

Exclusive: The Brooklyn Navy Yard is reinventing architecture—and itself

A new master plan and rezoning calls for three “vertical manufacturing” buildings, increased public access, and more educational programming

By [Diana Budds](#) | Sep 27, 2018, 11:02am EDT



The Brooklyn Navy Yard released a new master plan that includes 5.1 million square feet of new development | Courtesy BNYDC and WXY

Fifty years ago, the Brooklyn Navy Yard was launching ships; today, it’s launching startups.

This evolution is no clearer than from atop Building 77, a [World War II-era factory in the throes of reinvention](#). The ground floor’s polished concrete main hall features soon-to-open eateries, each with food production facilities behind their retail stalls. New windows usher light and air into the open-plan floors (much of the 16-story building didn’t have any windows [originally](#)). Tech companies, fashion brands, architecture firms, jewelry companies, and film production studios occupy the levels above.

But take the elevator to the 16th floor, step onto the roof, and survey the panorama: You’ll spy Brooklyn Grange, a 1.5-acre rooftop farm; WeWork’s slick new headquarters in [Dock 72](#), a 17-story, 675,000-square-foot glass office building; and a caravan of NYC ferries docked where warships once moored.

Here, the new economy of New York is emerging—at least, that’s what the city and Navy Yard’s management hopes—and it’s ramping up the scale of this ambition.



With a new NYC Ferry landing opening in 2019, increasing connectivity between the dock, located in the back of the Navy Yard, and the street (about a five-minute walk away) is a challenge. A new skybridge is proposed in the master plan. | Courtesy BNYDC and WXY

This week, the Navy Yard released new renderings and an expanded master plan that shows a 30-year plan for the complex. Developed with the multidisciplinary design firm [WXY](#), the master plan includes three new buildings totaling 5.1 million square feet, to be constructed on three open lots adjacent to Navy Street, Kent Avenue, and Flushing Avenue. The plan also includes increased public access to the complex, including retail and open space, and improved wayfinding and circulation. The expected cost is \$2.5 billion, coming on the heels of a nearly complete \$1 billion expansion.

“This is not a ‘dream small dreams’ master plan,” says [David Ehrenberg](#), president and CEO of the [Brooklyn Navy Yard Development Corporation](#) (BNYDC), the not-for-profit company that manages the 300-acre industrial site. “We are becoming a central business district in our own right and wanted to create a moment where we had a unifying theory on how we were doing wayfinding and lighting and all kinds of cityscape and city development [initiatives] we’ve never done before.”

With the new master plan, the Brooklyn Navy Yard is shepherding New York City’s next manufacturing economy—and potentially creating a new blueprint for urban manufacturing in America. But if BNYDC builds this, will manufacturers actually come?



Increased public access is a key part of the master plan. For a site near Navy Street, the Brooklyn Navy Yard Development Corporation (BNYDC) envisions a museum explaining what type of work happens on the 300-acre site and a public plaza.

New York City's innovation economy and the *other* affordability crisis

The Brooklyn Navy Yard has a long and storied history, but was most active in the period around World War II, when it employed more than 70,000 people. The Navy decommissioned the Yard in 1966 and sold the land to New York City, which, in turn, intended to redevelop it into an industrial complex that would generate between 30,000 and 40,000 jobs. Through the 1970s and '80s, the Navy Yard struggled to meet its goals and employment stagnated, as New York City—and the United States as a whole—~~lost factory jobs~~ and transitioned into a post-industrial economy. In the '90s, the Navy Yard embarked on a diversification plan to stimulate job growth. The master plan revealed today is a continuation and maturation of that strategy.

All development and programming at the Navy Yard—the renovation of existing buildings, new construction, educational partnerships, and employment outreach—is in service of creating the conditions for these businesses and potential labor force to thrive.

“These are accessible jobs,” Ehrenberg says, noting that 50 percent of the workforce in New York City has a high school education. “However, these are not the jobs of 50 years ago where you could come to the Navy Yard with limited English ability, limited education, start moving stuff around, end up welding on the Navy ship, and you were in the middle class. We still see those career ladders, but the reality is this stuff is getting mechanized, computers are an important part of our economy now and it’s just as true as manufacturing as any other part of the economy.”



The master plan divides the 300-acre Navy Yard into districts. The west, center, and north will each receive a new vertical manufacturing building. The BNYDC also plans to add more food, open space, and amenities—like a childcare center—to the Yard. | Courtesy BNYDC and WXY

About 8,500 people work in the Navy Yard today, mostly in traditional manufacturing companies (like [shipbuilding](#), printing companies, and [material fabrication](#)); so-called “innovative manufacturers” that work in [robotics](#) and [3D-printing](#); producers, like architectural fabrication, furniture manufacturers, and food and [drink manufacturers](#); and media, like [film and television production studios](#).

By 2020, the complex is expected to grow to 20,000 jobs with the completion of [creative office space in Dock 72](#); [food production](#), manufacturing, and office space in [Building 77](#); [Steiner Studio's expansion](#); and a new green manufacturing building and Wegman's supermarket complex on site of [former officers' housing](#).

While New York's [industrial past is being scrubbed from its waterfront](#), its industrial future involves emerging, high-growth industries that are based in technology. For the next phase of growth, the Navy Yard wants to reach 30,000 jobs between 2030 and 2040, but doesn't have enough space to do it.

“The master plan isn’t nostalgic—this isn’t pining for the manufacturing of yesteryear,” Ehrenberg says. “This is thinking, ‘What does the next generation of high-growth manufacturers that are going to create these quality jobs need?’ ... We want to stay focused on manufacturing but acknowledge that what will contribute to a healthy manufacturing cluster in New York can’t turn it’s back on New York’s strength, which is technology, innovation, and culture.”



The multidisciplinary design firm WXY developed a new type of structure to support the master plan’s ambition to add over 10,000 jobs to the Navy Yard. The “vertical manufacturing” typology includes heavy manufacturing floors, light industrial, and creative office space. | Courtesy BNYDC and WXY

A new type of architecture for the Brooklyn Navy Yard 2.0

To make room for the evolution of urban manufacturing, the BNYDC realized it couldn’t just replicate the structures of the past—it had to design a new type of building.

Industrialists of the past pioneered vertical integration, where a company owns its entire supply chain. The classic example is Carnegie Steel owning iron ore mines, steel factories, and the ships and railroads needed to transport its products. While today’s manufacturers aren’t making I-beams, many of them are scaling in a similar trajectory and controlling the design, prototyping, and manufacturing of a product—and the Navy Yard wants them to do that in New York.

One example of this new generation of vertical manufacturer is [Crye Precision](#), a maker of technical garments and one of the largest suppliers of high-tech body armor and camouflage to military and law enforcement customers.

Founded in 2000 by two graduates from the Cooper Union, Crye began in a space in Chelsea Market knowing that it wasn’t a long-term solution. After looking for more affordable and private space with room to grow, Crye moved into a 1,000-square-foot unit in the Navy Yard in 2002 with just a handful of employees. But as the company evolved from a designer of tactical gear to a prototyper and manufacturer, its footprint also grew; at one point, Crye occupied six different floors across three buildings at the Navy Yard, which added inefficiencies to its operations.

“Many years ago, we had considered relocating and expanding outside of New York completely to other states with more space, lower costs, and generally more pro-business practices,” says cofounder and executive director Gregg Thompson. “But it comes down to the people. We all have roots here and never want to disturb that. Fortunately, unlike much of the city, the Navy Yard is one of the few places that is specifically set up to encourage and facilitate our type of manufacturing both functionally and financially. As the need to expand approached, we were able to secure more space incrementally.”

It recently moved into a 90,000-square-foot space in the Navy Yard, in the recently renovated [Building 128](#), and employs about 200 product designers, engineers, technologists, garment makers, machinists, and more. The space is a flurry of CNC machines, laser cutters, a full metal shop, a full woodworking shop, and miles upon miles of fabrics and other materials.

“Those are the kinds of companies we want to have,” Ehrenberg says.

To find out what these manufacturers of the future needed, WXY talked with tenants at the Navy Yard to understand their real estate needs. Along with the architecture firm [ORG](#), WXY also researched urban manufacturing structures in the United States, Europe, and Asia. No precedents for the type of building the Navy Yard needed existed, so the architects went to the drawing board.

“Something we kept hearing from the Navy Yard was really large production space is hard to come by,” says Paul van der Grient, studio director at WXY and project manager for the Brooklyn Navy Yard master plan. “That’s the moment where companies start growing from small to medium scale, and there isn’t space to continue their growth at the Navy Yard. This [height] has to do with racking the need to store goods. And it’s tied to forklifts and moving around and racking vertically. That’s really set at a 40-foot vertical clearance.”

The “Vertical Manufacturing Building” that emerged includes three scales of space. The ground level consists of loading docks, parking, and showrooms which act as a buffer for flooding. All of the mechanical systems—like elevator machinery and HVAC—are located on the second floor. The “XL” manufacturing floors, designed for large and heavy equipment, have large footprints, few columns, and 40-foot tall ceilings. (They’re also located two to three stories above the ground—a necessary intervention given the Navy Yard’s vulnerability to sea level rise—and are accessed by ramps and elevators.) Above the XL floors are light-industrial spaces with 15-foot-tall ceilings. On the uppermost floors is creative office space with 12-foot-high ceilings.



Adding more open space, like this pocket park near the waterfront, is part of the master plan. | Courtesy BNYDC and WXY

BNYDC and WXY envision companies expanding from office space to leasing light-industrial and eventually XL manufacturing space. Office space generates more revenue per square foot compared to industrial space, and having those rents will help make manufacturing space affordable—a challenge in New York.

Other practical concerns for the building include adequate vertical circulation for vehicles and freight, passenger elevators, how to illuminate and ventilate the structure, and how to help share resources—like fabrication, printing, and research labs—among tenants.

Since the buildings are in the master plan phase only, only the footprints and programmatic needs of the structures have been decided. The ultimate form will be determined once BNYDC hires a development partner, but three new structures will likely rise in the future.

“The Navy Yard can do things that other areas of the city can’t do because it’s city-owned land,” says Adam Lubinsky, a partner at WXY. “We’re starting to see that physically with these renderings—that you can have an industrial skyline that shows to the city where things are made.”



On a site near Kent Avenue, the BNYDC is proposing a public waterfront esplanade. This vertical manufacturing building includes ground-floor showrooms to establish retail for Navy Yard tenants. | Courtesy BNYDC and WXY

The next-generation urban manufacturing district

It’s not just the Brooklyn skyline that will change with the vertical manufacturing buildings; the BNYDC is also thinking about how to better integrate the Navy Yard with its surroundings. Because of the nature of operations in the yard—lots of traffic from trucks, forklifts, and heavy machinery—it’s closed to the public. However, the master plan calls for increased public access.

“The question is, How do you modernize the campus while still maintaining the uniqueness that excites people in the first place?” van der Grient says.

In developing the master plan, WXY and the BNYDC consulted with tenants, local government representatives, and local neighborhood stakeholders, and received over 100 suggestions on how to improve the Yard. There was a particular emphasis on increasing connectivity within the site and to the rest of the neighborhood.

The master plan sites—an unused barge basin near Kent Avenue, an NYPD tow lot near Navy Street, and a warehouse for the Department of Justice near Flushing Avenue—border the Navy Yard, with a physical barrier between these sites and the streets. The master plan proposes removing the walls and fences and creating street-level public access and amenities—like food, beverage, open space, and retail—for the new buildings. Each structure would become the centerpiece of a mini district in which tenants wouldn’t have to walk more than five minutes to transportation, a place to buy lunch, and an outdoor space in which to eat it. Most of the Navy

Yard would still be closed to the public, but security gates would be moved to allow the public to wander freely in the new public plazas.

Taking advantage of the Kent Avenue site's proximity to pedestrian-heavy Williamsburg, the BNYDC and WXY propose creating a plaza around a former dock and building street-level storefronts. This esplanade-like space would also offer more access to the waterfront—a popular and much-needed theme in development along the East River.

You can have an industrial skyline that shows to the city where things are made.

At the Flushing Avenue site, the master plan calls for a public market plus benches and greenery. This building is also near a new dock for the NYC Ferry, which is expected to open in early 2019, along with a skybridge connecting Flushing Avenue to the ferry. For Navy Street, the BNYDC envisions a museum that explains what's happening inside the Yard today and more plaza space.

Advancing accessibility to the Navy Yard extends beyond architecture to programming what happens inside of the structures—which is where rezoning comes in. The BNYDC is requesting a special-use district designation for the entire complex that will reduce parking requirements and the number of loading docks, while allowing for educational use. The Navy Yard has partnerships with the Department of Education for public high school programs that address career and technical curriculum to help ensure that graduating students are attractive job or internship candidates.

To that end, the [Brooklyn S.T.E.A.M. Center will open in January 2019](#). Until now, the BNYDC has requested mayoral overrides to allow educational use in the complex. The rezoning, which will not seek additional building height or density, would take schooling from the exception to the rule.



A new building on Flushing Avenue would include a public marketplace and plaza | Courtesy BNYDC and WXY

If you build it, will they come?

The BNYDC has ambitious goals and a plan to help it achieve them—but that doesn't guarantee success. The job-growth goals in the 1960s, when the Navy Yard was decommissioned, are essentially the same as they are today. Will pouring billions of dollars into the Yard now make any difference? Will new businesses and people come?

There are a number of challenges, particularly with regard to transit—while the forthcoming NYC Ferry dock is nice, it [isn't a mass transit solution](#). The complex is served by scant bus service and subways are distant (it's a 20-minute walk from Building 77 to the York Street F stop in Dumbo). The BNYDC operates shuttle buses to Atlantic Terminal and Dumbo to help increase connectivity and plans to increase service as more tenants move in. Increased bikeability and walkability are key parts of the master plan and are still under development.

Ehrenberg views the BQX—a hotly debated light rail proposal, which would have stops in the Navy Yard—as a “critical next component” of transportation accessibility. However, its future remains highly uncertain, considering its \$2.7 billion price tag and location in an area highly vulnerable to sea level rise.

But proximity is relative. For the architecture firm, research studio, and fabrication shop [Situ](#), the Navy Yard offers accessibility to a community of creatives that help fuel its work—either as clients or subcontractors—and to its customers throughout Brooklyn and Manhattan. The company, which currently employs 40 people, was based in Dumbo for 14 years and found it very difficult to scale in that neighborhood. In autumn of 2017, Situ moved to Building 77 as one of the inaugural tenants.

“The Navy Yard is an ideal spot for us,” says Aleksey Lukyanov-Cherny, one of Situ's co-founders. “There's really nothing like it in terms of the new building, the community, the established businesses—from fabricators to artists—and the new breed of businesses, like ours, that have been popping up. We heard about the other businesses coming in—from fashion designers, makers, artists, and tech companies—and that was exciting too.”



Improving walkability, bikeability, and circulation in the Navy Yard is another priority for future development. | Courtesy BNYDC and WXY

However, the appeal of working in the Navy Yard, the relative affordability of space, and the improvements to amenities might not be enough to sustain some companies given a very imminent threat: climate change.

IceStone, a manufacturer of recycled glass aggregate countertops, has been a Navy Yard tenant since 2000. When Hurricane Sandy hit in 2012, it sustained over \$2 million worth of damage. Flood waters—which went five feet high in IceStone’s building—destroyed expensive machinery; everything had to be replaced. Owner Dal LaManga doesn’t think his business could survive another catastrophic weather event as his flood insurance premiums are costly and don’t offer much protection. His lease is due for renewal next year and he hopes to stay, but whether or not the Navy Yard offers more assistance for resiliency measures will impact his decision.

“The cache of being in Brooklyn as a brand—‘Made in Brooklyn’ is a big deal for our marketing,” LaManga says. “My concern is there will be a flood and we won’t be ready for it. I don’t have the money to raise everything two feet up [to avoid floods].”

Climate change resiliency is a forever project for the Navy Yard, but dry-proofing all older buildings isn’t feasible. (The new buildings will have machinery floors well above flood plain.) It’s currently experimenting with ways to dry proof interiors using waterproof walls around machinery that can’t be moved. Time will tell whether or not that will be enough to convince manufacturers to move into an area at high risk for sea level rise.

Ehrenberg believes that the Navy Yard will have a compelling enough mix of real estate, companies, workers, and people to make it a desirable place for 30,000 people to thrive. So far, his plans have been well received. Within the last year, representatives from 90 cities, around 40 or mayors, and 50 deputy mayors or heads of planning and economic development have come to the Navy Yard to learn from its example.

“What excites me most [about the master plan] is that we’re really certain that there’s a huge number of companies out there who want to be in New York if there’s a real estate solution for them,” he says. “And we’ve done the best we can at reinventing the Navy Yard to serve their needs. But this, the master plan, will be a template, not just for us, but we hope for others on how to really do [urban manufacturing] the right way.”

Correction: The total square footage of the master plan’s new buildings is 5.1 million ■



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