

SCHOOL DISTRICT OF THE MENOMONIE AREA

MENOMONIE HIGH SCHOOL RENOVATION



EXECUTIVE SUMMARY:

MENOMONIE HIGH SCHOOL RENOVATION

Located in the heart of the Big Woods Wisconsin, Menomonie saw its first major population boom in the 1800's when loggers moved from across the county to tap into this prime location. The then heavily wooded area was divided only by the Red Cedar River, Wilson Creek and Gilbert Creek, which were later dammed to form Lake Menomin, a reservoir used first by the logging industry and later for hydroelectricity.

During the late 1800s, William Wilson, John Holly Knapp, Captain Andrew Tainter and Henry L Stout formed the Knapp, Stout, & Co. which grew to the largest lumber corporation in the world, bringing with it more than 1,200 employees. In 1891, James Stout, son of Henry L. Stout formed a manual training school to prepare residents for a future in the logging industry, as well as other industries. This training school soon became Stout Institute and still operates as the University of Wisconsin-Stout.

In 1901 Knapp, Stout & Co. closed operations in Menomonie, and their facilities were split between the Wisconsin Power Company and Submerged Electric Motor Co. using the dam for hydroelectricity and the Wilson-Weber Lumber Company. In 1902, Menomonie founded the first agricultural high school in the US, the Dunn County School of Agriculture and Domestic Economy.

Over the past century, many things have changed in the Big Woods, with logging now just a memory. However, one thing has not, and that is the importance of public education in this community. The School District of



the Menomonie Area (SDMA) serves more than 3,300 4K-12th grade students in eight facilities in and around town. The University of Wisconsin-Stout (UW-Stout) has remained as one of the city's largest pulls to the outside community, bringing in over 9,500 students a year, which is a significant portion of the city's 16,200 residents.

Being a University town brings with it many exciting opportunities for the young learners in Menomonie. The SDMA and UW-Stout have a partnership which allows Menomonie High School (MHS) students to attend classes at UW-Stout free of charge when they've outgrown courses offered at MHS, while UW-Stout students are able work with the students of SDMA as mentors, tutors, and work through their education practicum for their childhood education majors. As life-long learners, MHS also offers a mentorship program where juniors and seniors from MHS go into the elementary schools to work with younger students.

Being a University town, however, also offers challenges to the SDMA. In the 2010 census, reportedly 42% of the town's population was between the ages of 18 and 24 years, making nearly half of the voting age population in the community either students at UW-Stout or young adults just out of school.

When considering any sort of school referendum, these young community members play an important role. They could be fresh out of MHS and know the condition that the school is

in; they could be UW-Stout students from outside Menomonie only there for four years, not wanting their rent to go up due to higher taxes; they could be just starting out with young families, again not wanting their taxes to go up; or they could be university students living in the community but still registered to vote in another location.

In addition to such a large portion of the city's population being young and possibly transient, the average annual household income is only \$31,103. 23.5% of residents are living below the poverty line; amongst them, 25.6% of the children in Menomonie live below poverty level.

HOW DOES THIS ALL EFFECT SDMA?

In the fall of 2012, our firm was hired by the SDMA to perform a facilities evaluation and long-range master plan for their eight facilities. Like many districts in 'rural Wisconsin', SDMA faced serious challenges of balancing to maintain and upgrade their aging facilities, recruiting and retaining the top students due to Wisconsin's Open Enrollment program, and providing an interactive 21st-century school, all while facing major budget cuts.

With the economic challenges that this district faced, any design/construction projects that the District were to consider needed to be proven to the public as a need, not a desire. The fiscal impact on taxpayers had to be considered, given the district's desire to serve as a responsible steward of taxpayer's



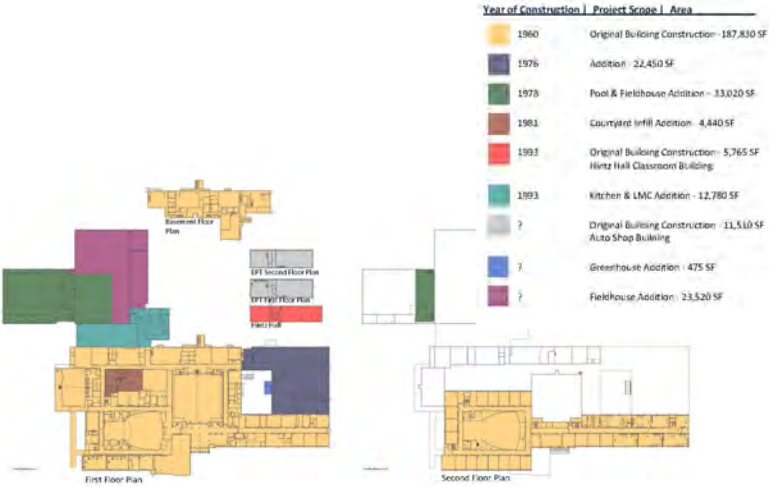
Left Top: Science casework in disrepair
Left Bottom: Water damage in water closet wall
Right Top: Building use and circulation prior to renovation

dollars. In addition, they wanted to create wonderful learning environments that students would want to attend, yet still balance the design so it didn’t seem superfluous or wasteful.

Over the past ten years, our firm has developed a graphic, user-friendly approach to facilities evaluations that not only lists or narrates issues, but shows where those issues are on a floor plan and provides photos of each issue so our clients fully understand the concerns, whether or not they have any experience in facilities. This evaluation provides a comprehensive list of concerns, each prioritized with respect to its perceived need in 1-3, 4-6 and 7-10 year needs, and their associated anticipated cost (including inflation). This study document is then used to communicate to the community the district’s very real needs.

After three months were spent assessing the district facilities, collecting information, and reviewing the findings, it was determined that the High School and one of their elementary schools needed major improvements, and one additional elementary school needed minor attention. Our talented team of architects and designers then worked with the district to develop several potential design options, the costs associated with each, and potential construction times for each concept.

Located on the bank of the Red Cedar River, Menomonie High School sits on nearly 100 acres, though only half is considered to be buildable due to the terrain. Originally constructed in 1960, the facility began as the District’s Middle and High school. Since that time it has undergone eight additions,



switched to only house high school students (grades 9-12), and even survived a fire. The 300,000 SF facility allowed for approximately 287 SF per student, well above the national average, but was lacking function with program spaces scattered throughout the facility and no real 21st-century learning spaces or collaborative areas.

Because the existing high school was in such disorder, the school board’s initial perception of our findings was that the best solution was to either construct a new high school on their current site or raze most of the existing school and rebuild to create an updated, cohesive facility.

Unfortunately, when told of a nearly \$60 million construction budget to create this new school, the district determined that construction at this level was beyond their means, and we worked to develop a solution that satisfied all their goals, while making this project fiscally feasible for the taxpayers. Our job was to transform the outdated, aging facility into a cohesive, 21st century learning environment with three main goals:

- 1. Create a safe & secure school
- 2. Improve general education spaces & wayfinding throughout the facility
- 3. Improve athletic facilities

With feedback from a community/district ad-hoc committee, a community survey, open houses, community listening sessions, the School Board reached a decision about what option they would like to pursue in an April 2013 referendum. The board worked to further educate the community on what work would be done, its timeline, why it was needed and how they will be impacted (both fiscally and programmatically) by the referendum. Along with attending public meetings, we produced conceptual drawings of the projects for the board to distribute throughout the district.


The referendum passed on April 2, 2013 and the design of the additions and remodeling work to the High School, along with the two additional elementary schools, began.

SCOPE & BUDGET:



Total Area of School, prior to construction:	301,790 SF
Total Area of Remodeled space:	227,975 SF
Total Area of New Construction:	25,210 SF
Total Area of School, after construction:	327,000 SF
Floors:	1 with partial 2nd floor
Students:	1,000
Grades:	9-12
Construction Budget:	\$20,191,300
Remodeled Budget:	\$14,052,700
New Construction:	\$7,400,000

MENOMONIE HIGH SCHOOL HAD UNDERGONE EIGHT ADDITIONS IN ITS 55-YEAR EXISTENCE, CREATING A MAZE OF DARK CORRIDORS WITH PROGRAM SPACES SCATTERED ABOUT THE FACILITY. Through proper planning the relocation of spaces, we were able to redefine this 1960’s facility into a cohesive, easily navigated facility. The school’s once scattered program spaces are now grouped, a central commons space was created to serve multiple functions, and flexible learning spaces replaced outdated and underutilized classrooms.

A wide-angle photograph of the exterior of Menomonie High School during sunset. The building features a combination of brick and large glass windows. A prominent curved glass entrance is on the right, reflecting the sky. To the left, a brick section has the word 'SCHOOL' visible. A flagpole with an American flag and a 'MUSTANGS' banner stands in the foreground. The sky is filled with soft, colorful clouds, and the sun is low on the horizon, creating a lens flare effect.

"Our Architectural Team designed an amazing renovation for Menomonie High School. The impact of the project will undoubtedly be felt for years but the open, modern, and innovative design connects the school and all of its services. Students and community members are proud that 'this' is their school with the grand entrances and clean lines brought together by many new commons spaces where flexible, personalized learning can truly occur."

David Muñoz
Principal
Menomonie High School

PHYSICAL AND EDUCATIONAL ENVIRONMENT:

OLD SCHOOL INEFFICIENCIES:

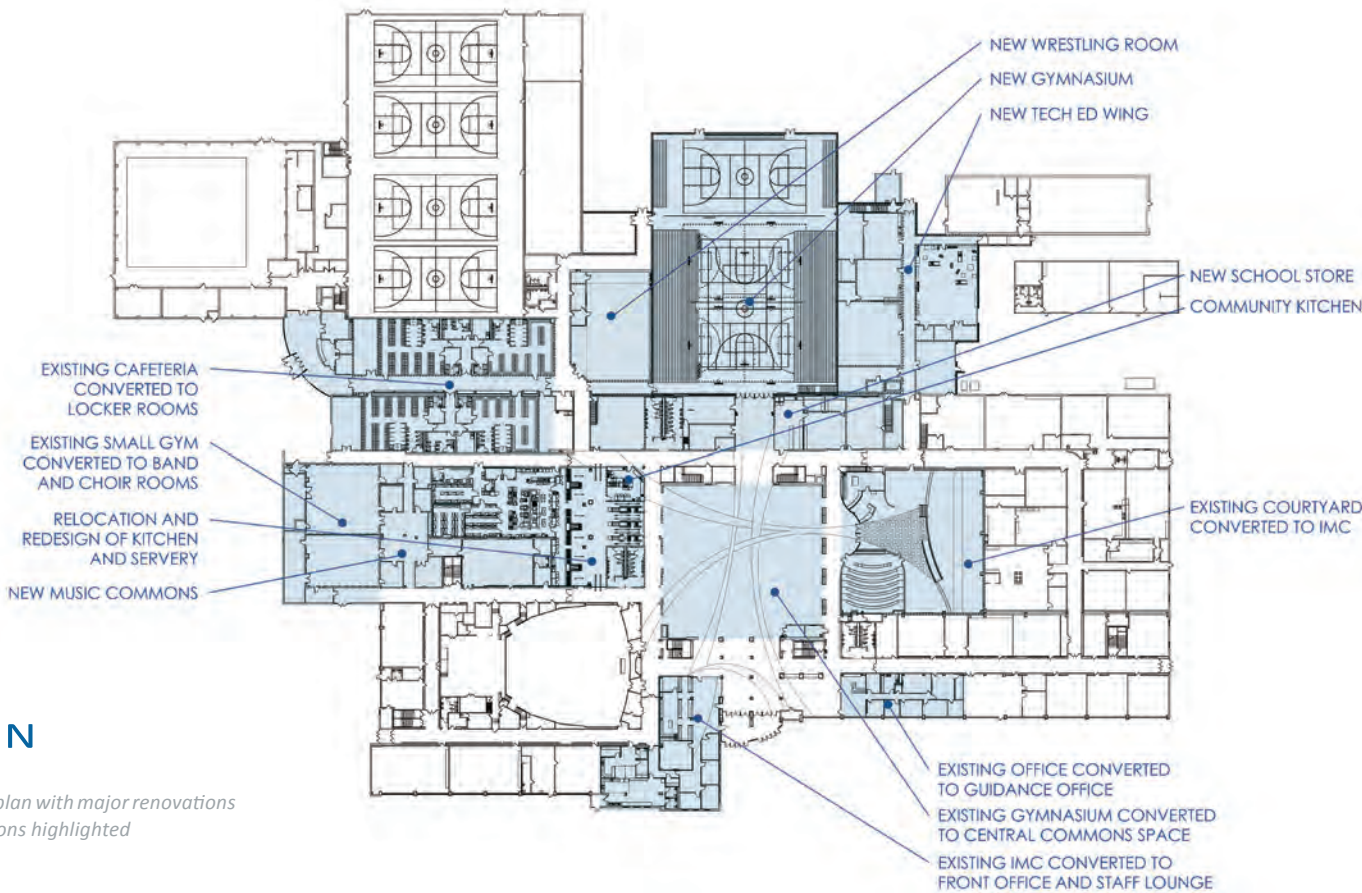
Prior to the renovation, as visitors approached the school its entry was hidden behind a row of tall, overgrown pine trees. The front entry had skylights that leaked, and when entering into the lobby space, it had low ceilings and even lower flush-mounted ceiling fixtures. To the north, through a small gathering space you'd find the school's front office. This small office got extremely overcrowded during peak hours, and its location away from the front entry made it difficult for staff to monitor visitors. The IMC was located to the south of the lobby and was no longer serving the needs of the school. It was located away from the majority of the school's academic classrooms, oddly shaped as an "L" which made for spaces not easily monitored by the staff, and was too small when several classes would use the space at once, which regularly occurred.

Directly off the lobby to the west held the school's main gym. Its central location in the school originally seemed like a perk, however once actually attempting to navigate through the school, its location caused for several long corridors and confusing spaces. The gym, built in 1960, had ceilings that are considered low for today's sports standards. Volleyballs would regularly hit the center beams during tournament play. Sized again for a generation not as sport focused as today's students, it only supported one basketball court. These restrictions caused the school to be unable to host tournaments, potentially a large revenue maker for the District. The existing locker rooms were located in the basement without an elevator for access.

On the school's south side, the old "middle school" gym was no longer a useful size for the school, and its wooden floors were well beyond recommended use.

In 1993, an addition was added to the school's west side that connected the school to the fieldhouse and pool. This space was designed to accommodate the school's kitchen and cafeteria space, however the space was too small for the current student population, causing lunch shifts to begin as early as 10:30am. The kitchen's receiving dock was located at the opposite end of the school, and delivery trucks would have to travel between the school and its two smaller outbuildings used by students for automotive and wood shop classes.

An existing courtyard was used for the school's agriculture studies programs. This space housed small livestock, had a greenhouse, and supported natural grasslands for the students to learn from. Though this space was heavily used, its location was a challenge. All the surrounding classrooms had views to this space and often became a distraction for students. There was also no way into the courtyard without going through the school. Livestock housed in the courtyard were brought through a mechanical room, across a hallway, and through a standard sized man-door.



New floor plan with major renovations and additions highlighted

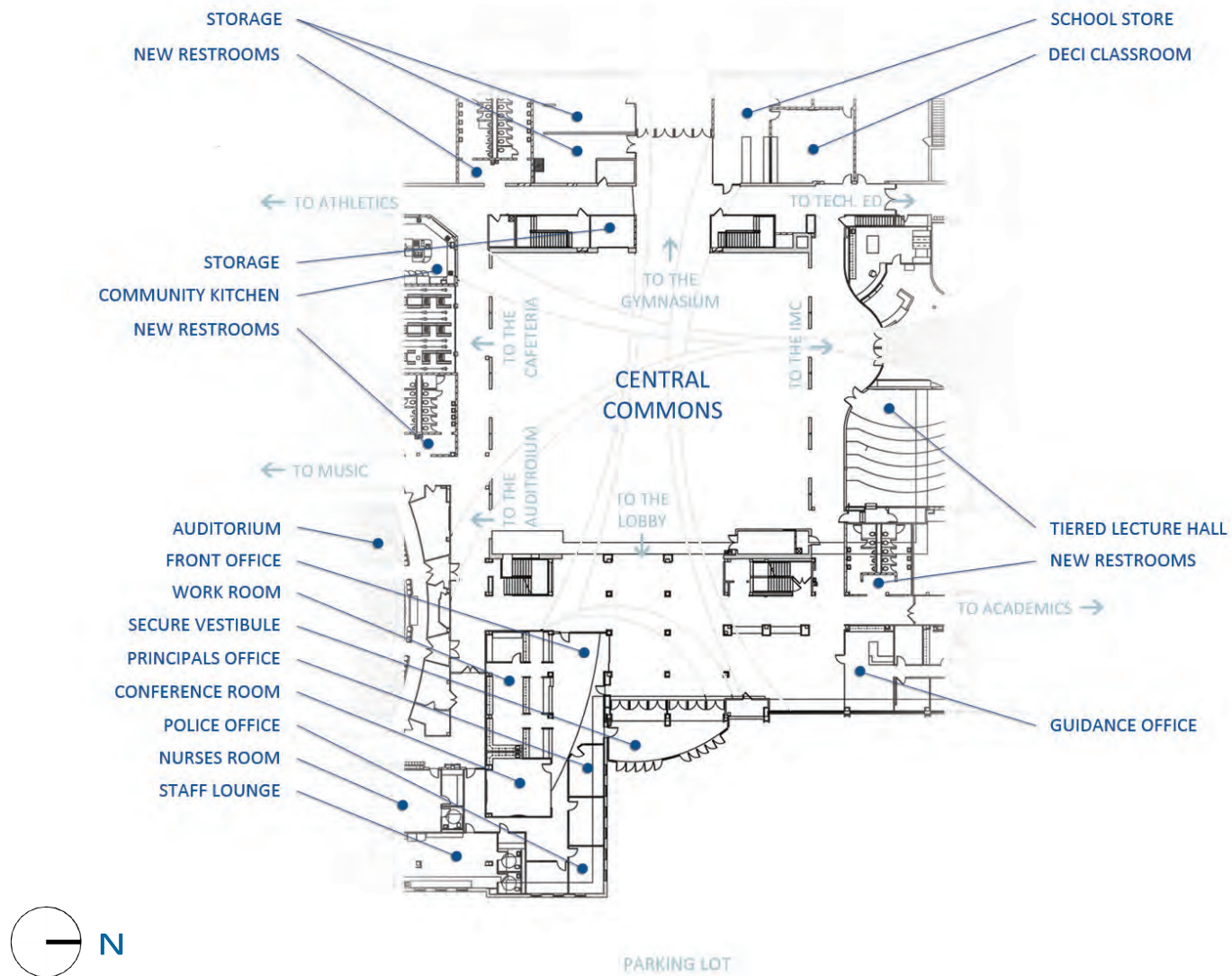


The front office allows clear sight lines from the parking lot, through the new secure entry, and into the lobby and commons spaces.



WHEN OLD BECOMES NEW:

Located adjacent to a new secure entrance on the school's east side in the former IMC, the new office complex is the cornerstone for school safety. With views to the parking lot, front entry, lobby and central commons, staff can monitor all visitors' arrivals and departures, as well as the students in the core of the school. Private offices were created for the administrative staff as well as the school's police officer along the perimeter for additional monitoring capabilities. The school nurse and staff lounge were also relocated to this space. The former front office was able to be converted to a larger guidance and career development office.



WAYFINDING (ONE OF THE TOP GOALS OF THE RENOVATION PROJECT) REALLY STARTED WITH THE RELOCATION OF THE GYM. Building a new competition gym on the school's west side, allowed the vacated gym to become a perfectly located commons - serving the auditorium, IMC, foodservice and the new gym. The old gym was converted to a fun, functional space that opens up the center of the school and makes visual connections between functions. The lower portion of the gym walls were opened with large 10' openings on the north wall leading students to the IMC and on the south wall leading students to the kitchen and servery. The west wall focuses on a large opening leading to the new competition gym, and the east wall opens to the school's lobby and office space.

Since the space is no longer being used for athletics, large clerestory windows were punched through the north and south walls flooding the space with natural light throughout the day. Additional light is also brought into the space through the upper portion of the east wall which connects to an upper commons space, and eventually to the school's new glass facade.

To further connect the spaces, pattern and color changes were created in the new terrazzo floor. This low maintenance material will stand the test of time with all the traffic that this portion of the school will face.



The new kitchen and servery was designed to be more like a foodcourt than the traditional cafeteria serving line. Six different food stations offer a variety of options for the students to choose from. Located in the northwest corner of the servery, a community kitchen was created. This kitchen serves concessions during after hour activities and also allows booster clubs to cook / serve dinner for team meals.

Having so many physical and visual connections, the new commons space is used throughout the day and after school: student athletes set up camp while participating in tournaments; booster clubs host team dinners; it functions as a lobby space before, after, and during intermission of performances held in the auditorium; and by community members as a gathering space while attending one of the many functions held in the tiered classroom (located off the IMC) after school hours.



Above: New commons, looking northwest from upper commons down into the space.
Below: Gym prior to construction, looking northwest.

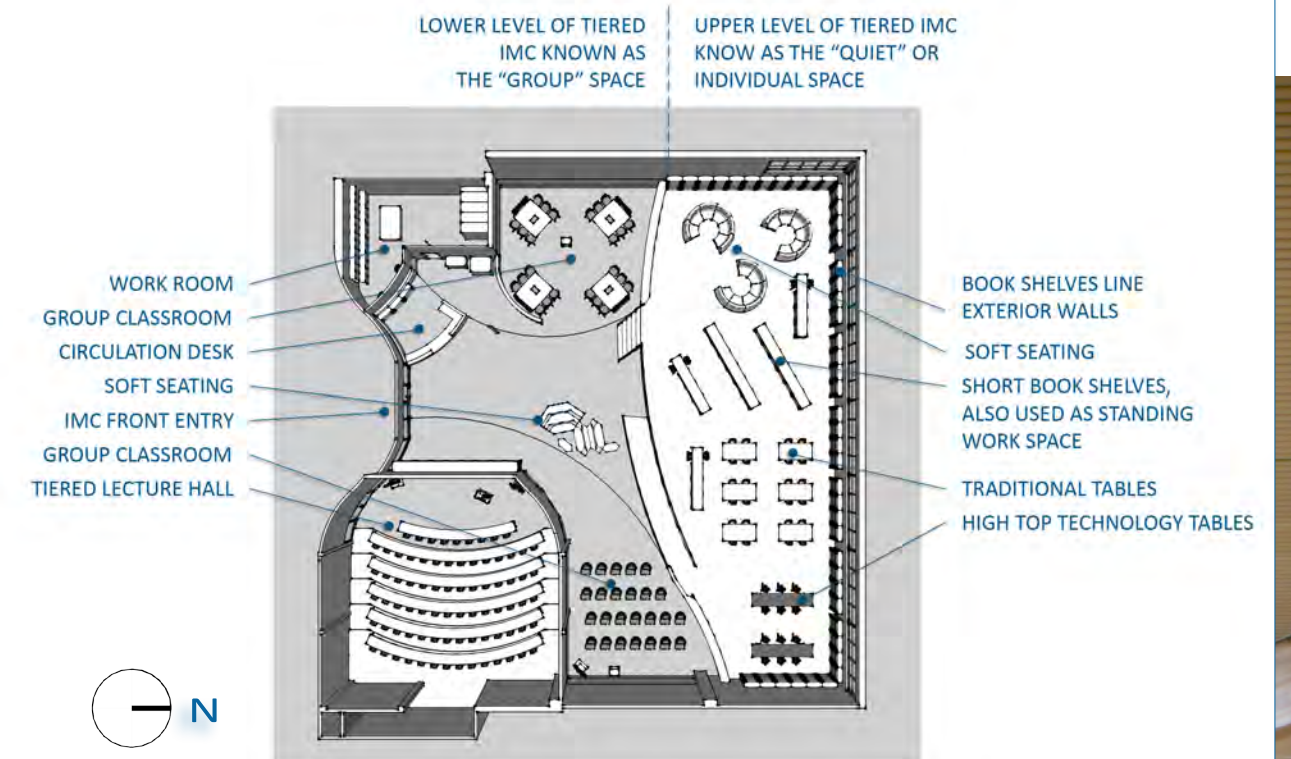


Menomonie is a very proud community and many families have attended the school there for generations. This project allowed us to honor the past with display cases throughout the corridors. Display cases feature historical artifacts, artwork and photos of distinguished alumni, trophy cases, and current student art.



"Since the new IMC opened, I've seen students come and enjoy the space that never stepped foot in our old space. The students love it!"

*Terry Staupé
Director of Library Media Services
Menomonie High School*



A new IMC was created by infilling the existing courtyard and now anchors an academic wing of classrooms. This centrally located space is large enough to comfortably house up to four individual classes without any conflicting space issues. The circulation desk was designed so that the librarian can remain at his or her desk, while still having sight lines to nearly all of the 6,400 SF IMC.

The IMC was visually divided by a curved wall and raised flooring section. The lower level of the library serves more as a “group” space with two different group “classrooms” and a soft seating section. Media tables fill one of the classroom spaces, while flexible individual chairs on casters filled the other. This diversity in seating style allows teachers to use whichever form best suits their lessons. The soft seating is used by individuals who’d like to curl up to read, and also by larger groups waiting for the tiered lecture room to open up. The upper level of the IMC is meant as more of a quiet or individual work space. This space houses all the books, has soft seating for individuals, traditional library tables for studying, and tall technology tables. Knowing that technology moves faster than furniture, none of the tables purchased came with technology. The technology was added by the school after installation to allow it to be updated as their needs change.

A tiered lecture hall was placed in the southeast corner of the IMC. When the idea of a lecture hall was first presented to the district, it was highly opposed. However, upon further reflection as to how it could be used and who it could be used by, it was added into the design. By the time the school opened for the academic year, the lecture hall was booked nearly every day for the next year. Sport teams, PTA, community groups, staff meetings - users came from all directions to utilize the space.



Courtyard Before

Tiered IMC After



Security and technical education were further improved when two stand-alone structures, previously accessed via a parking lot, were connected directly to the building by the new tech. ed. addition. Menomonie High School strives to give their students hands-on experience and real-world skills with spaces designed for the specific educational needs of agriculture, metals, automotive, wood shop, robotics, and a fabrication lab.

The agriculture classroom has a live animal vivarium and a greenhouse. Plants raised in the greenhouse throughout the year are sold at a spring plant sale, helping to generate revenue for their programs.

Located just outside the gymnasium, the school store is stocked with merchandise designed and produced by MHS students. Students screen print gear, laser etch surfaces, and produce their own news program from within the fab. lab. During construction, these students etched their school logo onto tiles that were placed on the walls in the school's new servery.

"Project Lead the Way" or PLTW, is a national pre-engineering program that Menomonie is proud to be a part of. Last year, the Menomonie Program was honored by the Wisconsin chapter of PLTW as the program of the year. Students involved in this program are taught hands-on, problem-based approach to solving real life challenges in classes such as Introduction to Engineering Design, Principles of Engineering, and Digital Electronics.

The Menomonie High School's Science Olympiad team won the Wisconsin State Science Olympiad Tournament in April of 2016. After competing against 44 teams from across the state, Menomonie beat Madison West by one point and will represent our State at the National tournament in May of 2016. This year's win marks the third year in a row that Menomonie's team will complete in the National tournament. Additionally, Menomonie will get to represent their home team, in their home town, as Nationals will be held at UW-Stout.





In addition to tech. ed., the new expansion had an athletics emphasis as well. Directly off the commons, a new gymnasium large enough to hold three full-sized basketball courts was created. A varsity court is dominant as you walk into the gym with folding bleachers on the north and south walls. These bleachers can be pushed back for tournament play or Phy. Ed. class. An additional section of moveable bleachers is placed along the west side of the court, and quickly became the student section.



A mezzanine was built above the bleachers on the north wall. This space is used for gymnastics, dance and gym class. Accommodations were put in place for front-folding bleachers to be installed in this space in the future. Even without bleachers, many fans currently use the space as an additional viewing area. The gym is able to seat 2,200 people for a varsity game and has been rented out by other districts for state sectional finals games.

With a state-of-the-art sound system and air conditioning, this new gym is also able to be used for graduation. Over 3,000 people can be accommodated when additional chairs are placed on the courts.

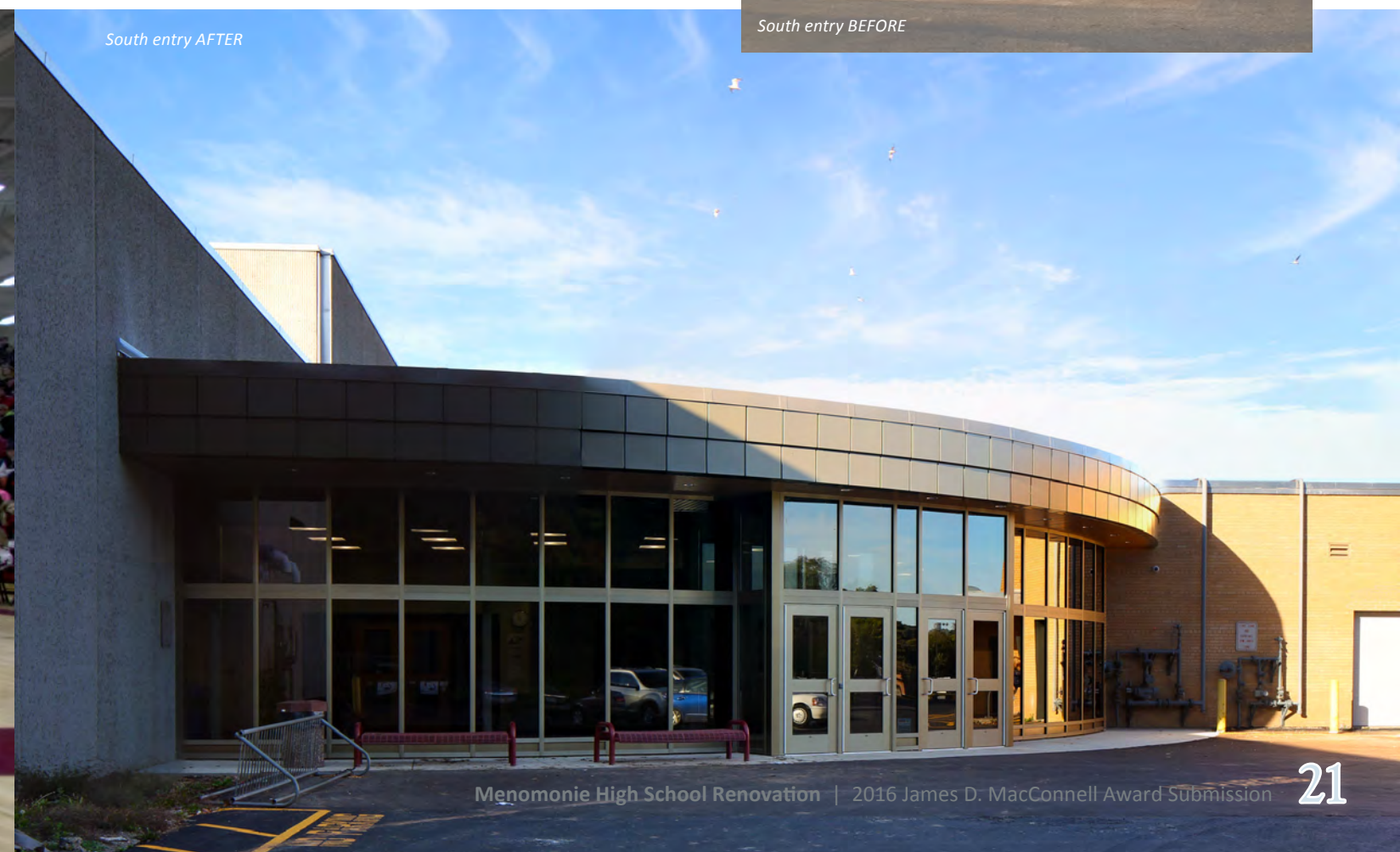
The athletic facilities were further improved with the creation of an athletic entryway on the school's south side. This new entry creates a better connection between the school and its pool and fieldhouse. A small office for the Community Athletic and Activities Coordinator is located in this new entry and also serves as a front desk for visitors entering in this entrance. A new "trophy corridor" then connects this entry to the new locker rooms, wrestling room, training room, and gymnasium.



South entry BEFORE



South entry AFTER





Finally, in a space that once housed two underutilized computer labs and created a long dark corridor on the school's upper level, an upper commons was created. With punched openings looking down to the central commons below, large glass windows facing the school's new glass entry, soft seating options, and tall technology tables, this upper commons space is a prime space for students throughout the day. Classes utilize the space for independent or group study and students use it before/after school and during lunch enjoying the 'college like' feel of flexible learning.



The band, choir, and orchestra rooms were relocated to form a music wing in the school's south side, in what was formerly the "middle school" gym. The original wood floors, though no longer appropriate for physical education, were able to be maintained as the flooring for these spaces.

Now located near the auditorium, they are grouped together and share a small commons spaces, practice rooms, music library, and offices. Outfitted with soft seating and tables, the music commons is used throughout the day and for after school activities by music students. This transformation created a professional studio feel the students love.



Middle School gym BEFORE

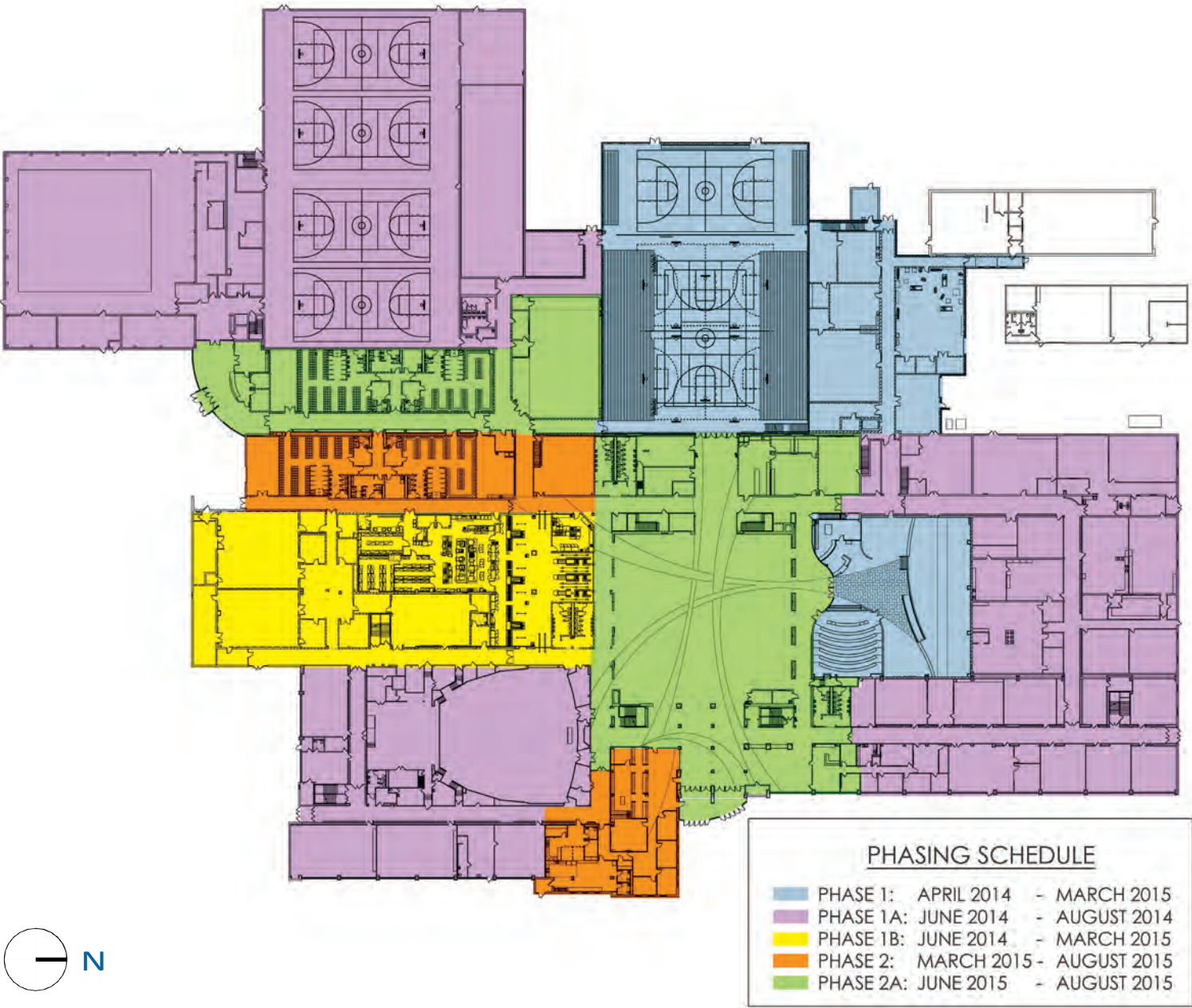


Upstairs corridor BEFORE



New Upper Commons

CONSTRUCTION PHASING:



Once the plans for the renovation were complete, determining how to get \$21M worth of construction done while keeping school in session became the next challenge.

Construction for the facility began in April of 2014 while school was still in session. The first phase included two sections of new construction, the gym/tech. ed. addition on the school's west side, and the courtyard conversion into the IMC. Phase One continued when school was released in early June and construction began on the music wing, creating the new kitchen, and minor work throughout the building. While the minor remodeling was complete when the students returned in the fall, the new construction and the renovation of the music wing and kitchen lasted until March of 2015.

During the 2014-15 academic year we worked with the District to shuffle spaces so that educational needs continued to be met and student safety remained as a top priority.

In March of 2015, the new gymnasium, IMC, kitchen, and music wing opened to the students. A nearly sold-out basketball doubleheader against a neighboring town, Rice Lake, brought the community into the school and their brand new gym for the first time. Though the old gym was behind temporary construction walls, some ceilings were not in place yet and the terrazzo floors between the new gym and old gym were incomplete, the community was abuzz with the excitement of seeing their tax dollars already making such a transformation.

Phase two kicked off immediately following the completion of phase one. With the IMC now relocated, the old IMC began its transformation to become the front office. And with band and choir classrooms situated in their new space, the new locker rooms, training room, and health classroom construction got underway. Once school released in June of 2015, the final push of construction went into full force.

Education was a top priority while all this construction was underway. We worked with the administration and the contractors to continuously monitor noise levels and site safety, minimize disruptions, and worked to even shutting down all work during ACT testing days.

Construction finished in time for the 2015-2016 academic year. An Open House was held by the district and nearly 300 community members came to tour the new facility.

The images shown on the right document the progression of the transformation. From before construction (top) when the central space was the gymnasium, during construction, and after (bottom) when it was transformed into the central commons. The punched holes on the upper level look into the the Upper Commons. The school's new entry, new windows on the north and south walls, and skylights allow abundant natural light into the commons.

These views are all standing on the west side of the space, looking east towards the school's main entry.



RESULTS:

By **listening** to our clients, **understanding** their needs and limitations, and **working together**, we were able to accomplish a very significant amount of work for a very reasonable budget. We were able to transform a dated, underutilized, maze of a school into a modern, 21st-century learning environment that the **community is proud of**.

This renovation accomplished all of the District's goals of improvement to: safety, educational spaces, wayfinding, and athletic facilities, while still costing the District a third of what it would have to build new. Spaces were not only rearranged, they were modernized and freshened up to give the students a collegiate feel that **allows flexibility and inspires students** to think outside the box. The professional feel excites the students to continue their education and to prepare them to enter the real world.

"In my past 30+ years' experience with renovation projects, this is the first time the whole building has been brought together to look as one. It's very difficult to differentiate the new from the original 55-year-old building. We couldn't be happier with our design team."

Mike Meyers
Director of Buildings and Grounds
Safety Director
School District of the Menomonie Area

