

SLIP | SCAPE

Jeremy Jeong
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Often times, when someone hears of the waterfront in Toronto, the main thoughts turn to those of overdevelopment and wasted potential. The tip of Spadina Slip is no exception. Given that the site lies on the Toronto waterfront, an area coveted for its scenic appeal, its development is one that holds a number of different implications for the city. The NXTCity competition, which called for "A clearly represented vision for future of one or more City-owned public space," [1] beckons ideas for the improvement of the site- the north side of Queen's Quay is currently stagnating with respect to public activity.

Slipscape is an effort to extend the green space of the waterfront in a move that engages both land and water. It is a continuation of waterfront parkscape design in Toronto, but has several elements that represent a divergence from said path and ultimately set it apart from other landscape designs along the waterfront.

The History of the Waterfront

The waterfront in Toronto has always had trouble balancing its uses. As early as the 18th century, the city was already setting aside waterfront land as public commons. In 1793, Peter Russell, a public administrator and associate of Governor Simcoe had noted that Simcoe "has fallen so much in love with the land that he intends

to reserve from population the whole front from the Town to the Fort- a space of nearly three miles." [2] Simcoe's intent to leave the land public was thwarted by the selling of land in order to pay for public institutions, and by the conflict between desired uses on the waterfront.

In 1852, the city had hired architect John Howard to prepare a plan for a waterfront park that would occupy the remaining lands, stretching across what is now the Central Waterfront. As stated by the title of the plans, 'Sketch of a Design for laying out the north shore of Toronto's harbour in pleasure drives, walks and shrubbery for the recreation of the citizens' [2], the park would have consisted of sweeping, planted pathways and a scenic carriageway for citizens to enjoy the view of the harbour. Changing economic tides, however, brought an end to such plans, and the lands were instead prepared for railroad and industrial uses instead.

Railroad and industry uses continued to dominate waterfront uses through the remainder of the 19th century until the mid-20th century, when yet more changes in the modes of transportation left the area ripe for change. The decline of railroads and the portlands throughout the city, combined with a new growing awareness of the qualities of the waterfront brought around the development of the first redevelopment projects on the waterfront.

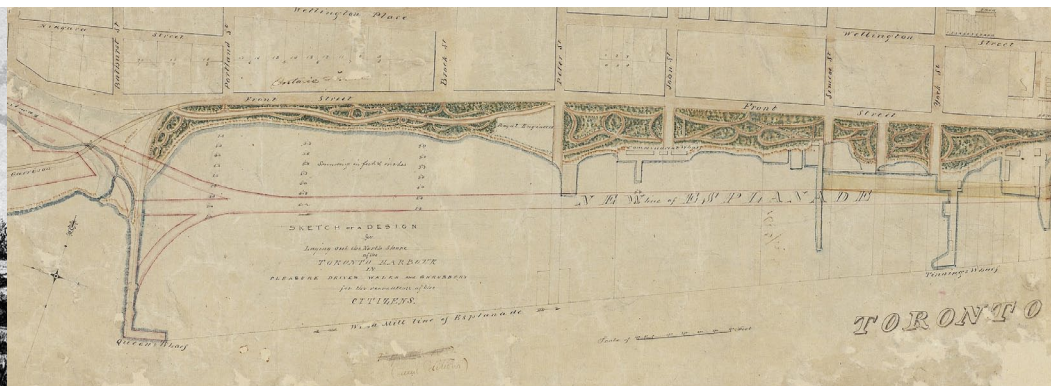
1. "Submission Guidelines." NXT City Prize. <http://www.nxtcityprize.com/>
2. Osbaldeston, Mark. "2." *In Unbuilt Toronto: a history of the city that might have been.* Toronto: Dundurn Press, 2008. 17-21.

Projects like the Westin Harbour Castle and Harbourfront Centre were brought about in the 70s as a way to bring about alternate uses to the area, and residential and commercial redevelopment of the waterfront began in earnest.

By the 90s and the turn of the millenium, rising criticism over the potential overdevelopment of the waterfront brought about the creation of Waterfront Toronto in 2001 and the establishment of a more comprehensive plan by West 8 and DTAH in 2006. Despite the creation of such a plan, certain areas that had already been developed by the time of the establishment were excluded, and this is where *Slipscape* begins to take a look.



Toronto Harbour in 1793, looking west
Source: [http://commons.wikimedia.org/wiki/File:Toronto_Harbour_in_1793_\(Scadding,_cropped\).jpg](http://commons.wikimedia.org/wiki/File:Toronto_Harbour_in_1793_(Scadding,_cropped).jpg)



Plan of John Howard's 1853 Plan for the Waterfront
Source: <http://fortyorkmaps.blogspot.ca/2013/04/1852-howard-sketch-of-design-for-laying.html>



Waterfront Toronto Plan, West Bayfront Area
Source: <http://urbantoronto.ca/news/2013/05/waterfront-toronto-making-more-waters-edge-accessible>

1. "Maple Leaf Quay." ToBuilt. http://www.tobuilt.ca/php/tobuildings_more.php?search_fd3=1338
2. Warkentin, John, Carolyn King, and Noemi Volovics. "2." *In Creating memory: a guide to outdoor public sculpture in Toronto*. Toronto: Becker Associates in association with the City Institute at York University, 2010. 104-105.

The Site: Maple Leaf Quays

The site that *Slipscape* occupies is no exception to the history of the waterfront; in fact, it may very much be considered an archetype. Initially created as part of waterfront expansion in the early 20th century, Spadina Slip became home to the Maple Leaf Mills Silos, a series of grain silos that would eventually provide grain for the Molson Brewery nearby.

However, with the shift of industry away from the waterfront and the decline of the portlands, the silos became derelict and were demolished in 1983 as part of the early Waterfront revitalization efforts. By 1989, the site was eventually occupied by the namesake Maple Leaf Quay condominiums, a pair of 21-story residential towers that encircled Spadina Slip [1].

With this development, Maple Leaf Quay boasts numerous amenities for passerby, yet offers little in terms of real attraction. Likewise, the north side of Queens Quay is packed with condominiums, yet offers little respite for those passing by. As a result, the majority of pedestrian traffic is concentrated south of Queens Quay while the northern side stagnates in terms of human activity.

Slipscape is an attempt at rectifying that issue with the introduction of a new destination. With the NXTCity competition, action was limited solely to public space- which consisted only of the basin itself.

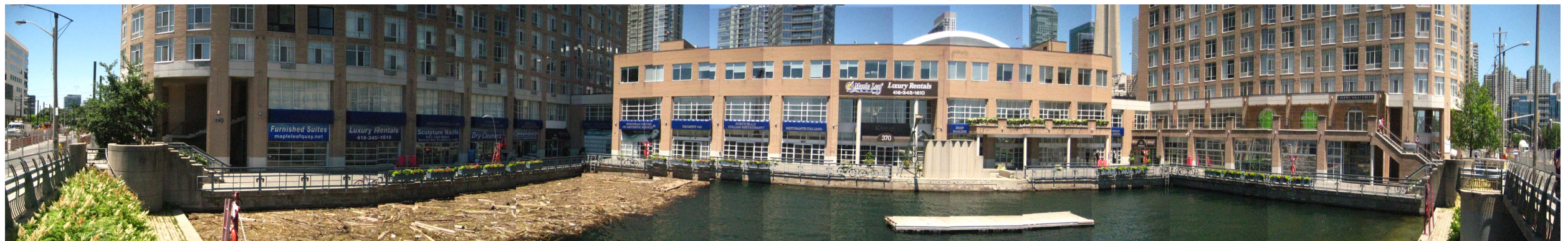
In doing so, the idea of the 'parkland' is reevaluated and flipped on its head.

The concept of *Slipscape* consists of a floating set of walkways that meander around the site- a reference to both the Howard plan on 1853 and the landscape parks of the early 20th century, but rather than the 'shrubby' and terrestrial greenery that occupies much of the site it is the aquatic realm that dominates the landscape. As such, those strolling upon such walkways do not take in so much of the elevated harbour views as envisioned by Howard, but instead are immersed eye to eye with the waterline.

The elements that form *Slipscape* are influenced by the myriad human and natural considerations. The shape of the deck, inspired by water, shapes human interactions. Like a stream of water where it speeds up when it narrows and widens when it slows down, the wider portions encourage alternate uses such as sunbathing or sitting, while the narrower areas encourage movement.

Pavilions placed around the slip offer not only diversions off the pathway and places of respite and rest, but also places where the idea of the marshland can be interacted with; 'lollypop' posts are placed along the edge of the path, softly illuminating the walkway at night while avoiding excessive light pollution.

As a final gesture, the pathway arcs around the front of *Learn to Throw Your Voice! Trumpet, Wall and Drive-Unit*, a 1986 sculpture inspired by the grain silos that once occupied the site [2]. It sweeps in close, allowing passerbys an unorthodox view of the sculptural work.



Panoramic view looking north from Queens Quay. At the centre is the artwork 'Learn to Throw Your Voice! Trumpet, Wall and Drive-Unit'

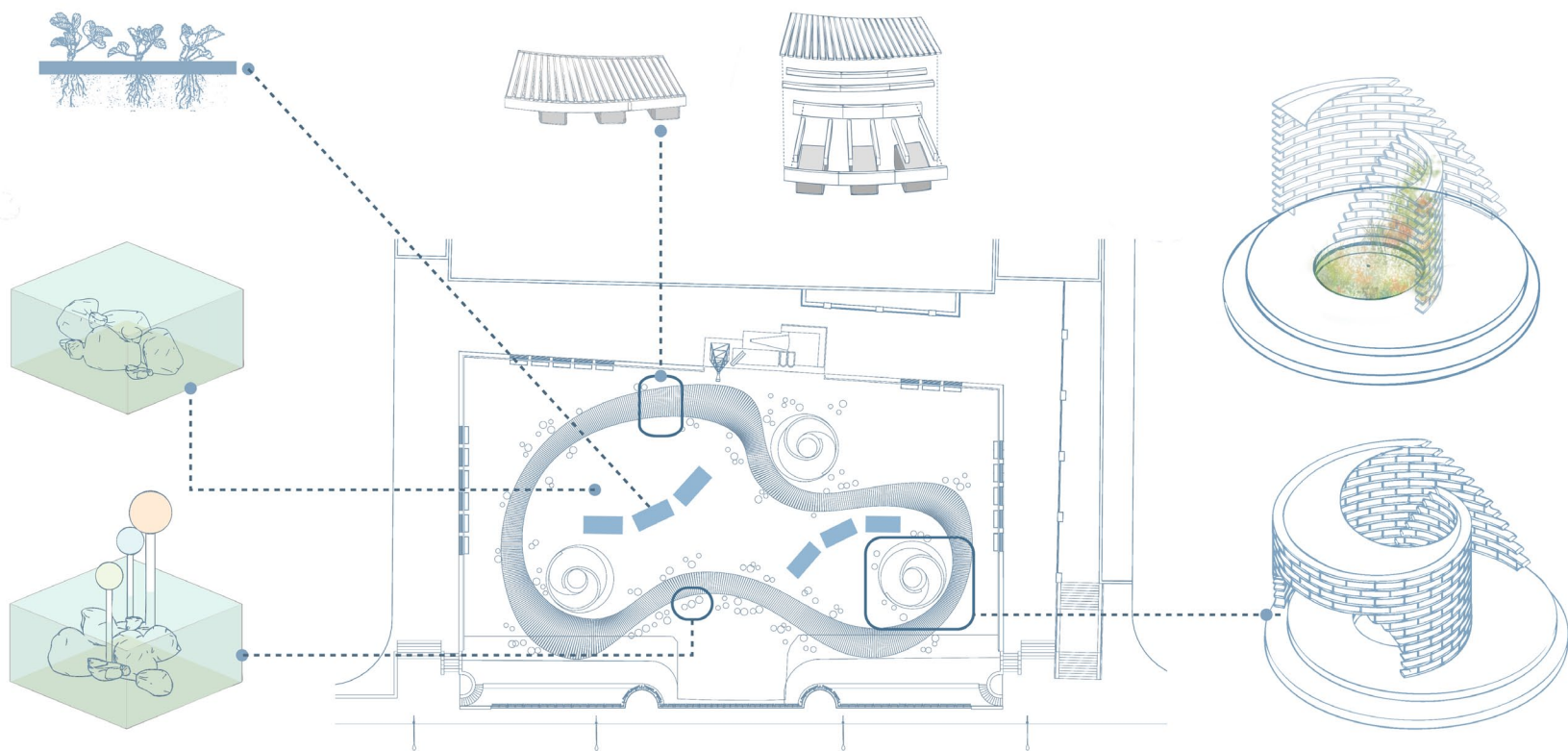
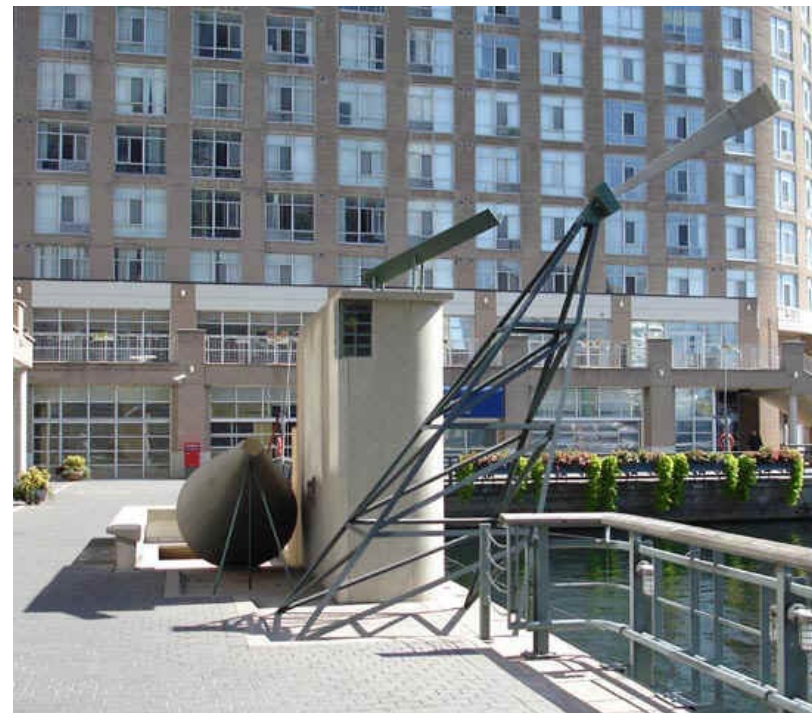


Diagram showing different components of site.



'Learn to Throw Your Voice! Trumpet, Wall and Drive-Unit'
 Source: <http://www.ruthard.ca/art/downtown/voice.html>



Maple Leaf Mills
 Source: <http://tallshipsintoronto.wordpress.com/2012/03/07/the-gypsy-of-the-waterfront-tbis-brig-house/>



Queens Quay, 1983
 Source: http://www.blogto.com/city/2012/03/what_queens_quay_looked_like_before_the_condos/



Queens Quay, 1990s
 Source: http://www.blogto.com/city/2012/03/what_queens_quay_looked_like_before_the_condos/

Water and Ecology

While the focus of this project may be on the increase of 'parkland' on the northern side of Queens Quay, it also takes a look at the ecology. Constant neglect throughout the 19th and 20th centuries have left the waterfront degraded, and only through recent efforts by conservation authorities has the situation improved somewhat. However, waterfront efforts remain largely confined to land and the elements of human use; the harbour is left largely as the realm of recreation and commerce.

Despite the reduction in levels of pollutants and general improvement in water quality, the amount of riparian habitat has remained low with much of the shoreline built over. Slipscape's second deviation is the reintroduction of marshland and riparian habitats into a small segment of the waterfront, tying into the aquatic improvements done on the Wavedecks.

Initial studies focused on solely improving the aquatic realm, but consequent research brought in the creation of marshland habitat. Precedents like the Downsview Park Competition by James Corner and Stan Allen were studied carefully for their aspects of ecological organization and propagation. Central to the idea of Slipscape was the creation of a framework that would allow a self-sustaining ecosystem to form.



Downsview Park Time-Based Ecological Management Diagram
Source: <http://www.expandedenvironment.org/the-architectural-animal-part-5/>

The creation of such a framework first required the study of the environmental conditions that dominate the site- that of the hydrological patterns that shaped the harbour and our waterfront.

Of these factors, a crucial element is that of silt. The majority of silt in Toronto's harbor originates from the runoff and erosion of the Don River and as a result of its alluvial and erosional origins, the composition of this silt is that of depositional muds and clay [1]. The silt moves in an east-to-west direction due to long eastern fetches that produce the ambient wave energy, which is stronger than the prevailing westerly winds [2]. Much of this silt ends up in the harbour, which requires annual dredging to remain functional.

Central to the creation of the framework is the introduction of floating wetland rafts. These rafts are comprised of a floating core, in which wetland plant species are grown with their roots suspended in the water. Over time, the roots provide cover for fish species and pull excessive pollutants out of the water; the plant species allow insect populations to establish themselves, consequentially allowing other species up the food chain to find a habitat in the area. The large surface area provides a large colonizing zone for a microbial biofilm to establish itself.



Floating Marsh Rafts

Source: <http://www.bbc.com/future/story/20120925-natures-water-purifiers>

1. "Meteorological Conditions." Aquatic Habitat Toronto. http://www.aquatichabitat.ca/meteorological_conditions.shtml (accessed August 26, 2014).
2. "Lake Effect Our Energy Source." > Lake Effect Energy. <http://lakeeffectenergy.wordpress.com/lake-effect-our-energy-source/> (accessed August 26, 2014).
3. "Nature's water purifiers help clean up lakes." BBC Future. <http://www.bbc.com/future/story/20120925-natures-water-purifiers> (accessed August 26, 2014).

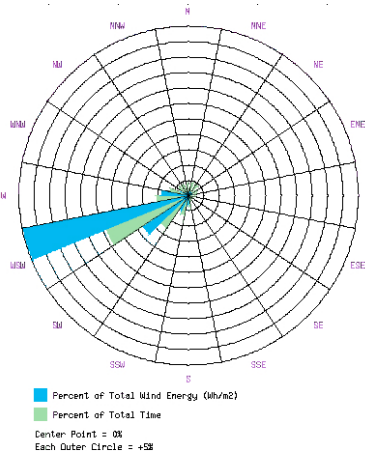
At the same time, the islands shade the water, cooling it down and allowing aquatic species which have a low temperature tolerance to return. In certain instances, studies found that the introduction of these plant rafts over a 2% area brought about a 95% reduction in nitrogen, and a 40% reduction in phosphorous in the lake water used in a mesocosm experiment [3].

In designing every element of the site, these factors were carefully studied and acted upon. The walkway itself acts as a breakwater that calms waves entering the basin, providing an optimal environment to best propagate growth. The elongated form of the loop is also entirely intentional, rebuffing the western prevailing winds.

Likewise, the positioning of the 'lollipop' posts are entirely deliberate, intended to direct water in a circular pattern around the basin and avoid stagnant areas of water. In conjunction with the floating walkway, the posts form a restrictive barrier around the channel running in, preventing debris from entering the basin. In conjunction with the roots of the wetland rafts, the posts slow and trap silt, allowing the benthic layer to be replenished.



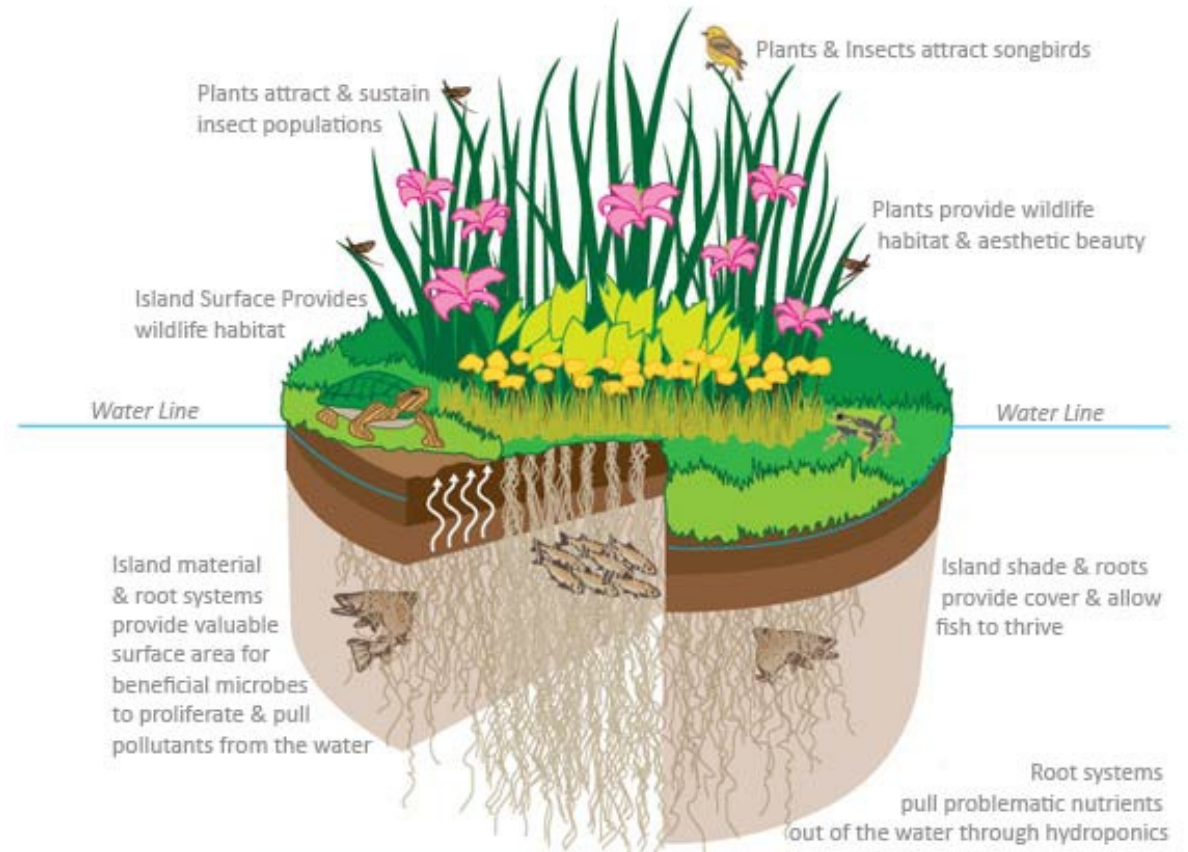
View looking west from walkway



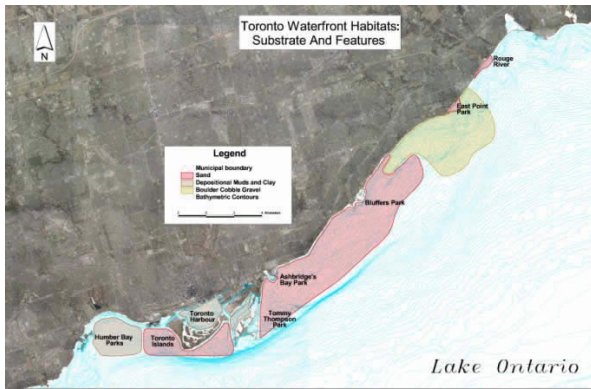
Average prevailing winds for Toronto
 Source: <http://lakeeffectenergy.wordpress.com/lake-effect-our-energy-source/>



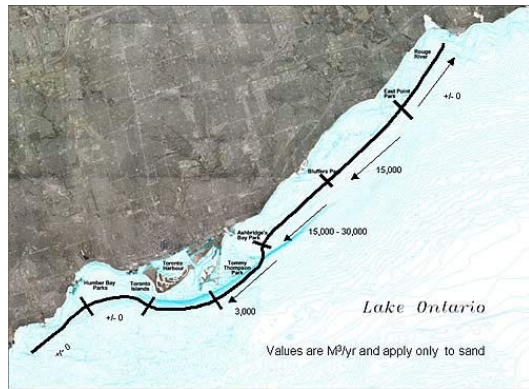
Lettuce grown in plant raft.
 Source: <http://fosterlake.com/blog/?p=287>



Plant Raft Diagram
 Source: http://www.watershed-alliance.com/mcwa_restore59.html



Sediment type along the Toronto waterfront
 Source: http://www.aquatichabitat.ca/meteorological_conditions.shtml#Winds



Sediment flow along the Toronto waterfront
 Source: http://www.aquatichabitat.ca/meteorological_conditions.shtml#Winds



Progression Diagram showing progression of growth over time.

Community and Place

While Slipscape is the creation of a haven for wildlife in an overall hostile environment, it is also the creation of a place for the community. While Maple Leaf Quay has brought much needed residential life to the waterfront, urbanistically, it is hardly a success. Directly exposed to the sun without shade or protection, the site was consistently empty and devoid of pedestrian traffic, a stark contrast to the bustling flow of pedestrians across Queens Quay.

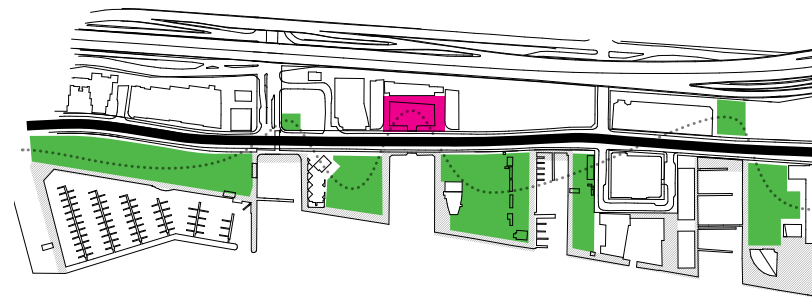
In an attempt at rectifying this situation, Slipscape again subverts the traditional concept of a landscape garden. Whereas traditional landscape park design focuses on sylvan landscapes that form a picturesque backdrop to human activity, the look, don't touch, Slipscape is an attempt attempt for human interaction with the landscape itself.

While the use of plant rafts is largely dedicated to native riparian species, a portion of those surrounding the pavillions, protected and purified by the rest of the marshland rafts are allocated towards community use as aquaponic gardens. As such planted plants are able to take part of the fertile ecosystem of the marshlands; native productive species are also planted to allow the community to better understand the productive qualities of the marshland itself.

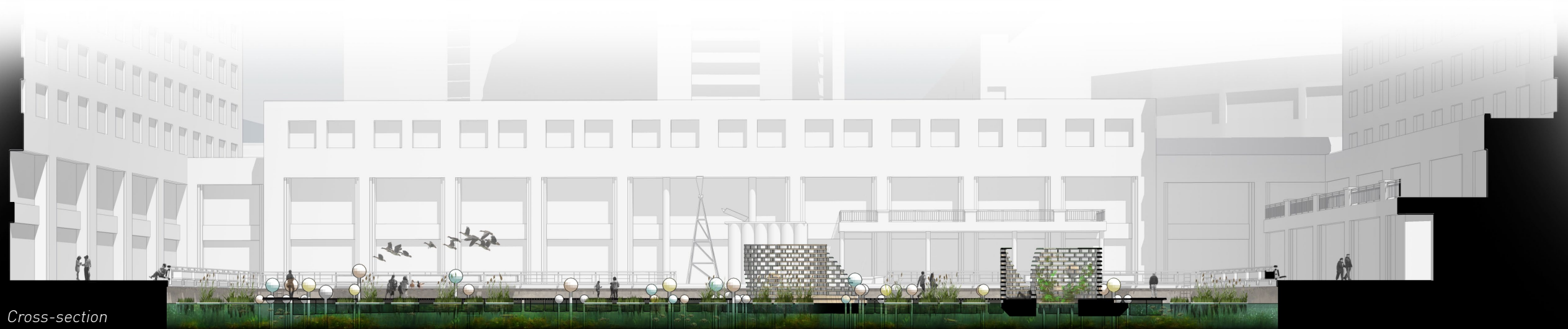
Likewise, the pavillions themselves also accommodate this alternate use. Voids on the inside of each pavilion enable visitors to grow their own gardens, and a trellis that extends from each void accommodates upward growth of vegetation.

To this end, Slipscape is both a continuation and departure from the history of waterfront park design. It draws from the designs of Howard, but reverses them to take advantage of the constraints of the site. More importantly, rather than just presenting itself as a destination for pedestrian activity, it looks at also becoming a wildlife destination with the reintroduction of marshland landscapes.

Slipscape looks to contribute back to the community itself, with a direct focus on active community participation in the form of aquaponic gardens. With these elements in place, the hope is that Slipscape will become a destination in a space lacking place- and an anchor for future community growth.



Parti Diagram, showing weaving of parkspace into waterfront



*Cross-section
looking north*

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