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Newark students get dedicated robotics laboratory

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Summary: The Newark, N.J., public school system is getting a world-class robotics lab for its high school students with an aptitude in science, math, and engineering. Designed by Terrence O'Neal Architect (TONA), the facility will provide a dedicated space for Newark's students to design and build robots and compete in local and international competitions.

Newark Public School District (NPSD) robotics teams have been participating in competitions at various levels for several years, including a 2005 contest in Japan. But over the last few years, Newark's high school students have had to borrow space from the New Jersey Institute of Technology to design and build robots for competitions. While grateful for the technology and space provided, the lack of their own robotics laboratory often left Newark students at a disadvantage during competitions, because their facility wasn't necessarily in the same configuration from practice to competition, says O'Neal. This 6,500-square-foot facility will provide them that advantage.

The NPSD retained Terrence O'Neal Architect LLC in 2006 to provide a feasibility study for a robotics laboratory for its math- and science-minded high school students. According to O'Neal, two other sites initially were considered for the project, but both were existing buildings that would have required extensive renovations to the physical space and mechanical

systems. The school district quickly decided that it would be more economical and efficient to erect a new building on the site of the former Chestnut Street School, a centrally located vacant lot already owned by the district and in close proximity to mass transit lines.

And it's green, too

The NPSD will use the $2 million robotics laboratory as a tool to increase student interest in science, says O'Neal. "The Newark Public School District is trying to increase student interest in science and as some of the robotics instructors say, students learn science from robotics in a way that is fun," explains O'Neal. The Robotics Center will accommodate 65 students and include a robotics practice and competition field, a computer lab where students can work with instructors on design, and machine shops for robot fabrication, plus staff offices and custodial spaces. Though sustainability was and continues to be a consideration, the project is not aiming for LEED® certification.

"That is not a goal of the project, but we are incorporating sustainable design elements such as special high-intensity, low-energy fluorescent fixtures for the robotics field space; extensive use of daylighting through north- and south-facing clerestory windows; formaldehyde-free adhesives; and low VOC paints," states O'Neal. "We're working with the HVAC engineer to efficiently size the HVAC equipment; [we're using] insulated low-e glass widows, well-insulated wall and roof assembly; and a sustainable site location in proximity to public transportation." In addition, O'Neal notes, all building materials are made from pre-engineered steel components that are fabricated in the shop and assembled on site, minimizing the environmental impact on the site.

Departing Newark Public Schools Superintendent Dr. Marion A. Bolden, enthuses: "Robotics celebrate math, science, and technology in a way that kids enjoy. We have more math and science majors as a result of this program. Now they will have their own place to practice. After lengthy negotiations, it is a pleasure to see the construction begin."
Groundbreaking for the Robotics Center occurred in July, and completion is slated for September 2009, in time for the 2009/10 school year.