

HANDBOOK of REGENERATIVE LANDSCAPE DESIGN

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1 To Love a Landfill

The History and Future of Fresh Kills

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LANDFILLS AS COMMONS

Most people do not choose to spend time at active landfills. Livestock are not put out to pasture there, crops are not raised, game is not hunted, picnickers do not ward off ants, runners do not sweat, children do not gambol there. Cemeteries, schools, churches, hospitals, parks, housing developments, and libraries are not sited nearby (though landfills sometimes grow up near such facilities, much to the dismay of teachers, librarians, and homeowners, and many landfills are meant to become parks after they're capped).¹

A landfill is an unfortunate, if common, answer to solid waste disposal problems. It is not understood as a commons, though its function as the repository of unwanted material goods is essential to the well-being of the metropolis that relies on it.² Often considered a blight, it is also a space to which all residents contribute, a "social sculpture" (Ukeles 2002). The artificial geography of a landfill is created by all, shared by all, and has the potential to be transformed after closing into something that all may use and enjoy—or not, depending on variables like what's buried there in the first place, how steeply the garbage has been mounded, how the closed faces are landscaped,

¹ Until the 1930s, landfills, as they were called, were little more than dumps, but for centuries they were seen as a solution to the problem of solid waste and to the problem of unusable land. In New York and in many other cities, landfills were created specifically to make taxable land from otherwise marshy, swampy areas thought to be useless—or worse, thought to be dangerous, since they served as breeding grounds for mosquitoes. One of the most infamous in New York was the expansion of Riker's Island in the East River. The project was started in the early twentieth century with the intention of eventually building a city jail and perhaps some hospitals on the resulting land. The hospitals aren't there, but today Riker's is synonymous with one of the largest penal institutions in the world.

² Not all communities despise landfills. Some towns can earn significant revenue by hosting landfills for larger cities or private waste haulers. Tullytown, Pennsylvania, for instance, saw a reversal of its economic despair when residents agreed to open a landfill for New York and Long Island trash in 1991. The town (population: just over 2,000) earned payments of between \$2 million and \$4 million a year for more than a decade, allowing a new Borough Hall, playgrounds, park, library, police station, fire trucks, and an annual "property improvement allocation" of \$1,500 per homeowner per year. See Kilborn 2002.

whether or not and how methane is retrieved, and where the newly created land fits in larger local development plans.

Moreover, a landfill reveals unexpected details about the society that creates it. "The urban physiology of excretion," notes social historian Alain Corbin, "constitutes one of the privileged means of access to social mentalities" (1986). He was referring to sewage disposal, but the sentiment applies just as well to solid waste. That landfills are the disposal method of choice for much of the United States³ reflects a particular set of relationships between citizens, municipalities, environmentalists, material culture, moral and aesthetic sensibilities, and the science of solid waste management.

Landfills let us get rid of our debris but also keep it indefinitely. Contrary to popular belief, much of our buried trash does not decompose.⁴ When choosing between a landfill and an incinerator (or a waste-to-energy facility, as they're now called), a landfill is allegedly safer because incineration is thought to cause unacceptable air pollution. The off-gassings of methane and other volatile organic compounds at many landfills, however, are often greater threats to air quality. As landfills are usually sited far from crowded population centers, they allow the illusion that there is a distant, disconnected place to "throw" "away" rejectamenta. In the United States, with its vast open spaces, it seems impossible to run out of places in which to deposit refuse. In part because of this, source reduction—generating less trash in the first place—is not seriously explored.

Carefully designed and engineered landfills (as opposed to "spontaneous" dumps) became the prevalent means of refuse disposal in American cities when manufacture and consumption habits moved from home-based local handicrafts to mass-produced goods newly accessible to large numbers of people. This trend coincided with significant population shifts as people moved from the countryside into cities and as waves of immigrants arrived in urban centers. Because there were more things to be had (so to be discarded) and more people to have them (so to throw them out), urban garbage drew serious infrastructural attention from city governments almost for the first time. The Progressive Era of the late eighteenth and nineteenth centuries, inspired in part by concerns about sanitary conditions, focused on individual hygiene and public cleanliness as signs of a healthy citizenry and of civilized cities. Cleaning the streets was one of the movement's most urgent goals. It is no accident that many of today's municipal departments of sanitation were first established as branches of local boards of health.

Fresh Kills Landfill in New York City is an excellent example of these trends and assumptions. Historically significant and politically volatile, it has always been a commons, whether or not it is ever formally recognized as such. In this essay I will consider how a dump or landfill can serve as a commons, and explore the unique role Fresh Kills plays in New York's well-being.

First, to contextualize the challenge, it is helpful to illustrate how solid waste vexed even the ancients. After that I explore the parameters of commons generally, briefly review Fresh Kills' history, and finally investigate some of the social implications and cognitive difficulties of allowing a landfill the role of a commons. I argue that if we cannot appreciate a landfill as a commons, our understanding of our larger culture is incomplete. Though landfills can be considered abhorrent, they reflect an age-old human behavior and thus, perhaps, are not entirely despicable.

GARBAGE THROUGH TIME

Garbage, in the form of rejected and discarded material remains, has been part of human civilization since our first days as hominids and perhaps even before.⁵ The transformation of garbage into a large-scale problem, however, had to wait for us to move from hunting/gathering groups and agrarian

³ Landfilling, "one of the oldest and perhaps the simplest form of biotechnology," accounts for nearly 70 percent of municipal solid waste disposal in the United States. See Suflita et al., 1992.

⁴ Ibid.

⁵ Martin and Russell note that garbage generation is "a universal human activity Materials discarded are seen as refuse, things that, while they may have some residual value for reuse or recycling, are essentially a nuisance that needs to be removed from the places where people do things" and that thus can become useful artifacts for research (2000:57). Needham and Spence also point out that trash is "... rich in significance for many aspects of social organization" (1997:77).

communities into early urban sites. Although not uniquely urban, garbage presents particular challenges to city dwellers.

Rubbish in ancient Troy, for example, was simply dropped on the floors of homes or tossed in the streets. This was the custom, too, in some parts of Africa, where eventually street levels rose and new buildings were constructed atop the mounds of accumulated debris. In approximately 2500 B.C.E., the city of Mohenjo-Daro in the Indus River Valley had rubbish chutes, trash bins, a drainage system, and a scavenging service. Babylonians had cesspools, drains, and a sewage system. Evidence from China suggests that by about the second century B.C.E., some cities had "sanitation police" who removed animal carcasses from the streets. Israelites took a big step toward improving hygiene when Mosaic law directed Jews to remove their waste and bury it far from living quarters (Melosi 1981:3-20; Rathje 1989:1,2).

The ancient Mayans disposed of their organic wastes in open dumps on the edges of their settlements. The first municipal dumps known in the Western world were organized by the Athenians, who also enacted what may have been the world's first antilitter ordinance. Romans had more trouble coping with sanitation, and by the time the city's population reached its zenith of a million and a half inhabitants, there were unprecedented health and pollution problems. But at least the Romans had their baths and a version of a sewer. Europe forgot these niceties for nearly a millennium after Rome fell, despite Leonardo da Vinci's innovative proposals for indoor plumbing, flush toilets, and a below-ground sewage system.

Indeed, the filth of Europe in the Middle Ages and in the Renaissance is difficult to imagine. King Philip II of France ordered the streets of Paris paved in 1184 because he was sickened by the smells emanating from the garbage-soaked mud. It didn't help much. "This town is always dirty," wrote one visitor to the City of Light in the late 1500s, "and 'tis such a dirt, that by perpetual motion is beaten into such black unctuous oil that where it sticks no art can wash it off It also gives so strong a scent that it may be smelt many miles off if the wind be in one's face" (quoted in McLaughlin 1971:67).

In 1758, dumps were outlawed inside the borders of Paris, and by 1781, Montfaucon was the only one serving the city. It was already infamous; between the 13th and 17th centuries, it was the site of thousands of hangings. It was also where executed criminals or those killed by torture were strung up to rot; their remains were eventually tossed in with putrefying household trash and sewage. "Deep cultural associations of execrated criminals and society's excretions merged in Montfaucon," observed historian Donald Reid (1991:11).⁶

London was as rank as Paris. In 1347, "two men were prosecuted for piping ordure into a neighbour's cellar—it says a great deal about the general smell of London at the time that this economical device was not discovered until the cellar began to overflow" (Ibid.:27-8). The flow of the Thames was regularly impeded by the accumulation of trash and untreated sewage that bulged from the river's many locks and along the shoreline, slowing and sometimes completely stopping boat traffic.⁷

Sanitary conditions in Europe remained relatively awful until the Industrial Revolution, when they got worse. Besides transforming production, labor, trade, residence patterns, life expectancies, and family relations, among other variables, the era also intensified urbanization and thus the problem of garbage generation and accumulation. Industrialism "produced the most degraded urban environment the world had yet seen ..." (Mumford 1961:447). England suffered the most devastating transformation. In 1801, about a twelfth of the population lived in cities, but by 1901, 77 percent of the nation was urban. There were few adequate measures for dealing with the tremendous pressure of

⁶ Reid also notes that the practice of stringing up the bodies of dead criminals stopped with the Revolution, but a slaughterhouse built on the site maintained the association between waste and dead flesh.

⁷ See Halliday 1999 for a detailed description of the Great Stink of 1858, when the Thames became so fetid that it stopped the city of London.

such an increase; sanitary conditions went from bad to unlivable. In 1843, for instance, one neighborhood of Manchester had a single privy for every 212 people.

The situation in New York wasn't as awful but only because the city wasn't yet as big a metropolis as some in Europe. Street-side trash collecting was legislated in the 1670s, but it happened only sporadically. Scavengers sold what they could salvage, but much was also dumped along the city's shore. This proved a popular solution to the problem of too much trash and too little space. Even in the 1600s, real estate was a hot commodity in New York, and much of urban life centered on the downtown waterfront. Merchants were eager to build on crowded spaces, and dumping helped create more land onto which they could expand. In Manhattan below City Hall, 33 percent of the land is built on "street sweepings, ashes, garbage, ballast from ships, dirt and rubble from excavated building sites, and other forms of solid waste dumped along the shore" (Corey 1994:72). Some parts of lower Manhattan have been filled three blocks out from the original shoreline (Rothschild 1990:16).

By the turn of the twentieth century, trash disposal in New York was shaped by the separation of various kinds of debris, which the 1905 Annual Report of the city's Department of Street Cleaning (precursor to the Department of Sanitation) took pains to elaborate. "Garbage" specified kitchen or table waste, vegetables, meat, fish, bones, fat, and fruit. These putrescibles yielded greases and fertilizers through a boiling process called reduction. Reduction was a sometimes profitable but always malodorous business, and early NIMBY (Not in My Back Yard) protests in New York centered on reduction plant locations.⁸ "Ashes" included ashes, sawdust, floor sweepings, bottles, broken glass and broken crockery, tin cans, and oyster and clam shells from homes (but not from restaurants or fish dealers, who were responsible for discarding their own). These were most valuable for landfill projects and were often combined with street sweepings. Paper and rubbish, a single category, was made up of paper, pasteboard boxes, rags, mattresses, excelsior (wood shavings), straw, carpets, old furniture, old clothes, oil cloths, old shoes, leather and rubber scraps, tobacco stems, flower stems, and "house refuse generally." These were scavenged for salable items and then burned, "developing heat, power, and light," according to the DSC's optimistic commissioner, John McG. Woodbury; in fact, much was combined with ashes and used as fill.⁹

New fill opportunities were greeted enthusiastically. "The possibilities of this reclamation are almost boundless," crowed Woodbury. Of one site in particular, he noted, "The lowlands on Jamaica Bay afford an almost unlimited supply of dumping ground."¹⁰ When fills reached capacity, or when the city's ability to carry away the trash was overwhelmed, the debris was often dumped at sea. In fact, ocean dumping was one of New York's preferred means for ridding itself of trash, though much of the refuse, "being light ..., easily floated in onto the beaches along Long Island and New Jersey shores, where its presence in years past has caused great complaint."¹¹ It was not until the U.S. Supreme Court intervened that the practice was finally halted in 1934.

By then the city was roaring ahead with incineration and with landfilling. City planners saw incinerators as a practical waste disposal technique, while accelerated landfilling allowed for some of the most ambitious public works projects ever attempted.

Regardless of solid waste management choices in New York or in the ancient world, neither the trash of antiquity nor of contemporary cities was acknowledged as a common good; rather, it has always been seen as a chronic problem, even a crisis. Attempts at source reduction—that is, decreasing the amount of stuff that becomes trash—have never received large-scale, serious attention except temporarily during war time.

⁸ The longest-lived and most infamous was on the aptly named Barren Island in Jamaica Bay, Queens. See B. Miller 2000; K. Johnson 2000.

⁹ One of the first waste-to-energy incinerators in the United States was built under the Williamsburg Bridge in lower Manhattan. It opened in 1905 and had a daily carrying capacity of 1,050 cubic yards of "light refuse or rubbish," according to the Department of Street Cleaning's 1905 Annual Report (p. 82). It provided electricity for some homes in the neighborhood, and for lighting the Bridge.

¹⁰ New York City Department of Street Cleaning Annual Report, 1905; p. 74.

¹¹ *Ibid.*, p. 82.

It is helpful to recall, however, that the trash of New York, and of many other American cities, has created thousands of acres of shared space that would not otherwise exist. The contours of New York differ irrevocably from their configurations before Europeans arrived, both inland and along the shore. About 20 percent of contemporary Manhattan, Brooklyn, Queens, and the Bronx is landfill. Archaeological evidence suggests that even before Europeans, indigenous residents dumped refuse along water's edges; discerning an "original" shoreline for the city would be virtually impossible.

There is little public memory of the source of so much land. Few people realize that both of New York's airports are built on fill, as are the foundations of the Triborough, George Washington, Verrazzano, Whitestone, and Throgs Neck Bridges. Numerous New York parks (Great Kills in Staten Island, Orchard Beach in the Bronx, Battery Park in Manhattan) were wetlands or water before they were filled.

Fresh Kills will someday be one of those spaces. A Department of Sanitation Annual Report from the 1950s bragged that Fresh Kills was the greatest land reclamation project ever attempted. This unlikely claim is being made real with current work to transform the formerly pungent geography into the largest green space within the borders of New York City.

INVENTED COMMONS

Its status as a future park is not the only reason Fresh Kills qualifies as a commons. Social arrangements that bring a commons into existence, or that recognize and protect certain resources as commons, are in continual flux. The idea of a commons challenges notions of private property, prosperity, and who has rights to define and control communal well-being. In England, the commons were sources of grazing pasture, game, fish, and fuel wood for hundreds of years, until enclosure laws written during the eighteenth century forbade access (a process that was repeated throughout much of Europe). Resulting hardships among the peasantry included starvation, and inspired violent reactions, which in turn provoked Draconian responses from the state. The punishment in Britain for removing the boundary markers of newly enclosed commons was death (Rykwert 2002:24-5).

A cheerier model of a commons is the grazing pasture sometimes pictured at the heart of colonial New England towns. Careful husbandry meant that it was available in perpetuity, or at least until advancing modernities made livestock a cumbersome possession for townsmen. Public parks often replaced those older commons; now humans occupy space once dedicated to large ruminants. Grazing cows would be a rare sight in such places today, though the Sheep's Meadow in New York's Central Park hosted its namesake until 1934, when parks officials, fearing that the woolly mammals would end up on dinner plates made empty by the Great Depression, removed them.

More contemporary examples abound. The Clean Air and Clean Water Acts of the 1970s were explicit recognition that those basic elements constitute shared resources that must be safeguarded, transforming them from unmanaged (and thus exploitable) to managed (and thus at least potentially protected) commons.¹² Genetically altered food crops seem to many a threat to the safety of the food supply, endangering a resource that in practice is largely private but that in imagination is public and so is a kind of commons. The Georges Bank, once-plentiful fishing grounds off the northeast coast of the United States, was for centuries an unmanaged commons; today it suffers serious depletion after unbridled overuse. Biodiversity in some of the planet's last tropical rainforests inspires nations like Brazil to guard them from northern powers that would investigate. Such efforts impose a shelter on these wild commons but also place them at risk, since science that would strengthen the cause of preservation is rebuked with the same energy as attempts at exploitation.

¹² According to Garrett Hardin's famous explanation, an unmanaged commons will be used by its members for their individual benefit before any other consideration. This model of resource management dooms any commons, since unmitigated personal gain will always come at the expense of the larger good. See Hardin 1993 and 1998.

Next to these illustrations, a landfill seems a lowly and unlikely commons.¹³ But it serves, in the sense of a resource set aside by the community for its shared use, to enhance the greater good. Without a functioning landfill or some other way of ridding itself of debris, no metropolis can survive.

A landfill commons is humble in part because of the stuff that makes it. Garbage imposes technical, environmental, social, and cognitive challenges that unite and commemorate the culture that creates it. Household rubbish in particular underscores the problem of trash as intimate, perpetual, and despised. It is intimate because there are few activities that occupy us in any given 24-hour period, except perhaps sleep, that do not generate garbage. Thus, our refuse reflects our simplest, most mundane behaviors as well as our more celebrated moments. It is perpetual because, if we partake of contemporary life at what I call average necessary quotidian velocities, there are few ways to stop its creation.¹⁴ And trash is despised for many reasons, the simplest of which is its conglomerate power to disgust. A single moldy orange peel is not so gross, especially if it's my own moldy orange peel, but a bucket of rotting fruit from who knows what source can elicit strong negative reaction.¹⁵

Trash invites a willing ignorance that is nicely revealed in our vehemently vague language of discard. We don't "put" it away, which would imply that we save it for later use.¹⁶ Rather, we "throw" it away, and the "away" is comfortably undefined. It is initially the kitchen trash bin or the bathroom waste basket. It becomes the trashcan in the garage, in the basement, on the curb, in the back alley. When it is dumped into a truck, the "away" becomes more real, since the refuse is no longer part of a home, but it is also more invisible, since neither the trash nor the "away" are in sight, though obviously both exist somewhere.

The "away" is often a landfill. As burial grounds for our discards, landfills force commonality on our material traces, whether or not such commonality existed before they were discarded. They hold startlingly accurate records of the people who form them, and unlike the people, they endure. "If I were a sociologist anxious to study in detail the life of any community," wrote Wallace Stegner, "I would go very early to its refuse piles For whole civilizations we have sometimes no more of the poetry and little more of the history than this" (1959:78). "The artifacts that will fully represent our lives are safely stored within mega-time-capsules, which we call landfills," concurs archaeologist William Rathje. "It is these anonymous, random remains that will tell our story to the future" (1999:88).

Landfills unite objects. They also sometimes unite citizens. In municipalities without garbage collection, they bring together residents who must travel to their landfill (or, in days gone by, to their dump) to discard trash. They often provide formal or informal recycling centers, where rejected but still useful possessions are claimed by new owners. Some landfills, or dumps, provide entertainment. When I was a child growing up in a small town, we went to ours on summer evenings to sit in the car with the windows rolled up and the headlights focused on the pits of trash, watching bears forage for food. We usually met neighbors who had come for the same attraction. But even more significant connections

¹³ A dump may serve as a commons. The difference between a landfill and a dump, according to the Environmental Protection Agency, is the way in which they are constructed. A dump is established without any environmental controls, a polite way of saying that it can spring up nearly anywhere,—in an empty lot, down a backcountry holler, along a riverbank. One of the most infamous dumps in the world is Smoky Valley outside Manila. A community of up to 80,000 people scavenged a livelihood from it when it collapsed after heavy rains on July 10, 2000, killing more than a thousand.

A landfill is not so haphazardly constructed. According to the EPA Website, a landfill is a repository for "nonhazardous solid wastes spread in layers, compacted to the smallest practical volume, and covered by material applied at the end of each operating day."

¹⁴ It is possible to live without creating much trash, but such lifestyles are bracketed as "alternative" and thought to be impractical. They require at minimum a relationship between an individual and her notions of time that is different from what most Americans know or want.

¹⁵ It's never simple, of course; that bucket of rotting fruit might be destined for a compost, which could alleviate some of the nausea that it could provoke. For a thorough discussion of many varieties and implications of disgust see W. Miller 1997.

¹⁶ There can be a later use for trash, even landfilled trash. Landfill mining is an industry gaining strength in England and in some parts of the U.S. (see O'Brien 1999).

can occur. Nuptials were celebrated at the Bethel, Maine, transfer station—formerly known as the town dump—on September 1, 2003. The location made sense to the newlyweds because it was where Rockie Graham, a conscientious recycler, met her husband, Dave Hart, a new employee at the facility. Townsfolk contributed to their honeymoon fund with bottles and cans to be redeemed for nickels.¹⁷

FRESH KILLS: LANDFILL

Fresh Kills is a rich example of a landfill as commons, which its history—especially its recent and future history—suggests. In part because of its audacious scale, it is a commons not only for the city that created it but also for the larger civilization that the city represents.

Before it was a landfill, Fresh Kills was a series of inlet marshes, woods, and meadows nestled into the middle western edge of Staten Island, separated from New Jersey by a narrow strip of water called the Arthur Kill.¹⁸ Indigenous artifacts estimated to be nearly 10,000 years old were discovered there. To the north, Linoleumville (now a neighborhood called Travis) was founded around the country's first linoleum factory, built in 1882 by British inventor Frederick Walton. In its heyday, the factory employed more than 200 workers. By the early twentieth century, nearby hamlets included Kreischerville to the south (now Charleston), where locally mined clay was made into bricks and drainpipes.

Fresh Kills provided treasures for locals. Old women roamed the marshes harvesting herbs, wildflowers, grapes for jelly, and watercress. Italians came for mushrooms and mud shrimp. In the fall, truck farmers harvested salt hay with scythes, while Jewish elders and rabbis cut carefully chosen willow twigs for Succoth.¹⁹

Early in the 1900s, through a breathtaking piece of political legerdemain, the city established a reduction plant at Fresh Kills. Dead horses, other offal, and garbage (the putrescibles described earlier) were to be boiled down into grease, fertilizer, and glycerin. The contractor who built the plant promised that odors would not be a problem, but it was regularly filled past capacity. Garbage and carcasses rotted in uncovered barges for months at a time. The odors—the very ones that city officials had promised wouldn't exist—were nauseating. Public outcry was immediate and loud, but the plant was not closed until the mayor who approved it lost his bid for re-election.²⁰

Two decades later, in 1938, city planner and infamous autocrat Robert Moses wanted to build a bridge that would straddle the Arthur Kill and further his grand scheme to lace the New York region with highways. Fresh Kills' many bogs and swamps seemed the ideal place to fill for the bridge's foundations. As city parks commissioner and chairman of the Triborough Bridge Authority (among other titles), Moses already commanded the dumping of city trash to create the foundations for highways, bridges, and parks all over the city; Fresh Kills was merely one more place to fill in, to make "taxable."²¹

It took a while, and Staten Islanders did their best to thwart the plan,²² but dumping started on Fresh Kills in 1948; soon complaints were sounding from every neighborhood. Moses assured irate residents that he only needed three years to fill the land. In 1951, however, he urged the mayor to allow more time. "The Fresh Kills project cannot fail to affect constructively a wide area around it," he reported that year. "It is at once practical and idealistic."²³

¹⁷ Associated Press, July 2003 and September 2003.

¹⁸ "Kill" derives from the Dutch word for "creek" and place names that include it (like the Catskill Mountains) are traces of a long-gone colonial legacy.

¹⁹ For a more eloquent elaboration, see J. Mitchell 1993.

²⁰ A thorough description is found in B. Miller 2000:127–35.

²¹ See Rodgers 1939 for an admiring if naïve profile of Moses' influence on New York City, written while Moses was reaching the peak of his powers.

²² Staten Islanders sued the Departments of Health and Sanitation to try to stop Fresh Kills from becoming a landfill, to no avail. See Fenton 1947.

²³ Quoted in Severo 1989.

By 1954, Fresh Kills covered 669 acres. Five years later, the city proposed extending its life by 15 years. In 1965, when pressed about a closing date, officials demurred, claiming none could be set. By 1966, the landfill consumed 1584 acres. A planning report in 1968 proposed a ski resort once the landfill's slopes were finally capped, but this surprisingly creative notion did not count on the perpetual presence of methane gas, a heat-generating by-product of decomposing organic matter.

By the early 1970s, other landfills in the city were closing, and Fresh Kills received almost half the city's refuse. In 1980, the state's Department of Environmental Conservation charged the city with environmental violations because Fresh Kills had been built and expanded without linings, gas retrieval systems, or leachate recovery plans, among other problems. By then the landfill was so far from compliance with existing regulations, most legislated after it was opened, that it was technically illegal. The same charges against the city were made again in 1985, when Fresh Kills was receiving almost 22,000 tons of garbage every day—nearly all of New York's trash. Tipping rose to an all-time high of 29,000 tons a day by 1987. By then the landfill employed 650 full-time workers.²⁴

In 1990, for the third time, the state's DEC cited the city for violations at Fresh Kills but this time the charges included a tight schedule for bringing the landfill into compliance. In 1991, Edgemere landfill in Queens closed. Incinerators were already in decline as public protest against them grew, and the city's last three closed in the early 1990s.²⁵ Fresh Kills became the city's only option for disposing of household waste.

Staten Islanders had spent more than half a century protesting the landfill, to no avail. Always New York's outlier borough, Islanders resented Fresh Kills for its size and stench, but even more, they resented it as but the most visible sign of the larger city's contempt. The landfill topped a long list of complaints that fueled increasingly passionate talk of secession. When a referendum was allowed in the early 1990s, residents voted two-to-one to secede. Had the vote been only theirs, they would have won, but it was open to the entire city, and the other four boroughs refused to relinquish their suburban would-be secessionists.

In 1995, Staten Island officials sued. Fresh Kills, they argued, violated the city charter's "fair share" provision of the federal government's Clean Air Act. At the same time, the state legislature entertained bills mandating the landfill's closure by 2002. A few months later, the governor, the mayor, and the borough president announced that the landfill would close by the end of 2001, a goal signed into law in June of 1995. There was no alternative garbage management plan in place. The closing date was mostly arbitrary, but it let Mayor Rudolph Giuliani pay a debt. Staten Island, the least ethnically diverse and most conservative borough in New York, had awarded him huge margins of victory in both his mayoral bids. Without an overwhelming majority there, it is unlikely that he could have carried his first or second election.²⁶

Because the decision to close the landfill was political, despite the sound arguments of the Staten Island lawsuits, knowledgeable sources scoffed that it would not be shut down. There was no other place to put the trash and no coherent plan to find one. Despite predictions, however, and months ahead of schedule, the last tugboat pushing the last barge of steaming trash arrived at Fresh Kills on a rain-drenched Thursday in late March, 2001. A few politicians and reporters gave the barge a modest send-off from the its departure point at the North Shore Marine Transfer Station

²⁴The daily load at Fresh Kills was cut in half in 1988 when the city doubled tipping fees for private carters, forcing them to find cheaper disposal options.

²⁵Incineration was a popular waste disposal method in New York for decades, starting in the late 1890s. In 1930, the city had nineteen incinerators, including the three largest in the world. By the 1960s, "refuse incinerators were deeply rooted in New York City's waste disposal infrastructure. Thirty-six furnaces in eleven municipal incinerators and some 17,000 apartment house incinerators—arguably the largest refuse incineration infrastructure ever assembled in a city—were burning about 40 percent of NYC's refuse and emitting about 35 percent of the city's airborne particulate matter" (Walsh 2002:321).

²⁶In his 1997 bid for re-election, Giuliani won close to 90 percent of the vote in most of the borough.

in Flushing, Queens. Mayor Giuliani hailed it as it passed his home. A handful of photographers followed it down the East River. Fire boats blasted water cannons as it passed the Statue of Liberty. Five hours after it left Queens, Staten Island dignitaries met it at its destination, where the rain poured and the bunting dripped and after 53 years, the last building block of an extraordinary piece of architecture was loaded into payhaulers and sent up the hill.

Fresh Kills is one of the largest landwork structures ever built in the history of humankind and for years was the largest landfill in the United States.²⁷ It spans nearly 3,000 acres, about two and a half times the size of Central Park. Allotting two square feet of space per person, it could hold 33 million people. It comprises nine percent of the landmass of Staten Island, and until a methane retrieval system was initiated in 1998, generated six percent of the nation's and fully two percent of the world's methane. It is crisscrossed by fifteen miles of roads and bridges. It cannot be seen from its entirety on the ground, but only from the air; in fact, it is visible in space to the naked eye.²⁸ It holds approximately 108 million tons of trash and still has an estimated 80 million tons of remaining capacity.²⁹

The city's municipal garbage is now exported upstate, out of state, out of the country. For the first time in its history, New York has no place for its own trash. Most of the garbage travels by diesel-fueled truck, severely stressing the city's highways and streets and adding significant quantities of pollution to the air. The cost of exporting has pushed the DSNY's annual budget above the one billion dollar mark. Rudy Giuliani's successor, New York mayor Michael Bloomberg, announced a plan to containerize the city's trash at existing marine transfer stations, which are to be retrofitted to accommodate the necessary technology. The containers will be loaded onto barges and shipped to rail transfer stations in New Jersey and elsewhere, and then sent by train to landfills. Recycling will be significantly enhanced, with new facilities planned in several locations.

The ambitious plan was fiercely debated for several years before it was approved in 2006; it still has big gaps.³⁰ No one is completely sure how long it will take or how much it will cost to reconfigure the marine transfer stations, but money and schedule estimates have already ballooned well beyond their original ceilings—and no construction has begun. The rail transfer stations don't exist yet, nor are there enough long-term contracts with enough landfills.

One thing is certain: the garbage will keep coming. And regardless of pressures in the future that might push toward reopening Fresh Kills, at least one section of the landfill will never again receive trash.

FRESH KILLS: BURIAL GROUND

One of the many arresting features of Fresh Kills is its view of lower Manhattan. Sketched delicately against the horizon, the city's skyline seems a hazy Oz from the landfill's austere hills fourteen miles distant. Workers on Fresh Kills watched both planes hit the World Trade Center on September 11, 2001, and watched the buildings fall. They knew what was coming. Even before official word arrived, they started readying Sections 1 and 9, the largest and last face closed, for the new loads. There was no other space in the city that was big enough and—just as important—that could be sealed off and secured for the ensuing criminal investigation and retrieval operations.

²⁷ A newer landfill outside Los Angeles can claim more square acres, but not yet more trash.

²⁸ Confirmed by NASA; see Schoofs 2001.

²⁹ According to Ben Miller, measuring just Fresh Kills' remaining capacity makes it the sixth largest landfill in the country.

³⁰ One marine transfer station scheduled to be retrofit for containerization is located on Manhattan's Upper East Side. The neighborhood includes some of the wealthiest ZIP codes in the world, and residents vow that they will continue to fight the siting of the facility. Residents of other neighborhoods that have hosted one or more transfer stations for many years, however, are relieved that each borough must now bear responsibility for its own trash. The policy, called "borough-based self-sufficiency," was inspired in part because of Fresh Kills.

The first wreckage arrived by truck in the early morning hours of September 12, but the Department of Sanitation soon had out-of-commission barges back in action and opened several marine transfer stations within days. At the height of the operation, more than a thousand people representing nearly 25 different city, state, and federal agencies worked at The Hill, as it was called, twenty-four/seven. A ceremony marking the end of the sorting process took place on July 15, 2002. By early August, the last piles of bent I-beams and tangled rebar were heading to recyclers.

The idea of purposely adding human remains to countless tons of trash compounded stunned public disbelief and incomprehension in the days immediately after the attacks. Initial reports said that the debris would be sifted at Fresh Kills and then taken elsewhere for burial, and city officials were careful to make no commitment about where the wreckage might finally end up. But it was gradually clear that it would be too costly to move the million-plus tons a second time, and Fresh Kills became the final resting place.

One of the workers sifting the rubble suggested that a memorial to the attack victims become part of Fresh Kills' future. He said he was glad that the remains of the buildings were staying inside the borders of the city.³¹ Outrage was immediate. "I really do believe that for the sake of their souls and their families, to have the 'Dump' be a Memorial is a disgrace," wrote one woman on the local newspaper e-mail forum that evening. "... Please don't even consider such an idea of this sort; the dump is the 'DUMP.'"

"I agree with you," replied another. "Who in the world came up with that idea? A garbage dump as a memorial to the HEROS!!! [sic] My God, what were you thinking?"³²

Mierle Laderman Ukeles had a similar but more nuanced reaction. Ukeles has been the artist-in-residence for New York's Department of Sanitation since 1977. A voluble, passionate woman in her 60s, Ukeles' work first brought her into contact with every sanitation worker on the force, and has more recently focused on Fresh Kills.³³ When she learned that the Trade Center debris was bound for the landfill, she was horrified. Many killed in the attacks had left behind physical traces and remains; thousands of these were reclaimed and given over to loved ones. But she was thinking of those who had been turned to what a Rosh Hoshanna prayer calls "flying dust." Their forced anonymity atop anonymous heaps of trash was too much. "That would collapse a taboo in our whole culture," she wrote.

To call something "garbage" means stripping the materials of their inherent characteristics. So that even though differences are obvious, hard becomes the same as soft, wet as dry, heavy as light, moldy old sour cream as a shoe, wet leaves as old barbells—they become the same things. The entire culture colludes in this un-naming. Then we can call it all "garbage"—of no value whatsoever.

Because of this process of un-naming, she argued, the idea of a memorial at Fresh Kills required a very particular sensitivity. "This must become a place that returns identity to, not strips identity from, each perished person," she concluded. "This part of the overall Fresh Kills site must become a double place: the unnamed healed and the named re-named. Otherwise the doubling being done here tumbles necessity into obscenity."³⁴

Another person intimate with Fresh Kills had a different reaction. "One can view with horror the decision to place what I consider sacred material on top of something profane. I do not," wrote Nick Dmytryshyn, for more than thirteen years engineer for the Staten Island borough president's office and thus a long-time student of the landfill. He continued,

³¹ Staten Island Advance, 19 September 2001; <http://www.silive.com/forums/>.

³² *Ibid.*

³³ Ukeles is Fresh Kills' Percent-for-Art artist, sponsored by New York City's Departments of Cultural Affairs and Sanitation. In that capacity she is working in collaboration with James Connor's Field Operations, the design team charged with transforming Fresh Kills into its next iteration.

³⁴ Ukeles 2002.

This section of landfill is scheduled, as per the law, for final closure. In simple terms, closure involves first placing down *clean* soil, followed next by an impermeable barrier, to be then all covered with another thick layer of *clean* soil. Thus, what was enacted to protect the environment is now very relevant in protecting and respecting the final resting place of so many of our dead. Fresh Kills has now become a part of the landscapes of every American (his emphasis).³⁵

FRESH KILLS: A NEW COMMONS

That Ukeles and Dmytryszn hold such divergent perspectives points to the volatile politics of memory that already marked Fresh Kills but that now promises to be even more controversial. Fresh Kills serves as an immense, inadvertent museum, with countless objects preserved until the future possibility that they are excavated, scrutinized, maybe even catalogued and displayed. It is a monument to what sociologist Wayne Brekhus calls the "unmarked" material relations of everyday life.³⁶ But now it also serves as a cemetery. It became both museum and cemetery by default. We had nowhere else to put our trash, and never worked much to diminish its quantity, so in our need for the "away" of throw-away society, we invented Fresh Kills. We had nowhere else to put the wreckage from the World Trade Center, so out of necessity for space and security, we transformed Fresh Kills—a name too horrific to say in the days immediately following the attacks—into The Hill (even as the Trade Center site was called Ground Zero and later, The Pit).

Before the attacks, Fresh Kills already memorialized many things. From its start until its closure, it represented the prevalent solid waste disposal technologies of the day. Now it will benefit from the best ecological science available as work is done to establish native plant species, insects, bird life, and mammals in its vast acreage.³⁷ It was located in a corner of New York that never received much serious respect or attention from the larger city, so complaints from locals, no matter how clamorous, could mostly be ignored. As it grew, its existence allowed the citizens of that larger city to continue living at break-neck speed, generating nearly five pounds of trash per person per day, without having to pull back or change consumption habits or consider that the "away" was always a real place.³⁸

It is made of four huge heaps of objects we classed as untouchable, consigning them to uniformed workers who took them "away." Now it is also home to "flying dust" that was human beings. We reject the former, masses of things that we decided to separate from ourselves. We passionately embrace the latter, traces of victims who could have been any of us, killed randomly by a rage most of us never knew was so intense. The biography of Fresh Kills always pointed to lives lived fully, richly, even to excess, and now that biography includes some of the very beings whose cast-offs already resided in the landfill's quiet hills.

Anthropologist Mary Douglas reminds us that the sacred and the profane are both segregated from the larger society; both are marked by special places and require particular behaviors.³⁹ Landfills are designated locations for things we no longer want and that can therefore qualify as profane, especially when they are mixed together indiscriminately—as Mierle Ukeles notes. Often a landfill can be forgotten once it is covered over and turned into something else—a golf course, say, or a park. But landfills

³⁵ Dmytryszn 2001/2002.

³⁶ See Brekhus 1998. "Just as we visually highlight some physical contours and ignore others," he writes, "we mentally foreground certain contours of our social landscape while disattending others." Fresh Kills and other landfills hold the physical remains of objects once socially engaged and now purposefully "unmarked," or as Ukeles notes, unnamed.

³⁷ Steven Handel, an ecologist at Rutgers University, has been working on Fresh Kills since 1993 to determine which species might thrive on the closed landfill without compromising its underlying infrastructure. He has had good success with hackberry, crab apple, and mulberry trees, as well as with rose, beach plum, and other shrubs. See Carlton 2002; see also Young 2001.

³⁸ One of the earliest sanitary landfills in the country was established in Fresno, California, in the 1930s. It was closed in 1987 and recently proposed as a National Historic Landmark, arousing great derision. For the proposal, see Melosi 2002. For the disdain, see Dowdell and Thompson 2001, J. Martin 2002.

³⁹ Douglas 1970.

like Fresh Kills are too big to ignore, and so they pose a continual cognitive dissonance. They betray the lie of the "away." They confront us with part of the real physical cost of the way we organize our material lives. We dislike landfills because, among other unpleasantnesses, they stink. But we dislike them, too, because they make evident a cost of living that we would prefer to disregard.

Whether or not we acknowledge some of the more difficult lessons of a landfill, it is a geography with much to teach. Techno-artist and activist Natalie Jeremijenko has created robotic feral dogs fitted with chemical sensors designed to roam a landscape and sniff out volatile organic compounds and similar toxins.⁴⁰ "What if you could modify an ordinary robotic dog by adding an inexpensive, off-the-shelf gas sensor," she writes. "What if you could release packs of these feral robotic dogs at former Superfund sites whenever a school, housing development, market opens for business on or near the site?" Successful releases have already happened at two sites in Florida, where the dogs detected volatile organics, and along the Bronx River in New York City, where they found volatile organics as well as polycyclic aromatic hydrocarbons. Jeremijenko proposes releasing her dogs on Fresh Kills. Were the city to explore her idea, it could generate a cheap and accurate profile of just what stage of quiescence the landfill is in, and find trouble spots fast.

Such information could prove invaluable to the designers and planners at Field Operations, the New York-based team of landscape architects, ecologists, engineers, and artists chosen to take Fresh Kills into its next life. Awarded the project through an international competition that drew entries from around the world, Field Operations will work with the city, and particularly with Staten Islanders, on a parks project the size of which New York has not seen in more than a hundred years. The first phase focuses on community outreach and on technical training for the design team. Public use of some parts of the terrain is expected by the end of the decade; other elements will not be finished for nearly 40 years. The ultimate goal, in part, is to restore a corner of New York's suburban sprawl to what the Field Operations plan calls "nature sprawl," connecting Fresh Kills to a green belt that already graces other parts of the Island.⁴¹

The long-term design includes a memorial to the victims of the World Trade Center attacks, slated for Sections 1 and 9, where the categories "profane" and "sacred" are now and forever combined. Exactly that contradiction poses an insurmountable problem for some family members whose loved ones literally vanished without a trace when the Twin Towers collapsed. When they realized, near the end of the recovery process, that the material brought from Ground Zero to The Hill would not be taken to a different final resting place but would be left at Fresh Kills, they formed a group called WTC Families for a Proper Burial. They do not accept that the remains, however tiny—even microscopic—of their husbands and daughters and siblings and sons are to be left forever in a location that was one of the most execrable places in the world. It was a dump, they feel, and it will be a dump no matter how many feet of clean fill or what kind of shrub species cover the mounds, and it is not now nor will it ever be a fitting resting place for any human being.

The group sued to have the World Trade Center material unearthed and returned to Ground Zero. The court case has lingered for a few years now; as of this writing, a judge has ordered the Department of Sanitation and the Families for a Proper Burial to work out a compromise. An offer by the DSNY to move dozens of tons of earth from Sections 1 and 9 to a part of Fresh Kills that never held garbage was not accepted. In the mean time, while the lawsuit is unsettled, work on "Fresh Kills, the Park" is on pause.

The landfill before September 11, 2001, would seem to be nothing more than a massive profanity, and surely it is a dissonance of unfathomable pain to imagine one's son or wife or sister left there. But I believe that Fresh Kills was never a profanity, any more than the defunct landfills throughout New York or in other cities can be considered profanities. Perhaps our age-old tendency to create a category of object that we must reject is a profane act, but it has been part of our behavior since before we were *Homo sapiens*. Certainly we have often invented messy, dangerous means of disposal and have

⁴⁰ See Glassman 2003; also see <http://xdesign.eng.yale.edu/feralrobots> for a thorough description.

⁴¹ <http://www.nyc.gov/html/dcp/pdf/fkl/fien1.pdf>.

imposed these unfairly on populations whose protests are ignored—Fresh Kills was one example. But we have needed and used landfills for too long to say that they are mere blights. We have even used them creatively to build our urban centers and to extend the reach of our municipalities.

No one can heal land that has been claimed for a landfill; Fresh Kills will never again be the salt marsh that it was before 1948. No one can heal a city, any city, wounded like New York was on September 11th, 2001, nor can families who lost loved ones heal to the wholeness they knew before the violence that ripped them asunder.

We can, however, acknowledge what landfills allow us and see them for the futures they help create, not just for the pasts in which they were difficult spaces. When they are closed, we have the chance to bring our most thoughtful efforts to their future, as the Field Operations team will demonstrate, by not forgetting what they are—what shapes the hills where children can gambol, runners can sweat, picnickers can ward off ants, aching citizens can mourn—and to make them a welcomed commons, not just a necessary one.

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