

NJIT AND THE

# URBAN

**More than a century ago, NJIT was founded in the heart of a historic American city – Newark, New Jersey. Over the decades since 1881, the university’s engagement with the improvement of urban life in Newark and other cities has steadily increased.**

In the 21st century, NJIT administrators, faculty, students and alumni are participating in initiatives focused on restoring frayed aspects of the urban fabric and translating a positive vision of our cities into reality. Their ongoing efforts span work in Paterson, Camden and Jersey City, as well as projects in Newark that have broader implications for cities nationwide.

NJIT’s campus itself is the tangible center of the university’s commitment to its home city. In addition to decades of campus-wide physical improvements, which continue, the university is advancing neighborhood redevelopment with the planned Gateway Project. The goal of this initiative is to improve amenities available to the university and the surrounding community. Envisioned are

**“ALL THE WAYS IN WHICH THE WORLD WORKS COME TOGETHER IN OUR CITIES. THEY ARE THE PROVERBIAL MELTING POT – NOT ONLY FOR IMMIGRANTS, BUT FOR SYSTEMS, BLENDING THEM TOGETHER TO ENGENDER NEW FORMS OF COMMERCE, OF CULTURE, OF SCIENCE, OF LIFE AND OF SOCIETY.”** *Samuel J. Palmisano, Chief Executive Officer, IBM Corporation*

# VISION



enhanced housing and new commercial space, as well as a “Greek Village” for fraternities and sororities on campus properties adjacent to Lock and Warren streets.

### A WELLSPRING OF INNOVATION

A wellspring of urban innovation, NJIT’s graduate infrastructure planning program is based at the College of Architecture and Design. The program has two unique six-credit studio courses that are taken in sequence, the first dedicated to infrastructure systems and the second to real-world application of those systems. The director of the program is Associate Professor of Architecture Darius Sollohub, who has long been involved with issues of urban life. Speaking of the intensive studios, Sollohub says that students begin by learning the basics of water, sewage and transportation. “These are the trunk and branches on which the leaves of urban life can grow,” he says.

Sollohub and NJIT colleagues and students have worked on projects for Riverside, Pleasantville, Lincoln Park, Jersey City and Paterson. Their efforts range from offering alternatives for the configuration of main streets and parking to studying housing and promoting the growth of “transit villages” – neighborhoods anchored by light rail and other forms of mass transit.

“Our master’s program is an immersive experience,” says Sollohub. “It’s research grounded in actual projects typically funded by grants from municipal, state and federal sources. There are deliverables, deadlines, interaction with clients. Our students learn to deal directly with real people and real issues in cities and towns, and to devise solutions to complex urban problems. It’s the real world.”

Take recent projects in Jersey City and Paterson. The Bayside initiative in Jersey City has the goal of redeveloping approximately 700 acres on the west side of the city. In advising on various aspects of this initiative – which entailed a Superfund cleanup of industrial waste – NJIT worked with New Jersey City University and an array of municipal agencies.



“We added a substantial amount of value for a relatively small amount of money.”

### AT THE GREAT FALLS

In Paterson – the state’s third largest city – NJIT has had a central role in the creation of the Great Falls National Historical Park. Considered the birthplace of the Industrial Revolution in America, the Great Falls once provided water to generate power for mills that produced silk, locomotives, aircraft engines and many other products. In 1778, Alexander Hamilton visited the falls and noted its potential for industrial development. Years later, as the country’s first treasury secretary, he chose the location as the site of the nation’s first planned industrial city.

The Great Falls was named a National Historic District in 1976 and received national park status with legislation signed in April by President Obama. The high profile of NJIT’s involvement in previous urban projects led the state to ask the School of Architecture for help in selecting a firm to develop a master plan for a new park and recreational area at the site. The school administered a competition for the New Jersey State Council on the

Arts and the Department of Environmental Protection, and the winner was Field Operations. This internationally recognized landscape architecture and design firm has proposed a recreational environment that interweaves the history of Native Americans, industry and the labor movement in the area with the site’s natural attractions.

### RESEARCHING URBAN COMPLEXITY

Research into the myriad complexities of the urban environment is the foundation of positive change. NJIT’s Georjeen Theodore, assistant professor and associate director of the infrastructure planning program, has taken this process to the streets of Newark to engage citizens in shaping the city’s future. Theodore is a founding principal at Interboro Partners, an award-winning architecture and planning firm recently commissioned by the administration of Mayor Cory Booker to develop a neighborhood plan for the West Market area, which includes the city’s Fairmount section.

“The Booker administration has really revitalized urban planning in Newark,” Theodore says. “When the city issued a

Opposite: Part of the historic Great Falls in Paterson, recently designated a national park; right: Assistant Professor Georjeen Theodore



## EFFORTS RANGE FROM OFFERING ALTERNATIVES FOR THE CONFIGURATION OF MAIN STREETS AND PARKING TO STUDYING HOUSING AND PROMOTING THE GROWTH OF “TRANSIT VILLAGES.”

Request for Qualifications, looking for firms that wanted to take part in this effort, there were responses from hundreds of offices from around the world.

Theodore, principal in charge of the project, explains that Interboro is known for innovative approaches to visualizing local infrastructure as a prelude to physical change, an approach that she employs in the infrastructure planning seminars she teaches at NJIT. Extensive community involvement is a hallmark of her strategy for assessing an area’s character and needs. Local residents and high school and college students are enlisted in what Theodore describes as “community detective work.” The information gleaned – including “comments gathered on a hundred street corners” – adds an important element to a portrait that also integrates census and property-value data.

Interboro’s redevelopment plan includes recommendations for increasing the neighborhood’s already stabilized population. Zoning changes and public space improvements – such as more street trees and a neighborhood jogging trail – are at the heart of the plan. Interboro has also suggested an advertising

and public relations campaign to make the neighborhood’s assets – affordability and great location – more widely known. “Improvement requires hard work to get the word out,” Theodore says. “Let more people see Newark’s assets and strengths.”

### HOPE IN CAMDEN

In Camden, urban systems PhD candidate Michael Brown is researching the human dimension of the HOPE VI program, which is revitalizing distressed public housing in the city. Brown is working with advisor Karen Franck, NJIT professor of architecture and director of the joint doctoral program in urban systems.

With the help of federal HOPE VI grants, Camden’s Housing Authority has been modernizing three of its largest and most distressed public housing developments. The goal is to transform living conditions at these developments by rehabilitating their physical landscapes and promoting self-sufficiency among public housing residents through services such as education, employment training, family counseling, and other support services.

Strategies to achieve these objectives include diversifying the mix of housing solutions offered to include home ownership, allowing households with a wider range of incomes into the new development, relocating some original residents to other developments, and awarding vouchers to others to seek better housing in the private housing market. Two of the three developments involved were demolished and replaced with newly constructed housing. The third was redesigned and rehabilitated.

For Brown, the overarching question to be answered is: How has Camden’s HOPE VI initiatives impacted the lives of residents with respect to their social and economic situation and expectations? Extensive interviews with residents have been a key metric in gauging the results, data he continues to gather. He is also evaluating the perceived cumulative effect of related neighborhood improvements such as nearby schools, transportation resources and recreational civic space.

Thus far, Brown sees significant positives in his data, which arise from having a personal stake in the quality of one’s environment. But he does posit questions about attempting to

engineer some types of socioeconomic change in our cities. Is it possible, he asks, that we're trying to import too much of the suburbs into densely populated inner-city environments?

### BOLD DESIGN IN JERSEY CITY

NJIT faculty and alumni are also transforming the urban landscape with 21st-century design and technologies – as manifested in a recently completed residence in Jersey City. It is the work of Assistant Professor Richard Garber, Nicole Robertson, and colleagues at their firm GRO Architects. Alumni Scott Corey '07 and Justin Foster '08 both had hands-on roles in the design of the house at GRO.

The imaginative name of PREtTyFAB



Baldwin's Run, a newly constructed HOPE VI housing development in Camden



The PREtTyFAB house in Jersey City – at the leading edge of high-performance design

# NJIT FACULTY AND ALUMNI ARE TRANSFORMING THE URBAN LANDSCAPE WITH 21ST-CENTURY DESIGN AND TECHNOLOGIES – AS MANIFESTED IN A RECENTLY COMPLETED RESIDENCE IN JERSEY CITY.

house, Foster explains, is a play on the structure's bold design and prefabricated components. "Our client wanted an urban home at the leading-edge of high-performance design, one that would be as energy efficient as possible." And that is what GRO provided.

The geometry of the economical 1600 square foot residence optimizes solar collection, drainage, and passive heating and cooling. Pre-cast concrete insulated panels are utilized as high-energy performance structural walls between which the structure is framed. The energy performance of this house is 30 percent better than a typical single-family home, and will allow the owner to be completely energy independent in an estimated seven years. All of this was achieved at a price of just over \$150 per square foot.

As Corey tells it, a major portion of the work was finding all the products needed to make this a "green" project. The solar panels and material for the roof, which will support a covering of low-impact vegetation, were readily available. But it took a few months to find the right product for the exterior walls, and then to work with the manufacturer to adapt their product to the specific requirements of the project.

Another key aspect of the project was working with the Jersey City Planning Board in an "open conversation" about meeting all municipal construction requirements while implementing a host of green building concepts in a pioneering project. Garber was able to convince Councilwoman Viola Richardson of the importance of PREtTyFAB. Now complete, the house stands as a prototype for an energy efficient, prefabricated housing alternative for urban neighborhoods. It has won the praise of the city's zoning and planning boards for its potential as a new architectural solution that harmonizes green design and economic viability. ■

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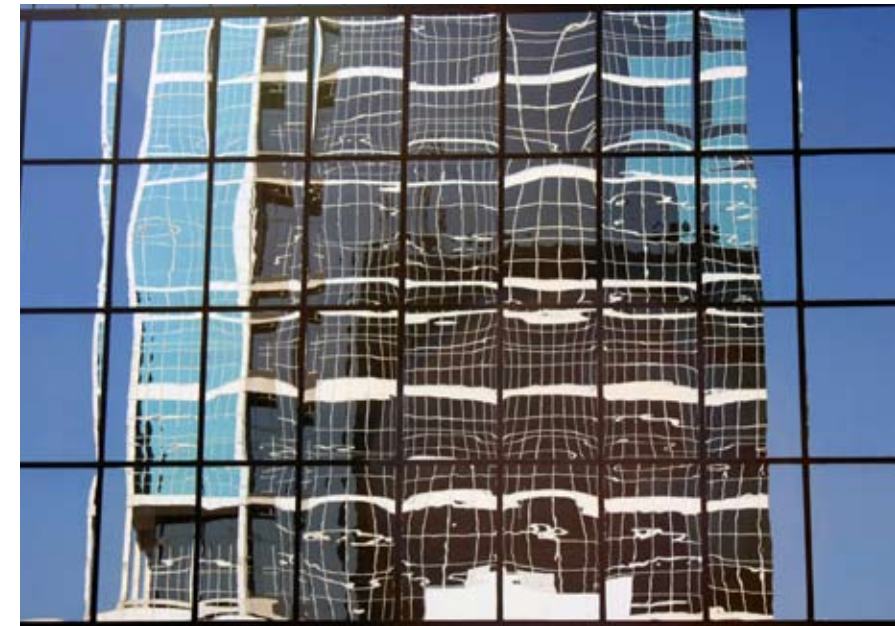


PHOTO: SUCATA BANERJI

### WORKING ON MORE URBAN FRONTIERS

NJIT's diverse engagement with the life of cities also encompasses transportation systems and the design and social roles of schools from kindergarten through high school.

The top prize in the undergraduate category at the 2009 Provost's Student Research Showcase went to four architecture students for their project "Newark Bus Rapid Transit." The students – Dario Brito, Joseph DiNapoli, Robert Pietrocola and Dominick Rodriguez – meticulously analyzed bus routes in Newark. They proposed modifications that would provide even better service to the public with minimal changes to the flow of traffic in the city. Organizations supporting this research included Newark's planning and economic development departments, the Newark Alliance, New Jersey Transit and the Tri-State Transportation Agency.

NJIT is also home to research centers that include the North Jersey Transportation Planning Authority (NJTPA), a federally authorized organization whose work affects daily life for some six million people in the 13-county northern New Jersey region. Each year, the NJTPA oversees major transportation improvement projects and provides a forum for interagency cooperation and public input into funding decisions.

A major focus of NJIT's Center for

Architecture and Building Science Research is the design of elementary and secondary schools that in all aspects provide the best possible environment for learning. The development of a sustainability tool kit to help communities implement state-of-the-art green technologies has been one of the center's chief initiatives.

Equally important is maximizing the social utility of schools in the community. "There should be new ROI – return-on-investment – metrics for every school that's built," says Deane Evans, executive director of the center. "We do not devote adequate attention to all facets of integrating a school into the local economic infrastructure."

In an urban environment, Evans points out, building a school raises questions about the impact on nearby housing and businesses. A school's location should be considered relative to transportation resources and in light of other community needs – for example, possibly dedicating space in a new school to health services.

According to Evans, a university is the ideal agent for promoting a dialogue that touches on all of these issues, and which involves all stakeholders in the public and private sectors. "We can convene the discussion and help to connect all the essential dots."