An overlay of the former coastline reveals that Hoboken was once an island in the Hudson River.
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Creative Uncertainty

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Monroe Center for the Arts, Hoboken, NJ

Monroe Center for the Arts is a mixed-use, market-driven real estate development project in Hoboken, New Jersey. It offers an urban design model for neighborhood change that actively cultivates ecosystem stewards through design with water and a measure of success called creative uncertainty. Water, which is not currently a positive presence in the neighborhood, is repositioned as an attractor. The meaning of this new water is intentionally immediate, multiple, ephemeral, and ambiguous.

Creative uncertainty as introduced by Felix Guattari is a mode of activism that aims to engage "How interrelations between living systems, social structures, and psychical processes are conceived" (Gensko 2003). This is not a goal toward fixity and control but rather toward the production of difference and heterogeneity. What is foregrounded at Monroe Center for the Arts therefore is not conservation of environment, but rather conservation of the view that environment is a living and changing system continually influenced by living and changing ideas. This is our commons and we wish for it to be continuously produced and recreated.

A 5-acre development, Monroe Center for the Arts currently hosts 70 artists and 50 businesses. Starting in 2008 the population density and level of use will increase by the addition of three new buildings, a public space with two fountains, and roof gardens. To communicate the design intent of Monroe Center, this text introduces the project as fully built, although it is still currently in construction.

The structure of this essay mimics the pathway of rainwater through the project; by describing water-human networkings in everyday scenarios starting from far above the ground, to on-the-ground surface, and finally into the ground's subsurface. In addition the legal, financial, and environmental mechanisms of this project are shared to make legible the way in which this hydrology design process was started by the developers 14 years ago, has been taken up by the landscape architect, and will be handed over to the new residents. The intent of this essay is to communicate our belief that new natural resources can be produced by humans. The traditional understanding of a natural resource is therefore being expanded to include human and societal mechanisms for caretaking.

Design: Tilling

Water in the west edge of Hoboken is the substance that lingers in the street after a storm. Close observation reveals that this water is

sometimes a rainwater pond and other times a brackish pool. This is because the composition of the water depends on the confluence of a local rain event and the Atlantic Ocean-Hudson River high tide. In these coincidental events, water forms a discontinuous surface, temporarily marking the ancient wetland river edge. It is an enigmatic urban actor and it is the inspiration for a flexible and adaptive public space network at Monroe Center for the Arts.

The existing and new neighborhood artists, residents, and users act in multiple ways to generate and share knowledge about their watershed. In a crisis scenario, excess water is considered a liability, such as a harmful flood. Conversely, in the context of this new development, excess water creates new opportunities for recreation, relaxation and exchange. People here appropriate their various public surfaces in innovative and playful ways.

Starting from the highest elevation, the new residents in the condominium towers are the high-rise caretakers of the watershed.

Looking toward the Palisades, the Hudson River estuary high tide is periodically visible in the Monroe Center parking lot.
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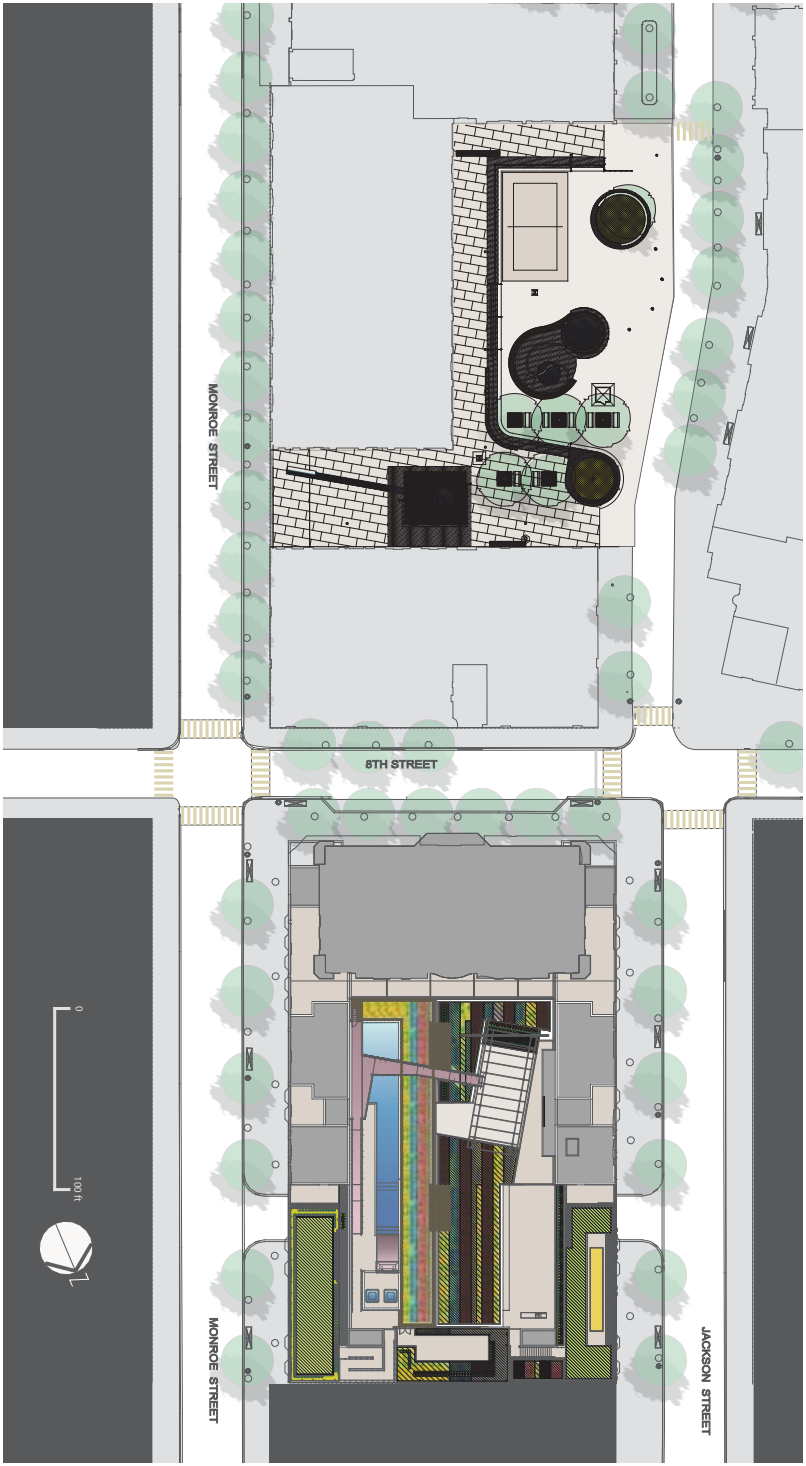

The Monroe Center site plan shows the transformation of a former factory to a mixed-use, vegetated and inhabited development. The productive nature of the industrial land is updated with design, small businesses, and arts practices.
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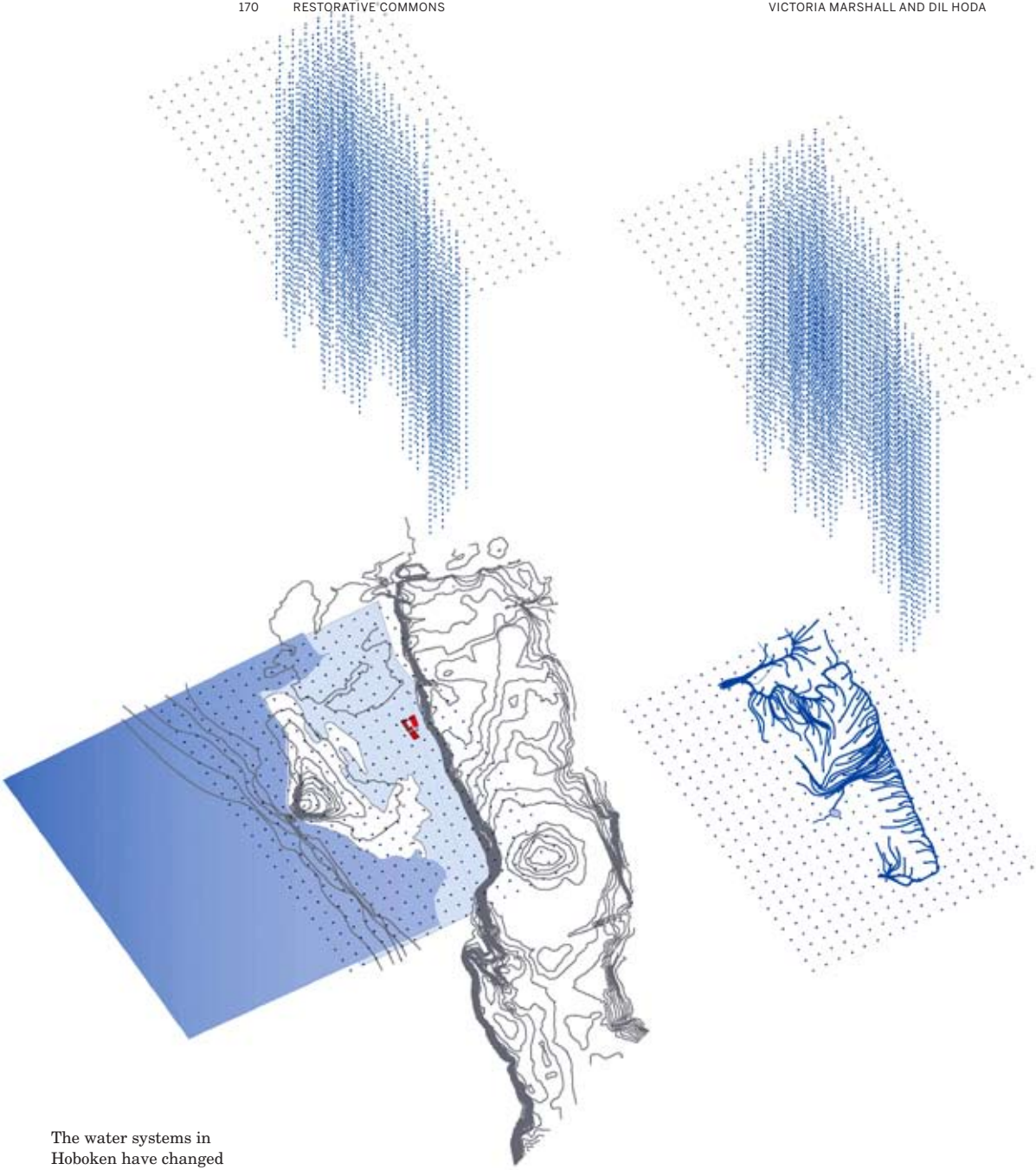
They protect the headwaters of the condominium tower catchment with their balcony rainwater filtration gardens and management of patio surfaces with nontoxic cleaning products. This water is stored in a basement tank and is used to irrigate the roof garden. In addition, balcony gardens provide extended habitats for birds and bugs migrating across the street from the Palisades cliff. Given their broad horizon, the high-rise tenants also serve as benefic surveyors, monitoring the neighborhood roof garden terrain.

The Palisades cliff, an ancient geologic fault, marks the boundary between Hoboken and Jersey City. Extending from Jersey City to far upstream on the Hudson River, the Palisades is a linear forest inhabited by plants, animals, and people. Due to its topography, it is difficult to navigate, however a carefully constructed trail has begun, which will eventually offer an urban hike to Bear Mountain, 50 miles north. Physically traversing this slope provides a performed measure of the river and its watershed. The trailhead is located at Monroe Center and is being created by an overlapping network of stewardship organizations.

The next watershed caretakers are the high-rise rooftop garden users. Encouraged to appropriate the roof as their own yard, they continuously invent practices and adapt their lifestyle on top of its thin absorptive section and in its gentle microclimate. Paved, grassy, sand, and gravel surfaces afford typical programs such as reading, walking, or play, however, as an extension of the Monroe Center for the Arts the same surface can function as a yoga studio, art class, ballroom, gallery, or whatever the creative users imagine. Two mobile barbeque carts and a cabana provide a cooking and washing surface for a roof top brunch, wedding, or even a mini-restaurant.

Accessed from the fifth floor via a public elevator and the fourth floor via the resident corridors, the roof garden has three distinct levels. The fourth floor terraces are like outdoor rooms, one with grass and the second with sand and toy boxes for play. Ramps and a stair allow access to the four-and-a-half floor wet garden and the fifth floor dry garden. Like an elongated zigzag, the circulation system is designed for both evening neighborhood strolls as well as a place to be still.

The roof garden functions to mitigate ground-level flooding as well as to offer a higher ground refuge during surge events. Located over a parking garage and residential apartments, it is on average 1-foot



The water systems in Hoboken have changed over time, from meandering tributaries to a piped and sewered system. The former coastline of the estuary can still be read in the city's long shallow puddles.

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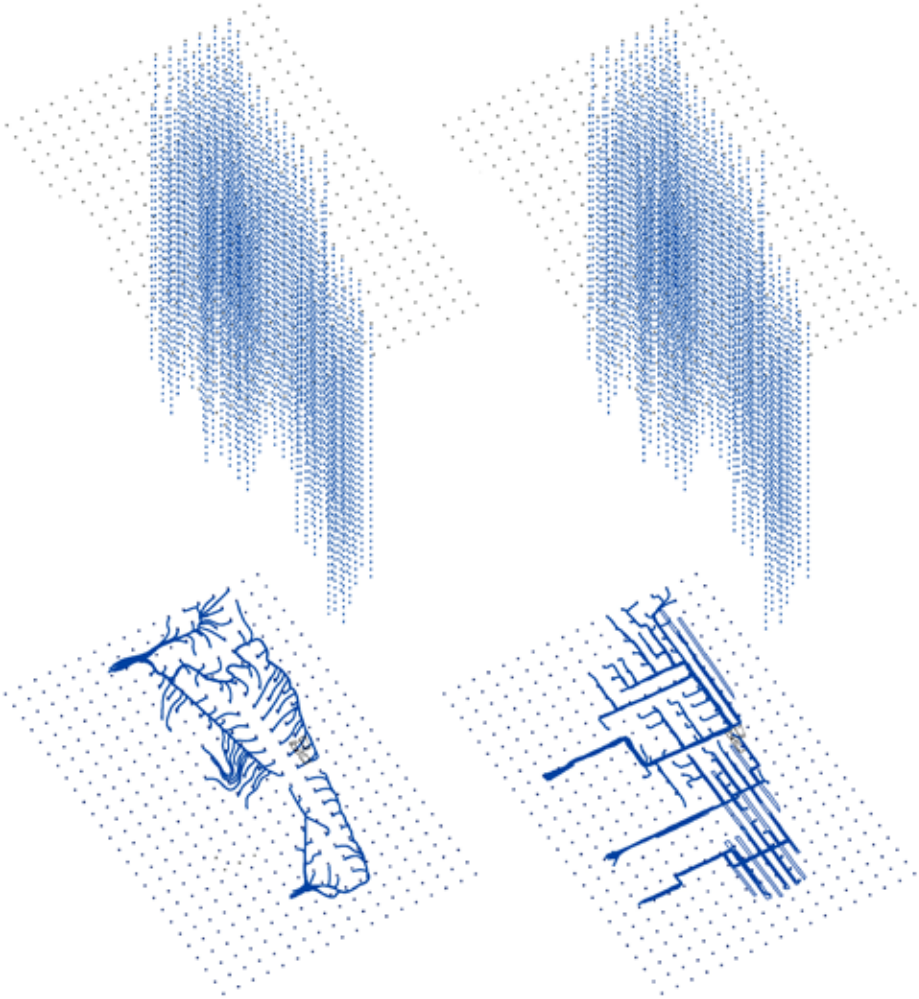


thick with multiple waterproofing membranes. An extensive green roof system acts as a sponge absorbing water and releasing it slowly. Hot water, created via a heat exchange with the warmer temperature in the earth is released into a fountain. This geothermal fountain also functions as an informal bathing pool. Adjacent are two hot tubs and a shower nook. Hot and cool water are therefore used to entice extended fall and spring season use, and a mobile fire pit is available for year-round use.

The street level stewards are the commuters, shoppers, tenants, restaurant patrons, retail owners, and workers. The rhythm of joining the breakfast crowd, lunchtime crowd, dinner crowd or the after-hours crowd affords opportunities for long-term, everyday, peripheral watershed observation. Two plaza fountains hold and circulate stored rainwater. Like large clocks, they evaporate slowly, measuring the moisture changes through subtle shifts in the splash of a mini-waterfall and the bubbles in a pool. The plaza consists of two levels; the boundary between them is the ancient Hoboken Island shoreline. Like an amphitheatre, the upper level is designed to offer a place to observe people and natural processes on the lower level. When the tide comes in, the water becomes the performer, filling the lower plaza. In another scenario, stored rainwater used for irrigation allows the plaza vegetation to sustain periods of drought. The Monroe Center for the Arts, therefore, manages heat and water stress that would otherwise negatively affect vulnerable populations, such as the elderly, and natural resources, such as street trees and gardens.

Below the plaza level, under the built-up and sealed surfaces and into the groundwater, there is another natural process occurring and being followed by the residents. Monitoring wells on top of the clay layer at 20 feet below grade and at bedrock (around 100 feet below grade) are regularly checked for the presence and absence of water and contaminants. Given the industrial legacy of the area, there is a slowly migrating flow of contaminants across property boundaries. On a regular basis, environmental consultants sample the wells and report their findings to the residents and public agencies. This aquatic uncertainty is therefore made transparent and allows for precaution and feedback.

An example of ecosystem feedback has already occurred. During the construction of one of the residential towers, elevated levels of

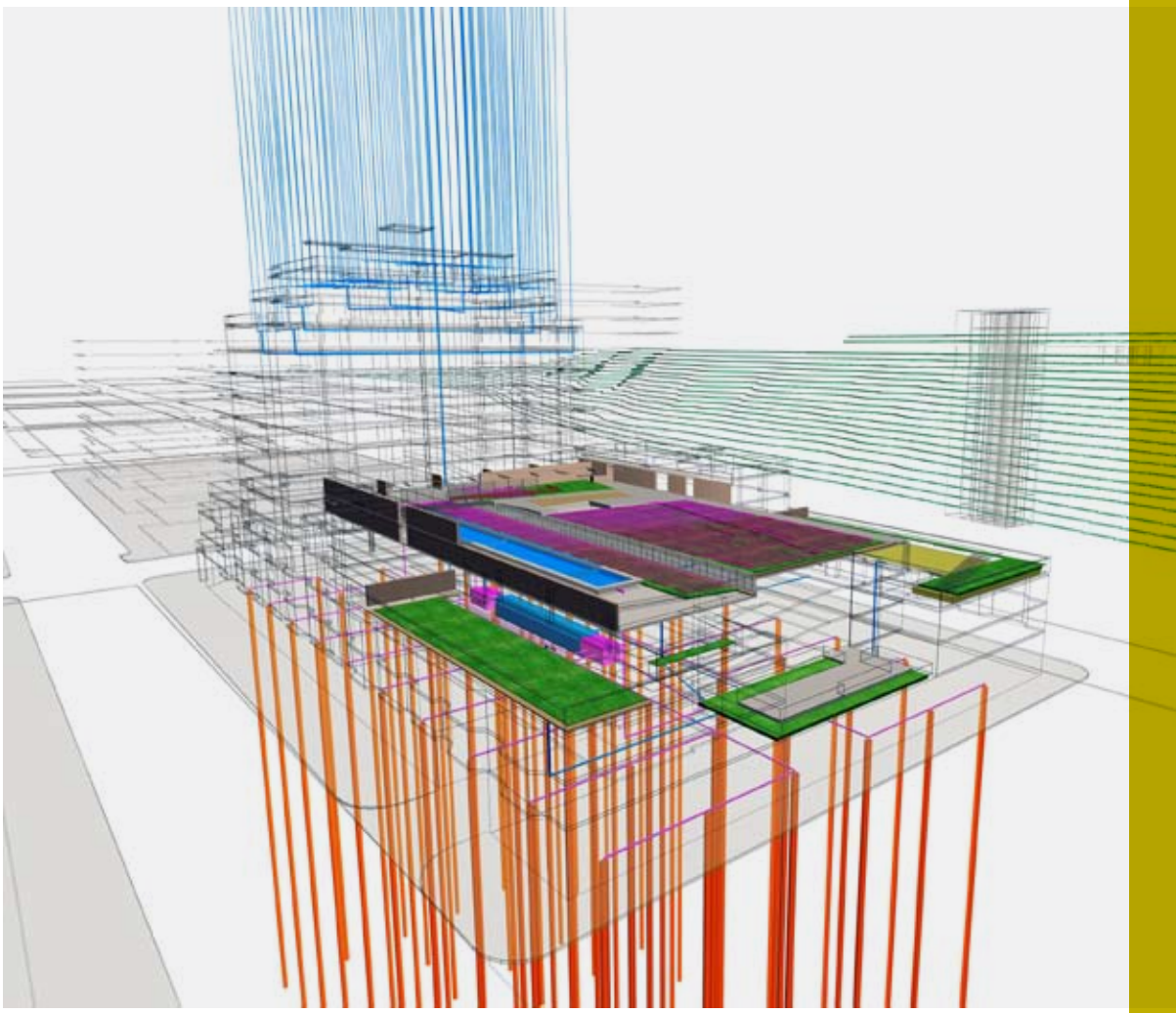
trichloroethylene (TCE) were detected in the subsurface water. TCE, a degreaser component, is unhealthy for human contact. After multiple attempts to neutralize the TCE and its derivative products, a cut-off wall was built below one of the buildings. Most of the water that was perched on top of the impervious clay layer within the cut-off wall was pumped out.

Development: Method

The Monroe Center for the Arts site was formerly the Levelor Blinds factory. With its two mill buildings and the surrounding 4 acres of land, it was blighted and slated by the local municipality for eventual demolition and construction of luxury housing. The owners of the site, with the support of the existing artist community in the buildings, proposed a mixed-use development that would be anchored by artists and the arts. This entailed preserving the arts community and constructing affordable work/ live spaces for artists, as well as taking the arts out into a public plaza and roof garden.

Environmental remediation was funded primarily through a combination of the Brownfield Reimbursement Program (BRP) and the New Jersey Environmental Infrastructure Trust Financing Program (EIT). The BRP (a state of New Jersey program) permits the reimbursement of 75 percent of the sales taxes generated on the site for 75 percent of the remediation costs. The EIT is largely funded by the EPA's Clean Water State Revolving Fund, which provides "seed money" for the state agency. New Jersey has used these funds to provide low-interest loans for 20 years. Until recently, the EIT funds were used primarily for municipal utility projects; since 2004 the program has been expanded to include brownfields and non-municipal water-cleansing projects.

To compensate for the development of the affordable units and the public space, the owners requested and received Payment in Lieu of Taxes (PILOT). Under the PILOT, the property tax burden (consisting of municipal, county, and school taxes) is reduced by eliminating the school tax and substantially reducing the county tax. Overall this new development generated substantially higher tax revenues for the city in absolute numbers. The public space and the rooftop gardens, in turn, created the opportunity for the fountains, the design of which would cleanse the water and therefore qualified for funding under the EIT.



The Monroe Center roof garden harvests rainwater (blue), municipal water (pink) and geothermal heat and cool (orange.)
IMAGE USED WITH PERMISSION BY VICTORIA MARSHALL, TILL DESIGN

The fountains and the arts, both in the public plaza and roof gardens and within the buildings, are attractive to the retailers and the market-rate home buyers and renters. The retailers started generating the sales taxes for reimbursement under the BRP. The market-rate housing generated the property taxes for the PILOT, which can be used for an up-front bond issuance for infrastructure as well as payment of the EIT loan. Thanks to municipal, state, and federal funding programs, support of the local neighborhood, and nesting of the various funding programs and programming of the overall development, local artists, market rate homeowners and renters, over 2,000 residents of a nearby public housing complex and visitors enjoy water and its myriad manifestations.

Conclusion

This project is designed with an understanding of health that is informed by contemporary ecosystem science where urban ecosystems are viewed in a non-equilibrium paradigm (Walker and Salt 2006). That is, they are **resilient**, complex, socio-natural, adaptive systems rather than one self-regulating system. In contrast to a conservation strategy of protecting remnant or restoring degraded water or plant systems, this is a mode of working that is more projective toward yet-to-be imagined futures and inclusive of social and economic forces. We ask of our work, can healthy urban ecosystems be designed with monitoring, knowledge, and feedback, as well as continuous planning, invention, adaptation, and wonder? The role of design is therefore shared and does not lie in the hands of one professional at one point in time. However we do believe that a compelling urban design made at one moment in time can function as a long-term ecosystem management tool by actors in everyday life.

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Water is a material that triggers creative uncertainty and therefore it offers the critical ecosystem process of multiplicity. By this we mean:

> "[N]ot the H_2O produced by burning gases nor the liquid that is metered and distributed by the authorities. The water we seek is the fluid that drenches the inner and outer spaces of the imagination. More tangible than space, it is even more elusive for two reasons: first, because this water has a nearly unlimited ability to carry metaphors and second, because water, even more subtly than space, always possesses two

> sides... water remains a chaos until a creative story interprets its seeming equivocation as being the quivering ambiguity of life. Most myths of creation have as one of their main tasks the conjuring of water. This conjuring always seems to be a division"
>
> Illich 1985

Ecologists Steward Pickett and Mary Cadenasso (2007) write about the role of meaning, model, and metaphor to communicate science concepts to "the public, to specialists in other disciplines, and even to schools of ecology beyond those which generally use it." At Monroe Center, our notion of the commons references this three-part thinking: the meaning we seek is to design public spaces that keep open the 'window' of creative uncertainty for the users; circuits and feedback loops of everyday life offer an urban design model for adaptive ecosystem management; and finally, water is the material that brings forth competing and collective metaphors toward building communication, trust, and cooperation.

In the future it is planned that this multi-dimensional model of development will be translated to other sites. While every landscape has water, this does not necessarily mean that it should always be the organizing element. Other attractors could include, for example, nitrogen or carbon. While not as charismatic as water, the role of design in these landscapes would need to work harder, requiring more fantastic and spontaneous scenarios of our possible urban lives. In addition, the integration of science models into design — and therefore seeing designs as working models of a small part of an urban ecological system — offers approaches to complex ecosystem processes in spatially based and meaningful ways.

Literature Cited

Gensko, G. 2003. **Felix Guattari—toward a transdiscsiplinary metamethodology.** Angelaki, Journal of the Theoretical Humanities. 8(1): 129–140.

Illich, I. 1985. **H_2O and the waters of forgetfulness—reflections on the historicity of stuff.** Dallas: Dallas Institute of Humanities and Culture.

Pickett, S.T.A; Cadenasso, M.L. 2007. **Meaning, model, and metaphor of patch dynamics.** In: McGrath, B.; Marshall, V.; Cadenasso, M.L.; Grove, J.M.; Pickett, S.T.A.; Plunz, R.; Towers, J., eds. Designing patch dynamics. New York, NY: Columbia University Press: 24–25.

Walker, B.; Salt, D. 2006. **Resilience thinking—sustaining ecosystems and people in a changing world.** Washington, DC: Island Press.