Frank Sinatra School of the Arts

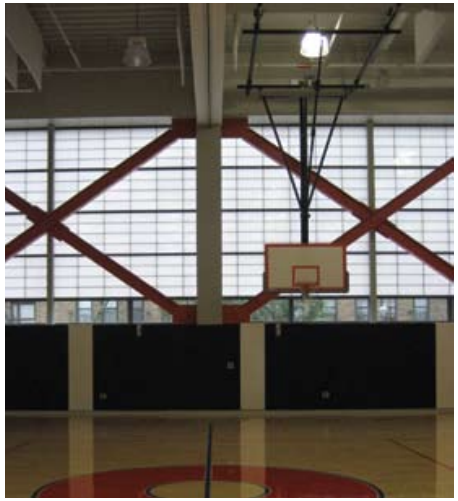
Astoria's newest school brings its performance to the street in a budding arts district.

WHEN A BUILDING IS NAMED after one of the most idolized singers of all time and envisioned by another, it had better perform. This was the goal of Susan T. Rodriguez of Polshek Partnership Architects when her team set about designing The Frank Sinatra School of the Arts, a new 147,000-square-foot educational facility occupying a full block on 35th Avenue in Astoria. And perform it does. Its five stories of steel-framed architecture clad in a transparent glass and stainless steel curtain wall reveals the building to its neighborhood, and vice versa, making it as much a living stage for its 1,000 students as for the community around them.

The public high school, which opened in the fall of 2009, was developed by the New York City School Construction Authority (SCA) in partnership with the Exploring the Arts organization founded by Tony Bennett and Susan Benedetto. Located between 35th and 36th Streets, the school joins the artistic community created by the neighboring Kaufman Astoria Studios and the Museum of the Moving Image. "It brings performance to the street," says Rodriguez. "It also creates a place that inspires the students. Many of them come from great distances."

To create the feeling of a welcoming arts community, three cantilevered studio spaces—for dance, music, and art—float above a double-height lobby and are exposed to view from 35th Street. Classrooms, studios, and practice spaces surround a full-height sky-lighted atrium space in which impromptu performances break out around movable pianos. More formal performances take place in an 800-seat theater in the southern half of the building, beneath a fourth-floor gym and a top-floor cafeteria. Because the 200-square-foot site doesn't include outdoor space, the architects created an uncovered rooftop terrace with a lawn and amphitheater.

Structural engineers Robert Silman Associates were charged with building the unique architecture envisioned by Polshek, but within the confines of SCA's specifications, which are geared toward cost-effectiveness and ease of construction. "We were able to work within SCA parameters while still answering the design challenges Polshek Partnership put forth," says Silman associate Mel Garber. According to Garber, steel framing is the most common structural assembly for the majority of SCA projects because it fits efficiently within the most appropriate structural grids for classroom layouts and long-span conditions over auditoriums and gymnasiums. In the case of Polshek's wish to cantilever the northern framing about 20 feet to accommodate the school's studio spaces, Silman was able to manipulate basic SCA requirements—structural steelframe and composite deck with a cross-braced lateral frame—by using the deck diaphragm and cross-brace frames to anchor the facade.



Previous spread Designed to evoke lightness, the school's curtain wall has mullions and spandrel beams that are reinforced with ASTM A36 steel plates, allowing it to have longer spans than ordinarily possible.
Left Structural engineers worked within the School Construction Authority's requirements for structural steel while staying true to the architects' programmatic vision.
Center Engineers employed typical steel framing on three sides of the building.
Bottom An 800-seat theater hangs over the parking garage atop which the school is built.

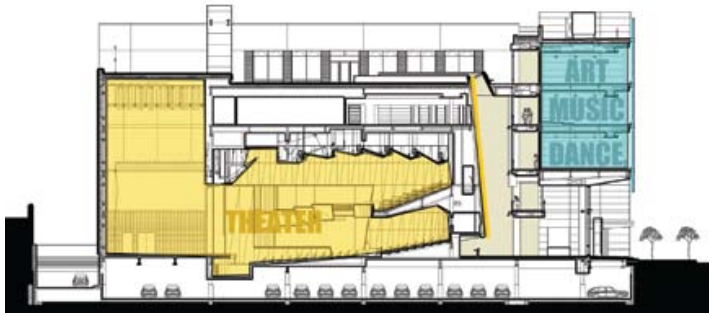
To create the professional theater space, engineers were challenged with constructing the auditorium over the 100-car parking garage atop which the school is built. (Owners Kaufman Studios sold their existing lot to the city on the condition that they could still use the underground space.) The theater contains a fly loft and a raked and cantilevered balcony, in addition to the internal structure of the most prominent design element, a sloping, four-story wall opposite the building entrance. Due to the complexity of the spaces within the school, it was necessary to use a variety of beam sizes. Custom plate girders support the cantilevered north elevation and span over the gymnasium and auditorium using W40 and W36 transfer beams. Given the long spans between columns, typical filler beams are W21 and primary beams are W24. The building's wide flange sections are all ASTM A992 Grade 50; its hollow structural sections are ASTM A500, Grade 50. In all, the project incorporates 1,400 tons of structural steel.

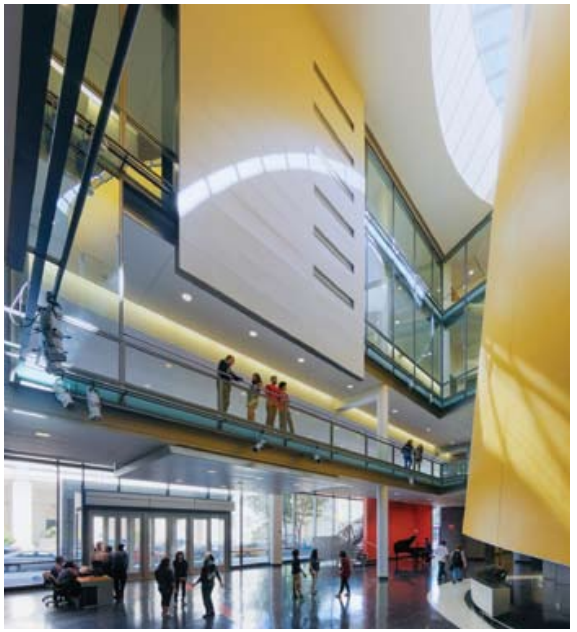
With so many long-span spaces inside the building, Rodriguez says her main goal for the curtain wall was to provide views into the rehearsal and studio areas for passersby, while allowing students to draw inspiration from views of the city through a foreground frit pattern of text recognizing famous artists and performers. In contrast with masonry facades on the east and west sides, the school's north curtain wall lightens the building and appears to float above the street, operating as the weather enclosure in front of the studios, and a rain screen at the top and bottom. Garber says his team worked closely with Polshek and

Previous spread: Jeff Goldberg/Esto; top: Polshek Partnership Architects; center and bottom: Robert Silman Associates

Above The theater incorporates a fly loft and a raked and cantilevered balcony.
Below Glass-enclosed studio spaces, with views to the north and east, are stacked atop a 20-foot cantilever.

Top: Jeff Goldberg/Esto; right: Polshek Partnership Architects





curtain wall manufacturer Zimmcor to test the boundaries of the standard stick system. By reinforcing mullions and spandrel beams with ASTM A36 steel plates, they were able to achieve much longer spans in the panels than normally possible. A sign band with the school's name cantilevers from the northeast corner of the facade, but the glass is broken only by slim, 10-inch ASTM A36 channels at each structural pass, reinforcing the lightness of the school's veil.

Although the project took seven years to realize, as students adapt to the space during its first school year it is revealing itself as an example of the great design that can be accomplished when pushing the limits of materials and budgets. Inside and out, "It brings a little Broadway to 35th Avenue," says Rodriguez of the lively vignette created by the stacked studio spaces behind the glass. It's one that Old Blue Eyes would be proud of. **M**

Above The design's long spans allow for optimal studio and performance space throughout the 147,000 square foot structure.
Facing By arranging the school's classroom and performance space around a full-height atrium, architects created a light-filled structure on a 40,000-square-foot site.

This spread, Jeff Goldberg/Esto

FRANK SINATRA SCHOOL OF THE ARTS

Location: **35-12 35th Avenue, Queens, NY**
Owners: **New York City School Construction Authority**, *New York, NY*;
New York City Department of Education, *New York, NY*
Developer: **New York City School Construction Authority**, *New York, NY*
Architect: **Susan T. Rodriguez of Polshek Partnership Architects**, *New York, NY*
Structural Engineer: **Robert Silman Associates**, *New York, NY*
Mechanical Engineer: **Cosentini Associates**, *New York, NY*
General Contractor or Construction Manager:
Leon D. DeMatteis Construction Corporation, *Elmont, NY*
Structural Steel Erector: **North American Ironworks, Inc.**, *Ridgewood, NY*
Architectural, Ornamental, and Miscellaneous Metal Fabricator and Erector:
MoMetal Structures Inc., *Varennes, QC*
Curtain Wall Fabricator: **Zimmcor Inc.**, *Concord, ON*
Curtain Wall Erector: **East End Window Technologies**, *Saint James, NY*