

The background image is a photograph of a landscape. In the foreground, two large, dark, rusted metal wheels are positioned on a dark, gravelly surface. Behind them, there are patches of green shrubs and tall, golden-brown grasses. In the background, there are several trees, some with green leaves and one with bright red leaves. A modern building with a glass facade is visible in the distance. The sky is clear and blue.

landscape architecture

THE MAGAZINE OF THE

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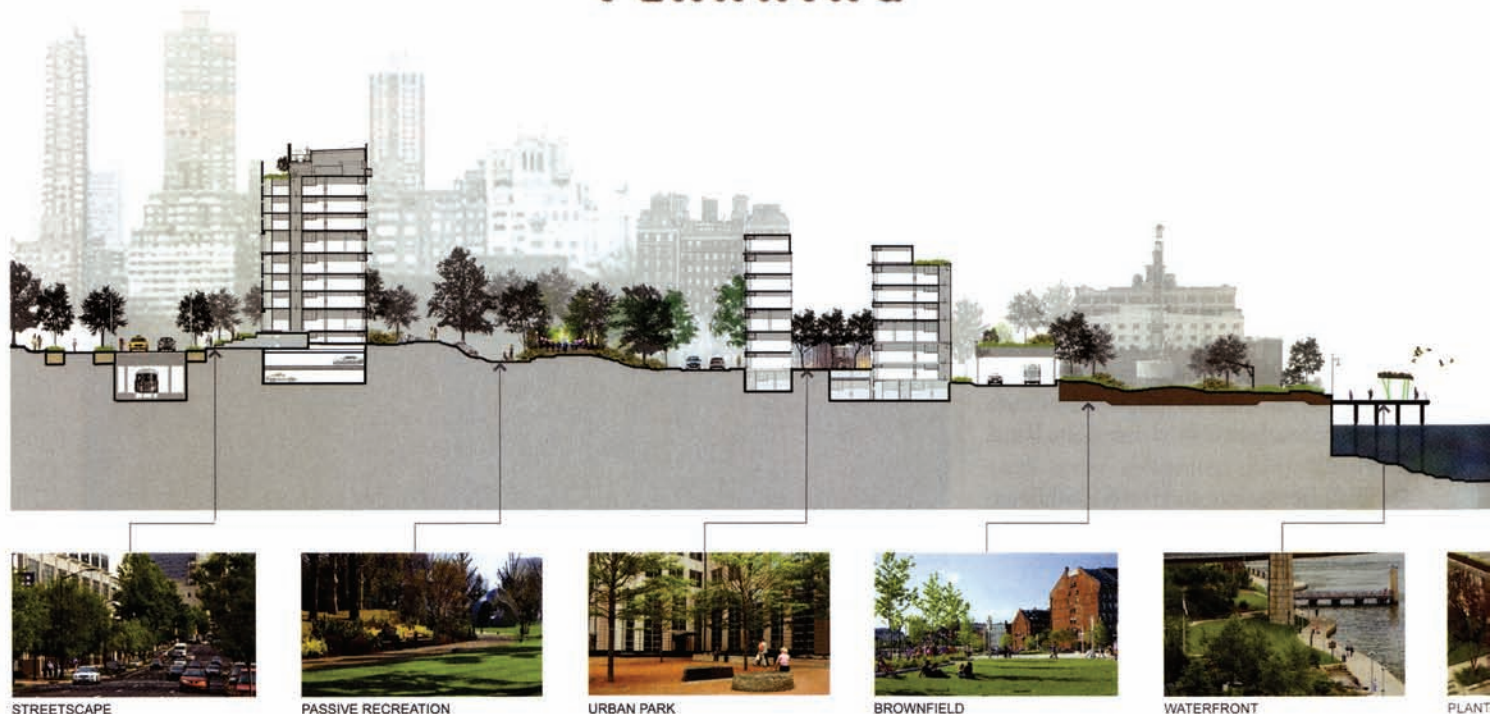
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in Santa Fe**

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Short but Cute Shrubs

What Makes a City Resilient?



STREETScape

PASSIVE RECREATION

URBAN PARK

BROWNFIELD

WATERFRONT

PLANT

BROOKLYN BRIDGE PARK is “the ultimate recycled park,” says Adrian Benepe, New York City’s commissioner of parks and recreation. It uses wood harvested from vacant warehouses rather than tropical forests, fill sourced from a new underground transit line, and more than 300 pieces of granite salvaged from the Roosevelt Island Bridge. Designed by Michael Van Valkenburgh Associates, the park also creates animal habitat, recycles stormwater, and uses solar panels to produce some of its own power.

This sort of “high-performance landscape” could soon become more prevalent in New York City, thanks to a multiyear planning effort by its Department of Parks and Recreation and the Design Trust for Public Space. This summer, the two offices will release *Park Design for the 21st Century: High Performance Landscape Guidelines*, a publication that could revolutionize how the city designs, builds, and maintains its public landscapes.

Cities such as Chicago and Portland, Oregon, have created plans to encourage sustainable development, and planning in Philadelphia and Seattle is encouraging sustainable stormwater solutions, but few if any other

GOthAM GOES GREEN

New York’s new *High Performance Landscape Guidelines* encourage a more sustainable approach to designing and managing the city’s parks.

By Daniel Jost, ASLA

cities have created sustainable landscape guidelines that address all the various elements that go into a landscape—from soils to materials, from stormwater management to the selection of vegetation, from design to construction to maintenance.

“I think New York is in the lead,” says Frederick Steiner, FASLA, of the University of Texas at Austin, who acted as a peer reviewer for New York’s guidelines. “I could be surprised, but I don’t know of any

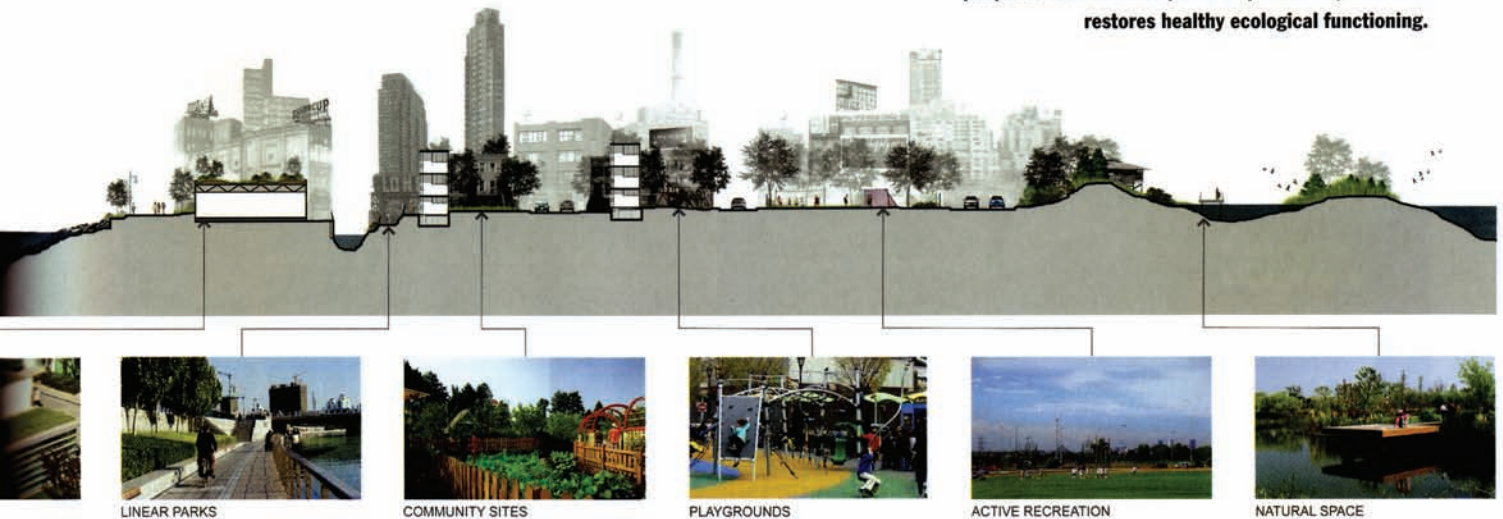
other park system that has been that ambitious.”

Of course, few other parks departments are so large and so active in the design process. New York’s parks department employs approximately 100 architects, landscape architects, designers, and project managers, and in recent years, capital improvements to the city’s parks have averaged almost \$300 million per year.

The Design Trust provided *Landscape Architecture* with an advance copy of the guidelines in April. At the time, minor edits were still under way and illustrations had yet to be merged with the text. But the draft, and a series of interviews with people who helped shape the document, provided a window into its process for creating the guidelines.

LANDSCAPE ARCHITECTS need to play a greater leadership role in the ecological health of our cities and the ecological services that parks can provide,” says Charles McKinney, Affiliate ASLA. As the chief of design for the parks department’s Capital Projects Division, McKinney

An abstract section shows the many different types of landscapes found in New York City and encourages people to look at these parks as part of a system that restores healthy ecological functioning.



thought many designers were unprepared to deal with these challenges. “A lot of these problems required thinking at a scientific level,” says McKinney, who is now New York’s principal urban designer. “We needed a manual to help everyone understand the proper way to deal with the new issues and encourage us to do things better.”

So the parks department approached the Design Trust. The nonprofit organization often pairs up with government agencies and other nonprofits to help tackle projects that these groups couldn’t handle on their own. Though it was founded only 15 years ago, the Design Trust boasts an impressive set of accomplishments. Back in 2001, it helped organize an early feasibility study for repurposing the High Line, and it has been a key player in encouraging sustainable design within the city. During the late 1990s, before LEED (Leadership in Energy and Environmental Design) became the prevailing standard for sustainable building design, the Design Trust worked with New York City’s Department of Design and Construction to create *High Performance Building Guidelines*. This exercise eventually led the city to require LEED certification for all public projects with budgets more than \$2 million. Lat-

er, in 2005, the Design Trust released *High Performance Infrastructure Guidelines* that focused on roads and underground infrastructure. Creating guidelines for landscapes was an obvious next step.

The Design Trust selected five fellows to oversee the process. Andrew Lavelle, a landscape architect at EDAW (now AECOM), was chosen for his experience working in New York and his knowledge of soils. Tavis Dockwiler, a landscape architect at Viridian Landscape Studio, and Michele Adams, Affiliate ASLA, an engineer at Meliora Environmental Design, brought their experience working with unconventional stormwater projects. And Steven Caputo, a designer and sustainability consultant, who had worked on the Design Trust’s *High Performance Infrastructure Guidelines*, offered guidance on how to put the project together. The fifth fellow, Nette Compton, is a young landscape designer working at New York’s parks department.

“I think what is going to make [these guidelines] really successful is they were created hand in hand with the parks department,” says Deborah Marton, executive director of the Design Trust. In addition to having someone on staff managing the project, nine parks department em-

ployees contributed text, and at least 40 other people within the department participated in the guidelines’ creation.

Experts who work for the parks department, including arborists, horticulturists, naturalists, and maintenance personnel, looked over sections related to their specialties. An early draft of the report was sent to a number of leading professionals and academics for peer review. “It ended up taking a really long time, but they infused a lot of practical information,” says Compton.

“WE NEED to take advantage of the benefits parks offer as green infrastructure,” says Marton. It’s a common refrain within the landscape architecture community today, and it sums up the philosophy behind these guidelines. “Parks store and clean stormwater, clean and cool the air, provide vital habitat for wildlife, and trap carbon emissions that contribute to global warming,” reads the guidelines’ introduction.

But all green spaces are not created equal, it explains. “High-performance landscapes must be meticulously planned, calculated, and seasonally orchestrated to get the most out of a limited parcel of land.... [T]ypically every aspect of a high-performance

landscape—the soils, the plants, the water levels, the installation—[is] as precisely engineered as a new bridge or road.”

Designers must think through the project’s entire life cycle—how to source materials, how to get them to the site, the methods used to construct the project, how the design will function, and ultimately how to maintain the space, says Marton. You can’t make any decision in a vacuum, as it is likely to affect how the rest of the system functions.

For example, how an area is maintained may affect how effective it is at infiltrating stormwater. “If you excessively mow a lawn it’s going to become compacted and create more runoff, possibly leading to erosion downstream,” Adams says. And materials such as pervious asphalt and concrete may require regular maintenance to maintain their capacity to hold water.

A major goal of the planning effort was to open up communication among those who design parks, those who construct them, and those who maintain them. “Right now, there is a capital design group, a planning group, a construction group, and an operation and maintenance group [within the parks department], and they are all sort of segregated in different ways throughout the boroughs,” says Lavelle. “Often those groups haven’t consulted one another for years.”

That slows down the adoption of promising new technologies. “We have a pretty good negative feedback loop,” Compton says. “If we use a new playground manufacturer, and the playground is failing, we find out about it. But if it’s working, that isn’t always shared.”

So as part of the process of creating the guidelines, they put people involved in the various divisions within the parks department together in the same room. During one particular meeting that sticks in Dockwiller’s mind, the fellows made a discovery. “Maintenance people were installing these incredible green features, like cisterns, that designers wanted to use but couldn’t get through the system,” she recalls. Suddenly, the designers had a precedent they could point to within their own park system.

The guidelines make a strong push for continuing interaction among these different divisions. “It was something the department had done in the past that had been very fruitful, but it had sort of lost its way,” Lavelle says. Construction and operations staff will be brought in earlier during the design process to develop shared project goals. And rather than holding separate reviews, which can lead to contradictory feedback, efforts will be made to bring all evaluators—from the design, construction, and maintenance perspectives—together in the same room to talk out their differences. The guidelines also encourage the development of maintenance plans for

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new parks that lay out how the park should be maintained and estimate the resources necessary to achieve that.

“We really worked on finding areas where sustainable design overlapped with ease of maintenance,” Compton says. Creating resilient parks that require less maintenance and fewer capital improvements became a major focus of the guidelines. Fewer changes mean fewer raw materials are required.

“It is very difficult to say what is a sustainable material,” says Dockwiller. For example, “there was this drive in [the parks department] to use all recycled plastic bench slats,” she says, “but the people in the field say they replace the plastic slats at a rate much higher than they do the wood slats. Things that appear sustainable may not be sustainable over time.” So, the guidelines encourage a systematic approach to testing, tracking, and evaluating new materials and approaches.

WHEN THE PROJECT BEGAN, some people hoped that the fellows would up-

date parks department specifications, many of which hadn’t been updated in decades. “A good example: Right now the parks department has one specification for soil—it doesn’t matter if you’re on a roof or on the ground,” Lavelle says.

But the limited budget and time frame made such a project unfeasible. “To write a catalog of soil specifications, it would take a major part of a whole career,” Lavelle explains. Also, it didn’t make a lot of sense to develop specifications that are not linked to a specific project. “It’s very difficult to develop a spec blind,” he says. “They end up being so generic, they’re useless.”

“We kept coming back and saying, we understand you need new specs, but if you don’t approach each park as a process where you think about water, vegetation, and soil, you really won’t change the parks,” says Adams.

“It’s not just a matter of applying solutions,” says Lavelle. “It’s a matter of applying the right process to get the right solutions.” To that end, about 15 pages of the text focus on site analysis. They provide in-depth guidelines for analyzing the site’s history, context, and conditions. Separate sections deal with analyzing the site’s soils and vegetation and how water moves across the site. And a site analysis checklist is provided at the end of the section for designers.

Another issue was how the guidelines would mesh with the Sustainable Sites Initiative (SITES), a project of the Lady Bird Johnson Wildflower Center, the United States Botanic Garden, and ASLA, which publishes this magazine. SITES, which was still in the planning stages when work began on the *High Performance Landscape Guidelines*, aims to be the national standard for measuring landscape sustainability.

The goal was to develop guidelines that were compatible with SITES, but with another level of detail and a heavier focus on issues of local importance. The fellows consulted an early draft of SITES and even asked individuals associated with the Lady Bird Johnson Wildflower Center to review the guidelines. The result is a document that is quite similar in spirit, if not in format.

Unlike SITES and the Design Trust’s *High Performance Building Guidelines*, these guidelines do not include metrics that could be used to evaluate individual parks; instead, the parks department is waiting to see how

PLANNING

SITES metrics work and whether such a system makes sense for them. Two parks under the department's care are being used as pilot projects for SITES's new rating system, and they are also considering an internal tracking system.

THE DRAFT *Landscape Architecture* received was nearly 300 pages in all. The first two sections of the guidelines describe why the document was necessary, place it within the larger context of planning within New York City, such as Mayor Michael Bloomberg's PlaNYC, and suggest a series of institutional goals that will help the parks department implement the guidelines. The third section focuses on site analysis.

Then there are short sections on designing different types of parks—including brownfields, restoration areas, waterfronts, playgrounds, and plazas. Including this

section was controversial among the Design Trust fellows. Some believed that it didn't make sense to separate parks by type, because many of the best management practices (BMPs) listed within the section are universal. But ultimately, this section was included to provide a familiar entry point for parks department staff using the document.

The meat of the guidelines is a set of BMPs for design, construction, and maintenance, followed by BMPs on soil, water, and vegetation. Of particular interest is a rough set of guidelines for adapting parks to climate change. The New York City Panel on Climate Change has projected that mean annual sea level may rise anywhere between 12 and 55 inches by the 2080s. So, the parks department is encouraging designers to consider how that will affect the city's parks and to plan wisely when it comes to locating ornamental vegetation and structures within areas where the soil may be inundated in the future.

While the section on adapting to climate change is broad in its recommenda-

Of particular interest is a rough set of guidelines for adapting parks to climate change.

tions, other sections are quite specific. A BMP titled "Provide adequate soil volumes and depths" includes a formula for determining the minimum soil volume required for a mature tree, which is particularly relevant in New York where many trees are placed in paved areas. A BMP instructing designers to "Use rain gardens and bioretention" includes formulas for sizing rain gardens. And some BMPs, including one for infiltration beds, are very thorough and could be converted to specifications without much difficulty.

The publication ends with a series of case studies. The authors put a special emphasis on using case studies within New York City that parks department designers could visit themselves, and contact information is offered for the person responsible for the project. The information provided

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in these case studies will probably be more valuable to landscape architects working for the parks department than for the profession as a whole.

INITIALY made the mistake of trying to read the document front to back. However, this is not the best way to approach it. "It's not a novel," says Compton. "It's not intended to be read from beginning to end. We decided we were comfortable with it being repetitive about certain key principles in case someone only entered the document from certain points."

That said, the draft *Landscape Architecture* received seemed to be much more repetitive than it needed to be. For instance, it had a multipage section on soil analysis toward the front of the document and another multipage BMP for comprehensive soil testing and analysis. Why not combine the two? It will be interesting to see if the final document cuts some of that fat.

One potential hurdle to the guidelines' usefulness will be the wide audience they are trying to reach—from local leaders and

citizens to experienced designers. Some people are bound to find the guidelines a bit dense, while others will find parts of them overly simplistic.

However, some of that may be corrected moving forward. One of the project's greatest strengths is that it will produce a living document. "I imagine there will be a fair amount of feedback about what's working and what's not working," says McKinney, "and we'll be making modifications in response." The parks department plans to update the guidelines on a regular basis as new materials and methods become available. "We wanted to have an understanding that as our knowledge evolved, [the guidelines] wouldn't get in the way of future improvement," says Adams.

The guidelines and the process that went into creating them are already fueling changes within the department. Compton, the sole parks department employee among the fellows, has begun reviewing all department plans through a sustainability lens. Parks hired its first brownfields specialist while the document was being created, and

the discussions fueled an effort to consider changes to the department's standard details.

Marton hopes that, over time, the guidelines will encourage the city to adopt technologies such as pervious pavements on a larger scale and encourage the use of local materials that don't need to be transported long distances. "If New York purchases something, [if it] switches from one material to another, a whole new market could be born," says Marton.

Commissioner Benepe hopes the guidelines will inspire other cities to take similar action. "New York City is sort of a leader for other park systems," says Benepe. "I suspect the promulgation of these design guidelines will have an impact not only on how we design parks but on how parks can be designed across the country and across the world. If they can work in a sustainable way in a big old city like New York, then it's probably adaptable to other cities as well."

Resources

■ Guidelines will be available on the Design Trust web site, www.designtrust.org.

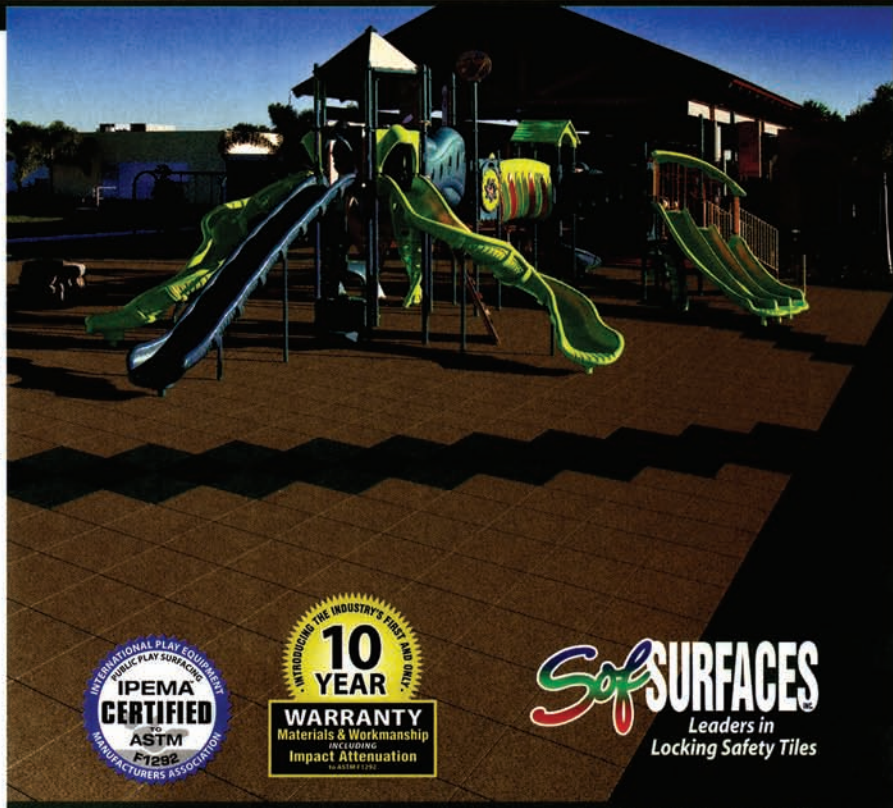


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