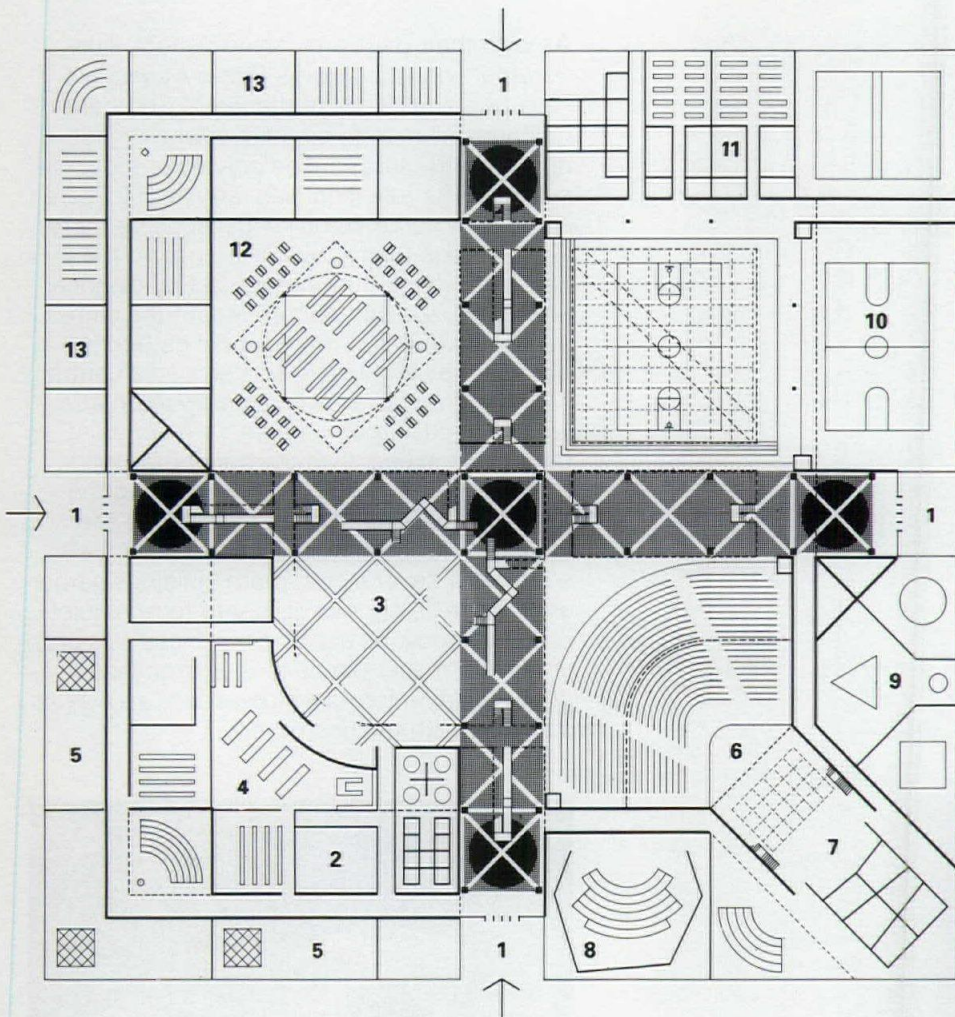


COURT WALKWAY

Jane Lutz Photography

# ASHTABULA SENIOR HIGH SCHOOL

**Architect:** Richard Fleischman Architects, Inc., Cleveland, OH.  
**Capacity:** 1500 students, grades 9 through 12  
**Area:** 180,000 square feet  
**Cost/Square Foot:** \$74  
**Completion:** 1991  
**Client:** Ashtabula Area City Schools

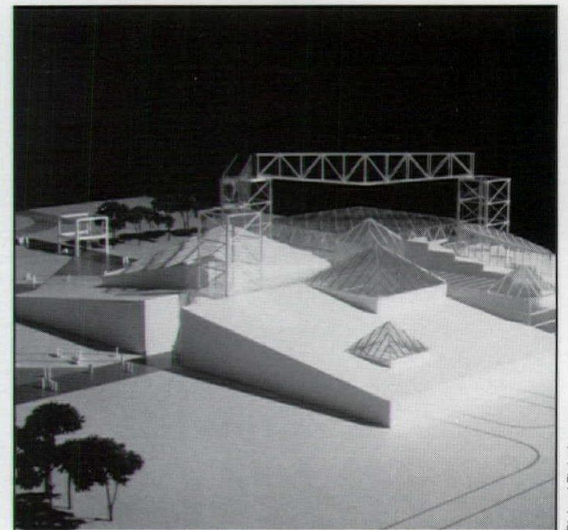


## FLOOR PLAN

- |                  |                 |
|------------------|-----------------|
| 1 ENTRANCE       | 8 BAND          |
| 2 ADMINISTRATION | 9 ART           |
| 3 CAFETERIA      | 10 GYMNASIUM    |
| 4 KITCHEN        | 11 LOCKER ROOMS |
| 5 SHOPS          | 12 LIBRARY      |
| 6 AUDITORIUM     | 13 CLASSROOMS   |
| 7 STAGE/PRACTICE |                 |

N ↑ 40'/12m

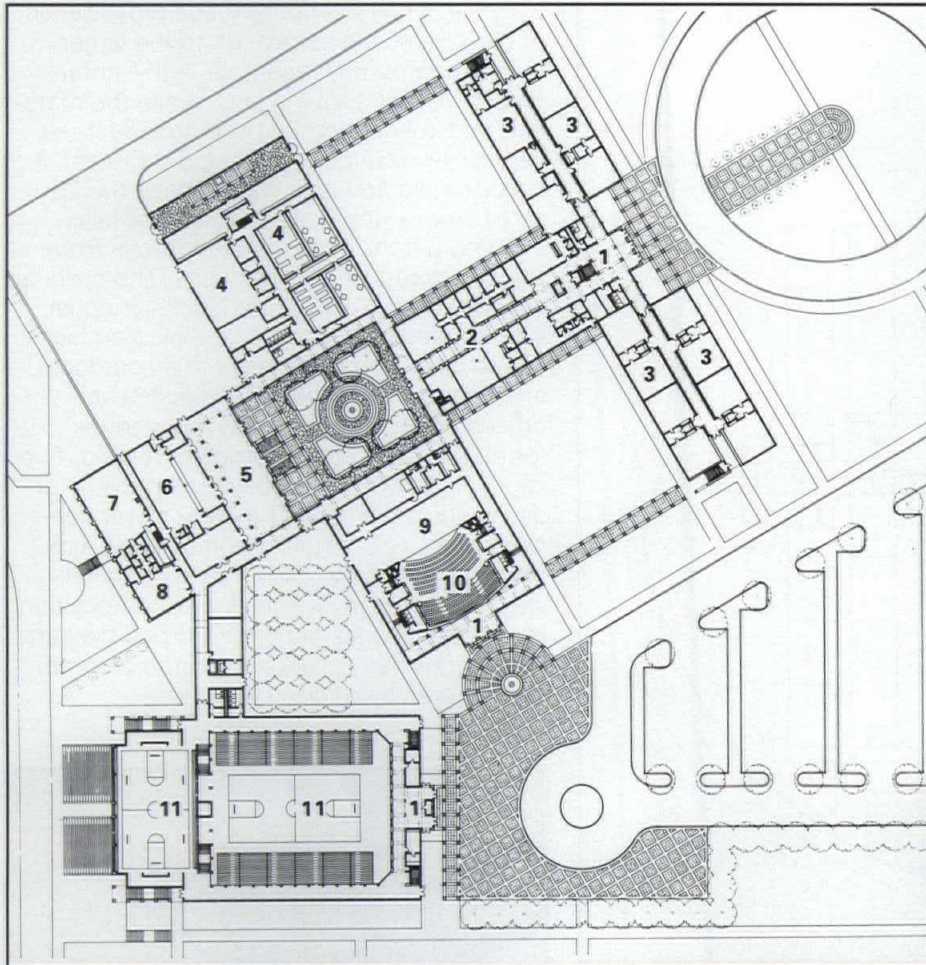
Ashtabula Senior High combines visionary aspirations with a remarkably simple plan diagram. The program is divided into four types of activities which occupy the quadrants of a monumental square. The four corners represent academics, athletics, performing arts, and industrial arts. A wide, continuously glazed, cruciform mall, conceived as a boulevard, provides both circulation and a setting for social gatherings. A smaller, secondary corridor rings the plan at its perimeter, serving the smaller spaces outside the mall. The promenade and inflated structural features create a theatrical atmosphere. Space frames, a large circular skylight, and gigantic exposed trusses perched high in the air look like a Constructivist stage set. "A new vocabulary of spaces" seeks to resist the traditional sense of closure in schools and to stimulate the creative thought of the students, expressing the architects' sentiment that "it is our imagination, rather than our technology, that allows us to anticipate change and to channel our intellectual resources in positive directions."



MODEL FROM SOUTHWEST

# CAPITAL HIGH SCHOOL

**Architect:** Perkins & Will, Chicago, IL.  
**Design Team:** Ralph Johnson, *Design Principal*; James Toya, *Project Manager*; Elisabeth Rakatselis, Mark Romack.  
**Associated architects:** Mimbres, Inc.  
**Capacity:** 800 students, grades 9 through 12  
**Area:** 160,000 square feet  
**Cost/Square Foot:** not available  
**Completion:** 1989  
**Client:** Santa Fe Public Schools

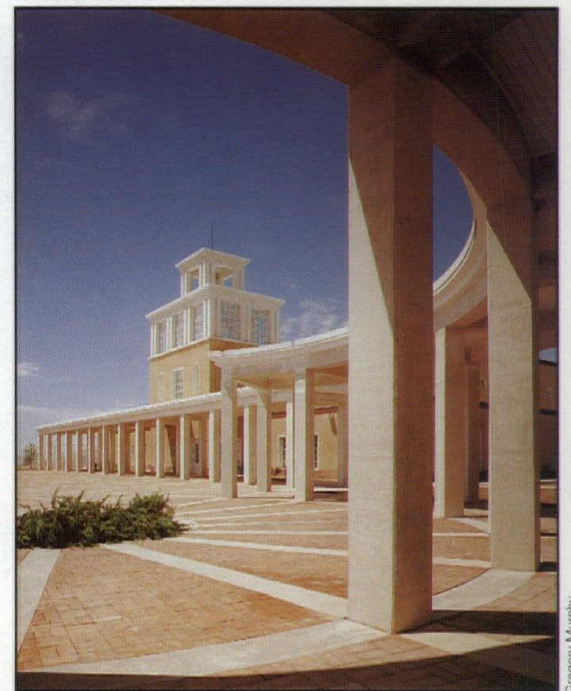


## FLOOR PLAN

N ↑ 100'/30m

- |                    |               |
|--------------------|---------------|
| 1 LOBBY            | 7 BAND        |
| 2 ADMINISTRATION   | 8 CHORAL      |
| 3 CLASSROOMS       | 9 STAGE       |
| 4 ARTS AND SCIENCE | 10 AUDITORIUM |
| 5 DINING           | 11 GYMNASIUM  |
| 6 KITCHEN          |               |

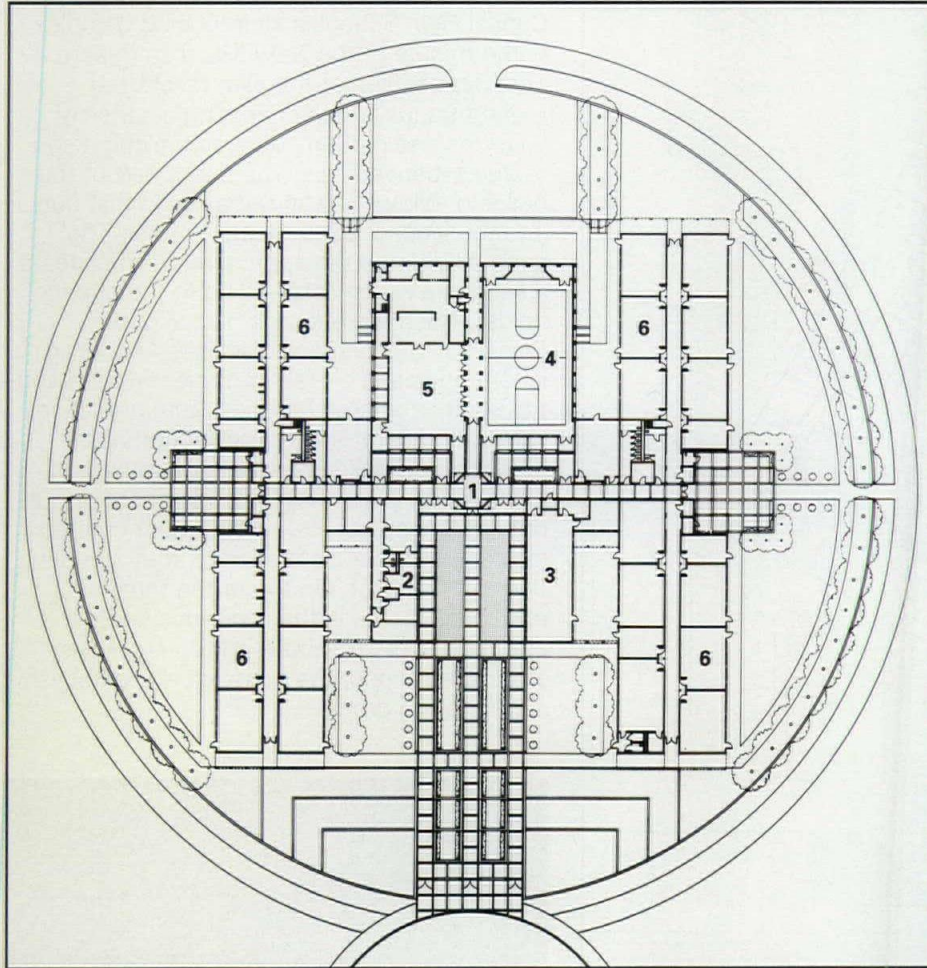
Capital High School is an imposing complex in the middle of the New Mexican desert. The composition of the plan recalls the French Beaux-Arts, connecting a series of pavilions and garden courtyards along a contextually derived axis. The major part of the building follows the line of a gorge that cuts into the landscape to the northwest. The gymnasium and the approach drive delineate a second axis, corresponding to the athletic fields, which are oriented north/south. Classrooms and special facilities, including laboratories and a theater, project from a central spine of shared facilities: administration, library, and cafeteria. Every section of the building overlooks one of the courtyards, encircled by either enclosed corridors or outdoor colonnades. The arrangement creates logical and convenient spaces; they get plenty of natural light. On top of the three entrance lobbies in the academic wing, theater, and gym are lanterned towers. These structures anchor the complex and establish a compelling profile.



VIEW TO SOUTHWEST

Gregory Murphy

# DESERT VIEW ELEMENTARY SCHOOL



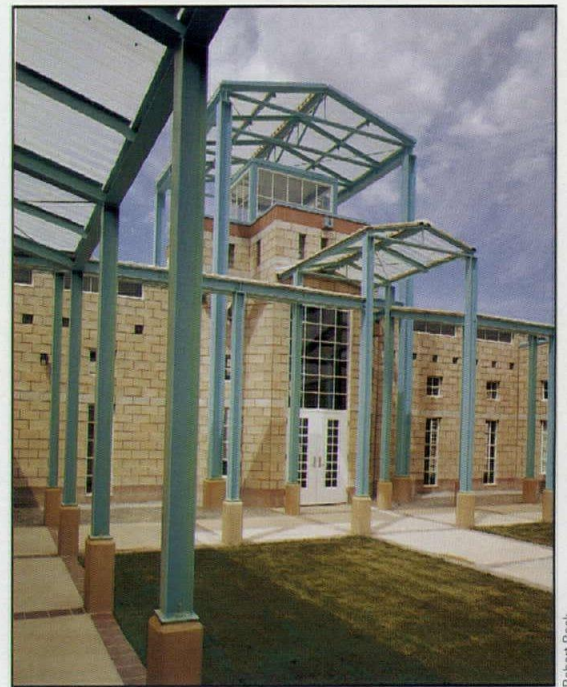
**FLOOR PLAN**

N ↓ 40'/12m

- 1 LOBBY
- 2 ADMINISTRATION
- 3 LIBRARY
- 4 MULTI-PURPOSE ROOM
- 5 DINING
- 6 CLASSROOMS

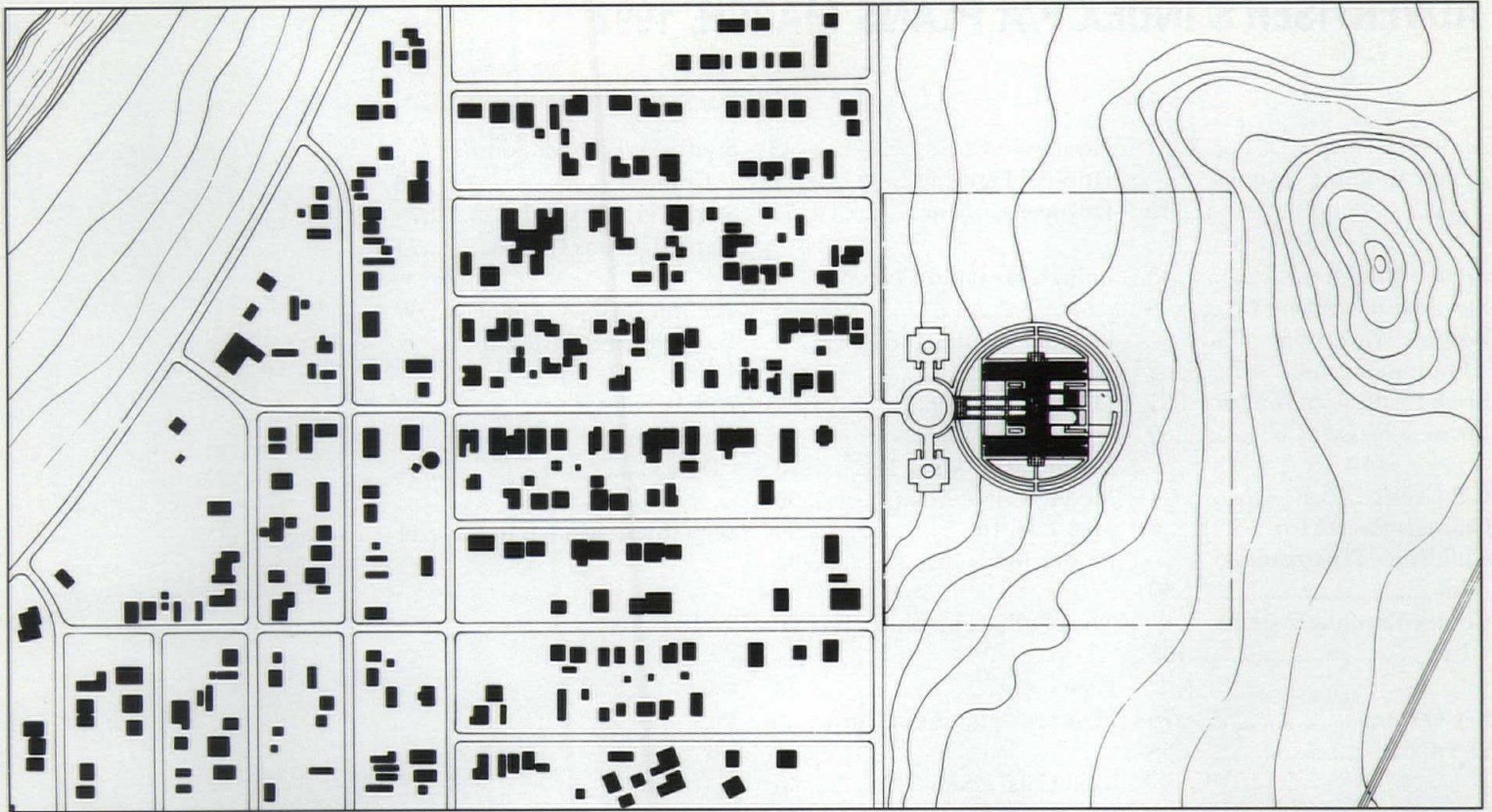
**Architect:** Perkins & Will, Chicago, IL.  
**Design Team:** Ralph Johnson, *Design Principal*; James Toya, *Project Manager*; Elisabeth Rakatselis, Jerry Johnson, Mark Romack, Stuart Royalty, Carolyn Smith.  
**Associated architects:** Mimbres, Inc.  
**Capacity:** 600 students, grades 3 and 4  
**Area:** 43,800 square feet  
**Cost/Square Foot:** not available  
**Completion:** Spring 1988  
**Client:** Gadsden Independent School District

In Desert View Elementary, the organization of the school and its relation to the larger community overtly resemble 18th-Century French visionary town plans, while the materials and imagery of the building reflect the vernacular architecture of the Southwest. A circular drive and rock wall enclose the 25-acre campus physically and symbolically, shutting out the untrammelled terrain from the structured landscape within. The building consists of two classroom blocks of equal size, divided by courtyards and shared facilities. A tree-lined plaza leads to an outdoor entry court between the administrative offices and the library. A tall lobby tower forms the heart of the campus. Beyond, two large, virtually identical pavilions provide for dining and assembly. The entry tower connects with a clerestoried corridor that runs north and south to link the classroom hallways, forming an H. The overall composition is a highly rational, uncompromising diagram that successfully breaks down the program into a hierarchy of discrete spaces.



**ENTRANCE**



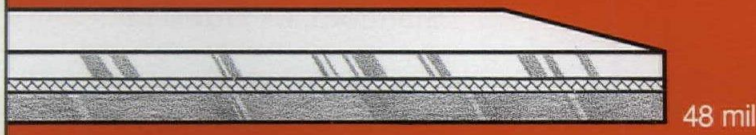


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