

## DETROIT / SOUTH BRONX FUTURE CITY STUDIO



Whitney Dangerfield, Meghan Louttit and Jeffrey Henson Scales. "Detroit by Air," *New York Times*, December 5, 2014.

### OVERVIEW

**Infrastructure** is the **lifeblood** of the future city. Demands on urban infrastructure are changing. The modern city (19th century) saw an ideal of infrastructure as **top-down superimposed** system. The future city (21st century) infrastructural ideals morph to a **distributed** system.

Infrastructures for **Water, waste, energy** are interdependent. We shall start with **water**. We shall compare two urban **watersheds**: in **Detroit** and in the **South Bronx**. Both are being reinvented to return to **hybrid systems** between former **natural states** (pre-19th century) and a **future state** (post 20th century).

In Detroit we will focus on reinvention of the **Bloody Run Creek** watershed; in the Bronx we will focus on the **Bronx River** watershed. Bloody Run Creek is a tributary of the Detroit River; the Bronx River is a tributary of the East River.

While the **ecologies** of both share many characteristics, their **urban contexts** are quite different. This contrast is important to our understanding of the **developmental mechanisms** connected to future infrastructural options in both cities and cities elsewhere in the world.

In both Detroit and the Bronx, fundamental changes in the next generation of urban infrastructure in both cities will contribute to the evolution of the **form and culture of housing**; as well as **livelihoods and urban economies**.

### DIFFERENT CITIES SIMILAR QUESTIONS

Both studio sites are similar in area: Bloody Run overall watershed is 5.6 square miles; the southern segment of the Bronx River is also 5.6 square miles. Population of the Bronx River segment is 287,000 inhabitants; the Bloody Run site has approximately 98,000.

Both sites share an abundance of water as a primary natural resource; and as potential genesis for future development initiatives. While Detroit and the Bronx, are seemingly disparate in their potentials and trajectories, there are many aspects of their current infrastructure needs and potentials that can benefit from shared knowledge. In this spirit we propose to site the studio in both cities. This sharing of site constraints can be the genesis for urban contextual configurations in each.

Our emphasis will be on watershed considerations; with particular attention paid to storm and wastewater management. Over time both watersheds have been radically changed by urbanization. Both evolved into sewage channels, with the Bloody Run covered over in most areas. The Bronx River remains open. Both are in the process of reclamation. Both are seen as important new generators of urban redevelopment. But the densities for each context will differ.

### **WATER FUTURES**

In cities everywhere, water is interconnected with waste and energy. In older cities, total reliance on large and singular 19th century systems for water, waste and energy management can not engage the performance criteria of the future. For water, in both New York City and Detroit, storm water management is a critical issue, given that obsolete large-scale one-pipe wastewater systems regularly dump sewage into the surrounding rivers. Because retrofitting to an entirely new two-pipe system is prohibitively expensive, alternative small-scale and distributed systems are essential; and such strategies are integral to robust social infrastructure at the neighborhood and building cluster scale. In similar ways, generation and storage of **energy**; and processing and reuse of **solid waste** engage this **social and geo-spatial component**.

### **DESIGN AND PROGRAMMATIC INTENTIONS**

Starting from this question, we will experiment with **design and programmatic intentions** across scales, culminating in **programmatic innovation and architectural design** residing in an overall infrastructure network concept and a **detailed formal node** that is place specific. We will explore a range of distributed infrastructure ideas fundamentally related to developing urban infrastructure as social fabric first and foremost. "Social" includes urban **life and livelihoods**. While the Bronx site will be important in understanding the scope of the our issues, **Detroit** will become the principal site for development of the **detail design projects**.

### **URBAN ECOLOGY STUDIO**

The Columbia University Urban Ecology Studio is an innovative teaching forum on questions pertaining to the ecological impacts related to urban development. It comprises a team of graduate architecture and engineering students that is tasked to work with place-based community stakeholders as clients in addressing their pressing developmental issues. Students and faculty represent both the School of Engineering and Applied Science and the Graduate School of Architecture, Planning and Preservation. The Urban Design Lab (UDL) <http://urbandesignlab.columbia.edu/> at Columbia's Earth Institute plays an important role in expediting this initiative.

### **COLLABORATIONS**

For the Bronx, the studio will be correlated with an on-going NSF-funded Coastal SEES project that is examining natural and social science aspects of remediation of storm water in the Bronx River watershed. The community development component of this work will be made in collaboration with the Bronx River Alliance (BRA) <http://www.bronxriver.org/>. The studio will also be correlated with a NSF SRN project involving distributed infrastructure in both New York City and Detroit; with the Detroit component based at the Center for Sustainable Systems at the University of Michigan. <http://css.snre.umich.edu/>

Study of the Bloody Run Creek site in Detroit will be correlated with the proposal of the Detroit Collaborative Design Center (DCDC) <http://www.dcdc-udm.org/> at the University of Detroit Mercy. The Center envisions a comprehensive watershed development that addresses its ecological remediation as well as its role as new economic generator. We will work with the DCDC in exploring further their 2011 proposal; and with comparative work involving the progress of the Bronx River remediation. It is anticipated that the Detroit Future City organization

<http://detroitfuturecity.com/> and its strategic plan of 2012 will also be important in informing the studio direction and priorities.

In summary, the studio would work on the Bloody Run Creek and Bronx River watersheds; with the Detroit Collaborative Design Center and the Bronx River Alliance as principal clients toward furthering the planning and design strategies for the ecological restoration of both tributaries; and with consideration of both spatial and economic components of each context

### **LOGISTICS**

First Weeks:

Sept 9-18 Week 1 + 2: Introduction to the literature of "distributed infrastructure" and general Bronx and Detroit.

Sept 21-30 Week 3-4: Site visits to Bronx and Detroit. Beginning design program consideration.

**NOTE: Site visit to Detroit** will be a requirement; date and logistics to be determined in the first week of class.