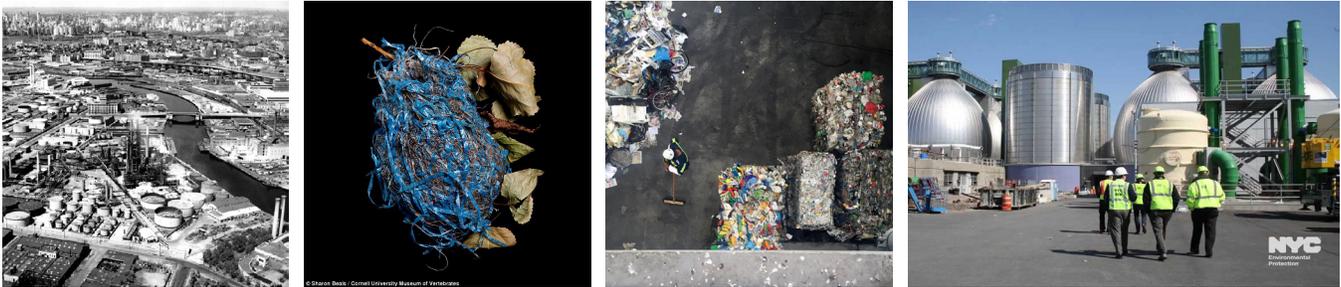


In Excess: By-productivity, Objectsystems and Infrastructural Frontiers for Newtown Creek



Introduction

The waste and water infrastructures of New York City are its shadow heroines and background music—overburdened, outdated, and continuously processing, transferring, and accumulating the city’s and our own outputs. Heaps of unwanted trash bags ready to be trucked out of the city every day and leaky, overflowing sewage pipes offer a counter narrative to modernist progress. These infrastructures mediate repressed and abject materials and fluids, and are not so much smooth and fast technological machines, as they are forgotten systems inundated by excess. It is in this excess that we might explore a different kind of nature and definition of environment, a Third Nature¹ (borrowing a term from anthropologist Anna Tsing) that accepts our environment as compromised as a starting point, and admits coexistence with contamination and waste as a given to open up hopeful new design possibilities for our strange time.

New York City is a hydropolis, surrounded, governed, and shaped by its waterways. Water both binds and divides the city, a collection of islands that historically prospered due to its critical aqueous position for international industry, transport, immigration, and trade. But these days, water is a slippery thing, quite

1. Anna Tsing, *The Mushroom at the End of the World* (Princeton: Princeton University Press, 2015), viii.

literally difficult to grasp, at once charismatic and hostile. New York presents a contradictory attitude towards water and its public perception in how water contributes to our urban experience. On one hand, New York City is developing an engaged, resilient edge of parks, recreational activities, and greater public accessibility to the water for leisure and enjoyment. On the other hand, with mounting anxieties due to global warming, rising water levels and the realities of the impacts from Hurricane Sandy, the city's response has also been one of fortification with barriers, walls, and big Us. This response suggests that water, and nature by extension, should be feared, opposed and controlled.

The legacy of infrastructure in New York City, from the controversial figure of Robert Moses to today's increasing privatization and the threat of a new federal infrastructure policy that could smother public works, has been a top-down technocratic affair. Even the well-known unbuilt infrastructures of the city which were once considered to be idealistic, including Buckminster Fuller and Shoji Sadao's "Dome Over Manhattan" (1960) and Paul Rudolph's "Lower Manhattan Expressway" (1967), could be grouped into a similar category. In recent years, it has been the "shovel-ready" projects that favor metrics, strict budgets and efficiency which have taken priority over qualitative, equitable and visionary proposals. The studio takes the latter concerns as a priority.

From this position, we will rethink value propositions for infrastructure and develop new approaches to waste and water infrastructures in the New York City waterways that are optimistic, exuberant and radical. Designing for infrastructure with other dimensions and capacities, as anthropologist Brian Larkin writes, can be both aesthetic and atmospheric.² For example, consider the horizon line that is produced by a materials transfer installation, the shiny marbled oily byproduct on the surface of the water or the vapor and steam of a wastewater treatment system.

New models are necessary for designing infrastructure at a time of new normals when global warming is no longer a looming threat but amongst us and the need for collective civic design is critical. While the design of infrastructure has been limited because of a technocratic approach, in fact infrastructures have alternative capacities precisely because they are not necessarily buildings. Rather than relying on a modernist attitude of problem-solving, functional efficiency, and sterile designs, can we produce frisky infrastructures that propagate and spatially risky proposals that have new energetic capacities for the city?

Approach

The following three points will act as guiding concepts and principles for the design approach of the studio: By-productivity, Objectsystems and Infrastructural Frontiers.

2. Brian Larkin, "The Politics and Poetics of Infrastructure," *Annual Review of Anthropology* 42 (2013): 329.



By-productivity

We will pursue designs that are *by-productive*, which harness and exploit existing and potential waste and water streams, open loops, energy recovery, and ecological change caused by human impact. If a by-product, according to the Oxford English Dictionary, is an incidental or secondary product made in the manufacture or synthesis of something else, we will transform this unintended output into a new productive design resource. We will accept waste and water systems as part of a larger urban ecology in the city—one that describes the city’s metabolism through cycles of consumption and discard, inputs and outputs, allowing for otherwise unavailable abundance to emerge and locating productive couplings and overlaps to inform our designs. In this, a new kind of value proposition concerning inventive resource management, new material cycles, and an expanded definition of environment will advance and suffuse our work.

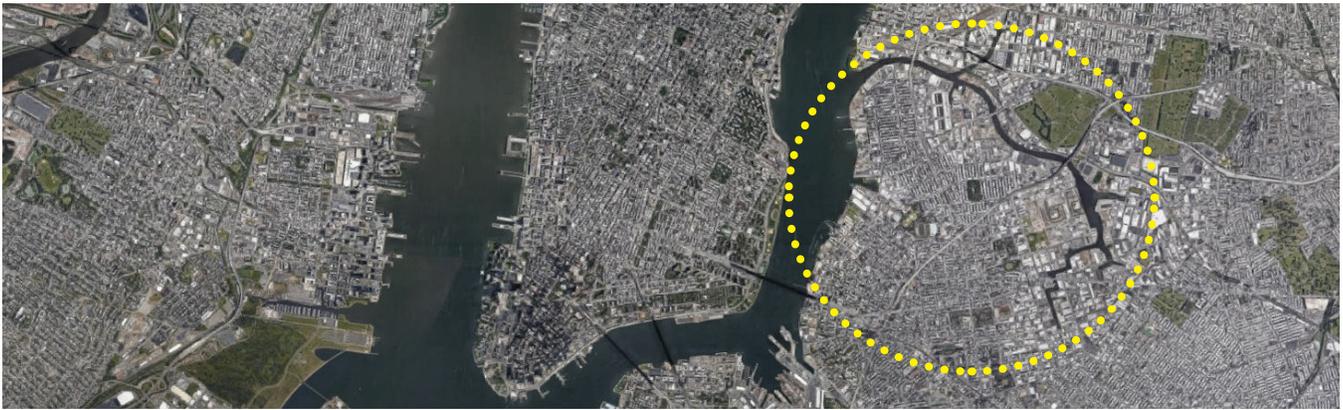
Objectsystems

Infrastructure is not a thing. Unlike a building, infrastructure operates at multiple scales of space, force and time, and we will develop experimental multiscalar approaches to our design proposals. Adopting historian Paul Edwards’ argument that infrastructures, “link macro, meso, and micro scales of time, space and social organization,”³ we will consider our designs at each scale to develop a proposal that can be read as a multiscalar assembly with material and aesthetic implications. We will borrow from post-minimalist artist Robert Smithson’s idea of an entropic geological time to consider planetary scope and the material histories and futures of our designs.

But scale is not synonymous with size. Indeed, scale is relative but size is absolute. You cannot “scale up” a mouse to the size of a cat because its internal organs would no longer perform, in the same way as you cannot necessarily “scale up” or “zoom into” a building to design infrastructure. How do we apply our architectural training, one of precise engagement with dimensions and size, towards the design of infrastructures? We will explore and develop the concept of *objectsystems*. Objectsystems, on the one hand,

3. Paul N. Edwards, “Infrastructure and Modernity: Force, Time, and Social Organization in the History of Sociotechnical Systems,” in *Modernity and Technology*, ed. Thomas J. Misa, Philip Brey, and Andrew Feenberg (Cambridge, MA: The MIT Press, 2003), 186.

Images (L-R): Smout Allen, L.A.T.B.D., 2016; Dunne & Raby, Foragers, 2009; Alexander Florensky, Modest Architecture (Meteorological Information Kiosk; amid.cero9, Magic Mountain, 2009; Robert Smithson, Non-Site (an indoor earthwork), 1967; Diderot, Anemometer Machines, 1778.



can be read and designed as objects much like an installation or a building, but in fact they are hybrid systems that are at once architecture, landscape, and infrastructure and carry with them the potential to be perceived as fragments at multiple scales.

Infrastructural Frontiers

We will design new futures and alternatives for urban infrastructures and waste and water systems with counterintuitive and hopeful possibilities, which build their own design logics and narratives. Instead of treating nature as stable and pristine, we will shift our thinking to consider the intertwined dependence between humans and nature to open up hopeful possibilities that respond to dynamic states of change in uncertain times.

A crucial frontier for infrastructure is in its capacity to provide a new model for education and to raise public awareness and environmental consciousness within the city of its shared resources and services. How might design be transformative to produce models for civic engagement towards a greater public good? How might we use our tools for designing form, organization, program, and behavior towards a new public work?

What Will We Do?

The studio will use Newtown Creek and its bordering edges as a site to test its hypotheses and design explorations. The Creek, which runs into the East River, is 3-1/2 miles long and bridges the boroughs of Queens and Brooklyn. While once a fertile and scenographic site, today Newtown Creek presents an intense yet prototypical urban site of ecological transformation caused by human impact. Due to heavy industrial activity with such materials as asphalt, oil, copper and manure, today it is described by some as “the most polluted waterway in America,” and was designated as a Superfund site in 2010. Brooklyn Community Board 1, which borders Newtown Creek to the south is one of four districts in New York City that handle 70% of the city’s total waste, raising issues of maintenance, spatial justice and equity.⁴

4. “Transcript of the Minutes of the Committee on Sanitation and Solid Waste Management” (City Council, New York, NY, February 13, 2015), 6.

Newtown Creek's Third Nature and its material archaeology will be studied and extracted to consider new opportunities and futures for the site. We will use Newtown Creek as a collective site to produce infrastructural species that interact, negotiate, and depend upon one another.

Students will be required to articulate a rigorous argument in relationship to the studio brief that tightly engages narrative and representational techniques. We will look to climate fiction and speculative design to pursue progressive, future-oriented designs that work with the here and now. Spatial, formal, and representational possibilities will be explored from the start of the semester. Students will expand their repertoire of representational tools to produce complex, multiscale designs.

The semester will progress through three cumulative phases that will inform the development of the final project. Studio work will be supplemented by in-class presentations, lectures, workshops, meetings with the Newtown Creek Alliance and Riverkeeper, and field trips to local waterway infrastructures such as the Newtown Creek Wastewater Treatment Facility, North River Wastewater Treatment Plant and the SIMS Material Recovery Facility. Detailed assignments and deliverables will be distributed at the beginning of each phase.

Phase 01 (2 weeks)

Groundwork

We will establish a common conceptual framework and shared vocabulary around studio themes dealing with infrastructure, public works and Third Nature through seminars and in-class presentations. A foundational understanding of the site will be established with a collective site analysis through inventive drawing and modeling techniques that will be both analytic and atmospheric.

Phase 02A (2 weeks)

Instrument

Building on Phase 01, students will develop an inhabitable instrument that responds to initial investigations and observations extracted at the site and processes an unexpected waste or water system to see, sense, collect, materialize and form the space around it anew. We will study precedents derived from art, architecture, scientific technology, natural science, and environmental management to guide this phase.

Phase 02B (2 Weeks)

Milieu

Alongside the design of the instrument, students will also co-construct its milieu. We will consider materiality and potentials of its ecology and ground definitions. The design of the instrument and its milieu as an objectsystem will be explored at the micro, meso, and macro scales.

Phase 03 (8 weeks)

Synthesis

Extending the work from Phase 01 and 02, students will choose a site at Newtown Creek and categorically determine a scale and scope to introduce specificity and complexity into the final design project. There is no pre-determined project size, thus an argument must be developed for the development of the project scale as an infrastructure. Students will expand their initial designs into infrastructural installations dealing with waste and water systems and inflect their projects with an educational dimension.

As a studio, we will negotiate across Newtown Creek as a site and across the studio's design projects to produce a collective and interdependent proposal for the future of Newtown Creek.

Key Dates

Mid-Review: March 1

Spring Break: March 12 - 16

3/4 Review: March 26

Pre-Final Review: April 9

Final Review: April 25

A detailed schedule will be handed out at the beginning of each assignment.

Studio Format

The studio will meet Mondays and Thursdays from 1:30-6:30pm. On Wednesdays there will be lectures across the Advanced IV studios from 3:00-5:00pm. Students must be present during all studio sessions, pin-ups and reviews. Students will work collectively and in groups throughout the semester and group work will be encouraged for the final project.

Students are expected to foster a studio culture of mature collaboration and respectful critical discourse. Within the studio, students should strive to engage and learn from one another. At the end of the semester, students are required to digitally submit their final materials and model photographs from both the mid-review and final review to the studio critic.

Studio References

Dana Cuff, "Architecture as Public Work," in *Infrastructure as Architecture: Designing Composite Networks*, ed. Katrina Stoll and Scott Lloyd (Berlin: Jovis Verlag GmbH, 2010), 18-25.

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Timothy Morton, "And You May Find Yourself in an Age of Mass Extinction," in *Aqueous Earth*, ed. Kari Conte (New York: International Studio and Curatorial Program, 2017), 33-45.

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Smout Allen, *Augmented Landscapes: Pamphlet Architecture* 28 (New York: Princeton Architectural Press, 2007), selections.