The New York Times https://www.nytimes.com/2024/09/23/nyregion/street-wars-flooding-pavement-porous.html

GUERRES DE RUE

L'arme secrète pour lutter contre les inondations est cachée à la vue de tous

Cette rue ressemble à une rue ordinaire, mais sous sa surface, six couches empêchent l'eau de pluie d'envahir les quartiers de New York.

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ParDodai Stewart

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Il s'agit de Street Wars , une série hebdomadaire sur la bataille pour l'espace dans les rues et les trottoirs de New York.

C'était une journée ensoleillée à Borough Park, à Brooklyn, et les fonctionnaires de la ville se tenaient dans la rue, regardant le trottoir.

Un homme portant un casque et un gilet jaune a ouvert un tuyau d'arrosage et l'eau s'est déversée dans la rue. La plupart des rues sont recouvertes d'asphalte standard, une surface dure sur laquelle l'eau s'accumule. Mais dans ce cas, l'eau a disparu, s'infiltrant à travers le trottoir avant d'atteindre le trottoir.

Il s'agissait d'un revêtement perméable, et il se pourrait qu'il soit déjà présent dans une rue près de chez vous : au cours du dernier exercice, le Département de conception et de construction de la ville de New York a installé environ quatre miles de ce matériau poreux .

Vous ne le reconnaîtrez peut-être même pas si vous le voyez, car à part sa couleur légèrement plus claire, il ressemble à n'importe quel autre trottoir. Votre voiture pourrait être garée dessus en ce moment même.

De nombreux quartiers de la ville de New York sont exposés aux inondations , et le changement climatique ne fait qu'aggraver le problème. Pour comprendre pourquoi, j'ai contacté Bernice Rosenzweig, professeure de sciences environnementales au Sarah Lawrence College et collaboratrice d'un nouveau rapport sur les inondations à New York .

« Nous avons remplacé presque toutes nos surfaces naturelles par des bâtiments, par des rues, par des trottoirs, par tout ce qui est pavé », a-t-elle déclaré.

En fait, 70 pour cent de la ville de New York est constituée de surfaces dures comme les trottoirs, qui empêchent la pluie d'atteindre le sol, a déclaré Melissa Enoch, commissaire adjointe par intérim du département de la protection de l'environnement de la ville.

« Nous devons saisir toutes les opportunités possibles pour essayer d'adoucir notre paysage et permettre aux eaux pluviales de s'infiltrer dans le sol », a déclaré Enoch, qui faisait partie de l'équipe de responsables municipaux supervisant l'installation du revêtement perméable.

Rosenzweig a souligné que les inondations sont un « processus naturel » — une réalité de la vie qu'il est difficile d'éviter complètement.

« Même si la ville de New York n'avait pas complètement tout pavé et remplacé nos cours d'eau par des égouts, il y aurait quand même des moments où des inondations se produiraient », a-t-elle déclaré.

But as extreme rainfall increases, the problem becomes more urgent. When it rains, if water can't soak into the ground, it flows into a sewer system that is more than 150 years old. About 60 percent of New York's sewer system combines storm water and sewage in the same pipes. If there's overflow, the delightful mix of rain and untreated sewage spills straight into local waterways like the East River.

This new kind of porous surface could make a big difference.

The city started piloting the technology back in 2017. After tweaking things in a research and development phase, officials have had "great success," Enoch said.

The pavement is installed in strips that stretch for an entire block, parallel to the curb. It's almost like a covered gutter, between the curb and the street. On some blocks, it's two feet wide; on others it's four feet wide.

Sofía Zuberbühler-Yafar, the assistant commissioner of the infrastructure design unit at the Department of Design and Construction, joked that installing the pavement requires "a lasagna" of elements.

On top, there's the six-inch-thick porous panel. Below that, there's a layer of small stones that keeps the panel level. Underneath are bigger stones that help drain the water. Beneath those, there's a layer of plastic crate-like membranes. Finally, there's the soil.

The lasagna design helps direct the rain into the ground, keeping it out of the sewer system.

Ted Timbers, a spokesman for the Department of Environmental Protection, said that when flooding happens, "if the sewer is full, the water starts backing up the pipes into people's homes." (Disgusting!)

The pavement is only one of New York's initiatives around green infrastructure, said Elijah Hutchinson of the Mayor's Office of Climate and Environmental Justice. "We're building out rain gardens and bio swales and cloudburst projects, and all of those things are really going to help us adapt," he said.

Of course, in New York, nothing is ever easy. Installing new pavement means digging up part of the street, where very important things are hidden, including electric, phone and gas connections.

"There's a lot of coordination with utilities," Zuberbühler-Yafar said, before clarifying: "*negotiations* with utilities." Sometimes Con Ed or National Grid will have to relocate their service lines.

Then, even if the city finds a good location, Hutchinson said the soil has to be tested to make sure it's in the right condition.

Certain parts of the city are built on bedrock instead of soft soil, and they may not be the best locations for porous pavement, since the water needs to be able to pass through and absorb into dirt. "You can't put it everywhere," Zuberbühler-Yafar said.

But the city has been identifying sites and moving forward. Already, a few big swaths of asphalt — some parking lots, schoolyards and at least one stretch in Rockaway — have been swapped out for porous pavement.

Often, when the porous section of pavement goes in near the curb, the city will also make the adjacent tree pits bigger, exposing more soil, which helps with rain absorption.

"Thinking about drainage and trees at the same time is really going to make sure we can utilize our streets in our fight against climate change," Hutchinson said, adding that a street "can actually keep us cooler and drier if we design it and maintain it well."

On the subject of maintenance: The pavement works best when it's not covered with litter or leaves. It requires vacuum cleaning and high-pressure jet washing, and the city anticipates needing to clear it of sediment and litter twice a year, in the fall and in the spring.

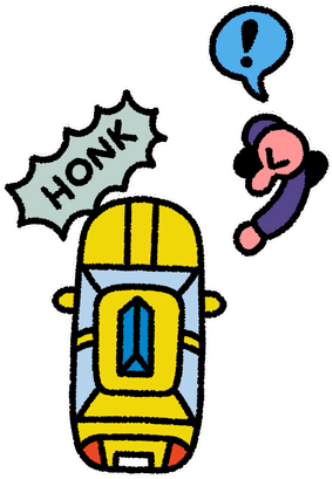
When it comes to preparing the city for the effects of climate change, many experts believe it's important to try a range of strategies.

"We cannot just rely on one best solution, because it doesn't really exist," said Yuki Miura, an assistant professor at New York University's Center for Urban Science & Progress and its Department of Mechanical and Aerospace Engineering.

Miura models hurricanes and develops strategies to build resilient cities. And though some climate researchers have a dismal outlook, "I'm optimistic," she said. "People are thinking about the risks of climate change every day."

She added: “I’m working on this because I believe we can fix this.”

New York City plans to have installed 100 miles of porous pavement by 2031, Enoch said. Hutchinson recommended checking out the city’s green infrastructure map to see both completed and upcoming projects: “We’re coming to a block near you.”



Leon Edler

Raised crosswalks are safer for pedestrians. But in New York City? They cost $800,000.

By Rose Adams

It’s a straightforward way to promote pedestrian safety: a crosswalk that doubles as a speed bump.

An upcoming city project plans to raise crosswalks across the five boroughs. These mounds of asphalt, which cut through dangerous intersections, have been proven to slow drivers down and reduce pedestrian deaths.

The New York State Department of Transportation puts the cost of building a raised crosswalk at $15,000. One in Pittsburgh cost $25,000 in 2021. So why is New York City planning to spend $105 million to elevate about 125 crosswalks, making each, on average, cost more than $800,000?

Raised crosswalks, like this one in the Bronx, have been proven to make streets safer for pedestrians. Matthew Lapiska/Department of Design and Construction

The project is part of Mayor Eric Adams's 2022 initiative to build 100 crosswalks each year, which has rolled out slowly: Just 42 have been built since 2022. The city has chosen a contractor for the $105 million project, although details of the contract are still under negotiation, according to Ian Michaels, a spokesman for the Department of Design and Construction.

Transit experts say the high costs stem in part from the city's old and densely packed streetscape. Traffic signals, streetlights and signage must be removed and reinstalled. You need catch basins to prevent storm water from pooling along the crosswalk's edge. And in some cases, construction requires rerouting utility lines, revealing the dense knot of cables known as "underground spaghetti."

"There's no comprehensive database for where stuff is," said Chris Jones, a fellow at the Regional Plan Association, an urban planning group. "So every time you open up the street, it's like, 'Oh, there's a pipe there that's got to be moved.'"

Much of the underground infrastructure isn't even city property, forcing delays and negotiations. And some raised crosswalks require rebuilding recent upgrades, like accessible pedestrian ramps. (The push to install and revamp the city's more than 210,000 noncompliant curb ramps, another major transportation project, will likely run over its $2.8 billion budget.)

New York City's building costs are the highest in the country. And since intersections vary in size, no standardized design will work.

It's a familiar story: An April review by the state comptroller found that more than half of city projects ran over budget and nearly two-thirds were delayed, many by more than three years.

Experts say projects get stuck in a sludge of regulations and reviews. "Outdated rules limit the city's ability to build and cause delays," said Alison Landry, the city's chief infrastructure officer. "Something as simple as building a bathroom often takes years longer than it needs to."

A slate of reforms, spearheaded by Ms. Landry, aims to modernize and streamline the building process. Now, the city invites contractors to help design many major projects, saving years of planning, and reducing costs by millions of dollars, she said. And as of this year, companies can submit construction bids electronically rather than by paper.

But, like the city's construction, some of these changes are off to a slow start. A new digital dashboard — designed to make capital spending more transparent — lists budgets with scant explanation, making it nearly impossible to break down a project's cost. Clarifying details hide in hundreds of pages of obscure filings, if they're made public at all. With little information, even the government struggles to identify where the bloat is.

« La première étape pour améliorer le processus d'investissement consiste à comprendre où se trouvent les obstacles actuels », a déclaré Louise Yeung, responsable du climat au bureau du contrôleur municipal, qui suit les investissements en infrastructures. « Sans ce type de connaissances, il est difficile de déterminer précisément où se situent ces problèmes. »

Vous aimez notre série Street Wars ? Dites-nous ce que vous aimez ou comment nous pourrions nous améliorer : streetwars@nytimes.com

Léon Edler

Ce que nous lisons

- Les meurtres sont en baisse, mais les accidents de la route mortels sont en hausse. [New York Daily News]
- Le pont de Washington, qui relie Manhattan et le Bronx au-dessus de la rivière Harlem, dispose désormais d'une voie de bus dédiée et d'une piste cyclable protégée. [6 pieds carrés]
- Le maire de Londres pourrait interdire les voitures sur Oxford Street. [Bloomberg CityLab]
- L'artiste graffeur Futura, qui utilisait autrefois les rues et les wagons du métro de New York comme toiles, fait l'objet d'une rétrospective au Bronx Museum of Art. [Gothamist]

Une correction a été apportée sur 23 septembre 2024*: Une version antérieure de cet article indiquait de manière erronée l'affiliation d'un responsable de la ville de New York. Elijah Hutchinson travaille au Bureau du maire pour la justice climatique et environnementale, et non au Département de la conception et de la construction.*

Lorsque nous avons connaissance d'une erreur, nous la reconnaissons en la corrigeant. Si vous repérez une erreur, veuillez nous le signaler à l'adresse nytnews@nytimes.com . En savoir plus

Dodai Stewart écrit sur la vie à New York, en mettant l'accent sur la manière dont nous nous réunissons et sur les lieux où nous nous réunissons. Plus d'informations sur Dodai Stewart