

WASTELAND

A journey through the American cloaca

By Frederick Kaufman

In 1998, John Brunston bought a house in Yorktown Heights, a suburb of New York City. His wife decorated bedrooms for their three daughters, and Brunston planted a cherry tree and an American flag. Then came the spring rains, and Brunston discovered a dark fountain of human waste bubbling up from his back yard.

He did everything he could to stop the sickening flow. He consulted engineers, installed a new septic tank, purchased sump pumps, dumped ton after ton of fresh soil over the ooze. He spent tens of thousands of dollars, but the evil-smelling gloop still percolated to the surface.

Brunston lives in a densely populated, well-established neighborhood. He should not have to use a septic tank. His waste should flow into the underground pipe that lies no more than thirty feet from his front door, and that pipe should carry the Brunston family waste far from the Brunston family home. But neither John Brunston nor anyone else on this lovely block of Yorktown Heights can hook up to a sewer, because the sewers of Yorktown Heights are already full. In

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fact, they are running at 100,000 gallons of waste per day beyond capacity. So Brunston's back yard must absorb Brunston's waste. And it cannot.

Every day, America must find a place to park 5 billion gallons of human waste, and our country appears increasingly unable to find the space. Not surprisingly, the effects have been dramatic: the *Colorado Springs Gazette* reports that one Jennifer McCowen discovered a geyser of raw sewage emerging from her toilet. "I couldn't believe it," McCowen told the newspaper. "It filled the bathtub until it overflowed." In southern California, where surfer websites post hourly runoff warnings, a paltry 2-million-gallon belch will not stop a dude from his appointed rounds in the bays of Santa Monica or Hermosa Beach. But when an aging main in Oahu discharged 48 million gallons of human waste into the placid waters of Waikiki, residents were not happy—particularly not the one who fell headlong into the fetid morass and died. In Durham, North Carolina, sewage has reared up from the depths and gurgled across the city sidewalks at an alarming rate of once every eleven days. North Carolina has notched up more than 2,000 such spills, both urban and suburban, and the state of Oregon fined Portland a half-million dollars for sixty-

seven overflows. Local newspapers from Tulsa to Allentown describe the same nightmare: Reeking goo invades family basement and living room. Unclear who will pay for the mess.

This sounds like a problem. For thousands of years, *Homo sapiens* flocked across continents in pursuit of bird, beast, and fresh water, leaving behind him a trail of gnawed bones and steaming waste. The moment we stopped removing ourselves from that waste, it had to be removed from us. Thus the origins of civilization; thus the glories of Rome, Paris, and Philadelphia; thus the horror of John Brunston's back yard. A civilization that cannot escape its own fecal matter is a civilization in trouble—unless, of course, the uneasy relationship between man and his effluents can evolve. Perhaps we could bridge the chasm, heal the rift, transform the untouchable into something rich and strange and marketable. Or so I hoped as I toured John Brunston's back yard.

The soggy lawn squished beneath our shoes, and I surveyed the wet grass with suspicion and growing anxiety. We smushed beyond the cherry tree. I kneeled in the shade, tugged at a tuft of grass, and the earth peeled back like a scab, releasing the dreaded stink. I recalled a report from the National Research Council, entitled *Biosolids Ap-*



plied to *Land*, in which the authors noted that “odor perception has been shown to affect mood, including levels of tension, depression, anger, fatigue, and confusion.” Brunston smiled vaguely and asked that I not include his real last name in the article. He told me he was embarrassed about his house.

I poked a stick into the lawn. A slick of clay lurked beneath the soft soil, then a smattering of damp stones, then the terrible stew. I turned away gasping, profoundly sorry I had made the trip. Since infancy we have been taught to stifle our curiosity, programmed not to look. Perhaps there were good reasons for the repression and denial.

“Want to see the septic tank?” asked Brunston. We made our way past the lilac bushes and the bird feeder, then he pushed aside a cedar rocking chair, removed four paving stones from the pa-

tio, and set about unscrewing the white plastic tank cover. Instead of watching him, I gazed at the nearest pine tree. A rope hung from a branch, and a well-battered baseball hung from the rope.

“There,” he said. “It’s full. Can’t digest any more.”

The white van speeded through miles of concrete tunnel. “The first regulations with respect to waste go back to the code of Hammurabi,” said Steve Askew, superintendent of New York’s North River Wastewater Treatment Plant, one of the world’s largest. “You have to bury your waste far from where you sleep.” And he gave me the look. Steve Askew never finished college, but that look had seen to the bottom of things. It was both spooky and intimidating, that particular look of pity and loathing the wise bestow

upon the ignorant. He knew something I wanted to know: the ultimate fate of our waste.

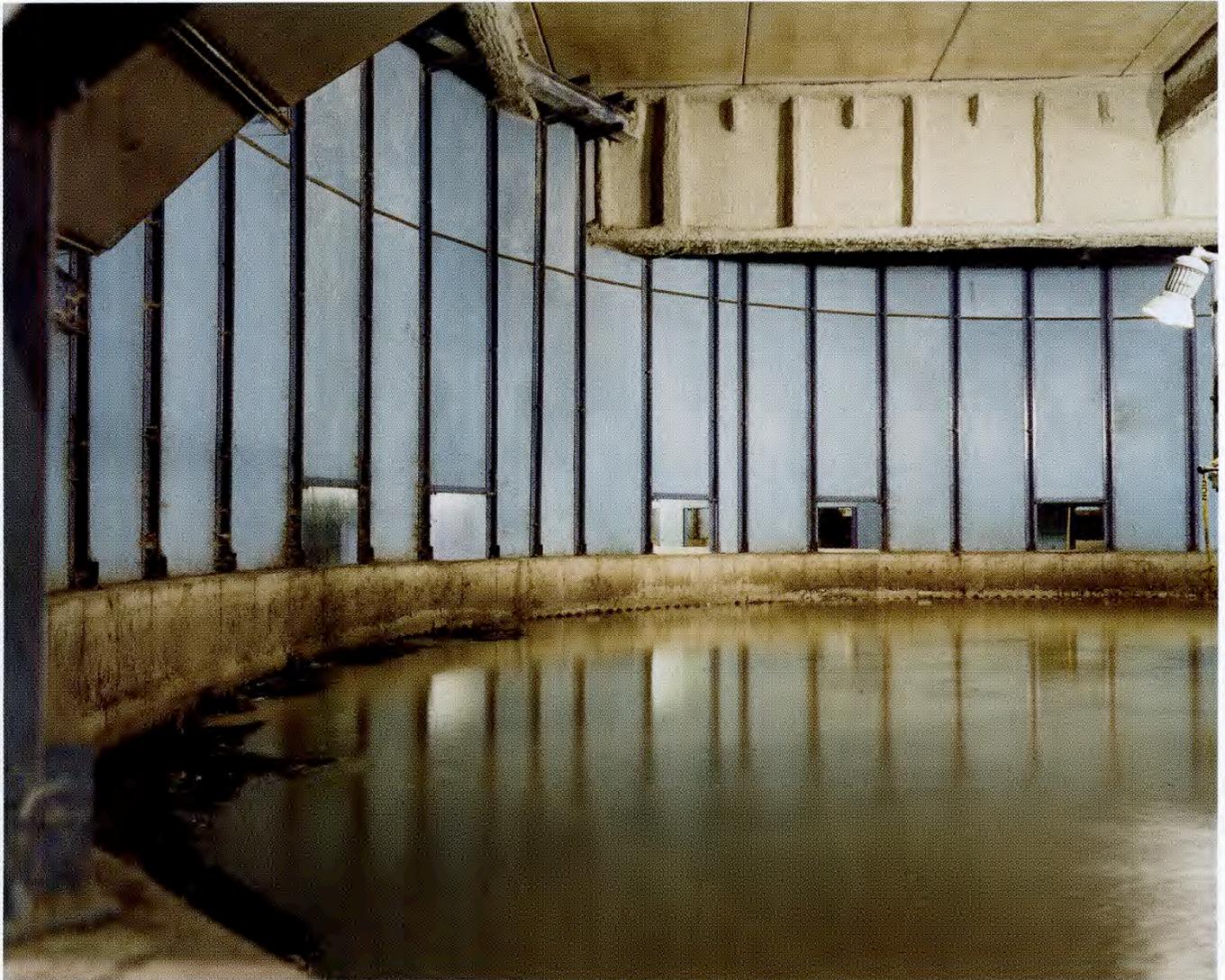
“People wake up in the morning, they brush their teeth, flush the toilet,” said Askew. “They think it goes to the center of the earth.”

If you happen to live within one particular 5,100-acre patch of the West Side of Manhattan, instead of going to the center of the earth, your waste flows to Askew’s extraordinary concrete cesspit: twenty-eight concrete acres suspended above more than two thousand concrete caissons sunk into the shallows between the West Side Highway and the Hudson River. Constructed in the 1970s, topped by three swimming pools, a skating rink, and a carousel, North River cost the city a billion dollars, 100 million of which went straight into odor control.

North River is just one of New York City's fourteen wastewater treatment plants, the first of which opened in 1886, along with the Statue of Liberty. These plants handle every conceivable kind of sewerable waste from

infected to the extent that it can merge inoffensively with the Hudson River. One flush on the Upper West Side at seven in the morning, and by three in the afternoon the water is back on the street, so to speak. What's left over is

tween eight and nine in the morning, when the city's output swells from 70 million to 150 million gallons per day. This is known as the big flush. Now it was 11:00 A.M., and in a few hours the circadian flow of biology *en masse*



the city's 8 million permanent residents, not to mention anything a commuter or a tourist might care to add. They separate the material that comes their way into solid, liquid, and gaseous parts, which they further subdivide into that which must be discarded, that which may be consumed, and that which someone, somewhere, might eventually be able to sell.

The substance that enters North River is mostly water, and the vast majority of that water leaves the plant after not much more than six hours, dis-

a half-million gallons of concentrated daily waste, now known as sludge.

The white van had reached the end of its journey, and I followed Askew into an enormous room of computers, controls, workstations, and switches. Behind us flashed a wall-size diagrammatic panel, the great computerized brain of waste. Next to us stood the oiler, who had been at North River twenty years.

"Right now we're at 135 million gallons per day," said the oiler.

The greatest increase occurs be-

would begin to diminish, eventually bottoming out around four in the morning, at 68 million gallons per day. The rhythm is as steady as the tides. "The Super Bowl halftime surge is a myth," said Askew.

He led me across the concrete floor, through a concrete screening room, and to the concrete screening room, where he began to extol the virtue and beauty of his eleven-mile-long sewage interceptor. By the time the morning flush finally rolls into North River, it has joined the downstream flow of all

the other morning flushes from all the other sewage lines from Bank Street to the Upper West Side, and sunk fifty-four feet below sea level. It is here, at the extreme low point of this immense underground current, that North River gets to work. In the stygian depths, its mighty diameter swollen to sixteen feet, the dark torrent branches into six channels, each of which must be pumped to the top floor of the plant, where gravity can once again take hold and set the out-cast on a new journey.

Askew gazed into the inky pool of untreated wastewater and began to describe some of the marvels the interceptor had disclosed. Aside from the daily take of leaves, sticks, cans, and paper, the great rake had brought up quite a few vials of cocaine. When cops bang on the door, the toilet is a drug dealer's best friend. Ditto for the professional forger: a good deal of counterfeit money has floated into Steve Askew's hands. Twenty years ago a dog showed up, a living dog that became the mascot of a Brooklyn plant.

"I never saw an alligator," said Askew.

As we walked away from the pool, I asked about the wind. No matter what the weather is outside, no matter where we traveled inside, the thick concrete walls of North River generated bracing gusts. Askew explained that every minute, titanic blowing machines inhaled 600,000 cubic feet of fresh air and exhaled 750,000 cubic feet of carbon-filtered, bleach-scrubbed exhaust—six to twelve complete air changes per hour.

But the scouring of North River's halitosis, while essential to community relations, has nothing to do with the plant's core mission. The alchemy of purgative transformation starts in the warmth and humidity of the next chamber we visited, where submerged chemical mixers combine the waste with custom-made bacteria. "It's volatilizing off!" Askew yelled above the din of engines and bubbling brown water. Undeterred by the general uproar, Askew detailed the technical intricacies of fecal breakdown and development, but I'm afraid the cacophony blunted the nuances. So Askew dumbed down the lecture. "This looks really good!" he hollered.

"Tan water! Light brown froth! Small bubbles! Musty smell! If the foam looks like chocolate mousse, that's an indication of a bacteriological process!"

We headed to a low-ceilinged room so huge it did not appear to have walls. Here were the settling tanks, the final stop before the water returned to the world. Peace held sway among these last lagoons, and indistinct reservoirs misted into a concrete vanishing point hundreds of yards away. "On a cold morning, you will see the water vaporizing off," Askew said. "And it will rain inside the plant."

He gave me the look. "When it is really cold, it snows inside the plant."

I ASKED HIM WHAT THEY DID WITH MY WASTE. "THEY SELL IT TO THE ARABS," HE SAID. "IT WORKS IN THE DESERT"

At that moment, two square football fields of submerged jets spumed into the shadows and the bronze liquid arced, more sublime and terrifying than the fountains of Trevi or Versailles. Soon these waters would sluice down concrete courses to mix with the mighty Hudson. As for the remaining sludge, it also would depart, but by an altogether different route.

When the froth finally settled back into silence, Steve Askew backtracked through the concrete dungeons until we arrived at a perfectly normal conference room and a nice surprise—someone had ordered pizza!

Despite the skating rink and swimming pool, despite the bleach, the carbon filters, the white hardhats and the spotless lab coats of the technicians, despite the banks of UNIX computers and the sober talk of asymptotes and oxygen demand, despite the boardroom-size wood-veneer table and the well-upholstered ergonomic chairs and the rush of 20,000 cubic feet of air per second, and despite, to put it bluntly, one of the most extraordinary concealments in all of human history, North River still managed to evoke unappetizing associations. But as I gazed at the cheese and red sauce and blackened crust, I recalled the words of one of the many wastewater professionals I had met that morning: "One

of the things about the job—you still have to eat."

So I sat down to lunch and learned about the glorious future of waste. Now that biochemists could scour the particles on the atomic level, the plant could recover ibuprofen, acetaminophen, endocrine disrupters, DEET, Prozac, and Chanel No. 5. Even caffeine could be extracted from the mix, and I had a hunch the citizens of New York excreted boatloads of stimulant. Perhaps Starbucks would be interested. The technology was there.

"Twenty years from now we will be removing things we have no idea about," said Askew. "Penicillin, mercury, heroin. Will this be a pharm business? An energy business? An agribusiness?"

He took another bite and delivered the look.

"A bear goes in the woods and it takes two years to decompose.

We do it in six hours. In six hours, we imitate all of nature—from the big bang to the big chill. We're trying to put it back the way that God intended."