

IN FOCUS

PEDDIE SCHOOL IAN GRAHAM ATHLETIC CENTER

A new natatorium gives a New Jersey boarding school an illuminated presence.

text by Jennifer Bickford
photos by Ken Douglas

The illumination scheme for the athletic center's façade does more than just highlight the architecture, it lets people know when the swim team has had a successful swim meet. Victory is signaled by the appearance of the school's color—Peddie blue—achieved with blue T5HO linear fluorescents controlled separately.

Located eight miles from Princeton, N.J., the Peddie School in Hightstown, N.J., is a private coeducational boarding school with an enrollment of 557 students. After acquiring additional land to expand athletic fields and facilities, the school sought to combine several buildings into one unified athletic center. Completed in January 2010, the structure, designed by RMJM Hillier, now houses the existing field house, fitness center, wrestling room, and pool, as well as male and female locker rooms.

Sitting at the edge of the campus, the new athletic center is "almost a proscenium to the rest of the campus," explains design architect Barbara Hillier. To create a building that could define the school and become a "transparent edge" along the south end of the campus, Hillier sought out Illumination Arts and principal Faith Baum, with whom they had previously worked, to design the interior lighting for the pool and the public spaces.

Conceptually, the theme of water was the jumping-off point for the design, and it led to the idea of a transparent skin glowing from

within. The exterior walls of the natatorium are glass, while the interior is composed of a prefabricated dual-resin sandwiched wall system with a 4-inch-interior airspace. The multilayered walls help to regulate the building temperature throughout the year, and the translucency of the resin allows plenty of daylight into the space while still providing privacy for the swimmers.

The natatorium is home to Peddie's nationally acclaimed swim team as well as the Peddie Aquatic Association, which provides community swimming classes and prepares swimmers to compete at state, regional, national, and international levels. Because the facility hosts competitive swim meets, the light level on the pool's surface is required to be a minimum of 50 footcandles. To achieve these levels, Baum used a high-performance 1,000W metal halide luminous linear lighting tube to achieve an even light distribution. This light-pipe system consists of an acrylic tube coated with an optical film to evenly disperse the light along the tube's 30-foot-length, with an illuminator located at one end. At 35 meters (115 feet) long, 12 tubes were required to light



The main feature of the athletic center is the natatorium (above), which houses a competition-regulation swimming pool. The pool is lit with a light-pipe system that uses 1,000W metal halide lamps to provide the required 50-footcandle-level of glare-free illumination on the water surface. Metal halide downlights illuminate the surrounding deck areas.

the length of the eight-lane pool and two tubes with a 10-foot gap at the center were needed to span the width. The light pipes are alternately switched, meaning only half as many need to be on during the day when daylight contributes to the illumination of the space. Metal halide pendant downlights illuminate the deck perimeter as well as the spectator seating. From the exterior, the translucent building appears animated and alive, and Hillier describes the entire structure as being “enlivened by the interior lighting” at night.

For special occasions only, such as an important swim meet or to celebrate a win, an additional layer of decorative lighting was designed into the façade to define both the pool and Peddie’s image on campus. Pendant-hung linear fluorescent wallwashers with blue

fluorescent lamps wash the perimeter walls from the interior, turning the exterior a vivid hue of blue and backlighting the school’s name. This distinctive look informs the rest of the school and the community that the swim team has won their meet.

Careful selection of lighting sources and daylight harvesting allowed for an energy-efficient design solution that also met the demanding requirements of competitive swimming. Baum was excited about the idea of a luminous wall material from the project’s start and sought to create “an ephemeral glowing facility” for the Peddie School that was both dramatic and sustainable. The new Peddie School Ian Graham Athletic Center signifies a win-win situation for both the school and the community as they team up to share and celebrate a passion for aquatics. •

Details

Project: Peddie School Ian Graham Athletic Center, Hightstown, N.J.

Client: Peddie School, Hightstown, N.J.

Architects: RMJM Hillier, Princeton, N.J.

Lighting Designer: Illumination Arts, Bloomfield, N.J.

Project Size: 42,000 square feet

Project Cost: \$26 million

Manufacturers

Bega (39W T6 ceramic metal halide bollards at sidewalk);

Indy (32W compact fluorescent recessed downlights at building entry and toilet rooms);

Insight Lighting, Illusions (Natatorium light pipe with 1000W metal halides);

Kenall Mfg. Co, Millenium Edge (32W compact fluorescent surface-mounted downlights with natatorium finish at pool locker room);

Kim Lighting (39W T6 ceramic metal halide steplights along exterior);

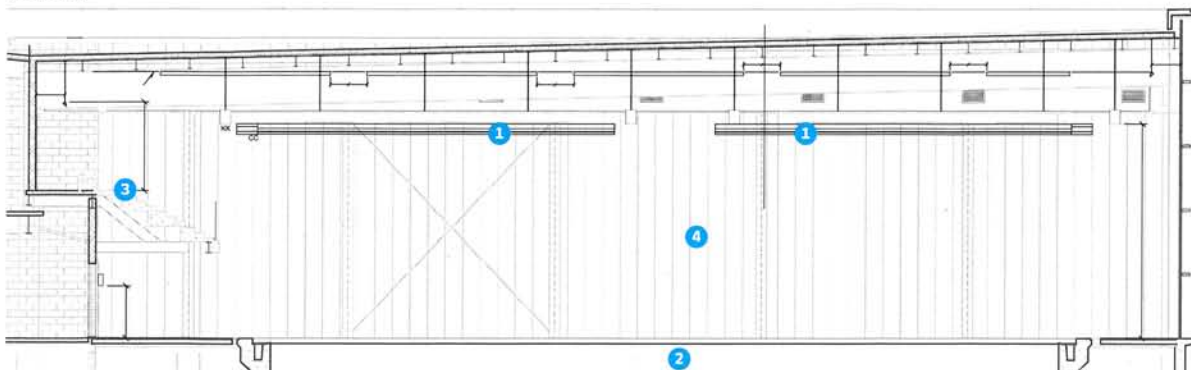
Kirlin Co. (Natatorium 175W metal halide deck downlights, and 32W compact fluorescent recessed-lensed downlights at toilet rooms);

Pinnacle Architectural Lighting (TSHO linear fluorescent downlights and wallwashers at concourse);

Winona Lighting (T5 and T5HO blue fluorescent wallwashers at natatorium seating area and blue luminous wall, and 39W T6 ceramic metal halide wallwashers in lobby)

Building Section Natatorium East/West (Latitudinal Section)

not to scale



- 1 Light pipe
- 2 Pool
- 3 Seating area and stands
- 4 Dual-resin sandwiched wall system with 4-inch interior airspace