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ENDANGERED EXISTENCE: AN ARCHITECTURE OF IMMINENCE

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ENDANGERED EXISTENCE:
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ABSTRACT

Despite being an inevitable fate for all living things, death incites fear in many people. Viewing existence through the lens of time limits the role of death to a singular moment indicating an end. The ability to rise above the local concerns of death provides the ability to participate in an eternal totality. Death becomes a transitory state that is part of an endless cycle of change. Recognizing the social and environmental context of the 21st century demands a sense of immediacy for transformation in the way we approach death. As a group, American Indians have suffered centuries of genocide, human rights violations, and social marginalization. In the 21st century, they are still in danger from ongoing threats to their survival. Even the health of their lands is at risk with the impacts of climate change. Here lies an opportunity for architecture to move beyond its traditional expectation of priority and permanence. By merging industry and mausoleum, factory and environment, the restoration of a historic salt marsh in Washington holds the potential to be a living memorial easing the transition to a new era. Architecture is expected to record the past, function in the present, and accommodate an uncertain future.

THESIS STATEMENT

Architecture is rarely asked to disappear, yet the assumption of a perpetually stagnant, ideal state willfully ignores the inevitability of change. In our rapidly evolving world, the magnitude of social and environmental challenges facing humanity demands the acceptance of death of various levels as a transitory state used to develop a framework for future growth. Architecture must account for life after its program death.
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“What about the seventh generation? Where are you taking them? What will they have?”

— Oren Lyons, Onondaga Nation Chief
3.1 AREA OF FOCUS SUMMARY

- Historical context of American Indians
- Modern social issues facing American Indians
- American Indian identity
- Lummi Nation history and industry
- Ecology of the saltmarsh
- History of salt hay agriculture
- Convergence of industry and environment

3.2 LITERATURE REVIEW

History is not the past. History is the stories that are told about the past. Often, the history of North America is constructed on a foundation of enlightened European discovery, courageous frontiersmen struggling west, and the “noble savage.” An examination of this history, however brief, is integral in understanding the contemporary context and establishing an informed approach.

Early explorers to America, who had fleeting encounters with Native peoples, generally reported positively on their relationships. However, the colonists who by necessity had long-term, daily interactions with American Indians had more friction with their indigenous neighbors. Religion played a significant role in the approach colonists took towards the Indians. Removing Native humanity and chalking the entire population up to a form of higher punishment created a palatable narrative that allowed colonists to proceed with little consideration beyond their own advancement. It also allowed for the belief in the superiority of European culture and called first for the extermination, and then the reshaping of American Indians. Violent conflict was constant from the early seventeenth century through the end of the nineteenth century. This includes, but is certainly not limited to the 1637 Pequot War, the 1675-78 King Philips War, the 1711 Tuscarora War, the 1754-63 French and Indian War, the 1774 Lord Dunmore’s War, The First and Second
Seminole Wars, the 1832 Black Hawk War, the 1855-56 Rogue River War, and the 1865-68 Ute Wars, all the way through to the Wounded Knee Massacre in 1890 (King 2013, 22-26).

These early years were plagued with violent solutions to “the Indian problem.” The abuses and subsequent retaliations are left largely untold when recounting early American settlement, although they undoubtedly could constitute an entirely separate historical thesis in and of themselves. Ignoring such atrocities (of which there was certainly no shortage) as the Trail of Tears, which resulted in the deaths of more than 4,000 people, and the 1887 Dawes Act that aimed at dissolving all tribal land, we land in the twentieth century at the 1953 Termination Act and the Relocation Act. These acts allowed the U.S. Congress to cease all federal communications with tribes at will and “encourage” tribal members to abandon their reservations, respectively (King 2013, 120-133). The entirety of American Indian history since the arrival of the first European settlers has been a struggle for survival in the face of elimination. The fact that they are still very much a vibrant part of the American population speaks volumes to their strength as a people.

While efforts to address the problems facing contemporary American Indians are coming to the forefront of social discourse, especially with the attention from the Obama administration, it is inarguably essential to understand the historical context of genocide and cultural extermination when formulating a plan to implement positive progress for both American Indians and non-Indians.

"Those who cannot remember the past are condemned to repeat it.” - George Santayana

The United States can, to a degree, be represented by the presidents that are elected in this free democracy [with suffrage eventually universal]. Examining the sentiments of United States Presidents regarding American Indians provides a fairly accurate time-line of the evolution of American sentiment towards indigenous peoples.

"Indians and wolves are both beasts of prey, tho’ they differ in shape.” George Washington

“If ever we are constrained to lift the hatchet against any tribe, we will never lay it down till that tribe is exterminated, or driven beyond the Mississippi… in war, they will kill some of us; we shall destroy them all.” Thomas Jefferson

“I don’t go so far as to think that the only good Indian is the dead Indian, but I believe nine out of every ten are, and I shouldn’t like to inquire too closely into the case of the tenth.” Theodore Roosevelt

“For a subject worked and reworked so often in novels, motion pictures, and television, American Indians remain probably the least understood and most misunderstood Americans of us all.” John F. Kennedy

“Maybe we made a mistake. Maybe we should not have humored them in that wanting to stay in that kind of primitive lifestyle. Maybe we should have said, no, come join us; be citizens along with the rest of us.” Ronald Reagan

“This government to government relationship is the result of sovereign and independent tribal governments being incorporated into the fabric of our Nation… Over the years the relationship has flourished, grown, and evolved into a vibrant partnership…” George Herbert Walker Bush

“Tribal sovereignty means that. It’s sovereign. You’re a… you’re a… you’ve been given sovereignty and you’ve viewed as a sovereign entity.” George W. Bush

“We also recommit to supporting tribal self-determination, security, and prosperity for all Native Americans. While we cannot erase the scourges or broken promises of our past, we will move ahead together in writing a new, brighter chapter in our joint history.” Barack Obama

"Those who cannot remember the past are condemned to repeat it.” - George Santayana
One of the most dangerous generalizations that can be made is the uniform conglomeration to establish a singular American Indian identity. There are 326 federally recognized American Indian reservations in the United States. In addition to that, there are 566 individually federally recognized American Indian and Alaskan Native tribes living on those reservations (US Census 2015). Each of these nations have a unique and singular culture that is in no way a clone of their Native counterparts. However, there are certain social problems that are evident in multiple Native communities. In 2014, the median household income for single-race American Indians and Alaskan Natives was more than $16,000 below the national average. Additionally, 289.3% of all single-race American Indians and Alaskan Natives were living in poverty in 2014. The percentage of American Indians without health insurance was more than double the national average (US Census 2015). Poverty, unemployment, mass incarceration, police brutality, exploitation, violence against women, and youth suicides are just some of the problems American Indians face in their communities.

Another complication is the perception of American Indians in North America. This particular plight is that of the “transparent” Native people. This is a presumptuous and heavy-handed attempt to solve all the problems of a community at once; at a glance, well-meaning people assume the correct solutions to help, to determine feelings, and the experience of a “real” American Indian. North Americans see a contemporary Native people, without really seeing Indians (Deloria 1969). Again, it hinges on the flattening of a diverse makeup of people into a neat “Native American” box still in the image of an antiquated facsimile of “the noble savage.”

Yet American Indian communities are not static. They are dynamic, adaptable, and have evolved with the times, just like the rest of American society. Even today, members of the American Indian youth have confronted the challenges facing their communities and worked towards improving their perception and social capital in creative ways. Through the medium of music, Inez Jasper uses music to speak out against the violence against Indigenous women. Nataanii Means and Mike Witko use rap as a platform to speak about the issues facing modern American Indians. Frank Waln uses hip-hop as a form of protest against injustices faced as an American Indian youth, state violence, and environmental degradation (Rebel Music 2014). Modern American Indians are anything but helpless.

If one thing has been proven in more than five hundred years of European occupation, American Indian communities have proven themselves to be exceptionally resilient. Not stagnant or immovable, but persistent and responsive. Native existence is one of modern life informed by traditional values and contemporary realities. It’s true that a large portion of American Indian communities have a long-standing relationship with the environment. That relationship is equally available to non-Indians, although with the implications of climate change, globally we seem to have turned away from these values. It makes sense to begin architecture’s transformation in purpose within a community so deeply connected to the land on which they live.

The Lummi Nation call themselves “Lhaq’temish.” They are a fishing Nation and strongly identify with the ocean. They have lived and thrived in the waters of the Salish
Sea for thousands of years. They are the original inhabitants of the northernmost coast of Washington and are the third largest tribe in the state (LIBC 2016).

The reservation is located 90 miles north of Seattle, Washington, and 8 miles west of Bellingham, Washington. It entails about 13,500 acres of uplands and 10,500 acres of tidelands. The reservation is composed of the Lummi Peninsula, separating Lummi Bay on the west and Bellingham Bay on the east, uplands to the north, Sandy Point Peninsula, the floodplains and deltas of the Lummi River (the Red River) and the Nooksack River, Portage Island, and adjacent tidelands. There are over 32 miles of highly productive marine shoreline surrounding the Reservation on all but the north and northeast border. This shoreline holds much of the high-density development on the reservation. The reservation holds the mouth of the Nooksack River, which drains a watershed of 786 square miles (LIBC 2016).

Before the arrival of colonists in the 1800s, the Lummi ancestors occupied a much larger territory than the current reservation. This included much of the San Juan Islands and the coastal lands down to present day Seattle. They traveled along seasonal migration routes to fishing sites, harvesting grounds, game hunting areas, waterfowl hunting sites, and winter villages. Their geographic spread overlapped with other First Nation groups and was characteristic of the Coast Salish people (Boxberger 1950). The land and water held huge cultural significance and were part of the creation stories and history of the Lummi people. This “homeland” was vital to the cultural identification and subsistence of the group. The land provided the necessary resources to sustain their tribe.

Many Lummi people still rely on salmon fishing and shellfish harvesting for both subsistence and income. These numbers have dropped significantly due to a decline in the fish populations. In 1980, the average annual salary for a Lummi fisherman was $50,000. By 1993, the average annual salary had dropped to $9,000. Since 1993, increased reductions in salmon stocks resulted in the closure of some fisheries and even more reduction in tribal fishery incomes (LIBC 2016). Changes away from the traditional diet have caused increased rates of diabetes, cancer, heart attacks, high blood pressure, and tooth decay in the tribe (Welty 1991).

There has been a significant change in the population and demographic of the reservation since its establishment in 1855. The sale of Reservation Lands to non-Lummis caused a migration of non-Lummis to the reservation. Since 1960, there has been an increase in both Lummi and non-Lummi populations on the Reservation. Improved economic conditions, tribal self-governance, development and improvement of potable water distribution and renewed sense of Lummi cultural identity have boosted the Lummi population. There are currently about 4,650 enrolled tribal members. About 2,650 tribal members are living on the Reservation (LIBC 2016).

Even if we completely stopped greenhouse gas emissions today, the effects of our past actions will continue to emerge for hundreds of years to come. We are still trying to understand the implications of our actions as a planet and working to find solutions to the changes we already see today. One of the most evident changes
is the increasing sea levels. Over the past century, global sea levels have risen 4-8 inches. However, the rate of annual rise of the past 20 years has been almost double that of the 80 years before. Sea level rise is cause not only by melting glaciers adding more volume of water, but an expanding ocean. As the water temperature increases because of climate change, the ocean also expands in size and occupies more space (National Geographic 2016). Most predictions say the sea level will continue to rise and the rate at which it does will continue to accelerate. The Intergovernmental Panel on Climate Change says we can expect an increase of 11-38 inches by the end of the century. More dire estimates place the sea level rise at 23 feet (National Geographic 2016). While the Pacific Northwest is expected to increase at a slower rate because of tectonic plate movement, an earthquake of magnitude 8 or higher would cause a sudden rise of 3-7 feet in certain areas (Adelsman 2016). Natural shoreline does provide a buffer for storm surges and rising sea levels. The effect on these ecosystem will vary depending on local conditions. Salt marshes with a high sediment supply, such as those at the mouths of major estuaries will maintain their stability (Adelsman 2016).

While there are many details of the future we cannot be sure of, we can be certain ocean levels will continue to rise globally, causing problems for all coastal communities. Most of the time the reaction is to try and stop this encroachment onto developed land by building wall or levees. Generally the notion is to keep the ocean out. Instead of this rejection of natural processes and the change brought by time, perhaps an acceptance of immutable facts could produce a more cohesive and sensitive solution for future habitats and interactions with the environment.

Salmon, Salt Hay and the Salt Marsh

Salt marshes are composed of various channels, or tidal creeks, that are filled with the tides. Marsh flats exist between uplands and tidal creeks. Here, salt pannes and pools are filled with very high concentrations of salt. The low-lying areas often have mudflats, large flat expanses of mud composed of fine silts and clays. The mudflats are filled with burrowing creatures like clams, mussels, sand shrimp, and fiddler crabs (NOAA 2008). Salt marshes have distinct zones, high and low marsh, that determine the plant species able to grow there. Vegetation in the low marsh have a very high tolerance to salt. The low marsh is flooded daily at high tide, where the high marsh usually only floods twice a month at very high tides. Usually, the difference in elevation between high and low marsh is only a few centimeters (NOAA 2008). Salt marshes serve as buffers against flooding and shoreline erosion. They also act as pollution filters for the rivers feeding them (Massie 1998).

In the Pacific Northwest, salmon rely heavily on nearshore waters and estuaries during the juvenile part of their life cycle. These areas are also integral for migration, refuge, and feeding. The salmon travel through the estuaries twice during their life, as juveniles make their way out to sea, and as adults migrating back to spawn. The adjustment period for salt to fresh water, or smoltification, is critical. There are actual changes in the body chemistry, appearance, and behavior of the salmon. The rich and diverse ecosystem of the estuaries and the salt marshes provides an abundance of food (Grisham 2016).

One of the biggest threats to the salmon population is habitat loss. The estuary
and marsh habitats are critical parts of the salmon life cycle. Salmon lose food and shelter in the absence of these marshes. The Puget Sound has seen a 73% decline in salt marsh habitats, with almost all salt marsh habitats in major urban areas being destroyed. In the Puyallap River Delta, 100% of the nearshore habitat was lost (Grisham 2016).

Salt hay, or saltmeadow cordgrass, is found in the high marsh zones of the salt marsh. It grows naturally on all salt marshes along the Atlantic Seaboard and was introduced to west coast marshes. It can be covered at some times by high tide. The plant has specialized cells in its roots to prevent salt intrusion and maintain its fresh water. Salt hay is less tolerant to salt water than other marsh grasses (Massie 1998).

The harvesting of salt hay was once a booming industry in the Northeast. Salt hay was used to feed horses and cattle for a time before more nutrient filled alternative were made known. The hay was also largely used for mulch in low-growing crops. It was also used as a leach bed for sewer pipes, insulation for fresh cement, and to blanket erosion-prone embankments. It was especially good as an insulator for curing cement (Mathis 1975). Today salt hay is still an excellent weed seed free much and is utilized in the landscape and vegetable trade industry (NRCS 2016).

A decrease in available harvesters of the tidal grass was partly responsible for the decline of this once thriving industry. Salt haying was largely a family business and the hard work was not carrying over to the younger generations (Mathis 1975). Even with mechanization, most of the original principles behind the modern harvest of salt hay are the same as they were during the colonial period. Information was passed through families, with salt hay farming spanning generations. The harvest begins in late June or early July and continued until all the hay was cut, sometimes working well into the winter. Salt hay grows naturally on the marshes and is replenished annually. There is no need for the harvesters to sow any seeds. Despite changes in technology, salt hay farming is remains a highly labor-intensive effort requiring teamwork and cooperation. A variety of upland equipment is used, including tractors, propelled mowers, hay balers, and wagons with automatic mowers (National Park Service 2005).

The concept of death is frightening to many people. It indicates a finite measure of time in which one is alive. Death is an end to life. This myopic view of time and space limits the ability to see beyond a single individual.

Baruch Spinoza was a 17th century Dutch philosopher who made contributions to almost every area of philosophy. He is one of the three major Rationalists, idealizing a purely intellectual form of cognition over sense perception as a means of acquiring knowledge. Spinoza is best known for his treatise Ethics, a work presenting an ethical vision of existence defining God and Nature. His work is controversial, some hailing him as a master of enlightened modernity embracing reason while others claim he attacks the very traditions that sustain us and denies what makes humanity noble (Dutton 2016).

Spinoza believed that through reason, humans could achieve a divine eternal
perspective. He saw life viewed through two different lenses: egotistically, or under the aspect of time, and globally and eternally, under the aspect of eternity. He saw humanity torn between these two opposing viewpoints. Spinoza believed that following reason could allow us to participate in “eternal totality.” Through rising above the local concerns of self-interest and personal gain, we could be truly ethical (Spinoza 1677). Our task is to understand, not rebel.

Applying this on a larger scale, participation in eternal totality does not negate the concerns of today. It does not imply a submissive acceptance and inaction. Rather, it instigates an acceptance of conditions upon which to act. The fact is American Indian culture has changed over time. While it still has a strong connection to the past, the people living today are not the same people living 100 years ago. The death of the salmon, the death of the environment, the death of the tribe. These are inevitabilities spread across the spectrum of eternity. Accepting the rising sea level and the death of the salmon allows planning for the future. It allows the emergence of a new way of life, informed from and born from the death of the old one. An architecture of imminence is easing the transition of death and facilitating new life to continue in eternity.
3.4 | ARCHITECTURAL ISSUES

- What role does architecture have in the lives of modern American Indians?
- How does the cultural context and history of a community inform design?
- How does an architecture embody identity?
- Is there an architecture that can acknowledge death?
- How do industry and environment merge in design?
- How can architecture account for a millenia of change?

THE NATIONAL TOURIST ROUTES

The National Tourist Routes are 18 designated highways in Norway, chosen for their picturesque scenery and tourist oriented development. In collaboration with several architects, landscape architects, and artists, a series of stops along the routes were made at key points to emphasize the landscape or landmarks nearby. The goal of the Routes is to enhance the visitor’s experience and appreciation of the landscape with design. The architecture is serving the environment, but the primary purpose is facilitating the tourist industry. The projects are informative in their treatment of materiality and form in the landscape, but lack an impact beyond the present. Their primary function is myopic on a millennial scale.
The wetland park was a project aimed to save a protected regional wetland dying from diminishing water sources. The urban wetland ecosystem became a multifunctional stormwater park that collects, filters, and stores stormwater, eventually returning it to the aquifer. Here, the architectural intervention is aimed at leaving the existing core of the wetland untouched, prioritizing the natural processes in the ecosystem. The paths and platforms exist on ground level as well as above the wetland. Visitors are allowed both a voyeuristic relationship to the wetland as well as the chance to have close interaction with nature. The project is ecosystem oriented but still doesn’t engage a scope beyond the present and relatively near future. It doesn’t attempt to accommodate a future outcome beyond the sustaining of this urban wetland.

**ST JACQUES ECOLOGICAL PARK**

Atelier des paysages Bruel-Delmar designed this ecological park in response to the territorial, historical, sociological, and political context of Rennes, France. Again within an urban context, the project preserves the natural environment while simultaneously supporting economic development. It keeps traces of previous agricultural use while integrating the forested landscape into the city. Water is a formative force, driving the design at all scales. The park becomes a laboratory to protect and develop its ecosystems. This project moves closer to working with the longer passage of time, but still doesn’t take a strong stand as to the impact that will be left behind the context of the city and its residents. It doesn’t account for a relationship with the city beyond superficial observations.
BREUNER MARSH RESTORATION PROJECT

This restoration project restored and enhanced 164 acres of wetlands and uplands in the San Francisco Bay. Because of the location, the rising tides are a direct threat to human populations and vital infrastructure as well as the environment. The effects would be disastrous for the state and local economy. Tidal salt marshes sustain diverse ecosystems and serve several ecological services but are particularly vulnerable to sea level rise. In the Bay Area, the location near urban development seriously inhibits salt marsh ability to migrate inland.

WRA, on a team led by the East Bay Regional Park District developed a restoration design for Breuner Marsh. The area become a self-sustaining tidal wetland area with adjacent seasonal wetlands. The most important aspect of this project is its use of resilient design in regards to sea level rise. Traditional restoration that would be successful today could be underwater by the end of the century. Breuner Marsh is designed to accommodate a sea level rise of 55 inches by the end of the century. Integral here is the establishment of a transition zone, allowing the wetlands to move inland as the sea level rises. The project also incorporates a public access plan that also responds to the rising sea levels. This project starts to look at the changing environmental conditions and their effect on the marsh ecosystem. The public access design is less obvious, emphasizing the primary focus of sustaining the salt marsh. It lacks a strong architectural aspect integrating human activity into the sustaining of the marsh, but the use of resilient design ensures and adaptable solution to a problem all coastal areas will be seeing as the impacts of climate change become increasingly evident.
“The Indian had what the world has lost. What the world has lost, the world must have again lest it die.”

— John Collier, Indians of the Americas
4.1 | ANNOTATED AERIAL PHOTOS OR MAPS OF SITE

The site is the Lummi Reservation, located in Northwest Washington state.

Located along the Puget Sound, the reservation is home to the opening of the Nooksack River, draining all the way from the top of Mount Baker.
LUMMI NATION: LOWLANDS

The Lummi lowlands consists of 4,800 acres of drained, leveed land currently used for agriculture.
NOOKSACK RIVER WATER SYSTEM

Snow from Mt. Baker melts and feeds the Noocksack River. The River makes its way across the state until it opens into Bellingham Bay and Lummi Bay on the Reservation.

CHANGING RELATIONSHIP BETWEEN LOWLANDS AND WATER
COMMUNITY FACILITIES AND INFRASTRUCTURE

Sandy Point Wastewater Treatment Plant
Sandy Point Fish Hatchery
Sandy Point Fire Station
Gooseberry Wastewater Treatment Plant
Wexliem Community Building
K-12 School
Gooseberry Point Fire Station
Biosolids Application Site
Lummi Bay Fish / Shellfish Hatchery
Housing Authority

Silver Reef Hotel, Casino, and Spa
Health Clinic
Northwest Indian College

GROUNDWATER QUALITY

Salt water intrusion
Fresh above salty
Salty groundwater
Transition zone
Fresh groundwater
RISING SEA LEVELS: CURRENT FLOOD PROJECTIONS

CURRENT CONDITIONS

SEA LEVEL + 1 FT

SEA LEVEL + 3 FT
100 YEAR ESTIMATE
40% LAND LOSS

SEA LEVEL + 4 FT

SEA LEVEL + 4 FT

SEA LEVEL + 10 FT
100 YEAR ESTIMATE
40% LAND LOSS

SALT MARSH RESTORATION

EROSION CONTROL

STORM BUFFER

OBSERVATION

RESEARCH

AWARENESS

PROPAGATION

REPLANTING

CULVERT INSTALLATION

CHANNEL REGRADING

NESTING BREEDING
A POPULATION IN FLUX

5,000+ population living on this tribal land.
2,650 enrolled tribal members living on the reservation.
2,500 non-tribal members living on the reservation.

SITE PARAMETERS | 4.4

The parameters of this site are restricted to the boundaries of the reservation. The area is 13,500 acres of uplands and 10,500 acres of tidelands to work within.

The proposed project location in the lowlands of the reservation are largely zoned for agriculture. This use would be maintained through the establishment of the salt hay industry as a major source of economic production.
“Out of a past, I make truth for a future.”

— Beth Brant, *Mohawk Trail*
The intention of this project is to establish the framework for a transition of the Lummi Nation to ensure their ultimate survival. In doing so, a memorial to the salmon they depend on now is merged with the agricultural industry of salt hay farming.

The restoration of a historic salt marsh creates a new environment that works with the rising sea levels and the changing environment. The salt marsh becomes the memorial for the salmon. It’s a living memorial that reexamines our relationship with the environment. The symbiotic nature of the two programs, memorial and industry, ease the transition into a new era.
The Lummi Nation is the largest fishing tribe in the Puget Sound. Their cultural identity derives from their connection to the water and especially to salmon.

Currently, agriculture is increasingly relied upon as the salmon populations have been in decline.

The Lummi Reservation includes 10,500 acres of tidelands and more than 32 miles of marine shoreline.

In addition to a declining salmon population, the Lummi Reservation land is also at risk from a rapidly rising sea level, endangering their existing agricultural land.

The new marsh creates a productive ecosystem, learning from the past while envisioning the future.

The proposed path merges industry and memorial, marks the past, serves the present, and looks toward an uncertain future.

The Lummi Nation is the largest fishing tribe in the Puget Sound. Their cultural identity derives from their connection to the water and especially to salmon.

Death is an inevitable part of the world we live in. Accepting this instead of longing for the impossible is necessary. Architecture must recognize the eventual death of its original program and consider its next purpose.
The restoration of the marsh will be achieved through distinguishing the four zones of salt marsh to support distinctive vegetation and wildlife.
“Longing for the perpetuity of an ideal state is the original delusion of architecture”

— Lebbeus Woods
The five loops of the project each archive and embody a particular trait or characteristic of the site's history and context. These paths are designed to disappear as the site changes and the original program becomes obsolete.
THE RISING SEA LEVEL:
AN IMMINENT DANGER

Rising ocean levels will be affecting coastal communities for centuries to come. While the general approach is to stop the water from encroaching into developed land, this approach is to accept the inevitability of rising waters and create an ecosystem that can adapt and respond to these changing conditions. The salt marsh ecosystem serves a number of purposes as it creates the potential for new life. The topography of the site is designed to slow the rising sea level and land encroachment. Certain areas of the site become islands before disappearing entirely. The landscape will be continually changing, and the paths react and change along with it. The ocean level loop serves to educate on the topic as well as exemplify the ability to structure future growth. The mesh laid over the path in certain areas rises with the water, trapping sediments and allowing roots to take hold.
THE LUMMI PEOPLE: A POPULATION IN FLUX

Although they are historically a fishing tribe, the Lummi Nation is widely known for its art and artists. They have produced prominent athletes, carvers, painters, performing artists, traditional storytellers, weavers, and “farmers of the sea.” They are also known for their college, the Northwest Indian College, which is one of the largest tribal colleges in the region. As one of 29 federally-recognized American Indian tribes in Washington, the Lummi exercise cultural, environmental, and political influence throughout their historical territory. Even as the salmon population dwindles, the Lummi Nation is growing larger than it ever has been before. The need to establish a new industry is more pressing than ever to sustain both the growing Lummi Nation and the land to which they are tied. The Lummi loop records the history of the people but will also eventually fade away as the lower path is submerged and the higher path floods and rots away.
5,000+ PEOPLE LIVING ON TRIBAL LAND
2,650 ENROLLED TRIBAL MEMBERS ON THE RESERVATION
2,500 NON-TRIBAL MEMBERS ON THE RESERVATION
THE CHINOOK SALMON: A POPULATION IN DANGER

Although they are historically a fishing tribe, the Lummi Nation is widely known for its art and artists. They have produced prominent athletes, carvers, painters, performing artists, traditional storytellers, weavers, and “farmers of the sea.” They are also known for their college, the Northwest Indian College, which is one of the largest tribal colleges in the region. As one of 29 federally-recognized American Indian tribes in Washington, the Lummi exercise cultural, environmental, and political influence throughout their historical territory. Even as the salmon population dwindles, the Lummi Nation is growing larger than it ever has been before. The need to establish a new industry is more pressing than ever to sustain both the growing Lummi Nation and the land to which they are tied. The lower gravel path of the salmon loop will wash away over time, as the water rises and the salmon also go extinct. As the program becomes obsolete the infrastructure also disappears. The higher path will remain longer, but it, too, will weather, break, and fade away as the steel rusts and the glass breaks. The trail markers remain, indicating sea level heights and reminding of a previous time.
THE ENTRANCE: A FINAL STATEMENT

The main entrance to the site is also the most significant because it will be the last remnant after the rest of the path erodes away. Because of location, elevation, and materiality, this central node will be the last portion standing. It is the connection between the Lummi loop and the salt hay loop. Even as these programs decay and fade away hundreds of years into the future, the last section of the walkway will continue to change in color and form with age.
With the restoration of thousands of acres of salt marsh on the reservation lies an opportunity to establish a new self-sustaining industry. The ecology of the salt marsh supports the salmon population by expanding their dwindling habitat. While the salt marsh cannot stop extinction or rising sea levels, it does put into question the time of this eventuality.
THE HUMAN SCALE IN A 13,500 ACRE MARSH
SALT HAY FARMING: AN INDUSTRY LOOKING FORWARD

With the restoration of thousands of acres of salt marsh on the reservation lies an opportunity to establish a new self-sustaining industry. The ecology of the salt marsh supports the salmon population by expanding their dwindling habitat. While the salt marsh cannot stop extinction, it can change the timeline for this event.
The magnitude of social and environmental challenges facing society demands the acceptance of death as a transitory state that can be used to develop the framework for future growth. In creating a symbiotic relationship between industry and environment, the relationship between human and nature is redefined to allow participation in eternal totality. The salt marsh represents this transitory state of moving from one way of life to another.

The growth of the salt marsh then becomes a gentle easing into a new era, allowing the salmon to thrive for as long as possible, while also looking towards the future environment and industries needed for the Lummi people to survive long after the salmon are gone. On a larger scale, the new marsh is a memorial for the salmon.

The significance of the salt marsh moves beyond a closed ecosystem adjacent to a human settlement. It’s a productive, living memorial, preserving cultures, promoting growth, and easing the transition of death. Lebbeus Woods said “longing for the perpetuity of an ideal state is the original delusion of architecture.” The establishment of a symbiotic relationship between industry and memorial, between people and the environment, moves beyond ideal conditions and accepts the changes we as a population will face in the next century and beyond. It not only accepts death, but embraces and plans for the future.

“If I can learn to love death then I can begin to find refuge in change.”

— Terry Tempest Williams, *Refuge*


Spinoza, Benedictus de. 1677. Ethics of Spinoza.


