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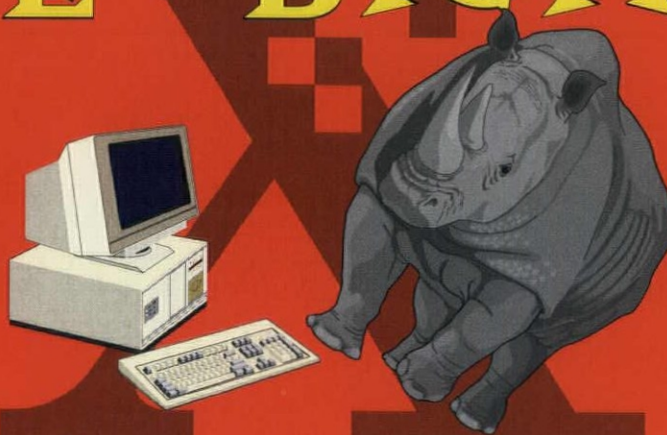


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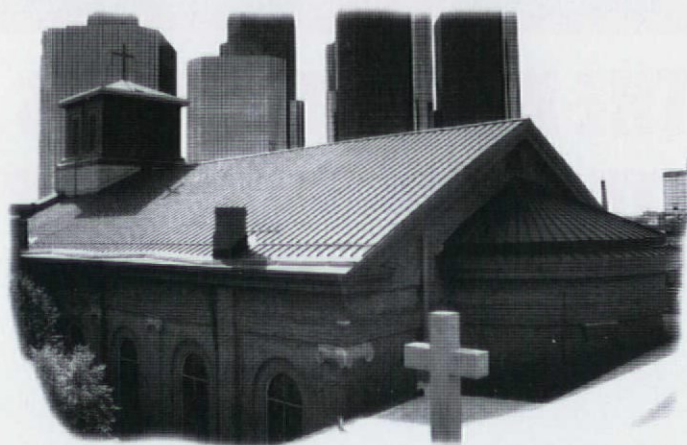
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# c o n t e n t s



Photo: Gary Quesada

Interactive Tech Center  
Derby Middle School, Birmingham, Mich.

## WINTER 1998

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Technology for the 21<sup>st</sup> Century  
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## About the Cover

Walled Lake Middle School is a home for students who thrive  
with books, technology, and a creative sense of space.

Architect: TMP Associates, Inc.

Photo: Gary Quesada/Hedrich Blessing

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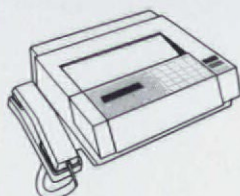
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# SEND A MESSAGE

**W**hy should we care about school architecture? Does the building in which kids are taught really make a difference? The debate rages on between the "four walls and blackboard" group and the "Taj Mahal" group. Should we enclose or attempt to inspire?

The answer to this discussion seems to exist in the message that we want to send to our kids. If we as parents and citizens care to provide a sense of warmth, of safety, and of a nurturing environment, then indeed we should care about school architecture. If the goal is to foster a sense of pride, to inspire new thinking, and to learn to think creatively, then our school buildings can make a difference in the education process. In fact it has been the position of architects who design schools that we don't build space to contain old ideas, but rather we create space to inspire new ideas.

Traditionally, attention was paid to the quality of architecture and the learning environment on the college campus. After all, big ideas equals big architecture. Is this a mistake? Perhaps the young engineer needs a lab, and the young actor needs a theatre. What if the young writer has a library, and the young swimmer has a pool? A learning environment which is inspired and stimulating can indeed teach our young students as well as older ones. Even the

smallest students can be inspired to think big thoughts. An investment in quality school architecture is not expensive. It is a powerful force for the future, for college and beyond.

It is puzzling sometimes to consider school buildings as architecture. Design award programs often ignore them and voters often deny funding for them. But school architecture occupies a unique niche in America. It can be the only sanctuary for a kid; a place with a sense of community which is at once social and nurturing. When our children arrive at the schoolhouse door, they have come to have their potential discovered and their opportunities expanded. They will learn to be a person at home, but they will become citizens at school. The school environment created by quality design can make a significant difference in that process.

School architecture has embraced ideas which were once reserved for the college campus as well. Concepts of planning, circulation, and arrival are utilized, while systems of technology, lighting and color are integrated into the design. It has become more sophisticated and creative. In short, school design is sending a positive message to our kids.

So, should we care about school architecture?

You be the judge. ▼

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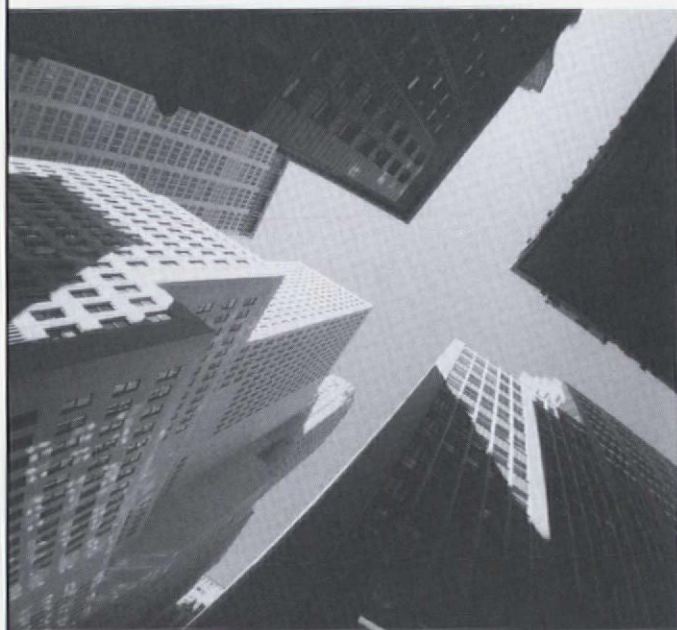
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Photo: Gary Quesada

The Interactive Tech Center at Derby Middle School.



TECHNOLOGY ADDITIONS

# TECHNOLOGY for the 21<sup>ST</sup> CENTURY

*John Castellana, FAIA  
TMP Associates, Inc.*

**“T**echnology for the 21<sup>st</sup> Century!” We have all heard this phrase on numerous occasions. But what does it really mean? Are there important considerations in planning school facilities to assure that students are being prepared to meet the challenges of the 21<sup>st</sup> Century? How do students use technology tools to prepare them for tomorrow? These questions have been asked countless times and answered in varied ways. But one constant is that technology is an integral part of virtually every building program today. Following are examples of how technology has been integrated into the full spectrum of curriculum offerings in today’s school environments. Everything from media centers to science labs to industrial arts...this integration is happening everywhere. These examples vividly answer the questions stated above in dynamic and innovative fashion.

continues



Photo: Gary Quesada

Derby Middle School's new front door.



Entry to the new  
Berkley High  
School Science  
Center.



Photo: Gary Quesada

At both the middle and high school levels in the Birmingham Public Schools one curriculum area that has received much attention involves the 'Industrial Arts' area. This specialty is moving away from traditional shops to an area that fosters integrated learning in technology applications, mathematics, and engineering science. Specifically at Derby Middle School, TMP designed a new Interactive Tech Center Addition. One of the major objectives in planning this project was to encourage the interactive use of emerging technologies as a design and simulation tool.

Prominently located at the new major 'Front Door' of this existing Middle School, the new

center features a gently curving facade that encloses the two major activity areas. Upon entering, generous display space is provided to "show off" the exciting student projects. Special lighting and floor and ceiling finishes are incorporated to reinforce this image. Flexible lab areas include moveable work stations supported with proper utility services (power, data, air) to facilitate a variety of exploration to occur. These services are housed in playful vertical kiosks that add a dynamic dimension to the space. A central work area for faculty commands a dramatic view of the entire teaching space. High ceiling spaces with





Photo: Gary Quesada

controlled glare free natural light provides an upbeat and stimulating interior environment and at night announces this as a very important learning center to the community.

This Center is a huge success! As noted by John Hoeffler, Superintendent of Birmingham Public Schools: "Students and Parents love the Interactive Tech Center at Derby Middle School. It is an exciting area which integrates math, science and writing in a program that resembles a pre-engineering atmosphere. Students are truly being prepared for the future!"

At Berkley High School, the district wanted to produce the best science center with the most effective use of technology. To begin the design process, TMP conducted vision planning sessions with high school science staff and administration to determine goals for the new center. The use of technology to support group, lab and individual activity areas and the blending of traditional spaces with research-oriented "high tech" areas were the predominant goals. The solution features two large interactive lab areas for individual or group hands-on activities, with adjacent group instruction spaces for more controlled activities. All spaces in the center incorporate an interactive technology system to allow both simulation of experiments and instrumentation. This science center is now the highlight of the school, and has won numerous awards from educators for its innovative response to science instruction.

Media Centers are no doubt the most common area in schools for integrating technology.

No longer are "libraries" just a place to select a book to read. When you walk into a new media center today, children are huddled around computers, conducting research, surfing the web, and doing just about everything. The media center has become the hub of all technology needs within the school, housing headend rooms which store the complex video and data systems utilized by the entire school. TMP's work at the Walled Lake Consolidated School District will update and integrate technology into all facilities in the district. Media centers will become the true "heart" of each school, allowing computer capabilities throughout the facility, as well as connection to other district buildings and additional facilities world-wide. Whether its elementary, middle or high school, the media center has taken on a new image.

Some districts have chosen to develop facilities that focus entirely on the area of technology. At Novi Community Schools TMP designed a new 37,000 square foot Instructional Technology Center, which links to an existing elementary and middle school. The facility is utilized by both schools as well as the community at large. Within the center is a large group instruction space which can accommodate staff and community meetings, multi-media presentations and on-stage demonstrations. Also within the center is a video studio, computer laboratory, two technology training rooms, eight classrooms and support spaces. All teaching spaces are fully networked and inter-

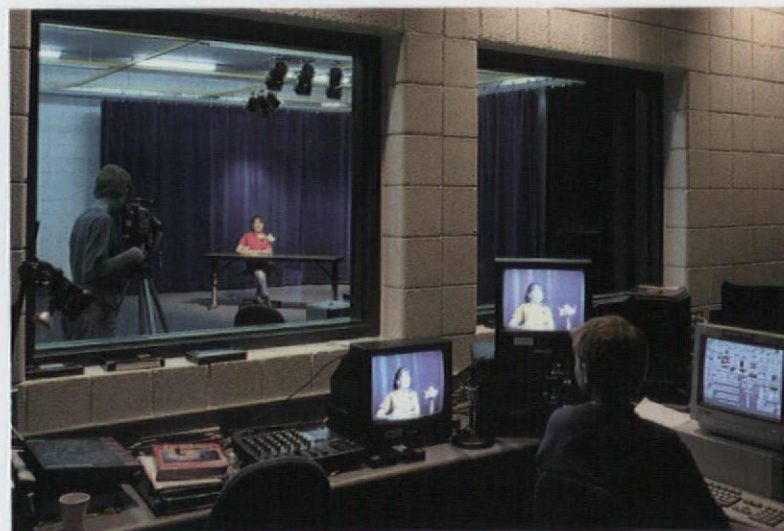
**Technology takes center stage at Berkley Science Center.**

continues





Walled Lake Middle School Media Center



Novi Instructional Technology Center

district and global communication is available through satellite and cable systems, making this a truly world class teaching facility.

The integration of interactive technology systems into school facilities is indeed a rewarding and challenging endeavor for architects. The explosion of technology has enabled new teaching and learning methods to occur. As illustrated in the above examples, voice, video and data systems of varying sophistication are now commonplace in our schools. Various delivery systems with the use of fiber and broadband cabling have enabled school districts to enhance curriculum with the use of current, state-of-the-art systems. The challenge to us, as Architects, is to be able to ask the right questions, have a clear understanding of the goals in the use of technology, and to make the infrastructure flexible enough to adapt to rapidly changing technologies.

It is an exciting endeavor. Educators and Architects must work together to enhance delivery systems to the student. Technology is one tool that allows sophisticated "hands on" learning to occur with enthusiasm, creativity and fun! ▼

#### ARCHITECT FOR

ALL PROJECTS: TMP Associates, Inc.  
Bloomfield Hills, Mich.

PROJECT: Novi Instructional Tech Center

#### GENERAL

CONTRACTOR: The Bell Company

PHOTOGRAPHY: Gary Quesada

PROJECT: Birmingham/Derby Middle School

#### CONSTRUCTION

MANAGER: Barton-Malow Co.

#### JOINT ARCHITECT/

ENGINEER: Giffels Hoyem Basso  
Troy, Mich.

PHOTOGRAPHY: Gary Quesada

#### TECHNOLOGY

CONSULTANT: Giffels Hoyem Basso  
Troy, Mich.

PROJECT: Walled Lake Middle School

#### CONSTRUCTION

MANAGER: George Auch Company

PHOTOGRAPHY: Gary Quesada

#### TECHNOLOGY

CONSULTANT: Michael McKay

PROJECT: Berkley Science Center

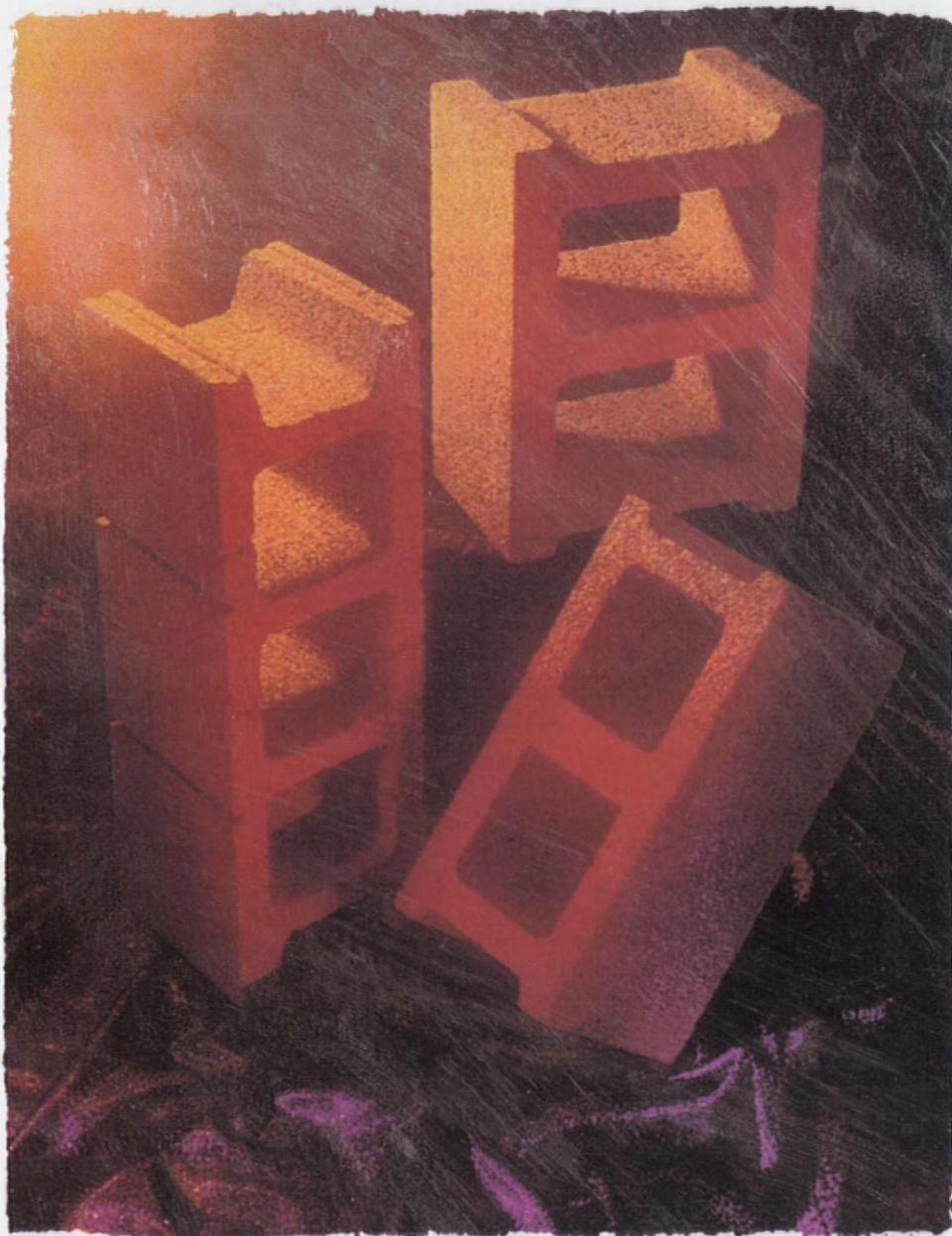
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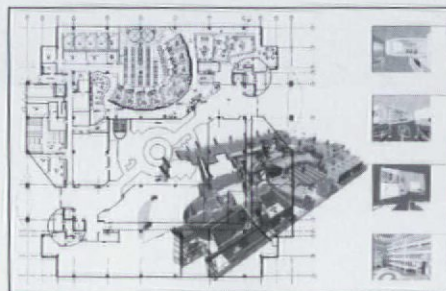
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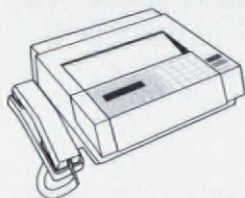


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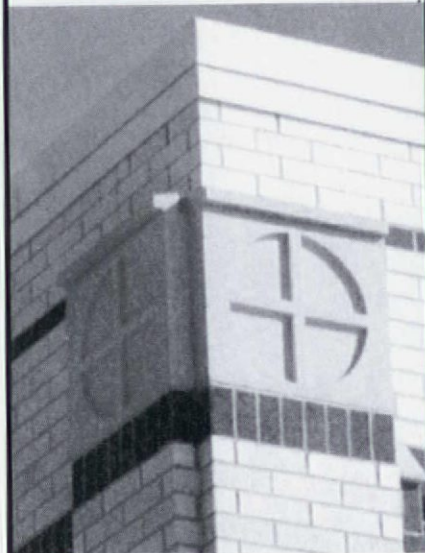
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# COMMUNITY FOCUS

Strong entry welcomes the students



Photo: Gary Quesada

**M**arshall Elementary School, part of Byron Center Public Schools, is located in a rural farming community, where residents maintain an active role in the school system. Consequently, this project required that the architect, **Tower Pinkster Titus Associates, Inc. (TPTA)**, work to promote community buy-in and ownership. Community involvement in the project was encouraged through several methods. The Building and Site Committee, which was consulted at every stage of planning and design, was made up of several community members. Also, special meetings were convened to address concerns and gain the expertise and insight of local contractors concerning construction methods, product use, etc.

The new facility features four academic wings serving grades K-4, a gymnasium, media center, staff conference rooms, principal's office, cafeteria, kitchen and staff lounge. Computer workstations can be found in every area, from Kindergarten on up.

The school principal presented a special design challenge to the architect. She wanted her office to be located near the center of the building, to be able to greet children as they entered and departed, and to be able to view the main corridors from a central location. This was accomplished by positioning the administrative office in the center of the facility with the academic wings branching out from it.

With the age of the facility's users in mind, circles, squares, triangles and bright colors were featured throughout the facility. This theme included customized doors, casework and display cases in the library. These display racks feature four colors of triangular pieces which can be grouped in many fashions, and



create a shelving effect, producing more wall surface.

In order to avoid the appearance of long, boring corridors, ceilings were raised to create visual interest. Colorful geometric patterns were built into the ceiling spaces by enclosing some mechanical ducts, while exposing some ducts to reinforce the geometric pattern theme. Brick banding and varying colors of bricks were used to break up the look of long corridors, creating unique spaces in the classrooms. Cabinetry and shelving were sized to the needs of the teachers, and specialty height counters were sized to the students. TPTA worked with teachers to create a room standard which would work for most of the classrooms, yet meet the needs of all.

In an area utilized for night-time committee use, the ceiling was left exposed to provide children an opportunity to see the immense, undulating mechanical duct system required to heat their school. The ducts were painted in vibrant colors to bring more excitement and interest to a space which would otherwise be a simple corridor passage.

The main plan of the building design was for the safety of the children. Pedestrian and vehicular traffic was carefully planned. All of the classrooms and playground are located away from the road. All utilitarian and committee spaces are closer to the road, creating an isolation of children flow. The bus drop-off is isolated from the parent drop-off to prevent confusion.

#### ARCHITECT AND

ENGINEER: Tower Pinkster Titus Associates, Inc.  
Kalamazoo, MI

#### CONSTRUCTION

MANAGER: Owen Ames Kimball

PHOTOGRAPHER: Gary Quesada, Hedrich Blessing

continues

Colorful ductwork enhances the environment



Photo: Gary Quesada



Photo: Gary Quesada

Circulation is colorful and spatially interesting

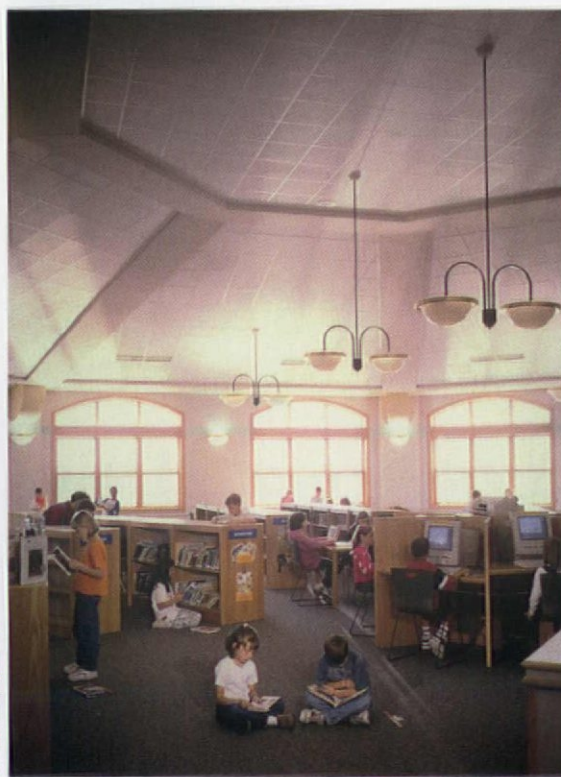


Photo: Gary Quesada

High ceiling library area invites students.





Lobby space is filled with natural light

Tech lab is a hub of student learning



Photo: Gary Quesada

Photo: Gary Quesada

In 1991, **Novi Community Schools** faced steadily increasing enrollment and a call for enlarged curriculum, primarily in math, science and physical education at the secondary level. The academic focus of the district's college-bound students was clearly evident in the dramatic change in programming needs from those of the 1970's. Novi is now one of the most rapidly growing cities in Michigan, located along the thriving I-275 corridor in metro Detroit.

**Tower Pinkster Titus Associates, Inc. (TPTA)** worked closely with the district to clarify their programming changes in science, mathematics and technology to ensure that the resulting facility design would fulfill those needs. Staff input was crucial to the successful design process. TPTA brought CAD-equipped computers to the school for staff to review room layouts and make suggestions during the design phase of the project.

Armed with the vision of a state-of-the-art facility, the district embarked on a \$17-million addition and renovation project at the high school. The new project included a physical education addition with three gymnasiums, science and math classrooms addition, music classrooms addition, student services and new main lobby and connecting corridors, as well as mechanical and electrical upgrades and changes.

Technology was integrated to allow access to a new Media Retrieval System, linked district-wide. Interactive video also links district buildings. Classrooms were designed to facilitate cross-curricular projects, as well as group and independent computer-assisted instruction.

The counseling center, careers center and administrative offices were relocated and renovated to improve accessibility of student services.

The original facility was designed during the energy crisis of the 1970's as evidenced in the small amount of windows, and strong geometric massing of masonry and cast-in-place masonry beams. The owner desired complementary additions using similar massing and materials which would open up the interior of the building with large gathering spaces and natural light.

Brick provided the consistent link, inside and out, to warm the public spaces and blur the line between old and new. The science/math addition provided an opportunity for an inviting new presence to the public and user alike.

The physical education wing is an expansion and renovation that includes a weight-room, multi-purpose room, three gymnasiums, three locker rooms and a field house. The addition totals 81,252 square feet. With a 14-foot change in elevation, the field house addition was constructed within ten feet of the existing





Photo: Gary Quesada

**New gymnasium features an elevated running track**

track/football stadium. The change in elevation allowed for new locker room facilities and the field house to be built at field level. The massive 38' x 220' wall was reduced to a visually pleasing pedestrian scale using differing planes of brick and windows.

New parking and roads, traffic entrances to the school, sports fields and courts became part of an overall master plan of the site.

This complicated project of five separate additions totaling nearly 145,000 square feet succeeded on many levels, but the one that TPTA is most proud is that not a single hour of instruction time was lost due to construction. This was accomplished through carefully planned phased construction coordinated with the construction manager, Barton-Malow Company, the high school's custodial staff, the fire marshall, and the district. Additions were brought online one at a time with mechanical and electrical system changeovers carefully coordinated. Every entrance to the facility was renovated under the watchful eye of the fire marshall. Each phase was carefully coordinated with and approved by the district before construction began.

With thoughtful programming, careful coordination and dedication from all parties involved, the team provided a compact, yet

comfortable, complementary and functional learning environment to meet the needs of this generation and those to come. ▼

**ARCHITECT AND  
ENGINEER:**

Tower Pinkster Titus Associates, Inc.  
Kalamazoo, MI

**CONSTRUCTION**

**MANAGEMENT:** Baton-Malow Company  
Southfield, MI

**PHOTOGRAPHY:** Gary Quesada, Hedrich Blessing

**Music rehearsal space enhances arts programming**



Photo: Gary Quesada



PRIVATE SCHOOL

# ONE ROOM SCHOOLHOUSE

**B**eginning as a pilot program to combine the advantages of a multi-grade learning environment with religious instruction, a project for a one room schoolhouse grew in scale to a K-8 private school of 120 students which had outgrown its leased quarters in a former public school building.

The design was required to accommodate a fast track schedule of six months through site selection and engineering, programming for various user groups, master planning for future expansion, design development and phased construction to meet funding availability. The "one room schoolhouse" became four schoolhouses with all the ancillary needs of a multi-use academic complex.

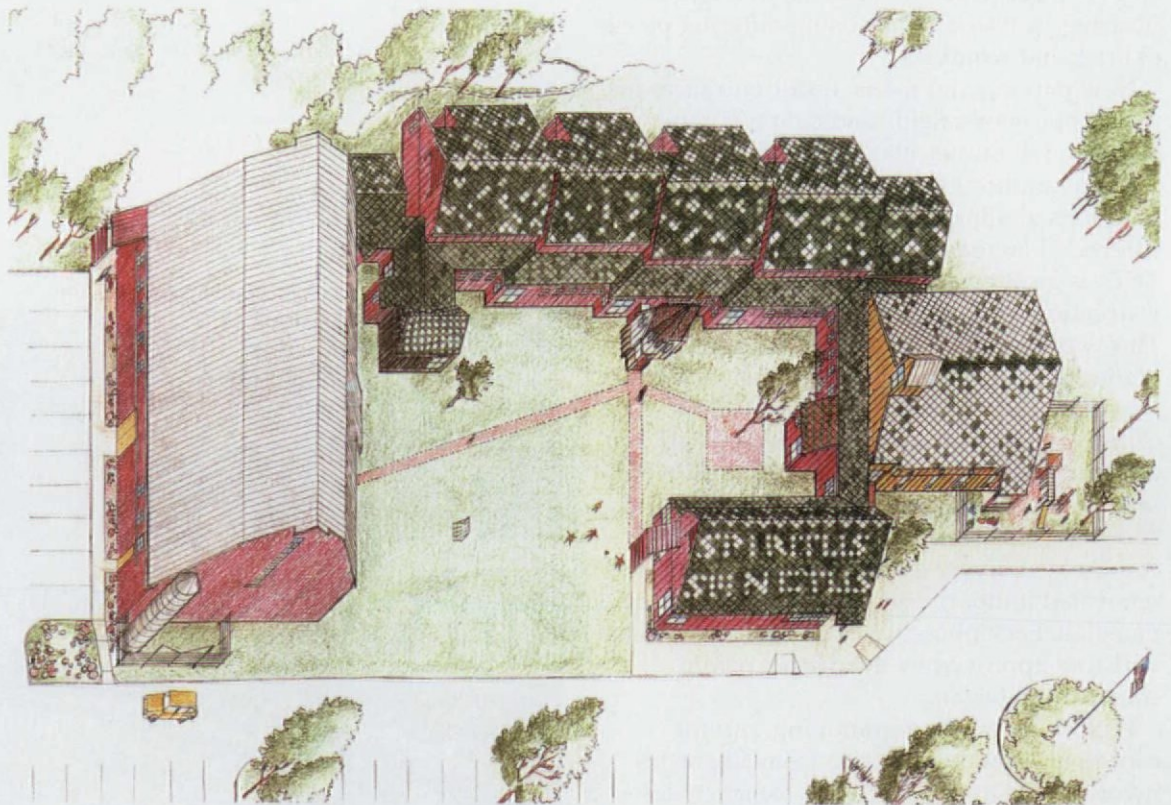






Photo: Balthazar Korab

Site view of rural vernacular

The site chosen was rural in character, bounded by woods and farm fields and in full view from the main approach of a major corporation in Ann Arbor.

The design draws from architectural vernacular: barns, sheds, silos and corrals and the interplay of these elements to create an academic community. This vocabulary was important to the context: the building forms complement a petting farm complex to the north of the site and draw upon the strengths

of agrarian image and organization: security, family and community for the campus. Although prominent when seen across the field, it is very much a background structure in context with its setting.

Like the New England connected barn model, the building was organized for expansion while maintaining a functional hierarchy: One transitions through entry and administration, progressing from yellow preschool through the four multi grade classrooms and

continues

Tiny chapel at the center

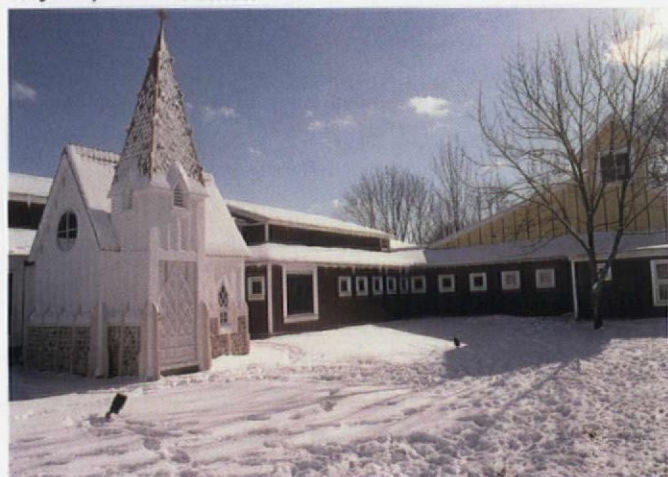


Photo: Balthazar Korab

Courtyard view shows contrasting forms



Photo: Balthazar Korab





Detail at the preschool wing

culminating in the gym/multipurpose room. (The gym also serves a 400 person church congregation and has its own separate entrance). A small chapel forms a meditative epicenter for the complex.

To the extent possible, materials and construction methodology were kept simple: the structures are comprised of pre-engineered wood truss or steel frames yet utilize the inherent potential of this construction to create vaulted ceilings in the classrooms and traditional barn roof forms in the multipurpose room.

The buildings are articulated in form, material and color to lend each an identity. Board and batten siding and the barn red color are a recurrent theme to maintain aesthetic continuity, but are manipulated to give the feeling that the structures were built over time and not necessarily by the same hand. To this end, the carpenters were also given latitude to improvise in the field. Color patterns such as the random shingling on the roofs are meant to recall patchwork patterns and signage as might be seen on older barns, but also give scale and enliven a very prominent part of the architecture. This pattern is also recalled in flooring of classroom areas and school corridors. Interior treatments such as the wood boarding used in the multipurpose room are rustic and warm for the churchgoer but are cushioned and will sustain impact from a charging forward during basketball games.

To this end, the project was a constant exercise in evaluating space and function from different, often contradictory viewpoints. The architects were often called upon to help mediate on issues of teaching process and its interaction with architectural organization. The success of the project was furthered by a positive teamwork approach with all the participants at all levels of development. ▼

Photo: Balthazar Korab

Interior of the barn/gym

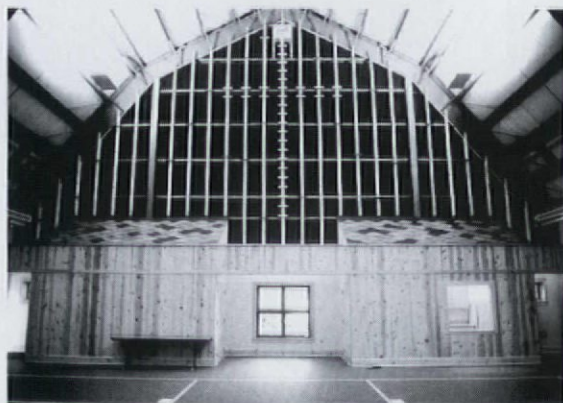


Photo: Robert Hart

**PROJECT:** Spiritus Sanctus Academy

**OWNER,**

**DEVELOPER:** Spiritus Sanctus Academy  
Domino's Farm Land

**DEVELOPMENT DESIGN**

**ARCHITECT:** Uppgren Associates - Ann Arbor, MI

**CONSULTING**

**ARCHITECT:** Mitchell and Mouat Architects  
Ann Arbor, MI

**ENGINEER:**

Ayres, Lewis, Norris & May  
Ann Arbor, MI

**CONSTRUCTION**

**MANAGER:** Rudolph Libbe - Canton, MI

**PHOTOGRAPHERS:** Balthazar Korab  
Robert Hart





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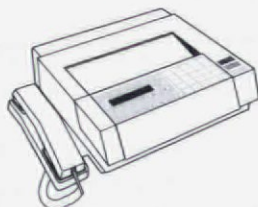
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# NORTHERN LIGHTS

**T**he South Range Elementary School is part of the Adams Township district in the western Upper Peninsula. The area has a rich mining history; many of the schools currently in use throughout the Copper Country were built by the mining companies. Until 1996, all of the schools in the Adams Township district were financed and built by the mining companies, with no taxpayer revenue.

The entry canopy welcomes students to their new school



Photo: Dietrich Floeter

In 1993, residents of the District voted for the first time to commit public funds for a new elementary school. The new building would replace the existing undistinguished school built in the 1920's. Several options for construction were considered, with schemes for building additions and new schools put before the committee. After weighing the cost of construction with the feasibility of adding to the building, the school board and citizens committee opted to build a new school on the site of the existing building.

Challenges presented by the site were many. The foremost challenge was to keep the existing school open and in use while the new school was being built. The site was not very large, so planning for playground areas was as critical as building placement.

The placement of the building was a key to acceptance by the community. The existing school was situated on the hill at the end of the main axis of town. In order to maintain the prominence of the school, it was clear that the new school must also be the focal point at the end of town. The challenge of keeping the old building open was complicated by the need to build along the same axis.

The solution was to design the new school to wrap around the existing building, on the upper side of the site. The building is V-shaped in plan, with the crotch of the V centered on the Main Street axis. The axis continues through the building, creating a central lobby. Opening onto the lobby are common areas: multi-purpose room, media center, music and art classrooms, and administrative offices. Two classroom corridors branch off to form the legs of the V, one corridor for Kindergarten through third grades, the other for grades four through six.

The most striking feature of the lobby is the steel-framed skylight, which follows the axis





The exteriors feature splashes of color on the masonry structure

Photo: Dietrich Floeter

from the front to the rear of the building. The large translucent skylight fills the area with natural light. Tubular steel trusses march through the lobby, also framing the front and rear entrances. The gable feature is repeated at the ends of the corridors, identifying all building entrances with the gabled trusses.

Splashes of color in the architecture are reflective of the playfulness of the building's occupants. Blue accents at the windows, red entrances and green gables are featured in the exterior. Corridor alcoves are color-coded for easy recognition by children looking for their classroom.

Building products were specified for their durability and low maintenance. Masonry cavity walls form the building shell. 12x12 terrazzo tiles cover the floors in the lobby and corridors, an economical means of using a time-tested product.

After completion of the school in April 1996, the children were each given a tote bag, bearing a sketch of their new school. The kids stuffed their bags and helped out where they could in the big move. During spring break, the furniture and equipment were moved from the old school to the new, and school was held in the new building for the remainder of the year.

In June 1996, the old building was torn down to reveal the dazzling new building behind it. The townspeople approved of the new South Range Elementary School. Brick from the old school was approved for fill on the site, reducing material costs at the landfill. Sitework and landscaping continued through the summer. A new light was shining in Northern Michigan. ▼

**PROJECT:** South Range Elementary School  
Adams Township Public Schools  
South Range, MI

**ARCHITECT/  
ENGINEER:** Hitch, Inc.  
Houghton, MI

**GENERAL  
CONTRACTOR:** MJO Contracting  
Hancock, MI

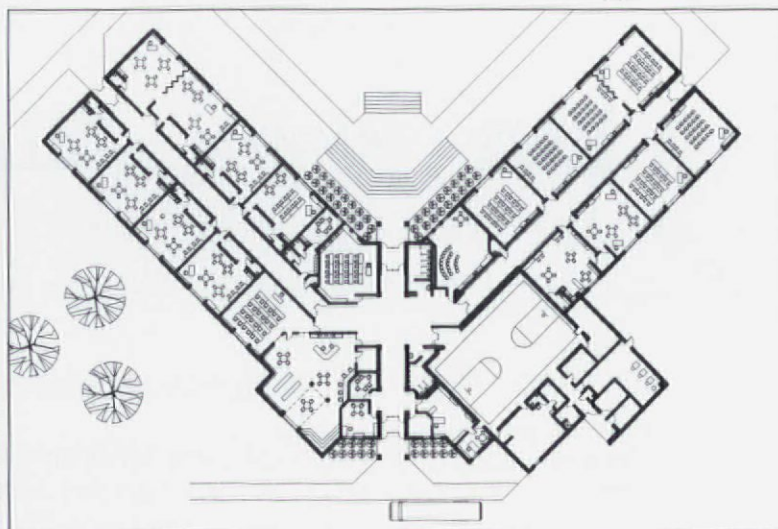
**PHOTOGRAPHY:** Dietrich Floeter Photography  
Hitch, Inc.

Natural light is featured throughout the interiors



Photo: Dietrich Floeter

Floor Plan





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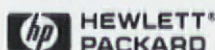
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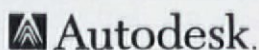
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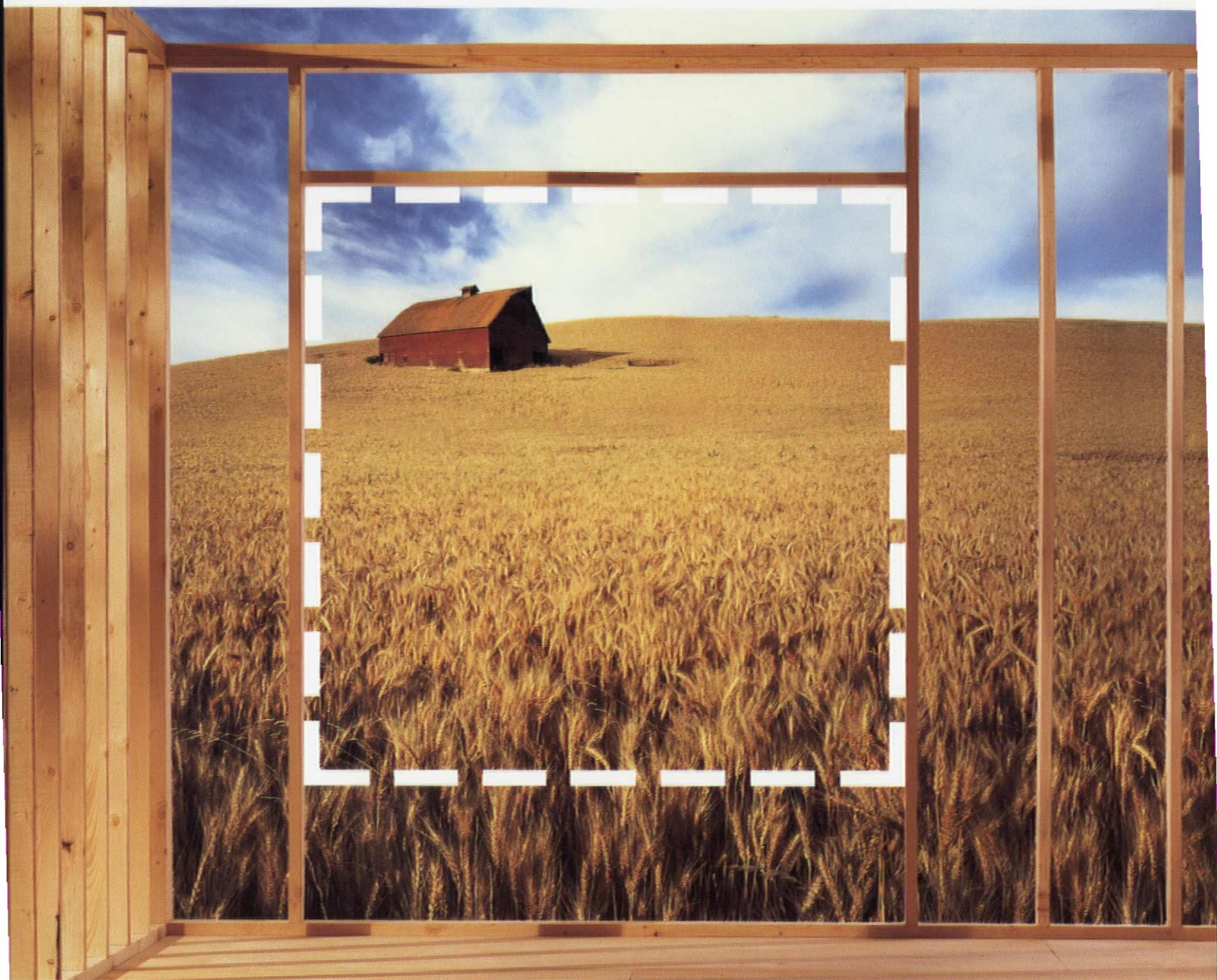
# l a n d m a r k s



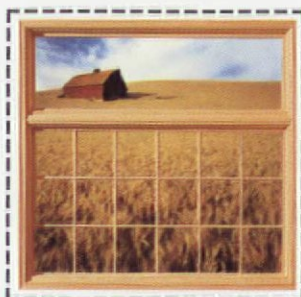
Where we've been....  
One room schoolhouse in Leelanau County.



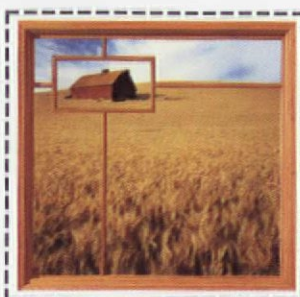
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