




Past Becomes Future

A Brooklyn high school lays the foundation for the future of students by teaching them to value the past

By Lisa Fratt

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In Brooklyn, where the mystique of the 123-year-old Brooklyn Bridge looms, high school students learn about caring for the bridge and other historic landmarks in their own backyard.



Brooklyn High School of the Arts' students are immersed in the country's first and only preservation arts curriculum, which teaches the art and science of maintaining and restoring historic landmarks. Their education ranges from reading about preservation to hands-on work at historic sites in Brooklyn and New Orleans, where students recently helped stabilize a house foundation built in 1896.

The program is a collaborative effort of the city's Board of Education, the New Jersey Institute of Technology, and the World Monuments Fund, a New York-based non-profit organization dedicated to preserving and protecting endangered ancient and historic sites around the world. The curriculum is designed to inspire and instruct the next generation of skilled craftspeople, explains the former instructor, Mark Watson.

Such craftspeople, or preservation artisans, are qualified to preserve and restore historic landmarks like the Brooklyn Bridge, which was completed in 1883, and Grand Central Station, which opened in the late 19th century. Historic preservation requires hands-on training in traditional building methods, like post beam construction, and an intimate knowledge of history, says Kate Ottavino, director of preservation technology at the New Jersey Institute of Technology.

"High school, where we have access to young people's hearts and brains, is an ideal time to study preservation arts." -Kate Ottavino, director of preservation technology, New Jersey Institute of Technology

The time for a preservation curriculum has arrived as historic landmarks in New York City and beyond crumble under the weight of decades of age, weather and pollution. What's more, the number of builders trained to handle the unique challenges of preserving and restoring historic structures has fallen dramatically as the construction industry has embraced modern practices. And many preservation masons are about 50 years old or older and nearing retirement.

The demographics and geography of preservation translate into an outstanding job market for skilled craftspeople. "There's enough work to go on forever, and these are jobs that can't be exported to third world countries," notes Watson, who adds that graduates will benefit financially as a preservation mason can earn more than \$100,000 annually.

New High school Program

In 1993, the World Monuments Fund, which enlisted Ottavino, held a symposium for academics, nonprofits and preservation artisans and a series of roundtables to identify needs and opportunities in the preservation field. The New York City Department of Education realized the potential for preservation arts in high school and commissioned the curriculum, assigning the new program to Brooklyn High School of the Arts. The World Monuments Fund contributed \$500,000 to curriculum development. Academics from the New Jersey Institute of Technology, non-profit organizations and Brooklyn educators used the funds between 2000 and 2004 to create the one-of-a-kind preservation arts curriculum and provide professional development to the entire staff at Brooklyn High School of the Arts.



The group adapted the guild model-the historic method of training the next generation of craftspeople-to the

American high school. In the guild model, students are apprenticed to a master practitioner, like a stonemason, for several years to learn the trade. But the preservation arts program relies on an integrated academic program coupled with hands-on projects and internships in lieu of the master practitioner.

"Historically, 14 is the age kids selected a vocation. High school, where we have access to young people's hearts and brains, is an ideal time to study preservation arts," says Ottavino.

"The goal is to institutionalize the process, weaving hands-on experience and internships with the academic background needed to succeed in preservation arts," states Ottavino. The program builds critical thinking skills and an ethic of preservation by weaving history and preservation throughout the curriculum.

Total Immersion

The process for entering Brooklyn High School of the Art's preservation program begins in eighth grade, when the school invites students to apply. Over the last few years, the school has aggressively educated Brooklyn junior high students and their parents about the academic and professional benefits of preservation arts, says Principal Robert Finley. The campaign has paid off. Last year, 700 kids competed for a mere 30 slots in the freshman class. After kids submit an application and portfolio consisting of oral histories, photos or drawings, the instructor interviews each applicant. Chosen students generally demonstrate that the program matches their vocational goals and are enrolled in the program as preservation arts majors, Finley says.

The foundation of the program is total immersion in the preservation arts. So all 650 students at Brooklyn High School of the Arts, regardless of major, spend about 75 percent of the school day participating in the academic component of the preservation arts program, which consists of interdisciplinary high school coursework. The majors then spend the balance of their days in preservation arts classes, and also receive additional training via fieldwork and internships.

Interdisciplinary curriculum

The nature of the curriculum is essential to developing a foundation for a career as an artisan, says Ottavino. History serves as the spine of the curriculum, so as teachers collaboratively plan units, they start with historic concepts and look horizontally at other subjects to determine how to link them to history. For example, as students study the rise of transportation in the 1880s in history class, they read the novels of Edith Wharton and others of the time period. In math, students learn about percentile equations, used in designing cables for the Brooklyn Bridge. Earth science focuses on developing an understanding of wind, waves and erosion so students can discover how the bridge resists environmental forces.



Daily preservation arts classes for majors hone in on the art and science of preservation. Freshmen and sophomore majors focus on the soft skills of preservation arts, developing vocabulary and survey skills. Teachers also foster preservation ethics to help students understand the responsibility that accompanies working on historic buildings.

The curriculum for majors uses a local landmark or concept as a theme for the year:

Freshmen focus on Weeksville, a historic Brooklyn settlement built and owned by free blacks in the 1840s. Students focus on history through the familiar lens of domestic activities like washing clothes and cooking meals. And academic activities range from dramatic reenactments of draft riots that took place during the Civil War, to guiding visitors through the settlement.

Sophomores learn about the local Greenwood Cemetery. "We'll entice kids with more materials-stained glass, granite, marble-and dramatic shapes on the headstones," explains Ottavino. Science is integrated via horticulture and water testing, with activities often occurring on-site at the cemetery. For example, students might predict and test which plants would thrive given the soil and water conditions at the cemetery.

Juniors tackle pre-World War II construction. Students might analyze the construction of the New York Stock

Exchange in preservation arts class while a math instructor can link it to math, for example, by exploring the value of the dollar over time.

Seniors examine various methods for preserving buildings, like post and beam construction or preservation masonry.

Students majoring in preservation arts must complete at least one paid summer internship prior to graduation. They can choose from positions with local artisans, architectural firms and nonprofit organizations. Upon completion, preservation arts students receive a nationally recognized Career Technical Education diploma and a New York State Regent's Diploma, demonstrating they have completed a vocational and academic high school program.

Professional Development

The curriculum at Brooklyn High School of the Arts mirrors the interdisciplinary nature of preservation arts. "In preservation arts, no one pursuit is more important than another. A mason can't begin the bricks and mortar restoration process on a building if the paperwork to designate it as a historic landmark has not been completed," explains Ottavino.

The program has become very competitive among the Brooklyn school's eighth-graders. Last fall, about 700 students vied for 30 slots and ranked preservation arts as their first choice for high school. -Robert Finley, principal, Brooklyn High School of the Arts

But interdisciplinary instruction can be tough. High school teachers must engage each other across the curriculum, but they are not taught to teach in an interdisciplinary way, so professional development is necessary. For example, the New Jersey Institute of Technology provides ongoing professional development at the Brooklyn school, where the principal and assistant principals meet 60 to 90 minutes weekly to map out studies, and teachers meet regularly to plan and connect lessons.

Measures of success

Martin Hylton, initiative manager at the World Monuments Fund, identifies a single, potential downside to the preservation arts program. The goal of adding new craftspeople into the market has not been yet met, Hylton says, because most preservation arts majors first enter college and select majors linked to preservation arts such as engineering, architecture or history. Last year, two of 12 graduating seniors were accepted into the prestigious Cooper Union architecture program, reports Watson. But the success of the high school program may come within the next two years when the first preservation arts students graduate from college.

The program is sparking national interest. South Carolina, for example, recently identified cultural tourism as one of the top industries fueling the state's economy, so it is implementing tourism as an option for a high school major, aiming to grow a network of citizens qualified for careers in tourism. Tourists flock to the state's historic sites like Fort Sumter National Monument, so the state realizes the need to preserve such places and, hence, prepare students for preservation arts. The Charleston School District,

among the first school districts to take advantage of the idea, approached the World Monuments Fund to introduce the preservation curriculum in its district. A similar initiative is underway in New Orleans, where the newly opened Priestley School of Architecture and Construction, a charter high school, plans to adopt the curriculum.

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Preservation on the Road

Although the preservation arts program at the Brooklyn High School of the Arts concentrates on New York City landmarks, a number of students are taking their newfound skills on the road. In October,

Mark Watson, who was a program instructor, and six seniors received funding from the World Monuments Fund and Deutsche Bank to attend the 2006 International Preservation Trades Workshop in New Orleans. Brooklyn students learned about the effects of flooding on historic buildings as they worked with preservation builders from around the world to stabilize the foundation of a Victorian house built in 1896. Floodwaters had completely covered the foundations of scores of historic homes and structures in New Orleans, weakening and damaging them. The tragedy provided an unfortunate but realistic learning laboratory for Brooklyn students to learn about the nuts and bolts of restoration.

