# RECOVERING LANDSCAPE MATTHEW J. HALLAL

Recovering Landscape

# University of Detroit Mercy School of Architecture

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ARCH 5200

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## SANDUSKY OHIO

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design experiments land manipulation about lake erie old + new cedar point water treatment + algae blooms

## **COLLAGE STUDIES**

28 - 58 watepark + marina battery park marina downtown sandusky maps destination + identity

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INTERVENTION I - WATERPARK water towers water filtration 69 - 94 the natural environmnet structural collaging method to the madness

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CONCLUDING THOUGHTS

### **INTRODUCTION**

Sandusky Ohio became the chosen place to undergo a thorough intervention of an architectural solution. The goal was to grasp a deeper understanding of the site by evaluating its history as well as its current discourse. Early research subjects were heavily influenced on water sources and large bodies of water feeding into cities through natural or artificial means like canals or streams. Water within an urban context bridges nature with man by allowing humans to use water as a means to transportation and nourishment. People belong in strong communities to share their input on the natural environment by constantly making the built environment more developed for effective living. The storytelling of this thesis takes on the positive and negative attributes to the built environment. In order for architecture to intervene, the city must have identity and be collectively and creatively controlled by the people.



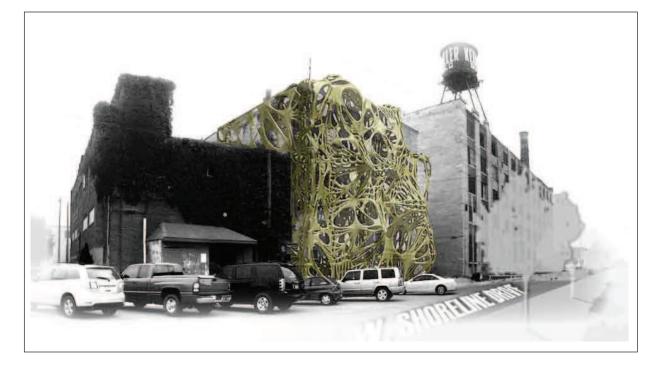
sandusky main street



crush winebar back entrance



crush winebar corridor



## experiment #1

connecting the natural environment with the built landscape can been a goal for designers to reach. Suppose the natual intervention could be self imposed by society without nature taking over thoruh its own means Studying waterfronts grew as my familiarity with these places also expanded. My understanding of these places made me think of the change in seasons; summertime experiences are more familiar than winter time. Waterfronts are boundaries blocking, or preventing lake water from reaching land. Protective barriers, break wall or fixed concrete slabs, distort the natural tendency of water reaching the surface. Experiencing places of water, lakes or oceans, create memories of exploration and deep, underwater navigation. An excerpt from Adrienne Rich's Diving into a Wreck describes a personal conquest of seeing a wreck in person: "I came to see the damage that was done, and the treasures that prevail. " (1) People want to discover the deep and be the ones to uncover lost artifacts. Lakes are the sanctuaries of those of wartime and accidental exploration. Explorative design in the natural realm is intriguing to think about. The basis for how a building will stand is according to the rules of geological studies of the earth's tectonics. Builders drill pylons deep into the earth to achieve a fixated structure of their own. The so-called "fixed" environment is right before us through rocks and layers of rock.



sandusky courthouse



sandusky coal docks





### experiment #2 - sterilization

connecting the natural environment with the built landscape can been a goal for designers to reach. Suppose the natual intervention could be self imposed by society without nature taking over thoruh its own means



# **Obama: Education is key**

president obama's visit to sandusky july, 2012

Conforming to the rules of geology may require architects to design within the architectonics of the geological formations. Mesa Verde in Colorado is a unique instance where design was based according to the existing geological formations; altering the grain was kept to a minimum as long as human processes were able to occur. Mesa Verde played with instances of light entering the cavernous, overhang village. This study is not to understand how these formations were created, but how humans influenced by cavernous spaces like Mesa Verde. Solemnity and calmness of these spaces are what bring people in. Caves and rock formation are a system or a catalysis that inspire human interventions. What is limited in the spiritual world remains tangible in the physical world; rocks serving as a base for millions of years of changes done by the natural environment and our doing.

Geological changes are now undergoing today. and the activity of molten hot rock billowing under us may explain the years of change to our lakes, oceans, and landforms. There is no threat that lakes or oceans will suddenly erupt, causing millions of gallons of hot magma to flourish onto the water's surface like a plague taking over mankind. Geologically, the earth is very fragile and as humans, we have a great ability of shaping the terrain. Bulldozers and large dredgers take millions of tons of raw, untreated earth products out of the earth and then all the product is shipped by land or water to all parts of the world. This may be good in the development of businesses yet dangerous as it may harm other ecosystems through cross-contamination. The technique in itself from dredging is harmful to aquatic species living among the activity, nevertheless big corporations are not considered about frivolous things as this.

Rock formations and glacial changes formed the Great Lakes over the course of millions of years. Changes in climate caused landforms to separate; followed by glacial formations to melt and create large bodies of water. Overtime, the bodies of water shift seasonally according to wind, temperature, or lunar changes. Bathymetry, the study of depths, became important within my study of natural and man-made interventions to the bottoms of oceans and lakes. Rock layers are broken up through methods of dredging in order to provide clearance for large vessels to navigate. Concerns with dredging come from the effects of erosion on coastal areas. Eventually, rock and sediment find their way back, causing the cycle to happen all over again. Dredging also takes the captured layers of rock and creates break walls that mute the aggressive activity of waves and currents. Break walls maintain stable conditions for boaters and freighters to safely navigate.



## experiment #3 - surveillance

Suppose the urban center became the most watch and secure place. Automated systems would work round-the-clock to rid the area of criminals or suspicious activiites. My focus for the thesis is Lake Erie. The shallowest among the other lakes, Lake Erie grew with the changes in trade and international relations with Canada (2). Specifically, the thesis will examine the geological interventions of the Sandusky Bay area. The peninsula of Cedar Point provides a half-mile gap from Marblehead that separates Sandusky Bay from Lake Erie. The primary freighter route out of Downtown Sandusky is the Moseley Channel, a man-made canal along the Cedar Point break wall that reaches a maximum depth of 35 feet (3). The Sandusky Bay grew from the early demands in trade provided by downtown Sandusky and neighboring Lake Erie cities. Along with that, entertainment centers like Cedar Point, Johnson Island, and Middle Bass Island became in popular demand at the turn of the century. These demands called for drastic changes to the infrastructure of the bay. Before 1940. Cedar Point was connected in one direction, which is now a private residential strip. The park today utilizes all its traffic from one man-made causeway that was assembled using dredging techniques. Johnson Island lost most of its luster after considerable damage done by the Tornado of 1928; the city of Sandusky also faced the same kinds of hardships and then some, including several tragic fires that brought the cities growth to a screeching halt. Middle Bass Island flourished as a wine-tasting resort, and still maintains the same reputation along with the adjacent party resort, Put-in-Bay. The considerable changes done to the Sandusky Bay is not something to be ignored. The main priority of Sandusky Bay area has always been tourism, yet loses that reputation during the winter months. The thick layers of ice that form in the winter leaves time for ice fishing, however climate changes has posed risks for daring fishermen seeking to venture out onto frozen surface of Lake Erie.

The major resorts that seem to do well in the winter months are the four indoor water parks located within a 15 mile radius of Downtown Sandusky. There is an attempt to drive the tourist population back into the city with these water parks, however only tailor to a select demographic. This thesis will not only look into bringing people back into the city of Sandusky, but provide some sustainable leverage that tie in with the treatment efforts of Lake Erie using wind and geothermal technologies.

<sup>2 - (</sup>Waffen, 2006)

<sup>3 - (</sup>McDonnell, 2007)



## experiment #4- floating landscapes

Suppose people created platforms generated by mood. The platforms would extend across the natural envirnoment, bridging cities and widely populated areas



GALVESTON



ERIE





**NEW ORLEANS** 



токуо



VENICE



NANTUCKET

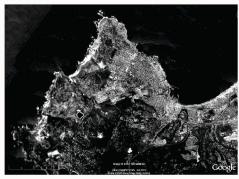


SAN FRANSICO

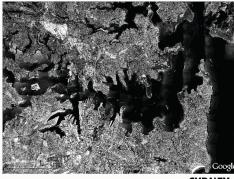




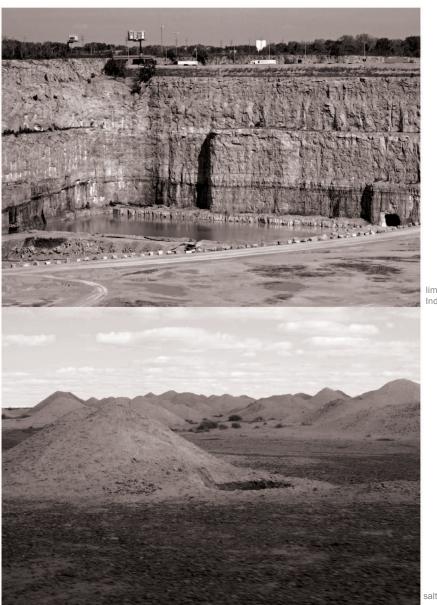




MONTEREY



SYDNEY



limestone quarry Indiana



Growing conflicts in industry arose when large manufacturers established along the lake. This, in turn, introduced pollution into the lake with circulating chemicals in the air and water. Damage occurred in the lake as toxic algae blooms started spawning along the surface, creating deep layers of green vegetation fueled by oxygen and phosphorous. Chemicals began to mix, causing these algae blooms to form, depleting the oxygen levels for native species of fish to live. Algae blooms suffocate these species, driving them out of their natural habitats and creating an influx of unnatural, man-made interventions to the lake

Cultural eutrophication is also a major problem that Lake Erie is facing. Cultural eutrophication describes the process of fertilized soils being introduced into the lake through various means of watershed (4). The biggest outbreak of this came from the destruction of the Black Swamp near the end of the War of 1812. In order to increase trading demands with the industrial cities of Toledo and Detroit, a road was required to bridge Sandusky with these industrial centers. Within the process, soils contaminated with nitrates and phosphates produces algae swamps in Maumee Bay. The green algae were so dense, that no aquatic li

4- (Walsh, 2010)

The green algae were so dense, that no aquatic life had a chance of sustaining life. The problem today affects the tourism population as well. Beaches remain closed and boaters are warned to keep away from algae blooms. Pollutants also affect the fishing industry; as many local species, walleye, northern pike, and sturgeon are becoming harder to come by.

One of the most plaguing issues of Lake Erie is the potential for the Asian carp to make its way from the Mississippi River. Invasive species, like Asian carp and zebra mussels, produce serious problems for boaters and fishermen. Carp feed on all levels of the food chain and they reproduce at an incredibly rapid rate. As the carp eat everything in sight, the native species have nothing to feed on. As a result, the native species move upward into Lake Ontario to find food.

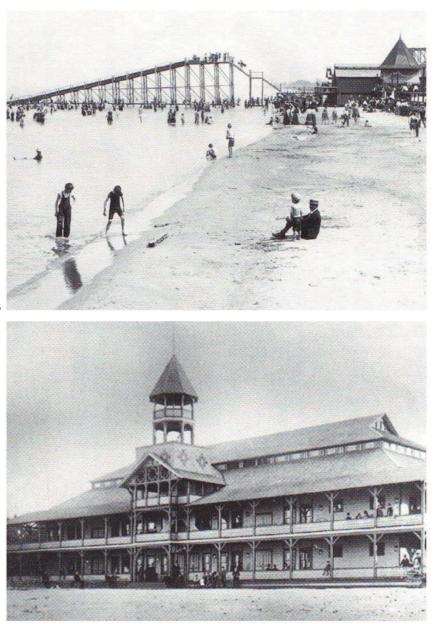


Power plants, like Davis Besse located 30 miles northwest of the city, is a major provider of nuclear energy. Industrial structures only grow the negative stigma of people avoiding Lake Erie due to contaminates produced my facilities like these.

Climate change also hinders the growth of these large-spanning algal blooms. In the summer months, algal blooms grow off of sunlight and phosphorous, causing the algae to grow deep. In the winter months, the algae hibernate by subsiding in areas where fish lay their eggs, forcing native species to move elsewhere to nest.

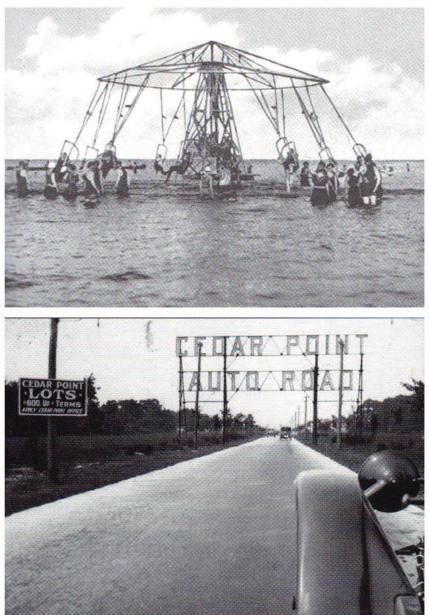


People do not want to see these interventions play into their lifestyles. Rivers and lakes offer sentimental ideas on the past, and instances of American pastimes of the "watering hole" and tire swings that are tied onto trees hanging over lakes. Keeping lakes pure is essential for the growth of neighboring cities that rely on freshwater every day for cooking and bathing. My initial stages of this thesis offer larger than life solutions for rectifying the problems of algal blooms and invasive species. These solutions are technical interventions that are assembled with moving parts and large spans of steel piping for extracting contaminates out from the lake. This initial study was to state an issue by immediately hypothetically solving the problem. The problem began with algal blooms, invasive species, and cultural eutrophication. The first thing that was asked was "what problems to these inhibit on the local environment," and "how could they be removed." Unnecessary things such as these are introduced into the mix unconsciously. Filters extract those things by introducing other chemicals like chlorine or physically by large net systems. The filtration process would automatically detect any harmful specimens, and immediately extract them from the environment in which they are causing damage. A large scale system, such as this, requires deep study in marine engineering and technical systems that would require lots of time to understand.



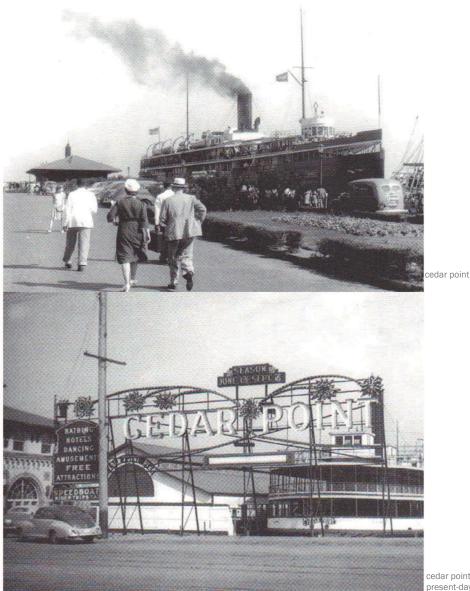
cedar point amusement park, 1895

grand pavilion 1899



cedar point amusement park, 1898





cedar point marina, 1905

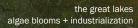


green algae

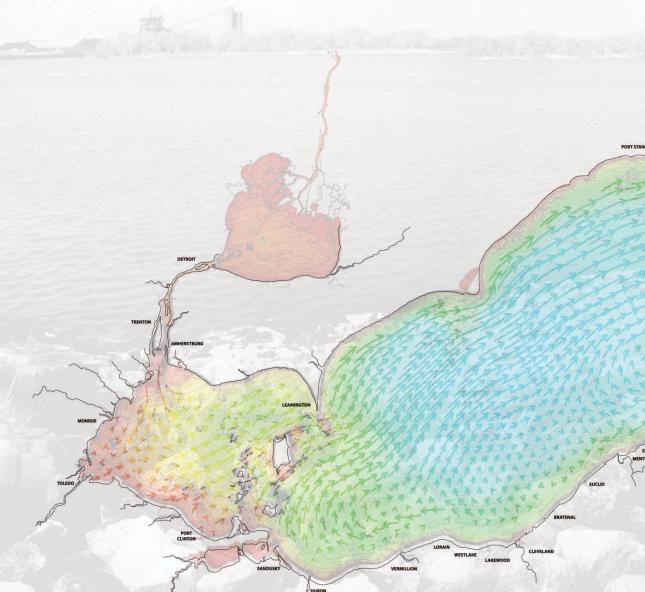


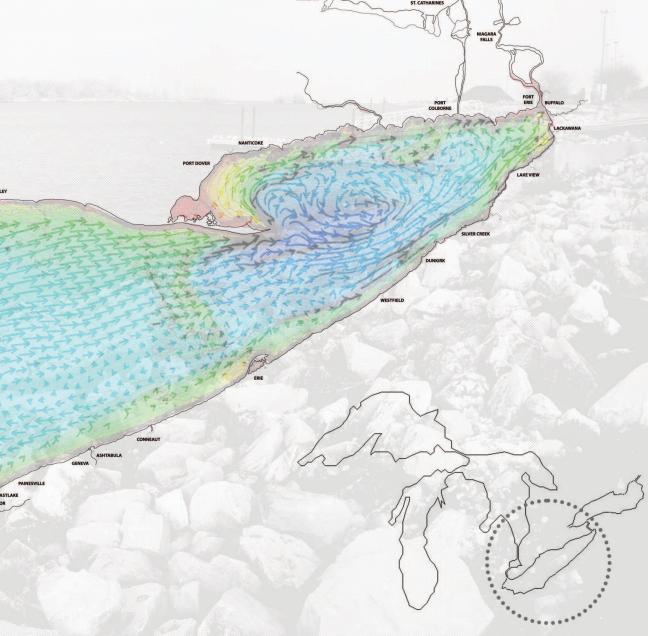
island networking

Besides considering innovative means of security, the next possible approach would be an environmental research center. The center would attempt to collaborate with the various wildlife reserves of Northwest Ohio, and educate on all the various environmental concerns. President Barak Obama's visit to Sandusky in the summer of 2012 expressed the concern for "educating our youth" and promoting small businesses around the area. The research center would address the issues of Lake Erie and the ongoing efforts done to rectify these issues. Doing a research center in Downtown Sandusky poses several problems. The issues of invasive species and algae are not all happening only in the Sandusky Bay area, but all over the Great Lakes. Efforts by neighboring cities have gone into beautifying Lake Erie. Research centers along Lake Erie often share the same mission, and often compete with one another. There are at least 15 separate organizations, some privately funded and others through major academic institutions that drive at studying all there is to Lake Erie. It begs to question how Sandusky would be able to compete with financially-stable centers like the University of Toledo. Instead of avoiding the topic of education, there is still the ability to educate by design.



. . . .





My early research looked at surveillance systems in both urban areas and in the natural environment. Surveillance cameras and personnel attempt to avoid chaos in various guestionable ways. The technical interventions proposed were industrial security systems in the lake that would only allow for certain species to thrive. Others, like Asian carp and algae, would be immediately eliminated from the lake. Unfortunately, this method for driving out unwanted specimen can be done using less extraneous systems. My concepts seemed extremely costly and somewhat barbaric; yet do provide some educated discussion as to what may become of industrial infrastructure in large bodies of water. John Todd is a well known writer and a pioneer in ecological design. Todd has introduced systems all along the Atlantic from northern Vermont to southern parts of Florida. He models his industrial systems off of the natural ecosystem (5) . His ecological models attempt to work with what is available in the given area, and makes them beneficial to fend off problems like toxic sludge, invasive species, and cultural eutrophication. Todd's "Eco-machines" are the working plant life treating these problems along with minimal man-made interventions. My thesis considered the ecological techniques of John Todd, yet did not want to get side-tracked into aquacultures and farming. One thing to take from this is that problems, like algae, can be removed using local products. Instead of shipping tons of barrels of chemicals to the area, why not use what is available locally to fix the problem? The potential for an ecological machine in Downtown Sandusky would drive in biological research into the city, as well as become a tourist destination alongside Cedar Point.



New England BioLabs John Todd

The architectonic of downtown Sandusky offers a character that people passing by would not know even existed. The Killborne Plot, designed to replicate the Freemason insignia, encases the Downtown area with two sets of diagonal streets running perpendicular to the lakefront. The cities edge is bounded by marinas that operate only through the summer months. In the wintertime, the boardwalks that stem off the shore are completely bare and without life. The aerial views of Sandusky show a ribbon of break walls extending from the industrial harbor all the way down to the edge of the Cedar Point Causeway. Large warehouse structures that house boats for the winter also block the views of the Sandusky Bay and the Cedar Point peninsula. There is a great opportunity to enhance the public activity of the city that would grow on the relation between people and Lake Erie. What could happen all-year long that would bring people to experience the lakefront once again? The Lakefront needs to be re-created to resemble the early history of Cedar Point as a bathing resort. This result could be achieved within the desolate Downtown Sandusky.



cedar point millenium force sketch





#### waterpark collage

Battery Park, located at the city's western-edge, is the largest operating marina in the Sandusky. It also takes up the greatest amount of waterfront real estate. The views from the site provide an astonishing panoramic view of the entire Cedar Point peninsula and the Sandusky Bay. The marina does not seem to address the views present, and is confined to the landscape of gas-guzzling recreational machines. The view is too hard to pass up, and the opportunity for an environmental facility would greatly impact the number of people back into the city.

The collage was intended to engage both the natural and mechanical environment. The people joined together in the large pool are cooperating with the natural landscape; creating means for assembly and recreation One of the early strategies for this thesis was to provide a water park that would serve as a catalyst to the growth of the lakefront city of Sandusky. The site will provide interventions for naturally maintaining the water without the use of harsh chemicals. The project will also boost activity in the winter months in environmentallyconscious ways. The "Pools of Sandusky" will bridge historical aspects of Downtown Sandusky and Cedar Point; creating a family-orientated facility that works to educate and purify the minds of all guests.





### marina collage

the marina collage studies the potential for mass development on the natural coastline. Because the demand for new and improved marina spaces, natural ecosystems are threatens as manufacuring drives out native plant species through dredging. From the early ideas of the thesis, the marina would be integrated as an attraction for guests to enjoy. The marina would also provide a waterpark that would provide attractions to guests of all ages





battery park marina november









#### water filtration collage

At the early stages of this study, there was the intent at fusing education with the final architectural solution. Considering such environmental issues such as eutrophication and algae blooms, it is essential to adapt the solution to be all about getting rid of these issue. Water filtration has been a part of Sandusky's history. At the rising point in the cholera outbreak, the city needed to do something to eliminate the threats to humans. In the 1920s, the city raise sufficient funds to put in the Sandusky Water Works building, located at the current location of Battery Park. After a massive tornado that ravaged most of the city, the water works building was destroyed.



ice build-up battery park marina, march







The city, relative to the Rustbelt, provides industrial potential to major cities like Cleveland, Toledo, and Detroit. Sandusky geographical characteristics provide linkages to neighboring islands, creating a strong tourism center for boaters.

# DISTANCES TO SANDUSKY, OHIO - LOCAL COUNTIES



SANDUSKY IN PROXIMITY WITH OTHER MAJOR METROPOLITIAN AREAS	66 MILES	TO CLEVELAND
RELATED ENVIRONMENTAL ISSUES WITH LAKE ERIE	62 MILES	TO TOLEDO
43 CITIES ARE A MAJOR SOURCE OF CHEMICAL POLLUTION	115 MILES	TO DETROIT



Understanding water depths was crutial in understading the geological changes made to the lakes surface. Dredging is primarily responsible for the Sandusky Bay formation from the Mosely Channel to the Cedar Point Causeway.

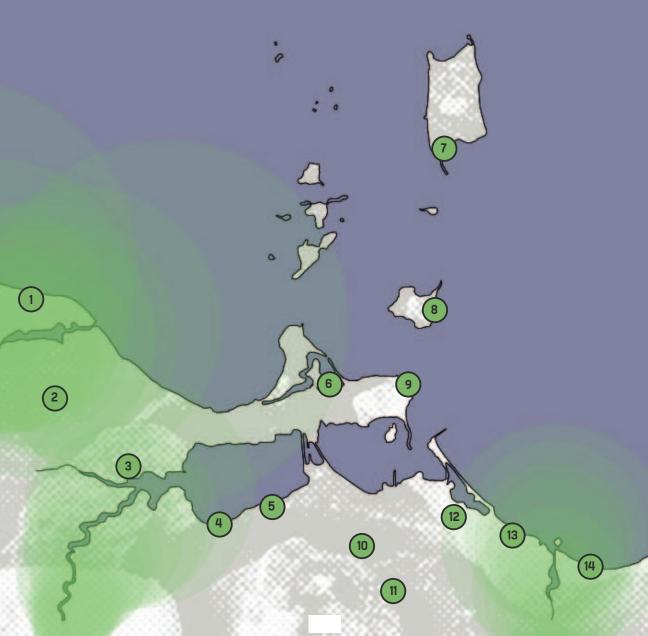
## SANDUSKY, OHIO - CHANNEL DEPTHS - SHIPPING CHANNELS

ALL NUMERICAL VALUES ARE IN FEET

THE MOSELEY CHANNEL IS THE DEEPEST SHIPPING CHANNEL WITHIN THE SANDUSKY BAY

SUDDEN CHANGE IN DEPTH IS MARKED IN DASHED LINES





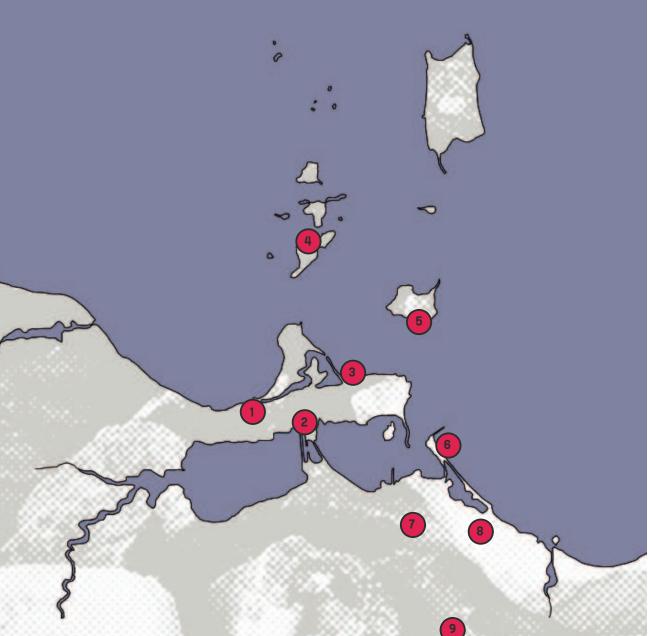
Watershed from the land's soil determines the quality of the lake water. The biggest known mistreatment of Lake Erie came from the draining of the Black Swamp. Phoshorous and other rich nutrients in the soil have resulted in such problems and algae and invasive species

## **RUNOFF - WATERSHED - STATE PARKS - WILDLIFE RESERVES**

8.

- 1. MAGEE MARSH WILDLIFE AREA
- 2. TOUSSAINT WILDLIFE AREA
- 3. LITTLE PORTAGE RIVER WILDLIFE AREA
- 4 PICKEREL CREEK WILDLIFE AREA
- 5. WILLOW POINT WILDLIFE AREA
- 6. EAST HARBOR STATE PARK
- FISH POINT PROVINCIAL NATURAL RESERVE 7.
- **KELLEY'S ISLAND STATE PARK**
- 9. LAKESIDE DAISY STATE NATURAL PRESERVE
- 10. **RESTHAVEN WILDLIFE AREA**
- 11. **CASTALIA QUARRY RESERVE**
- 12.
- PIPE CREEK WILDERNESS AREA 13.
- SHELDON-MARSH NATURAL PRESERVE 14.
  - OLD WOMAN CREEK NATURAL PRESERVE





 $S_{\text{andusky is home to many internationally}}$ known tourist attractions. Cedar Point ultimately created this center for entertainment in the Midwest, establishing wineries, water parks, and resort hotels. It's identity is embedded with this form of cultural expression

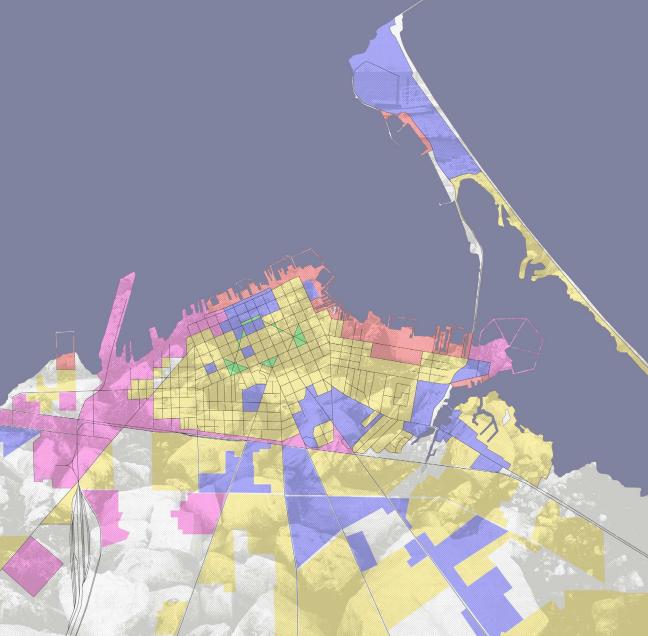
## SANDUSKY, OHIO - POPULAR TOURIST DESTINATIONS

- 1. AFRICAN SAFARI WILDLIFE
- 8. 9.
- 2. MONSOON LAGOON 3. LAKESIDE MARBLEHEAD
- 4. PUT-IN-BAY
- **KELLEYS ISLAND** 5.
- CEDAR POINT & SOAK CITY 6.
- 7. RAIN WATERPARK

- CASTAWAY BAY WATERPARK **KALAHARI WATER RESORT**



10



Sandusky is built with the tourism primarily along the waterfront, while major box stores occupy areas along Route 250. Boaters and tourists assemble downtown in order to get to major destinations like Put-in-Bay and Kelley's island.

## SANDUSKY, OHIO - FUNCTIONS - TRANSIT FLOWS

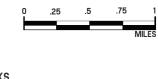








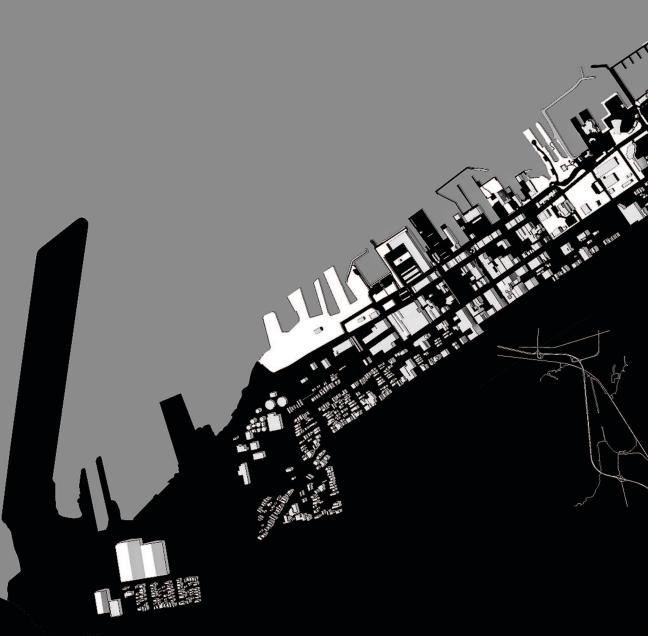




Water treatment facilities make sure that people are consuming clean and healthy water. These facilities often times use additives in order to keep the water clean. These methods may prove to be unhealthy for people to consume and may lead to long-term heath disorders.

There is still a desire for people to achieve purity by coming into contact with water. This study will look at bring people together in a city that is known solely for its marina activity, and bring people close to the water by attempting to see the benefits of water purity. Research topic includes cultural eutrophication, industrial pollution, and invasive species will all play in some greater effects into the introduction of a water purification and research center.





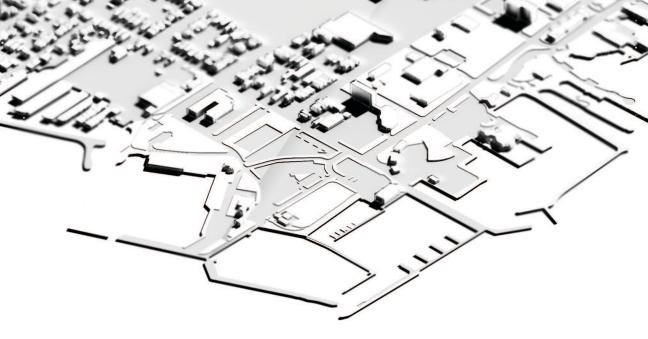


Lake Erie exhibits an international collaboration, or more so, a responsibility between America and Canada to make sure their water system will remain active for many more years. Within the history of Sandusky, there has been a desire among individuals to relax and bathe by the water. In its earlier years, Cedar Point was known as Ohio's largest public bathhouse and attracted locals as well as outsiders, and celebrities. With the demand for land. Cedar. Point changed its game from a pleasant swimming hole to a world-renowned family amusement park, Sandusky, besides the monster that is Cedar Point, is also a city that has come from a city with the potential for becoming the next Chicago, to an American wasteland. Aside from the entertainment district, industry held a huge stake in the city with manufacturing plants for Ford, Lyman boats, and was once home to the largest crayon factory. With industry taking a turn for the worse, property owners decided to utilize Sandusky not as an industrial town, but a place that was used for the summer to get people to the neighboring party islands like Kelley's and Put-in-Bay. Property went up to individuals who were able to buy the land cheap, and think nothing of it years later. Just by looking at Sandusky plan, there are three

issues that took place over the last century.

First, the city right from the beginning suffered from changing urban infrastructure. With competing cities like Cleveland, Toledo, Detroit, and Chicago, Sandusky was never able to introduce itself into the twentieth century. Streetcars were removed at the same time as major cities were already in full swing with the automobile. The Baltimore-Ohio Train Station was scrapped, and replaced with the Amtrak system that runs together with the coal trains that rush to the lake to fuel the massive shipping freighters. As soon as the city freed itself from the streetcar, Sandusky could not keep up as a lakefront city. The summer tourist industry is all that it has going for it. The city was also plagued with natural disasters and major building fires. The Slone Building, a lavish hotel that sat by Jefferson Park, burned to the ground. Not to mention every prominent building on South and Middle Bass Islands also suffered the same fate. It wasn't long for people to lose faith in the city because of these tragic events. After all the building fires and a massive tornado that struck the city, nobody had the urge to reinvent the city of Sandusky.

Today, the city sits as a shadow alongside Cedar Point with no urge to help one another. Property value, after the massive tornado and the loss of industry, fell way down. People were able to pick the land up for cheap, and use it for boat marinas, and places to store boat for the off season. Colossal boat warehouses now sit in the once active urban fabric of Sandusky. From Water Street, Shoreline Drive was created to fulfill the needs of boaters and the marina, which throws off the original Killborne Plot. The cities plan is already tossed-and turned by Route 250, a typical, commercial-American shopping road filled by box stores like Target and Home Depot. The marina business has thrown an anchor into the growth of the city's urban fabric, stunning it from growing along the waterfront.



#### TWO PROGRAM ALTERNATIVES

OPTION #1: Water Park/ swimming hole

- Make Sandusky, OH the one place on the world with the most amount of water parks
- Attracts guests from Cedar Point
- Waterfalls stemming out from the local water supply from Lake Erie
- Takes into consideration the views of Lake Erie and Cedar Point
- A destination space within Downtown Sandusky
- Nature reserve integrated into the space
- Also becomes a hub for marina activity
- Transit route from Cedar Point to this new watering hole
- River Country, only within a colder climate
- Integrate a system for all-year round enjoyment (indoor attractions)
- Educates and entertains (sustainable water park)
- Initiates a study and intrigue on the Great Lakes

OPTION #2: Nature/Wildlife/ Environmentally Sustainable Research Center

- Deals with the concerns of local soil and industry pollution
- More of an "attraction" rather than a "museum"
- Can be based somewhere close, but not directly in Downtown Sandusky (Apex Building)
- Environmental issues and responding with a solution that people may understand
- Educates and begins to perform some level of helping the environment

### MOVIING FOREWARD

The history of Cedar Point is a true story of the American Way and the growth of childhood memories. Its early origins as a bathhouse for guests like President Taft and Theodore Roosevelt have aspired to create a place that represents a true American aesthetic. A pier was once placed along the eastern side of the park that housed water attractions like slides and swings. The bathhouse building itself was a true gem in the early years; housing a beer hall and ballroom. Boeckling created what may be desired today, a true spirited place that represented the zeitgeist and the influences of the booming downtown Sandusky.

The entertainment industry changed after the Depression with the mainstream attention to radio and television. These innovations supplied people with up-to-date news and ideas of places that are far beyond the local swimming hole. The media boasted about places overseas that envision the culture of life much differently. People wanted to travel because of how it is represented in media and for the human desire to be fluent and multicultural. This influence caused a hodgepodge of style, and misrepresentation of place, as people decided to accept methods done by other cultures and banish those that did not fit the criteria.

At this point, the direction of study isshared between both the entertainment and architectural industries. The final product will convey attitudes of a park that identifies the key issues of Sandusky. PRECEDENT STUDIES + BATTERY PARK MARINA

The Great Rock Berlin Zoo

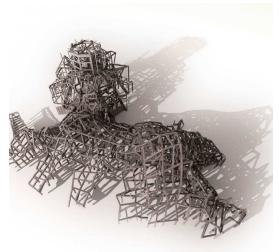


structural model



interior structure

The Great Rock at the Berlin Zoo was created for a lion exhibit. On the outside of this artificial mountain is a habitat filled with plant life and various streams of water. However on the inside is an intruiging man-made cave. During the cold months the inside is greeted by visitors who walk through the "building" as various performances occur.



3D structural analysis

Parc De Villette Bernard Tschumi

Parc de Villette create a unique public experience that assembles fragments of architecture out onto a landscape. The follies generate visual interest, as well as work to supply for wayfinding. The follies describe the industrial discource of modern day Paris through the fabrication of a public paradise. The follies are not meant to be functional works, but rather pieces that contribute to the built environment as a whole. These sculptural gestures are assembled linearly throughout the park, creating connections to local cultural attractions.

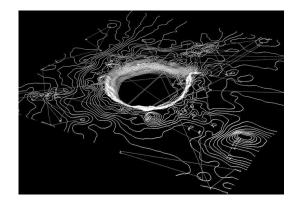


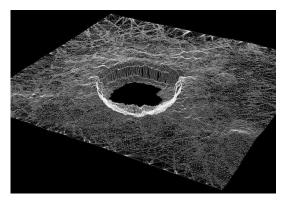


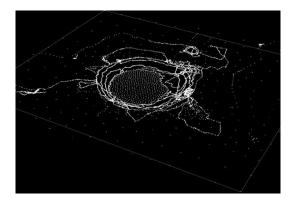


### Lonar Meteor Crater SITU studio

This project provides a diagrammatic process towards futhur studying the natural environment. The graphical studies show carefully mapped coordinates that express the rigid character of the meteor crater. Laser scanning became essential towards mapping out the exact points into the computer system. The process becomes important as it deals with the changes made to the natural environment, and how humans document these changes





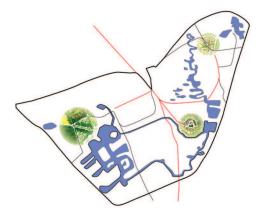


### Village Nature, Disneyland Paris Disney Imagineers

The Village Nature Project in Disneyland Paris will be the first self-sustaining water park in the world. Design by Disney Imagineers, alongside Jacques Ferrier & Pauline Marchetti, the site deals with the same climate conditions as Sandusky, Ohio. The goal for the project is to create an environment that would resemble a swimming hole with other various activities like gardening and horseback riding to occur. The project's mission also strives to produce zero carbon and emissions, as well as thrive on local businesses for food and resources. This project offers great insight to what may come of the Sandusky project. Educating people on the negative impacts of algae and invasive species would tie into the mission for this new facility.







### Leca Swimming Pools Alvaro Siza

Portuguese architect Alvaro Siza designed the Leça Swimming Pools in his hometown of Porto. The pools dramatically adapt modern architecture with the rocky coastline facing the Atlantic Ocean (6) . The pools are designed to look like they are connected with the ocean, however are bonded off with concrete walls. A series of platforms joined from the street taper slightly downward towards the ocean. The rocks also serve to break up the horizontal nature of the concrete slabs. The changes in tides provide water to the pools closest to the ocean, providing changes in depths through all parts of the day. Siza's design strongly represents the dimension in which the thesis is attempting to follow.







<sup>6 - (</sup>Balters, 2011)



lake erie boathouses



battery park



lake erie boathouses

The act of recreating place is essential not just for amusement parks, but major cities and suburban areas. Artificial landscapes have been essential in the growth of mining towns and shorelines that had changing demands to the shape of the local environment. Northwest Ohio went through a great deal of shaping it's natural landscape; from the destruction of the Black Swamp to the massive limestone quarries Kelley's Island and Marblehead.



battery park marina



battery park



demolished sandusky municiple pool

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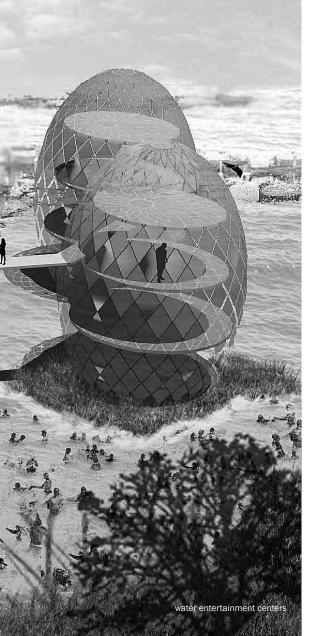
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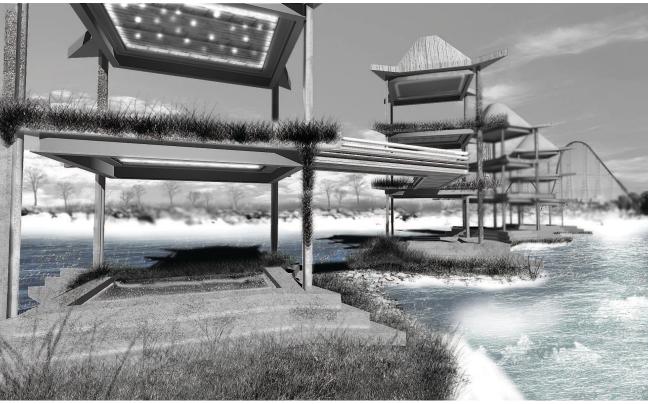
intervention I

water park + water purification systems + marina



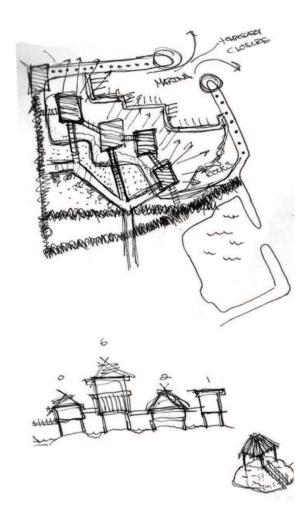


The water towers woud house various attractions while providing substantial views out onto the Sandusky Bay. This study describes the blending of architecture with the aquatic environment by providing something with character rather than the typical dock and bouy look.



cabana sheme overlooking sandusky bay

The cabana scheme explores the potential for cultural unity at the center of Sandusky. Suppose this aquatic cultural center bridges the gap of racial groups across the Rust Belt, creating a destination and aesthetically beautiful educational facility







nature reserve + water park

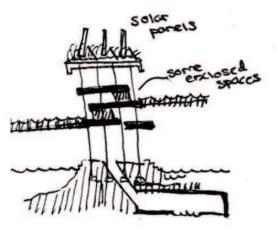


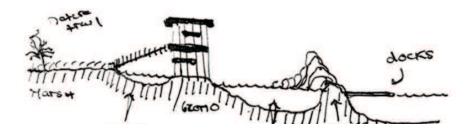
water park + attractions

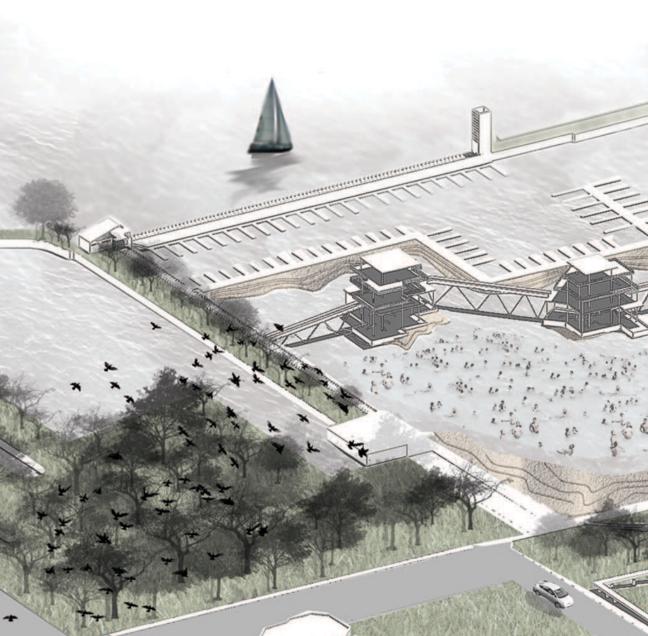


water park in the evening

The water park design came from an investigation of industrial systems used within Sandusky, The idea was to bridge the "work and play" attitude by assembling the built form as a playful expression.







water park + nature reserve

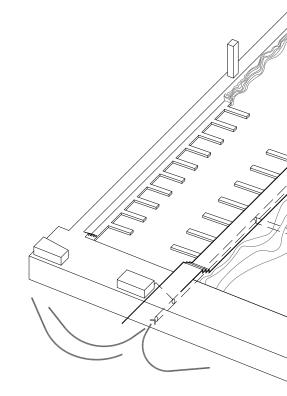
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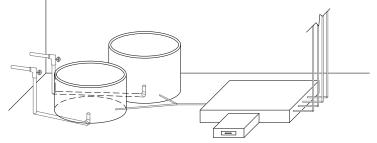
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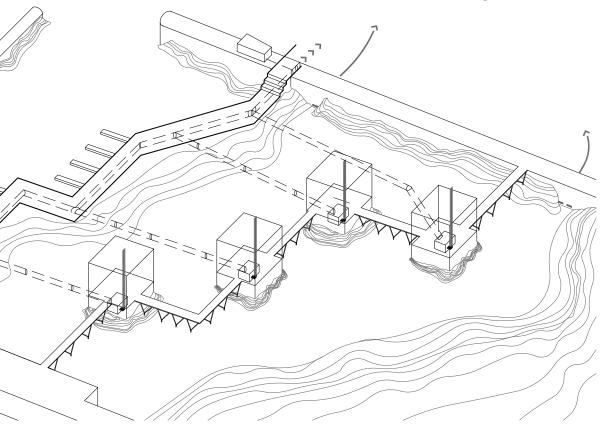
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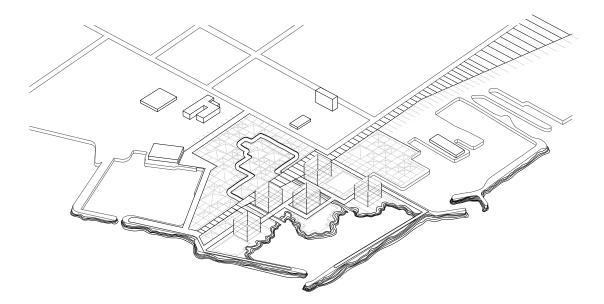
The water filtration system is built to remedy the problems of local unsterile water. The system works to bring untreated water along the perimeter of the breakwall. Then, the water moves under the marine boardwalk through a series of pipes. Once the water has reached the tower, the water is pumped through the underground filtration unit. Finally the water is pumped vertically through the tower, and it shot various splash zone areas in the tower



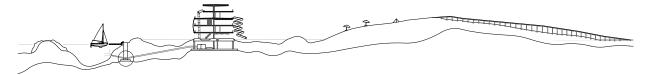


underground water filtration unit

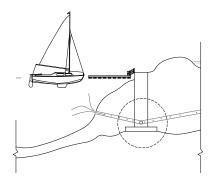




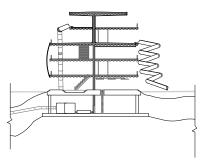
The water park scheme compliments the entertainment center of Cedar Point by establishing a local identity closer to the center of town. While the water park acts as a paying attraction, the nature reserve serves the public with a place that relishes in the local environment with native plant species like Great Blue Heron and Blad Eagle. The reserve also uses the act of wayfinding as a way to educate and inform about the beauty and character of the area. The isometric scheme shows a change in landscape with the addition of land mass to provide for the attractions and commercial opportunity.



water tower section + nature reserve

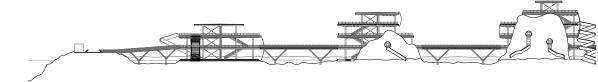


marina filtration system section



water tower section





The water towers work cooperatively while reducing the amount of contaminents introduced to the lake. Each system will back up each other based on the weather conditions

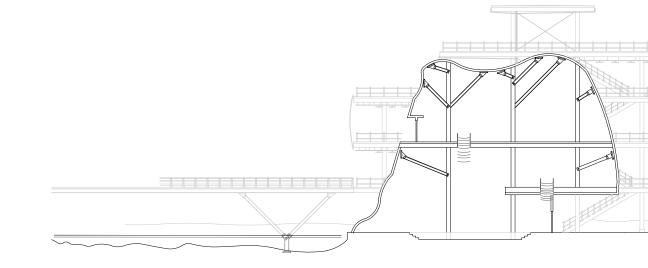


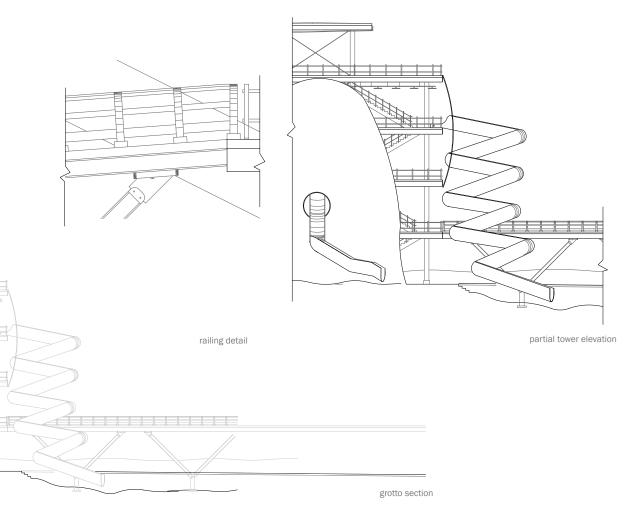
water tower elevation + artificial mounds

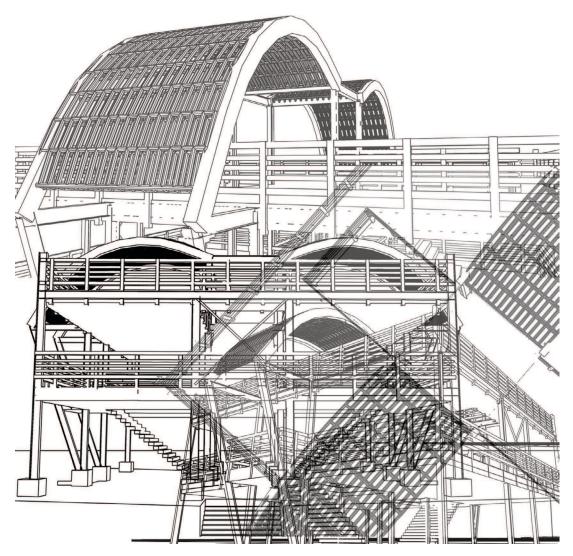


water tower elevation + nature reserve

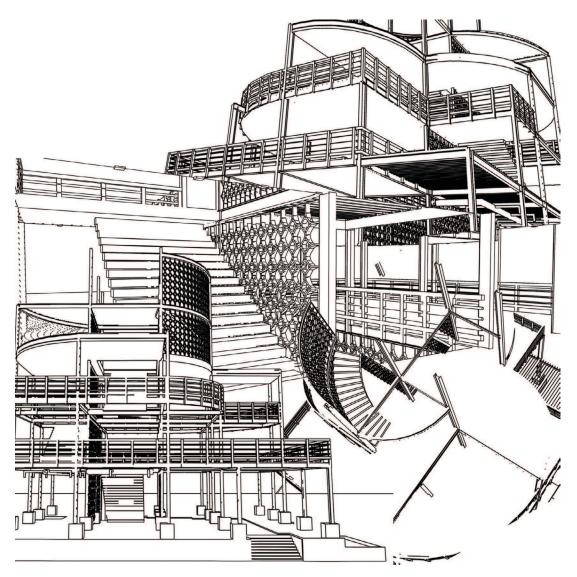
The grotto would work as a solution to provide clensing during the cold winter months. The enclosure is cased in with concrete structured using unique lofting beams. The grotto would become a place for those longing to explore the underground



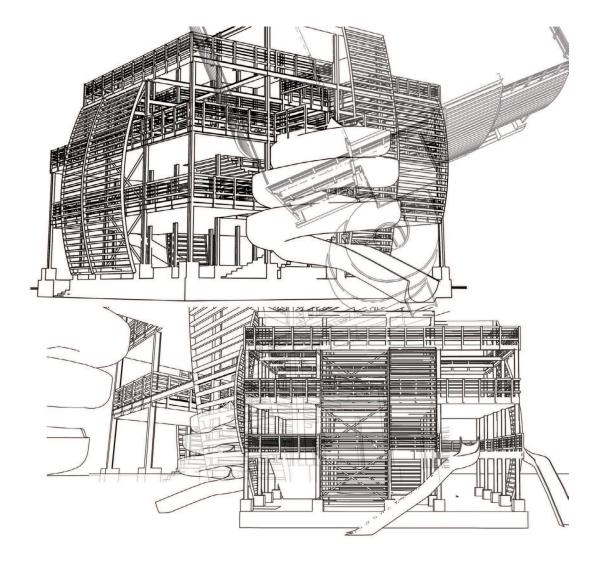




structural collage I



structural collage II





T

The proces for making the final design decisions, I chose to assemble a diagram that would represent the final stages of design. The 100' x 100' grid would be established (A) followed by an exploration of laying out the funtional properties (B - C). Then, the grid would be shaped to meet those design criteria (D). The tower would take shape with the added features including water slide, stairs, and railings (E - F). Finally, the tower would adapt sustainable characteristics will sun shading systems and green technology (G - H).









# BRIDGING THE NATURAL ENVIRONMENT WITH TH



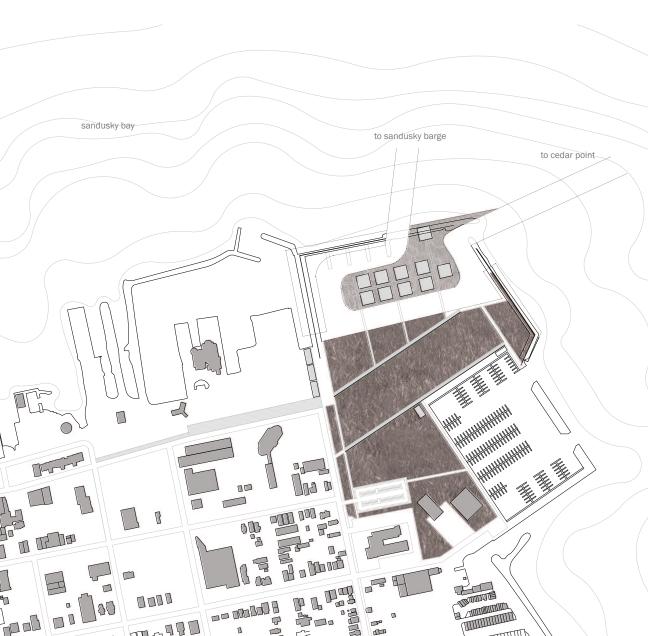


HE BUILT ENVIRONMENT



intervention II

diagram park + mechanical dreamland





sandusky marina landform study

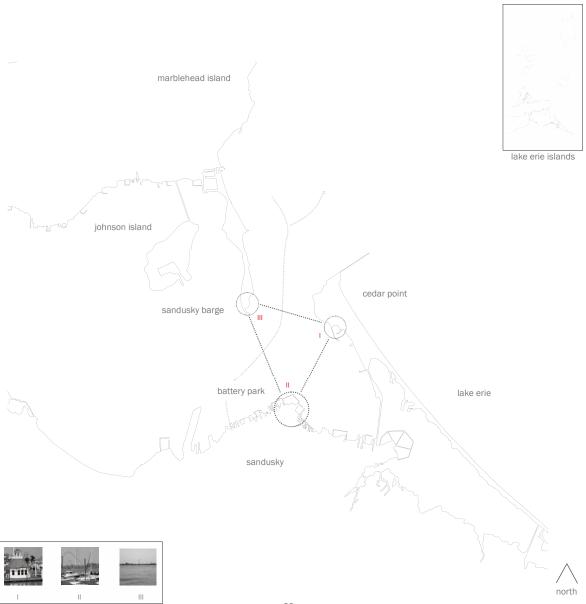
Boating has been a long tradition to Lake Erie and the Sandusky Bay. The final intervetnion will look into the possibility of networking Downtown Sandusky with Cedar Point, similar to the current ferry routes to Kelley's Island. The shuttle would launch from Cedar Point's marina to Battery Park, where it will arrive to pick up or drop off guests.

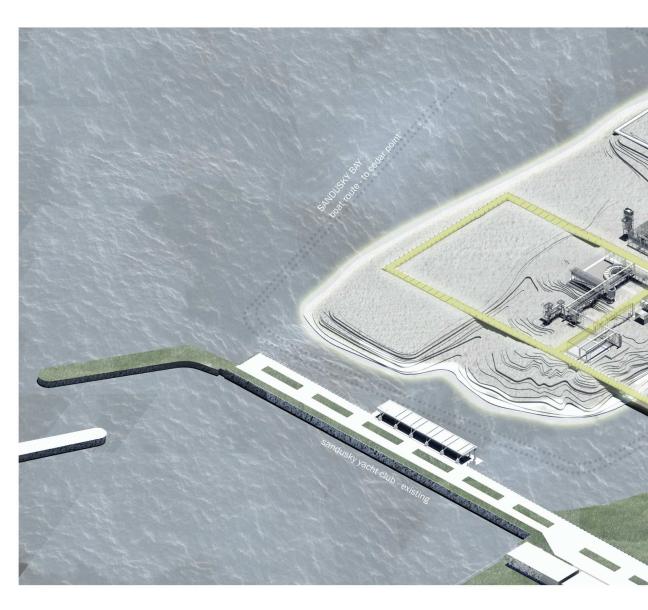
sandusky transit center

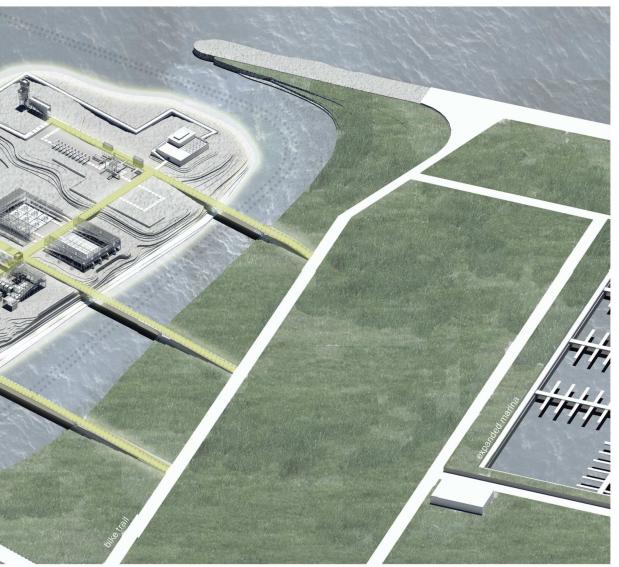
## battery park transit center

### program

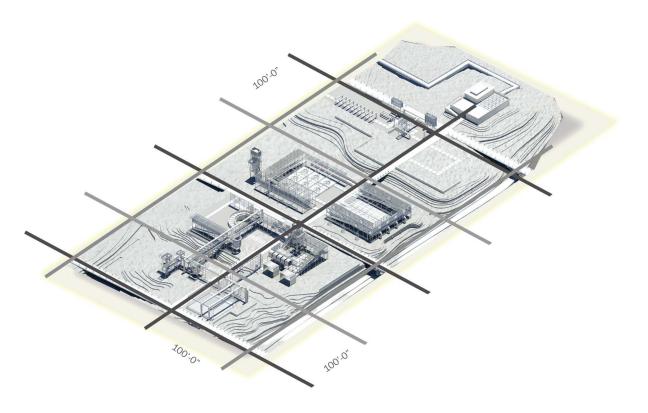
Α.	<b>park</b> wayfinding stations runoff streams	1,090,880 sq. ft.
В.	<b>transit center</b> water installations restrooms ground level commercial learning center	600,784 sq. ft
	boat clearance	approx 80'-0"
C.	<b>marina</b> total spaces	793,933 sq. ft 350

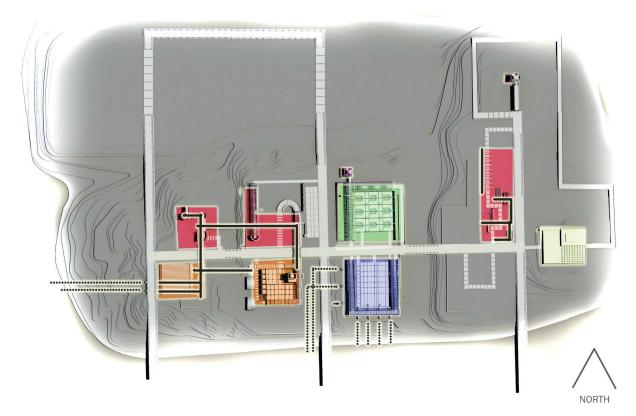






sandusky mechanical park overview





#### RED:

mechanical piping

#### BLUE:

water pavilion

ORANGE: storage + workspace

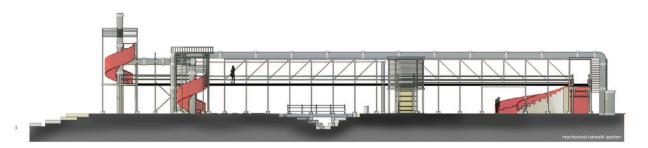
YELLOW: central control REEN: vegetation pavilion

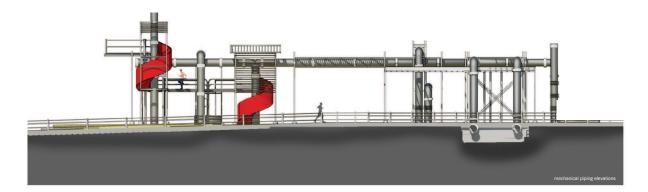
VIOLET: observation tower machine program

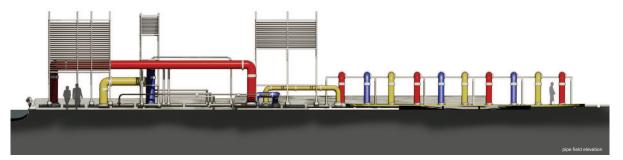


water research pavilion

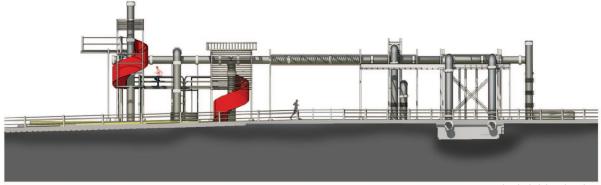






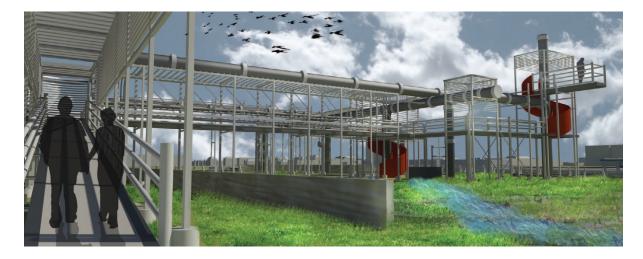


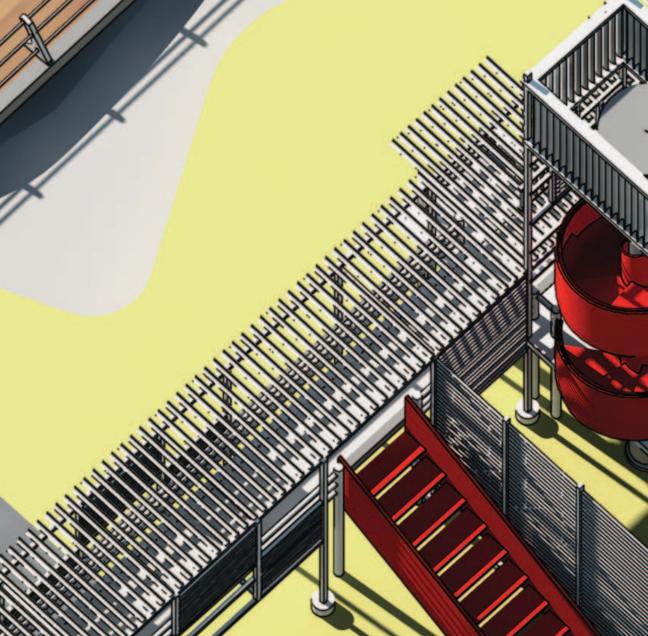
This intervention takes on the characteristics of everything that makes up the place of Sandusky from its industrious limestone quarries to the roller coasters at Cedar Point. The mechanical "theme park" attempts to make use of industrial shapes and piece to make a composed entertainment center. Not every place in the world is built to be like Walt Disney World or Cedar Point. What this intervention taught is that each place has its own unique identity, and the entertainment aspect can be found virtually anywhere.

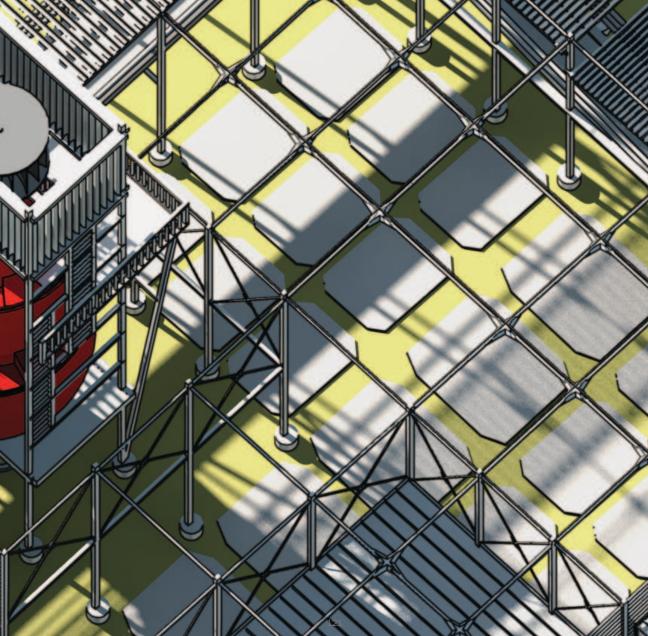


mechanical piping elevation

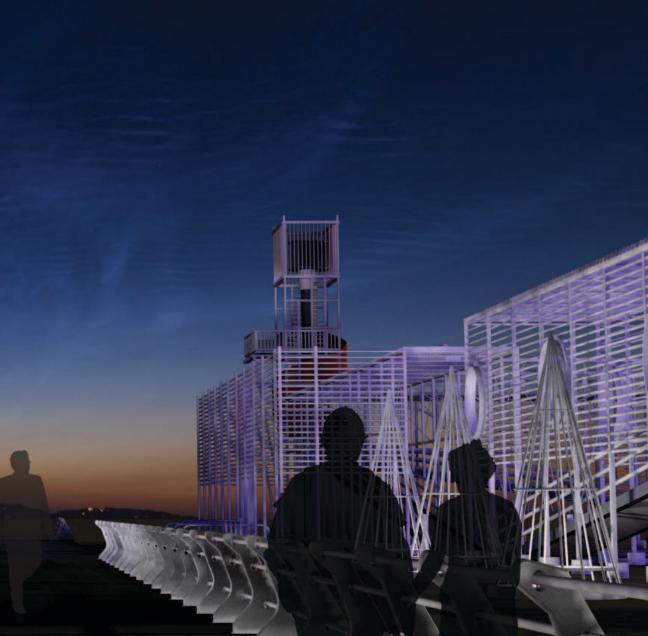
















## **Concluding Thoughts**

Architecture played a watchful role throughout the course of this investigation. It began as an attempt to study one place, and grew to be two unique architectural solutions. The intent was to get a solid grasp of Sandusky and attempt to conceptualize how the city could be different with this architectural gesture. I believe that the goal was not to mimic how other cities choose to define themselves, but create a whole new identity assembled by years of great tradition.

I found that by doing this, that I could see the building process differently. By understanding the greater whole of the project that a final resolution could be achieved. The thesis is about place, and the specific ideas that make a place

That's all for now.

Mar H.U.L

