

Shifting Phenomena: Inhabiting Waterscape Infrastructure within the Annapolis River

by

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at

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Dalhousie University is located in Mi'kmaq'i,
the ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

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Abstract

Throughout human history, we have viewed ourselves as separate from the landscape. This attitude can be seen in the vast array of infrastructure that now marks and modifies the landscape, interrupting and shifting temporal landscape processes to better align with our ways of living. Within the context of Atlantic Canada, this thesis explores how a decommissioned tidal generating station built into a causeway provides an opportunity for inhabiting this moment of interruption. Made inhabitable, the singular focus on tidal energy within the structure produces a space rich in experiential and sensory aquatic phenomena. Cross programming of marine research, art, and event spaces ties the grand scale of research performed across the watershed with the intimate scale of individual sensory experiences. Through this combination, phenomenologically charged moments that highlights how intimately connected our actions and lives are with the landscape becomes available for contemplation and reflection.

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Lastly, to my family. To my grandmother Joan and Uncle Mike and Aunt Heather, thank you for the support and lovely meals we've shared together during my time at school in Halifax. To my parents Paul and Sue and sister Gillian, thank you so much for the encouragement and never letting me fall too far off course. This project would never have come to fruition if it weren't for you all. Our adventures as a family are the reason why I've found myself on the path of architecture in the first place.

Chapter 1: Introduction

Over the course of human history, the commonly held belief that we are separate from nature has resulted in a contemporary landscape that has been irreversibly modified by infrastructural projects. These monuments of our detachment are often seen as banal and an inserted moment of blight within what may have once been romanticized as 'pristine nature.' As infrastructure ages and social attitudes change, many of these structures become decommissioned. Typically located in unique and/or remote locations and built of monolithic materials such as concrete, rarely are they torn down. Rather, they are closed off and left as inaccessible ruins rich with experiential possibilities. Like scars imprinted onto the earth, they remain part of the story of humankind's relationship to the landscape. As Tim Ingold suggests, "features of the landscape remain available for inspection long after the movement that gave rise to them has ceased" (Ingold 1993). What can the inspection of obsolete infrastructural spaces tell us about the landscape and about ourselves?

This thesis argues that highlighting infrastructure's reductive shift in waterscape processes with sensory phenomena can change how we mentally relate to these uncertain and modified landscapes. The focus of this project is the waterscape of the Annapolis River and local infrastructure built to control and harness the power of some of the world's highest tides. By repurposing a decommissioned tidal generating station, the sensory experience of the waterscape is strengthened within the confines of the station's interior. This hybrid space becomes one of re-experiencing a waterscape that has been modified by humans for centuries. Moments of

inhabitation are inserted within infrastructural space to bring simultaneous awareness to both the minute scale of aquatic sensory phenomena and the grand scale of the waterscape processes to which the causeway and station are tied. Programmatic overlap of ecological research, data-inspired art, and sensory experiences combine to bring these scales together.

Thesis Question

How can architecture instigate sensory experiences within decommissioned infrastructure to shift our awareness of the interconnectedness between landscape and infrastructure?



*G. V. New Croton Dam. Spillway and
ownstream face. April 19, 1912.*

Collage showing the contemporary modified landscape, 2021.

Chapter 2: Landscape and Infrastructure

Landscape: the landforms of a region in the aggregate (*Merriam-Webster Dictionary* n.d.b.).

Infrastructure: the basic equipment and structures (such as roads and bridges) that are needed for a country, region, or organization to function properly (*Merriam-Webster Dictionary* n.d.a.).



Concrete dam for water power and railroad trestle,
Nictaux Falls, Nova Scotia.

PAC PA-41927

Photo of concrete dam in Nictaux Falls, NS (Halifax & South Western Railway Digital Preservation Initiative 2022)

Human Relationship to Landscape

In his book *Nature: Western Attitudes Since Ancient Times*, Peter Coates outlines how the definitions of nature and landscape have shifted over the course of history. Despite the morphing of these definitions, two general attitudes have persisted over time; that we are separate from nature and that the landscape is a set of resources and obstacles for us to use and overcome. Nature is not us and the landscape containing nature is for us. The uncertainty of nature led to the landscape and wilderness becoming a source of

spiritual anxiety, with the word 'paradise' originally meaning a walled enclosure (Coates 1998). With the Renaissance came the romanticizing of landscape and the appreciation and protection of landscape became an issue of aesthetics rather than of function. As humankind left marks across the landscape, less and less of it was capable of fitting into this romanticized definition and our appreciation for processes and the other non-ocular senses faded.

Separate from Nature

In Ancient times, the personification of nature gave autonomy to nature and the landscape (Coates 1998, 4). Nature had its own moral purpose that was independent of humans and our actions. It was the natural spirit's moral purpose that was the cause for phenomena. With the arrival of Christianity, this autonomy was removed when nature was stripped of its divinity. The human spirit is what came to differentiate us from spirit-less nature. With this, the uncertainty of natural phenomena led to fear of the natural world. To overcome this fear, it was the duty of humans to improve on God's creation of nature and the landscape. A beautiful landscape was a productive one and the landscape needed the touch of human ingenuity through acts of engineering, modification, and parcellation to reach its full potential. Through our modifications, nature became dependable. This outlook has generally prevailed until recently, with climate change forcing us to acknowledge that nature does indeed change whether we want it to or not. However, seeing change in nature as inevitable also presents a potentially dangerous mindset from festering. If nature is to change regardless of our actions, our license to exploit the landscape can continue unchecked.

Landscape as a Resource and Obstacle

In addition to being a place we inhabit, landscape has also been seen as a set of resources and obstacles. The Ancients viewed nature as a storehouse from which humans can take and modify via their intellect (Coates 1998, 28). The materiality of the natural world was separated from the spirit of nature, resulting in human interventions being easily legitimized. As early as the 6th century BC, Romans were draining swamps and marshlands to increase agricultural lands and vast tracts of forests were being felled for a source of fuel (Coates 1998, 27). By the Middle Ages landscapes were being parcelled into private estates. These imaginary boundaries indifferently sliced through larger landscape systems such as watersheds and animal migration routes, creating a landscape of exclusion (Coates 1998, 111). From the Renaissance to the 18th century, landscape became well-regulated and predictable. The functions of landscape became secondary to its aesthetic qualities.

Infrastructure as Shiftscapes

The modern idea of progress, that the human condition must be continuously improved, perpetuates our ever-increasing control over nature as we require more resources and space to propel our species forward. Our detached attitude towards nature has set the basis for how we have gone about modifying the landscape with infrastructural projects. The result of this attitude can be seen in our built environment, particularly in how we have used infrastructure to shift waterscape processes to better align with our ways of living. Through infrastructure, we have transformed waterscapes from living ecologies into machines.

By transforming nature from a living organism into a machine
– simple, unfeeling, inert matter with no intelligence, soul

or purpose – the new mechanistic philosophy assisted the commodification of nature and fueled the cancerous ethic of ‘growthism.’ (Coates 1998, 68)

Water is essential for life. We have actively sought access to it, constructing cities along coasts and rivers. It provides an answer to our thirst, food for our hunger, and transportation opportunities to connect to distant lands. However, with close proximity comes greater risk of exposure to water’s destructive forces. At the mercy of a waterscape’s uncertain temporal changes, we attempt to control and repel water through water control mechanisms such as causeways and dykes. The intention of these water infrastructures is to shift how waterscapes operate, typically in a way that lessens their power. This shift fundamentally affects temporal landscape processes, impacting everything from water quality to fish migration patterns. While the immediate impacts may be readily apparent nearby, the far-reaching, larger scale effects, if studied at all, are typically shrouded in abstract data that lack the sensory richness to stir the soul.

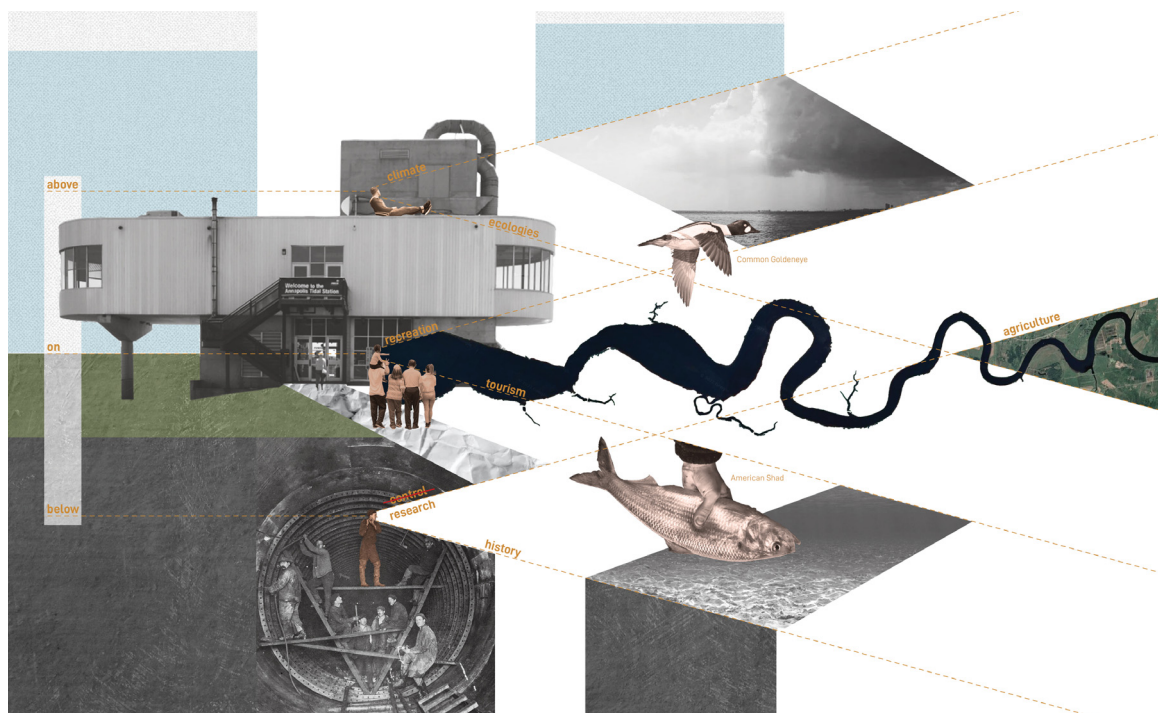
For a place in the landscape is not ‘cut out’ from the whole, either on the plane of ideas or on that of material substance. Rather, each places embodies the whole at a particular nexus within it, and in this respect is different from every other. (Ingold 1993, 155)

An Interface

The complexity and scale of infrastructural systems now mimic the landscape itself. As a result, the processes of these two systems have become entwined and can no longer be treated separately. Designing within this framework requires reading the landscape as infrastructure; an interface of temporal infrastructure and ecological processes. Described by Pierre Belanger, defining landscape this way acknowledges that landscape affects infrastructure and infrastructure affects landscape. This interface allows for

the possibility of infrastructural moments to become imbued with phenomenological aspects of the landscape. Through this combination the interconnectedness of landscape and infrastructure becomes readily apparent.

The interface is a layering of the cause and effect relationship between infrastructure and ecological processes as they are continuously designed, constructed, and reconstructed. (Belanger 2017, 433)



Collage showing the tidal generating station as part of the interface, 2021.

Landscape Time and Infrastructure Time

Landscape time is pre-existing and consists of cyclical yet uncertain successive and seasonal changes. Its scale ranges from the celestial, with the sun and moon affecting daylight and tides to the climatic with weather patterns and seasons. It continues to scale down, becoming the sensory phenomena we experience such as sights, sounds, and smells. Our senses allow us to deeply connect with the landscape and these larger processes. For example, the

sound of water, feeling of damp fog on our skin, and smell of ocean air grounds us directly in the coastal context of Atlantic Canada.

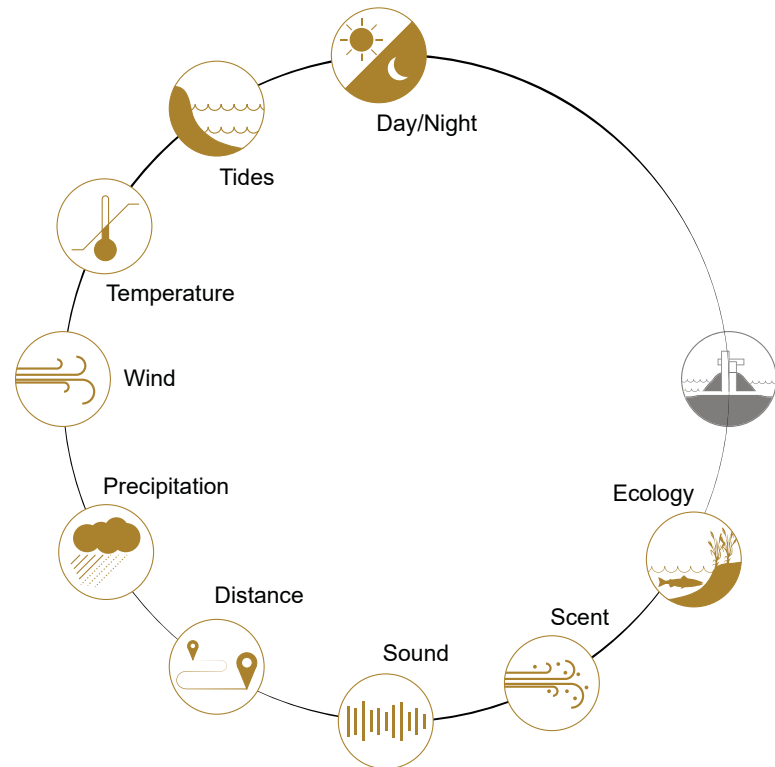
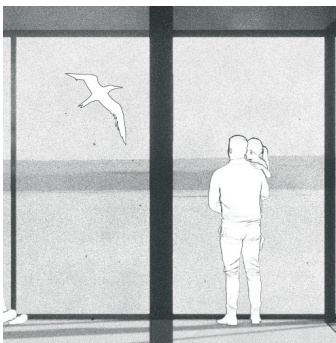


Diagram showing phenomena associated with landscape time.



Vignettes showing aspects of landscape time.

Infrastructure time is linear, reductive, deliberate, and predetermined. Infrastructure taps into landscape time and within its spaces reduces landscape processes and phenomena into a singular focus. Water is channeled, water levels are stabilized, and we appear to be in control. However, the reality is we're constantly grasping to hang on to this control. We introduce more infrastructure and new technology to replace what no longer works, continuously affecting the greater landscape. Infrastructure time is disruptive, yet this disruption can become a catalyst for focused experiential moments.

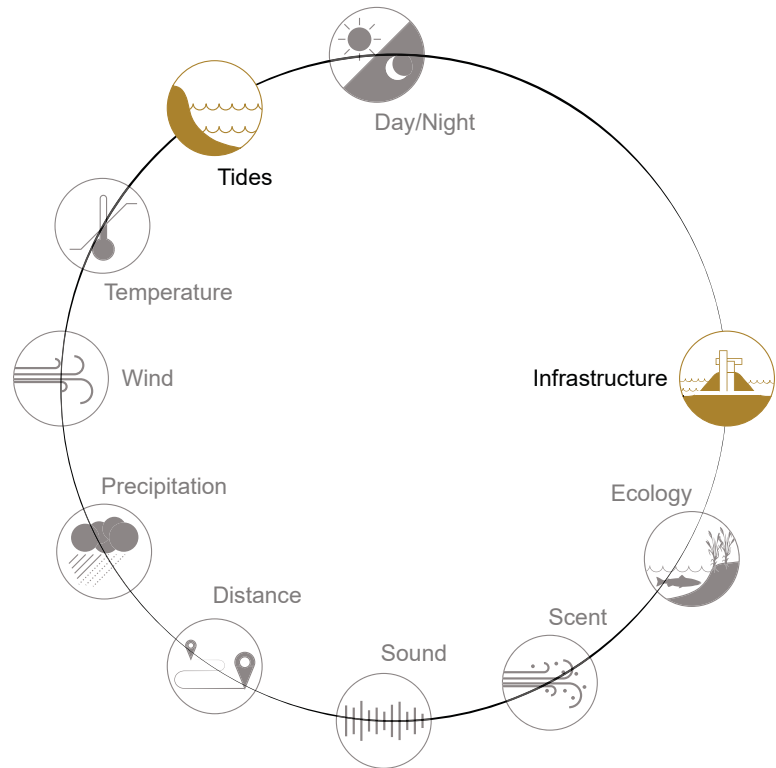


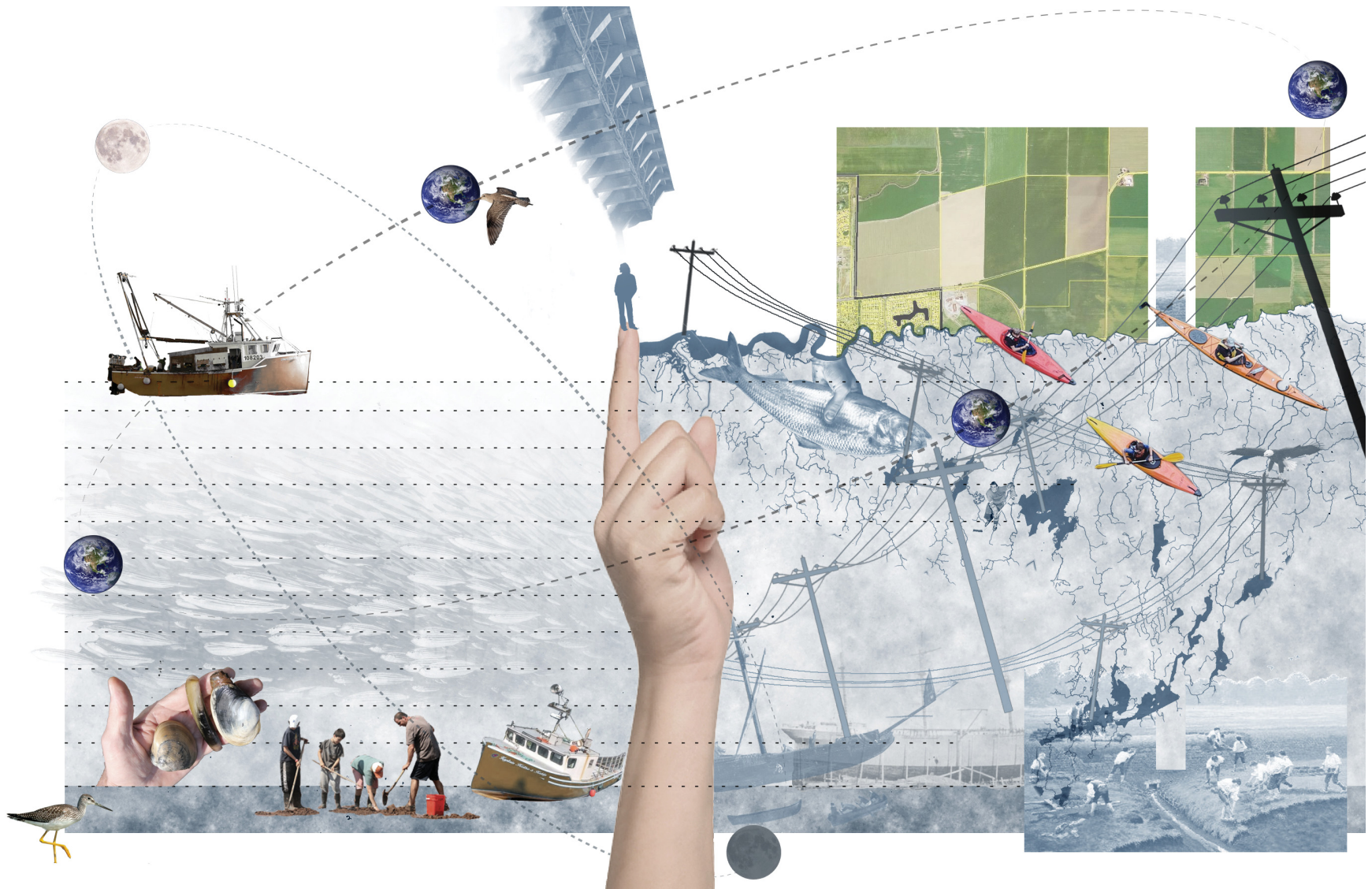
Diagram showing reductive quality of infrastructure time.

What could we learn if we stopped for a moment to simply observe and experience? What if instead of replacing defunct infrastructure, we decided to inhabit it and see what is unfolding now? What if we embrace the uncertainty of the landscape?

Reading the landscape as infrastructure presents new experiential possibilities within our hybrid world of modified processes and built form. Decommissioned infrastructure presents an ideal site where, through inhabitation, a third time can be instigated where these two former times meet.

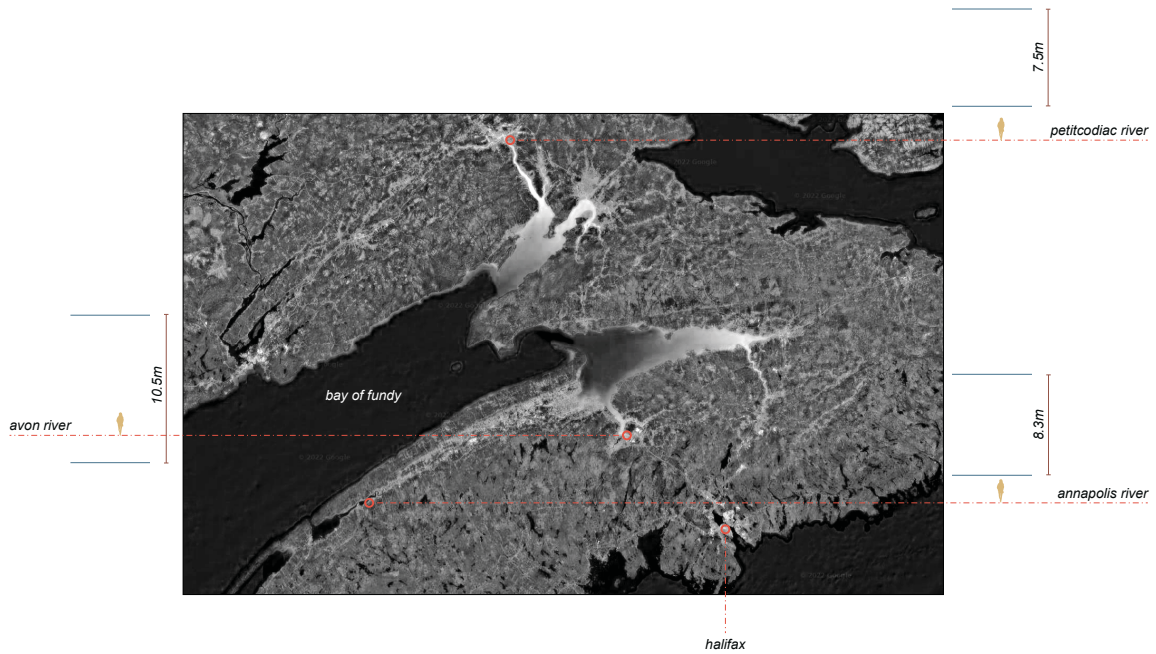


Before and after satellite images of the Petitcodiac River Causeway (Sentinelles Petitcodiac Riverkeeper 2022)



Collage showing where landscape and infrastructure meet.

Chapter 3: Atlantic Canadian Context: Fighting the Tides



Map of Bay of Fundy Region and tide heights at select locations (Google Maps 2022)

The Bay of Fundy

The tides in the Bay of Fundy region within Atlantic Canada are some of the highest in the world, resulting in a constant battle against their unrelenting waters. This unique waterscape phenomena brings hundreds of thousands of visitors to the region every year, yet infrastructural projects have sought to reduce them to manageable ebbs and flows that can be readily found elsewhere in the world. This project seeks to celebrate the immensity of these tides through the lens of infrastructure, to provide the experience of witnessing the true power and wonder of this cyclical waterscape process in a unique part of the world. Kenneth Frampton explains, “The understanding of the particularity and distinction of local and regional landscapes can provide a point of resistance to the homogenizing effects

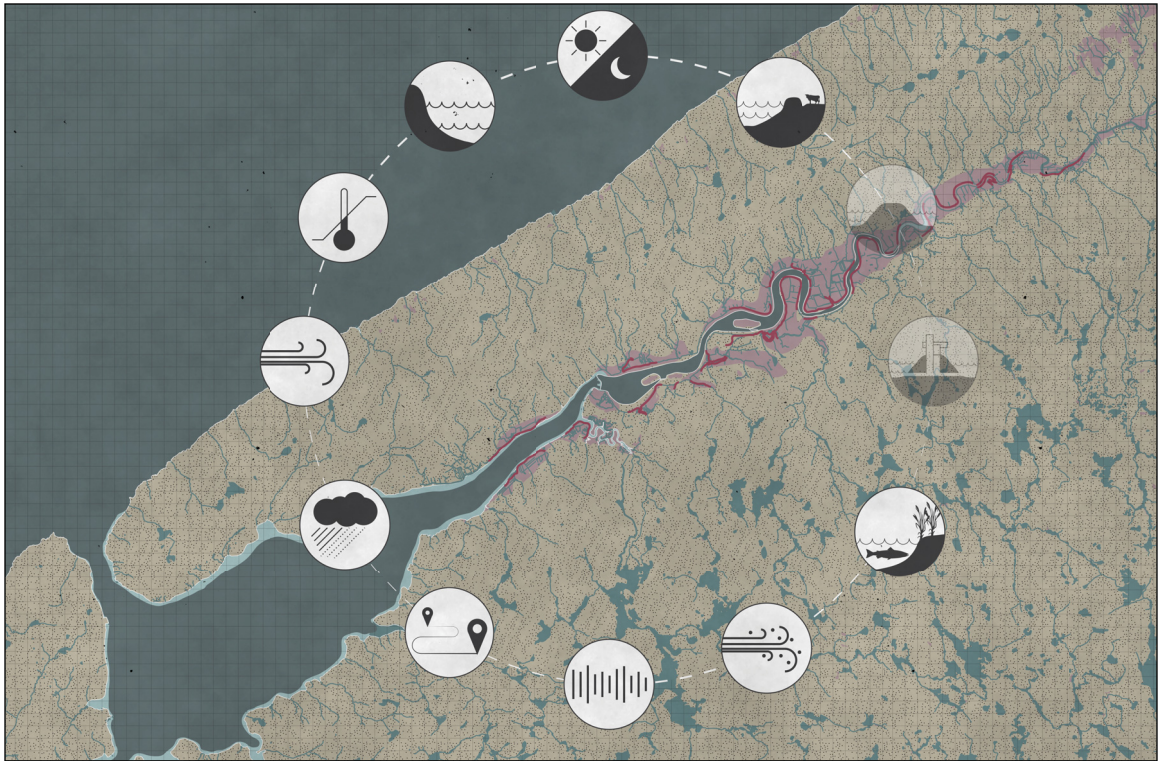
of globalization” (Belanger 2017). The opportunity to use infrastructure to highlight this phenomenon is inherently Atlantic Canadian and thus, can provide an extraordinary experience inherently tied to the region.

Dykes and Marshlands

Beginning in the 1600s, marshlands were selectively converted into farmland by the Acadians who brought knowledge of dyking techniques with them from Europe. The first dyking within the region occurred near Annapolis Royal in the 1630s and followed the settlers as they migrated across the Fundy Region (Percy 1996). The Petitcodiac and Avon Rivers also saw extensive dyke networks built by the 1700s. Dykes were traditionally constructed of earth and covered with sod to prevent the soil from eroding. Wooden pipes, known as aboteaux, were located strategically along the bottom to allow for water to drain out from the farmland. A



Map of previous marshlands along the Annapolis River (Open Data Nova Scotia 2021a, 2021b, 2021c, 2021d)



Map of dyke infrastructure along the Annapolis River (Open Data Nova Scotia 2021a, 2021b, 2021c, 2021d)



Map of dykes and farmland along the Annapolis River (Open Data Nova Scotia 2021a, 2021b, 2021c, 2021d)



Photograph of marshlands



Dyke Building (Acadian Explorations 2015)



Aerial view of the Avon River Causeway (Devet 2017)

wood flap was built inside that allowed for this water to drain out but would close when tidal water would push against it.

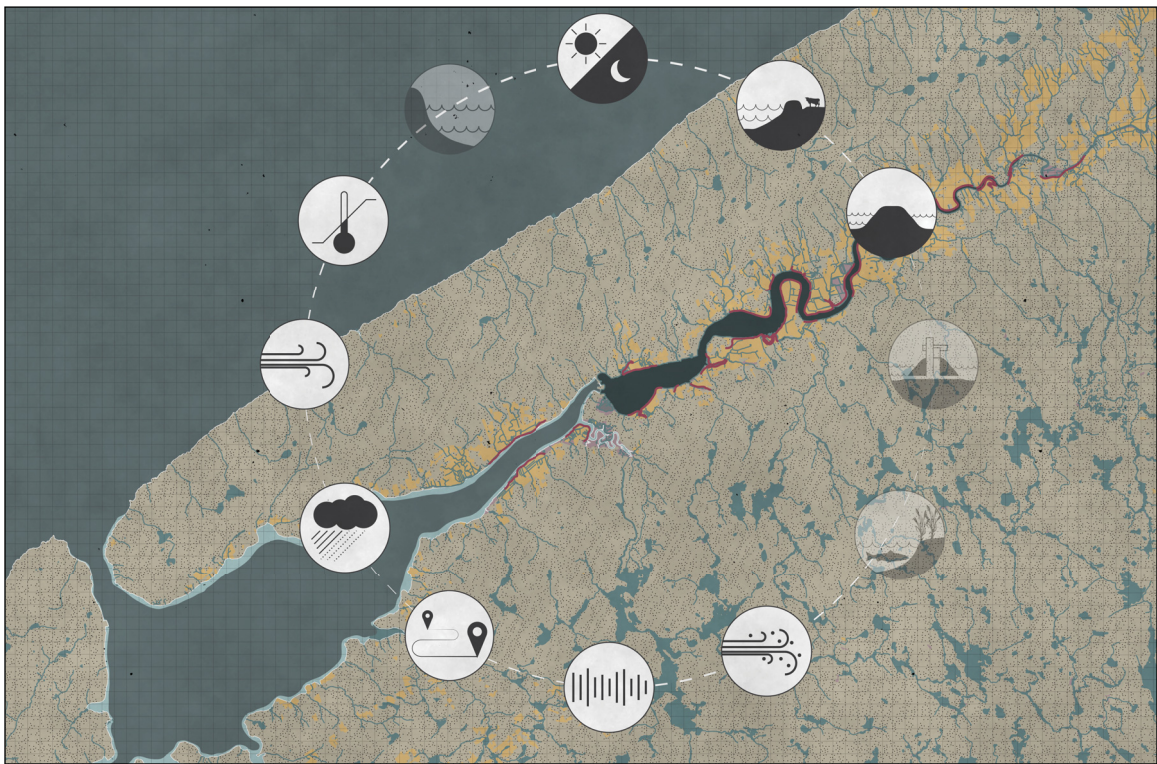
By the 1750s the Acadians had been expelled from the area by the British, who preferred using upland areas for farming. They converted much of the dykelands into hayfields and pasture for cattle. Hay was a major crop at this time, as horse power was used for everything from transportation to mining and logging.

The hay industry plummeted in the early 1900s at the outset of the industrial revolution as horses were replaced by mechanized equipment and combustion engines. The result was a mass abandonment of farmlands and the dykes that protected them, spurring the creation of the Marshland Reclamation Administration in 1948. Over the next two decades nearly 400 kilometres of dykes were reinforced (Percy 1996).

Causeways

Just like the dykes 300 years prior, in the 1950s causeway engineering was brought to Atlantic Canada from Europe as a bigger infrastructural move for protecting the dykelands. This was accomplished by indiscriminately blocking entire tidal estuaries and providing transportation routes across rivers. For the next 20 years, the Marshland Reclamation Administration constructed causeways across numerous major rivers within the Bay of Fundy region as an alternative to constantly repairing hundreds of kilometers dykes upstream (Percy 1996). Disrupting natural tidal exchange, these artificial strips of land create a hard line between two time zones, with waterscape time on the ocean side and infrastructure time on the river side. The blockage of tidal flow and fish passage has had pronounced impacts

on the ecologies on these tidal estuaries and the fish migration routes that pass through them. Only 16% of the salt marshes present at the time of European settlement remain today (Percy 1996). Increasing environmental awareness as well as a drastic reduction of active farmland in areas once needing protection has brought many of these causeways under recent scrutiny. Two examples of this are the Petitcodiac River Causeway in Moncton, New Brunswick and the Avon River Causeway in Windsor, Nova Scotia.



Map of dyke infrastructure, farmland, and causeway influence along the Annapolis River (Open Data Nova Scotia 2021a, 2021b, 2021c, 2021d)

Petitcodiac River Causeway Case Study



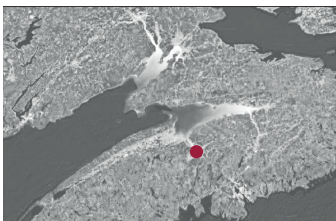
Map showing Petitcodiac River causeway location (Google Maps 2022)

The Petitcodiac River Causeway was constructed in 1968 to protect 1315 hectares of upstream dykelands from tidal flooding. The causeway obstructed fish passage to over two thirds of the 2000 square kilometre river system (Percy 1996). Poor fishway design saw thousands of dead fish within the first year of the causeway's completion. Natural

navigational conditions were also eliminated, causing the community of Moncton to become the first in Canada to lose its inherent right to a navigable waterway. In 2005 a \$5 million Environmental Assessment Report recommended restoring full tidal flow as the preferred option (Sentinelles Petitcodiac Riverkeeper 2022). The first step of the process involved permanently opening the causeway gates, which resulted in the rapid return of fish species that had once inhabited the river's headwaters. In early 2022 the final phase of the project was completed, with a bridge replacing the completely removed causeway and the full tidal flow now being allowed to pass underneath. This historic precedent in Atlantic Canada has now seen a landscape reduced to infrastructure time brought back to waterscape time.



Before and after satellite images of the Petitcodiac River Causeway (Sentinelles Petitcodiac Riverkeeper 2022)



Map showing Avon River causeway location (Google Maps 2022)

Avon River Causeway Case Study

The Avon River Causeway was constructed in 1971 to protect 595 hectares of upstream dykelands from tidal flooding (Percy 1996). It is now being modified to allow for better fish passage. This modification follows the typical status-quo of how we deal with infrastructure, the successive modifying

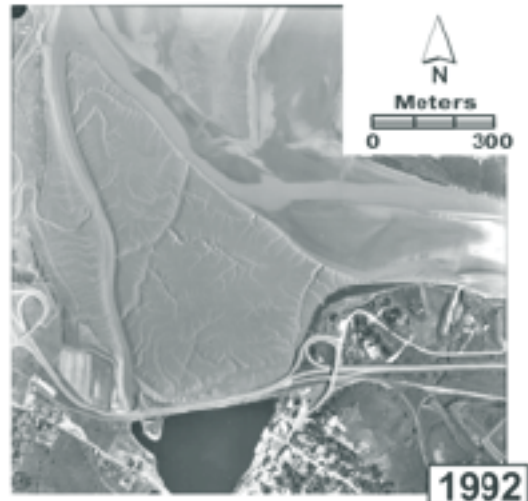
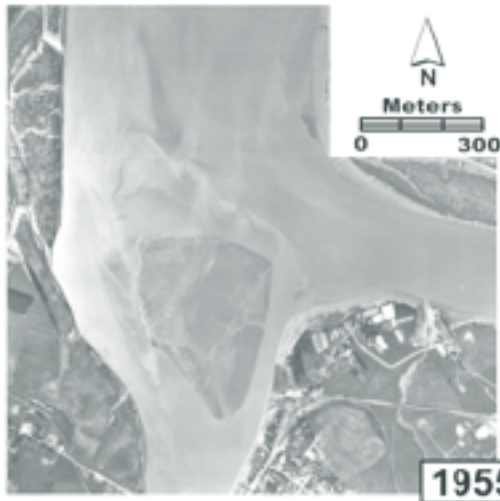
of old infrastructure to fix the problems they created. The proliferation of infrastructure time continues for recreational and economic reasons as a local boat club and property owners fought back against opening the estuary up to natural tidal flow.



Silt buildup from the Windsor Causeway (Devet 2017)

Historically, resources such as rivers, coastlines, and water were marginalized as backwaters. As a result of these exclusions, biophysical systems are partitioned and parceled into defined areas, often categorized or restricted to bounded sites of conversation or recreation. (Belanger 2017)

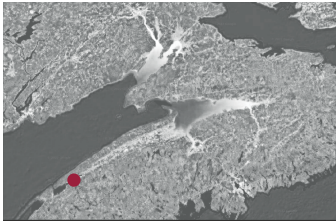
While fish migration may be improved, infrastructure time remains and much of the unique qualities of this region's landscape remain subdued and controlled.



Before and after satellite images of the Avon River Causeway (Proosdij, Danika & Townsend, S. 2004).

The Annapolis River Causeway

The Annapolis River Causeway was constructed in 1960 to protect 1740 hectares of upstream dykelands from tidal flooding and to replace a defunct highway bridge that spanned the river (Percy 1996). Similar to other causeways in the region, ecological ramifications were not well known and the reduction of tidal range from 7 Meters to 0.5 Meters disastrous effects on aquatic life. This



Map showing Annapolis River causeway location (Google Maps 2022)



Photograph of Annapolis River Causeway (Tripadvisor 2022)



Photographs of Annapolis Royal Generating Station, 2021.

causeway provides a unique opportunity, as nested within it is a recently decommissioned tidal generating station. This station provides a spatial opportunity for addressing where landscape time and infrastructure time meet. This becomes a break in the interface, a moment rich in possibilities of collaboration, contemplation, and reflection. Inhabiting this moment through architecture could introduce a third time into the equation, one that is neither landscape nor infrastructure time.

Landscape is the world as it is known to those who dwell therein, who inhabit its places and journey along the paths connecting them. Is it not, then, identical to what we might otherwise call the environment? (Ingold 1993, 156)

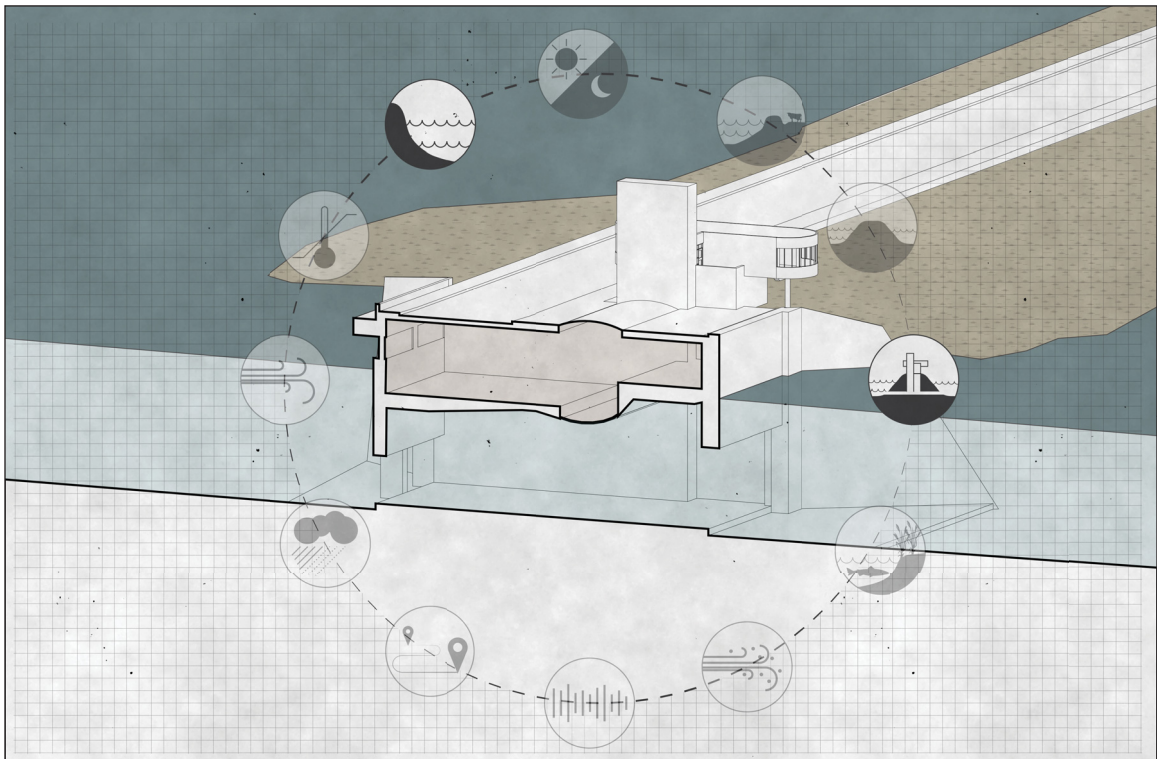
Annapolis Royal Tidal Generating Station

The Station was built as an experimental pilot project in 1984 with a planned lifespan of 3 years. It generated power twice a day on the ebb tide as water flowed from the estuary into the Annapolis Basin. While this new technology returned more tidal flow to the estuary, bringing its range up to 1.5 Meters, it also caused high fish mortality as extreme pressure changes within the turbine area killed thousands of fish. Despite this, the station was kept in operation until 2019, when two events coalesced causing Nova Scotia Power to deem it no longer profitable to operate. Not only did the station need expensive repairs to become operational again, the Department of Fishers issued a demand that would require the station to shut-down for a total of 4 months a year to allow for unimpeded fish migration. The station now sits idly on the causeway with water flowing freely through the bowels of the structure below. The town has subsequently lost both revenue and a popular tourist destination.

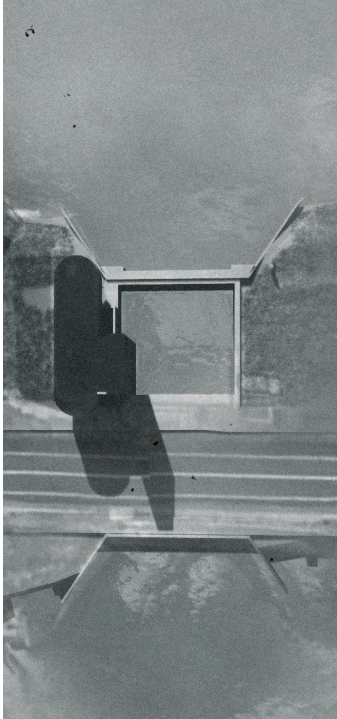
Hybrid Time

Hybrid time is responsive, focused, sensory, and undiscovered. It is the space between landscape and infrastructure time. It connects us back to the landscape, modified by us while simultaneously modifying us in the process. Using the infrastructure of the station as site, carefully placed architecture instigates hybrid time by bringing together sensory experiences of water with abstract data and information communicated through interaction and art.

Architecture is essentially an extension of nature in the man-made realm, providing the ground for perception and the horizon of experiencing and understanding the world. It is not an isolated and self-sufficient artefact; it directs our attention and existential experience to wider horizons. (Pallasmaa 2012, 44)

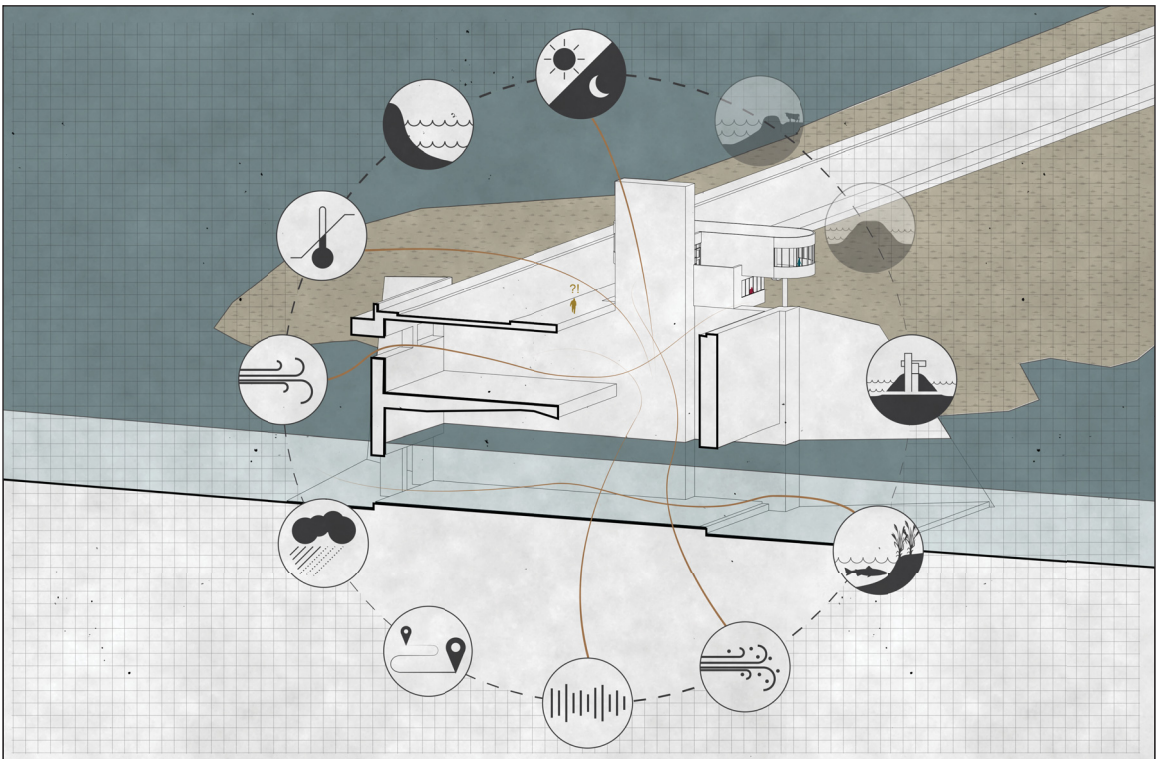


Section drawing showing the main structure of the existing generating station and reductive infrastructure time within.



Aerial image showing generating station opened up.

The liminality of hybrid time provides space for a pause, much like the causeway itself acts as a pause between two opposing time zones. What experiences can occur within this pause and how could they begin to inform new ways of understanding the Annapolis River Waterscape?



Section drawing showing the main structure of the modified generating station and introduction of hybrid time within.

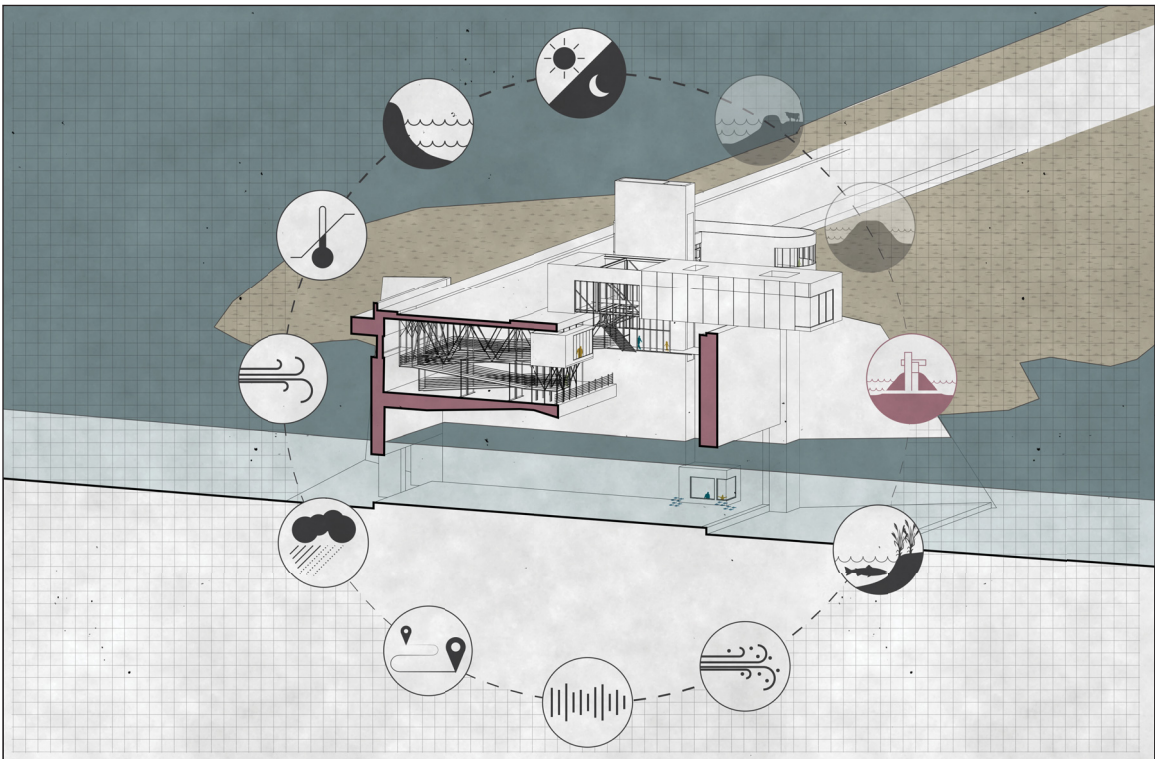
Chapter 4: Design Methods

Treating Infrastructure as Site

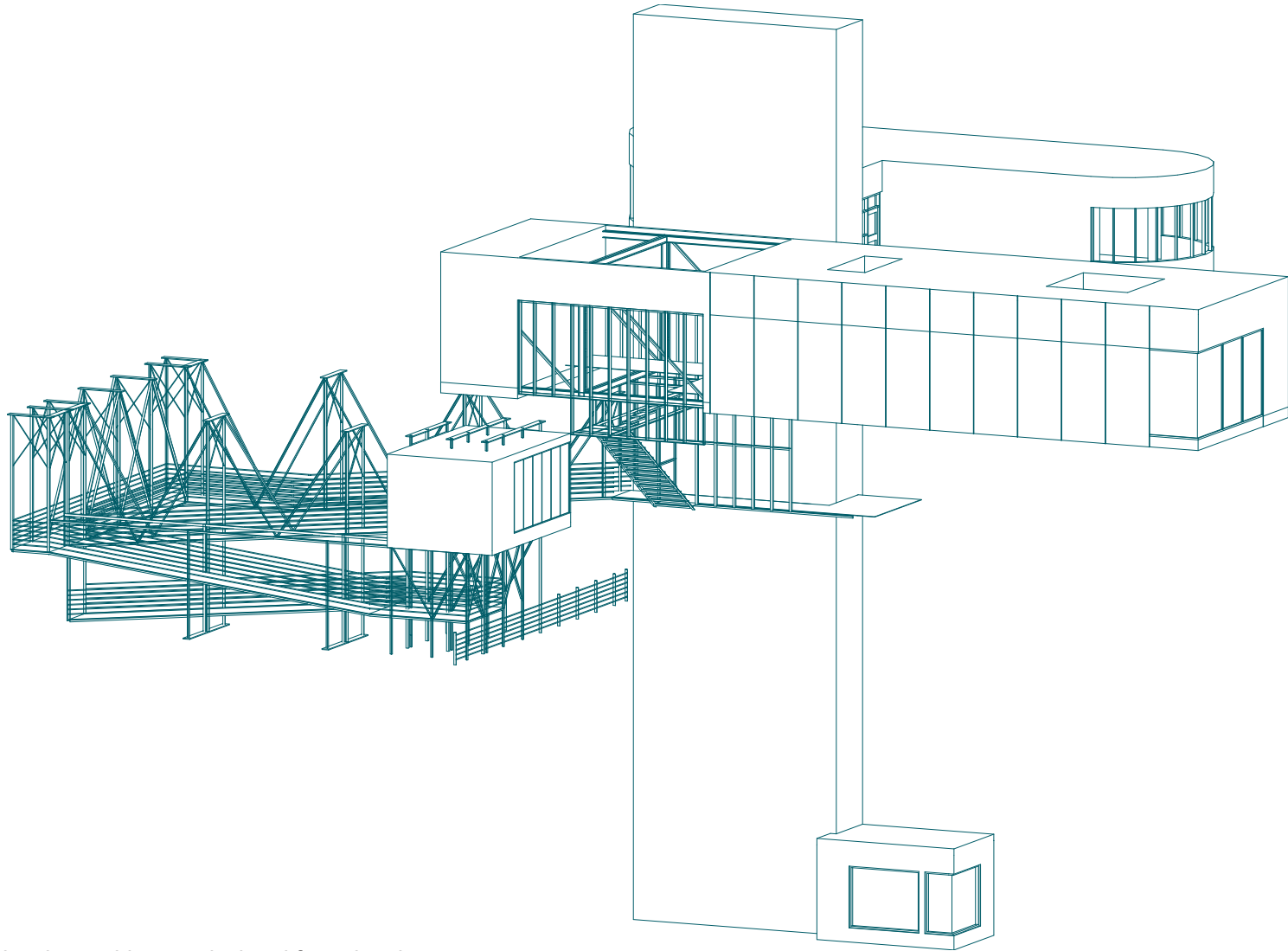


Aerial image showing generating station with added architecture.

The first design method treats the existing infrastructure as the site to which the architecture responds. The infrastructure being heavy and monolithic acts as the landscape, with its own set of processes found within. The proposed architecture is delicate and meant to lightly touch the infrastructure at precise moments of connection. Using infrastructure as site allows the architecture to take advantage of infrastructure time's intensified singular focus, which in this case is the water and tides. The architecture becomes the catalyst for hybrid time as it combines the phenomena of landscape time with the station's aquatic focus of infrastructure time. The infrastructure becomes a landscape of this hybrid time within the causeway.



Section drawing of the generating station showing inserted architectural interventions.



Drawing showing architecture isolated from the site.

Actor Groups and Scale

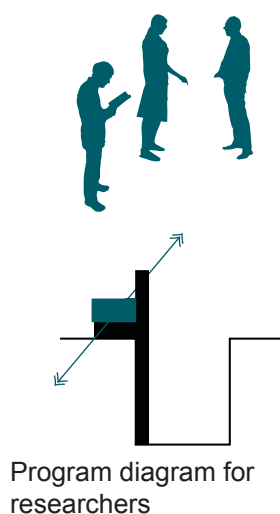
Based on the context of Annapolis Royal, the programming of this project takes on 3 actor groups to develop a strategy that allows for interaction and collaboration within the context of hybrid time. These actor groups are researchers, artists, and tourists and they have been chosen due to their existing contextual presence and the symbiotic feedback each group can give to the others as they inhabit and interact within the project and hybrid time.



Photograph of Annapolis Royal (Annapolis Royal, Nova Scotia 2022)

Research

A local NGO, the Clean Annapolis River Project (CARP), has taken on the task of “enhancing the ecological health of the Annapolis River watershed through science, leadership and community engagement” (CARP 2021). Currently located in the town, this project sees them moving into the existing building with lab and office spaces for both CARP and the Department of Fisheries. This new ideal location at the mouth of the Annapolis River will assist them in monitoring water quality, flow, fish migration, agrarian runoff, and erosion in the area. This research is grand in scale and relates us to the larger contexts through quantitative data, however it is

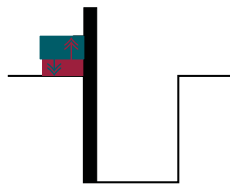


devoid of the sensory phenomena of the place. In the event of future partial causeway removal, this can become home base for studying how the landscape and ecologies react and adapt over time.



Map of Annapolis Royal showing existing CARP office location as well as researcher flow into the project site. (Open Data Nova Scotia 2021a, 2021b, 2021c, 2021d)

Art



Program diagram for artists

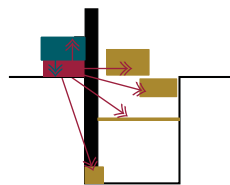
The town has a large art community, with many galleries filling the historic buildings. Tapping into this artistic resource provides a scale mediator, a bridge between abstract data and the intimacy of the senses. Art taps into site-specific sensory phenomena while communicating scales and information typically too abstract to physically relate to. The dynamic spaces of the station offer unique context within which to display art that relates to and physically responds to the context of the region. Acting as a catalyst for cross-discipline collaboration, this project provides gallery spaces for displaying art that communicates the ecological research



Map of Annapolis Royal showing existing art gallery and studio locations as well as researcher and artist flow into the project site. (Open Data Nova Scotia 2021a, 2021b, 2021c, 2021d)

undertaken within the facility through the use of local art traditions. Through this process, researchers can come to see their research in new light and artists and the public who visit are able to understand the scientific qualities of the waterscape in new ways.

In the experience of art, a peculiar exchange takes place; I lend my emotions and associations to the space and the space lends me its atmosphere, which entices and emancipates my perceptions and thoughts. An architectural work is not experienced as a series of isolated retinal pictures, but in its full and integrated material, embodied and spiritual essence. (Pallasmaa 2012, 13)



Program diagram for tourists

Tourism

Annapolis Royal is located at the mouth of the Annapolis River and draws tourists due to its history and Fort Anne, Canada's first national historic site. The town fronts the ocean, turning it's back to the Annapolis River that once helped give prominence to the town as a place of trade and



Map of Annapolis Royal showing existing tourist locations as well as researcher, artist, and tourist flow into the project site. (Open Data Nova Scotia 2021a, 2021b, 2021c, 2021d)



Photograph of Fort Anne with Annapolis Royal in the background (Illsley 2017)

ship building. This project creates a new tourist destination that provides a unique experience of the region's tides, replacing the tours the generating station provided when in operation.

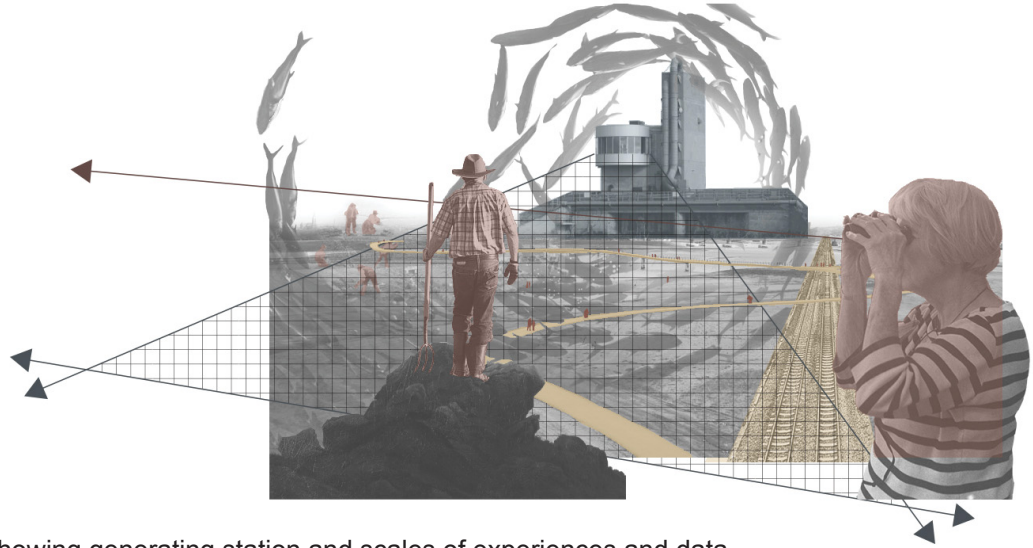
By bringing these three groups together, artists and researchers are able to collaborate and develop ways of communicating large scale waterscape data to the public through art and immersive experiences within the station. Phenomena relate us to the intimate, sensory experience of the immediate context in which we positioned. Research relates us to grand contexts through abstract data, devoid of the intimacy of phenomena. Art provides the mediator between these two scales, tapping into site-specific sensory phenomena while communicating scales and information typically too abstract to physically relate to. As the three groups use and experience the space. The public flow into and out of the building, taking with them new ways of perceiving waterscapes at both the macro scale of watershed and micro scale of senses and phenomena.

We in the Western world are beginning to discover our neglected senses. This growing awareness represents something of an overdue insurgency against the painful deprivation of sensory experience we have suffered in our technological world. (Pallasmaa 2012, 41)



Vignette showing actor groups within the station.

Chapter 5: Design



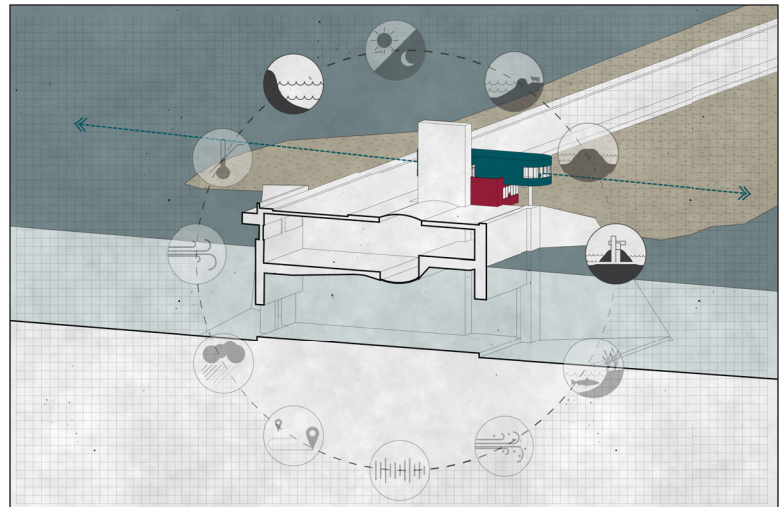
Collage showing generating station and scales of experiences and data.

The Proposal

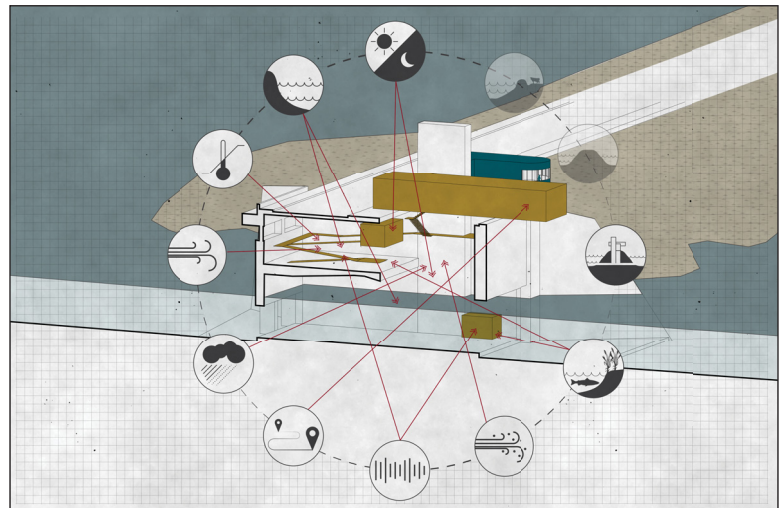
The project contains two key areas. The first area is the research labs and offices located on the second floor and an artist studio located on the first floor of the existing building. Here, large scale data and research on fish migration, land erosion, and water quality is brought in from across the watershed. Artists work as mediators between researchers and the public, using the research information from the scientists to explore ways of communicating this data in combination with the sensory experiences provided within the second area. The second area is publicly accessible and is the primary focus of this project. Referred to as the Shiftscape, it is composed of 3 pavilions and an outdoor circulation route that are intended to shift visitors' perception of the infrastructure of the station and larger waterscape context within which it is inserted. Open to the elements and tidal flow, the shiftscape is one of uncertainty. There are times throughout the year where parts or all of the space may be rendered completely inaccessible due to forces of nature.



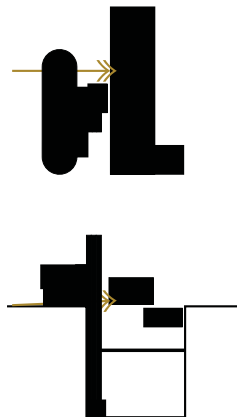
Diagram showing mixing of actor groups.



Section showing the first area consisting of an artist studio and research offices.



Section showing the second area consisting of the publicly accessible shiftscape.



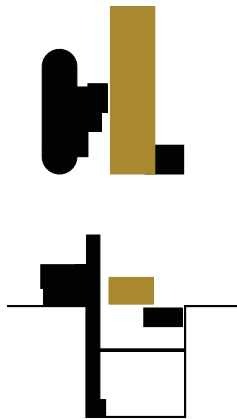
Key plan and section for way finding.

The Procession

A procession of experiences of above, within, and below leads visitors through the shiftscape. Each moment of inhabitation relates the intimate sensory experience of the space with the larger scale of the Annapolis River waterscape. One enters the project via a bridge that suddenly presents a dramatic view into the void of the opened infrastructure and water rushing below.



Vignette showing entry bridge.

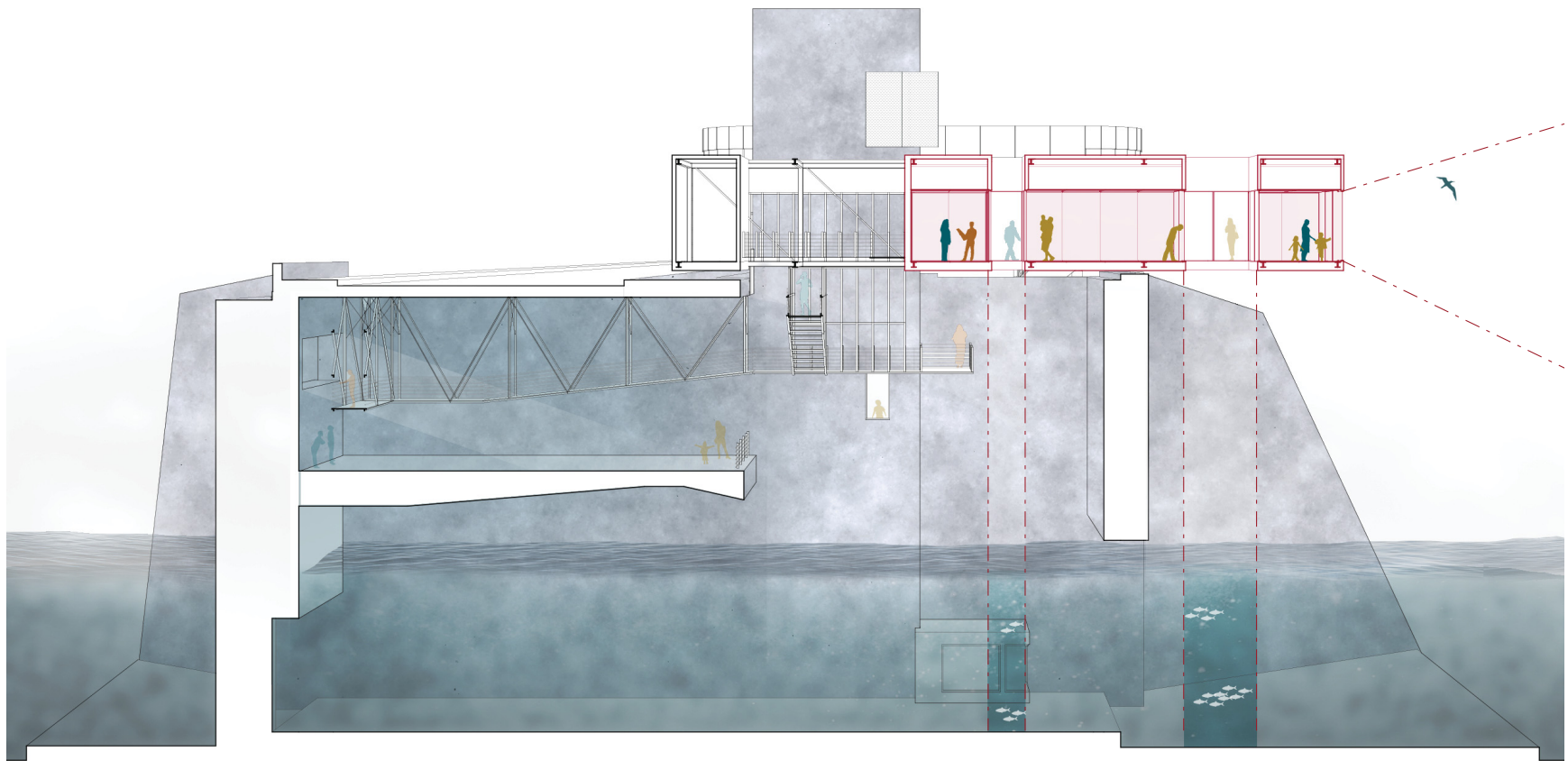


Key plan and section for way finding.

Landscape Pavilion

This enclosed pavilion floats just above the existing infrastructure on steel plates, an obvious addition. Upon entering, the landscape beyond and the infrastructure below are brought together in this exhibition space. A system of moveable wall panels allows for the space to shift and adapt to immediate programmatic needs, changing the experience of the landscape as they conceal and reveal the apertures and the courtyards. The experience of this space is intended to ground visitors into the context, both immediate and distant.

The exterior is clad in a veil of copper which will patina to a deep green as it interacts with the salty air. Through the veil, the truss structure is revealed and concealed depending on how the panels are arranged inside.



Section drawing showing the landscape pavilion and its relationship to the infrastructure and landscape beyond. (2022)

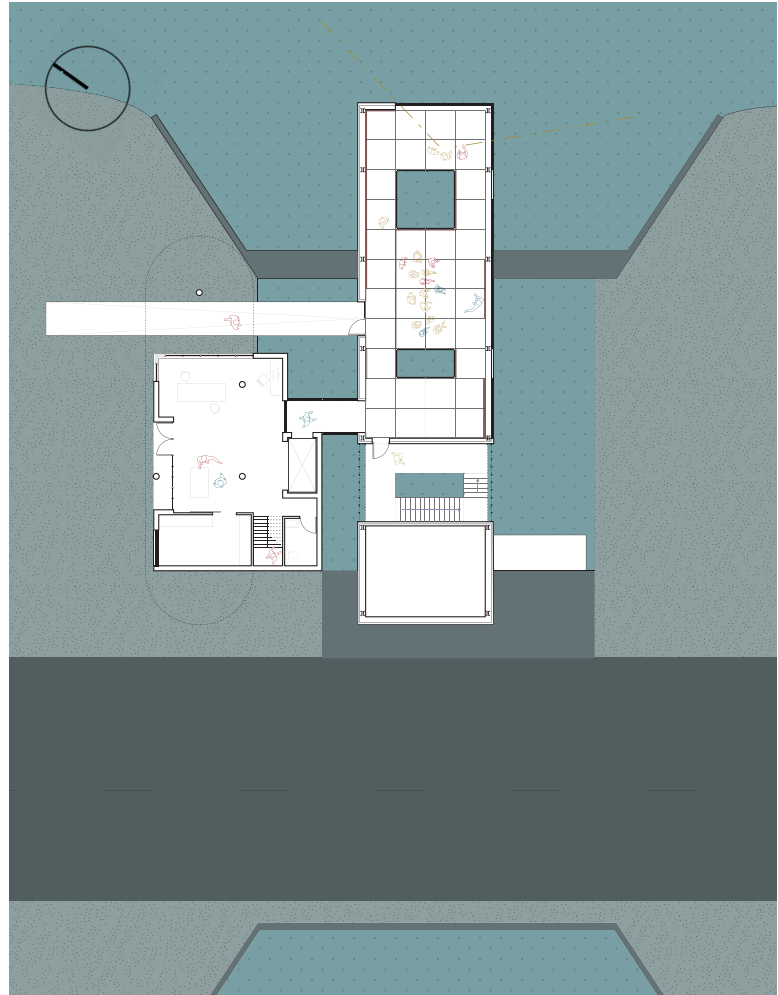
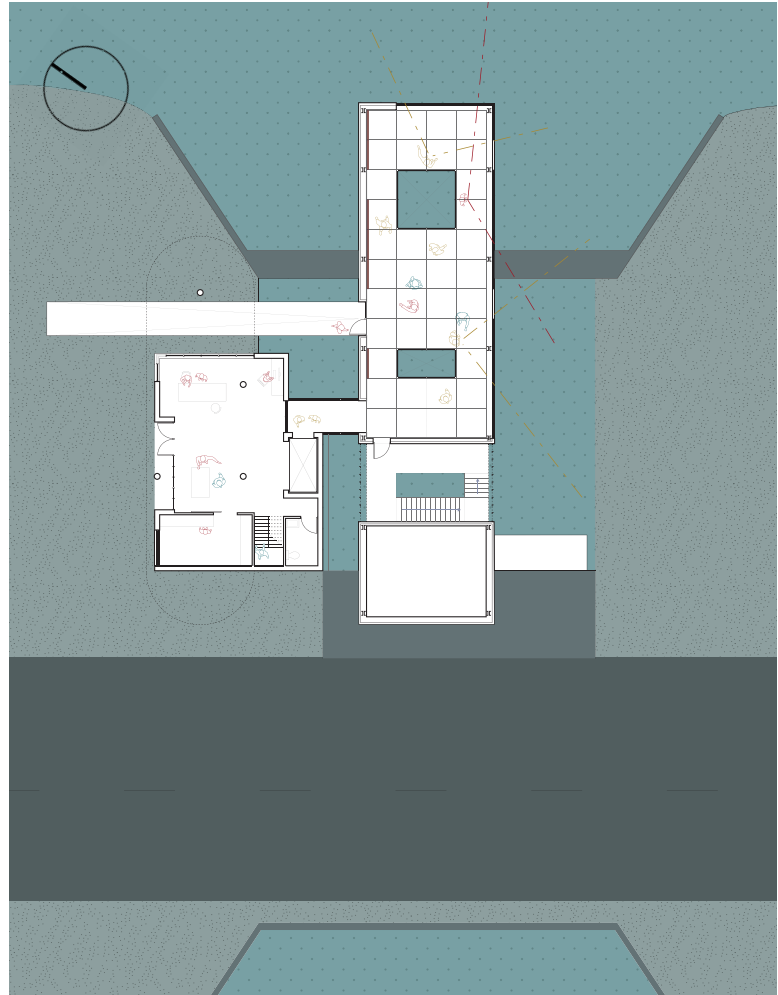


Diagram showing phenomena of focus.

Plan drawing and vignette showing wall panels organized for a public Department of Fisheries meeting.



Vignette showing public Department of Fisheries meeting with closed facade panels.



Plan drawing and vignette showing wall panels organized for an open experience of the landscape.



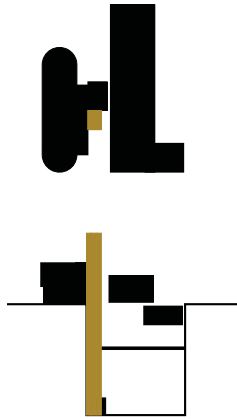
Vignette showing pavilion space with open facade panels.



Vignette showing copper facade material and interior panels selectively blocking glazing.



Vignette showing copper facade material and interior panels moved to allow full glazing.



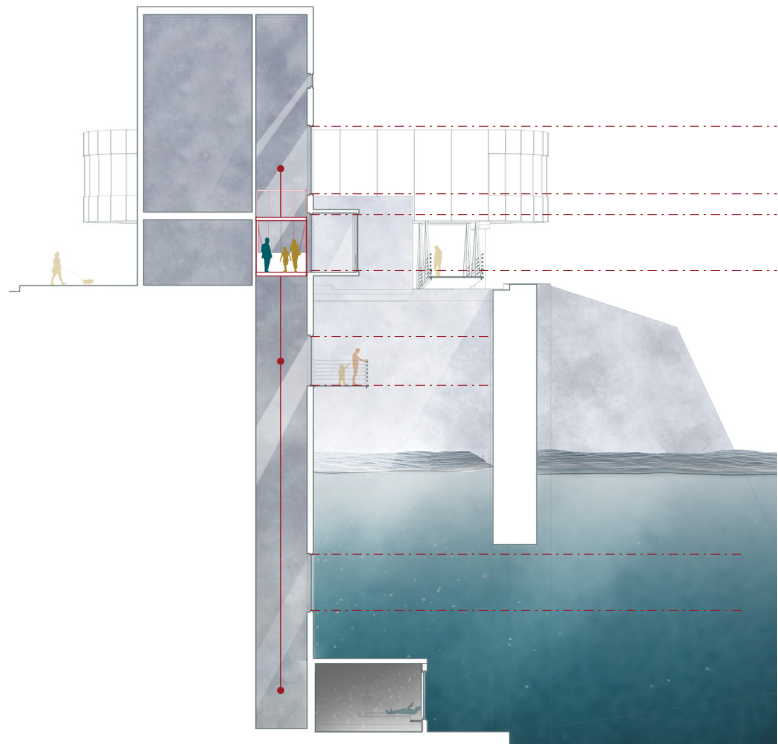
Key plan and section for way finding.



Diagram showing phenomena of focus.

Elevator

The elevator is within and semi-enclosed. Leaving the landscape pavilion, one enters the elevator to descend into the fish pavilion. An open construction elevator has been located within the existing elevator shaft and connects all areas of the project. The delicate structure of the elevator car contrasts with the exposed concrete walls of the existing shaft. As a vertical circulation connector between all parts of the project, the elevator becomes a place of interaction between all three groups. A series of windows along the east and south walls highlight the experience of descent, with light and fleeting views acting as vague wayfinding devices. Each stop along the elevator journey involves stepping into a new world of phenomena.



Section drawing showing elevator and its stops.



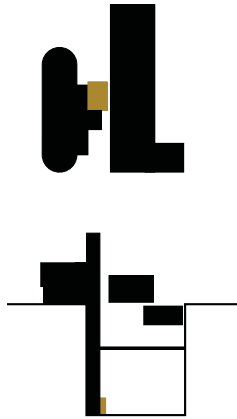
Vignette showing view out of the elevator at the landscape pavilion level.



Vignette showing view out of the elevator as it dips below the water level.



Vignette showing view out of the elevator underwater on the journey to the fish pavilion.



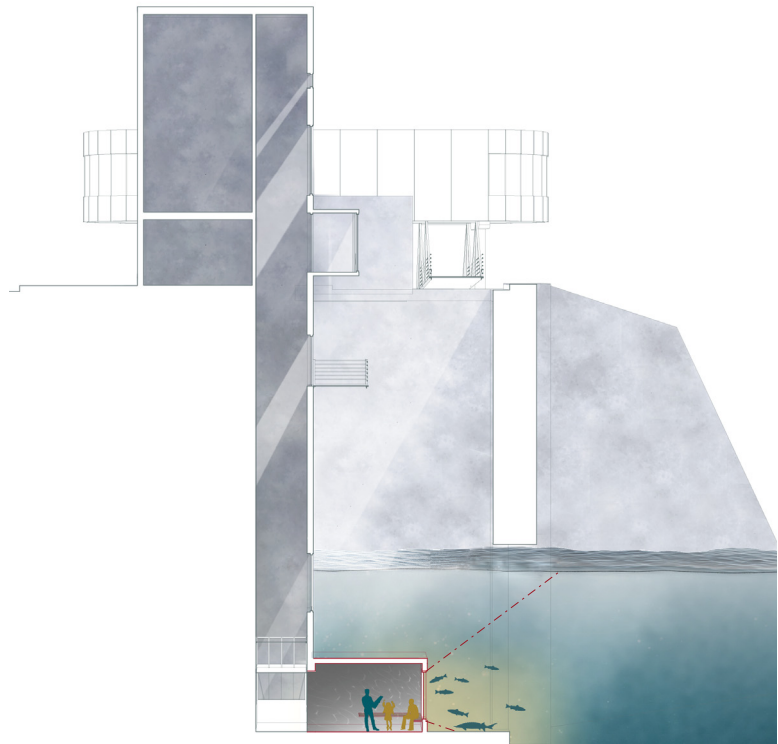
Key plan and section for way finding.

Fish Pavilion

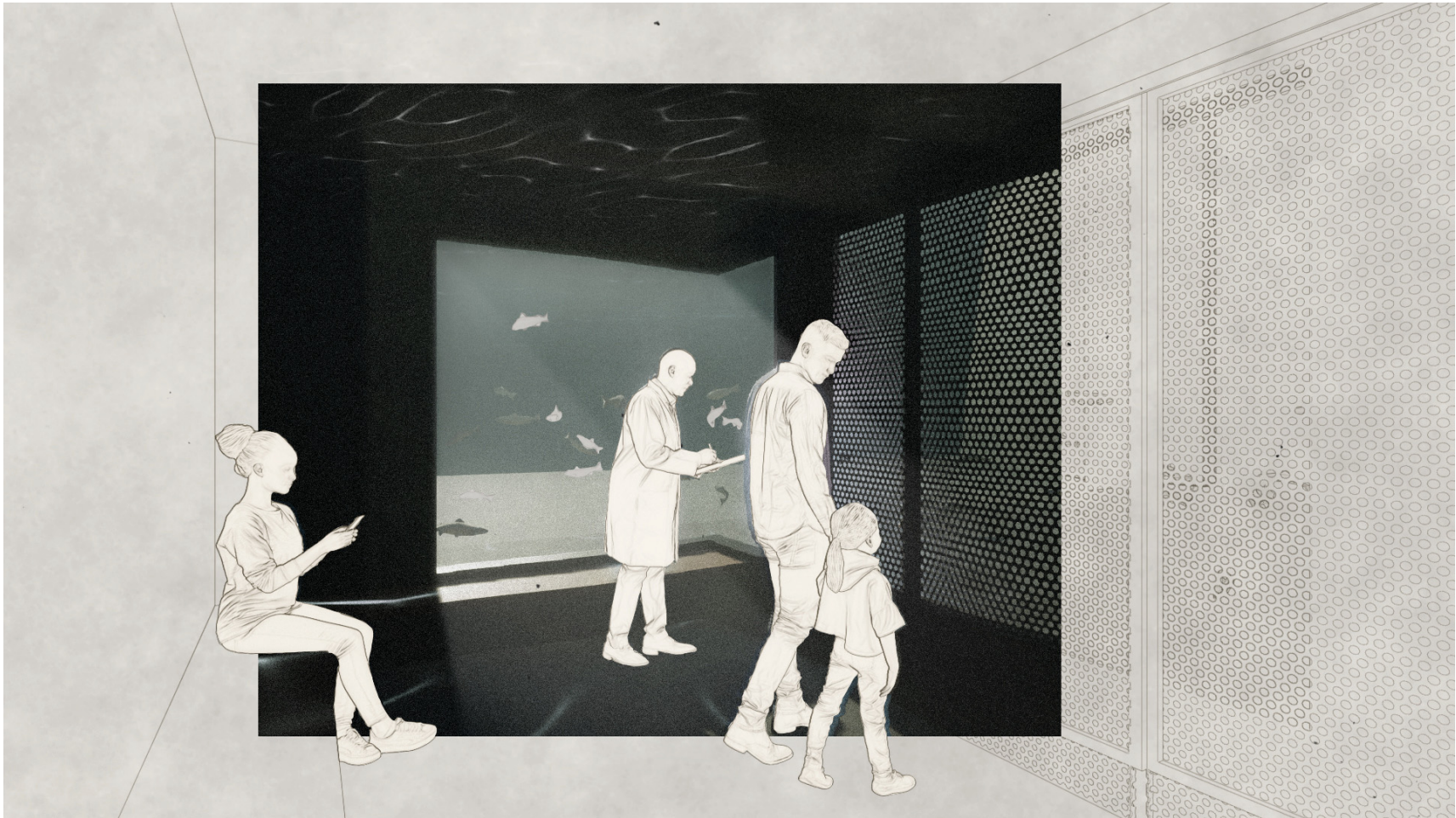
This pavilion is below and enclosed. Stepping out of the elevator, one becomes immersed in an underwater world. The noise of the elevator journey is contrasted by soundscapes created by a sound artist, with deep bass and light caustics filling the room. The space gives a sense of being underwater and the immensity of the depth resonates as fish migrate past large windows. Sliding screens prevent the fish from being disturbed by the shadowy figures behind the glass. Interactions between researchers counting and observing fish and visitors is common. The architecture is meant to become secondary, a vessel for allowing the experience of being under the waves to come to the foreground.



Diagram showing phenomena of focus.



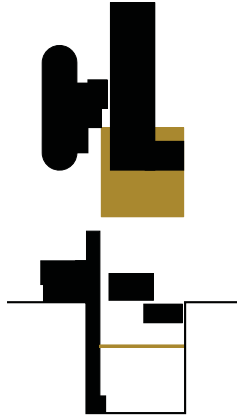
Section drawing showing fish pavilion.



Vignette showing a researcher taking notes as tourists ask questions and point out different kinds of fish.



Vignette showing kids hanging out in the atmospheric fish pavilion.



Key plan and section for way finding.

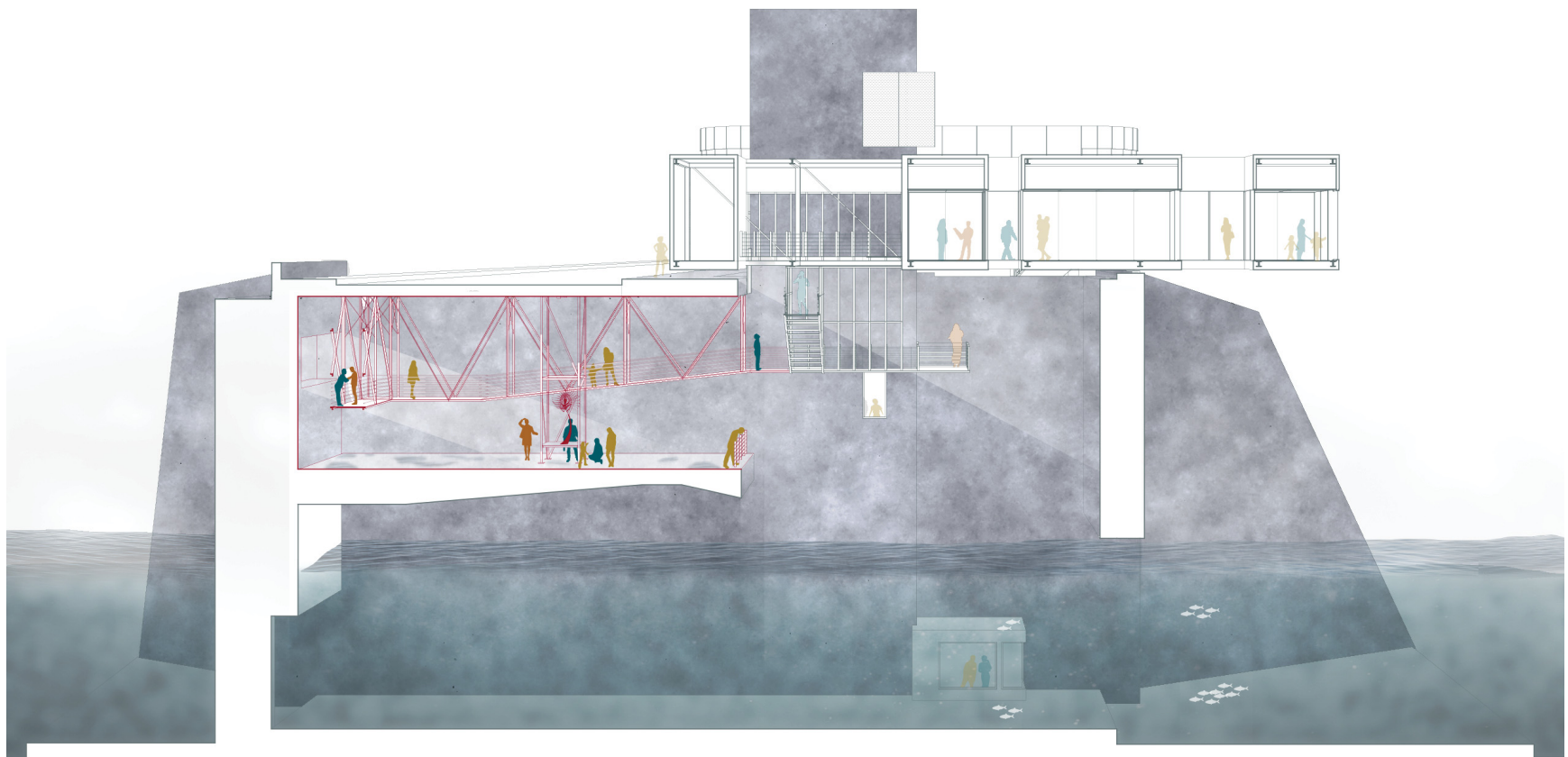
Sculpture Pavilion

This pavilion is within and exposed. Re-entering the elevator from the fish pavilion leads to an ascent to the main area of the project, the sculpture pavilion. Stepping out of the elevator and into the pavilion is an intense sensory experience, as the sound, smell, and feeling of rushing water below the perforated steel pathway. This circulation is immersed in a shifted and heightened sensory world of waterscape. Chaotic due to the sound of rushing water and waves, the wind and the weather. The pathway is delicately hung from the ceiling, providing a sense of precarious anchoring to the infrastructure. Interactions between research, visitors, art occurs here as researchers collect samples and visitors experience the art and phenomena within the space.

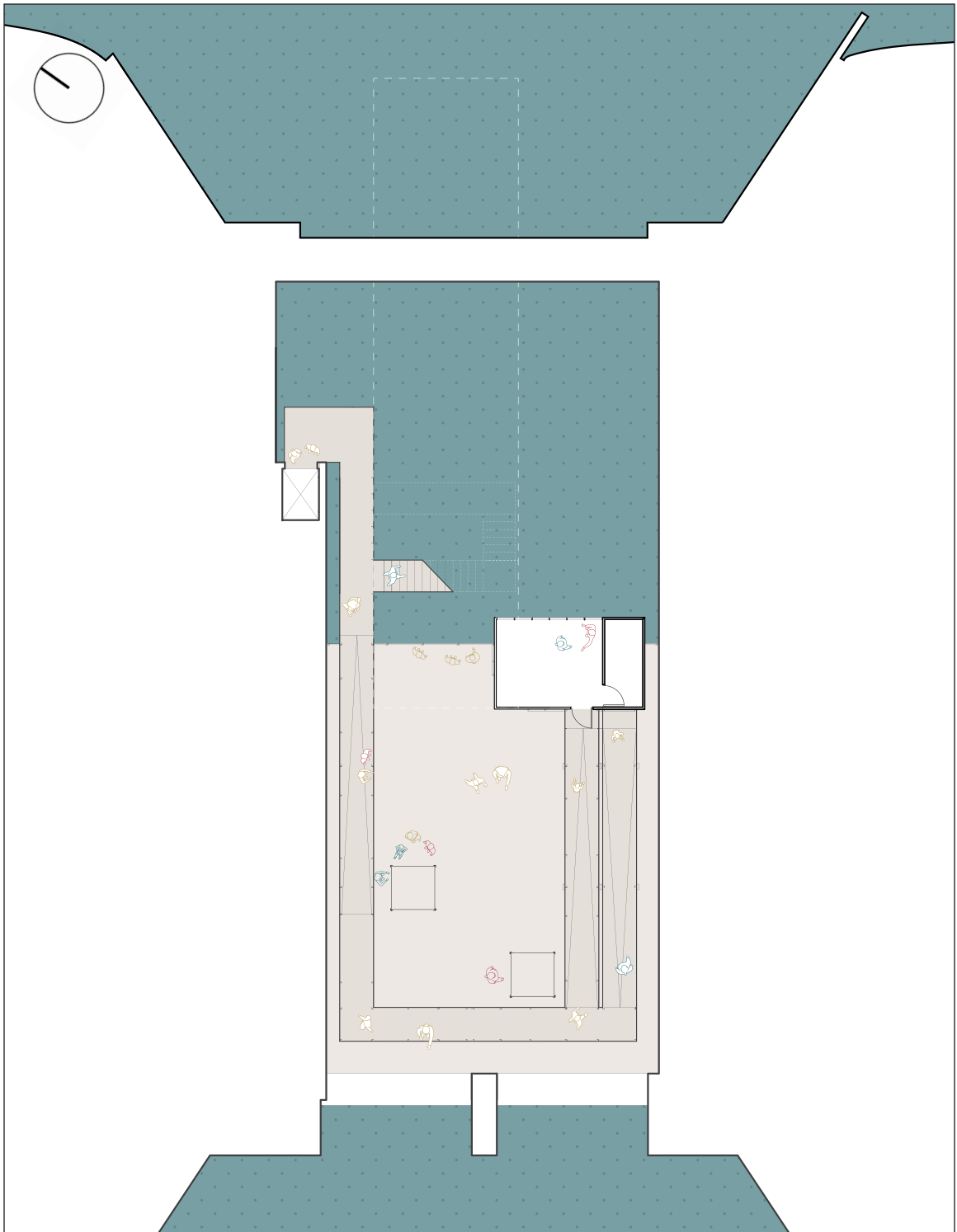
Due to the dynamic qualities of the space, the art can respond to the power of water and weather, tying the immediate sensory context to grander scale beyond the walls of infrastructure. Shifting water levels flood the sculpture pavilion floor, leaving traces of sediment, sea life, and erosion over time which researchers can use in their data collection and which affects the art and ability for visitors to fully explore.



Diagram showing phenomena of focus.



Section drawing showing the sculpture pavilion at low tide. (2022)



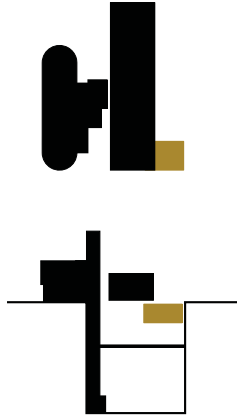
Plan drawing showing the sculpture pavilion and media pavilion.



Vignette showing tourists and artists exploring the sculpture pavilion at high tide during the storm.



Vignette showing the researchers collecting samples in the sculpture pavilion at low tide after a storm.



Key plan and section for way finding.

Media Pavilion

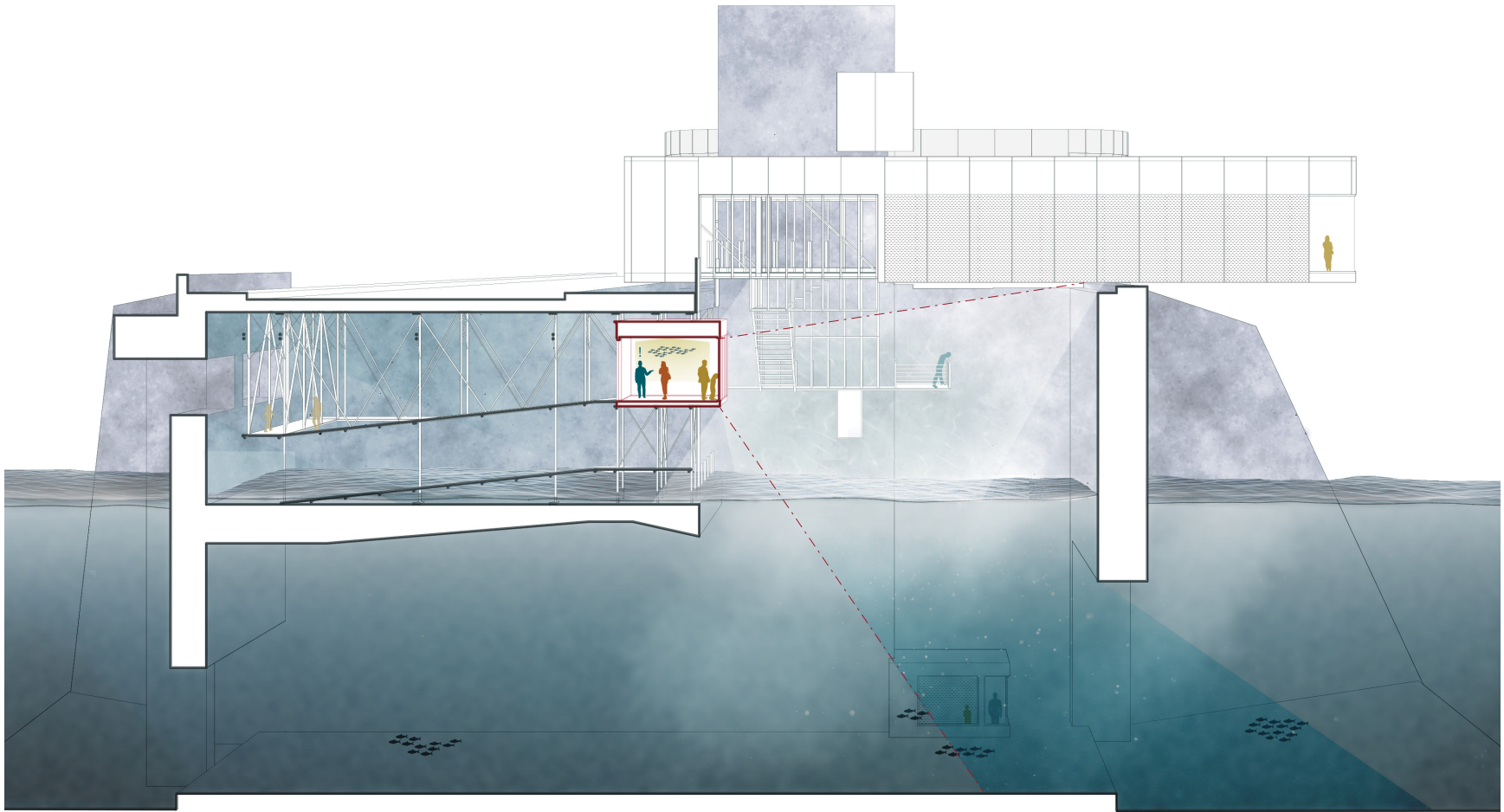
This pavilion is within and enclosed. Found at the end of the sculpture pavilion procession, this space is silent and still which contrasts from the sculpture pavilion that immediately precedes. The media pavilion is about water and light. Reflection, refraction, and absorption. The structure is translucent and double skinned, allowing for natural light to be absorbed and projected media to be displayed. This skin allows for the room to be affected by the outside and also affects the outside with the projection of media.



Diagram showing phenomena of focus.



Vignette showing atmosphere of the sculpture pavilion caused by the media pavilion.



Section drawing showing the media pavilion at high tide.



Vignette showing a thesis on the generating station being defended inside the media pavilion.



Vignette showing atmosphere of the sculpture pavilion caused by projected media from inside the media pavilion.

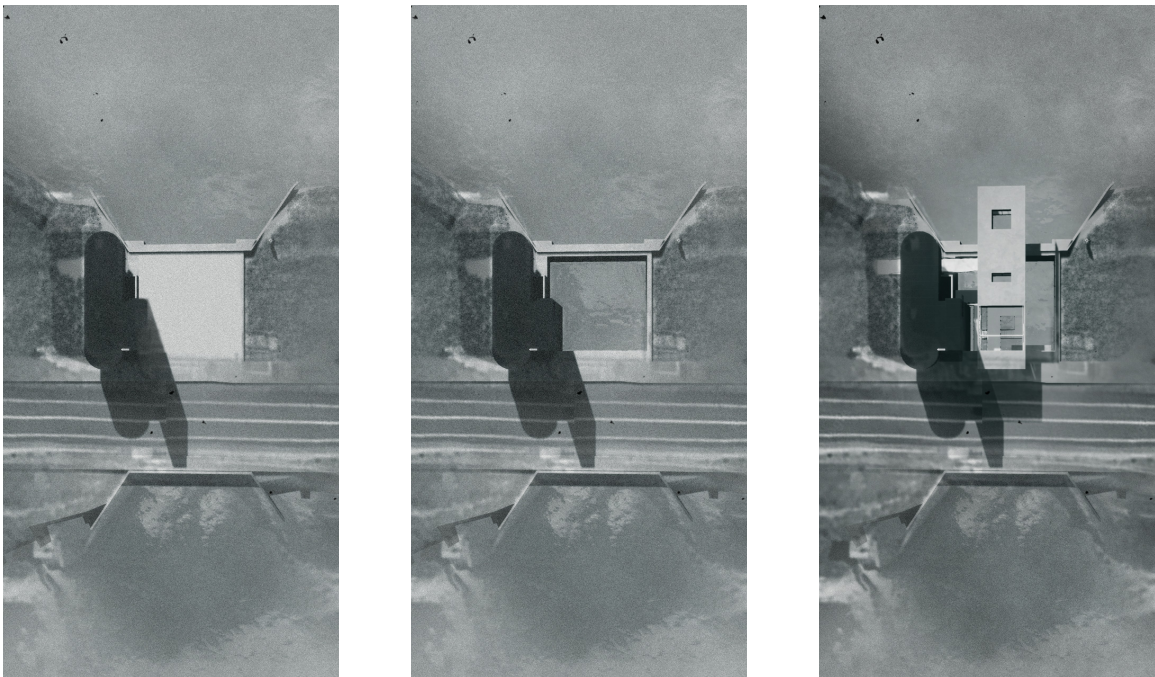
Chapter 6: Conclusion

Reading the landscape as infrastructure presents new experiential possibilities within our hybrid world of modified processes and built form. Decommissioned infrastructure provides an ideal site where, through inhabitation, a phenomenologically charged experience of this hybrid landscape becomes possible. This proposal is not about solving the ecological problems infrastructure creates. What this proposal attempts to stimulate are moments rich in possibilities of collaboration, contemplation, reflection across disciplines, private and public. Through these moments we can shift our awareness of the interconnectedness of landscape and infrastructure, the landscape and us.

Though this project touched on the idea of uncertainty and how to treat it as opportunity and not hindrance, all aspects of the project could be further strengthened by further embracing the unknown across programmatic, structural, and architectural strategies. The overlap of researchers, artists, and the public creates opportunities for both synergy but also discord. Unforeseen collisions between actor groups has the potential to initiate interesting programmatic relationships and occurrences. Questioning how the structure of the existing station will fare as water now flows through unimpeded alludes to the uncertainty of it and the inserted architecture. These are just a few streams of thought worth exploring in future work that seeks to address the uncertain future of built structures.

Another aspect to be considered in future work is the act of process. In the modification of existing infrastructural structures, the process and sequencing of interventions can become an important experiential component in the life of

the project. A slowed down construction sequence could reflect on the programmatic needs of the various actor groups to eventually inhabit the space, such as researchers being first to occupy, could allow for them to begin data collection as the rest of the construction is completed. This too ties into the idea of uncertainty and the use of process and sequencing provides another method for exploring the potentials of the unknown.



Aerial image showing sequential site modifications.

As infrastructure across the world is becoming outdated, this very uncertainty mirrors what infrastructure fights against in its creation, that of shifting an unpredictable future into a predictable one. By allowing landscape phenomena to flood back into infrastructure and treating uncertainty as an experiential spatial and programmatic enhancement, infrastructural relics can become filled with unabated sensory experiences. These structures can re-connect us with our senses and the aspects of landscape that enrich

them. Infrastructure is part of the historical legacy of our relationship to the landscape and using it as a means for shifting our perspective of this relationship seems apt for moving into an uncertain future.



Vignette showing the completed project at dusk.

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