

HIGHLAND MIDDLE SCHOOL

Blackhawk School District
Chippewa Township, PA
Middle School Renovation / Additions

VEBH Architects

Better schools... Brighter tomorrows



The Middle School years are a magical time in a student's learning career where incredible advancements in maturity and learning occur. The curriculum is packed with core math, science, language and technology instruction that provides students with a critical base of knowledge.

Our mission was to design an environment that supports the community's vision for a dynamic, team-oriented Middle School learning program and showcases the curriculum throughout a versatile and technologically rich community asset.



Key Project Goals

1. Enhance Learning Through Solution

Goal: Design from the student desk out in a manner that creates a dynamic, collaborative learning environment that can also serve the Blackhawk community.

2. Community Culture Connections

Goal: Design school and community spaces that provide the daily use for the school and also create strong ties to the community.

3. Involve All Stakeholders

Goal: Design with transparency to build support for the project.

4. Provide Safety and Security

Goal: Design a safe and secure environment.

5. Support Health and Wellness

Goal: Design a healthy environment for the students and the community

6. Efficient Use of Resources

Goal: Design wisely and in a manner that respects the resources of the community.

7. Allow for Flexibility

Goal: Design spaces with multiple functions for school and community use..



HIGHLAND MIDDLE SCHOOL

"Capturing the magic of the middle school years"



Capturing the Magic of Middle School...

At the project's groundbreaking ceremony, District Superintendent Dr. Michelle Miller boasted that the design team for Highland Middle School had "captured the magic of the middle school years."

Inventors, Explorers, Pioneers...

Each of the three grade levels has been designed as a neighborhood that has its own unique theme that was derived from the curriculum and incorporated in the colors, shapes and finishes in each area.

Our design creates a building that fosters learning with teaching tools on display everywhere...

It supports the magical learning and maturity that occurs in middle school students. Highland is a building that not only provides modern classrooms to teach the core curriculum, but offers visual tools as exhibits as a part of the floors, walls, and architectural details *for* the curriculum.



Collaborative Neighborhoods that Support Team Teaching

Neighborhood Dynamics

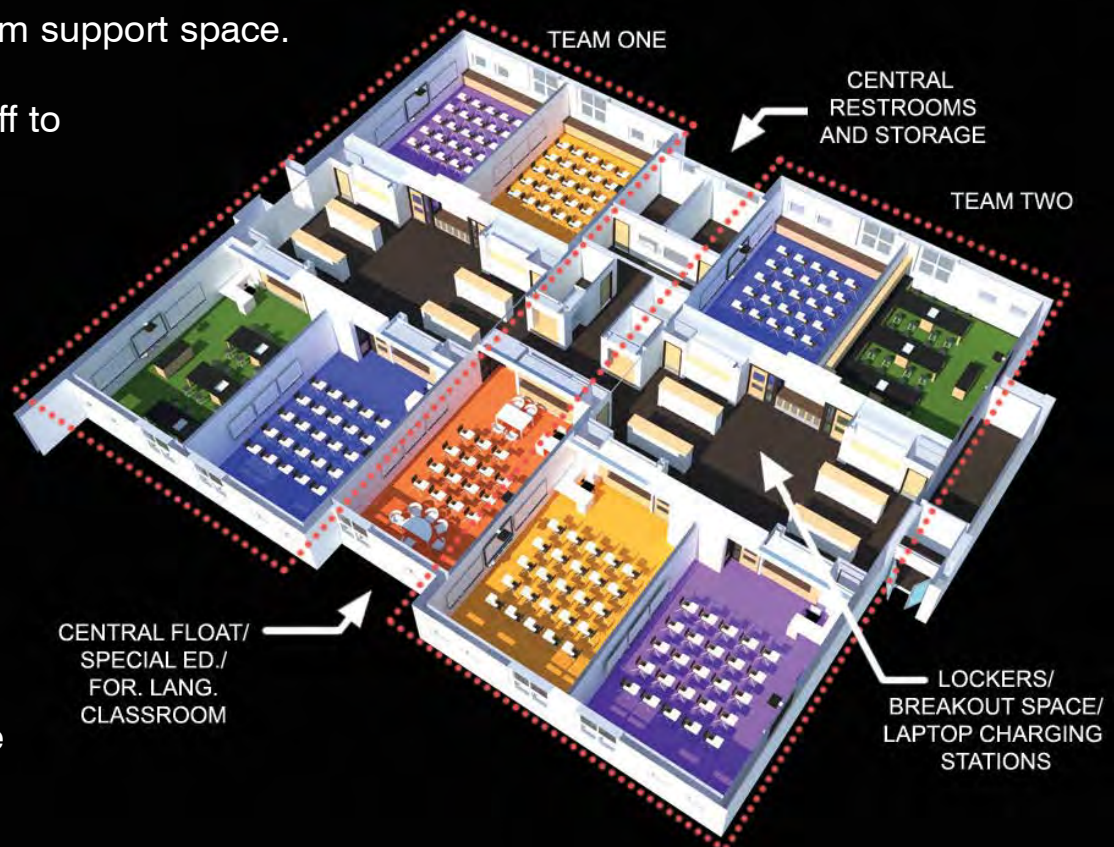
The Highland Middle School design is compartmentalized into three small neighborhoods, one for each grade level. Each neighborhood is made up of two team houses that share common resources and classroom support space. Each neighborhood was given a theme developed by the school's teaching staff to accentuate each grade level's core subjects and principles.

House is Our Home

The house's core teaching subjects share an open collaboration / breakout area for group projects. This central space is the showcase for the neighborhood theme and with the laptop storage spaces, a visible source of the building's technology infrastructure. Shared spaces between the two houses offer resources that are easy to access and supervise and unite the areas into a single neighborhood.

An Environment to Learn By

Compasses, mathematical formulas, ships, astronomical references and many other details are found in the floors, walls, and ceiling surfaces to differentiate each neighborhood and accentuate each grade level's core curriculum and to serve as background references for the teaching staff.



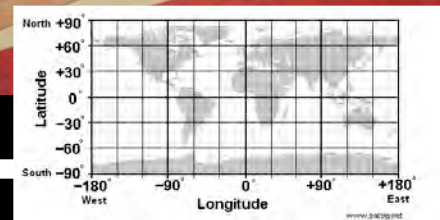
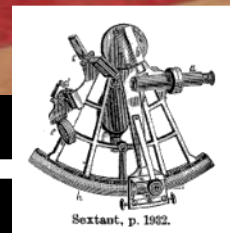
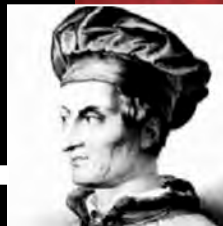
6th Grade "Explorers" Neighborhood

*Those who strike out a new path
or break ground...*

Sixth grade students at Highland begin their middle school years as explorers setting foot on exciting new ground. The abstract compass in the flooring of their neighborhood points north and the bright colors that define the two houses are derived from the sun and horizon, the first navigational tools used by early explorers.

The north pointing compass is repeated in the flooring at various key corridor intersections around the building for both learning and wayfinding purposes.

Each progressive grade neighborhood offers new challenges and learning opportunities.



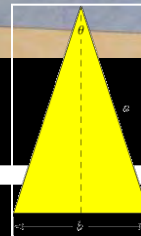
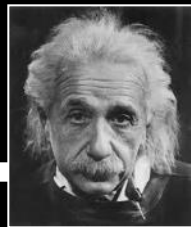
Christopher Columbus...Amerigo Vespucci...Navigation...Sun and Horizon...

7th Grade “Inventors” Neighborhood

Those who are the first to think of, construct, or fix something...

The Seventh Grade neighborhood is defined by geometric shapes and mathematical proportions and relationships. The flooring pattern follows the angles and folds that will create a complex origami ball. The colors are derived from the green of Newton’s apple, the slate a classic chalkboard and the gold of the ‘golden triangle’.

Natural light spills into the center of the building through multiple skylights in each of the team neighborhood spaces. Sustainable birch wood panels, linoleum flooring, carpet with a high recycled content were used in the project.



Albert Einstein...Sir Isaac Newton...Golden Triangle...Fibonacci Sequence...

8th Grade “Pioneers” Neighborhood

Those who open up new areas of thought, research, or development...

The Eighth Grade neighborhood of classrooms is defined by bold colors and celestial shapes. It represents the stepping off point for middle school kids as they go forth and explore their futures.

Each classroom at Highland is equipped with an audio/video system comprised of an interactive whiteboard and multiple stations within the room to allow flexibility for teacher and student presentations.

The team areas each have a central core that is a collaborative learning space with soft seating, laptop storage and recharging stations, tack display areas along with the students’ lockers.



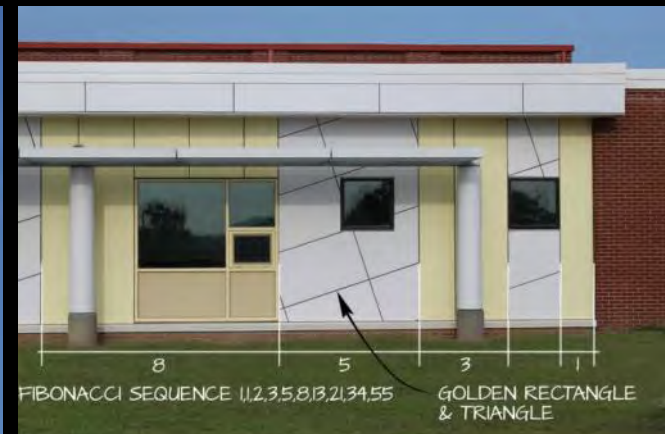
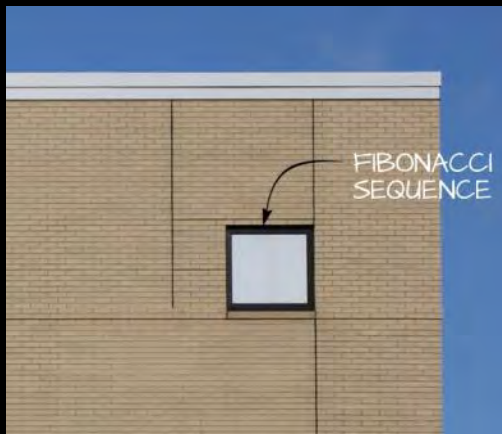
John Glenn...Ernest Shackleton...Our Solar System...Space Travel...

Learning Anytime, Anywhere

The curriculum-based design elements used in the three neighborhood themes are incorporated into the design for Highland's common spaces, the Lobby, Library, Cafeteria, and LGI.

Interior and exterior vertical surfaces evolved from the 7th Grade "Inventors" theme. Mathematic proportions and relationships are incorporated into the design by using mathematical equations such as the Fibonacci sequence, golden proportions, and ratios.

Each theme is represented in the building lobby. Elements from the "Pioneers" theme are included in ceiling materials and forms in public spaces; and all floor surface patterns have evolved from the "Explorers" theme.



PIONEERS

INVENTORS

EXPLORERS

WELCOME TO
HIGHLAND MIDDLE SCHOOL





Media Center





Servery





Transformational Space

This LGI was designed to be usable for activities far beyond a traditional auditorium. It features telescopic seating and a flat floor designed to support team projects and performances. Activities include school art shows, assemblies, grade level team collaborations, school dances, science fairs, and community events such as town hall meetings, PTA fundraisers, etc.



Teaching Sustainability

Highland's central courtyard is accessed from the Media Center and the 6th, and 7th grade science classrooms and works to create a central learning connection for the entire school.

The outdoor learning connections effort brings the Earth Sciences and Math being taught at the Middle School level from the classroom to the outdoors. The space is comprised of a student-planted wetlands and rain garden, native species planting beds, amphitheater, building panels that exhibit mathematical formulas, and a peer group patio area.

The courtyard is a unique teaching biome where students use observation, critical thinking, and scientific skills.



Seamless Learning Everywhere

A technology driven environment was created to allow “seamless learning” throughout the school, not just in the classrooms.

Wireless capability is available throughout Highland Middle School, as well as outdoors, to facilitate a BYOT (Bring Your Own Technology) Initiative. Laptop charging stations are centrally located in each neighborhood. This technology rich environment allows flexibility and supports a variety of learning styles, teaching methods. The design supports the ability to develop and include future programs.

The collaborative learning neighborhoods and themes were based on the teaching staff’s request to support their teaming initiatives. Principal Nancy Bowman worked to define the educational environment with content that brought the world into the classroom through technology and physical transparency



THE **WORLD** IS OUR CLASSROOM





A Total Success for the Blackhawk Community

VEBH Architects initiated an inclusive design process with the entire Blackhawk school community in the spring of 2010. The community focused planning effort included over a dozen hands-on sessions held in various facilities within the School District. By December of 2010, the community had rallied behind a new vision for their Middle School program and building environment.

Key Goals Included:

- Save the existing Highland Middle School building.
- Incorporate the 8th Grade to create a stronger educational format for grades six through eight.
- Design from the student desk out... supporting and building on the key relationship between student and teacher.
- Look beyond typical sustainable concepts to incorporate collaborative spaces and building elements that embody the educational programs being taught by the teaming faculty.
- Compartmentalize building systems and space to encourage community use after hours and in the summer months.

Ground was broken in September of 2011 and students moved into the first completed phase-one classrooms one year later.

Highland Middle School SITE PLAN

Outdoor Learning Connections

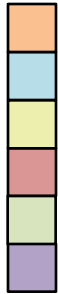
Science classrooms and the Media Center open directly into the courtyard to access:

- A student-created and maintained wetlands biome with native plant species.
- The amphi-classroom and project center.
- Also in the courtyard is a counselor / student peer group patio for interaction in a casual environment.

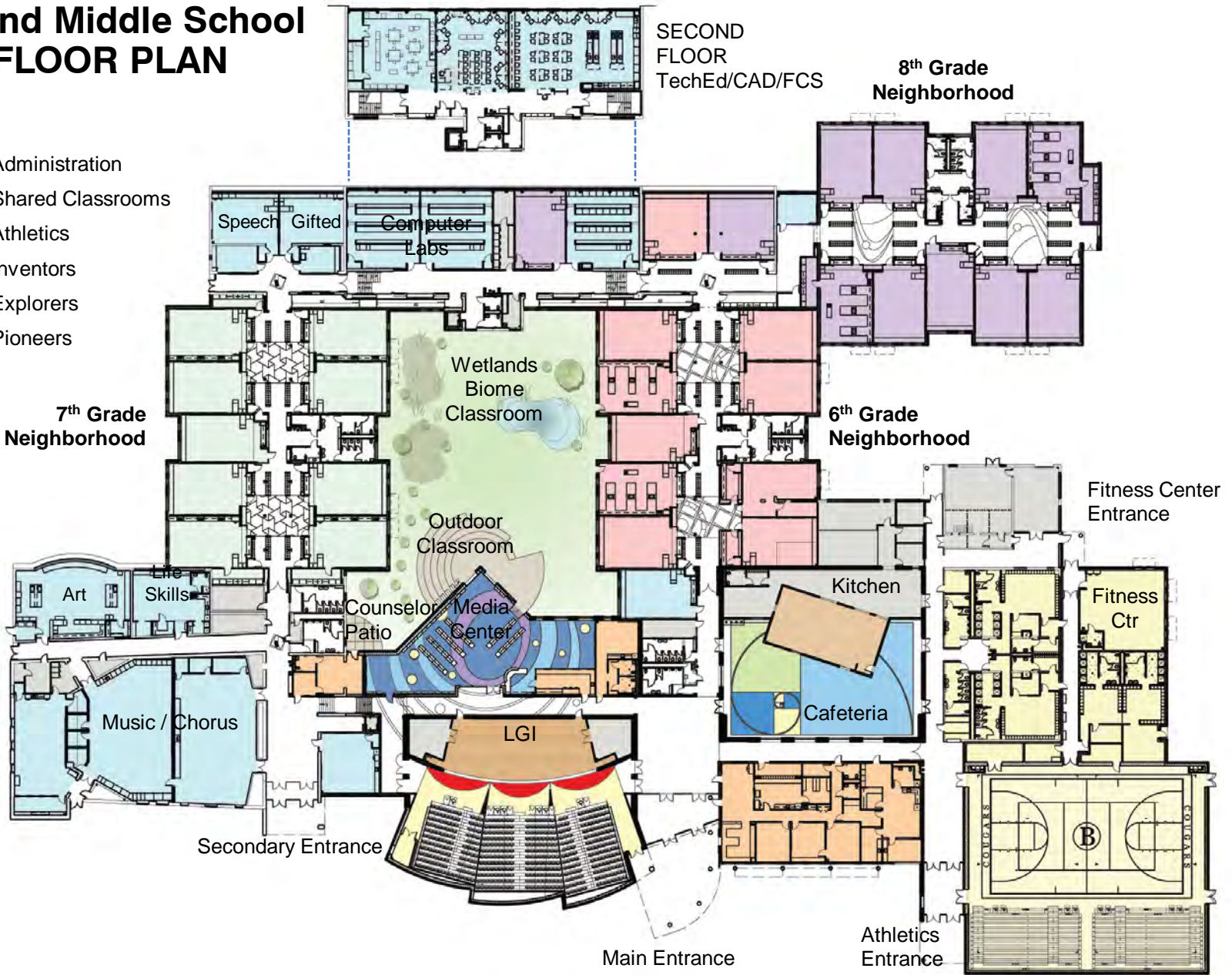
Public meetings during design identified the importance of the school's athletic fields to the community. The project included restroom facilities accessible after school hours and public parking along a new perimeter drive.



Highland Middle School MAIN FLOOR PLAN



- Administration
- Shared Classrooms
- Athletics
- Inventors
- Explorers
- Pioneers



Project Scorecard

1. Enhance Learning Through Solution

Result: Facility planning relationships progressed from student/teacher... classroom... house team... neighborhood... school community... Blackhawk community, growing the needs of the student first.

Result: The educators outlined a design theme to add depth to their daily teachings and to encourage interdisciplinary collaboration.

2. Community Culture Connections

Result: By clearly defining public vs. private space, the school design was able to involve and serve community groups in planning of spatial use beyond the typical school day.

Result: By creating a Life-Skills program, the school was able to accommodate many new students who previously had to commute out of the District.

Result: By salvaging the existing facility and its years of history, many community members became proponents of the project.

3. Involve All Stakeholders

Result: By convening many open public presentations, large and small group work sessions expanded the project's visibility, awareness and participation.

4. Provide Safety and Security

Result: A new system of campus visitor awareness was created to provide a safe environment and at the same time encourage community use of the facility. Monitoring technology was incorporated and the spatial arrangement was influenced to locate all public-use spaces at the front of the facility.

5. Support Health and Wellness

Result: A community membership fitness center was incorporated with its own entry and secure separation from the student areas.

Result: Air quality monitoring and controls were enhanced in a direct effort to provide a clean oxygenated environment to occupied spaces. Large operable windows were also an outcome of community discussions to provide outdoor access manually.

6. Efficient Use of Resources

Result: By repurposing existing spaces such as converting the former Auditorium into the Music suite and converting the former Gymnasium into the Cafeteria, the project avoided wasteful demolition and construction cost.

Result: The school advanced its sustainable efforts by providing localized hot water heaters near restroom facilities; reducing student/teacher travel; reducing paper copies through technology; providing a student-managed recycling program; providing separate HVAC systems for areas of the building used after school hours; and incorporating no-wax flooring materials.

7. Allow for Flexibility

Result: A large group assembly space that is truly flexible for many daily educational and performance activities, as well as many community events outside of the School District's programs.

Result: A design that opens the school to senior citizen program use, including exercise and special events that can utilize the school's kitchen facility.



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