

PHOTOS COURTESY OF TMP ARCHITECTURE AND CHRISTOPHER LARK PHOTOGRAPHY

# Notre Dame Preparatory School and Marist Academy:

Building to Inspire Students in the Areas of Science, Technology and the Arts

Note Dame Preparatory School and Marist Academy worked with Bloomfield Hills-based TMP Architecture to develop a Master Plan for facility enhancements at this private preparatory school located on a 100-acre campus in an outerlying area in Pontiac. Part of that Master Plan was the addition of a one-story science, technology, and arts wing that would provide for the needs of students today and into the future. TMP was chosen to design this wing that houses collaborative learning classrooms, a greenhouse, and a robotics lab, as well as science classrooms and fine arts studios for both middle and high school levels.

Creating a cutting-edge facility that focused on group work and hands on learning was important in meeting the educational goals of Notre Dame's students. TMP brought this into the science classrooms by creating spaces that allowed for small group collaboration and flexibility. The new collaborative learning classrooms are designed to be fluid spaces that focus on student comfort and the ability to complete group work easily.

#### Greenhouse

The greenhouse, designed by Gregg Short, P.E., Greenhouse Design LLC, Burbank, Ohio, is the central feature of a new botany program that teaches students using hands-on experience. Designing and constructing an appropriate greenhouse was a challenge as the botany program did not yet exist. A space was being created for a curriculum that would be developed after project completion. The greenhouse is an opportunity for students at every grade level to learn about plants, sustainability, and the environment in a hands-on way. TMP worked with Greenhouse Design to determine the needs of the school and the appropriate materials. The final greenhouse features three hydroponic growing systems and one traditional growing system.



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#### **Art Studios**

The fine arts studios are specifically for visual arts projects. Throughout the design process, the question being asked was how will this space be inspirational? The studios take advantage of natural light with windows overlooking the courtyard, and lots of wall and floor space gives students the tools they need to create any projects they can imagine. The high school studio also includes a kiln room and a gallery where student work can be displayed.

#### **Robotics Lab**

The 1,230 square-foot robotics lab was of special importance as Notre Dame's robotics programs are world-ranked. When the project started, however, the robotics lab was not even part of the program. Halfway through design, parents of students in the robotics program donated enough money to make the space feasible, and thus a dedicated robotics space was born. The lab features indoor and outdoor workspaces as well as mobile work stations that allow for When computer-aided instruction. additional space is needed, a glass



overhead door can be opened to allow robotics work to expand into an adjacent 804-square-foot classroom. It was important that the space function well for other curriculum needs when not occupied by robotics students.

The expertise of the landscape designers at Beckett & Raeder, headquartered in Ann Arbor, the land surrounding the exterior of the addition has a story of its own to tell as well. In order to build the addition, a stream had to be re-routed to a different part of the site (no small feat). The design intent was to create outdoor spaces that could compliment what was happening in the greenhouse and create outdoor classrooms in the form of seating areas. The stream was then re-established with local plantings to help establish native wildlife in the area. Outdoor learning pods and planting beds were installed around the site for an exterior addition to the botany program. The plantings were selected to provide students with a variety of plant materials to experience and study. Gardens were designed to allow students opportunities to grow food producing plants as well as flowering plants. The concept was to make both the planned landscape and natural wetlands accessible and part of the learning experience. Both the art room and robotics lab are able to take advantage of views and access to new landscaped and natural areas.

Finally, the overall look of the addition had to match the existing building. The state-of-the-art facilities housed on the inside had to be honored by the design choices on the exterior. By carefully matching existing brick colors and using large glass expanses, each space has a distinct architectural style while blending into one cohesive school.

Content courtesy of TMP Architecture and Frank Rewold and Son Inc., along with CAM Magazine editorial staff.

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