



TRASH TO TREASURE

A LIGHT TOUCH BRINGS A PAIR OF RECLAIMED
LANDFILLS OVER THE FINISH LINE.

BY JONATHAN LERNER

BROOKLYN, NEW YORK
In preparation for becoming a park, the capped landfills were planted with grasses, wildflowers, and 42,000 woody shrubs and trees.

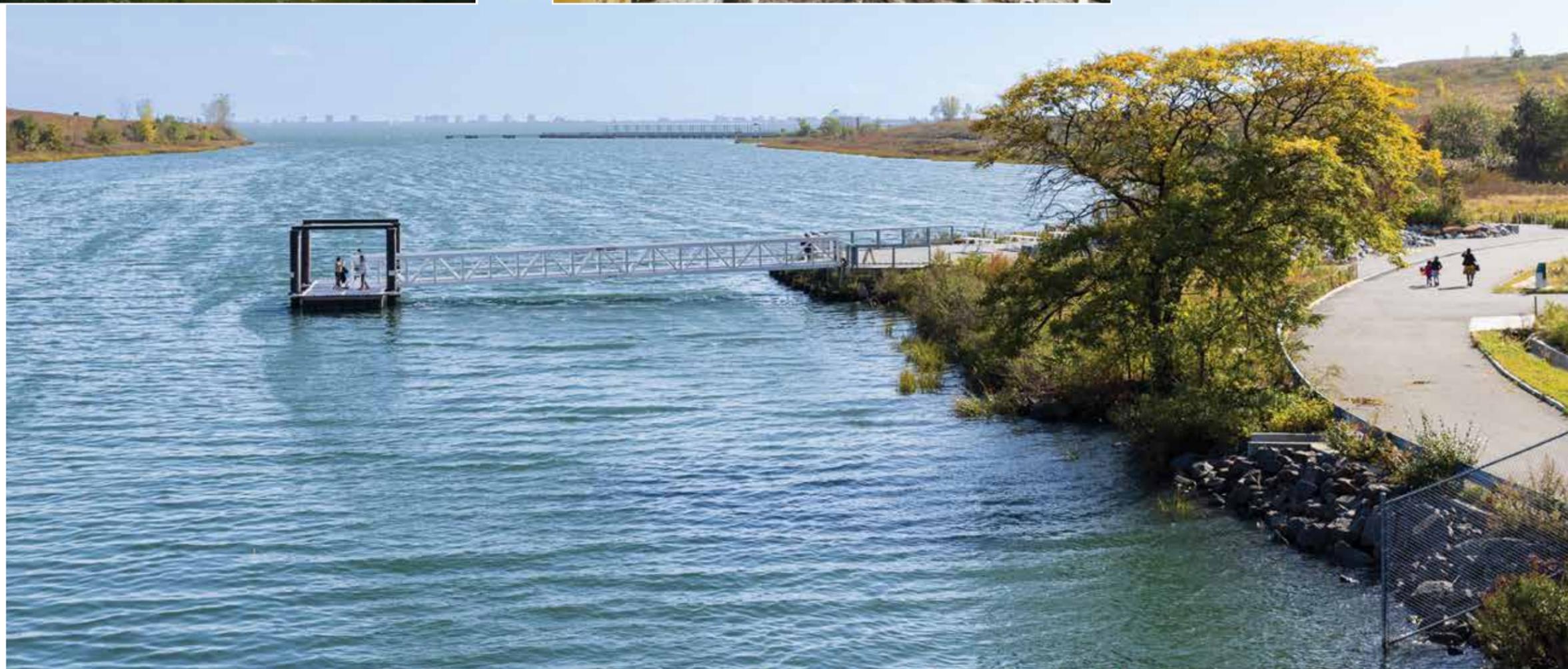
LEVI VAN VALKENBURGH



OPPOSITE
Before, the site was difficult to access and insalubrious.

LEFT
Workers on-site at the landfill on Jamaica Bay.

BELOW
Hendrix Creek, flowing into the bay, separates the park's two sections.



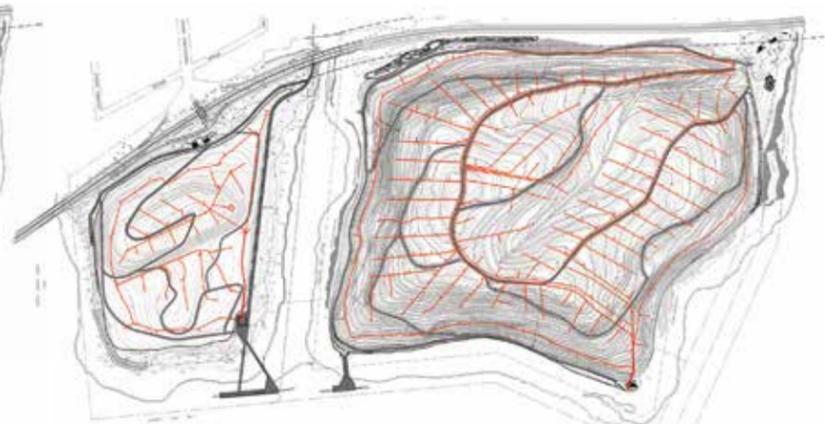
THE COLOR ARCHIVES/ALAMY STOCK PHOTO. TOP LEFT: ARTHUR TRESS/U.S. NATIONAL ARCHIVES. TOP RIGHT: ETIENNE FROSSARD. BOTTOM: NSF/ALAMY STOCK PHOTO. OPPOSITE TOP

JAMAICA BAY is one of numerous tidal lagoons along the Atlantic Coast that separate peninsulas and barrier islands from the mainland. At 39 square miles, it's the largest natural space in New York City. And it's beautiful—*island-dotted, marsh-edged, ocean-lit.* But it's hardly pristine. Like similar water bodies, it is shallow, with a mean depth of 13 feet. It has been dredged in places to 50 feet for borrow pits and navigation channels. It is encircled by urban and suburban development—and pavement. Stretches of shoreline have been hardened. All this disrupted the natural cycles of sedimentation and lagoon floor morphology. The bay has also been a dumping ground for construction debris, incinerator ash, abandoned boats, and raw sewage overflows. During the 20th century, it lost half its salt marsh, with consequent impacts on wildlife. Recent ecological restoration initiatives are promising, but some of this damage is irreparable.

CAP EXTENTS



METHANE PIPES, WELLS, AND FLARES



ENGINEERED DRAINAGE SWALES



A new state park has opened on the Brooklyn shore of Jamaica Bay. It is named to honor Shirley Chisholm, a native of the borough who, in 1968, became the first Black woman elected to Congress. Chisholm was a tireless advocate for racial and gender equality and against the Vietnam War. She died in 2005, but perhaps her scrappy spirit inhabits the park, because while its site has big challenges, they are largely the source of its power.

In the context of Brooklyn, which has a population density of 36,700 per square mile, the 407-acre park projecting into the open bay with three and a half miles of shoreline feels stunningly vast. That sensation of spaciousness is magnified by its elevations—which reach 130 feet above the sea-level surroundings—and the resulting long views they afford. The park comprises a pair of human-made peninsulas, former landfills that operated for more than 25 years until 1985. Some conditions remain quite problematic. For instance, the two peninsulas are separated by a creek, which adds scenic charm but breaks internal connectivity. Another hurdle is the six-lane expressway separating the park from developed areas. Across the highway from one former landfill is a mammoth shopping mall. Opposite the other is Starrett City, the country’s largest federally subsidized



MVVA, TOP; ALEX MACLEAN, BOTTOM

housing complex, which has more than 13,000 residents but only a single pedestrian crossing to the park—on an overpass. The park also sits in the flight path of John F. Kennedy International Airport, less than two miles away, which serves about 1,400 flights a day. The jets’ noise aside, regulations have limited the use of certain desirable plant species to discourage attracting birds that might interfere with airplane engines. “Anyone who grew up in New York would remember, on the drive to Kennedy, passing these giant piles of trash swarming with seagulls,” says Elizabeth Silver, a principal at Michael Van Valkenburgh Associates (MVVA), the park’s designers.

Like other nearby bayfront parcels within the Gateway National Recreation Area, the property is owned by the National Park Service, explains Leslie Wright, the New York City regional director of the New York State Office of Parks, Recreation, and Historic Preservation. “But the landfill infrastructure is the sole responsibility of the New York City Department of Environmental Protection [DEP]. Environmentalists and the community had been clamoring for a park there for decades. The missing piece was, who was going to take it over the finish line, with the political will and the resources to actually make it into a park and then operate it?” ↘

ABOVE AND OPPOSITE
Buried infrastructure readied the former landfills for reuse.

RIGHT
The six-lane, limited-access Belt Parkway makes park access an ongoing challenge.

PLAN

- 1 PENN KAYAK LAUNCH
- 2 PENN ENTRY
- 3 HENDRIX CREEK PATIO & KAYAK LAUNCH
- 4 PENN PIER
- 5 PENN BIKE CONNECTOR
- 6 FOUNTAIN BIKE CONNECTOR
- 7 FOUNTAIN PIER
- 8 FOUNTAIN LAWN PATIO "SKYBOWL"
- 9 FOUNTAIN KAYAK LAUNCH
- 10 FOUNTAIN ENTRY



SHIRLEY CHISHOLM STATE PARK

HENDRIX CREEK PATIO (BEFORE)



HENDRIX CREEK PATIO (AFTER)



↳ In early 2017, then governor Andrew Cuomo launched his ambitious Vital Brooklyn plan, directing—and funding—state agencies, including the parks department, to redress legacies of disinvestment in central Brooklyn. The governor wanted results fast, and he was able to cut the ribbon at Shirley Chisholm State Park’s first phase in July 2019. “It was an impossible schedule,” says MVVA partner Matthew Urbanski. “Almost everything we proposed would have died in some risk-management meeting without that special kind of priority. But when the emperor says he wants something...”

Speed was also possible because of how well the site had been prepared by the DEP. Beginning in 2002, the decommissioned landfills were capped and planted by the department, with eventual conversion to a park in mind. For example, there are no exposed vents, which typically dot closed landfills. Instead, a network of buried pipes and wells traps the continually off-gassing methane, which is delivered to a flare on each peninsula and burned. The liner was covered with up to four feet of clean soil, 1.2 million cubic yards of it accounting for the lion’s share of a \$235 million budget. The soil was planted with grasses, wildflowers, and 42,000 woody shrubs and trees. All the species used

TOP LEFT

A creekfront area beyond the landfill cap could support construction.

TOP RIGHT

Planting beds were designed to withstand inundation.

RIGHT

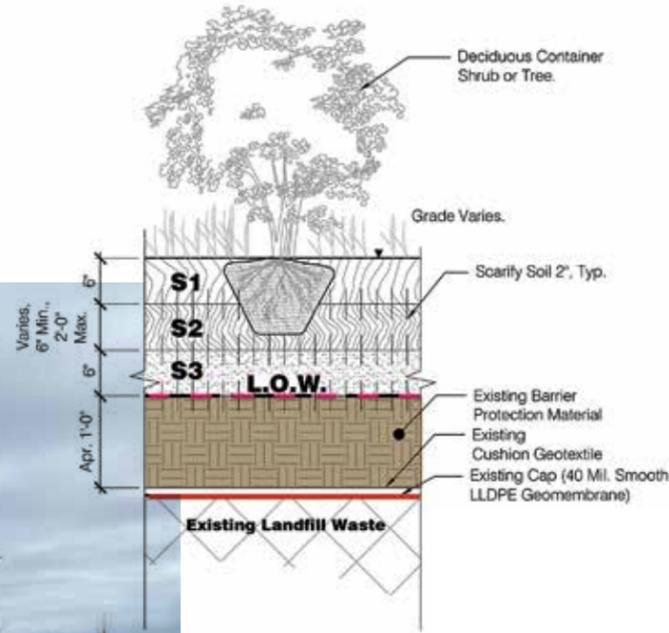
Raised beds and the short view across the creek give the patio a sense of enclosure.

MVVA, TOP LEFT AND RIGHT; ETIENNE FROSSARD, BOTTOM

SKYBOWL (BEFORE)



SOIL PROFILE – SOIL ON CAP



TOP LEFT
The Skybowl spot was chosen for its elevation and views to the ocean.

LEFT
Gray birches define the Skybowl space on either side.

BELOW
The lawn is one of the few spots where people can get off the trails.

are native to the region's maritime ecosystems; some are extirpated or rare plants being reintroduced to the city.

Trees atop a landfill are not as unlikely as they may seem to be. "When tree roots hit an impenetrable liner, they don't want to waste energy to go through it. They simply change position and go lateral," says John McLaughlin, the managing director at the DEP's Office of Ecosystem Services, Green Infrastructure, and Research. With grasses and wildflowers, he says, "the goal was to not make the entire site uniform. So wildflowers were added, say, every third acre. It's a fragmented meadow by design."



SKYBOWL (AFTER)



LEFT
Densely planted crescents of trees provide spatial definition and wind protection.

BELOW
The Skybowl, like the patio and the piers, serves as a destination point.



MVA, TOP LEFT, TOP RIGHT, CENTER, AND OPPOSITE TOP; ETIENNE FROSSARD, BOTTOM; LEXI VAN VALKENBURGH, OPPOSITE BOTTOM



ABOVE
In the distance, the skyline of the Rockaway Peninsula and the Atlantic.

RIGHT
The piers, built for unloading of bargeloads of soil, were remade as destinations for parkgoers.

OPPOSITE TOP
Because the piers are hard structures, and off the landfill cap, it was possible to roof them over for shade.

Today the two peninsulas present like rolling grassland prairies. Given their openness, elevation, and exposure to ocean winds, it's a tough environment. By 2012, the new woody plants were doing well, but that summer was especially hot and dry. McLaughlin says, "The impermeable liner—granted it's four or five feet down—doesn't have the ability to accept groundwater that could wick up to the surface. Pretty much the entire soil profile dried out. The following year the [tree] mortality may have jumped to 60 percent."

But many of those trees' roots survived, and seedlings and regrowth are now emerging, hidden by the taller grasses. When the MVVA team first visited, Urbanski thought, "It's very harsh. It's weirdly like Wyoming. It's a surreal experience." The place will look and feel different in years to come, softened by maturing trees and their welcome shade. For now, the uninterrupted emptiness, the grasses rippling in stiff wind, and the intense sunlight bouncing off the water are captivating—all the more so because the kinetic and battered city is everywhere around and hard to ignore. It's in the



ETIENNE FROSSARD, THIS PAGE AND OPPOSITE

shriek of jets low overhead and the rumble of the highway behind, in a shattered concrete stormwater outflow pipe visible on the mud of the creek at low tide and in the methane flare structures, one per peninsula—stubby chimneys behind chain link. And it's in the barge that still routinely docks at the smaller peninsula's pier to feed sewage into a pipeline for a wastewater treatment plant just across the highway, next to Starrett City.

Silver's first reaction was, "This is an amazing place, and it's a landscape. It's not perfect, but we can work into it." To the list of restraints they faced, however, must be added a relatively paltry \$46 million budget for capital improvements. (For comparison, at the 85-acre Brooklyn Bridge Park, that figure to date is roughly \$350 million.) She reels off the minimum criteria to create a park: "Safe access. People need to know where to enter and feel they're allowed to go in. They need some basic human comfort things like shade, bathrooms, food. Furnishings, places to sit, signage, trash cans. And things that make them want to go there: destinations."



ABOVE
A mural by Danielle Mastrion honors Shirley Chisholm, the park's namesake.

RIGHT
Existing utility structures were retained but given colorful paint treatments.

OPPOSITE BOTTOM
A planted berm divides the lanes in the larger of the two parking areas.

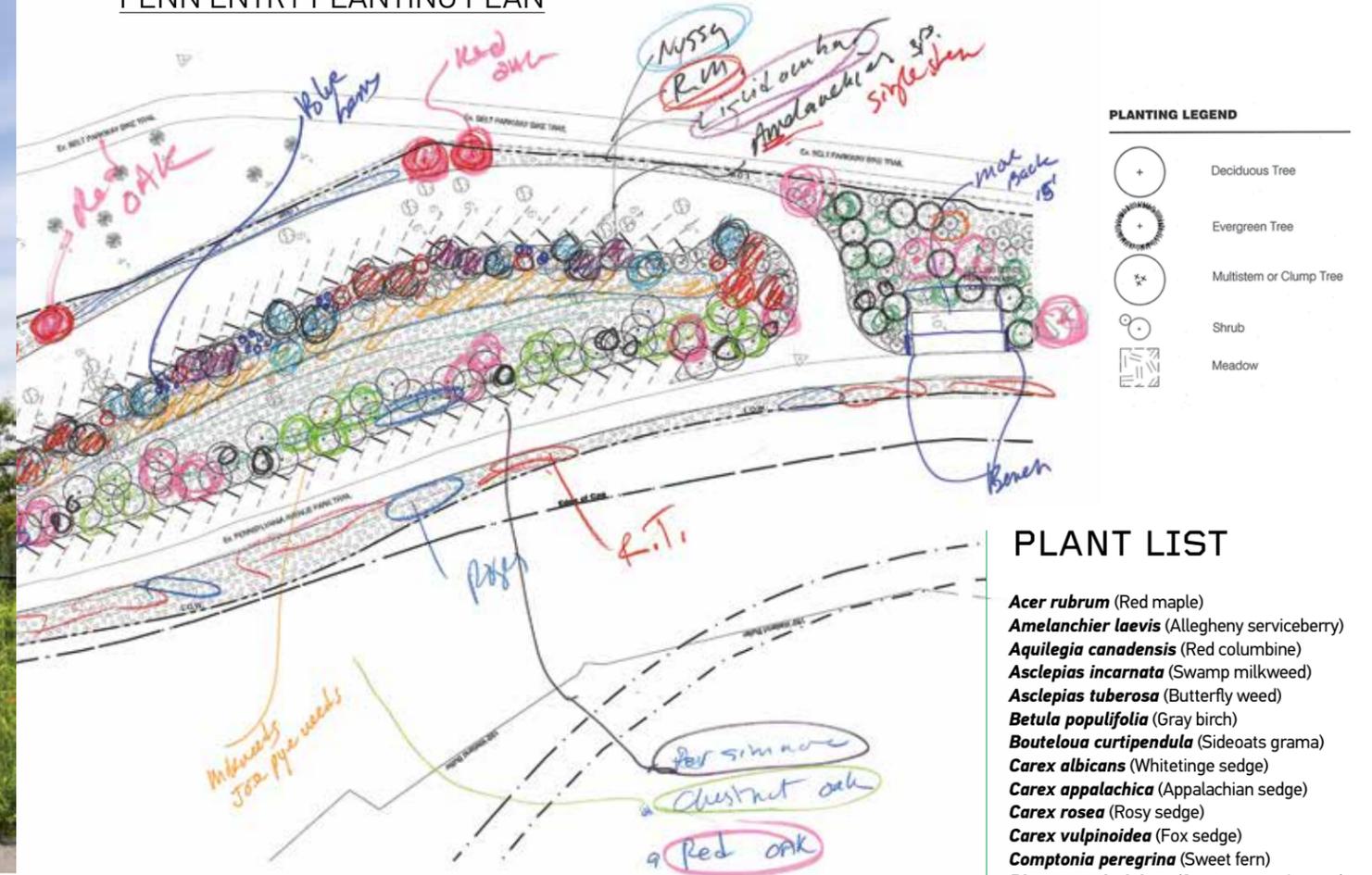
Much of what MVVA added to the site was inexpensive and low-tech. Entering each of the peninsulas, visitors pass under a wide portal dressed in colorful murals with a wildlife motif. The few existing utility buildings were retained and similarly painted. There are portable toilets and standard wood picnic tables with umbrellas scattered around and grouped together, especially along the water. Simple benches consist of lengths of tree trunk, laid across two smaller logs, with their top surfaces planed level. They'll be easy to replace when necessary with trees harvested from other state parks. The parks department was keen on environmental education programming. Interpretive kiosks were fashioned from shipping containers fitted with rooftop solar panels. Chain-link fencing is disguised behind pictorial banners with the tagline, "The Black Sea Bass"—or whatever other living thing—"Can Be Found Here at Shirley Chisholm State Park."

Two spots received modest but artful landscape architectural gestures. One, close to a main entrance, is a "patio" at the very edge of the creek.



LEXI VAN VALKENBURGH, TOP; MVVA, BOTTOM AND OPPOSITE; TOP AND BOTTOM

PENN ENTRY PLANTING PLAN



PLANT LIST

- Acer rubrum* (Red maple)
- Amelanchier laevis* (Allegheny serviceberry)
- Aquilegia canadensis* (Red columbine)
- Asclepias incarnata* (Swamp milkweed)
- Asclepias tuberosa* (Butterfly weed)
- Betula populifolia* (Gray birch)
- Bouteloua curtipendula* (Sideoats grama)
- Carex albicans* (Whiteninge sedge)
- Carex appalachica* (Appalachian sedge)
- Carex rosea* (Rosy sedge)
- Carex vulpinoidea* (Fox sedge)
- Comptonia peregrina* (Sweet fern)
- Diospyros virginiana* (Common persimmon)
- Eragrostis spectabilis* (Purple love grass)
- Eurybia divaricata* (White wood aster)
- Eutrochium purpureum* (Sweet-scented joe-pye weed)
- Ilex opaca* (American holly)
- Juniperus virginiana* (Eastern red cedar)
- Kosteletzkya virginica* (Virginia saltmarsh mallow)
- Liquidambar styraciflua* (Sweet gum)
- Lobelia siphilitica* (Great blue lobelia)
- Morella pensylvanica* (Northern bayberry)
- Nyssa sylvatica* (Black gum)
- Panicum virgatum* (Switchgrass)
- Pinus rigida* (Pitch pine)
- Prunus maritima* (Beach plum)
- Quercus alba* (White oak)
- Quercus montana* (Chestnut oak)
- Quercus palustris* (Pin oak)
- Quercus rubra* (Northern red oak)
- Rhus copallinum* (Winged sumac)
- Rhus typhina* (Staghorn sumac)
- Rosa virginiana* (Virginia rose)
- Sassafras albidum* (Sassafras)
- Schizachyrium scoparium* (Little bluestem)
- Sporobolus heterolepis* (Prairie dropseed)
- Symphotrichum cordifolium* (Common blue wood aster)
- Symphotrichum laeve var. laeve* (Smooth blue aster)
- Vaccinium corymbosum* (Highbush blueberry)
- Vernonia noveboracensis* (New York ironweed)

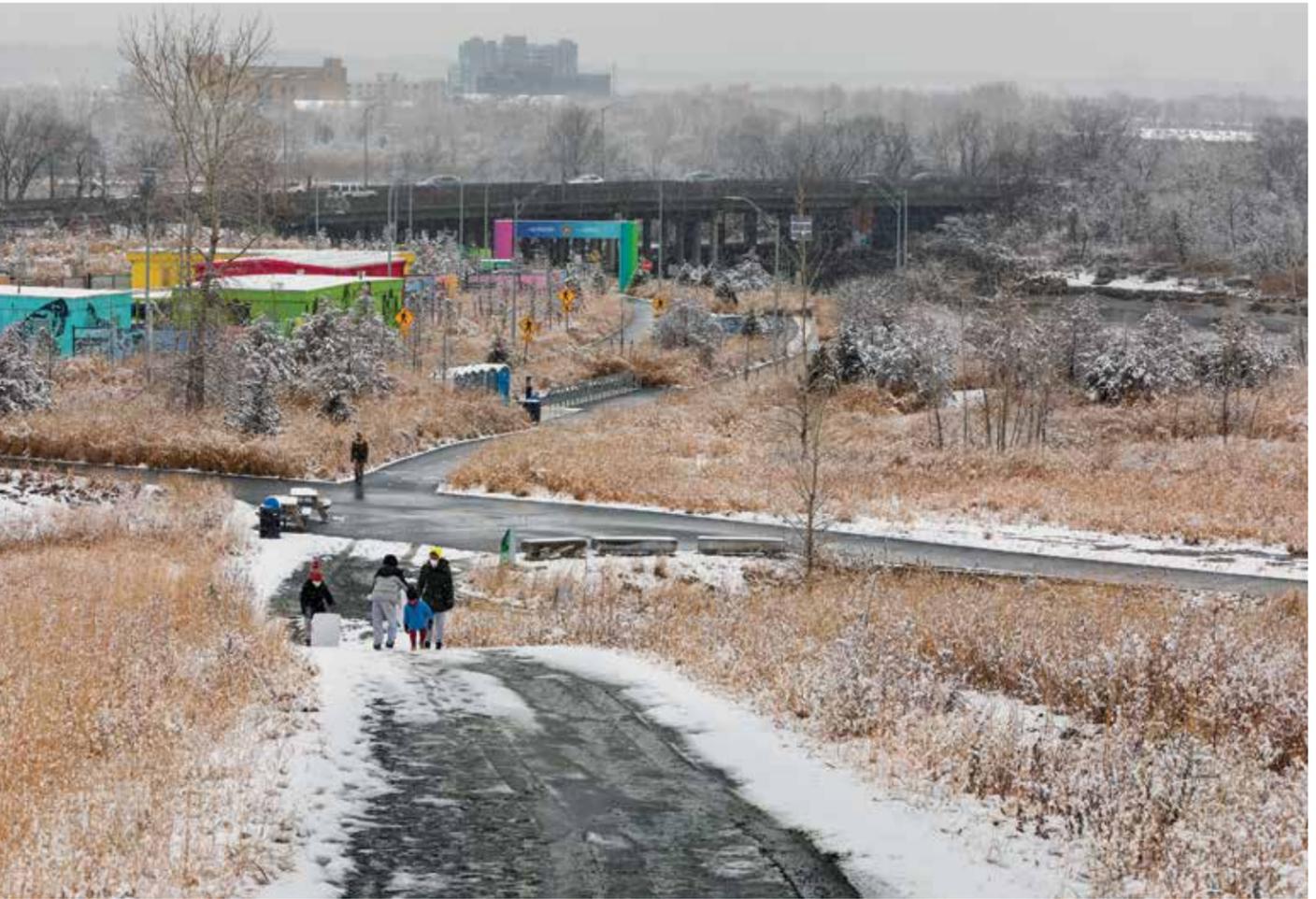
PENN ENTRY





**THIS PAGE
AND OPPOSITE**
Varied plantings offer
year-round access
to nature in the
city's most densely
populated borough.

ETIENNE FROSSARD

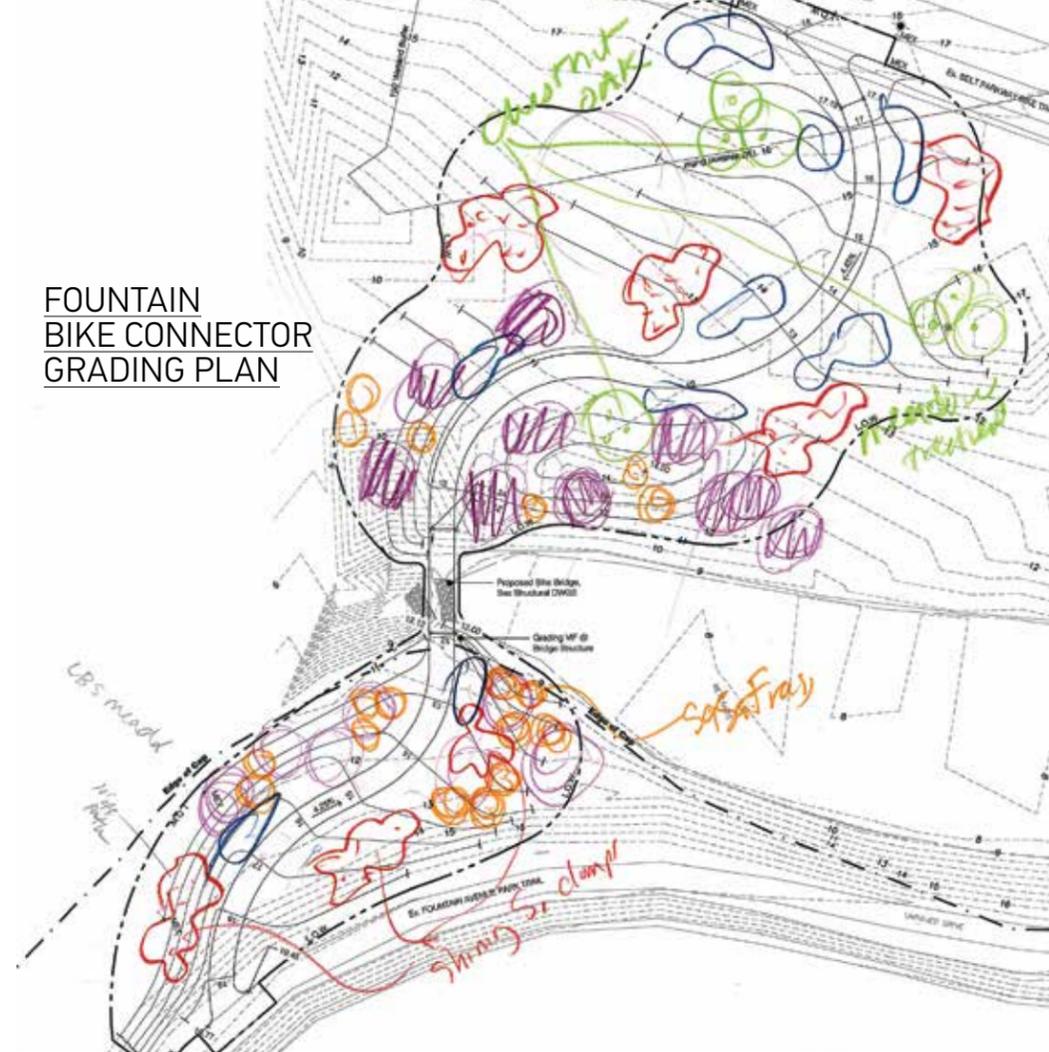


ETIENNE FROSSARD

It has a pleasant view of the opposite peninsula across the water and also serves as a kayak launch. Because it is not above the landfill cap, the spot can support construction. It's paved in gravel, furnished with tables and umbrellas, and has planting beds elevated on naturalistically shaped piles of large rocks, which can handle intermittent inundation. These also create a sense of enclosure, which might occasionally be a relief in the context of the park's immensity. The other lovely gesture, at a high elevation, is called the Skybowl, an amphitheater-like section of circular mowed lawn. "You can't sit in the meadow. It's filled with ticks," Silver points out. You enter the Skybowl through a "foyer" defined by loosely set stone pavers. Log benches arranged in semi-circles embrace the lawn. These are backed by gray birches closely planted on curved berms. The wall of trees parts directly across from the entrance, framing a splendid long view four miles across the water to the Rockaway Peninsula and the Atlantic beyond.

Some desired interventions were impossible. Silver says, "The state insisted, and they were correct to: 'We want a bridge between these two landfills. It's one park.' We looked at a hundred funny, slightly ridiculous ideas: A cable ferry! A gondola! What about a zip line? A bridge would have been impossible" within the budget. In the end, no new link was established. Instead, an access path was created from each peninsula to an existing greenway trail that bridges the creek.

There were other adaptations of features already present. The pier with the sewage pipeline is not public, but space was added during the DEP's restoration process to accommodate barges bringing in new soil. A pier for the same purpose was built on the other peninsula, and they were both reimagined as destination points, outfitted with seating and roofs for shade. While it's not possible to build on the cap, the piers, "because they were already hard structures, could be part of the foundations" supporting metal canopies,



ABOVE
The bike library lends bikes and gives riding lessons.

RIGHT
Both sections of the park have seamless connectors to an existing shoreline bike path.

OPPOSITE BOTTOM
Roads built for distribution of soil and plants became the park's trail network.

Silver explains. And the roads made for distributing the soil, which are mostly graveled, became the park's 10-mile trail network. Also, the project was simplified a bit because some elements that would have been necessary in a city park are not required by the state. For example, lighting is not mandated, and not every path must comply with the Americans with Disabilities Act.

Active programming is minimal and inexpensive but hugely popular. There are spaces for food trucks and a "bike library" that during the warm months lends out bikes and helmets for free and also provides bike riding lessons. Park staff bike mechanics are on-site in case of problems. The program operates out of another converted shipping container and a tent. The bikes are all donated and refurbished. "The property is entirely recycled," Wright says. "The premise was that the bikes need to be recycled, too."



ETIENNE FROSSARD, TOP; ALEX MACLEAN, BOTTOM; MVA. OPPOSITE TOP: LEXI VAN VALKENBURGH, OPPOSITE BOTTOM

RIGHT
Turn around,
and you're
looking at the
big city.

It's notable that while the park is complete and fully functional, much or maybe most of it is relatively unchanged from how it was following the DEP's capping and planting. "There's an important idea, that you don't have to get involved in every square foot," Silver says. This spirit of economy and simplicity surely helped the project win a 2022 ASLA Professional Honor Award in Urban Design.

Urbanski says the project proves that "you can take a marginal space that has potential and apply a lot of brainpower to it, and get the most you can with minimal resources instead of leaving it because it's not going to be the next Central Park or it's in a low-priority neighborhood." ●

LAM CONTRIBUTING EDITOR JONATHAN LERNER'S NOVEL *LILY NARCISSUS* IS PUBLISHED BY UNSOLICITED PRESS.

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