

**PSPE PHILADELPHIA CHAPTER
OUTSTANDING ENGINEERING ACHIEVEMENT AWARD NOMINATION FORM – 2024**

Project Information:

Name of Project:

Perth Amboy High School

Location of Project:

931 Convery Blvd, Perth Amboy, NJ 08861

Description of Project, Include specific details (use two additional pages if necessary):

See additional pages

Construction Cost: \$283.8 Million Completion Date: 8/31/2024 Project or component must be complete in 2024

Primary Engineering Disciplines Represented by the Project (check those that apply):

Mechanical _____; Electrical _____; Civil _____; Structural _____; Chemical _____; Control Systems*

Organizations/Firms That Contributed to the Project and are Responsible for the Achievement (provide additional sheets as required):

Names: RSC Architects Phone: 201-917-2729

Address: 3 University Plaza Dr #600, Hackensack, NJ 07601 Email: jschlecht@rscarchitects.com

Contact Person: Jeffrey Schlecht, AIA Title: Principal

Client/Owner: New Jersey Schools Development Authority NJSDA

Names: Terminal Construction Corporation Phone: 201-939-9150

Address: 215 NJ-17, Wood-Ridge, NJ 07075 Email: bsenyk@terminalconstruction.com

Contact Person: Brian D. Senyk, P.E., M.B.A Title: Vice President/Chief Engineer

Names: BW Electrical Services, LLC Phone: 908-281-0660

Address: 239 Homestead Road Hillsborough, NJ 08844 Email: jbowbliss@bwes.com

Person: Joseph Bowbliss Title: Project Manager

Submitted by:

Firm/Organization: Professional Systems Engineering, LLC Phone: 215-661-1600 x 107

Signature:  Email: jif@profsyseng.com; pse@profsyseng.com

To be Presented on December 5th by: Jerry Forstater & Jason Delp

Email jif@profsyseng.com; Cell Phone: 215-661-1600 x107

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A \$50 Entry Fee is required and is to be submitted with the Nomination Form.

The entry fee is to be made payable to PSPE, Philadelphia Chapter.

Nomination is due: November 15, 2024 Presentations: Thursday, December 5, 2024

Send by Email or Fax Nomination to: oea@pspe-philly.org or 215-885-3732

Payment of the Application Fee may be check or by credit card.

To pay by credit card, click to [PAYPAL BUYNOW](http://www.pspe-philly.org/oea/entryfee.htm) button on our website <http://www.pspe-philly.org/oea/entryfee.htm>

To pay by check please mail to:

Fredric L. Plotnick, Ph.D., Esq., P.E. Chairman, Outstanding Engineering Achievement Awards

5000 Boardwalk Apt 1901, Ventnor NJ 08406 Phone: 215-885-3733, Fax: 215-885-3732,

email: oea@pspe-philly.org or oea@fplotnick.com or fplotnick@fplotnick.com

* Title 49 of PA Statutes under Chapter 37

§ 37.34. Branches of engineering

§ (a) 16. Control Systems

Hands on Engineering Propels High School Education

PSE is the Electrical/Electronic and Controls Technology Engineer of Record for the new Perth Amboy High School, located seven miles west of New York City is a state-of-the-art educational facility located in Perth Amboy, New Jersey. It was constructed on a sprawling 11.63-acre tract of land along Convery Boulevard. With construction starting 2021, this design/build effort delivered a beautiful and contemporary \$283 mil high school in 36 months plus design time of one year - starting in mid-pandemic 2020.

While addressing core curricula and its underlying **importance to society**, this STEAM based high school environment is built to enable tools and facilities to engage and expand five tenants of current education; **Science, Technology, Engineering, Arts, and Math**.

*The technology engineering is **innovative** by integrating a universal IP based infrastructure to serve safety, audio, video, phone, intercom/paging, clocks, displays, projectors, A/V/lighting and scene controls, high speed data communications, administrative secure networks, and physical security systems. It represents the goal of achievement-based education at all levels - whether using intellect-based learning, say for math, or physical based-learning as in semi-professional theater arts and sports. This school features both and more.*

PSE's electrical engineering, electronics engineering, and control systems engineering - with applied technology innovations to schools over our 38 years - have played significant roles in design of many of New Jersey's public and private schools.

PSE's Forth Digital School - Designed in the Delaware Valley

Construction of the new high school is now complete and utilizes educational technologies and digital programs within a safe environment. This marks an exciting phase for the City of Perth Amboy and New Jersey's School District Authority (SDA). It represents only a part of **PSE's** collaboration on New Jersey public schools – on over \$700 million in Pre-k through high school construction since. **PSE's staff of Greater Philadelphia** (Philadelphia County, Bucks County, Delaware County, Montgomery County) and **New Jersey** (Camden County) has been instrumental in providing digital infrastructure, educational technologies, controls engineering and physical security since 1999 for the State of New Jersey schools - starting with New Science High School in Newark, in the heart of three college campuses.

PSE engineering of electronic and control systems places advanced technology that is (1) easy to use and (2) transparent to the user - having the potential to transform the way students learn and acquire knowledge, teachers present challenges and elevate historic and social issues with video and sound while always introducing topics in safely-built environments.

Design/Build Schools – Building the Program

The three-story structure occupies an impressive 576,000 square feet, making it one of the largest contiguous high schools built in America. Being fully remote, all coordination was conducted during the heart of the pandemic with all architects, engineers, owners representatives, school officials, and contractors working on remotely controlled workstations for design, utilizing extensive conferencing apps for meetings and PM reporting platforms.

The school's design was carefully crafted to meet the needs of students; but also, just as important was the larger community. Perth Amboy High School is not just a place of learning, but also a hub for community activities. A semi-professional, fully outfitted performing arts center, black box theater, gymnasiums and larger spaces serve as popular venues for events.

Using planning sessions for (1) educational curriculum specifications and (2) educational technology specifications, the School District Authority (SDA) in tandem with the district and designer, efficiently designed the school with the builder to meet the estimate predicated upon its design.

Educational specifications are utilized with the school district to elicit input on specific educational program needs both in general and on a room-by-room basis. This provides the builder and architect with a method to produce drawings faster because of prototyping.

Safe Schools: School Security Practices Facilitate Safer Learning Environment

PSE practices in a specialty of engineering for public safety that impacts society directly; safeguarding our children and teachers. This requires physical security to be at the appropriate level. Professional Systems Engineering acted as prime professional for all security systems for the site, using a team of professionals and engineers for the design to implement strategies that the contractors and vendors would use to establish site security.

As a place of learning and growth, schools have a vital role to play in ensuring the safety and well-being of their students, staff, and visitors. This responsibility covers all aspects of school life, including regular classroom activities, after-school events, and extracurriculars. The final designs pave the way to achieve a safe and secure environment by implementing a multifaceted approach that encompasses both prevention and physical security measures.

Integrated Audio/Visual/Video/IT/Phone Systems; Instructional Technology Specifications

Instructional Technology Specifications elaborate high-speed data backbone requirements, core switching, edge switching, delivery methods of infrastructure, distribution of audio/visual/video and digital shared media, and last-mile incorporation of digital components such as digital clocks, cameras, paging systems, intercoms, and digital telephones. Wallboard enhancement systems for lectures, ADA systems for hearing and visually impaired as well as accessibility issues were addressed to heighten the level of sound or visuals for those needing additional accommodations.

Construction specifications detailed the exact components, operational requirements functionality, expectations of quality, interoperability, and integration with other components on the site whether physical or electronic.

Special Conditions specifications reflect electrical safety issues “conforming to code,” while other technical sections form the basis of electronics for the “digital environment;” stipulating the speeds of digital data transfer, optical cable requirements, servers, core switches, patching and redundancy, optical and copper switching speeds, virtual access, and subnets.

Audio/visual specifications address sound systems and high-power LED projection with touchscreen controls and specialized loudspeakers. Security sections address monitoring alarm systems as well as panic systems and lockdown need; ensuring safe passage with proper card access through hardened portals and openings.

The incorporation of this technology in the new high school will undoubtedly enhance the quality of education by preparing these 3,300 plus students for a highly competitive world.

Footnotes

1. <https://www.collegevine.com/faq/122172/what-s-the-biggest-high-school-in-the-us> stating “Talking about physical size, the title belongs to Parkland High School in Allentown, Pennsylvania. It covers about 457,000 square feet, which is just over 10 football fields worth of space.”
2. *“For every dollar spent on early child development you save \$7 over the life course because children with better early child development are less likely to end up delinquent, involved in crime, unemployed and so on.”* Michael Marmot