

**Frames + Fieldnotes:
Existential Architectures for the Landscape
of Climate Change**

by

Amber Kilborn

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ABSTRACT

The transcendental experiences and perceptual insights evoked by good architecture are not merely qualitative outcomes. They form the elements of a way of measuring what is much larger than our selves. This thesis explores how the experiential metric facilitated by architecture is an essential part of understanding landscapes as they carry us toward a difficult environmental future. The theory is structured by two elements: “spacing paths” which move across the landscape and “timing places” for dwelling or pausing in the landscape. These pieces are further refined in a conceptual design for a recently abandoned wetland on the fragile coast of Staten Island. The project argues for an architectural environmentalism that is based on experience, and the less tangible traces of memory and emotion as much as it is based on what is empirically measurable.

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At some deeper level, this accomplishment is credited to my parents. Their decision to raise my sister and I at the isolated end of a long gravel road in a beautiful corner of Ontario's wilderness has undoubtedly influenced the core of this thesis, and much more profoundly, the core of the person I have become.

CHAPTER 1: INTRODUCTION

One of the most remarkable qualities about architecture is how it performs as a device that frames our perceptions and experience in a field of otherwise indecipherable space.¹ While we often think deeply about the experiential outcomes and perceptual invitations architecture provides, I think this quality in architecture operates as a tool, designed or not, that offers a function often overlooked in our discipline.

When we consider other perceptual devices – a telescope, a magnifying glass, an amplifier – it's obvious that they are designed to be held or operated by our arms and hands. They come with an associated metric and often function using isolation and magnification. As a perceptual device, we cannot hold architecture, rather architecture holds us. Instead of our hands or arms, our whole bodies are involved. As a result, it's associated metric is experiential. Without decibels, factors, or other units, it is less quantitative but still profoundly functional. It makes up for empirical inaccuracy by including the powerful vectors of human emotion that come with experience. In other words, architecture frames how we perceive things, the perception is experiential, and this experience can be used as a method of measurement.

This kind of experiential immersion is how we begin to understand what is bigger than us. Architecture exists on a scale that mediates between the beguilingly vast and the familiarly human. In some ways it transforms space and time into places and events we can dwell in and remember. One of the most important things

1. "True qualities of architecture are... existential, embodied and emotional experiences," Juhanni Pallasmaa, "Space, Place, Memory and Imagination: The Temporal Dimension of Existential Space," in *Spatial Recall: Memory in Architecture*, ed. Marc Trieb (New York: Routledge, 2009), 25.



Oakwood Beach,
Staten Island and the
Hudson River delta;
image adapted from
Bing Maps.

we perceive and measure experientially is the landscape: a spatial field that now more than ever we ought to pay attention to as the natural systems and environments within it shift quietly faster toward a difficult future. Quietly, because for the most part, these changes exist at a scale in both time (pseudo-geological)² and space (global) that is hard for us to grasp. Quietly, also because most of us live in cities where the slipping stability of the natural world is, at least most days, easily and conveniently overlooked. And quietly, lastly, because there are still many of us who don't have an experiential metric for climate change; a metric that includes an emotional understanding of what's at stake. "There is the scientific and ideological language for what is happening to the weather, but there are hardly any intimate words," Zadie Smith points out in "Elegy to Country's Seasons."³

One landscape that is changing rapidly is New York City. Hurricane Sandy, in October 2012 was an intimate experience of what

2. I use this term to suggest that climate change has outpaced traditional geologic time but is still a part of that magnitude of duration.
3. Zadie Smith, "Elegy to a Country's Seasons," *The New York Review of Books*, April 3, 2014, accessed July 13, 2015, <http://www.nybooks.com/articles/2014/04/03/elegy-countrys-seasons/>.

is happening to the weather for the residents of the greater New York area. Intimate but loud and necessarily so because I think the people of New York have trouble perceiving the slower changes in the environment around them. One of the areas hit hardest by the storm was, and continues to be the eastern shore of Staten Island. Its location in the Hudson River delta and the underwater geometry of the ocean floor around it, resulted in storm surges during Hurricane Sandy that swept houses far off their foundations.⁴ The community of Oakwood Beach was subsequently abandoned, and a ruptured marshy landscape that tells a longer story of change was released from the fabric of the city.

Homes to be demolished on Kissam Ave; photograph by Matt Green, December 10, 2014.



The focus of this thesis is how architecture can facilitate an existential understanding of change and quality in the abandoned landscape of Oakwood Beach by framing our perceptions and experiences of it.

4. Ian Frazier, "The Toll: Sandy and the Future," *The New Yorker*, February 11, 2014, accessed October 9, 2015, <http://www.newyorker.com/magazine/2013/02/11/the-toll>

CHAPTER 2: PLACES + PATHS

Landscapes are gigantic, their vicissitudes even more so, and we will only ever partially understand what is there.⁵ As J.B. Jackson put it: “Anyone can look, but we all need help to see that it is at once a panorama, a composition, a palimpsest, a microcosm; that in every prospect there can be more and more that meets the eye.”⁶ When we introduce architecture as a mediator between the gigantic and the familiar it presents us with opportunities to understand landscapes and how they change a bit better, or at least, to take the time to wonder about them more often. In this project, architecture that frames our perceptions and experiences of landscapes is understood as a network of places and the resulting paths, formal or otherwise, that connect them. These two elements comprise a framework through which an experiential understanding of the changing landscape takes place. If abstracted and conceptually simplified, landscapes can be thought of as vast fields of shifting spatial and temporal qualities. As such, places in the landscape, defined by pause, lend themselves to understanding temporal shifts; while paths, defined by motion, lend themselves to understanding spatial shifts. Although it may seem overly reductive, this framework breaks down into a diverse repository of opportunities for rich perceptual experiences.

Another way to think about this is through the linguistic concepts of synchronic and diachronic meaning. Synchronic meaning is what paths offer. It’s the result of a comparative analysis at a certain point in time of the meaning of a word as it is compared to

5. Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (London: Duke University Press, 1993), 71.

6. J.B. Jackson, “Introduction,” *The Interpretation of Ordinary Landscapes: Geographical Essays*, ed. D.W. Meinig (New York: Oxford University Press, 1979), 6.

other words. Paths offers us the same thing for space: the result of comparing changes across space at a given point in time. Diachronic on the other hand is what perception through place offers. Linguistically it is the meaning of a word as it changes through time, in which the only point of reference is the word itself. By remaining fixed, places frame diachronic observations that illuminate the passage of time.

2.1 Perceiving Through Place

A place is where you stay. The longer you stay in one place, the more you perceive the temporal shifts of your surroundings. If you spent a whole day in one place you could notice how the angle of

Perceiving time through place: the movement of light and advance of decay.



the sun changes, how the shadows on the floor inch closer to the wall. You might hear the traffic rise in the morning and the evening; see the flowers first closed, open then close again; robins in the morning, cicada's at noon, loons in the evening and a barred owl at night. If you spent a year in one place you'd be able to see the leaves unfurl and later turn red; children out of school then gone to class, swollen rivers in the spring, thunder in the summer, wind in the fall and snow in the winter. Over a lifetime in one place, and

you could see how each of these events shift from year to year or day to day because place has given you an experiential metric that allows you to compare them. Consider the power in this: Henry David Thoreau's journals about the natural world he observed by simply being in one place for nearly his whole life have since been used to track climate change in eastern Massachusetts.⁷

Places then, and specifically architecture, are fundamental anchors to which we tether ourselves in order to gage what slips by and the relative rate and frequency of such things. Even a window, the most elemental architectural "frame" has this capacity. If you plant a tree in front of it, you can see from season to season how the view changes. In summer your view will be obscured by leaves, in winter completely transparent, in spring you will see the buds appear, a songbird arrive and so on. At a different scale, you may notice how much the tree grows year by year, relative to the height of the window which remains the same until eventually



Perceiving vast amounts of space through movement along a path.

7. Rebecca Solnit, "On the Dirtiness of Laundry and the Strength of Sisters," in *The Encyclopedia of Trouble and Spaciousness* (San Antonio, TX: Trinity University Press, 2014), 278.

that tree dies and something new fills the frame. The window is a small scale version of what architecture is doing at a larger scale for our perceptions about the world.

2.2 Reading Landscape Through Paths

A path can be defined simply as a means of moving through space. As we move along, we perceive the varying spatial qualities of the landscape around us much more than the temporal ones. With each step something slips away while the next thing appears in front of you producing “a relational tactile world of impressions, signs, sights, smells and physical sensations.”⁸ Walking through the heterogeneous neighbourhoods of a city you’d encounter the compression of tall buildings and narrow streets or the alienating openness of a new suburb. Walking along a trail you might first pass through a maple grove (open and airy) followed by the eerie atmosphere of assorted conifers (dense and dark) and finally past the dappled space of birches where it is low and moist. The necessity of motion in understanding landscapes is described eloquently by Icelandic artist Olafur Eliasson when he says:

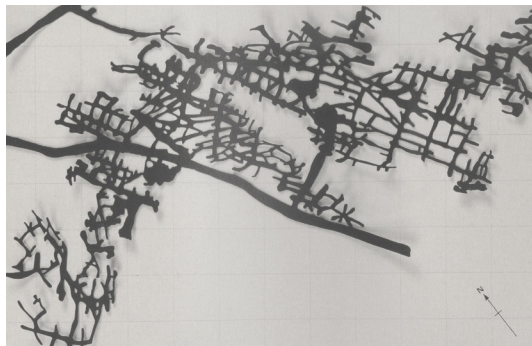
I’ve walked a lot in the mountains in Iceland. And as you come to a new valley, as you come to a new landscape, you have a certain view. If you stand still, the landscape doesn’t necessarily tell you how big it is. It doesn’t really tell you what you’re looking at. The moment you start to move, the mountain starts to move. The big mountains far away, they move less. The small mountains in the foreground, they move more. And if you stop again, you wonder, “Is that a one-hour valley? Or is that a three-hour hike, or is that a whole day I’m looking at?”⁹

Olafur marvels at the capacity for motion to suggest depth and distance. He articulates how experience of motion, is a way of measuring space by thinking of distance in terms of effort over time

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8. Christopher Tilly, “Space, Place, Landscape and Perception,” in *A Phenomenology of Landscape* (Oxford: Berg Publishers, 1994), 34.
 9. Olafur Eliasson, “Olafur Eliasson: Playing with Space and Light,” TED video, filmed February 2009, 9:36, https://www.ted.com/talks/olafur_eliasson_playing_with_space_and_light, 5:42.

rather than in units of length. It's an old idea, the relative experience of moving along a path was one of the only ways we had to measure space before it was globally subdivided into an abstract grid and we developed empirical units for it.¹⁰

Speed, position and the nature of the path are all factors in how we move through space and subsequently in how we perceive and measure it. There is a tension between gridded motion and motion directly influenced by the environment that I find interesting. David Leatherbarrow considers the difference between position and situation in his book *Uncommon Ground*. The first is defined



Map of the Devis Mine in the United Kingdom showing paths informed by geology and paths informed by geometry; image from "Distance and Engagement," page 335.

precisely with respect to orientation and direction on a global coordinate system or similar top-down structure. The second is defined roughly by one's perception of place based on feelings, experiences and memories of it. The Devis Mine Map above shows a fascinating amalgamation of the efficiency of gridded space and a more informal method of making space, driven by the natural oc-

10. David Leatherbarrow, *Uncommon Ground: Architecture, Technology, and Topography* (Cambridge, MA: MIT Press, 2000), EBSCOhost (AN 138426), 5-6.

currences of mineral seams and geological striations. When we combine the two systems there is a powerful manifestation of position that responds to its situation. One can be connected to a larger structure of organization while gaining insight into his or her immediate surroundings. This opportunity is explored further in the combination of paths and places with space and time that manifests in the design chapters.

2.3 Overlaps

It's important, when working within an investigative structure to point out the interesting ways in which it breaks down. A path can of course also be a place or a series of places in the same way places are often comprised of paths, and that there is a beautiful haziness at the edges of all categories. In the design that follows, the paths form a network that trace across space but also a series of places with names, qualities and positions. Another layer must be considered as well. How

Photographs of her studio taken from points along a pre-determined path; "Tracing Space" by Dora Maurer, from Socks Studio.



we perceive our surroundings, and read the landscape is only partially informed by the spatial and conceptual structures that make it decipherable. A great deal of what we notice and understand arises out of our state of mind.



Using our bodies to empathize with and understand the landscape; photograph by Valie Export, "Körperkonfiguration," 1976, from Socks-Studio.

2.4 Mental States

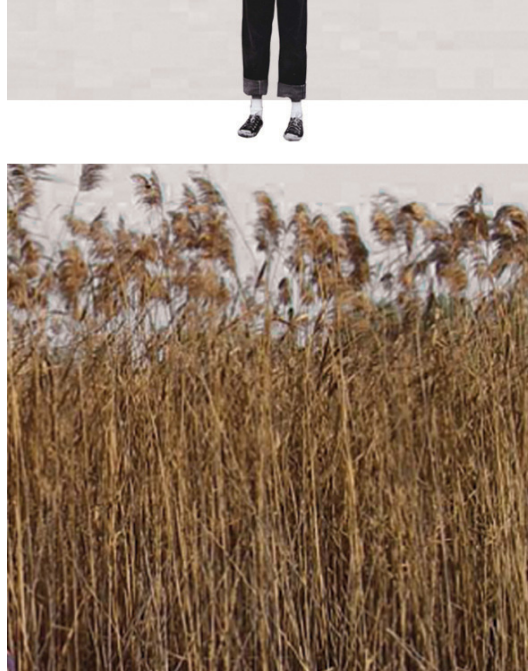
Yi-Fu Tuan is a pioneering humanist geographer who believes that imagination is necessary: "... to see landscape properly, different sets of data must be conjoined through an imaginative effort"¹¹. Furthermore, it's a particular kind of imagination that is most effective, the kind described by architect Donlyn Lyndon when he suggests that "To harvest ideas implanted in places by those who originally made them requires a kind of empathy; an act of recognition or interpretation, a playing out of the thoughts of the person(s) who placed them there"¹². A certain mental willingness to engage and be aware is necessary.

Yi-Fu Tuan celebrates architecture's capacity to "... clarify different kinds of experience and encourage us to select different kinds of environmental clues to attend and fuse in the imagination"¹³.

11. Yi-Fu Tuan, "Thought and Landscape," in Meinig *The Interpretation of Ordinary Landscapes*, (New York: Oxford University Press, 1979), 97.

12. Donlyn Lyndon, "The Place of Memory," in *Spatial Recall*, ed. Marc Trieb (New York: Routledge, 2009), 64.

13. Tuan, "Thought and Landscape," 97.



Diagrammatic collage illustrating a position above the natural context of the thesis site.

Architect and theorist Juhani Pallasmaa evocatively describes architecture's responsibility to do so: "It's role is not to create strong foreground figures or feelings but to establish frames of perception and horizons of understanding. The task of architecture is not to make us weep or laugh but to sensitize us to be able to enter all emotional states. Architecture is needed to provide the ground and projection screen of remembrance and emotion"¹⁴. Through architecture, we can offer an emotional experience that will facilitate readership of the landscape and its changes.

2.5 The Effect of Position on Perception

Our perception of a landscape is profoundly affected by our position within it. Position not only effects what is observed, but also the attitude we have toward it and ultimately the actions we take such that. "views of nature influence treatment of nature."¹⁵ If we

14. Pallasmaa, "Space, Place, Memory and Imagination," 34.

15. Lauren Kolodziejski, "What is Missing? Reflections on the Human-nature Relationship in Maya Lin's Final Memorial," *Environmental*

consider the capacity of architecture to position us in nature, we can thus invite new attitudes toward it. In particular, occupying an experimental or unusual points of view, as Susan Stewart points out often “results in a ‘new perspective’ on the object” being perceived.¹⁶

Above

The view from above, historically was very hard to achieve. Though tall buildings and hills or mountains offered something close to an aerial vantage point, it really wasn't until the airplane that we gained the self-conscious awareness we have today of our surroundings.¹⁷ Viewing human settlement from above is an identity forming activity, not unlike seeing oneself in the mirror or pondering a candid photo taken from an obscure angle. As Stewart suggests, “...the view from above remains a view from elsewhere,¹⁸ and as such it can prompt critical reflection.

In contemporary society we are surrounded by this perspective: from the view out the window of an airplane to the satellite image on your computer or phone. The excessiveness of it makes me wonder if the view from above, instead of providing an opportunity for constructive criticism, has made us self absorbed; that instead of offering a healthy perspective, it has limited our capacity to see beyond ourselves and notice the landscape of struggling natural systems that supports us. For this reason, I've decided to exclude opportunities the from above in my designs, and focus instead on heightening awareness from within.

Communication 9 (2015): 430, accessed September 14, 2015, doi:10.1080/17524032.2015.1047883.

16. Stewart, *On Longing*, 78-79.

17. Leatherbarrow, *Uncommon Ground*, 15-16.

18. Stewart, *On Longing*, 79.

Various positions of the human body in nature questioning their effect and emphasis.



Within / Without

Within is the position we generally occupy from day-to-day. Physically, it means your feet are on the ground and mentally you are stimulated by the environment around you. It is difficult to be critical or reflective when you are truly immersed in your surroundings.¹⁹ Instead you are engaged in experience, forming memories and acting out volitions. You are actively preceptive and aware. It is a position that we mentally stray from especially when easy distraction exists in the form of entertaining technology that is literally at our fingertips.

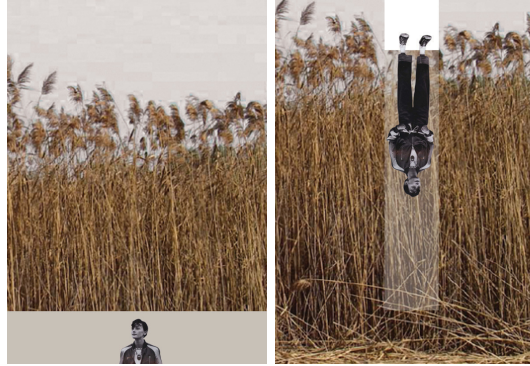
It should be made clear, however, that being *without* is not a bad thing. Rather, it is important for solidifying experience. Being *without* can provide environmental contrast, clarity, and resolution regarding a different situation or position, particularly a difficult or unusual one.

Below / Inverted

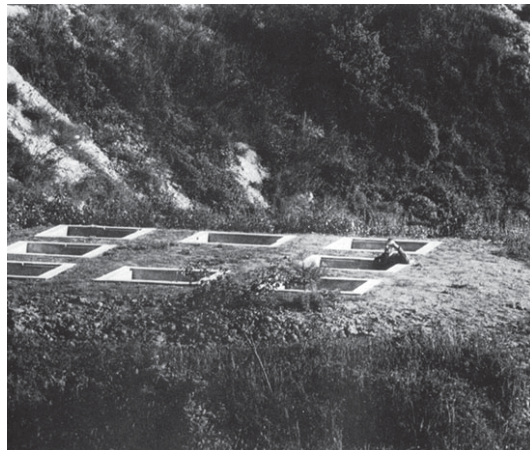
These positions question how far we need to go to gain new understandings and perspectives. Inversion increases a sense of vulnerability and discomfort which nearly enforce utter immer-

19. "We are typically not capable of deep imagination outdoors in wild nature," Pallasmaa, "Space, Place, Memory and Imagination," 25.

sion. As a highly memorable and rarely occupied position, the experience of it is deeply engrained and rigorous investigation would demand looking from at the landscape from many angles. Similarly, the view from below could offer novelty with out the same



Diagrammatic collage illustrating positions below and inverted in the natural context of the thesis site.



An unusual position with in the ground to contemplate a new perspective; Walter Pichler "Sitzgrube," from Socks-Studio.com

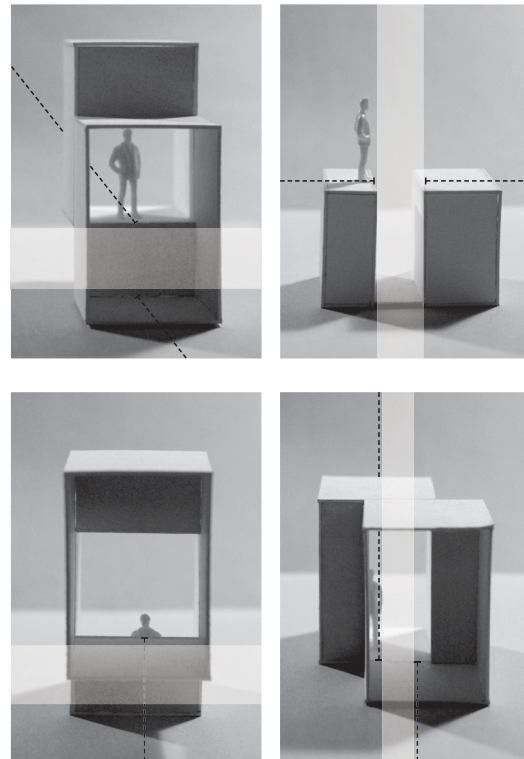
intensity. The landscape would appear dominant while the viewer begins to feel vulnerable, thus destabilizing the perceived human dominance over nature which has been so prevalent over the last two centuries. As part of her meditation on the gigantic and the miniature, Susan Stewart suggests firmly that the gigantic, namely nature and history ought to "swallow us... that the transcendent

position be denied the viewer” so that our urge to dominate or miniaturize what essentially cannot be, is avoided.²⁰

Spatial Disruption

In this research I’ve come to think of disruption as the action that abruptly suspends a certain state of being, resulting in a moment of reorientation. This moment is the crucial point at which something else entirely is possible. It facilitates paying attention.

The previous arguments about places and paths and positions only work if we invite attention. The more unusual positions achieve this because they are inherently disruptive, but the others are



Photographs of models showing studies of spatial disruption.

20. Stewart, *On Longing*, 89.

likely to have little effect. As much as we frame time and space and there is no way of ensuring a certain experience or awareness; but by introducing spatial disruption there is a way to provoke it. Encountering the unexpected may initiate renewed awareness and a heightened perception of one's surroundings. Some of the most intelligent decisions we make are the result of interventions and disruptions to the status quo, though to many of them and all focus is lost in frustration. Disruption is what makes the site for this thesis so interesting. Both spatially and temporally it is a disrupted place that has effected a great deal of people and will continue to do so.

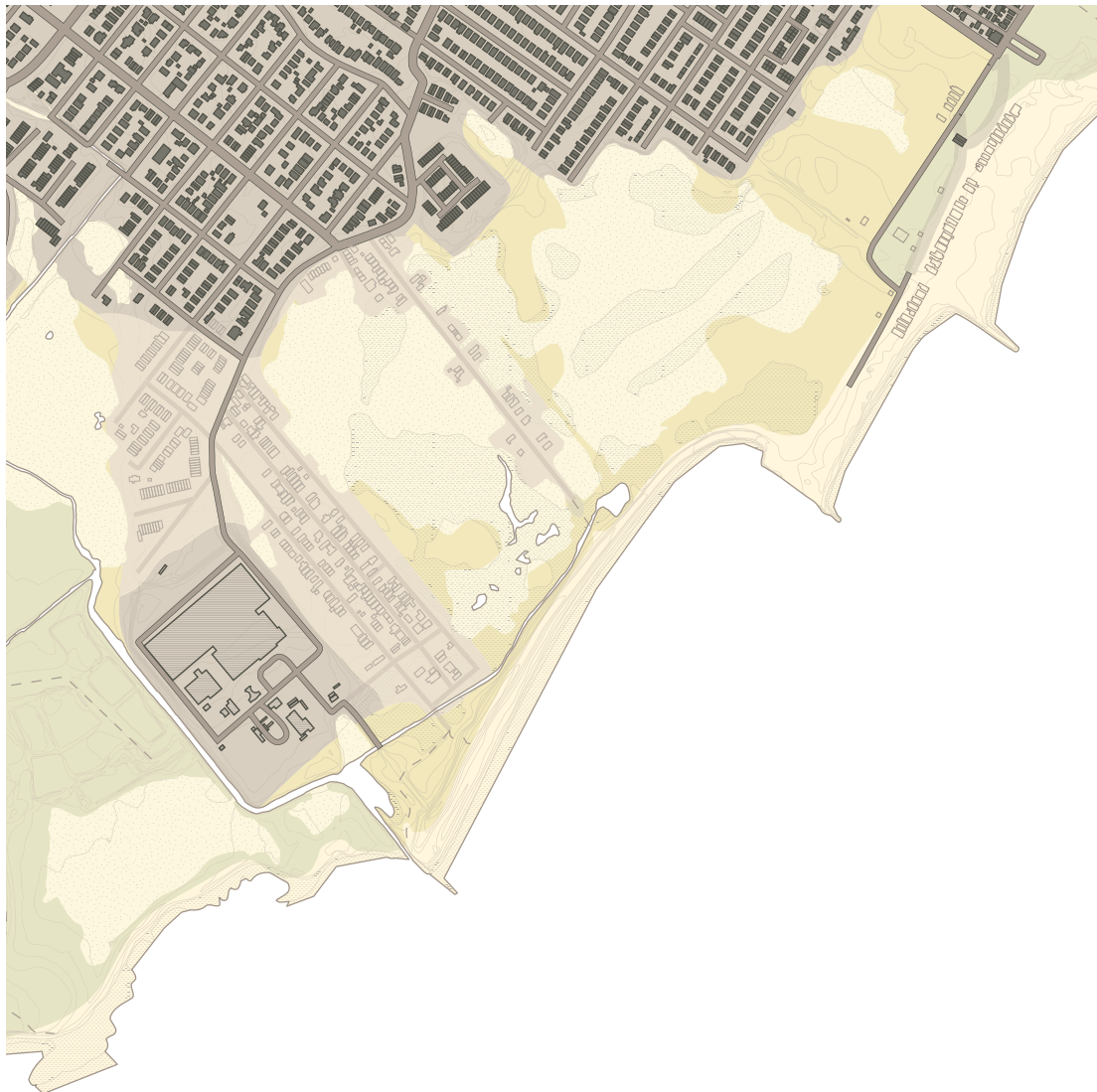
CHAPTER 3: SPACING + TIMING

As mentioned earlier, landscapes can be thought of, at least in part, as a collection of shifting spatial and temporal qualities. The spacing and timing of a landscape comprise its character and its story and are the things we experience through the architecture of places and paths. As architects, our tendency is to over emphasize the spatial qualities of a given location, when the perception, experience and phenomenology of a place all depend on timing. This chapter investigates some of the spacing and timing of Oakwood Beach. The maps, diagrams and sections included often combine the two together, offering a layering of information that reflects the richness of its subject.

3.1 Spacing

Oakwood beach is an abandoned community on the east coast of Staten Island, New York. A couple hundred homes, mostly converted seasonal bungalows, were once tightly packed on several narrow streets before they were purchased and demolished by the state government. Kissam Avenue, Fox Lane, Fox Beach Avenue, and Tarlton Street reach prominently and precariously away from their neighbours on higher ground across a large marsh toward the ocean. There is a sewage treatment facility and national park to the south, a public beach and boardwalk to the north, and a long dune of unmanaged coast to the east.

Great Kills Park is a large nationally managed park and marina, the coastal area of which reaches around to the south end of Oakwood Beach. Accessing the park however, is restricted from this direction by a tidal inlet and creek that runs between the two. This is likely part of the reason pedestrian movement along the coast



- | | | | |
|---|------------------|---|---------------------|
|  | Developed Area |  | Major Road |
|  | Buyout Area |  | Minor Road |
|  | Green Space |  | Decommissioned Road |
|  | Managed Park |  | Walkway |
|  | Wetland |  | Demolished Homes |
|  | Open Water |  | Occupied Buildings |
|  | Intertidal Zones |  | Sewage Treatment |

The former community of Oakwood Beach, Staten Island showing the state buyout area of demolished homes as well as other topographical features.

The grid is stunted by the marsh with dead-ends, roads, decommissioned roads and other paths.



Assumed lack of use and disconnection through the site between the public parks on either side.



from the public beach and boardwalk further north dwindles significantly.

Development in the area has largely been governed by the opposing factors of elevation above sea level and proximity to the ocean. As a result, the neighbourhood is spotted with dead ends and proposed streets that were never built. Around Oakwood Beach, most of the land barely reaches 4 feet above sea level. The dune and raised area of the sewage facility provide some protection from flooding and storm surges, however the roads and homes were still frequently inundated over the years.²¹

21. Nate Lavey and Myles Kane, "Retreat from the Water's Edge," *New Yorker* video, 12:28, October 16, 2014, <http://www.newyorker.com/>

The low laying land feels open and vast with only a few patches of trees, most of which occur on the inland slope of the dune. Water moves through the wetland in a highly affected manner, along straight channels, efficiently draining the hard-scaped community further inland of its stormwater. Throughout the area, the prolific *phragmites australis*, a towering invasive reed, grows in a rhizomatic mat of roots and a sea of swaying stems.



Tidal erosion patterns and depressions below the high-tide line protected by the tide gate.



Draining wetlands and open waterways around the site. A tide gate restricts flow into the northern marsh.

The creek that runs through the marsh freezes in winter opening large otherwise wet areas to exploration; photograph by AntG035, 2011.



3.2 Timing

Oakwood Beach is a place of cycles, gradual shifts and instants of disruption. Daily, the tides move in and out along the coast. The seasons bring migrating birds, freezing and thawing, and the growth, seeding and decay of plants, among other things. Over the years it has been appropriated, artificially filled, altered, eroded, and disrupted by flooding, fires and other natural disasters, including Hurricane Sandy in 2012.

Cyclical Timing

The cyclical quality of the landscape is reduced significantly by a one-way tidal gate that prevents the diurnal flooding of the marsh. To the south, where there were never any homes, water flows freely in and out, but from the north only drainage is permitted. There is a lot of land below the high tide line north of the gate that could flood if the gate were removed, potentially converting large areas into more diverse and thriving salt marsh ecosystems. For now, the tides are only registered during walks along the beach as it changes in width and is “swept smooth by the broom of the ocean every twelve hours.”²²

22. William T. Davis, *Days Afield on Staten Island* (New Brighton, N.Y.: L. H. Biglow, 1892), 47.



TYSENS LANE
spring 1:2000 / 1:500



KISSAM AVENUE
summer 1:2000 / 1:500

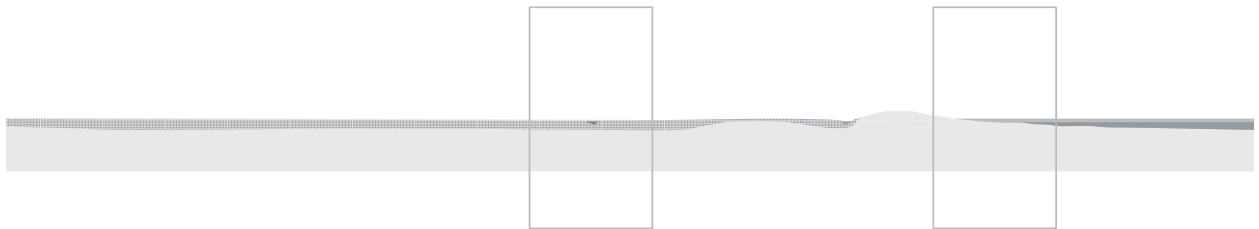
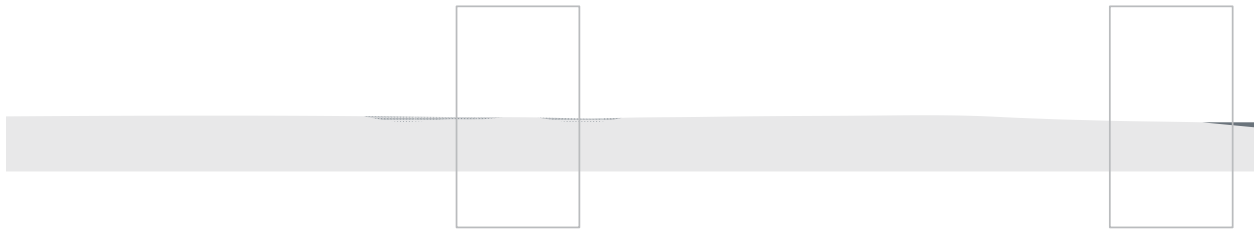


ADELAIDE AVENUE
autumn 1:2000 / 1:500



FOX BEACH AVENUE
winter 1:2000 / 1:500

Section cuts through the site showing abandoned and occupied houses in relation to the shore and the wetland. Pieces of the long sections indicated by the grey boxes are developed in detail on the following pages.

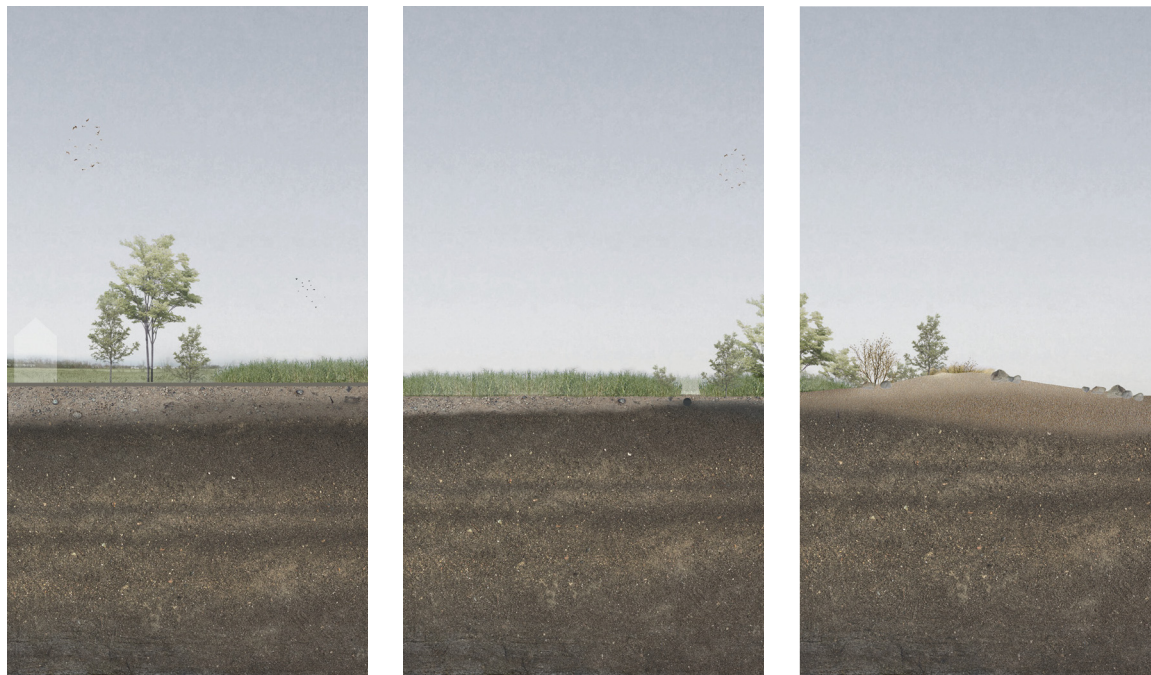


-  Wisconsin Glacier Outwash Deposit
Depth: < approx. 125 ft
-  Artificial Fill (Partial Sanitary Waste)
Depth: varies < 30 ft
-  Local and Imported Sand
Depth: varies; unknown
-  Imported Limestone Armour Rock
Depth: varies; unknown
-  Vacant/Demolished Buildings
-  Occupied Buildings
-  Asphalt/Concrete
-  Wetland, depth approx.



Legend for the following sections indicating soil composition.

Collaged partial sections along Tysen's Lane showing soil composition and the seasonal atmosphere of Spring.



Collaged partial sections along Kissam Avenue showing soil composition, abandoned houses, foliage and the seasonal atmosphere of Summer.



Collaged partial sections along the extension of Adelaide Avenue through the marsh showing soil composition, water saturation, phragmites, and the seasonal atmosphere of Fall.



Collaged partial sections along Fox Beach Avenue showing soil composition, demolished houses, Oakwood Creek, foliage, and the seasonal atmosphere of Winter.



Filling in the Great Kills marsh with landfill waste; photograph from the National Park Service, 1949.

Seasonally, the region transforms from a sparkling landscape of long shadows, ice, and snow in the winter to a swollen mess of fertile mud and warm breezes in spring. Summer brings a wealth of activity, heat and greenery while the storms and winds of fall usher in returning dormancy. It's astounding how a place changes with the seasons. Cold temperatures make vast areas of water and wetland easily accessible; leaves as they unfurl transform a pile of sticks into a soft and shady hollow; returning wildlife fill the air with sound and motion; fall brings a rush of colour that gives distance a depth swaths of green cannot achieve. Some of these phenomenological qualities are explored in site sections of Oakwood starting on page 24 which combine the spacing of houses and streets with the depth of soil and the atmosphere of seasons.

Gradual Timing

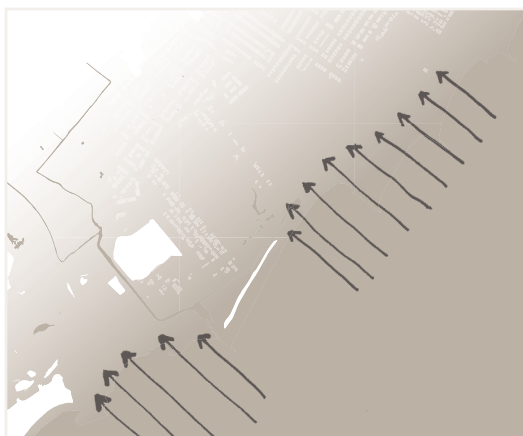
In addition to their cyclical shifts, landscapes also change gradually. A small book from 1892 called *Days Afield on Staten Island*, states, "It has been estimated that each century brings with it about twenty inches depression, and owing to the flat character of the country, many acres of woodland and field have been washed

away.”²³ The author, William Davis writes about the beaches and marsh around Oakwood and Great Kills with astonishing descriptions of the diverse flora and fauna and vivid topography of the dunes and the wetland. In the 1940’s, most of the wetland was filled, much like Fresh Kills to the west, with huge amounts of human household and sanitary waste.²⁴ The elevation above sea level at its highest point is now over 30 feet. In Oakwood Beach the amount of fill is much less but it’s important to know that the ground the community sits on was built up in this way.

Today, most of Great Kills park has hazardous levels of radium contamination and remains closed to the public while Oakwood Beach was deemed to dangerous to live in after Hurricane Sandy. All the while the waves eat away at the shore and the sand dunes shifts steadily inland or wash away down the coast.

Incidental Timing

Direction of, and area above the 14 foot Hurricane Sandy storm surge.



23. Davis, *Days Afield on Staten Island*, 20.

24. Lisa W. Foderaro, “Radiation Cleanup at Park on Staten Island to Take Years,” *The New York Times*, November 25, 2013, <http://www.nytimes.com/2013/11/26/nyregion/radiation-cleanup-at-staten-island-park-to-take-years.html>



Sustained hurricane flood levels and approximate drainage patterns.

In addition to being marked and marred by the traces of gradual changes, Oakwood Beach is also a palimpsest of incidental disruption. This category of timing includes the occasional brush fires that consume acres of dry reeds, and more significantly the destruction wrought by storms and the floods they bring. Hurricane Sandy swept through the greater New York area on October 29, 2012 bringing with it an 14 foot surge of seawater that rammed into the eastern shore of Staten Island,²⁵ an area called a “crumple zone” in situations like this.²⁶ The water breeched most of the dune, broke the tide gate intended to stop it and rammed into Kissam Avenue with a force that dragged entire houses off their foundations and into the marsh beyond. The area was left reeling:

The beaches themselves showed how crumpled a “crumple zone” could look. Shrubs and saplings had been cut off at the roots—not cleanly, but as if scratched away by fingernails. Deep gouges in the banks undercut fences and asphalt biking trails, and the scrubby trees far above the usual high-tide line hunched down as if some massive creature had slept on them. Shreds of plastic bags hung among the branches everywhere, while the ocean, distant and calm at low tide, offered its quiet wavelets and asked, “Who, me?”²⁷

25. New York City, “Coastal Protection,” in *A Stronger More Resilient New York* (New York City: New York City Government, 2013), 42. <http://www.nyc.gov/html/sirr/html/report/report.shtml>

26. Frazier, “The Toll.”

27. *Ibid.*

The community sustained significant flood levels for several days as the water drained back into the sea. Following the storm, community members gathered to discuss interest in a government buyout which they fought for and succeeded in obtaining. About 311 homes were purchased by the New York State government in the years following the storm, many of which have now be demolished.²⁸ As a result, the development front along the coast has retreated. The disruption caused by Sandy, felt profoundly all across the eastern seaboard, in this one instant lead to a moment of re-

About 311 homes bought out by the New York State government after the storm.



The gradual retreat of development away from the coast as illustrated by the buildings remaining after Hurricane Sandy.



28. Nate Lavey and Myles Kane, "Retreat from the Water's Edge."

freshing clarity and forethought; that the future of a climate in crisis is riddled with very difficult consequences. Though it may be hidden under a layer of imported topsoil, or behind the misleading beauty of invasive plants, Oakwood Beach is systemically shattered. The marsh doesn't flow like it should, the earth is a medley of mis-matched matter, and the streets stop and start in a nest of dead ends and demolitions. Fragmentation is a factor in most if not all landscapes, but particularly in places at the fringes of urbanity approaching wild, where the overlap of cultural and natural systems grind against each other. The optimistic designer will tell you we can refine the mess into a beautiful sustainable system of closed loops, and seamless continuity in which the boundaries between nature and culture fade and everything is one. While it is definitely a vision worth striving for, let us not forget: "Sunshine dulls the mind to risk and thoughtfulness,"²⁹ and all the places short on sunny days are as important as those that aren't. That is to say, things that don't work have an indispensable value of their own.

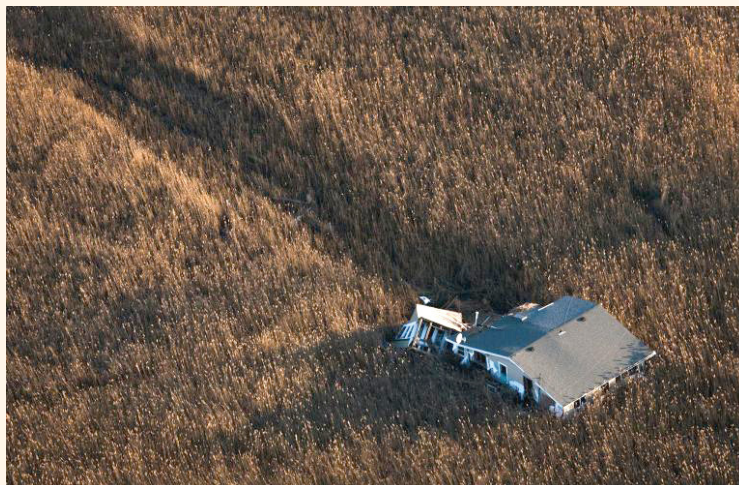
3.3 Stories

It couldn't be more true that for Oakwood Beach, "knowledge of place stems from human experiences, feelings and thought."³⁰ The people who lived here knew it best. From waking up to the smell of the ocean, to walking through the marsh, and ultimately leaving, their reflections are what make it all matter. In fact it is part of the site, such that "any landscape is composed not only of what lies before our eyes but what lies within our heads"³¹, and

29. Adam Alter, *Drunk Tank Pink: And Other Unexpected Forces that Shape How We Think, Feel and Behave*, (New York: The Penguin Press, 2013).

30. Tilly, "Space, Place, Landscape and Perception," 15.

31. D.W. Meinig, "The Beholding Eye," in Meinig, *The Interpretation of Ordinary Landscapes*, 34.



Photograph by
Andrees Latif, Nov-
ember 28, 2012.

Quote: Pedro Cor-
rea, former resident
of Oakwood Beach,
from "Coming Back"
by Berenstein et al.

*"That's my house right there. That's a brand new roof I
put on my self."
[walking through reeds]*

perhaps our hearts. Emotional and experiential layers give emphasis and meaning to parts of the landscape. While it's impossible to shake our own mental disposition toward a place, sifting through written accounts, recordings and films about the people who lived in Oakwood Beach broadened my understanding of the least tangible aspects of the context. The images and quotes that follow begin to communicate the things you can't read on a map. They capture the feelings of loss and longing associated with Hurricane Sandy while also presenting glimpses of the daily banal. The impression left behind, undoubtedly softened by nostalgia, is of an unassuming place, where people came home after work to go for walks, enjoyed each other's company on hard-earned weekends and cherished their proximity to the ocean.



A man walks his dogs from the pathway at the end of Kissam Avenue; photograph by Samira Bouaou, 2014.

“To move here and ...to listen to the quiet and at night when it was very quiet you could hear the waves crashing. It was really a calming effect in this area... very calming.”

Quote: Tom Fitzpatrick former resident of Oakwood Beach, from “Retreat from the Water’s Edge,” *New Yorker* video, Nate Lavey and Myles Kane.



“...you’d hear the waves crash and you knew rain was gonna be on its way... Whenever the waves started crashing.”

Wolf’s Pond Beach, nearby Oakwood Beach; photograph by Wusel007, 2008.

Quote: Tom Fitzpatrick, “Retreat from the Water’s Edge,” by Nate Lavey and Myles Kane.



Photograph by Ed Kashi, November 2012.

Quote: Unnamed woman, former resident of Oakwood Beach, from "Coming Back" by Berenstein et al.

"Well basically our house was cut in...cut in half. The first floor is totally gone...totally disintegrated. We don't know where it is."



Franka Costa in her partially reconstructed home; video still from "Coming Back" by Berenstein et al.

Quote: Franka Costa, former resident of Oakwood Beach, from "Coming Back" by Berenstein et al.

"Some people don't want to come back. 'Cause if we keep having these crazy superstorms... how safe are any of us?"



"...and little by little they're moving out. You start seeing more and more U-Haul trucks here. People just wanna go."

Homes awaiting demolition on Kissam Ave; photography by Matt Green, December 10, 2014.

Quote: Stephen Drimalas, former resident of Ocean Breeze, from "After the Waves" by Jim O'Grady.



*"I got to really like the people here... and it was nice... really nice."
[birds chirping; a light breeze]*

Tom Fitzpatric watching his house get demolished; video still from "Retreat from the Water's Edge," by Nate Lavey and Myles Kane.

Quote: Tom Fitzpatric, former resident of Oakwood Beach, from "Retreat from the Water's Edge" by Nate Lavey and Myles Kane.

Lighting the torches at the annual memorial walk for the 23 Staten Island victims of hurricane Sandy, more than any other borough; photograph by Andrew V. Simontacchi, October 29, 2015.

Quote: Daniel M. Donovan in "Islander's cite feelings of 'Bittersweetness'," by Andrew V. Simontacchi.



"I only came down to be with you. To remember the 24 people who died that evening... I just wanted to come down and hold a candle..."

Pedro Correa in the ruins of his old house which was carried off by waves into the marsh; video still from "Coming Back," by Berenstein et al.

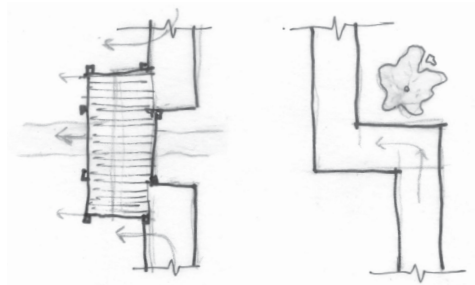
Quote: Pedro Correa, former resident of Oakwood Beach, from "Coming Back" by Berenstein et al.



"I like to say that one day I'll be able to bring my kids over here and, you know, walk them around in a park and let them see where we used to live."

CHAPTER 4: DESIGN

The intent of the design can be broken down into two parts: How can an experiential metric supported by architecture be used to gage critical changes in the landscape? And how can architecture position us in the landscape in a way that inspires a remedial attitude toward it? The last two chapters explored the conceptual framework of time and space with respect to site, and the elements of places and paths with respect to form. Consolidating spacing and timing with places and paths outlines an architectural vocabulary of “timing places” and “spacing paths” that lends itself to experiencing and perceiving the vast complexity of the landscape’s temporal and spatial qualities.



Situation shear is a method that emphasizes landscape features by expanding, contracting and shifting the path as it encounters them.

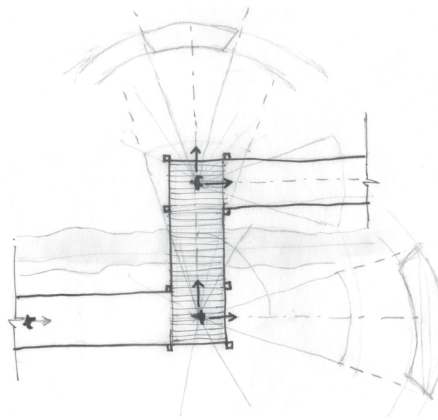
4.1 Spacing Paths

As surmised in Chapter 2, paths are a good way to understand changes across space. A network of “spacing paths,” mediates movement across the landscape. By considering loops, dead ends, straight lines, offsets, and parallax elements these paths position us in our surroundings in informative or novel ways that help alter our attitude toward nature.

A Fragmented Network

The design intention was to imagine situations in the landscape that put people in positions that provoke thought or qualitative perceptions of their surroundings. Furthermore, a gradient of intensity across the site with respect to these positions and intimacy with the land makes sure the project overall is not too difficult to inhabit while establishing a procession. A great deal of affirmation

Moving through abrupt turns in the path increases visual scanning of the surroundings.



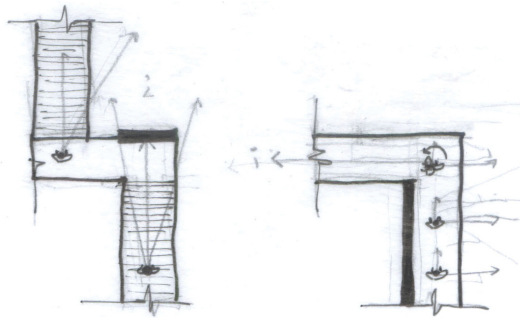
was taken from David Leatherbarrow's differentiation between situation and position and how this affects design. In pursuit of a more experiential design strategy, Leatherbarrow suggests:

... we would accept the challenge of imagining a terrain with gaps or unclaimed areas, a discontinuous field, an uncommon ground, a horizon no longer dominated by a constructed vista said to be 'true,' nor by the adventure of comprehensive design. Discontinuous in this sense would signify a mosaic field built up situation by situation, not taken for granted, like space, as an extended receptacle wanting infill.³²

The strategy for this site comprises a fragmented network, built up situation by situation. In accordance with this philosophy, the site plans that follow are oriented not cardinally, but with respect to the shore, valuing "up the shore, down the shore, and

³². Leatherbarrow, *Uncommon Ground*, 19.

inland” as navigational markers that reflect ones situation rather than position. In departure from Leatherbarrow’s assertion however, a sense of the orthogonal persists in the geometry of each intervention, bringing a spatial rigidity to the situation it develops. The tension between the precision of each path and the incongruences of the context brings an instrumental opposition into play. Transgressing from the formality of the path to the informality of the site is to pass from one state of mind into another prompting reflection on the prior, as if a kind of afterimage takes place. The alternation between structured and unstructured space is reminiscent of the interplay between culture and nature: our urge to draw a bold line through the ebb and flow of a marsh, to close with streets what ought to remain open. The whole story of Oakwood Beach is rooted in this give and take and take. What’s so wonderful about the rigidity of our built environment is that by contrast it emphasizes what isn’t built. In the proposed designs,

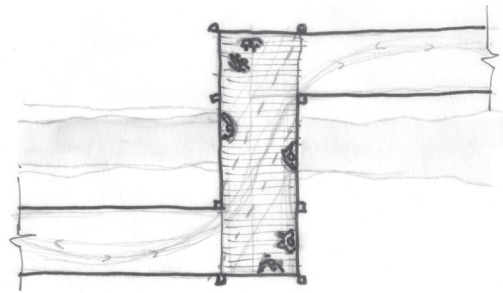


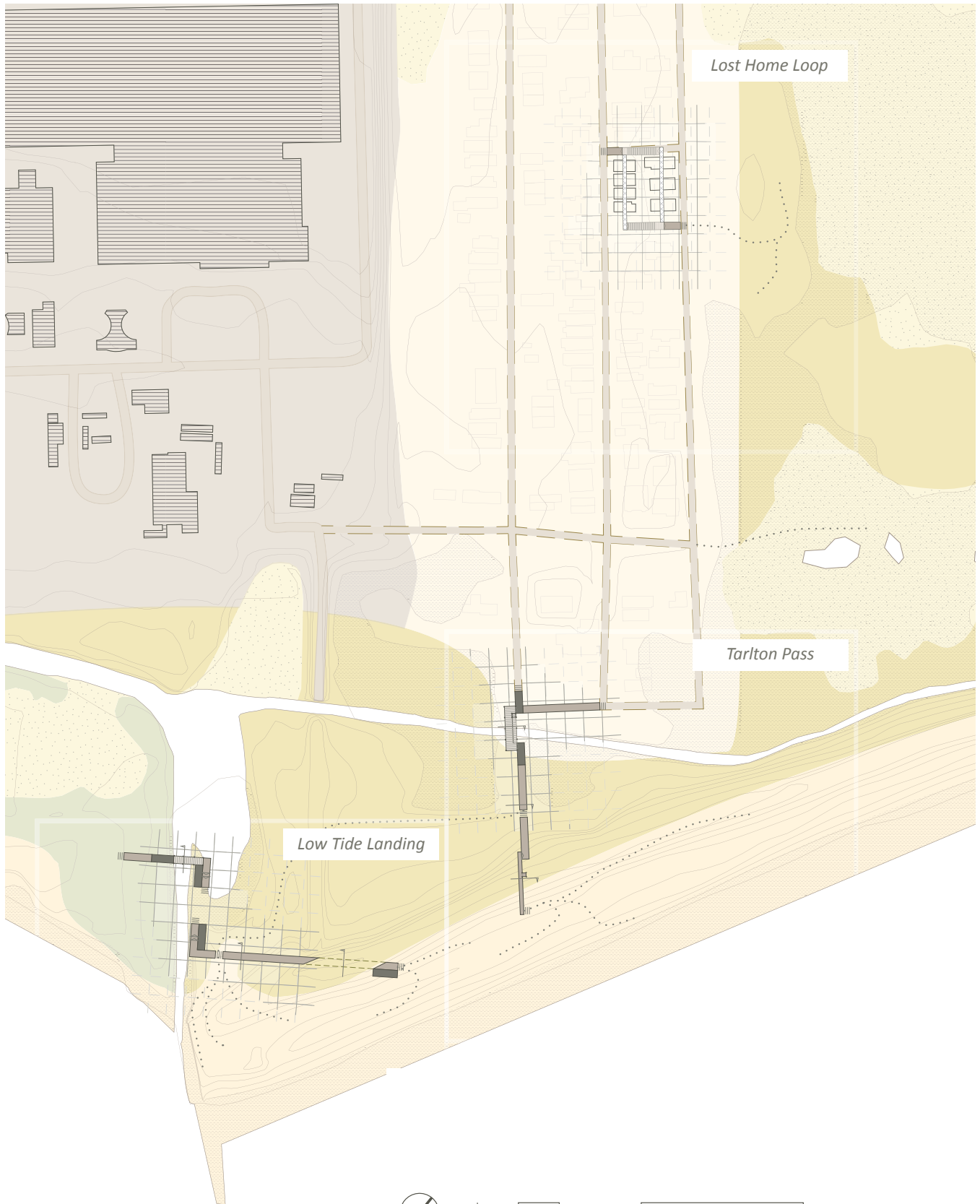
Walls and other obstructions are occasionally used to delay views in order to invite anticipation and renewed attention.

very precise architectures are inserted on, into, and through the landscape such that their austere simplicity will serve the observation of changes and the complexity of a natural context without overcoming it.

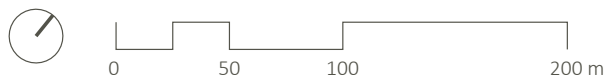
The way these insertions relate to the topography, widen or expand, and change in elevation above the ground are represented in a series of sections. The network as a whole can be examined on the site plan while each piece is represented in a series of site models. Darker shades of brown indicate wetter land, white indicates pavers, grey indicates concrete, beige indicates wood, and translucent white indicates crushed oysters shells. These materials are explained in detail in 4.3 Field Guides. For the sake of clarity I have chosen to move through the site from north to south but the journey should be imagined in reverse as well.

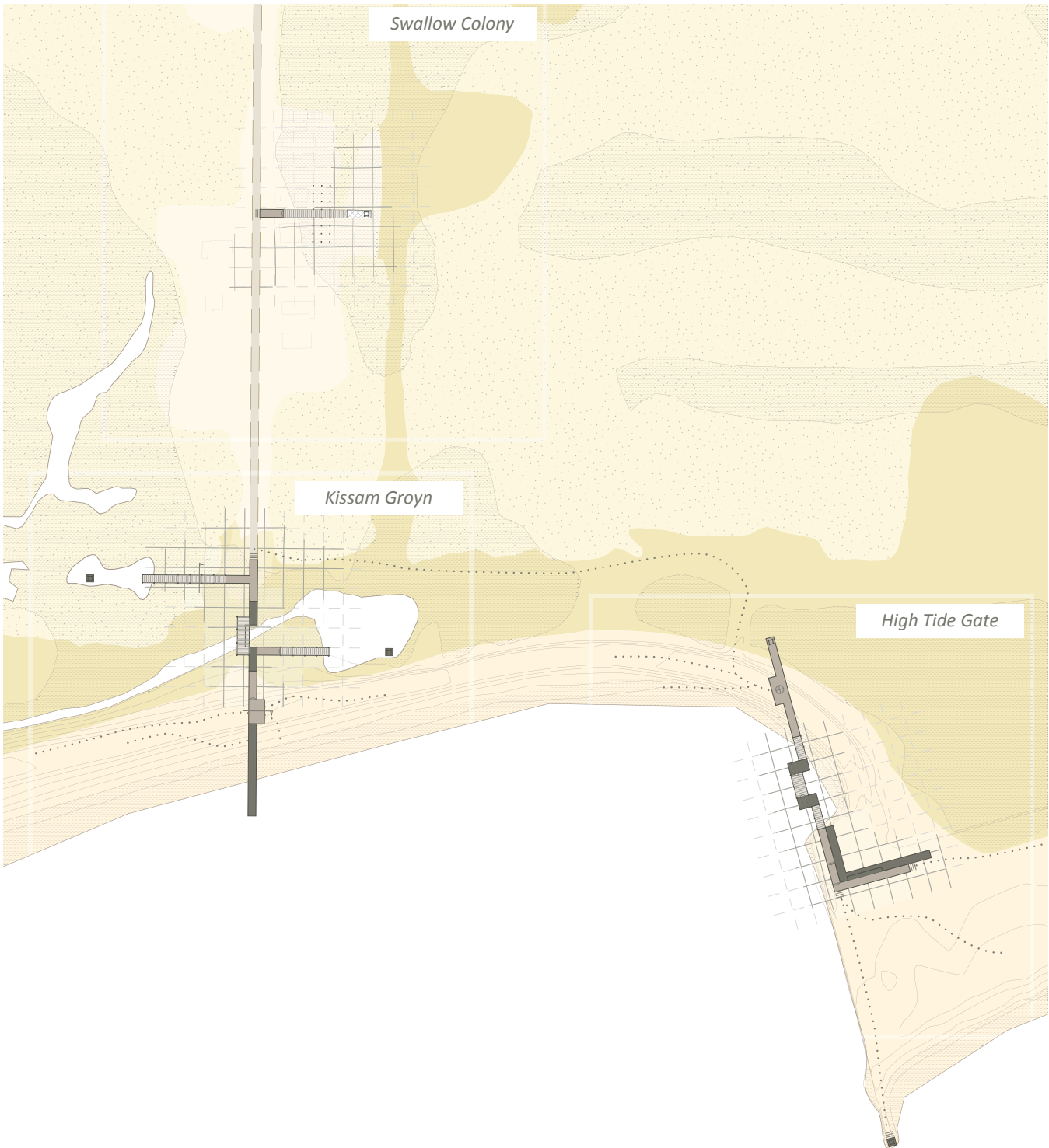
Jogs in the bath provide nooks and eddies for slower movement or complete pause.





Site Plan: Six interventions highlight the natural and cultural traces of the site.

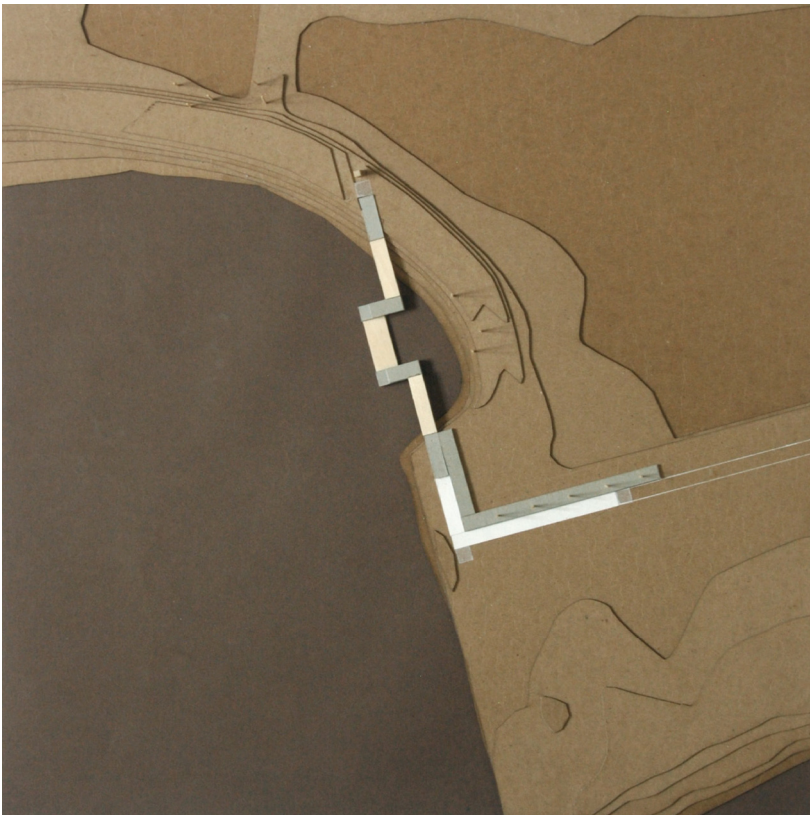




- | | | |
|------------------|-----------------------|-----------------------|
| Developed Area | Existing Road | Section Cut |
| Green Space | Decommissioned Road | Step down |
| Managed Park | Proposed Path | Fade-out Transition |
| Wetland | WFS Concrete "Anchor" | WFS Concrete "Anchor" |
| Open Water | Wood Boardwalk | Demolished Homes |
| Intertidal Zones | Steel Grating | Sewage Treatment |

Upper Cove

Upper Cove was and is formed by the gradual erosion of longshore drift and the use of groynes along the coast. In time, the water will breach the low lying land and regularly flood the marsh beyond. The intervention at the cove spans the place that will eventually become a tidal channel. For now, it connects Oakwood Beach with Cedar Grove Beach and the boardwalk nearby. The path formalizes around the remainders of Cedar Grove Avenue, a decommissioned street where a colony of seasonal dwellings used to line the coast. It follows a low lying wall of anchor stone, birches and alders. As you move toward the water the wall become more and more monolithic. It transitions from loose anchor rock to gabions, to concrete. At the end of the wall, across the water you can see the Lower Landing groyne before turning sharply around and mov-

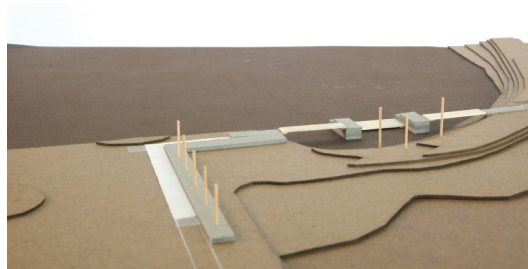


Upper Cove in plan. Original model measured 17.5" by 17.5" at a scale of 1:500. Each contour layer represents an elevation change of 2 feet.

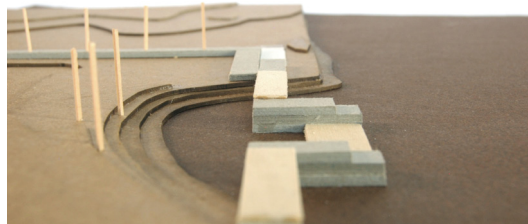
Cedar Grove Beach dunes approaching where the proposed path would start. Photograph by Garrett Ziegler in April 2012, before Hurricane Sandy.



Approach to the path from Cedar Grove Avenue looking out across the bay of Oakwood Beach.



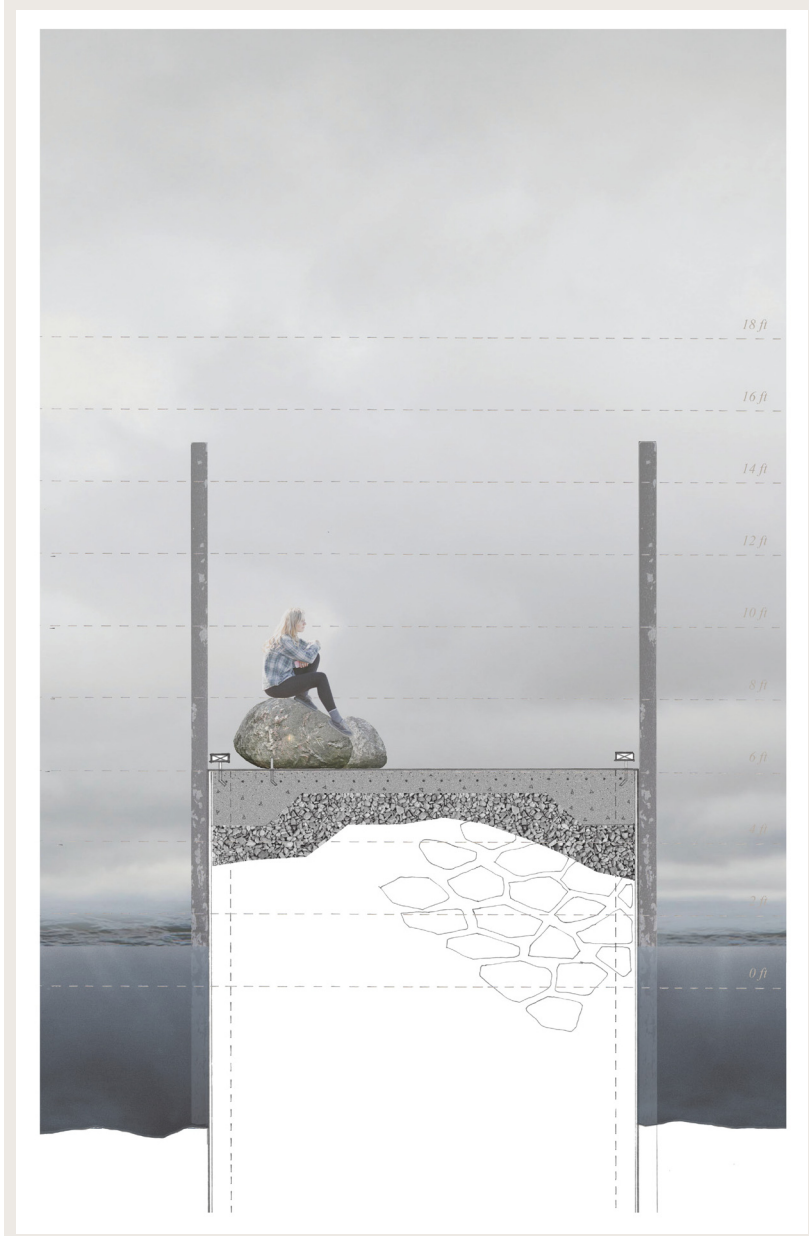
Moving across the path to Cedar Grove Beach offers views of the ocean horizon.



ing inward. A subtle raise in elevation leads up to the crossing where a series of wooden bridges span anchors of deep sheet piling and concrete slabs. The middle most section of the crossing rises and falls with the tide. It provides the necessary connection for only several hours when the water is highest. Once across, the path breaks down, dissolving into the sand dune to and inviting unstructured motion along the beach from there on.

Position in Section

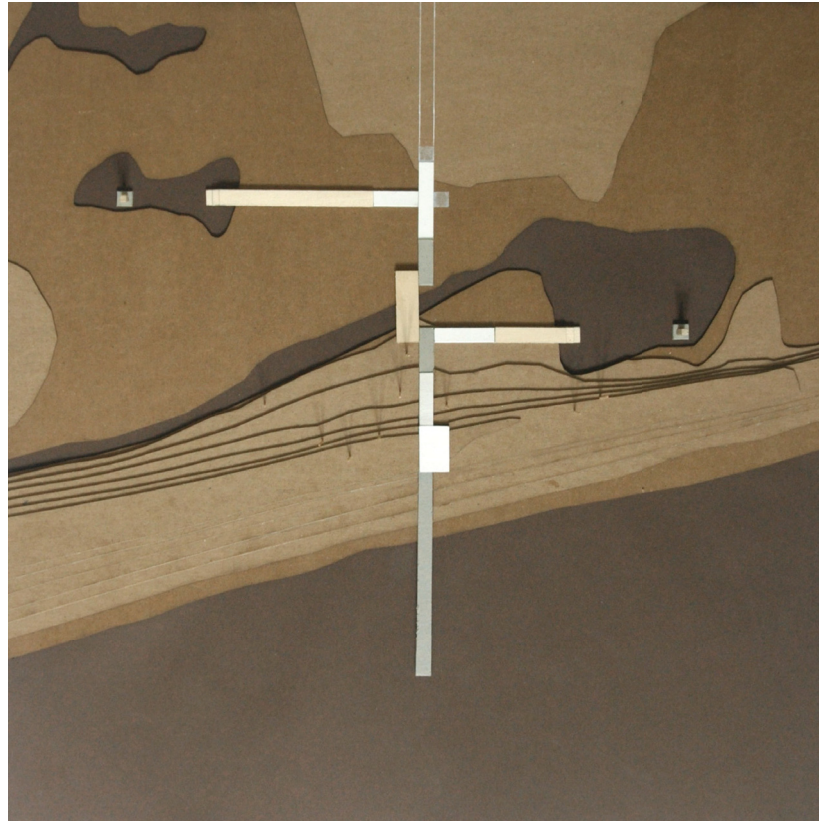
The path at Upper Cove is a gentle positioner. It is the first in a series of installations that intensify in their investigation of the top-



Section 1: Cut through one of the concrete “anchors” that abut all wooden water crossings. This is specifically rendered to represent waiting for the high tide gate to rise into place.

ography. For the most part, it floats on top of the land, rising and falling subtly until it leaves the surface behind and offers a position surrounded by water where the sky and the horizon and the condition of the ocean are enhanced.

Kissam's End in plan. Original model measured 17.5" by 17.5" at a scale of 1:500. Each contoured layer represents an elevation change of 2 feet.



Kissam's End

This intervention begins where a small footpath and culvert used to be. The path begins with an intersection to a boardwalk that leads most of the way to a curious marsh tower, just visible above the reeds. It continues to the creek where, instead of passing blindly over, the path jogs, as if sheared by the flow of the water. On the

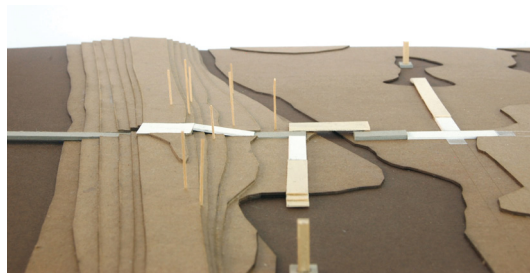
Kissam Avenue with houses demolished looking inland; video still from "Retreat from the Water's Edge," by Nate Lavey and Myles Kane.



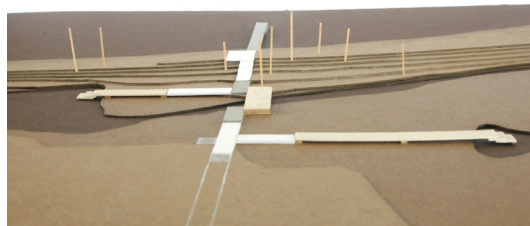
other side, another marsh tower is visible before the path ascends about 10 feet to the top of the dune. Here it expands in width, responding to the open and high elevation. A vertical drop disrupts further movement forward and requires unstructured motion down the beach to continue. The path picks up at the base of the drop with the same elevation above the sea as before the dune, thus translating the gradual climb to the top into a vertical wall. The height of the dune, when expressed vertically is experientially memorable and easily measurable with respect to the body. After the drop, the path continues its trajectory out into the ocean as a concrete and sheet piling groyn that will help mitigate the erosion of Upper Cove.



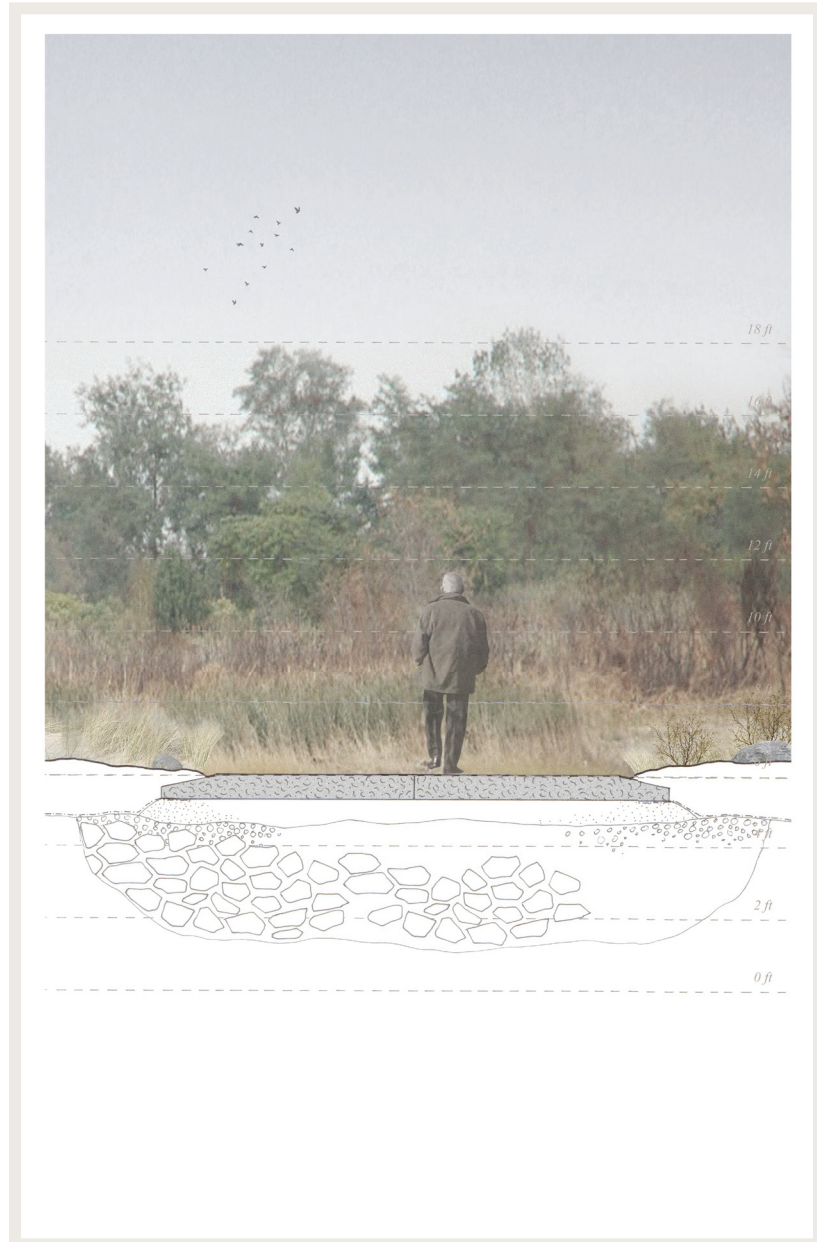
The shore at the end of Kissam Avenue as it looked in October 2014. Upper Cove is seen in the distance; photograph by Nathan Kensinger.



Model photograph where the Marsh Towers and the abrupt drop are visible.



The approach to Kissam's End from Kissam Avenue showing the intersecting paths to the Marsh Towers.



Section 2: Typical section through the path as it passes in plane with the land. Precast pavers with oyster shell aggregate define the surface. At it's edges it dips underground.

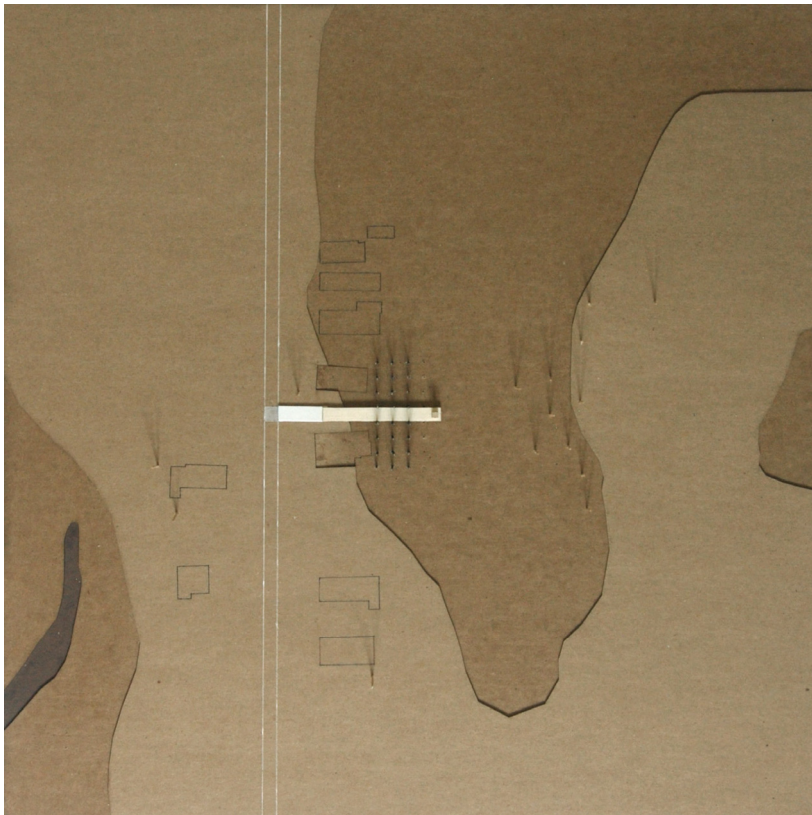
Position in Section

When it runs along the surface of the ground, the path is comprised of concrete pavers set on bedding sand, gravel and anchor stone. It is typically 12 feet wide and slopes down at the edges where geotextile and topsoil encourage the growth of plants. In this way the path nestles into its context, literally enveloped by it

along the edges. In the right conditions, over time the effect would intensify as plants grew into the cracks between the pavers.

Swallow's Post

Just past a large maple tree, the path to Swallow's Post departs the remains of Kissam Avenue and traverses into the marsh. As the ground slips gently away and the reeds rise on either side, the pathway's pavers stop at a narrow wooden boardwalk which extends between two old house foundations toward a grove of trees in the distance. From within the tall reeds 24 slim steel posts rise in a grid against the sky. At the top of each post is a little colony of 5 white birdhouses. Moving amongst their regular spacing magnifies one's sense of distance through parrallax adding depth of field to the vast open surroundings. Just beyond the posts, at the end



Swallow's Post in plan. Original model measured 17.5" by 17.5" at a scale of 1:500. Each contoured layer represents an elevation change of 2 feet.

of the boardwalk is a tall narrow bird blind with operable shutters and an elevated platform. It is just big enough for about 4 people to ascend and watch the swallow's aerial acrobatics.

Position in Section

The boardwalk through the marsh is narrower than most of the other paths. At 6 feet wide it's suited to single file or solitary walking which can lead to a more contemplative state of mind. It is

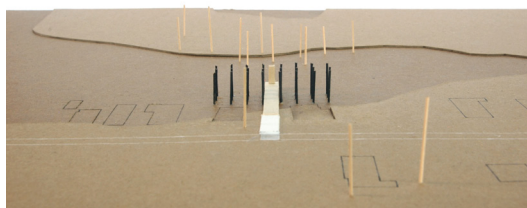
The tree on Kissam Avenue that would mark the start of the proposed path to Swallow's Post; photograph by Nathan Kensinger, October 2013.



Swallow's Post from the north.



Swallow's Post from the southwest illustrating the procession from the street toward the trees.





Section 3: The boardwalk through the marsh is narrow - about 6 feet wide - to enhance the experience of walking through the reeds.

supported by helical piles driven deep into the marsh and elevated about 2 feet above the ground. At this height, one's position is far below the top of the towering phragmites, and railings which would severely limit a feeling of immersion, are not necessary. The reeds would grow right up to the edges of the boards. Such proximity invites more profound and memorable experiences of the plants which dominate the landscape. In some cases they may

even tilt to meet above the path. Understanding the seasonal changes in height, colour and texture as well as observing the various creatures that make the reeds their home is much more likely from this position.

Lost Lane Loop

When the houses in the community are demolished, the lots are leveled, covered with top soil and sprinkled with native wetland and meadow seeds.³³ This intervention, though not developed beyond a simple geometry, proposes leaving behind the low foundation walls of 7 original seasonal bungalows that defined the neighbourhood. Nestled between three small lanes and one of

33. Nathan Kensinger, "Three Years After Sandy, Returning Staten Island to Nature," *Curbed New York*, October 29, 2015. <http://ny.curbed.com/2015/10/29/9905926/three-years-after-sandy-returning-staten-island-to-nature>



Lost Lane Loop in plan. Original model measured 17.5" by 17.5" at a scale of 1:500. Each contoured layer represents an elevation change of 2 feet.

the most mature stands of trees to the northeast, the foundation walls could be filled to create a loop of elevated meadow islands or alder groves with places for contemplation and observation.

Position in Section

Though not illustrated, the position in section for this installation is elevated, at least 4 feet above the ground on a surface of metal grating. The lightness of the material and distance from the ground reflect being mentally elsewhere, in memory or imagination.



Three traditional bungalows on Fox Beach Avenue at Mill Lane awaiting demolition; photograph by Andrew Lichtenstein, October 2014.



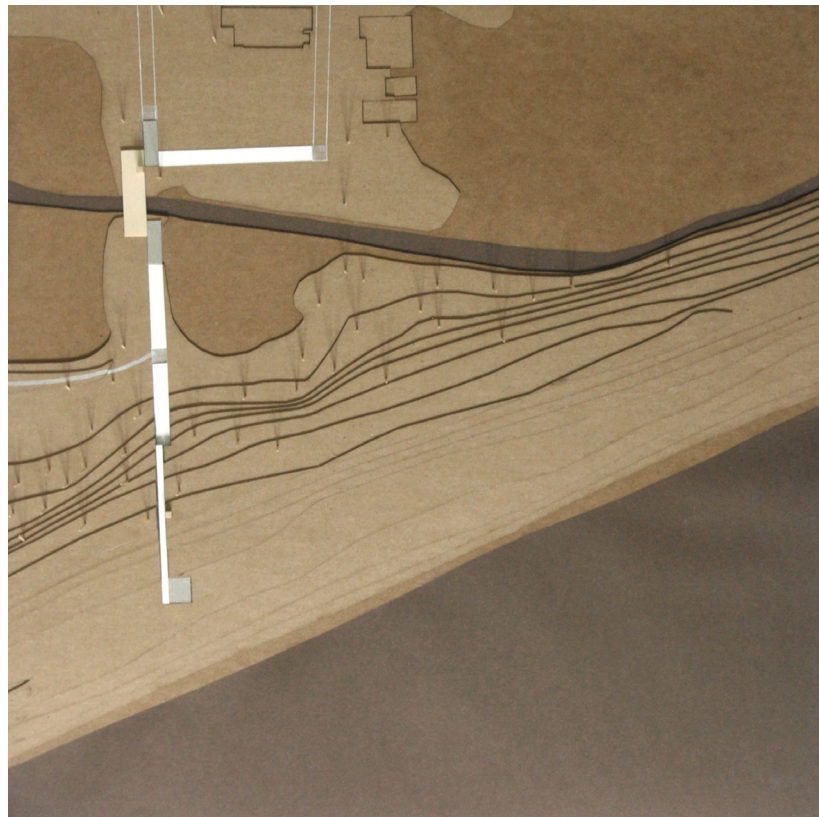
The remaining foundation walls of a house on Kissam Avenue; photograph by Nate Dorr, July, 2013.



Proposed memorial loop between Fox Beach Avenue, Mill Lane and Fox Lane.

Tarlton's Pass

Tarlton's pass replaces an existing bridge and trail with a path that abruptly narrows to a 6 foot wide cut in the 18 foot tall sand dune. The path begins at the ends of Tarlton Street and Fox Beach Avenue by connecting them along the creek. As it passes over the water it shifts in response to the flow of the creek, widening by several feet before returning to its original trajectory and size on the other side. At an intersection with an existing footpath, the pavers transition into a more informal aggregate of oyster shells before resuming again as the path confronts the dune. Cutting through the hill, it narrows as if compressed on either side by the mass of the land. At the wall's highest point, an small alcove with a place to sit and pause provokes contemplation of the vertical walls, and the possibility of registering the height and significance



Tarlton's Pass in plan. Original model measured 17.5" by 17.5" at a scale of 1:500. Each contoured layer represents an elevation change of 2 feet.

of the topography with our bodies, instead of just our eyes. Once through the pass, the path expands again releasing the walker out on to the beach where no motion in particular is prescribed.

Position in Section

Continuing with the intensification of position in the landscape, Section 4 describes how the path cuts through the dune. The concrete wall tapers down to a thickness of just 3 inches at the top. Rich topsoil and geotextile encourage the growth of plants right up to and even over the edge of the wall. Like the pavers in the ground, the intervention is enveloped by the natural context. The concrete walls would read more like the ground itself instead of



The existing Tarlton Street bridge with homes awaiting demolition and a great blue heron in flight, photograph from Google Street View.



View of model showing the cut through the 18 foot sand dune.

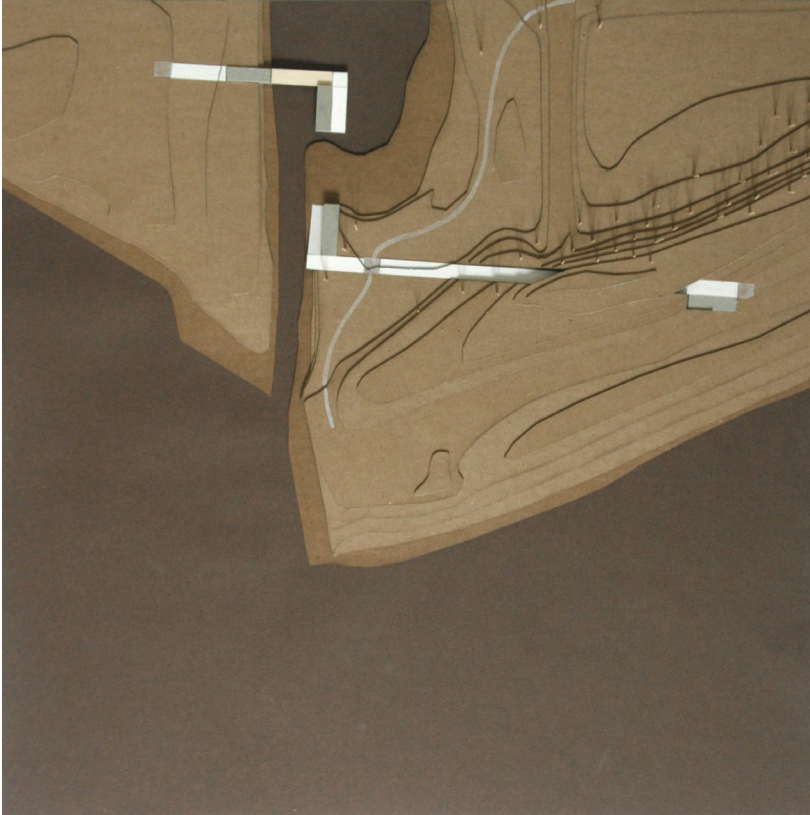


Tarlton's pass from the north showing the Oakwood creek crossing.



Section 4: The path through the dune is only 6 feet wide and about 10 feet tall at its highest. The proportions emphasize the vertical plane leading to deeper registration of the dune's mass.

a barrier holding it back. To emphasize the vertical plane, a 4 inch reveal separates the walking surface from the walls suggesting appropriately that the ground cut continues below. These troughs collect and drain water that, when there is enough of it, produces the sound and humidity of a wet subterranean atmosphere.



Lower Landing in plan. Original model measured 17.5" by 17.5" at a scale of 1:500. Each contoured layer represents an elevation change of 2 feet.

Lower Landing

Lower Landing is the southern most installation and it connects Oakwood Beach to the coastal trails in Great Kills Park. Instead of cutting through the dune, this installation continues the gradient of intensity by going underground. It passes under the ground, trees and shrubs at the highest point on the site passing from ocean side to inland side of the dune. A look over one's shoulder reveals that the path is oriented to frame the opposite end of the beach and the groyne at Upper Cove; a distant view of the other side. At the creek, a wooden bridge crosses the tidal inlet but not the adjacent intertidal zone leaving the walker to determine when and how they will complete their crossing while providing all the formal invitations to do so.

Position in Section

Section 5 is cut through the path as it passes underground. At first the land rises slowly on either side until it completely cover the path. A domed roof makes it feel as if the land has curled over the

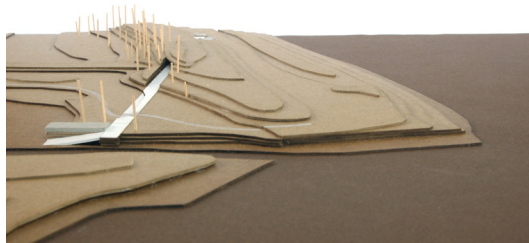
A grove of sumach trees looking out toward the ocean with the tidal channel down hill on the right; photograph by Nate Dorr for Gothamist, July 2013.



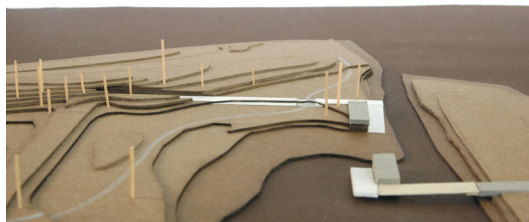
The tidal channel that currently separates Fox Beach from Great Kills Park; photograph by Andrew Lichtenstein for Al Jazeera, October 2014.



The path through the dune approached from the south.



Waiting platforms and ramps leading down to the tidal flat.





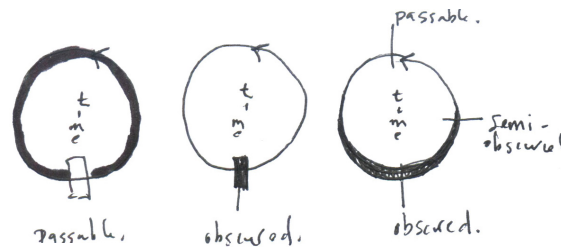
Section 5: This section is cut through the tunnel at Lower Landing. A light well brings light to the bottom of the space to create a sense of inversion.

walkway like a giant wave while a light well illuminates an opening just above the floor. The intent is to replicate the threat of the ocean by orienting the light on the inland side. Furthermore, to have light emerge at our feet begins to suggest a position of inversion or at least achieves the unusual situation of being below the natural context, symbolically subordinate to it.

4.2 Timing Places

Timing places take the idea of place as a way to see time, discussed in the second chapter, and emphasize it by making places that are timing dependent. Sprinkled within the network of proposed paths, are places and passages that depend on changes in the landscape in order to be accessed. Though there are many shifts and transitions in Oakwood Beach, these designs focus on the seasons and the tides.

Some different options for using timing as a disruptive mechanism; varying degrees of abruptness.



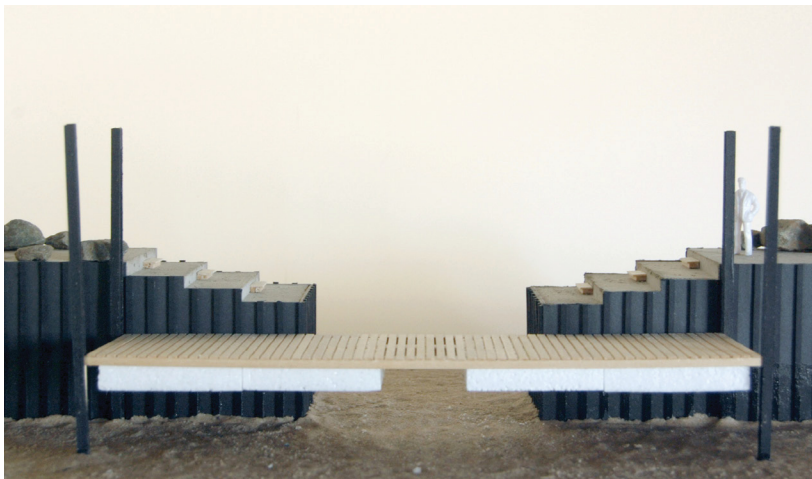
They also draw from the notion of disruption previously explored as a necessary tool for facilitating attention. Instead of spatial disruption however, in this case, the disruption is temporal. As such, movement through the landscape depends on the temporal characteristics of it and not just the volition of the walker intent on getting from point A to point B. It requires a kind of mental and experiential dialogue with the natural world; a consideration of what it's up to and when that replaces our usual indifference and entitlement. It celebrates some of the things learned by the previous residents of Oakwood Beach when Hurricane Sandy tore through their small neighbourhood: that living with nature is very different than living near it.

Low Tide at Lower Landing

Making the crossing from Oakwood Beach to Great Kills Park or vice versa is only possible at low tide. The crossing is an unmediated, adventurous experience of uneven and potentially muddy walking surfaces. The lack of infrastructure stands in contrast to the highly structured path on either side of it, an opposition that emphasizes each condition. It's not immediately obvious if the crossing will be possible until you walk down the ramp that takes you to the tidal flat. If the water is too high, there are waiting spaces on either side that look down on the crossing and across at each other. The intensity and intimacy of the experience is part of the gradient that runs across the site, lessening as you move north toward Upper Cove.

High Tide at Upper Cove

The tidal gate at Upper Cove and the crossing at Lower Landing bookend Oakwood Beach. Access from either direction depends on the water elevation making this stretch of coast unique along the shore. Unlike the unmediated crossing at Lower Landing however, Upper Cove is relatively easy. The piers on either side step

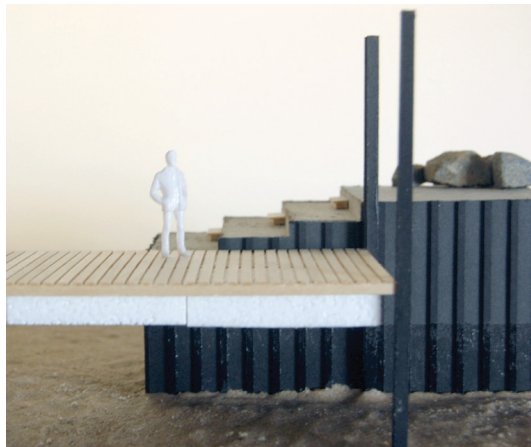


The floating tidal dock and concrete piers at Upper Cove.

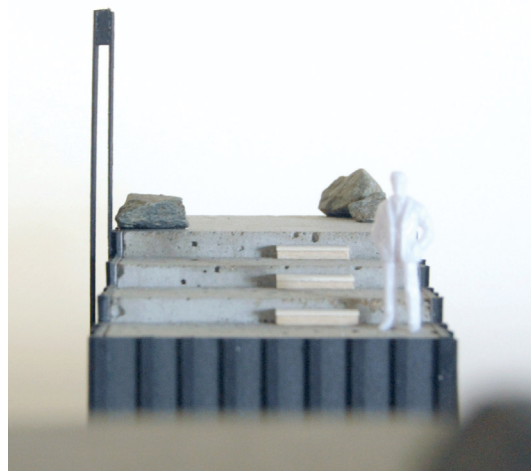
This image shows the tide partially in. Crossing may be possible depending on the volition of the occupant.



As the tide rises, the floating dock eventually meets the steps at the end of the pier.



When the tide is out the steps and rocks offer places to sit and wait .



down toward each other, getting close but not quite meeting. A wooden dock rises and falls with the tides in the tracks of four steel columns and connects the two piers. The dock can be accessed at a range of water elevations to not only account for fluctuations in tide levels, but to also extend the time at which crossing is possible, lessening the disruption somewhat.

It may strike some people as a great deal of effort to provide what is essentially an inconvenience, but I think that a great deal of opportunity can come from inconvenience, that is in a life where most things come easily. The mental exercise of choosing when to cross is a valuable one. Gauging at what point it is safe, anticipating that point and feeling a sense of accomplishment and gratitude are the un-formalized experiential components of this design that make it valuable in its very “inconvenience.”



The Marsh Tower is a place to visit in the winter for afternoons and evening fires.

Mid-Winter at Kissam's End

When temperatures drop in the northern hemisphere a huge amount of space is made accessible as water turns to ice. It's a seasonal shift highly anticipated by hundreds of thousands of people

Operable screens provide protection from the wind or open to a view. When not in use, the screens on all four sides are closed.



and animals who depend on it. During a typical winter in Oakwood Beach the open water in the marsh freezes making the area much more accessible on foot. The Marsh Towers rest on small concrete islands surrounded by water and reeds. There is a small place to sit, a shelf for firewood, a fire pit and a chimney. Four operable screens can be opened or closed to suit the needs of the occupants for shelter from the wind and views of the surrounding landscape. In the summer the towers can be seen over the reeds and from the paths as a reminder of the opportunity winter brings.



A collage illustrating the atmosphere of birds arriving in spring.

Spring and Summer at Swallow's Post

Every spring, millions of birds fly thousands of miles from their winter ranges to places all over North America to be happily spotted or heard by anticipating birders. It's a sure sign of spring they will tell you. One bird, the purple martin, flies thousands of miles north from South America. In flocks so large they register on weather radar, they migrate along the east coast of the United States to arrive at their annual nesting colonies. These large swallows are known for their pleasant call and aerial acrobatics as they barely ever touch the ground. They feed on insects by marshes, streams, open fields, and lakes³⁴. But what makes the purple martin especially remarkable is its utter dependence on humans for a

34. Kenn Kaufman, "Purple Martin," *National Audubon Society* website, accessed February 6, 2016, <https://www.audubon.org/field-guide/bird/purple-martin>

their homes.

Architecturally, the colony rises from within the reeds of the marsh in a tall and slender grid, visually subservient to the natural context. The arrangement and structure appear simple, allowing the arrival and inhabitation of the birds to be the ultimate focus and defining element of the space. The structural elements that support the houses are simultaneously the structural elements that support human observation. The architecture facilitates a dialogue between nature and culture without impressing itself on

Traditional purple martin houses made from gourds; photograph by Carol M. Highsmith, 2010.



A pair of purple martins. The female is on the left; photograph by Chuck Abare.





The birdhouses raise and lower to be cleaned out each year using a simple pulley system (not shown). The steel is also used to support the boardwalk at the ground.

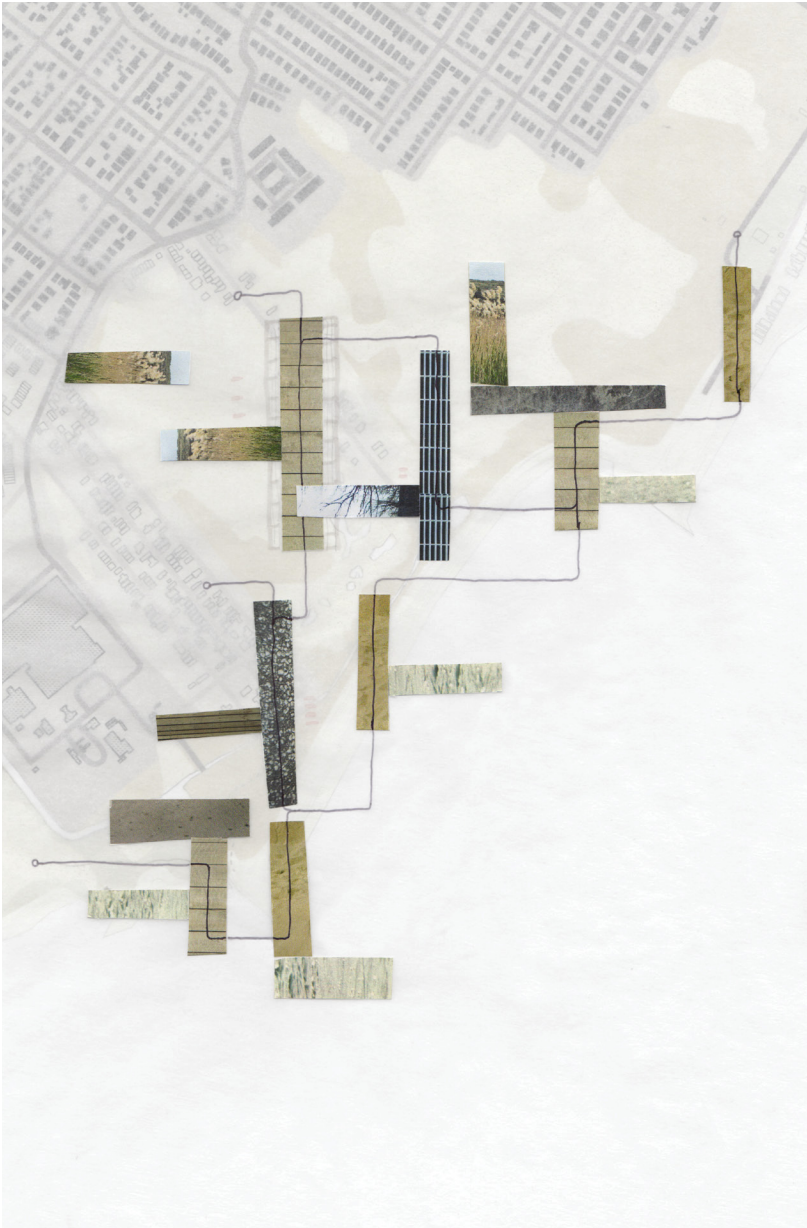
the exchange.

While the other interventions operate on a principle of human occupancy that depends on a change in the landscape, this intervention shifts the focus away from human occupancy. The occupant in this case is the flock of birds. They depend on seasonal changes in the landscape for migration and successful reproduction but critically, they also depend on us. We are a part of the landscape and our place in the natural world is one with responsibility.

4.3 Field Guides

Material coding is part of the strategy that makes the architecture of this design transparent to, or indicative of its position in the landscape. Consider how difficult it is to tell whether you are over land, over water, suspended in the air or supported by piles when walking along a boardwalk that never changes as it jogs in and out along the city's waterfront. Instead of providing a built context driven by ease of use or ease of construction, changing materials according position is driven by ease of interpretation and brings the experience of the occupant closer to the context they are inhabiting.

Materials in this thesis are either introduced to the landscape or borrowed from it, though over time it could be said that the introduced materials transition from foreign to integrated. Initially however, introduced materials are either highly refined, processed or imported from a different context while borrowed materials are what is found on site, unmoved and unaltered but considered part of the architectural palette. Most of the vertical materials in the design are borrowed. Some of these include the phragmites that form walls around the boardwalk, the grove of sumachs at Lower



Location and juxtaposition of materials in the landscape as wall (left-to-right) and path surfaces (top-to-bottom). The exact location is refined in the site plan.

Landing, the maple tree at the trailhead of Swallows Post and the ocean itself which completes the architectural procession at Upper Cove by floating the tidal dock. A host of other shrubs and bushes found at the site are included to formally note the heuristic value they have not as spatial positioners but as temporal cues for the changing seasons. These include the speckled alder for its winter catkins, the pussy willow for its remarkable spring buds, and

These materials are borrowed from nature to comprise the vertical surfaces indicate critical changes in the seasons.



the sumach tree for its vibrant fall display.

To respond to the spatial positioning of a given point in the landscape, introduced materials are arranged in the following pieces of the path. The location of these materials is precisely represented in the site plan on pages 42 and 43 and generally in collages throughout this chapter.

Wood

Whenever the path crosses water, it is constructed of 6 inch wide cedar decking with visible gaps between each board. It's an intuitive choice for its light weight, relative transience, and buoyancy; practical and qualitative characteristics that compliment the location and purpose. Wood also reverberates and the distinct hollow sound of walking on boards suspended over the ground is further indicative of the spatial position.

Steel

The steel birdhouse posts are repeated through out the projet in a way that provides or implies the same mechanical motion and structural support. They are consistently 6 inches wide, 3/4 of an inch thick with a 6 inch space for sliding elements between. The dimensions are maintained in the posts for the marsh towers though

they are configured slightly differently to support the perpendicular intersection of the sliding shutters. Wherever the steel columns occur, which is everywhere there is wood, they extend 24 feet above sea level. The consistent height introduces a subtle horizontal datum that aids the interpretation of one's relative elevation.

Anchor

A number of "anchors" have been set into the ground along the path. They are constructed using steel sheet piling which is driven deep into the ground and then back filled with earth or anchor stone and gravel. The resulting assembly is a long lasting block of ground highly resistant to water and erosion. The surface is finished with a flush slab of fine dark concrete cast using Waste Foundry Sand (WFS), a by-product of the metal industry that is nearly black. The dark hue, heavy mass, and rough broom finished surface all reaffirm an association with the ground. The anchors slip under the wooden bridges at either side, communicating their role



Material study with crushed oyster shells cast in concrete as aggregate, scaled approximately 1:5.



Loose oyster shells behave similarly to pack gravel depending on their size. This project proposes a 1/2 inch screening.

in supporting the span. In general they occur where the ground plane has been manipulated, elevated or depressed.

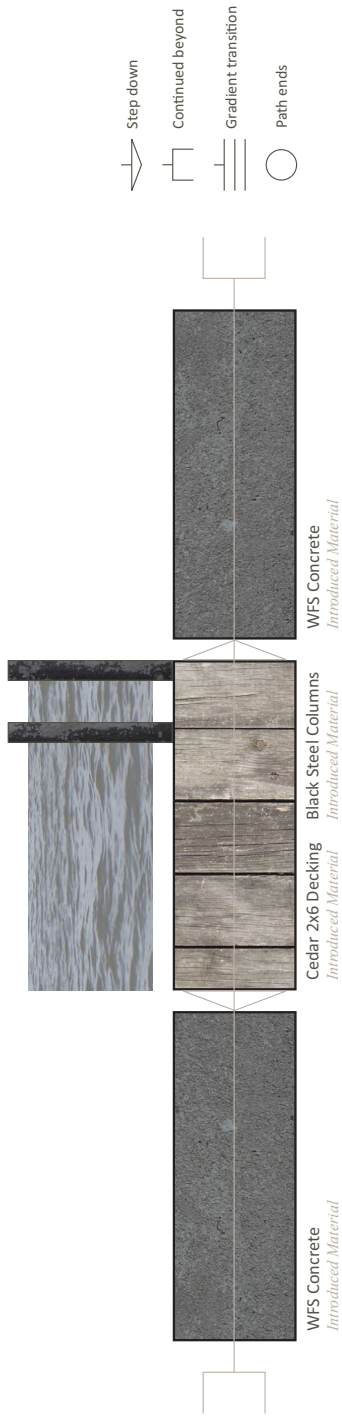
Pavers

Most of the path is delineated by large 4 and 3 foot long precast concrete pavers installed end to end across the 12 foot wide path to form alternating rows of either 3 or 4 blocks. They indicate a grounded-based structure that is less formal and permanent than the monolithic concrete of the anchors but more robust than a loose aggregate. As seen in Section 2 earlier in this chapter, the outer most pavers slope down underground, establishing the natural context as the dominant element. Whereas the surface of the anchors is a fine broom finish, the pavers are sandblasted to produce a rougher texture and expose the oyster shell aggregate within.

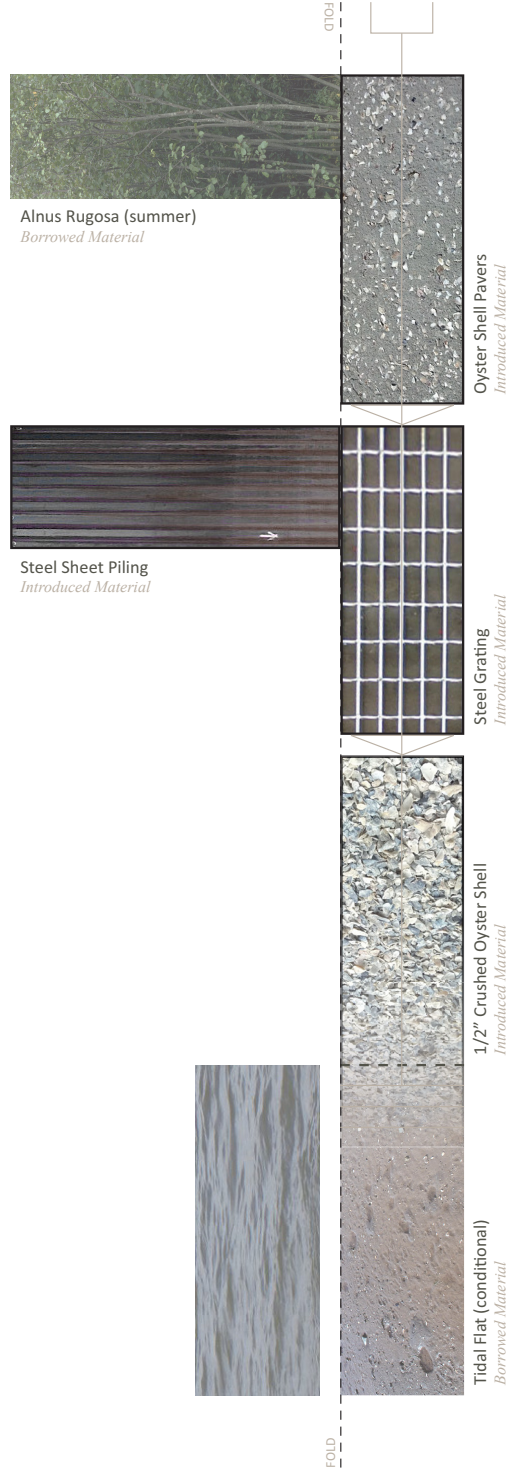
Aggregate

Oysters have long been a part of the New York harbour ecology and economy. Integrating oyster shells into the material palette of the site is a reminder of not only proximity to the ocean, but of everything it provides us with. As loose aggregate, the formality of the path is further reduced. The crunchy sound of walking on the shells reaffirms the path's dissolution into the context. Inevitably bits and pieces would start to bleed out across the site, carried astray by the movement of feet and blurring the boundaries further.

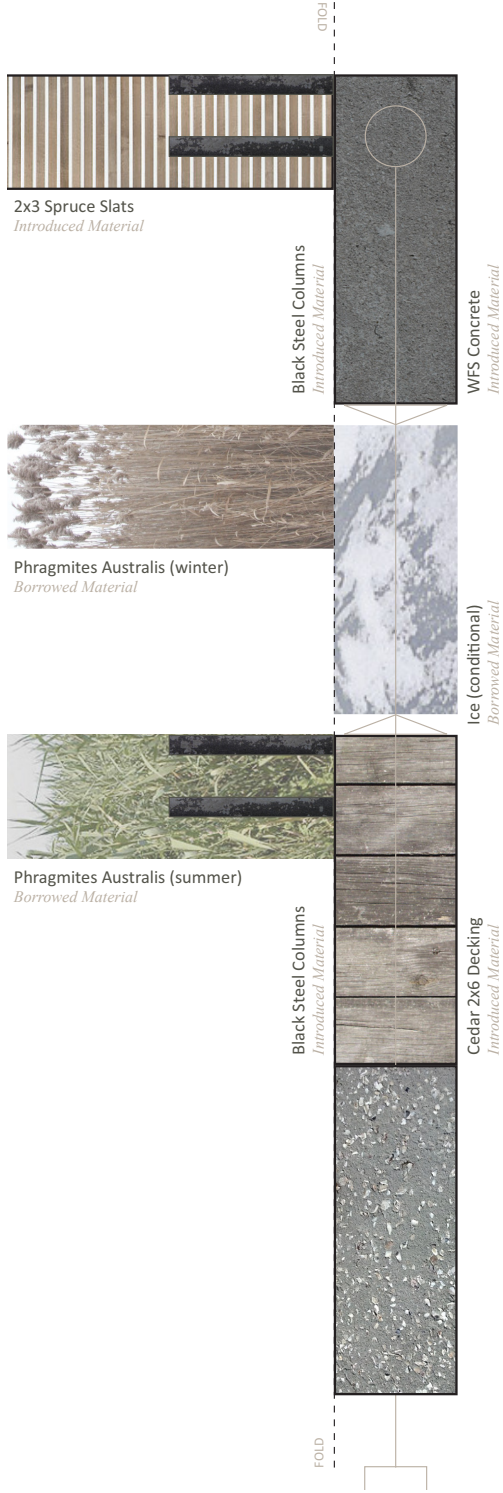
Typical material scheme for a water crossing and associated legend.



Material scheme for the tidal crossing at Lower Landing including borrowed and conditional materials.



Conditional material scheme for accessing the marsh towers when the water in the wetland freezes.



Vertical and horizontal introduced materials used in gradients of aggregation.



CHAPTER 5: FUTURES

All boundaries are blurred in time; it's the transformation of context, the dissolution of structure and refinement of chaos. Needless to say, it is difficult to engage the future when it comes to design, there are so many unknowns, and yet necessary. There are some important points to make about the future of Oakwood Beach that influenced the design of this project.

5.1 Predictions

Necessarily, these interventions are calibrated to the present. As climate change and other shifts take place, there is a point at which they may stop operating. Since the 1970's bird counts for most species across North America have been declining.³⁵ The purple martin is certainly one of them. Changes in the weather could effect their migration patterns and timings as well. If temperatures rise such that winters become significantly warmer in the northeast, ice will stop forming in the marsh at Oakwood Beach restricting the use of the marsh towers. Though the tides will never stop so long as there is a moon, sea level rise will eventually flood out the tidal flat at Lower Landing while the path at Upper Cove, when it isn't underwater may become a mid-tide rather than high-tide crossing. In the more distant future, perhaps only the introduced anchors will remain, driven deep into the ground, as monolithic totems to an irretrievable past.

5.2 The Function of Futility

Memory conspires against nature The forgetting can begin in the instant that a change takes place: the human mind did not evolve to see its surroundings - what we so clinically refer to as 'the environment' - as the focus of our attention, but rather as

35. Quirks and Quarks, "Songbird's Range Get's Squeezed by Climate Change," *Canadian Broadcasting Corporation*, February 6, 2016.

the backdrop against which more interesting things take place.³⁶

Futility is a way of calling attention to our surroundings. It's important because it leaves behind a marker of how things were at a particular time. It undermines shifting baseline syndrome and helps us remember that any climactic "new normal" is really abnormal if we take into account the past.³⁷ Memory is essential in understanding the scope and severity of the changes taking place which is why experiential measurements are necessary.

If its true that "Longing is triggered as one of the primal drivers for creative human action by the loss of something precious,"³⁸ then the inevitable failure of something has the potential to be profound. Zadie Smith says, "In the end, the only thing that could create the necessary traction in our minds was the intimate loss of the things we loved," when she meditates on the transition from "the elegiac *what have we done* to the practical *what can we do?*" about the climate crisis that surrounds us.

36. J.B. MacKinnon, "The Nature of the Problem," in *The Once and Future World* (Toronto: Vintage Canada, 2013), 21.

37. MacKinnon, "The Nature of the Problem," 19.

38. The Curators, "Longing and Desire," *Sehnsucht* (New York: SpringerWien, 2010), 29.

CHAPTER 6: CONCLUSION

The changes in the weather are changing the world we live in; a landscape that is marked and marred by our collective act of dwelling. By learning to read into the beauty and complexity of our landscapes using architecture, we can embrace the shifting stories to form a deep understanding of the precarious natural context we depend upon. This thesis has illustrated some of the ways architecture speaks a dialect of the landscape language, performing in tandem with its environment as a mechanism that reveals what we might not otherwise notice as it slips across space or through time. Architecture like this can help us transition into a culture of respect and awareness by evoking sensitivity to what is observed.

The timing places and spacing paths carefully inserted into the wavering context of Oakwood Beach connect us to what is larger than ourselves in a way we are able to decipher; a way that does not stun us with vastness. They are existential architectures that celebrate the slow accumulation of experience. As changes in the very nature of the planet accelerate, our futures depend on being able to tune into this repository of experience to be able to say with conviction: "Something is wrong." After all, climate change is place change. It's not merely the atmosphere, way up high and safely distant from our homes and neighbourhoods, that is changing. It is our homes and neighbourhoods, here, there and everywhere else around the world. It is the loss of things close to us, the memorable and resonant qualities of the places we grew up, the houses we live in, the landscapes that nurture us, the cities we cultivate, which are at stake. The more we are able to see this the more we might do something about it.

It might be the case that I've taken an emphasis on experience and

perception too far. And it's probably true that the real solutions incorporate all aspects of architecture, taking the technological, empirical, and certainly the economic into account. But I perceive a lack of concentration on the less tangible characteristics of our built environment, the beautiful and artistic ones, when it comes to conversations about sustainability. I wonder why, just as Zadie Smith pondered the lack of an emotional vocabulary for what is happening to the weather. If there is one thing to get emotional about, this may just be it.

With further consideration and adaptation, I think the elements of this project and the research at its foundation can be translated into any number of contexts from the strictly rural to the intricately urban. We need a new environmentalism in the discipline of architecture. By appealing to the phenomenological capacity of design to inform perception, empathy and experience, we can move toward a built environment that balances the existing emphasis on technology and efficiency with a celebration of the less tangible notions of memory and narrative as necessary, and beautiful parts of an astounding global movement.

APPENDIX

Every exploration, assertion or investigation has its hazy cloud of remainders; paths not taken, places unknown. We fumble around in the mist until we think we've found something solid while in the foggy periphery is the whole language that supports your idea. The remainders of this thesis are the trimmings of a wild process cast aside for now but very much still alive.



Remainders from the design process. Including an early tide gate, wood details and general thresholds.

There are two early concepts and their complimentary models included in this appendix that didn't get worked into the final scheme. One is an installation that traces the rises and rolls of the land, the other is a kind of mnemonic device.

Racking House

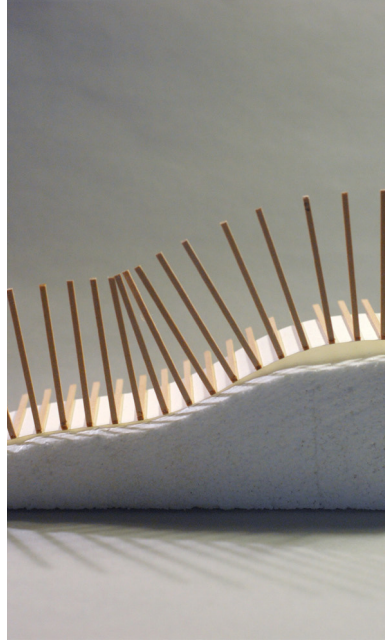
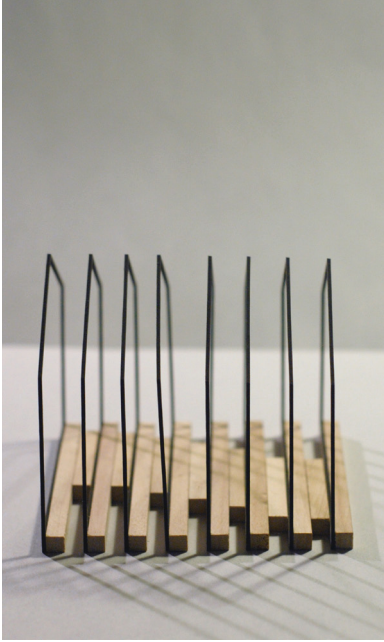
The path through the racking house unfolds time into an illustration of destruction and orients the visitor to the force of the wind and the sea. The proportions of the house reflect those of the original seasonal bungalows that defined the site. The narrow metal frames are nearly invisible from the side where the racking is less obvious. From the front their width accumulates to emphasize the distortion. The path veers in response to the imaginary forces.

Tracing Topography

Vertical cues along a path frame movement forward while emphasizing the elevation changes taking place under foot by remaining perpendicular to the surface at all times. The resulting wall compresses as the path crosses a valley and expands over hills. Trans-



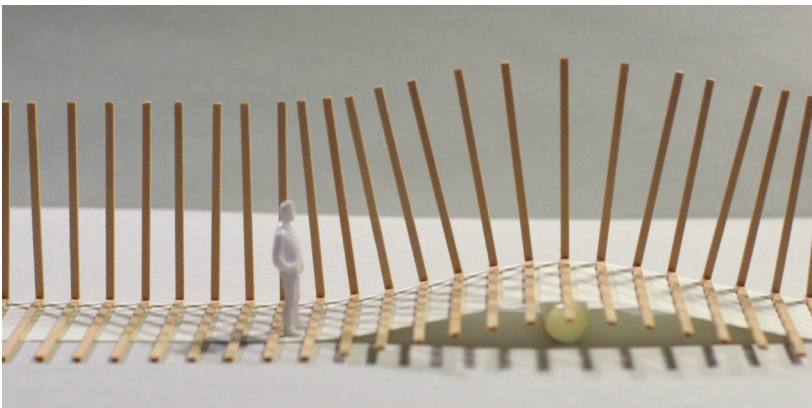
The steel frames of the racking house tilt further and further away from the ocean; the path veers accordingly.



Left: the frames are narrow and perfectly planar giving the house a transient and ghostly quality.

Right: The vertical slats remain perpendicular to the curve of the land.

lating the changing surface into the vertical plane creates an additional way of perceiving and ultimately experiencing the rhythm of moving across the landscape. Though represented at a relatively intimate scale, it's fascinating to imagine a much larger version.



Tall vertical cues translate the curve of the land into compressions and expansions within the walls, increasing perception.

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