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Buffalo Outer Harbor Quays

Ryan Decker

Roger Williams University, rdecker679@gmail.com

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An aerial photograph of Buffalo, New York, showing a dense urban grid, parks, and the Buffalo River. A semi-transparent, grayscale image of an industrial facility, likely the Buffalo Steel Plant, is overlaid on the left side of the page. The industrial image shows complex piping, structural steel, and a large building with the text 'BUFFALO STEEL PLANT' visible. The title 'Buffalo Outer Harbor Quays' is in a bold, sans-serif font, and 'Graduate Thesis' is in a regular weight of the same font. The authors' names are listed below in a smaller, regular sans-serif font.

Buffalo Outer Harbor Quays

Graduate Thesis

Ryan Decker
Roger Williams University SAAHP Spring 2010
Andrew Cohen

Buffalo Outer Harbor Quays: a working industrial, recreational waterfront

independent project submitted to Roger Williams University School of Architecture, Art and Historic Preservation in fulfillment of the MArch Degree

signature: _____ date: _____

Ryan Decker

signature: _____ date: _____

Andrew Cohen
thesis advisor, SAAHP

signature: _____ date: _____

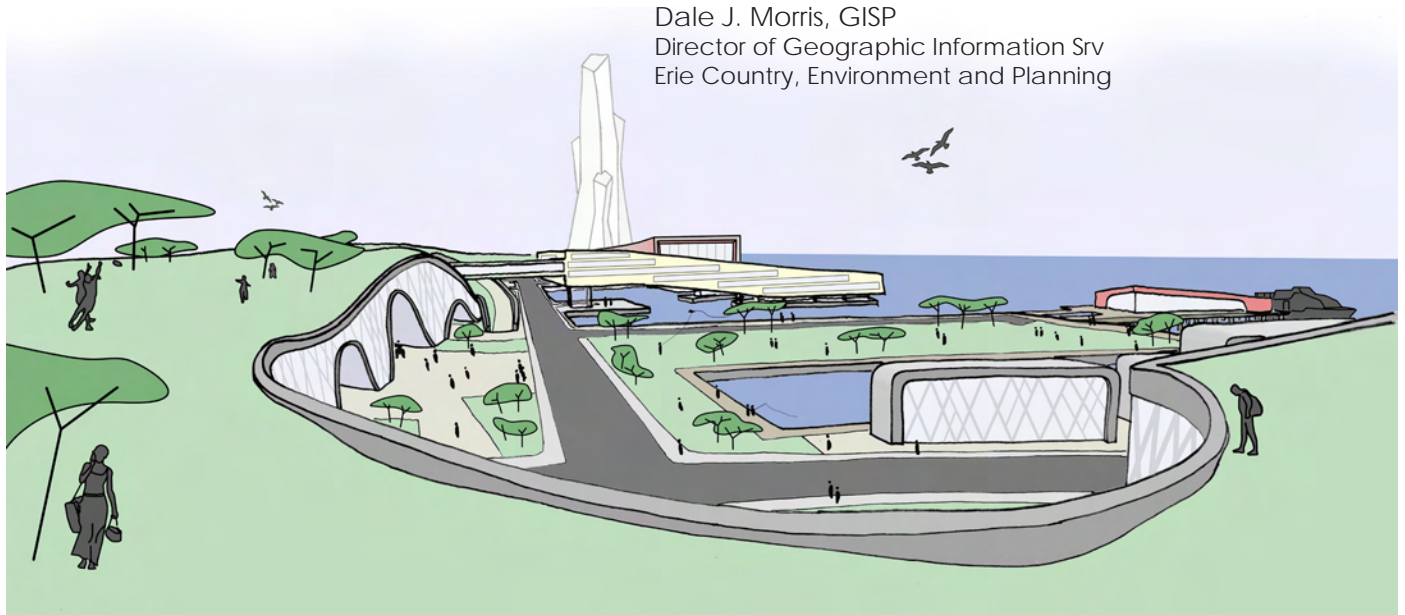
Stephen White
dean, SAAHP

with aid and advice from:

John M. Fell, AICP
Senior Planner
City of Buffalo Office of Strategic Planning

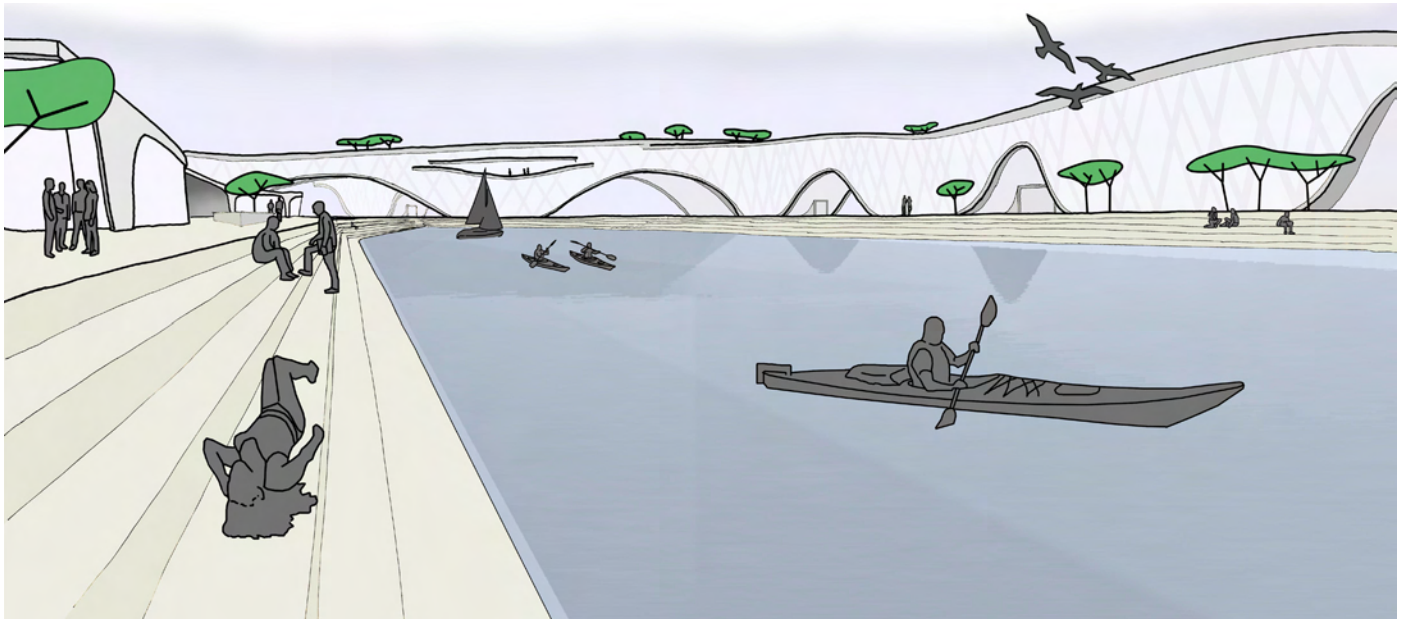
Eric J. Birner
Senior Planning Systems Analyst
City of Buffalo Office of Strategic Planning

Dale J. Morris, GISP
Director of Geographic Information Srv
Erie County, Environment and Planning



abstract:

Buffalo, a once prominent American city hit by hard times, has the opportunity to rebuild. It has industrial resources and transport options. It has a booming education system and medical business. Its technology sector is rapidly expanding. The city has a chance right now to create new glory days. This project is about transforming a forgotten piece of land, a large swath of man-made waterfront that since the fall of Bethlehem Steel has been nothing more than equipment storage, on arguably the best portion of the city's waterfront. Combining heavy industry, shipping, living, working, and waterfront recreation into one new city district will expand the city to the waterfront and bring new life to this city that continues to hope.



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What happens to an industrial city when its main source of jobs, revenue, and population suddenly closes? Does it die, while all the people move away, leaving an abandoned city, or does it reinvent itself?

How then, does a city revitalize itself in today's modern society? Where does a city, that since its creation thrived on industrial production and shipping, turn to in a world that no longer values these businesses? Where is the connection between the industrial city and the modern tech city?

manifesto:

Today's world famous architects lead the life most of us can only dream of. They get huge commissions for major projects across the globe, sometimes based on the fact that they are who they are. On top of that, these select groups of designers, from Gehry to Koolhaas to Zaha, some known to even the general public by one name, have provided publicity and buildings that might inspire people to hire architects more often. Their success and notoriety may help bring about an age where all buildings are designed by architects.

In spite of this, some architecture has become fetishized. Zaha Hadid's Vitra Firehouse is a perfect example of my issue with the starchitect, and the liberties they are given. The building is dynamic and exciting in form, but serves absolutely no function as its intended program as a firehouse. Creating sculptural forms without contextual reasons, or using the same routine for every project, or letting a generative script be the determining factor in a design's form all seem to be taking architecture somewhere it probably shouldn't belong. These architects get jobs because they've reached the plateau of starchitect. Someone might ask for a Gehry, looking for the flowing titanium panels, or ask for a Zaha, looking for that plastic smooth stretched form. It isn't so much about what the site or program dictate, but the overall form and notoriety that will come with the building.

Their success has changed architectural appreciation and more importantly, has heavily influenced the up and coming designers of the future. What projects get the most attention in schools and competitions across the world? The flashy, form and color oriented designs. Given a closer look, these projects may or may not work on a functional or technical level, but they get the first looks, they draw the viewer in. There is an emphasis on entertainment value, and sometimes it overshadows the rest of the process. It is too easy to design an exciting form and find a meaning for it later.

This is not a call for pure function first design, but there needs to be a renewed emphasis on finding a balance between form and function, one where the two equally guide a design.

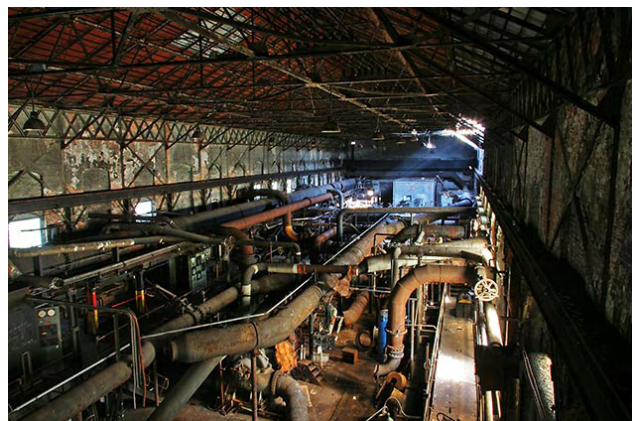
The design magazines, design blogs, and up to the second architecture specific websites have made it easier to promote and publish buildings than ever before. Between the flash and glamour of modern day starchitects and the instant fame design blogs provide, young designers are bombarded with more ideas and precedents than ever before. Unfortunately this leads to a feeling that everything has been done. However, many of these projects are the same programs; a small private residence, a major museum, clients with money to burn. Few are looking to solutions to social issues, or attempting to make connections between formerly connected programs. Many are *frivolous*.

Along these lines, an exploration that must be undertaken is whether architecture can revive a dying city or community, economically, socially, or physically. More specifically, can architecture bridge the gap between industrial, technological, and public in order to help revive a city?

problem statement:

6

Bethlehem Steel acquired the Lackawanna Steel Mill south of Buffalo, New York in 1922, and the company expanded to close to 300,000 employees during WWII. In 1973 the mill produced 23.7 million tons of raw steel and close to 16.3 million tons of finished steel. By 1977, however, foreign competition, high New York tax rates, and pollution led Bethlehem to build a new mill in Indiana, and the Buffalo reduced employment from 20,000 employees to only 8,500, and by 1982 down to a bare minimum skeleton crew. That year Bethlehem Steel recorded a loss of \$1.5 billion and ceased the production at the Lackawanna mill, completely shutting it down in October of 1982. Nearly all the employees of the Lackawanna mill lived in the Buffalo area, so all those job losses had a major effect on the local economy. Bethlehem Steel had previously accounted for 66 per cent of the city's tax revenue, and the city still owed the company \$5 million in tax overages. Because of this significant reliance the city had on the mill, its loss as an economic generator hit Buffalo hard, and it has never fully recovered. The aim of this project is to attempt to begin to fill the void by reviving the port and outer waterfront land to provide jobs, tax revenue, and economic stability.



project statement:



A large scale master plan addressing the Outer Harbor site is missing from the Buffalo Waterfront Corridor Initiative. They essentially don't know what to do with this 260 acre site, and all proposals are more or less leaving it open. The huge plot of land has direct water access, a deep-water port, a nature reserve, and there is the potential to extend the main light rail straight to the site. It has so much potential to become a vibrant new district of the city as well as provide the needed tax revenue and economic boost.

The previous industrial programs on the site still leave it in an ideal condition for shipping and distribution uses. The Great Lakes shipping from Buffalo has the ability to reach 55% of the American population and 70% of all Canadian manufacturing firms. The skyway and adjacent freight rail system provide land connections, making Buffalo a major international distribution port.

University of Buffalo (SUNY Buffalo) has an extensive school of medicine and biomedical studies, and the medical business is already one of the largest in the city and still growing. The waterfront site, protected by break walls and essentially on an island, could support a suitable marine and medical research facility in addition to the industrial ports. This facility could address an interesting issue: What can marine and simple organisms teach us about human health?

The spread outward of housing in Buffalo has lowered the density in the city center, and caused an efficient rail system running through it to be under-utilized. A southern city-center node, with a rail, road, and pedestrian connection could extend that main strip and bring people back to the center. Populating the Outer Harbor with housing, some retail, and some recreation will live the entire central pathway into the center.

The key is to find how these all can work together.

Industrial Port:

A portion of the waterfront will have shipping abilities, with warehouses for distribution and customs processing. The access to rail and highway allows for bulk amounts of goods to come from either US or Canada, go through inspections and be distributed in smaller bulk to either country via ship or through one of the nation's largest rail centers. It may be unreasonable to try to produce or manufacture again in a city that has shifted its focus to more modern and high-tech commerce. So often today, the waterfront is being redesigned solely for recreation and resort style development, when they have the perfect conditions for industry to thrive.

2 million square feet for industrial port area:

industrial	
2 million sqft. Total	
dock adjacent storage	200,000 sqft.
terminal storage	600,000 sqft.
bulk storage domes	100,000 sqft.
transportation access	100,000 sqft.



Marine and Biomedical Research Facility:

By combining two research cores, marine biology and medical research, the objective is to use bio-mimicry in a biological sense to improve quality of life and find new treatments. This will help capitalize on Buffalo's growing bioinformatics research industry, as well as keep students in Buffalo after graduation from surrounding universities.

1.5 million square feet for research center:

research	
1.5 million sqft. Total	
cancer	200,000 sqft.
molecular genetics	150,000 sqft.
microbiology and immunology	100,000 sqft.
marine mammal research	150,000 sqft.
biophysical ecology	150,000 sqft.





Public:

The site allows for a commercial extension of the city, past the HSBC Arena to the water, extending the city's plan for populating the waterfronts throughout the city. A mix of water recreation and retail, with restaurants and other destination activities, will act as amenities for the large amount of housing. Approximately 1500 apartments, condominiums, and townhouses will account for a little over 1% of Buffalo residences.

Designed park space, on the ground plane and building tops, will unite the programs, and follow the city's wishes of expanding the Buffalo Park System.

5 Million sqft. for public functions and housing:

public 5 million sqft. Total	
housing	1,500,000 sqft.
north end commercial	2,000,000 sqft
designed park space	1,500,000 sqft.



Infrastructure:

The final 1.5 million square feet of the site will account for new infrastructure, making it easier to access the site. In addition to new roads and parking, the above-ground light rail system, running free of charge down the center of Buffalo, will extend across the water to service the site, creating a new final stop on the line.

1.5 Million square feet for infrastructure

[note: all proposed square footages include related green spaces]

+ rethinking the modern industrial port:

The rugged, rusted steel and corrugated metal of the American Industrial hey-day are still prevalent not only on this particular site, but in all of Buffalo. However, this style is a dying breed, looked at now for re-use or demolition. And possibly rightly so. These buildings, many of which have been abandoned for thirty years, are not sound structurally for adding on to, or safe to build around due to ground contamination. A new style of industrial building, one that melds with the current fabric, or one that melds with my proposed fabric, is necessary to keep the industrial from seeming its own entity apart from the city.

+ establish a connection between two scientific research programs in order:

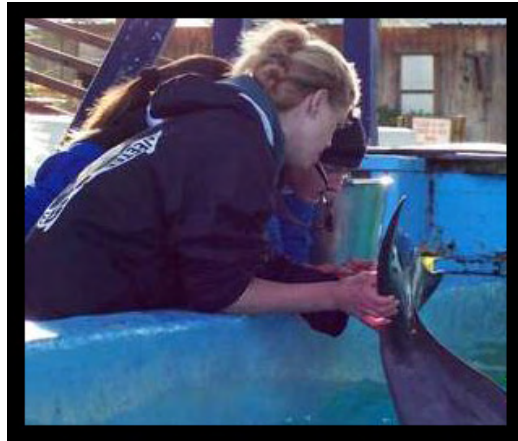
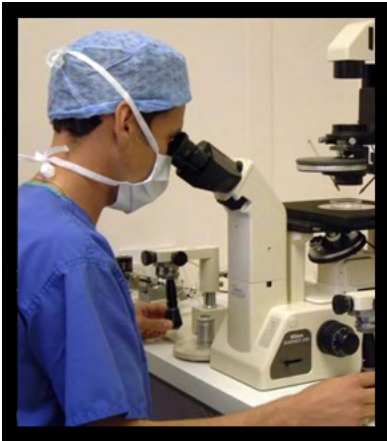
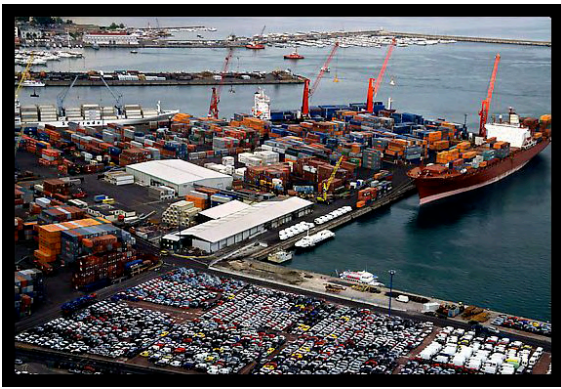
a campus style of biomedical and marine biology research centers can result in new medical findings through the use of bio-mimicry, as well as allow the public to use the grounds and learn about what is being done in Buffalo. This will not only inform visitors, but help build up Buffalo's profile.

+ extend the city to the outer harbor

The northern edge of the city has a recreation complex of playing fields and boat slips, but nothing like a public waterfront. A leisurely walk along the water in Buffalo now requires walking through little league baseball games and personal docks, not a waterfront boulevard with shops and restaurants. The opportunity to extend the city to the outer waterfront would also make the HSBC arena closer to the city center, rather than it acting like a city wall.

+ create a cohesive green space that melds building and landscape

combine programs with a morphing landscape that blends between park space and building, public and private, water and land. I want to make the landscape the buildings, without hiding the buildings, however. There should be no mistake that there are built spaces here. New construction, new housing, etc, will all be a symbol of growth for the city. There will need to be a fine line between building and landscape.



site identification:

Buffalo, Erie County, New York, founded 1801

52.5 square miles in area

Population:

city: 292,648

metropolis: 1,254,066

The second largest city in New York State, located on the east edge of Lake Erie, originally boomed in population with the creation of the Erie Canal, when the shipping and rail industries took off. In the 1900's, a successful steel and heavy industry helped Buffalo continue to grow, but the steel industry decline and resulting move to China, Pennsylvania, and Indiana killed Buffalo. Today, health and education are the backbone to the city, with an emerging technology business. Buffalo is consistently ranked one of best places to live based on the low cost of living, and the population is a very loyal group, very proud of their city.

"Buffalo characterizes itself as the City of Good Neighbors and is a cosmopolitan municipality with strong ethnic loyalties and a record of good inter-group relationships. Its stalwart citizens...have succeeded in creating an international lake front city rich in culture and notable for its architecture and many beautiful parks. In 2002, the National Civic League again named Buffalo an 'All-American City,' designating it as one of the ten best communities in the country in which to live. In recent years, Buffalo has struggled against a declining population and a poor public perception—but the city that rebuilt after two major fires continues to look forward to its future."

specific site identification:

Buffalo Outer Harbor:

Cut off from the city center by the canal and the skyway, the outer harbor is a 265 acre (10 million square foot) plot currently relatively unused. The linear stretch of land is occupied by the coast guard at the northern tip, but more or less open space otherwise, most of which is owned by the Port Authority.



Buffalo: Current economy:

Medicine and education are the largest sectors of Buffalo economy, with a growing financial element. Three major banks headquarter in Buffalo, Marine Midland (owned and operated by HSBC), M&T Bank, and Greater Buffalo Savings. The city has recently earned the nickname "the Byte Belt" as a result of the some 700 high technology companies in the region, and the city has become one of the "most wired municipalities in the US." Of the traditional employers, automotive parts and the flour industry are the only two major survivors, with most other industrial businesses being forced to cut back. Since 2006, nearly 17,000 jobs in the production and manufacturing fields have been cut, and a predicted 5000 more by 2012. The recent nationwide economic distress has hit the financial business as well, and the unemployment has risen from 6% to over 10% since 2007.

Buffalo has traditionally had a low cost of living, and the recent hit to the economy has dropped that number more.

Estimated median household income in 2008:
\$29,973 (it was \$24,536 in 2000)

Buffalo: \$29,973

New York: \$56,033

Estimated median house or condo value in 2008: \$67,800 (it was \$58,800 in 2000)

Buffalo: \$67,800

New York: \$318,900

Buffalo: Education:

Canisius College, D'Youville College, and Medaille College are among the smaller private schools in the region. SUNY Buffalo (UB) and SUNY College at Buffalo (Buffalo State) are major schools in Buffalo. UB has a large medical and dental program that feeds the medicine industry in the region with eight teaching hospitals affiliated with the university.

The elementary and secondary schools are one of the premier public school systems in the New York, with an extremely successful and prominent magnet school system. Recently, more has been made of the connection between the public schools and the universities, with students from UB and Buffalo State working with high schools to help kids continue to college.

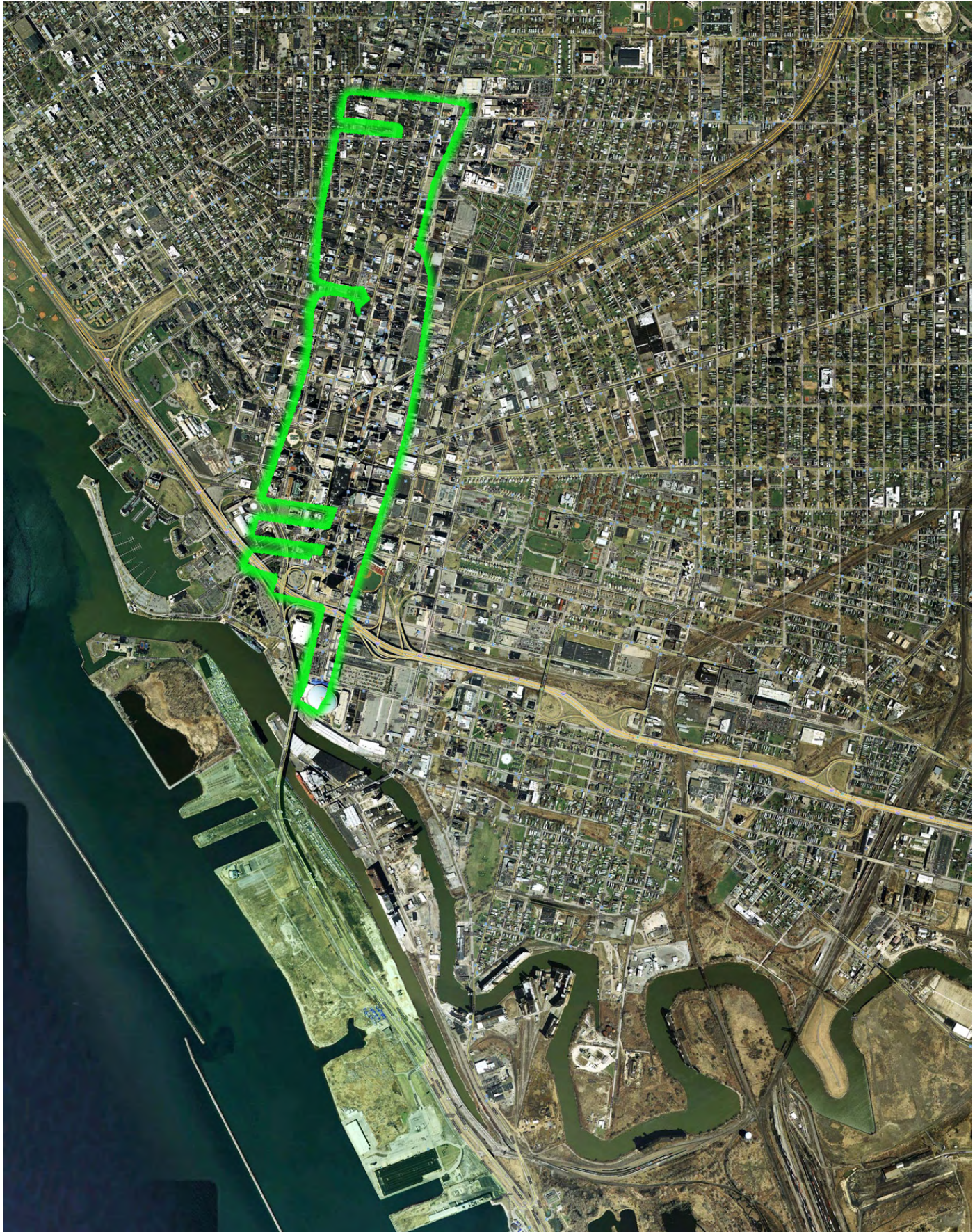
For population 25 years and over in Buffalo:

- High school or higher: 74.6%
- Bachelor's degree or higher: 18.3%
- Graduate or professional degree: 7.8%
- Unemployed: 12.5%

These numbers show that although kids in Buffalo grow up getting a good education, not many stay in the area. Keeping this intellectual talent in the city should be a goal for the business sector.

site:

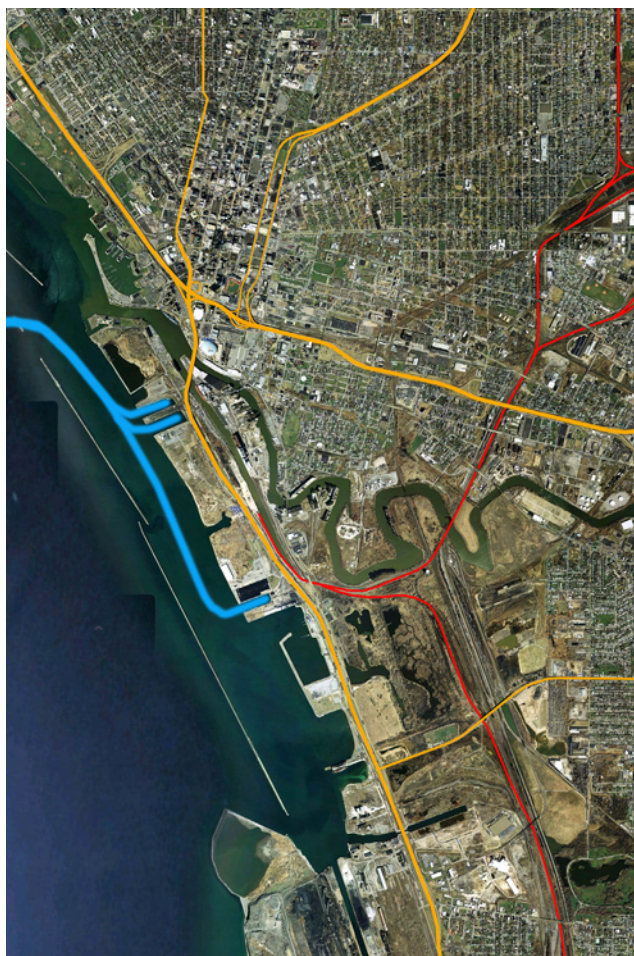
the site encompasses as much area as the Buffalo city center. Over all it will be considerably less dense, but will have pockets of high density to allow for large areas of open public space.





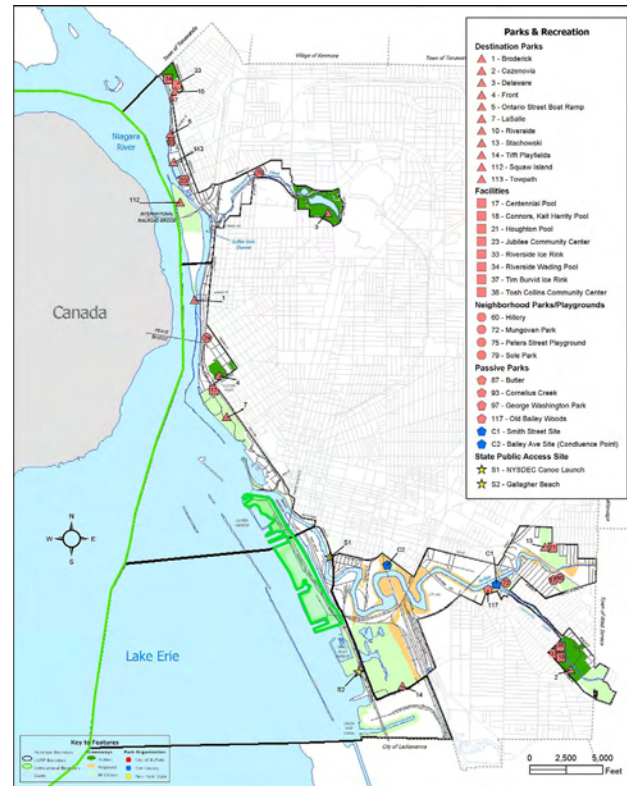
The current connections to the city center are limited: [top left] Getting on the skyway, to immediately get off and double back is really the only way. However, for moving goods from the site is considerably better laid out [bottom left].

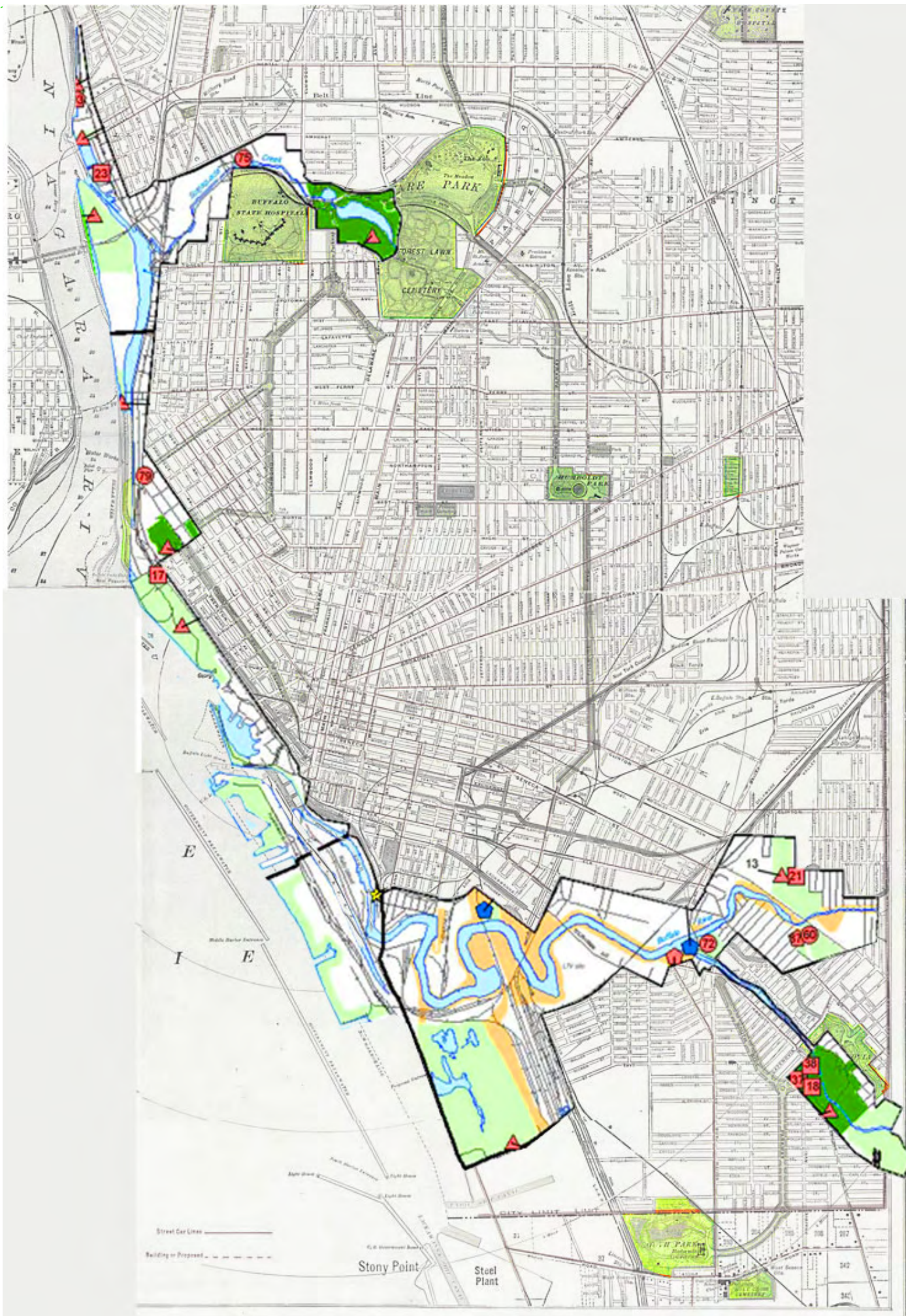
The site itself is currently used by the coast guard, some light industrial facilities, and equipment storage. [below]



green space in Buffalo:

The Buffalo parks and parkway system is the oldest in the United States, designed from 1868 to 1896 by Olmsted and Calvert Vaux. The Outer Harbor is at the center of the string of parks running along the edge of the waterfront and along the city's rivers. A significant public space would help complete a loop with the original Olmsted vision for the Buffalo park system. This will eventually create an Emerald Necklace effect, a green belt around the city center.





Buffalo weather seems to be synonymous with snow to everyone who doesn't actually live there. The thought of Buffalo is that of a snowy tundra, where every morning people shovel two feet of snow off their car before they drive to work. According to the USA Today Weather Almanac, Buffalo doesn't even crack the top ten snowiest cities in the US. Syracuse does. Flagstaff, Arizona does. Buffalo doesn't make the top ten in the coldest or windiest either. Top ten lists it does make? Buffalo is number one in Percent of sunshine June through August, with 67% of the time receiving sun. (Vogel) Maki Becker points out that "in 2008, Buffalo logged more days with at least 50% sunshine (167) than Rochester (56) and Syracuse (164). But we also beat out Orlando, FL (119)." Buffalo has more days in a year where the temperature is above 60 than days with snow on the ground.

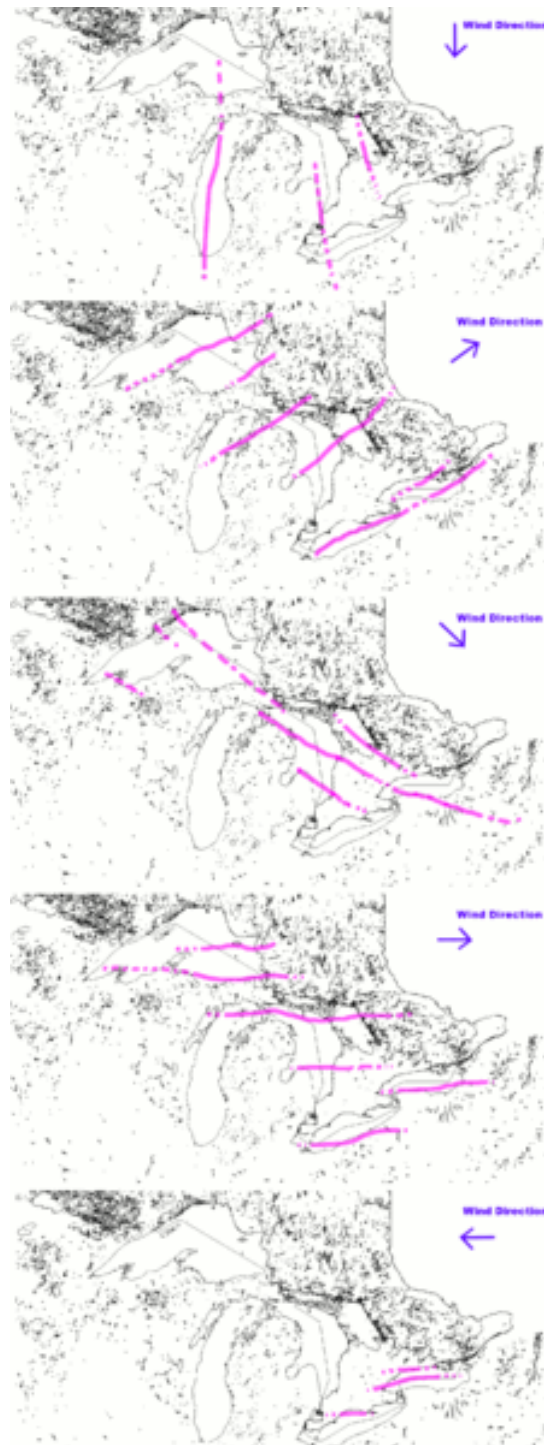
So what created this phenomenon?

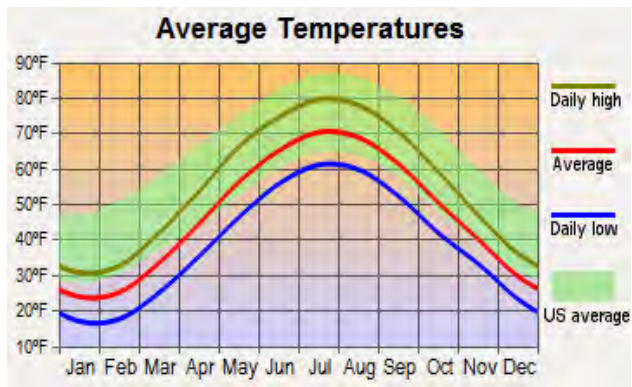
Perhaps memories of the 1977 Blizzard, which dumped over six feet of snow on the entire region, but winds of close to 70 miles per hour packed the snow down in Buffalo to the point where it became hard to clear and continued to pile.

Perhaps it is the Lake Effect. "Lake effect snows occur when a mass of sufficiently cold air moves over a body of warmer water, creating an unstable temperature profile in the atmosphere. As a result, clouds build over the lake and eventually develop into snow showers and squalls as they move downwind."

That same Lake Effect acts as a cooling force in the summer however. Lyman Powell wrote:

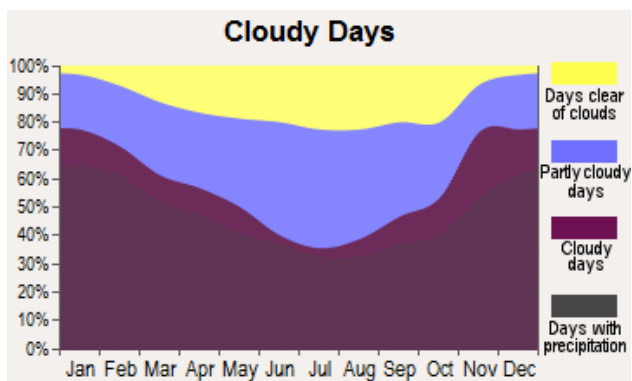
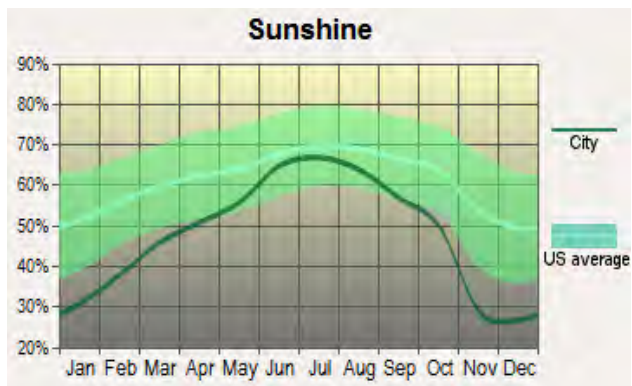
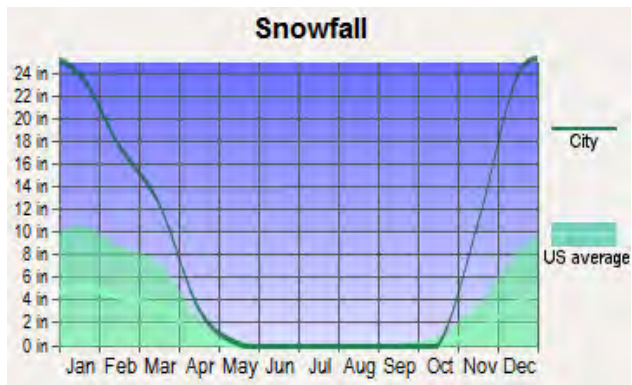
"The climate of Buffalo, with the exception of high winds during certain portions of the winter, is probably as delightful as that enjoyed by any city on the globe. In summer, the temperature is nearly always moderate, and when other cities suffer from extreme heat, the people of Buffalo are blessed with the conditions common to late summer in other regions."





The people of Buffalo appreciate the outdoors. During the warmer months, it has been discussed how nice it really is. During the colder months, people build outdoor hockey rinks, they go to town sledding hills, they use outdoor spaces.

Though the winters have received a harsh reputation, and partially rightfully so, people in Buffalo are proud of their ability to live outdoors year round. This philosophy backs the idea that a major green space or series of green spaces would be successful on the Outer Harbor.



	Buffalo:	New York:
Population, 2006 estimate	276,059	19,306,183
Population, percent change, April 1, 2000 to July 1, 2006	-5.7%	1.7%
Population, 2000	292,648	18,976,457
Persons under 5 years old	7.1%	6.5%
Persons under 18 years old	26.3%	24.7%
Persons 65 years old and over	13.4%	12.9%
Female persons	53.0%	51.8%
White persons	54.4%	67.9%
Black persons	37.2%	15.9%
American Indian and Alaska Native persons	0.8%	0.4%
Asian persons	1.4%	5.5%
Persons reporting two or more races	2.5%	3.1%
Persons of Hispanic or Latino origin	7.5%	15.1%
Living in same house in 1995 and 2000, % 5 yrs old & over	54.1%	61.8%
Foreign born persons	4.4%	20.4%
Language other than English spoken at home, % age 5+	12.4%	28.0%
High school graduates, % of persons age 25+	74.6%	79.1%
Bachelor's degree or higher, % of persons age 25+	18.3%	27.4%
Mean travel time to work (minutes), workers age 16+	21.2	31.7
Housing units, 2000	145,574	7,679,307
Home ownership rate, 2000	43.5%	53.0%
Median value of owner-occupied housing units, 2000	\$59,300	\$148,700
Households, 2000	122,720	7,056,860
Persons per household, 2000	2.29	2.61
Median household income, 1999	\$24,536	\$43,393
Per capita money income, 1999	\$14,991	\$23,389
Persons below poverty, percent, 1999	26.6%	14.6%
Wholesale trade sales, 2002 (\$1000)	3,757,606	343,663,041
Retail sales, 2002 (\$1000)	1,495,330	178,067,530
Retail sales per capita, 2002	\$5,203	\$9,291

	1950	1970	1990	2000
City of Buffalo	580,132	462,768	328,123	292,648
Remainder of Erie County	319,106	650,723	640,123	657,617
Buffalo-Niagra Region	1,089,230	1,349,211	1,189,288	1,170,111
New York State	14,830,192	18,241,391	17,990,455	18,976,457

	1950	1970	1990	2000
Population	580,132	462,768	328,123	292,648
under 18	26.0%	30.8%	24.2%	26.3%
over 60	13.3%	18.4%	19.4%	17.0%
total housing units	165,538	166,107	151,970	145,574
households: w/ 5+	20.6%	17.0%	8.7%	8.5%
households: 1 person	8.1%	25.6%	35.6%	37.7%

	1990	2000	% difference
total jobs	131,001	114,062	12.9
manufacturing	21,201	14,906	29.7 (-)
retail	22,415	12,172	45.7 (-)
transportation/warehousing	5,823	5,474	6.0 (-) but less than 13%
prof, scientific, & tech services	3,864	4,840	20.2 (+)
arts, entertainment, recreation	1,461	1,371	6.2 (-) but less than 13%
health care	17,612	20,218	12.9 (+)

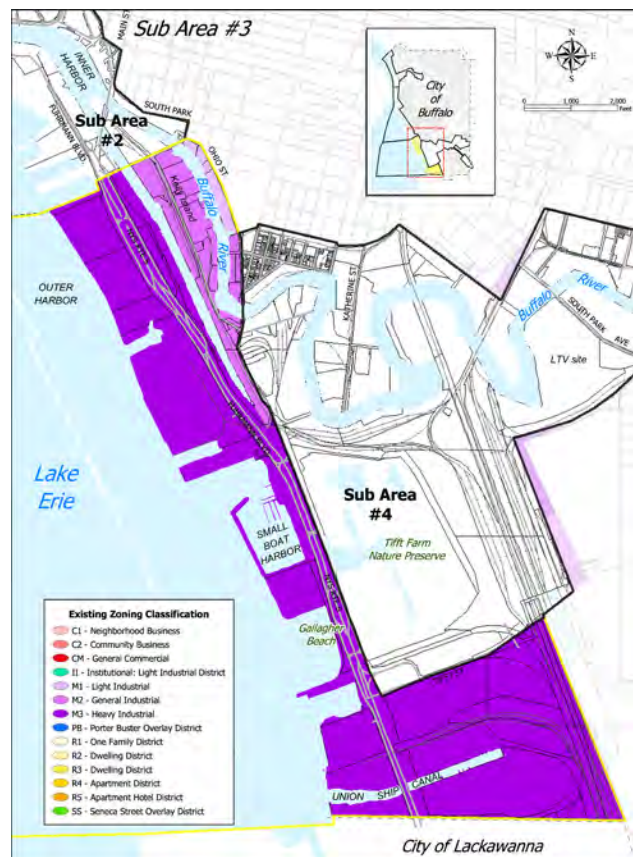
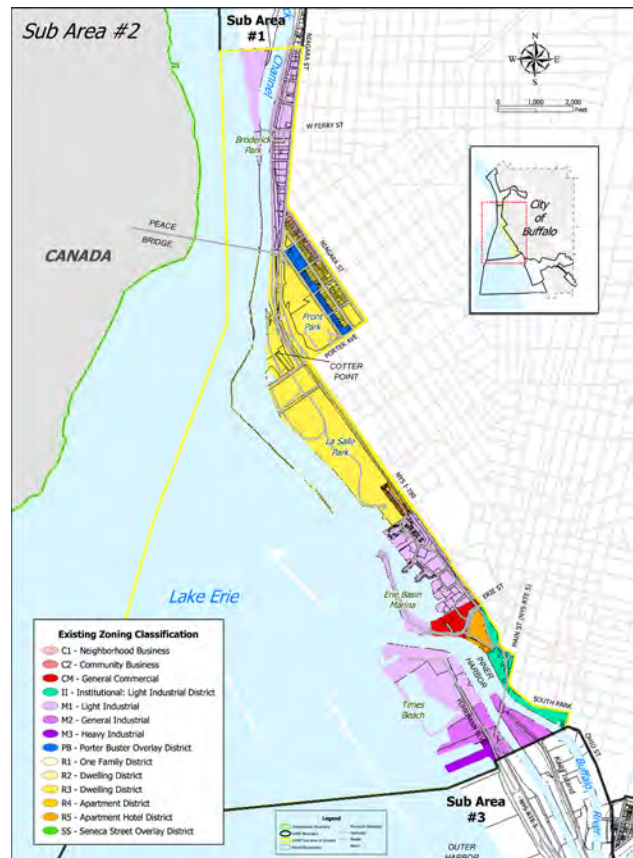
While the population of New York State has slowly grown, the population of the Buffalo-Niagra region has steadily fallen.

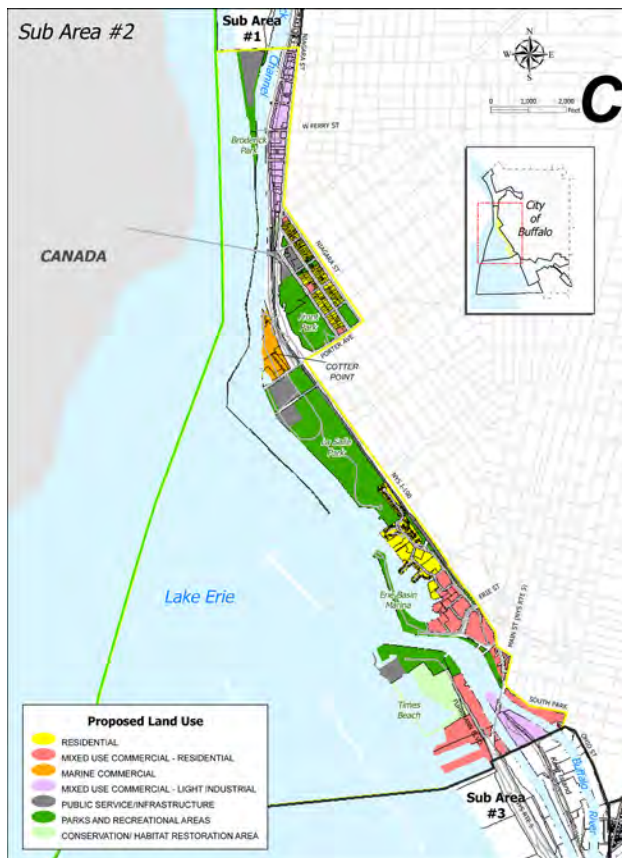
The profile of those leaving seems to be mostly families, households with 5 or more. This may be due to the fact that more businesses are located in the suburbs than ever before, or that families do not want to live in the city area, but outside.

Both these trends have slowed however, though the time table for a comeback in the city's current status is, as the city calls it, "a matter of informed speculation." There is evidence to support that these trends have leveled off, and with interventions, major or small, the reversal could begin sooner than anticipated. The city's population projection is that any declines will have completely leveled by no later than 2020 and that by 2030 population and employment will have "begun to grow again at an annual rate of one percent or better."

regulatory environment:

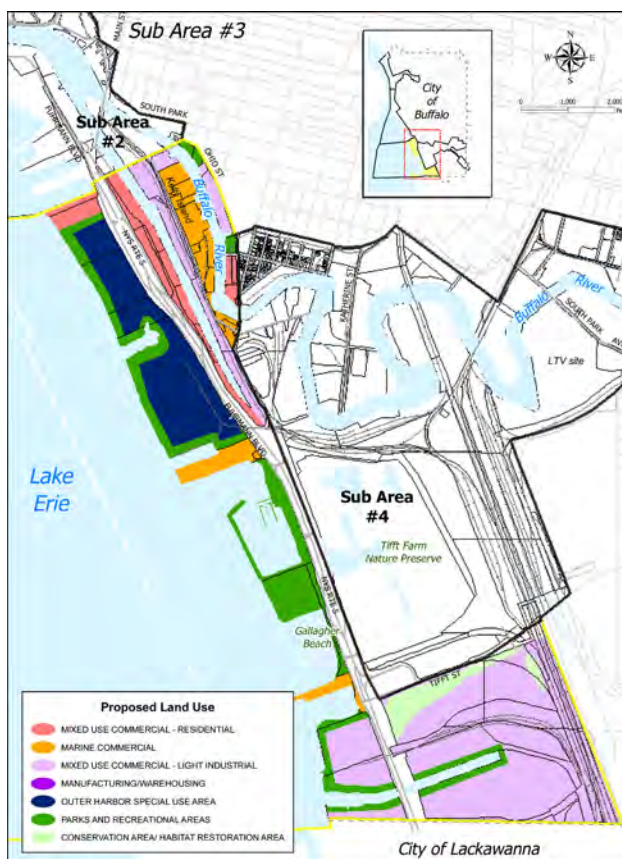
The scale of the project means that it will follow several zoning codes. As of now, the zoning of the site is purely industrial, following the M1, M2, and M3 zoning codes, with nearly all of the site falling under M3, the Heavy Industrial District.





The Local Water Revitalization Plan has tentatively proposed mixed use commercial and residential, marine commercial, mixed use commercial and light industrial, parks and recreation, and an Outer Harbor special use area among the zoning districts. These will essentially fall under a few existing zoning codes: R2 Residential, R3 Residential, R4 Apartment, CM General Commercial, and M3 Heavy Industrial.

The Special Use District is one that basically assumes something that will not meet any other code or a unique building type will be used. This change in zoning allows some interesting freedom as far as code limitations go.



Zoning codes: residential:

R2: applies to units 2,000 sqft to 4,000 sqft, a very small portion of the housing will fall under these requirements. Luckily the setback and yard requirements for R2 are the same for R3, so mixing the two won't be difficult. Both will see limited use however, because a majority will follow the R4 Apartment District zoning, being that the housing will work better as dense groupings with shared public and green spaces.

R4: the lot must not be less than 5,000 sqft, which with the size of the whole site, I do not see becoming a problem.

My vision is to, as mentioned, group housing into a dense system of private units that share common and green spaces, a plan that will make following any setback, height, or any other physically restraining codes simple to follow. I do not see zoning codes to be a hindrance in any way. The key issue is how the site can actually be re-zoned from all heavy industrial to a mix of commercial, residential, mixed-use, parks and recreation, and industrial.



The zoning regulations for heavy industrial requires a 60 foot setback from any plot line. Issues like these provide the opportunity to redefine the industrial site. With today's green technologies and safer industries, is it necessary to keep industrial sites so far away from other programs? Violating this regulation is a way to show that heavy industry isn't something to be afraid of.

Buffalo Waterfront Corridor Initiative:

The Buffalo Waterfront Corridor Initiative was created to:

- + Develop the economic strength of neighborhoods, the community, and the region;
- + Extend direct access to our waterfront from Riverside to South Buffalo and everywhere in between;
- + Revitalize our waterfront neighborhoods and connect them to the water;
- + Protect and repair the health of our water, land, and wildlife along the waterfront

The Initiative created a set of guidelines, policies, and visions for all waterfront development in Buffalo, many of which fall into line with my proposal:

"The Queen City Waterfront plan is based on a clear and simple vision that Buffalo, once a waterfront city, will be a waterfront city once again. As a community, Buffalo is committed to making its waterfronts more accessible and environmentally healthy, to reconnecting neighborhoods to our waterfronts and getting best possible economic use from them, and to improving the efficiency of our waterfront transportation corridor and making sure it serves all our other goals."

"Buffalonians know what they want for their waterfronts. They have expressed it time and time again. The Queen City Waterfront expresses these aspirations through vision, policy, projects, designs, and a framework for setting priorities and managing implementation. Following this strategic plan for transportation improvements, Buffalo will be a waterfront city again."

"People want access to the waterfront. They want to see it, touch it, smell it and hear it. They want to put their boat or their fishing line in it. They want to jump in and swim. Residents want these things. So do all of our visitors."



"The vision demands that we continue work on plans to redevelop old industrial lands, where appropriate, for continued industrial use, such as the South Buffalo Redevelopment area. We can foresee new development along Niagara Street that will be appropriate to that waterfront location. Certainly the development of tourist oriented attractions at the Erie Canal Harbor, Outer Harbor, Broderick Park, and elsewhere are faithful to the vision."

"Achieving the full potential of Buffalo's waterfronts is dependent on the quality of the transportation connections from the neighborhoods to the water, such as an integrated Peace Bridge Plaza, Porter Avenue and Erie Street. It is also dependent on the reduction of negative impacts on waterfront access and development created by Interstate 190, Route 5 "Skyway," the west side rail corridor, and Fuhrmann Boulevard, all being addressed as projects at very different stages of planning."



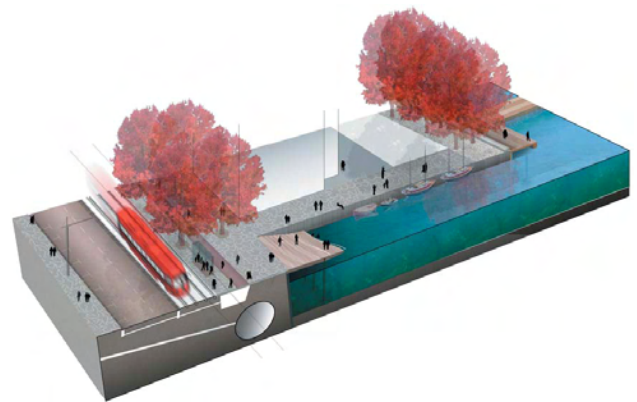
Policies for the Developed Waterfront

1. *Foster a pattern of development in the coastal area that enhances community character, preserves open space, makes efficient use of infrastructure, makes beneficial use of a coastal location, and minimizes adverse effects of development.* For Buffalo, this means to:

- Concentrate development and redevelopment in order to revitalize deteriorated and underutilized areas of the waterfront, and strengthen and prioritize the traditional waterfront focus of these areas.
- Ensure that development or land uses make beneficial use of their coastal location, promoting water-dependent and water-enhanced uses.
- Maintain and enhance natural areas, recreational areas, and open space.
- Minimize the potential adverse environmental, land use, or economic impacts of development and redevelopment through zoning revisions, enforcement, and other appropriate measures.
- Protect and strengthen the quality of life in waterfront residential areas including Riverside and Black Rock, sections of Front Park, and the Seneca Babcock neighborhood.
- Develop and adopt a waterfront transportation plan that addresses local access, as well as access to Canada.
- Lend focus to the waterfront as an International Gateway.



erie basin marina



toronto developed waterfront



2. *Preserve historic resources*, including efforts to:

- Maximize preservation and retention of historic resources in general, using the U.S. Secretary of the Interior's Standards for Identification, Restoration and Rehabilitation as a guide.
- Protect and preserve archaeological resources in the vicinity of the inner harbor, along the Buffalo River, and in other areas of the waterfront.
- Protect and enhance resources that are significant to the coastal culture and maritime, industrial, and political history reflected in Buffalo's harbor, grain elevators, Erie Canal, and Underground Railroad sites.
- Protect and promote historic shipwrecks in the waters off the Buffalo waterfront.
- Preserve and enhance historic lighthouses and other navigational structures situated in the Buffalo Harbor.

3. *Enhance visual quality and protect outstanding scenic resources*, including measures to:

- Protect, enhance and improve visual quality throughout the local waterfront revitalization area.
- Identify and protect aesthetic values associated with recognized areas of high scenic quality.
- Protect the aesthetic quality of locally recognized scenic areas.

Policies for the Public Waterfront

9. *Improve public access to and use of public lands and waters, including measures to:*

- Promote appropriate physical public access and recreation throughout the waterfront areas.
- Provide public visual access to waterfront lands and waters at all sites, where practical.
- Preserve public interest in and use of lands and waters held in public trust by the State.
- Assure public access along public trust lands above the line of mean low water mark.
- Provide access and recreation that is compatible with natural resource values.
- Where feasible, establish and maintain ownership of the waterfront to ensure public use and access.
- Where feasible, utilize conservation easements to provide public access and greenway trail development along the waterfront.



toronto public waterfront

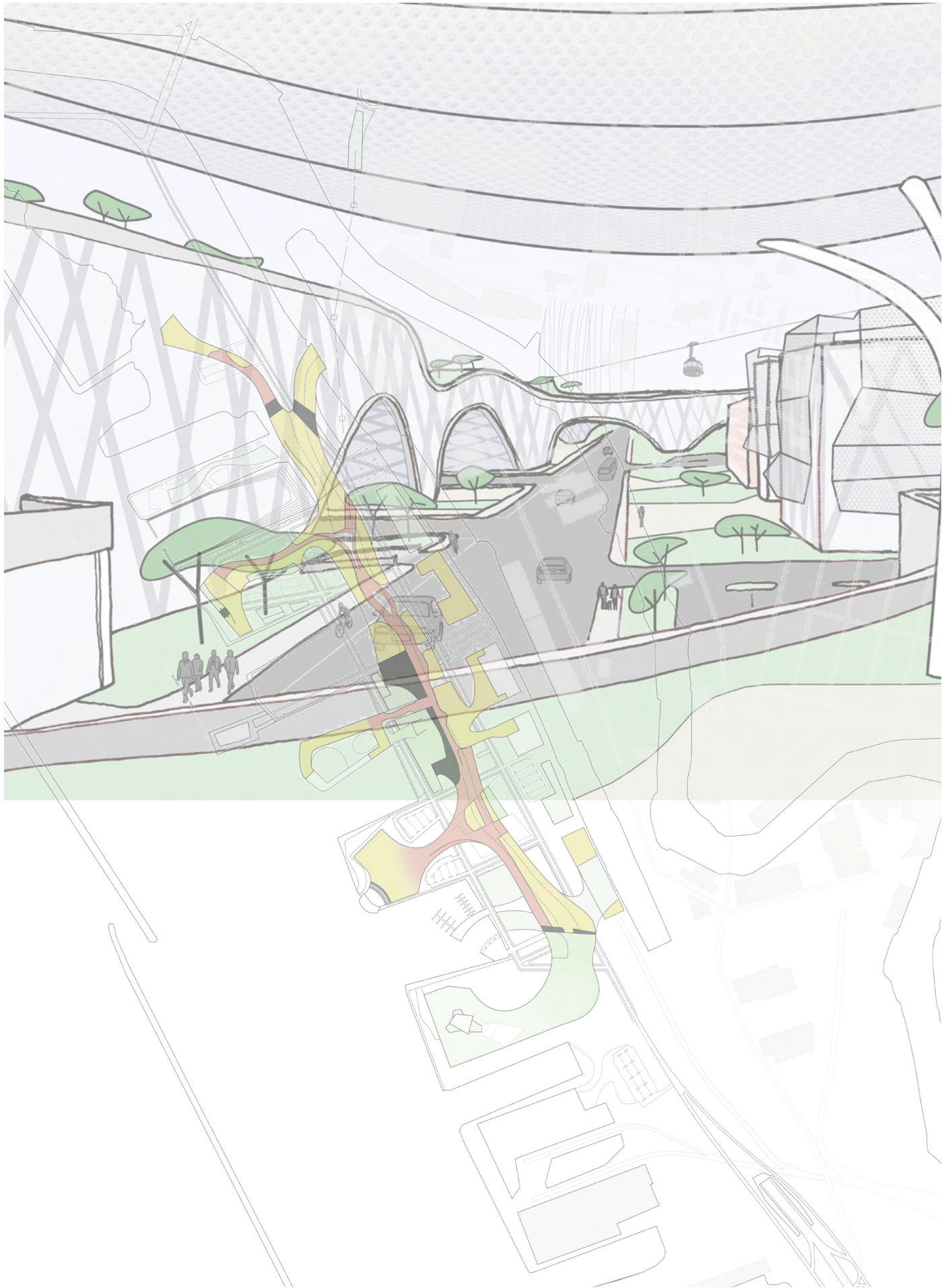
Policies for the Working Waterfront



oswego, ny, east port

10. *Protect existing water-dependent uses, promote the siting of new water dependent uses in suitable locations, and support efficient harbor operation, including measures to:*

- Protect and improve the economic vitality of water-dependent uses along the City of Buffalo waterfronts, including marinas, transshipment facilities, water and wastewater treatment plants, and other land uses that require a waterfront location to effectively operate.
- Promote the siting of new water dependent uses at suitable locations and provide for their safe operation.
- Protect and improve the economic viability of water-dependent uses.
- Allow water-enhanced uses that complement or improve the viability of water-dependent uses.
- Promote the efficient management of surface waters and underwater lands.
- Support efficient harbor operations.
- Enhance the City's waterfront as a quality of life amenity to attract potential businesses, laborers, and visitors to the City and region.



The design process followed a two part plan; the first half being the overall schematic master plan ideas, and the second half being the detailed design of the actual building.

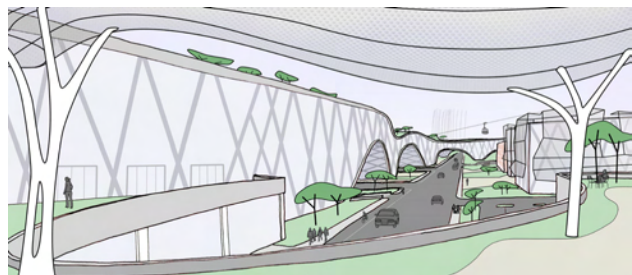
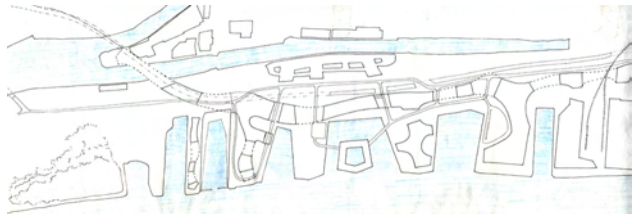
major dates:

schematic review: september 28th, 2010

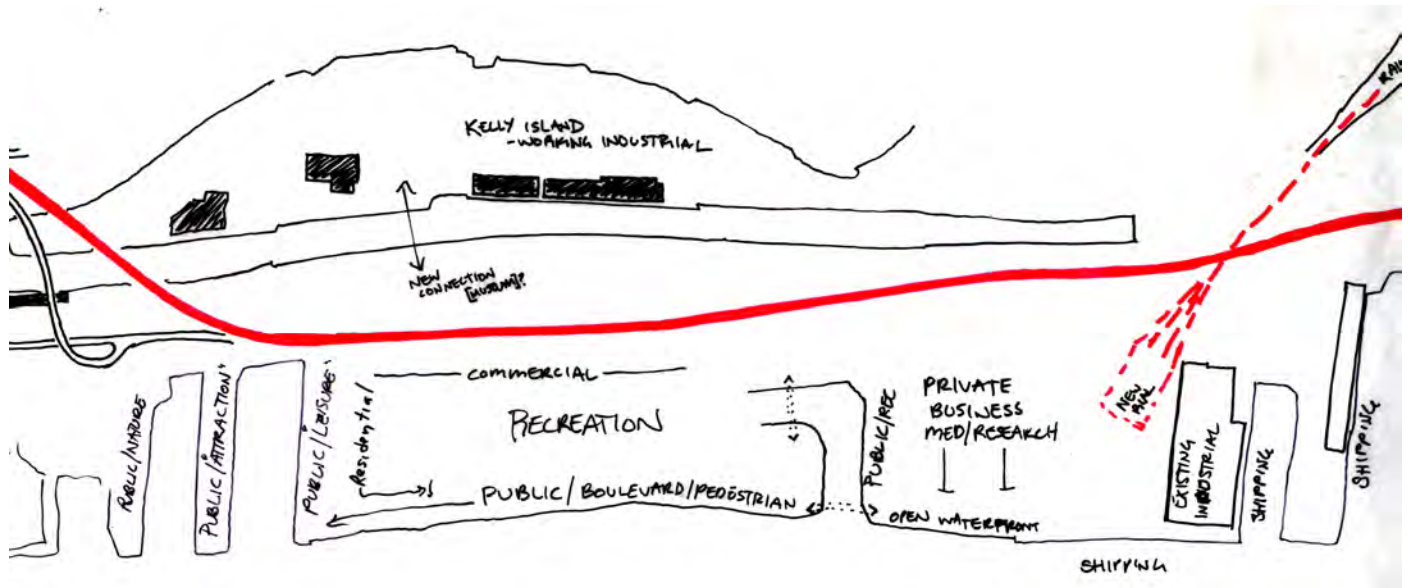
mid review: october 23rd, 2010

gate: november 16th, 2010

final review: december 11th, 2010

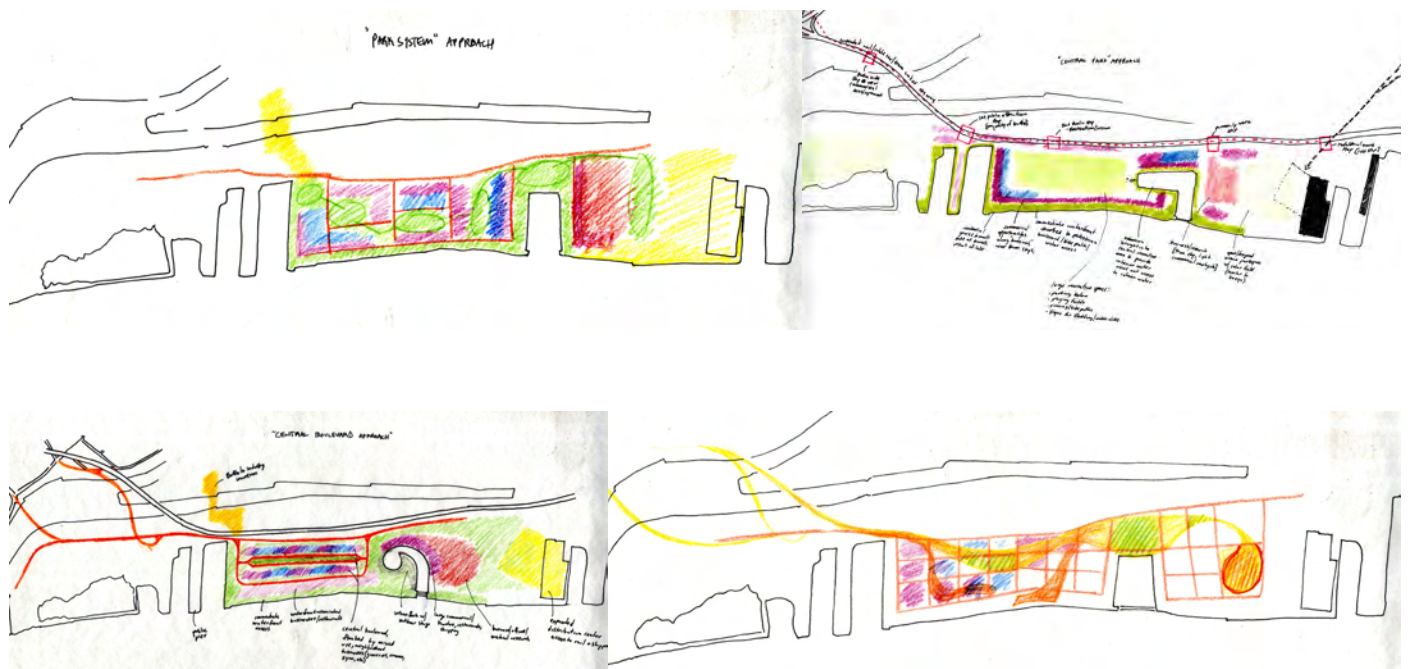


early schematic design:

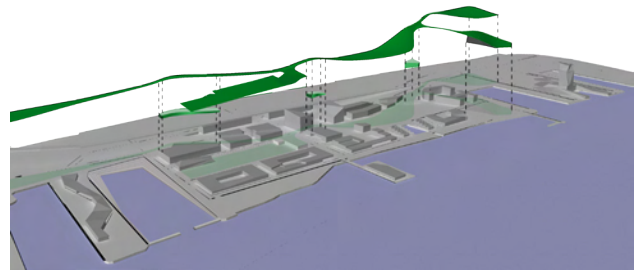


Deciding how to utilize 265 acres in a cohesive manner seemed to necessitate creating specific areas for specific uses and breaking down the program and site, or conversely, using a large umbrella concept across the entire site.

several versions of these ideas were attempted, one with a system of connected small parks, one with a large central park, a boulevard-centric design, and a grided design that had a green snake-like flying park slicing through it.

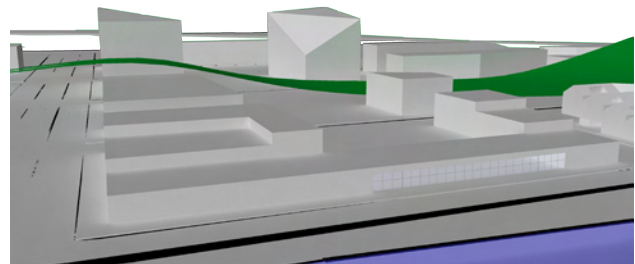


The sliced grid master plan became Scheme_A, one which be developed more for the schematic review. It provided a connection to the 'mainland' and downtown, physically, and in a layout sense, using the grid sizing of the heart of downtown Buffalo as its base.



The slicing park would lift off the ground and fly over the new gridded cityscape below, only to cut through and return to the ground and lift again, weaving from the city center all the way to the new industrial shipping docks at the south end of the site.

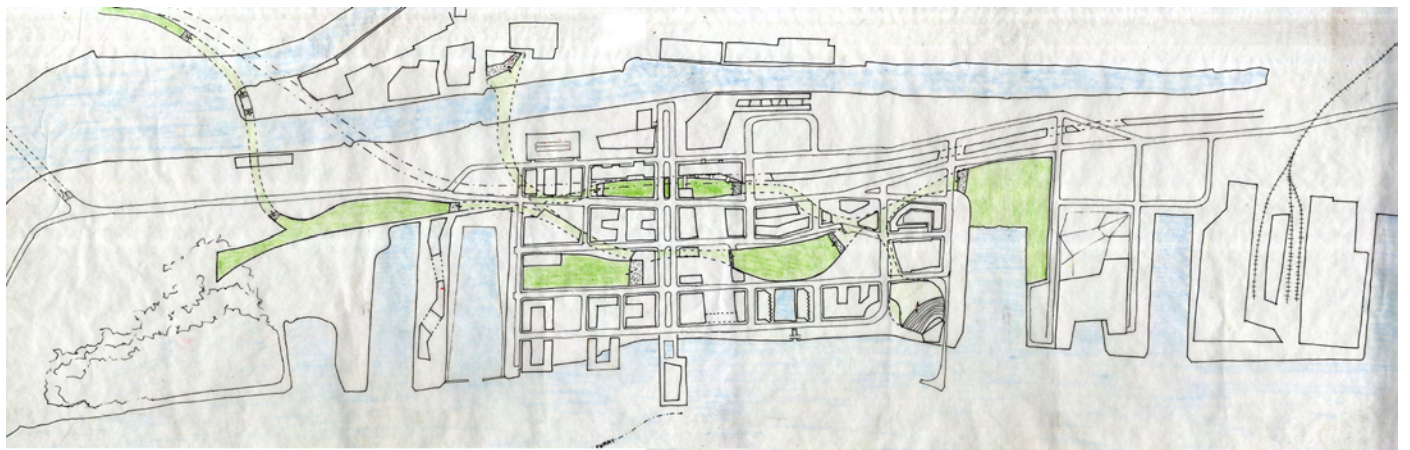
A series of secondary moves were made in the grid system. Public parks would run in the North-South direction, parallel to the waterfront, while wider boulevards and hardscaped plazas would run East-West, from the canal to the water.



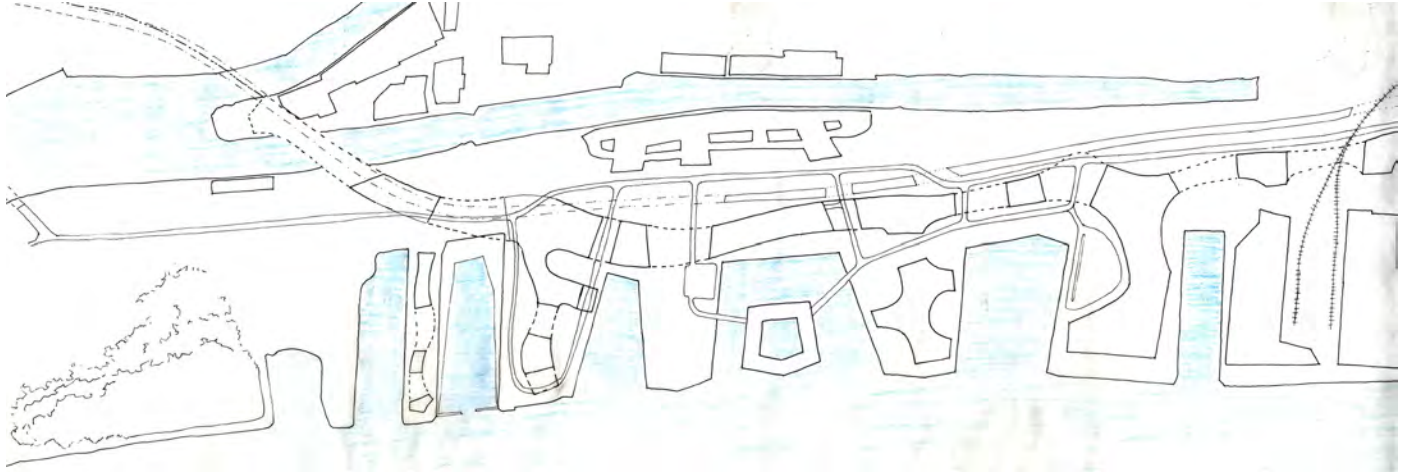
The excitement of this plan was a result of the versatile slicing park. It acted as a series of parks, one long green space, a connection from downtown to the water, and a link between ground and sky.

It also competed with the existing skyway, an interesting issue in that most residents of Buffalo dislike the skyway.

Scheme_A was and is a serviceable scheme, one that could work, but was missing something.



Scheme_B was almost an afterthought, a wild attempt at something different. Looking at Corbusier's Algiers proposal and Steven Holl's new Vanke Center, all the program was crammed into one massively long building. A 1.75 mile long bar stretched along the site parallel to the waterfront abutting the canal and skyway, with fingers stretching to the waterfront.

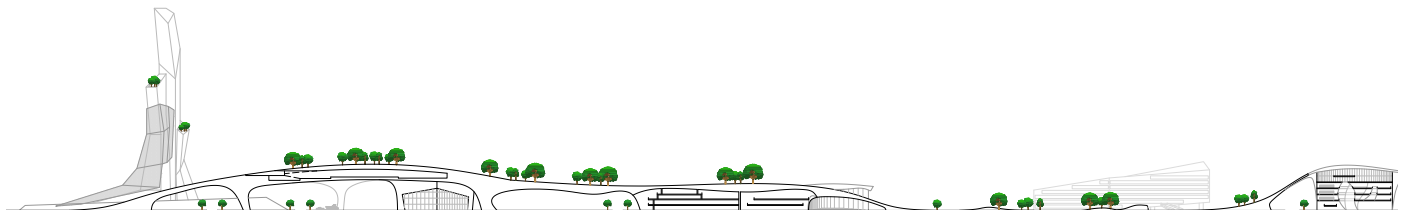
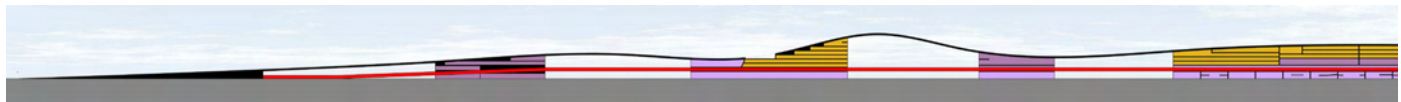
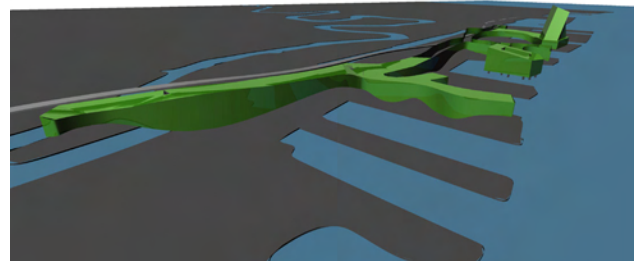
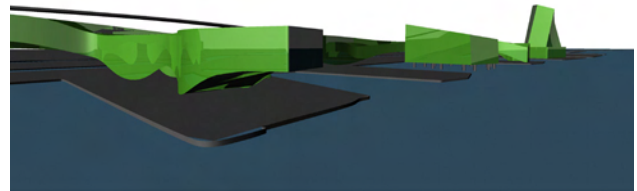


Partially following the skyway and residing under it at times, the long building showed promise, in that it had the ability to physically connect the varied programs.

schematic review, September 28:

Both schemes work, and were possible solutions, but the intrigue and over-the-top scale and dynamism of Scheme_B was ultimately more appealing.

A key issue to come out of the review is the possibility of removing the skyway. If it is so ugly and has been so universally disliked, why not completely remove it? Post review, the first design move was to dig a tunnel from downtown to south of the site where the highway touches the ground, thereby opening the site up completely, and removing a major eyesore and intimidating highway for the city.

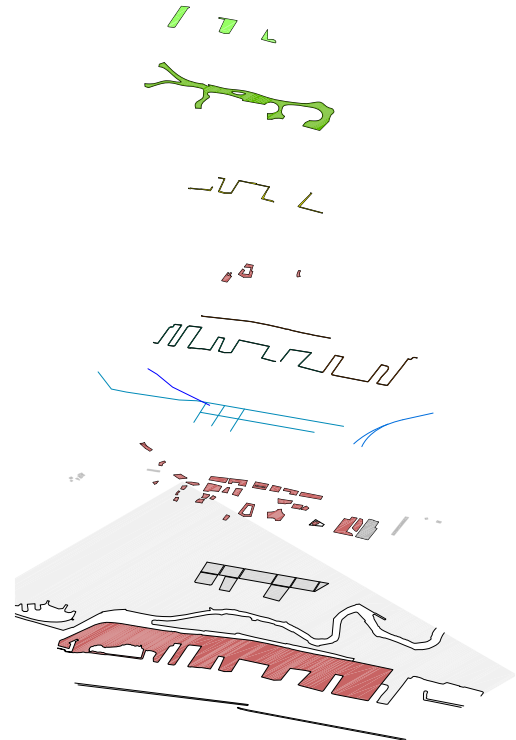


scale: 1" = 80'



As Scheme_B developed, it grew to use ideas from Scheme_A, such as the linear park and the grid system of streets. The monster building developed an undulating roof that also served as a major waterfront park, hovering over the simple grid of streets and pedestrian plazas. The roof dropped to the ground to allow direct access in points, and it became a wider larger version of the slicing park from Scheme_A. Underneath the roof were the "buildings," the programmed space, with public arenas and plazas formed by the covered voids between them.

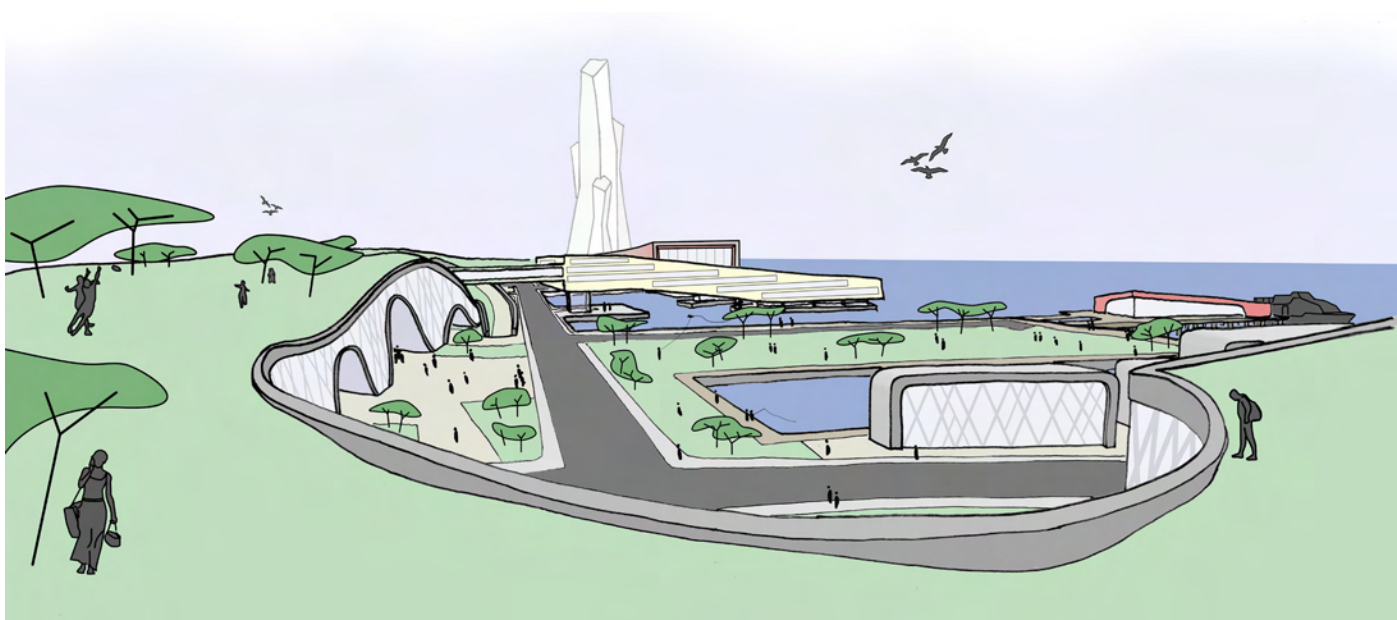
A bar of industrial buildings took over the canal side, with the bar's fingers taking the waterfront side, and the bar itself residing in the former location of the skyway. The museum stretching across the canal branched off to the nature preserve, creating a complete connection from preserve to industry.

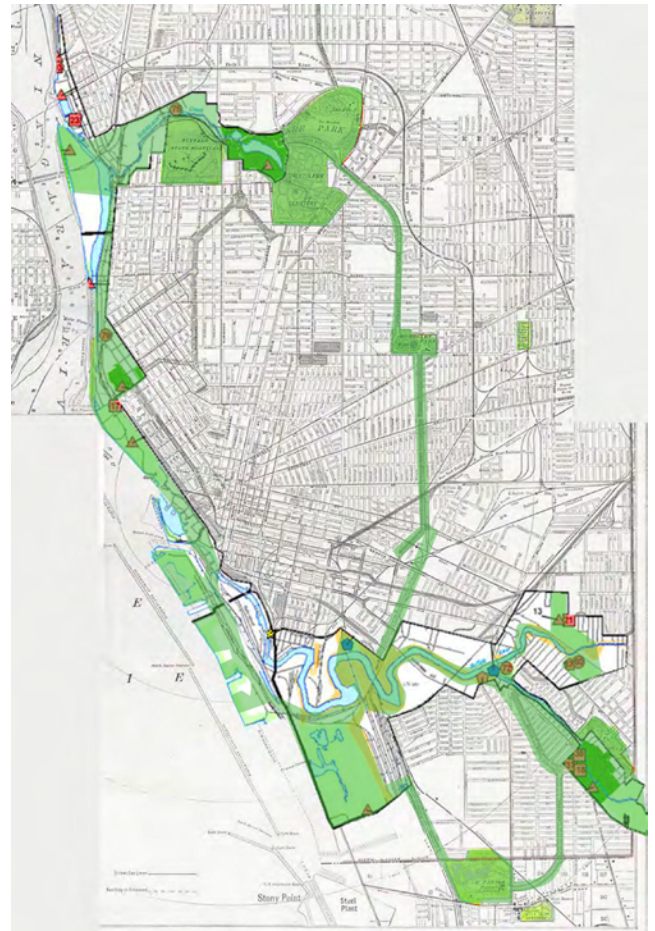


Buffalo Architectural History as precedent:

The city of Buffalo is one of the great American cities, architecturally speaking. It as a hub of innovation and exploration for architects looking to develop something other than the standard European practices. H.H. Richardson built his Asylum here, Frank Lloyd Wright refined his Prairie Style here in the Dwight D Martin Complex, a residence with outlying supporting buildings all ingeniously connecting with long low horizontal elements. Sullivan built the first skyscraper, the icon of American architecture, here in downtown Buffalo. The Guaranty Building would become the beginning of possibly the most important American addition to world architecture. Olmsted created a system of parks to ring the city, a move he would late implement for Boston, changing the city completely.

Buffalo was a place for experimentation, and in that vein, Scheme_B was the perfect solution for the site. It would be radical and possibly controversial. It can stir discussion and provoke ideas for future developments. Such a drastic move is creating an opportunity to explore architecture and the effects it will have on not only the people who will use it, but anyone who comes in contact with the ideas, and that is more than just designing a building or planning a site.





mid-review, October 23:

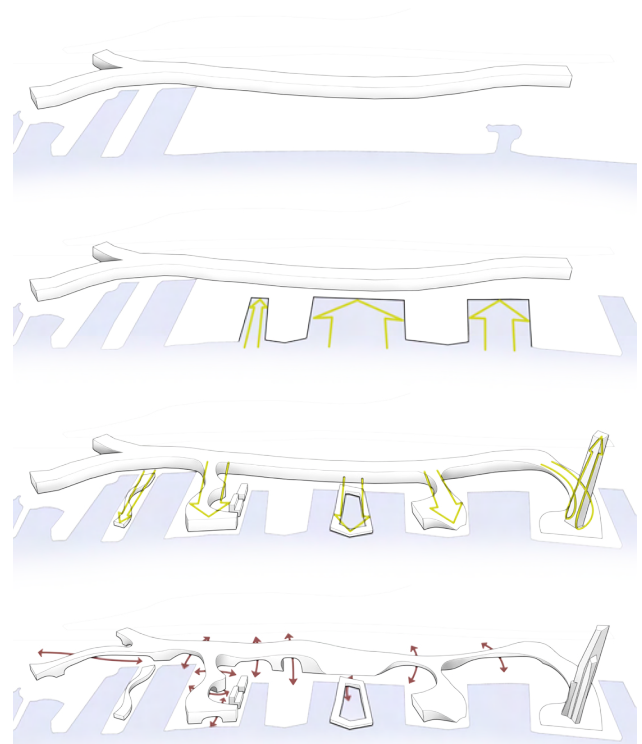
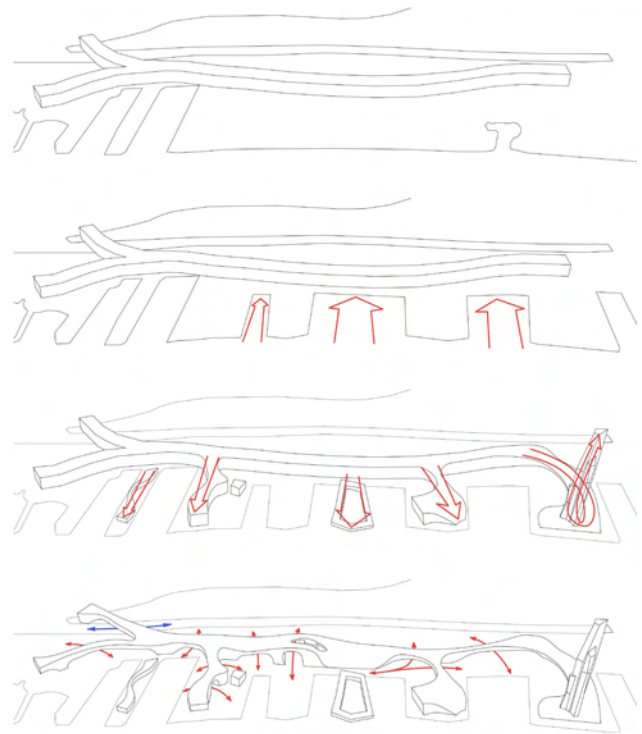
Issues that still existed with the developed scheme focused around the habitation of the "roof." The section shows that park/roof was merely a plan over a series of buildings, when it should **be** the building. The point of the mega structure is to be one integrated massive building, not a group of buildings with a connecting roof, which was not the aim of the scheme. A reworking was necessary.

The building went back to form massing, and back to one solid block with an undulating surface top. Rather than designing where buildings sat within the grid, the bar was carved to create openings where the streets and plazas were needed, and what was left would hold the program. This method resulted in a much more massive building, in a good way, one that felt like a continuous form rather than a series of separate buildings.

next level of developments:

+ the museum that reached across the canal no longer landed on Kelly Island, it was pulled back to just barely look out over the canal and provide a view up and down the industrial ways. Bridging the canal was not necessary and created too much volume for the museum and the building overall. The two branches, the museum and the preserve center needed to be different, one shorter and cantilevered and wider, one slimmer and longer, or they were fighting each other at the end of the building.

+ the floating housing building moved to the coastline, becoming one of the monster's fingers and becoming more community oriented. The form of this particular piece was very different from the rest of the language used in the buildings, so it was reshaped to be less angular, more organic, and physically tied in. Later on, the research and development building on the opposite side of the bar from the housing building would be designed in further detail to provide a cross section of an example of a day living and working in the building.



+ the steadfast grid system on the ground began to respond to the building more, compromising in places to allow for the form of the building to hug the waterfront, creating a unique harmony between the regular grid and the organic sculptural building above.

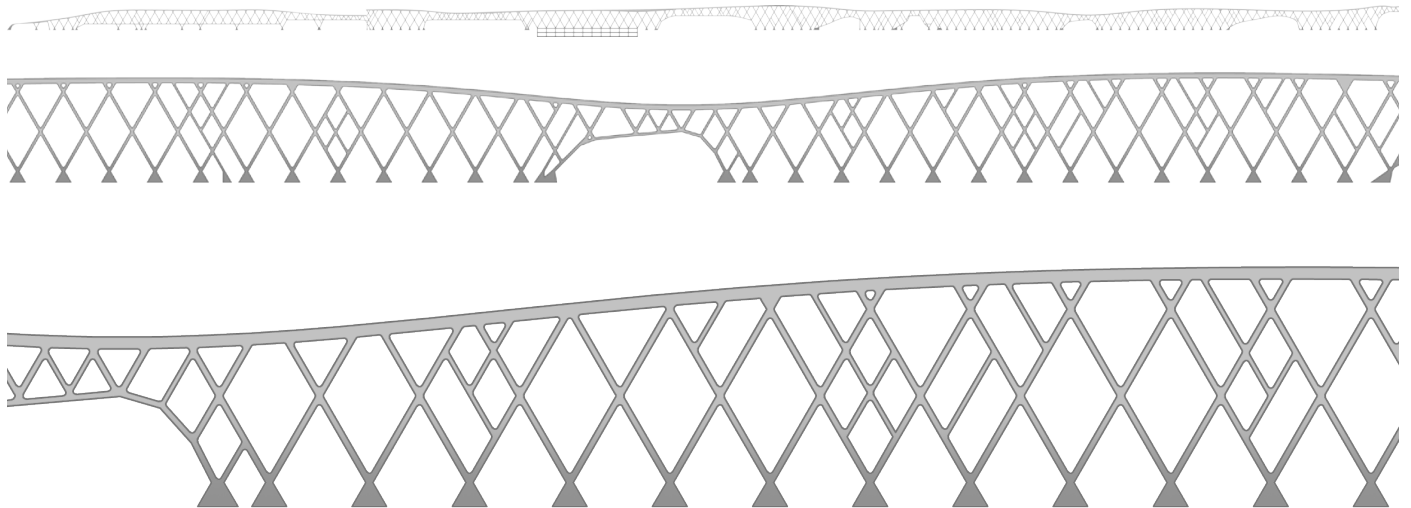


Gate, November 16:

For the gate review, the building had to become real. While a wall section or mechanical systems may have been several more steps of in-depth development for a project this scale, structure, enclose, and materials were all designed.

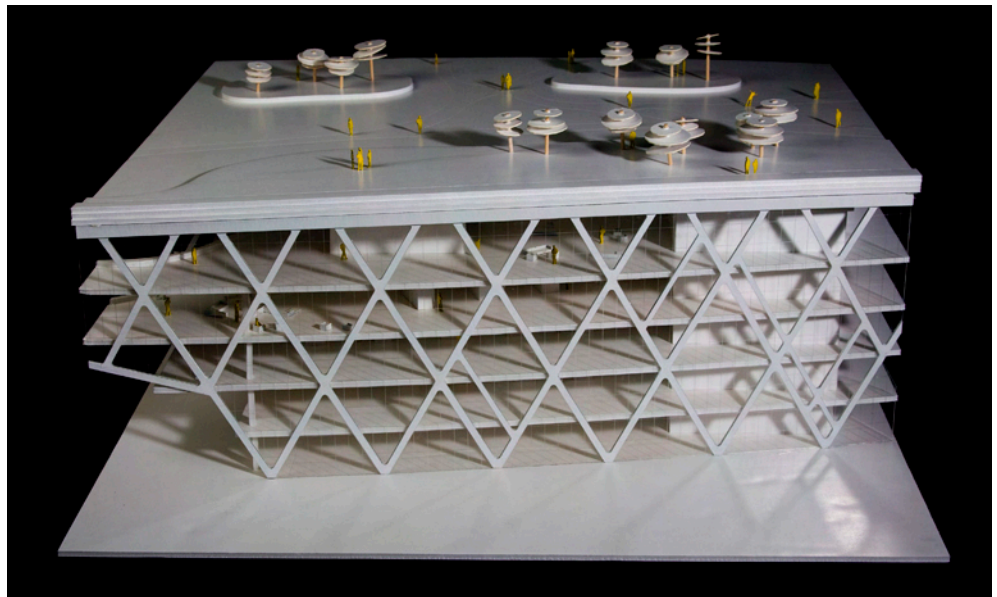
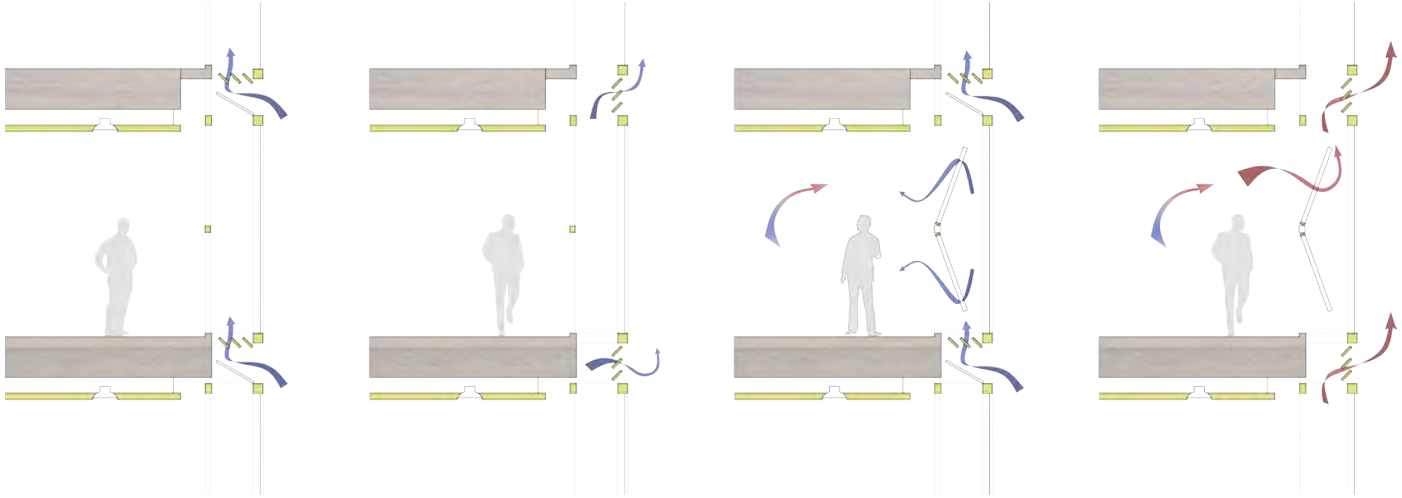
structure system:

Four diagrid systems would run the length of the building, given the width of the form. The diamond form would span two levels, then repeat upward for up to five levels at the tallest point. The spacing conflicted with breaks in the floor plates, atriums, or changing ceiling heights, so additional diagonals insert into the grid, breaking down the stringent continuous form, and create a composition of smaller diamonds along the vertical surface of the building. Secondary structure runs perpendicular to the grids, connecting them, and lighter tertiary supports run parallel to the grids to hold the actual floor plates.

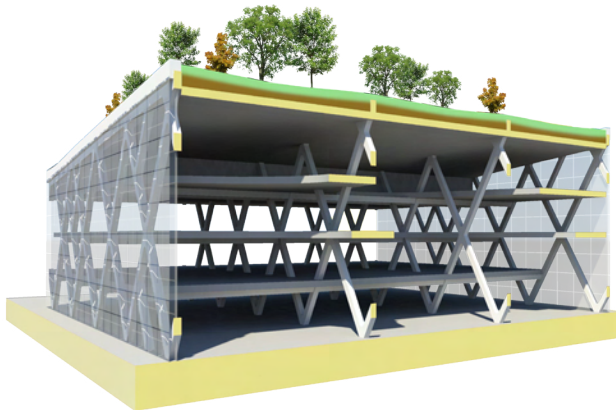


enclosure system:

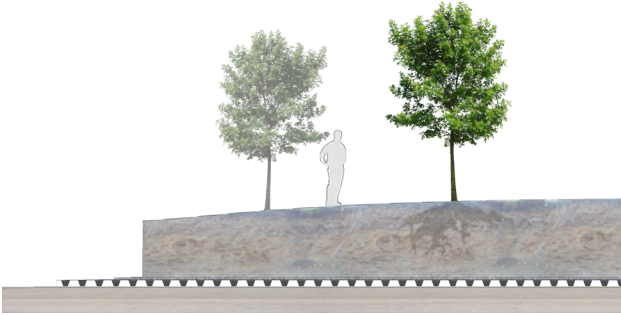
a double glazed wall would be employed to enclose the sides of the building, with the first layer of glazing set in the width of the structure grid, and the second floating outside it. The double layers allow for more passive heating and cooling in an area with drastic weather.



materiality:



The simplicity of the enclosure and structural systems working together means that the entirety of the building is of the same exterior treatment, but with a high level of transparency. The plug-in aspect of the program inside reflects the uses and advertises what is inside. The structure and enclosure act as a shell, one that will change over time and by use based on what is directly inside it.



The roof however, is specifically and more technically designed. The green roof system can reach depths of 8-10 feet to accommodate roots of trees and larger plants that will transform the long roof into a combination of open park space and true forest. Along the spines of the diagrid, where support is the strongest, the soil is deepest and the trees the largest, while the center points between the spines is more open.



A system of pathways weave from one end of the building to the other, as well as providing access to the ground and points at which one can get into the building from the park.

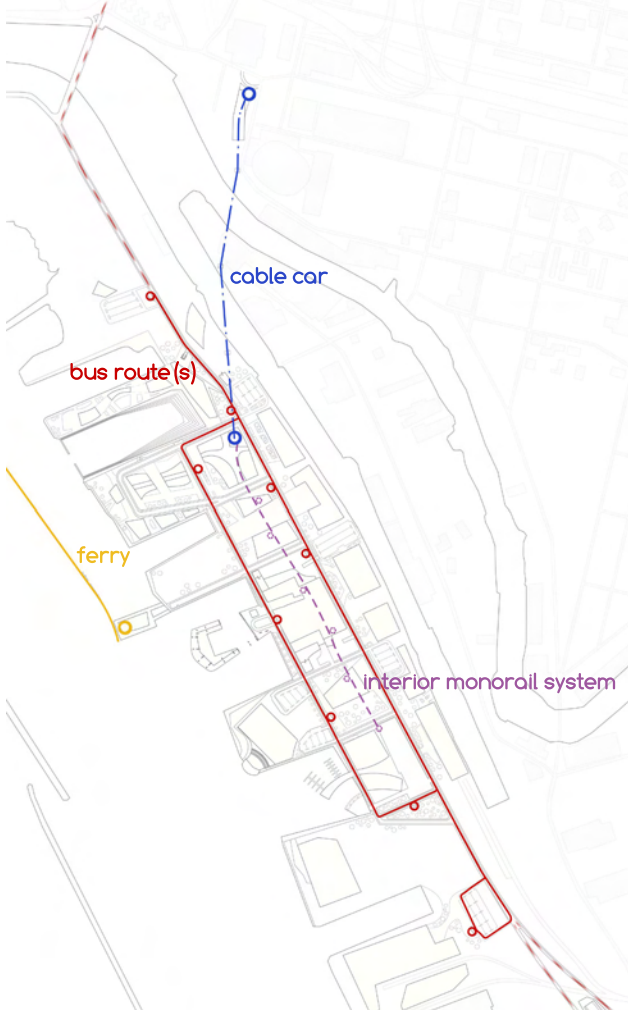
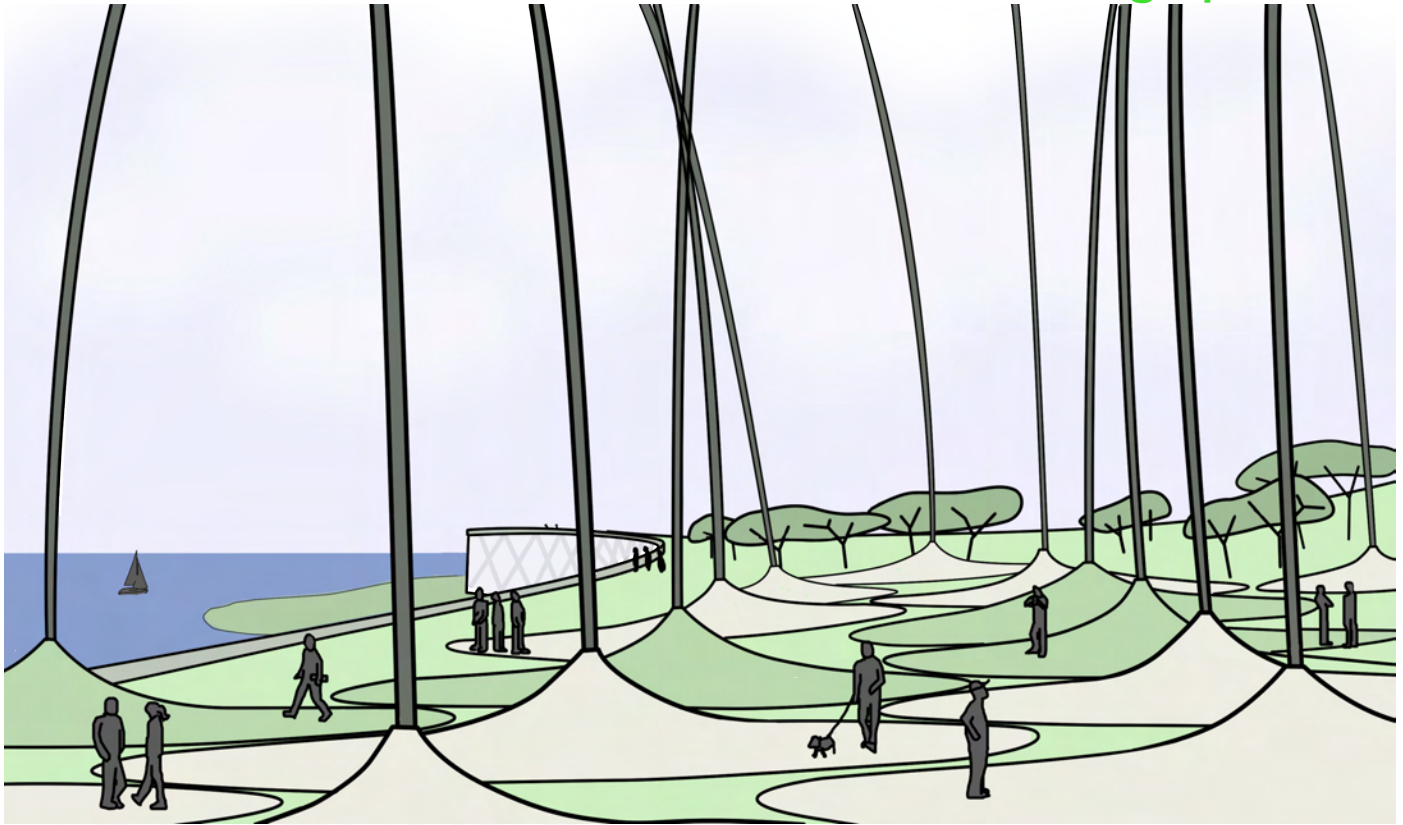
energy:

being situated at the end of Lake Erie, the winds on the Buffalo waterfront are fairly constant; perfect conditions for some sort of wind energy system. A traditional wind farm was recently completed just south in Lackawanna, on the contaminated and unbuildable land of the former steel mill.

While these are obviously efficient, and look just fine now, rather than inserting these into the end of a monster building and making it look like it is attempting to take off, a different solution was needed.

A competition submission for Masdar City by Atelier DNA comprised of a new technology they developed theoretically, called windstalks. 180 foot tall poles, 2 feet tapering to 6 inches in diameter, sway gently in the wind. The motion causes friction between stacked horizontal discs filling the poles, and creates charges. These charges are carried to the base of the poles, powering torque generators and storing electricity. A small field of these windstalks stands on the roof at the museum end of the building, transitioning from a forest of trees. People can walk through them just as they would walk through a series of trees, and they provide an interesting texture on the ground plane with nearly intersecting discs of concrete, grass, and pathway.





the energy created by these windstalks powers the transportation needs of the site. Besides the new bus routes that will take people from the 'island' to downtown as well as around the site, a cable car crosses the canals and an internal monorail line allows for movement from one end of the building to the other, covering a mile and a half.

design process:

50

the concept of nodes is not new, but inserting the concept into a megastructure needed to be different than small neighborhoods strung along in a line. Rather than develop a series of small groups of housing, stores, etc, that make up your typical neighborhood, each region of the district has a specific focus.

obviously each area is not solely reserved for these uses, as they overlap and share crucial elements such as transit and social spaces like restaurants or public gathering spaces.



design process:



site appreciation: nature preserve and Buffalo Industry museum

public recreative: ice skating, boating, swimming, cafes, changing rooms, etc.

public commercial: shopping, restaurants, bars, housing, office space, public transit hub, etc.

public center: civic duties, library, bank, post office, large park, water transit, etc.

typical neighborhood: housing, community spaces, grocery store, office space, small retail, etc.

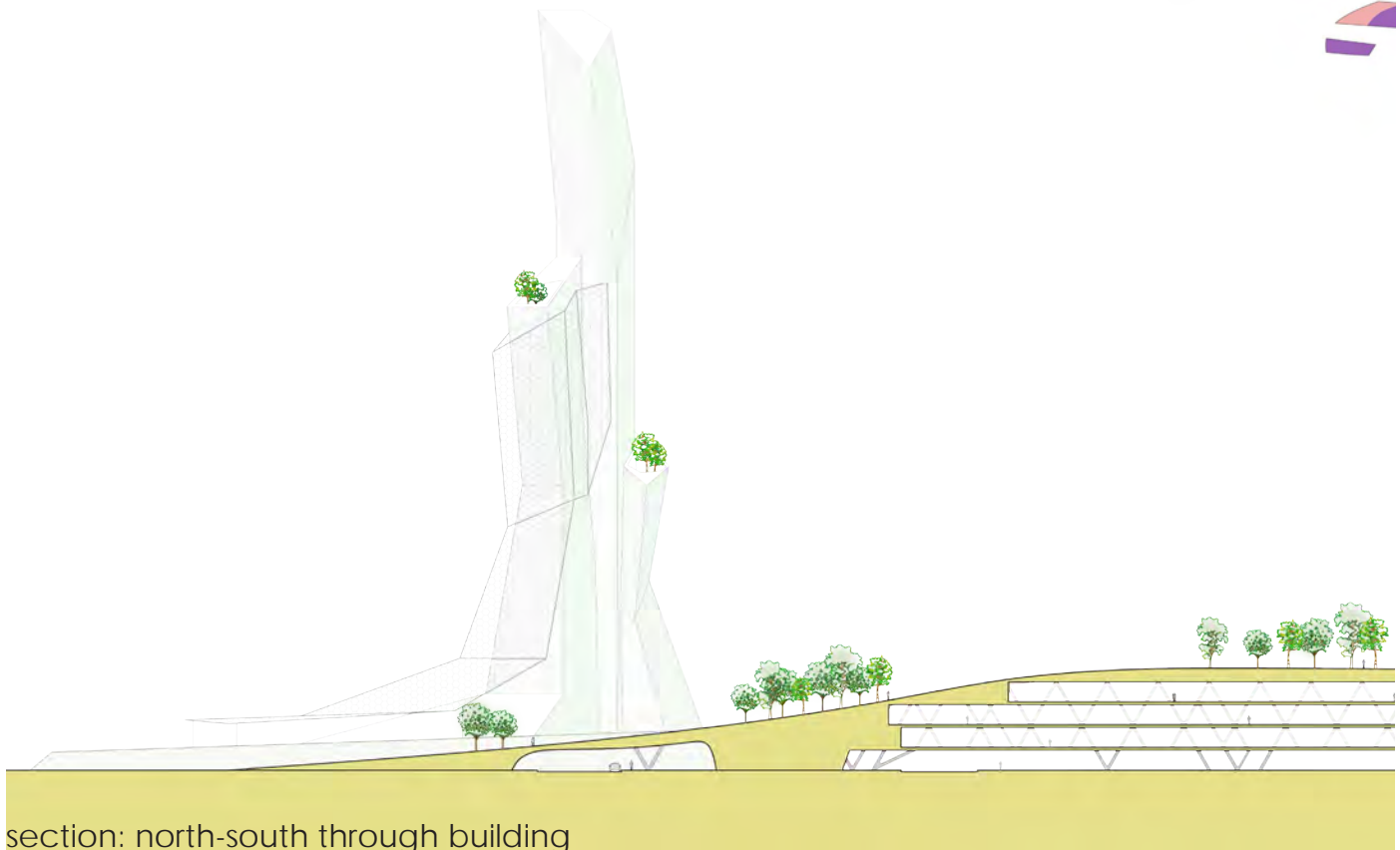
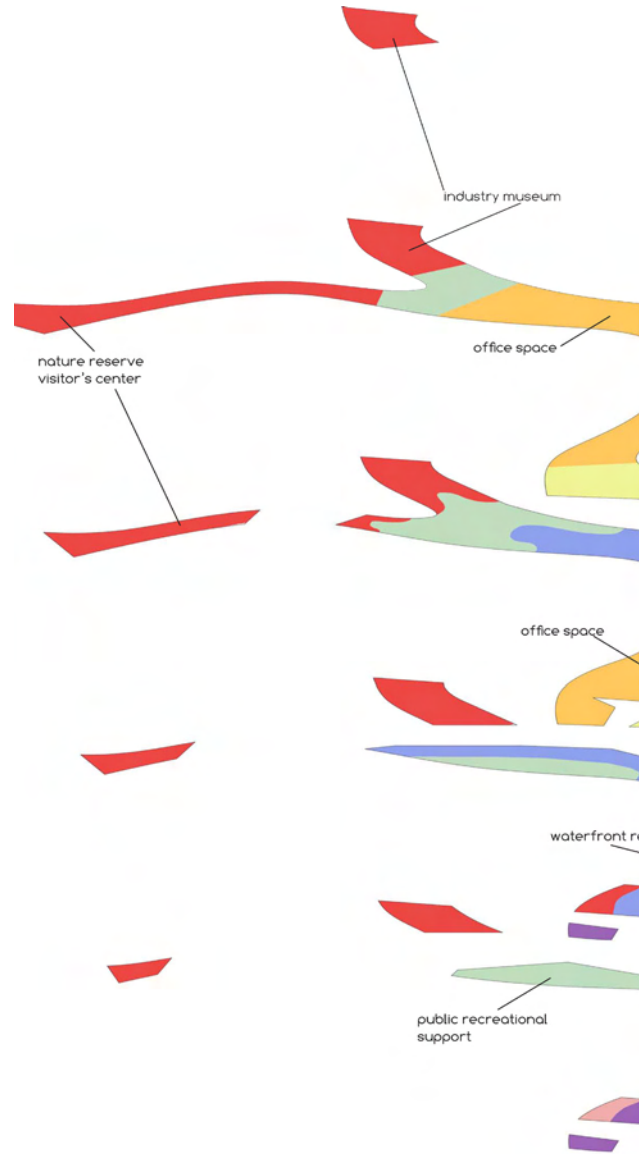
cultural: theater, outdoor ampitheater, museum, Buffalo architectural society, retail, etc.

marina: docks, boat launch, marine equipment stores, restaurants/bars, housing, office space, etc.

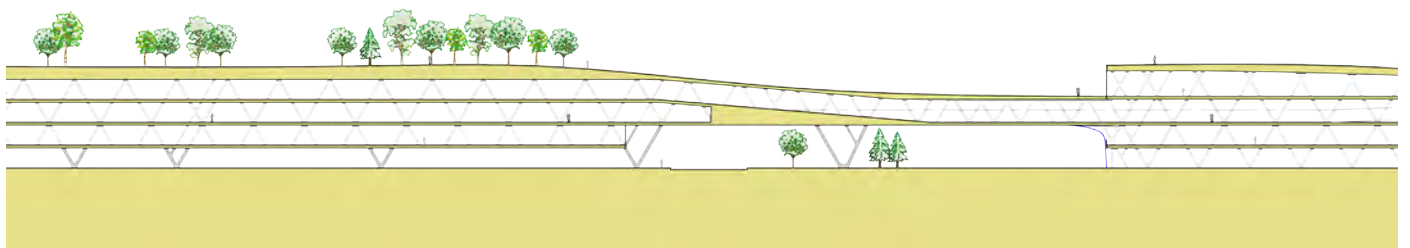
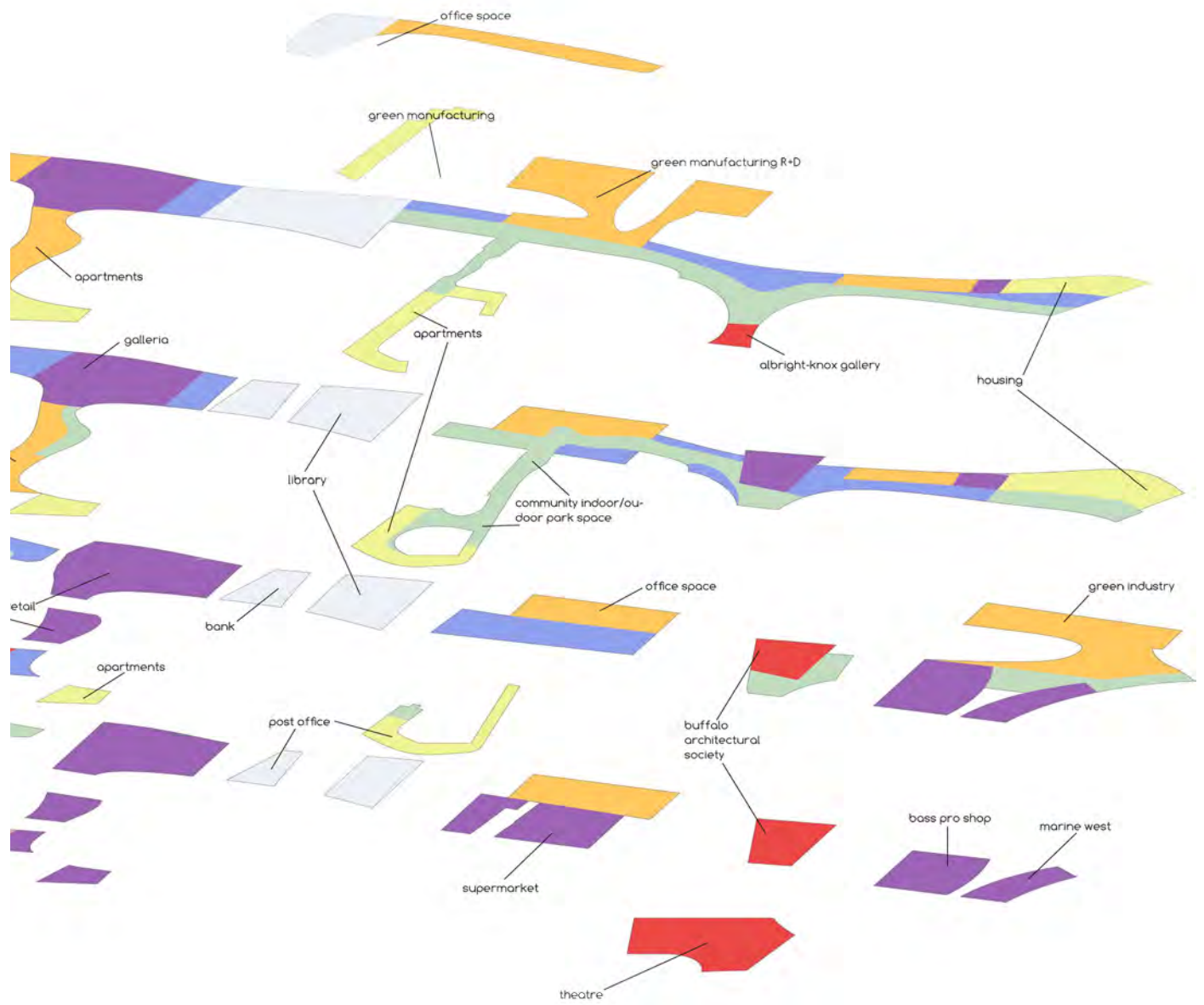
working: biomedical research center, office space, apartments/condos

heavy industry: shipping port, loading docks, goods warehouses, train station

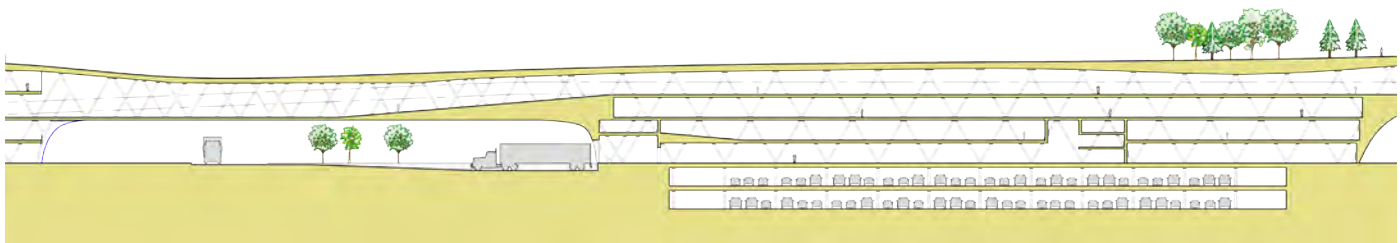
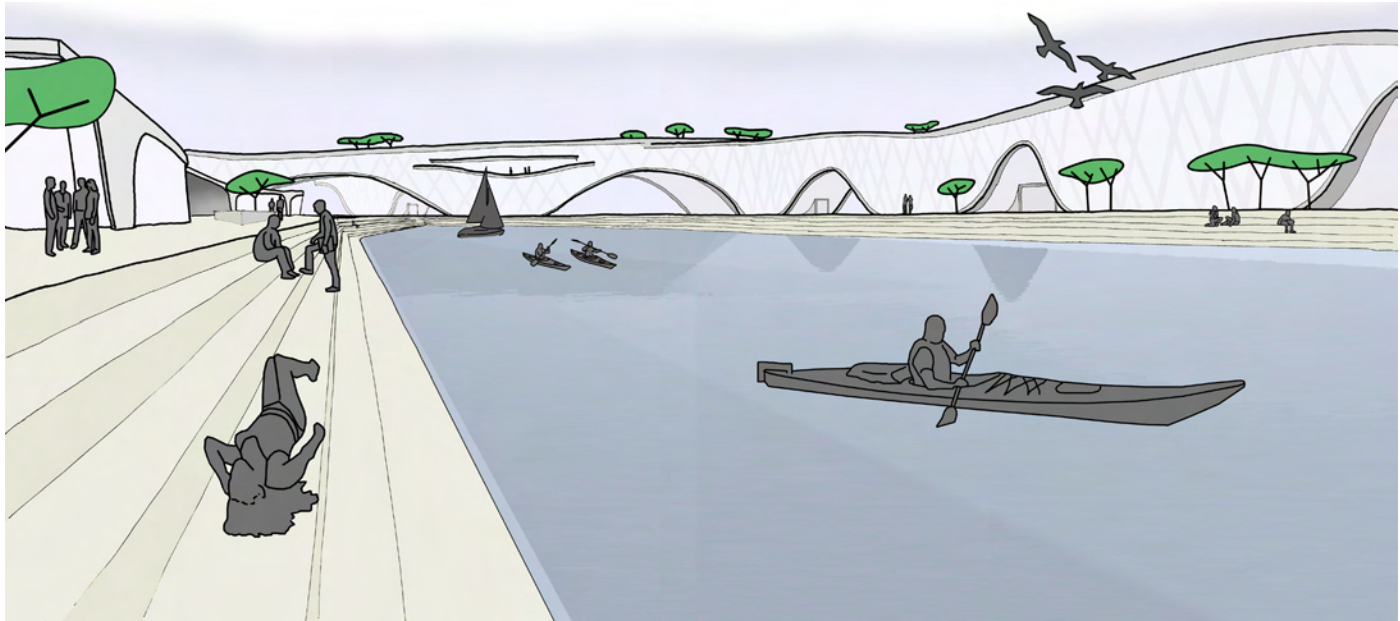
the sculptural form of the building took shape quickly, relying on street and plaza openings, waterfront cuts and program requirements. The shape of the central area, for instance, grew wider as a result of the needs for an open public space where the cable car and monorail start and end, and there would be more public gathering, while the areas near the marina was slimmed down because more people are actually going in and out from the docks and launch and spending less time indoors. At the point where the housing and community building reaches out onto the water, the roof of the megastructure drops all the way to the ground, forming a slope towards the water and allowing direct access for an extended length from ground to roof, where people will be walking more than driving or riding a bus. Some office spaces on upper levels are narrower than lower levels through the use of cuts in the roof, which not only allow more light to get completely through the building, but provide outdoor space for the offices or apartments. Decisions like these slowly formed the details and eventual shape of the building.



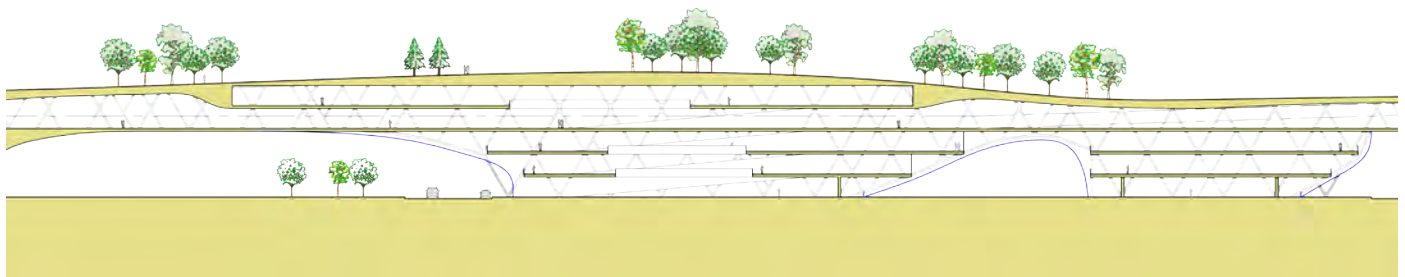
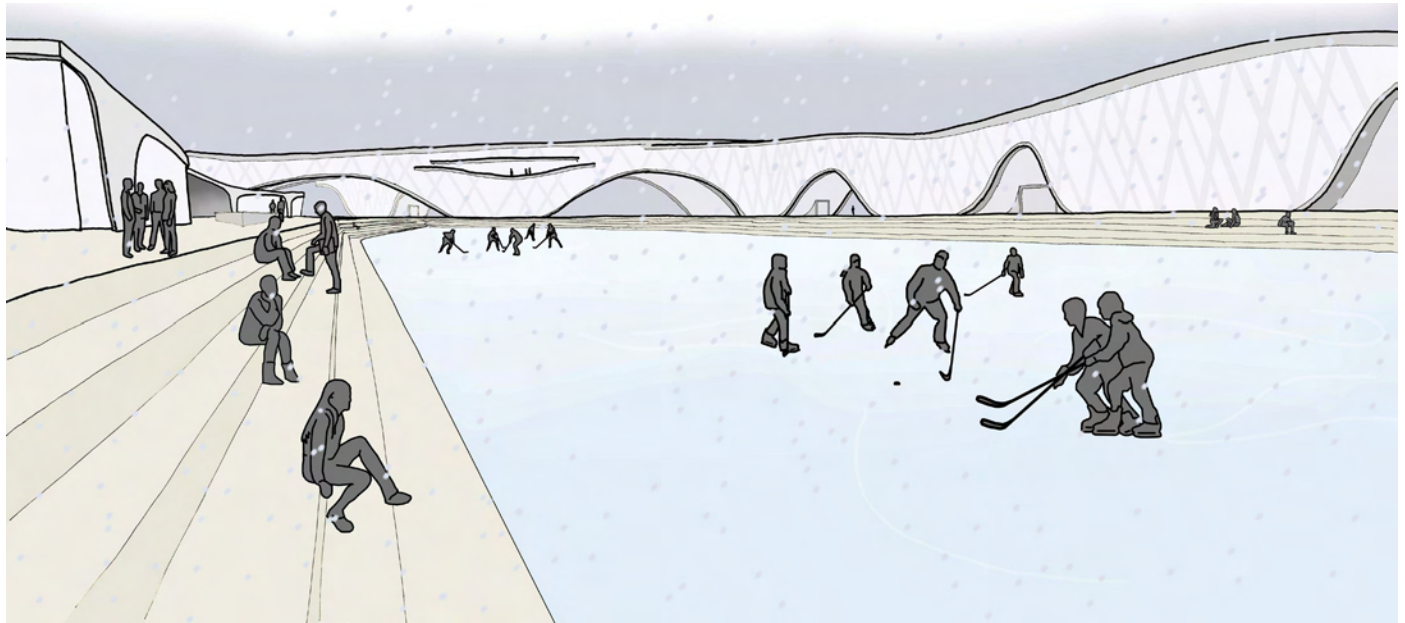
section: north-south through building

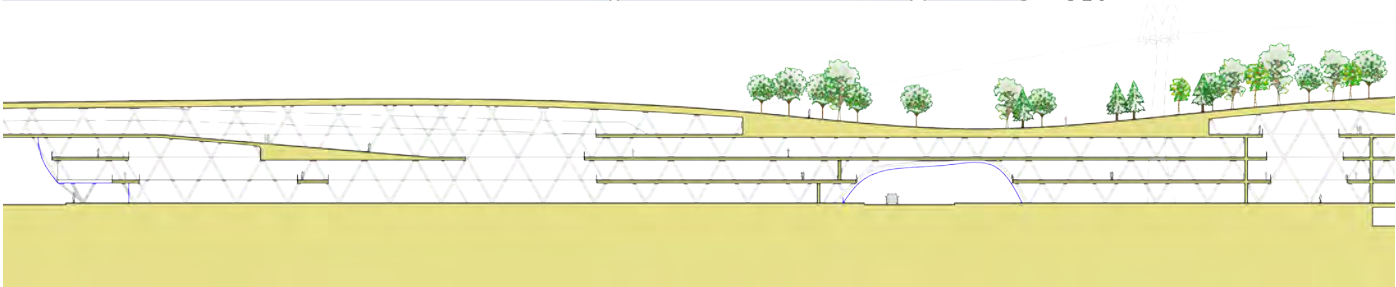


The overall aim of the final shaping and detail work for the mega building was creating spaces that would draw the public to the waterfront. This under utilized opportunity of a site would be home to people working in offices, factories, on the docks, etc, but also needed a public life, one that changes throughout the day or year and animates the space. The existing dry docks, with addition of large steps and supporting buildings, become a summer water recreation area for small boats, swimming, or lounging. The same area in the winter is sealed off, freezes, and becomes a place to ice skate, including hosting the annual northeast pond hockey tournament.



Hardscaped plazas below the building weave through the carved out areas and encourage walking around the site, along the waterfront, or even through the building, promoting pedestrian circulation. Plazas that run under the building, perpendicular to the water, tie together the canal side buildings and the lake front, offering views and access to the new waterfront for everyone on the site.





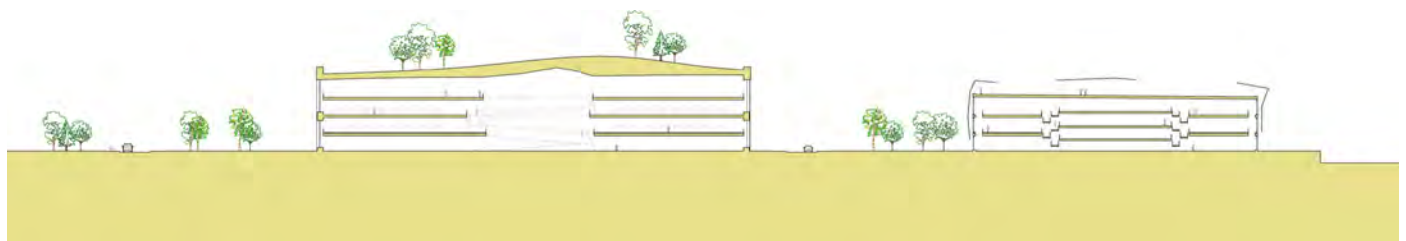




plan: level 3

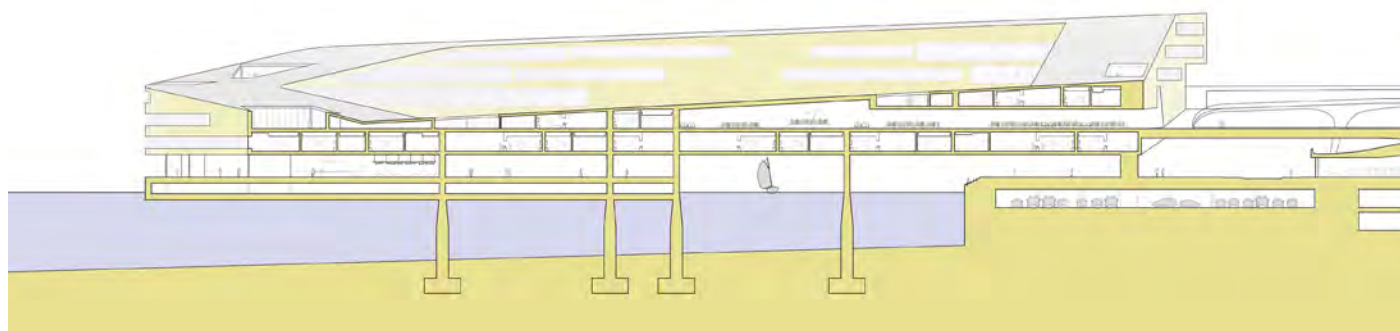
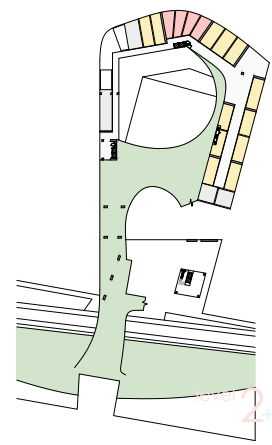
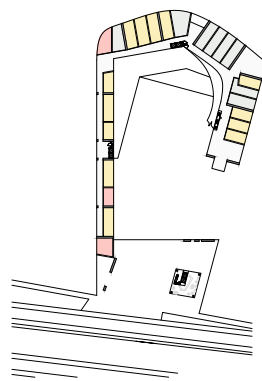
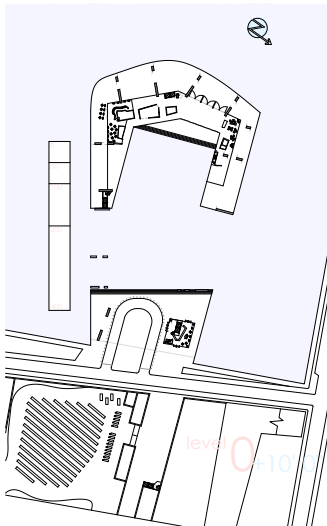
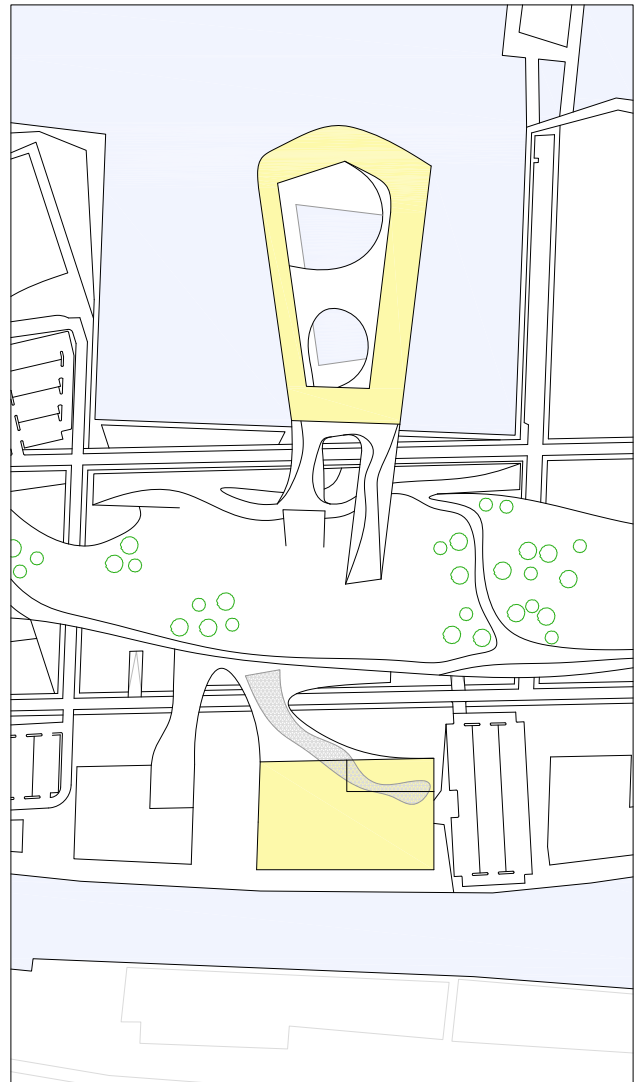


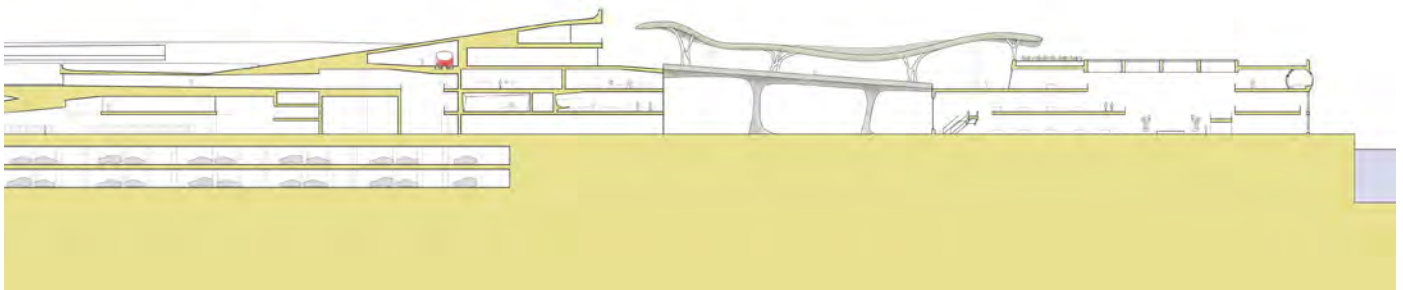
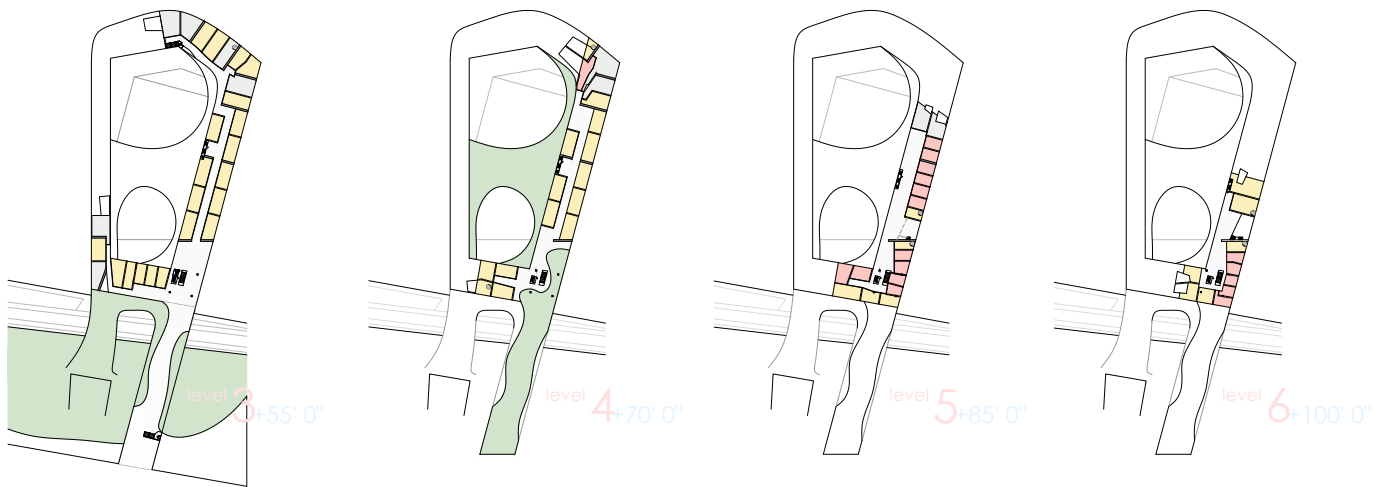
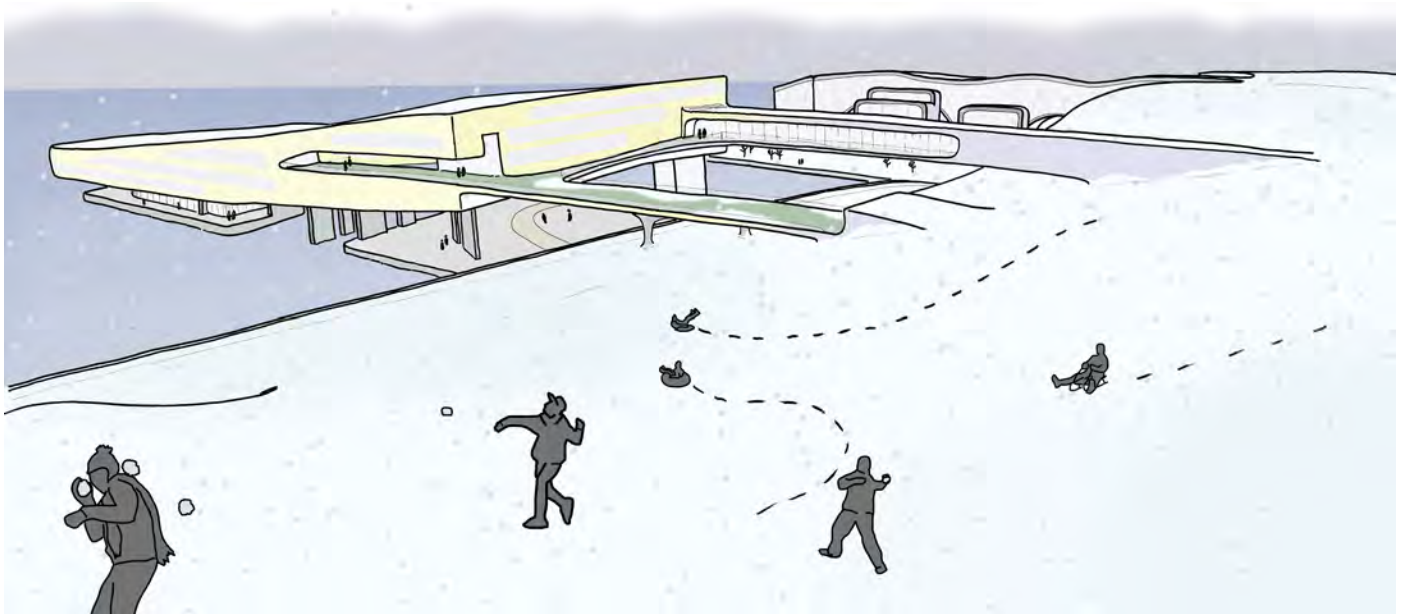
section: east-west through ferry terminal, park, building



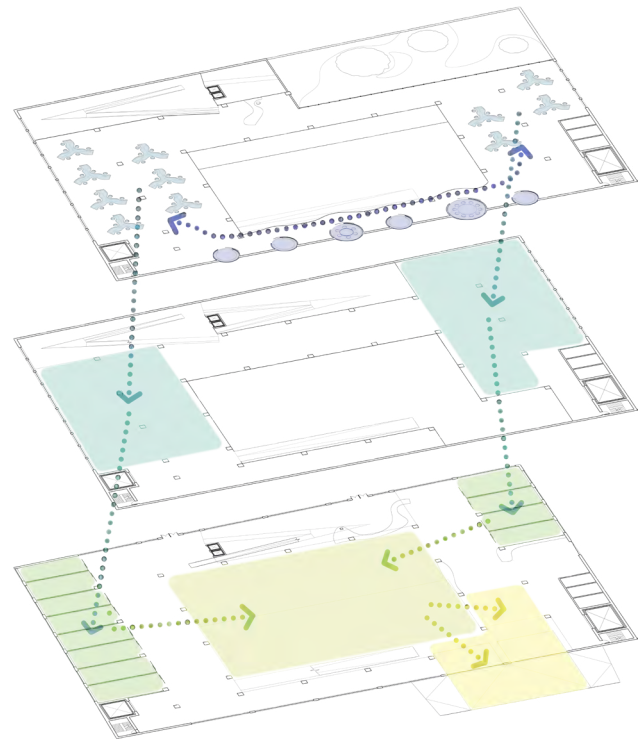
an area studied in further depth was a cross section from lake to canal, through the megastructure, one finger (the housing dock) and an R&D building on the canal side. This section shows the possibility of working and living in this new district. A central parking garage is located underground the mega building with a secondary area for residents. The “floating” housing building’s form was dictated by the need to provide views and bring in sunlight for winter passive heating, as well as forming unique spaces for public gathering, internal green spaces, and water recreation.

The ground level of the housing docks is half outdoor dock space, and the glazed walls open completely in areas so that in warm weather, the air can move through to the center of the building, creating open air public spaces, including an informal amphitheater. When closed, the lower level contains two restaurants, a bar, a pharmacy and convenience store, a small cafe with plenty of living room style seating areas. Community gathering spaces are located on each level above, some connecting levels vertically.





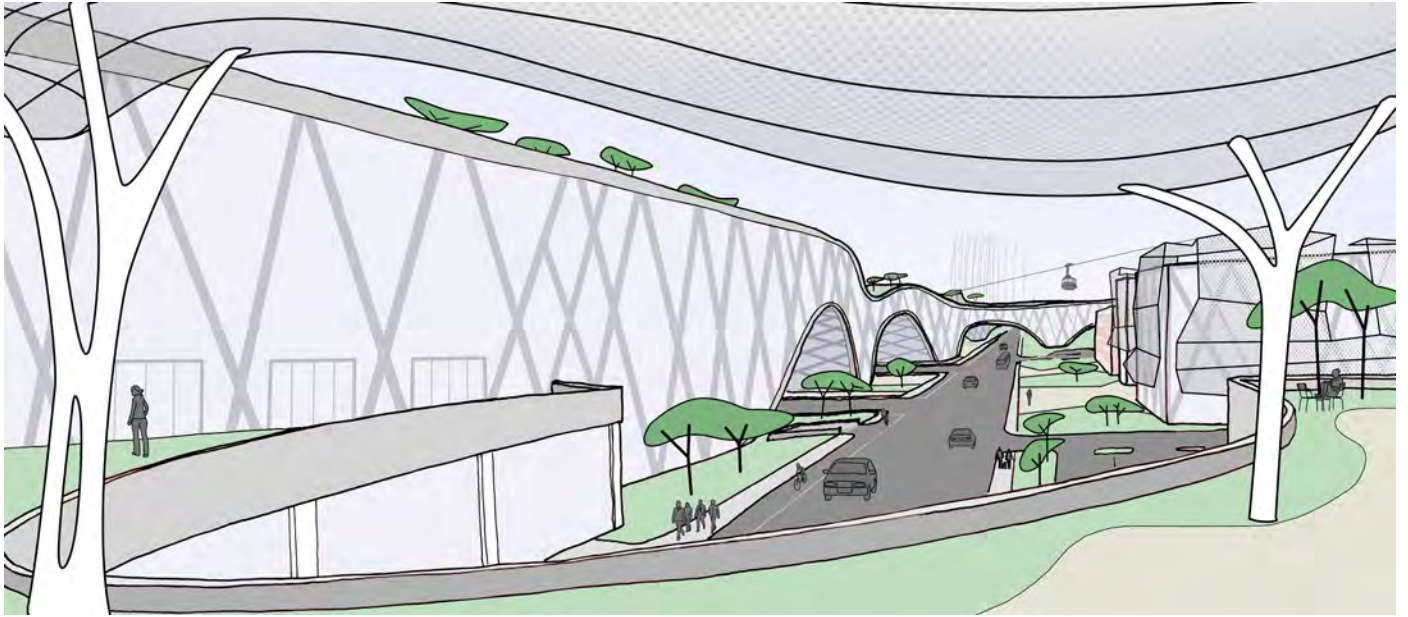
The R&D Building is a prototype for what could be built along the canal. The process of idea flow and product progression organizes the building, from think tanks down to production and testing to distribution.



This building also exemplifies a stand alone building type that is connected to the mega building rather than a space carved out inside the larger structure. It shows a way that these buildings can interact and connect even though the programs may limit the activity to not actually tasking place inside the main building.

Though it is not a space carved out of the megastructure, it is connected via park-like bridges or one floor of the megastructure extending out to penetrate the outlying building.





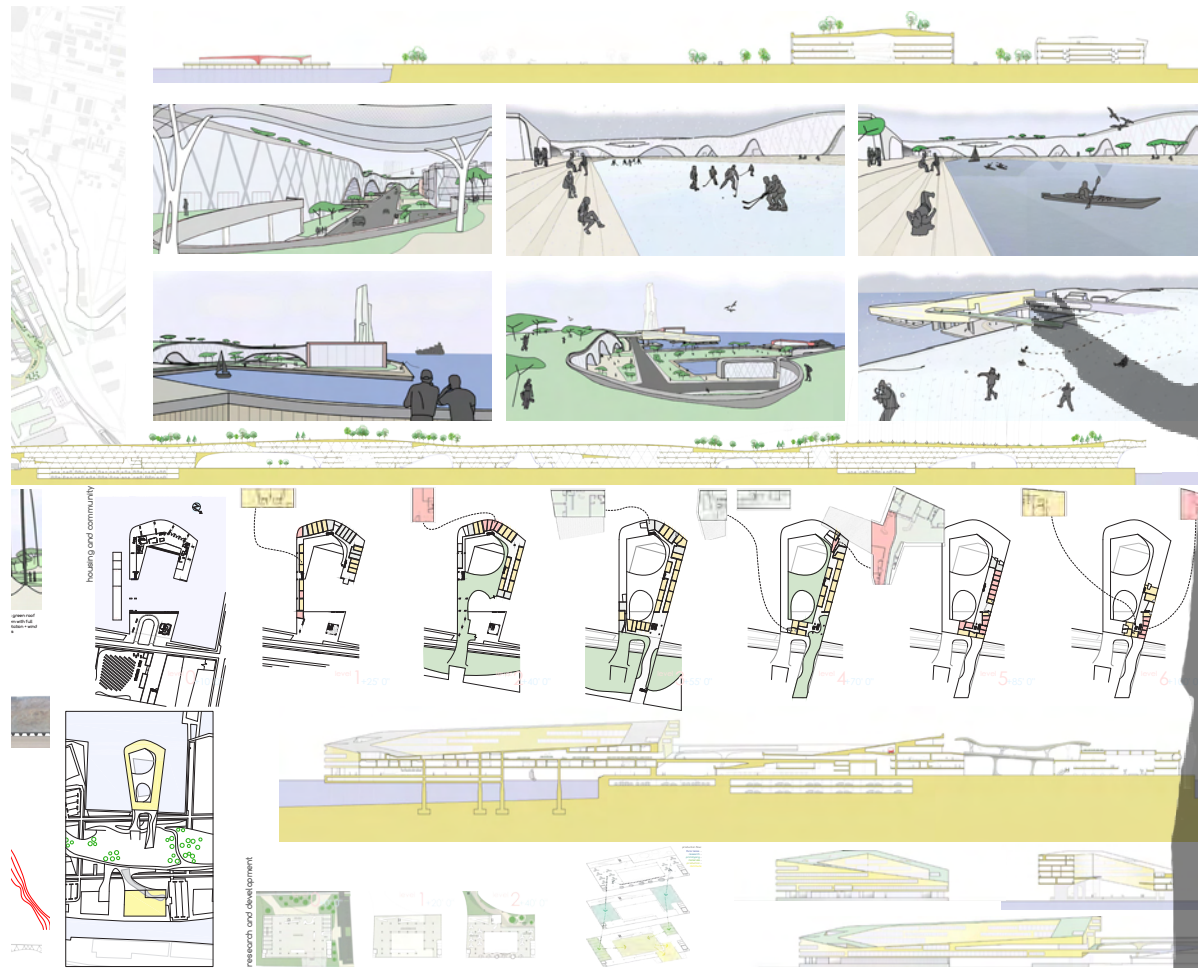
mega-structure to canal buildings relationship

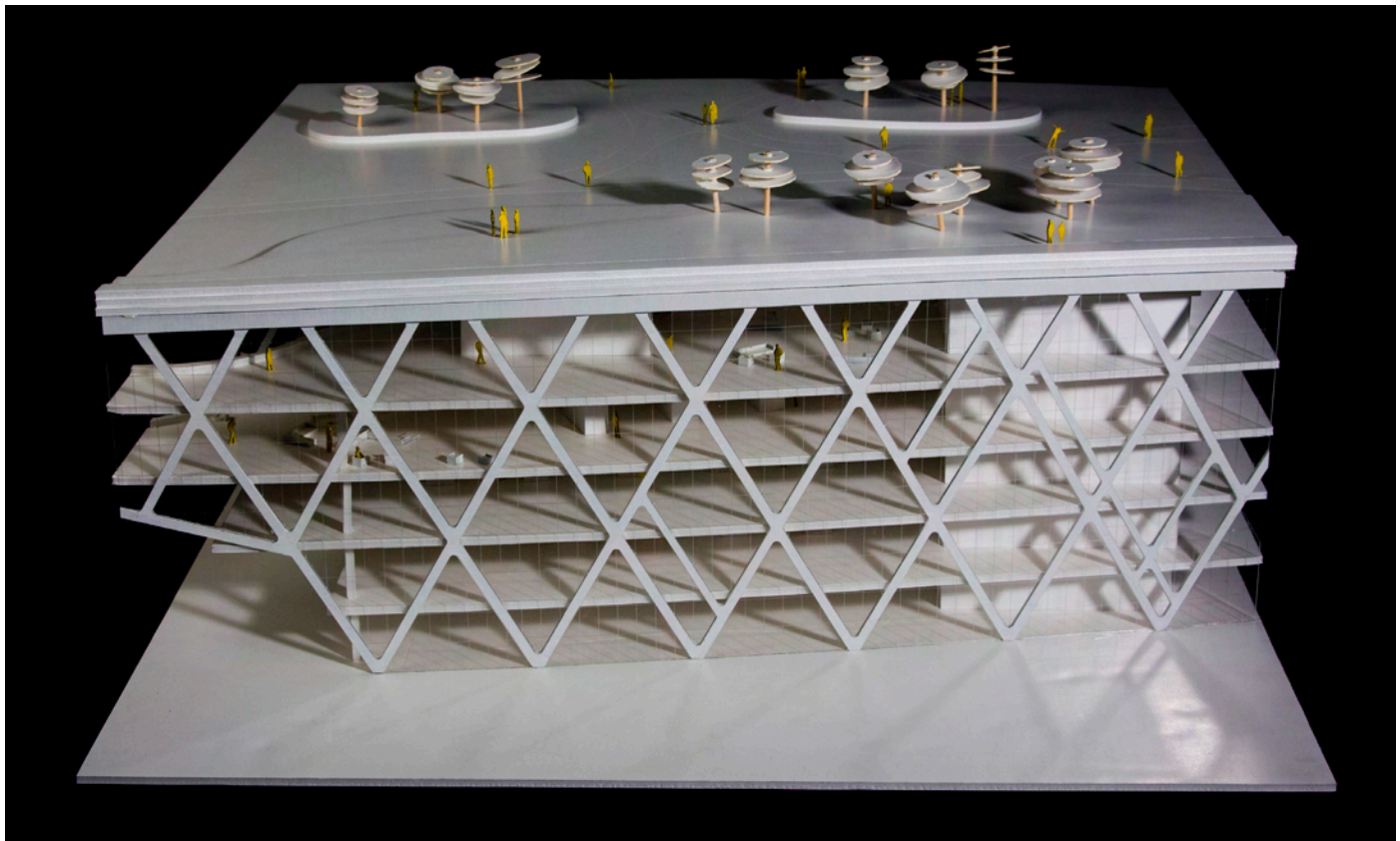
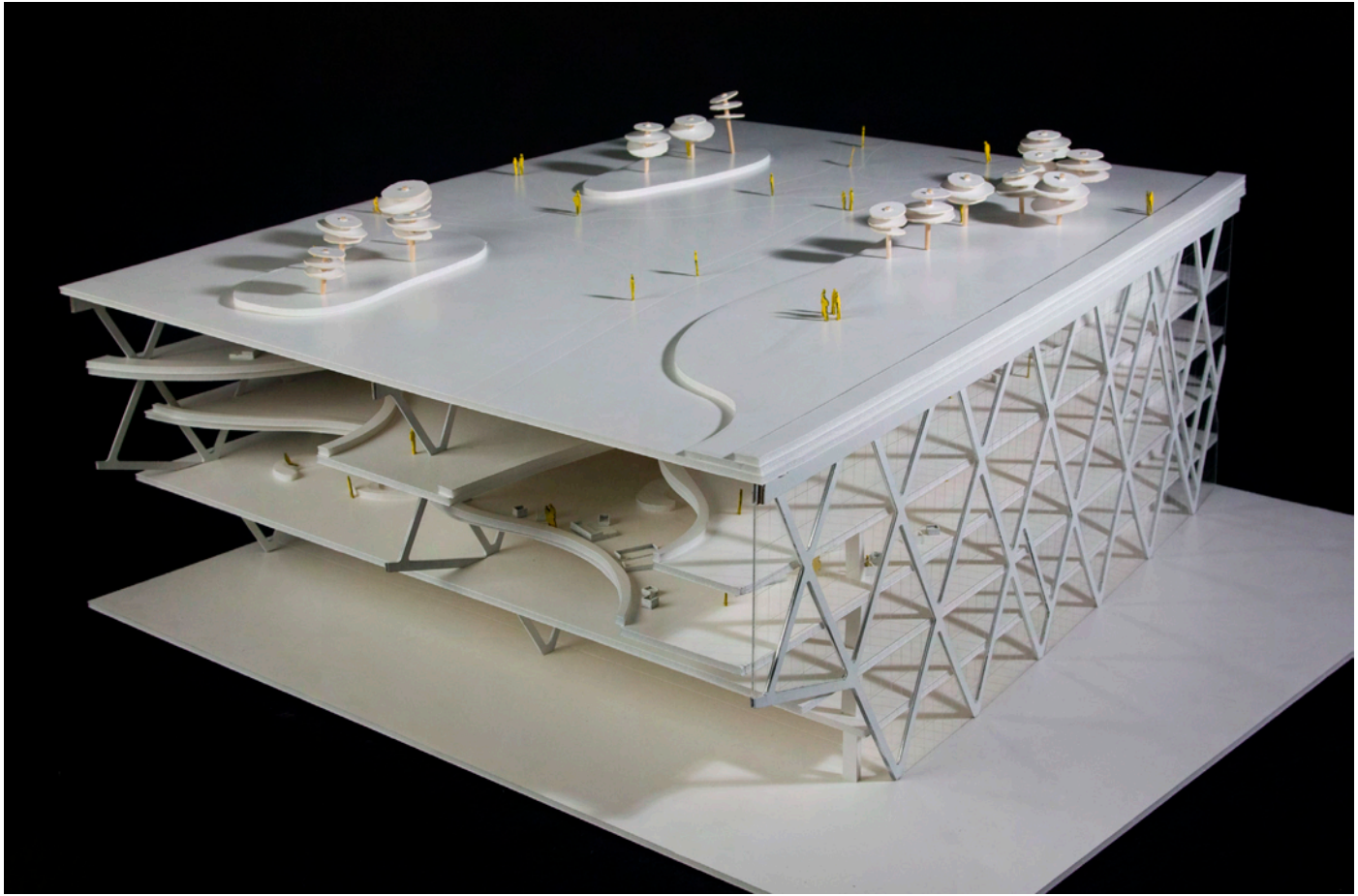


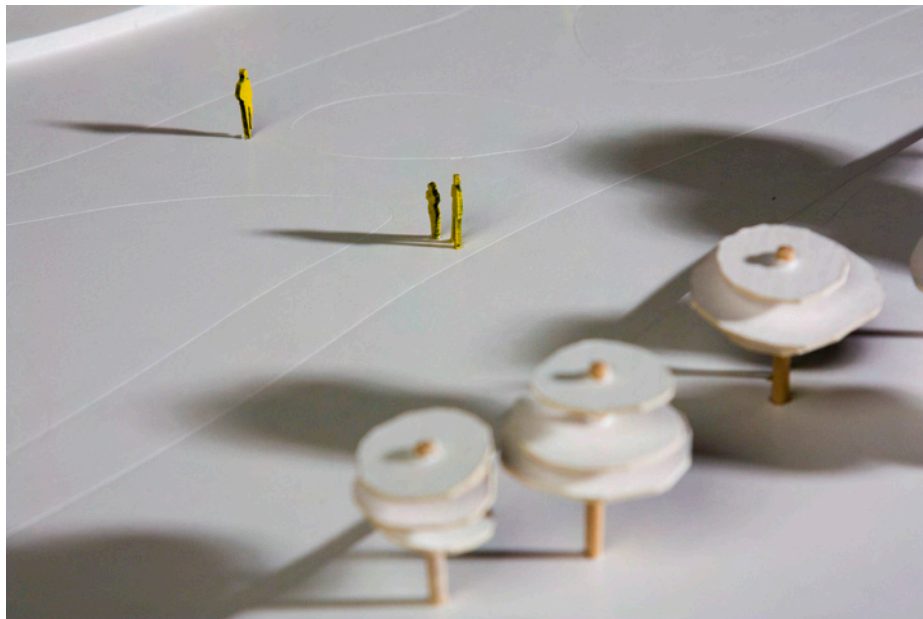
A project such as this, a fantastical study of form and program interaction and its effect on a city is one of speculation. It could be built, yes, but the goal was not to design a project that could be constructed tomorrow, but to delve into the process of combining programs that were formerly bitter enemies, to sculpt a form that would excite a city, to *facilitate arguments*. While the building and plan themselves may have flaws, I believe the goals were met. The project encouraged discussion about architecture, not just what was on the page or on the wall, but the concepts and the ideas. Because of this, the exploration was successful.

final review, december 11







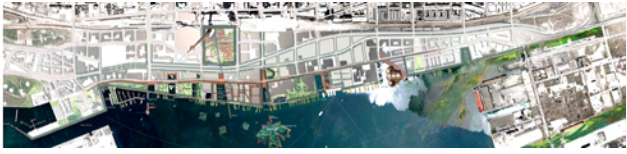












West 8 + Du Toit Allsopp Hillier:
Toronto Central Waterfront Master Plan Proposal



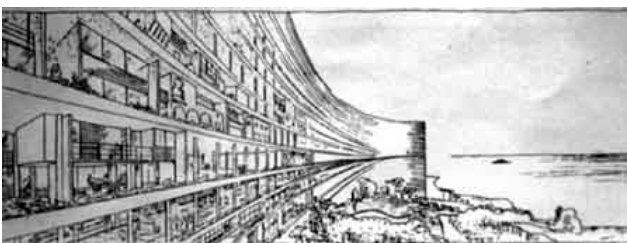
Un Studio: Ponte Parodi



Eisenman Architects:
Cidade da Cultura de Galicia

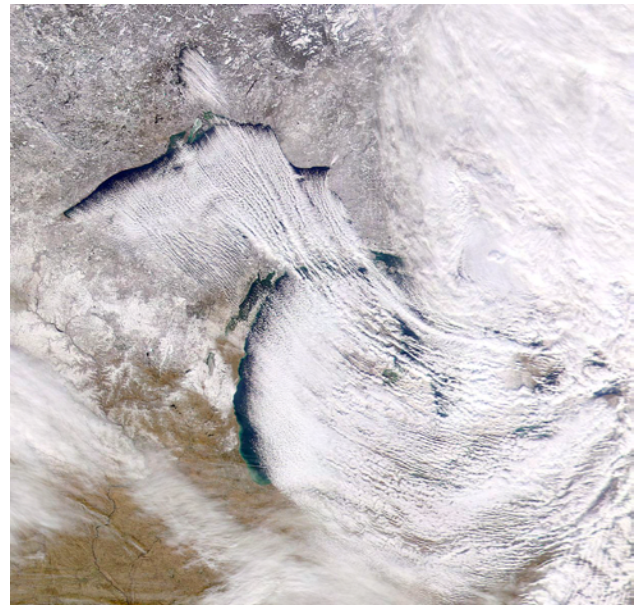


City of Curitiba, Brazil



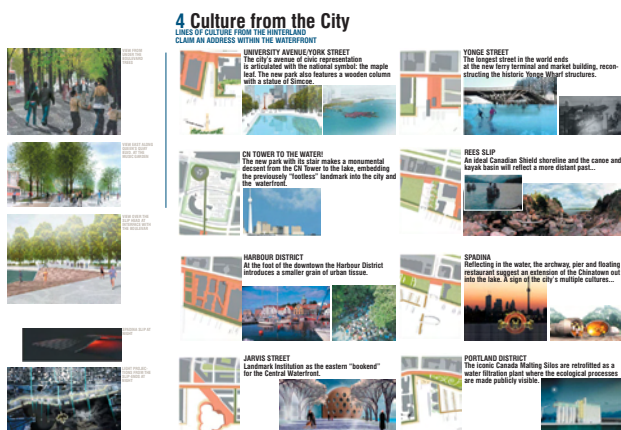
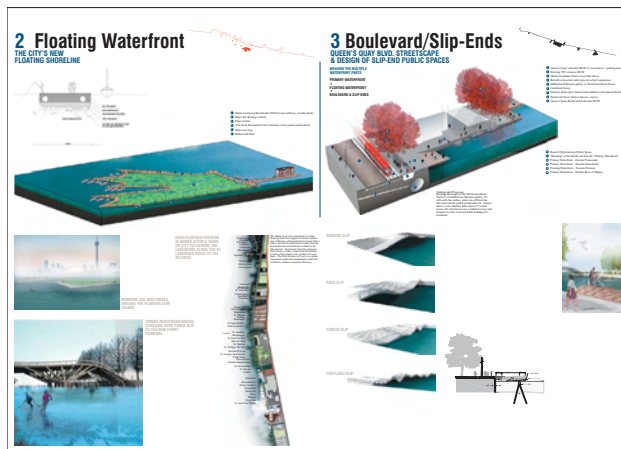
Le Corbusier: Algiers Proposal

Toronto is a similar climate and geographical location to Buffalo, encountering several of the same stereotypes when it comes to outdoor living. Both do have long winter months, with Lake Effect weather, which in the winter can be harsh, but in the summer create a cooling breeze that makes the heat more bearable. The long winters have made the people of both cities appreciate the summers more so, and use outdoor spaces in the winter more than the typical city. Both cities are known for winter recreation; backyard hockey rinks, town sledding hills. The identity of both cities are in the pride the people have for their northern region. Their ability to not only live in, but thrive in the cold weather create very tight communities of people who would not consider living anywhere else.



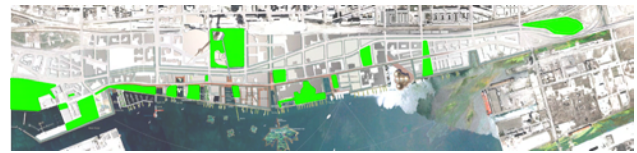
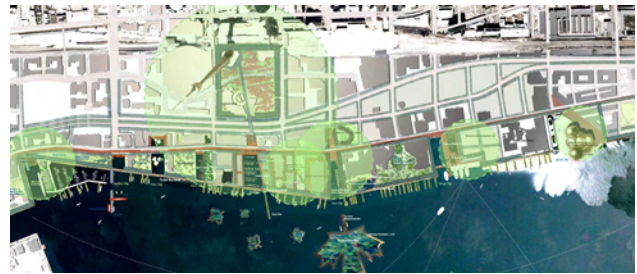
a competition won in June of 2006,
with the aim of revitalizing the urban
waterfront of toronto, canada
encompassing a 3 km stretch of waterfront due
south of central toronto

1. canadian identity
2. connectivity along the water and to the city
3. sustainability



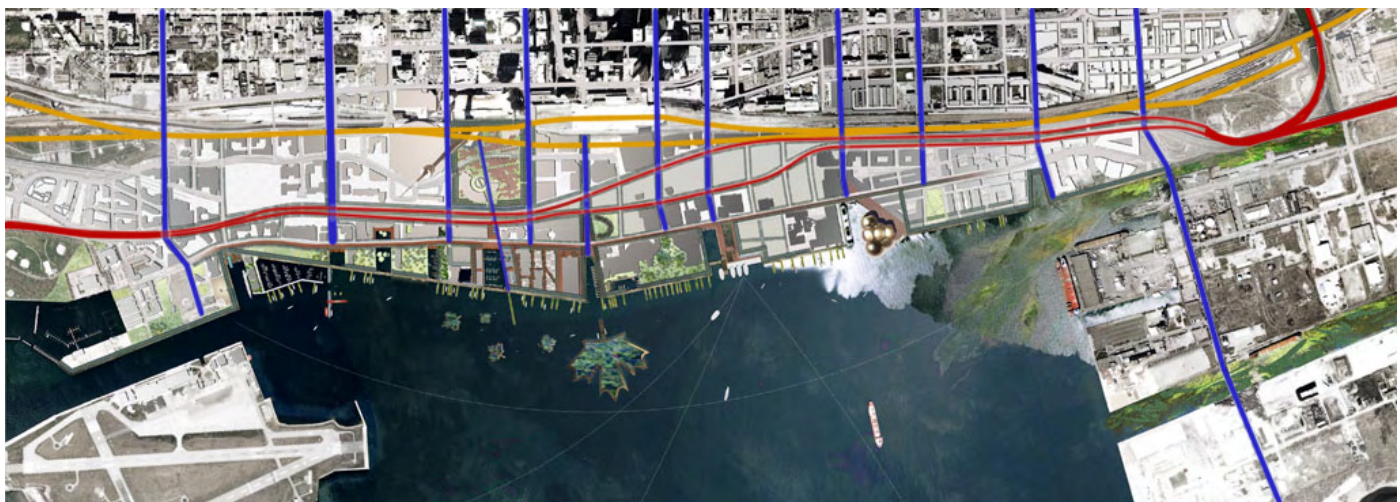
connectivity:

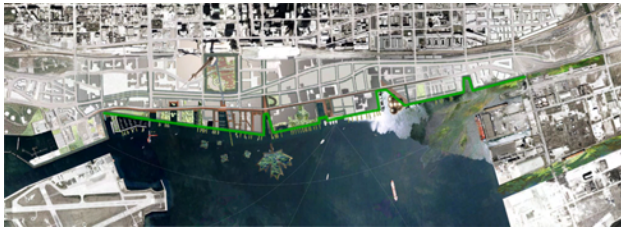
a central issue of this proposal is reconnecting the waterfront to the city center. Much like Buffalo Outer Harbor, the Toronto waterfront is cut off from the city by a highway. West 8 and DTAH solve this issue by transforming the highway into a divided boulevard. The result of this is slowing down traffic through the city, and creating more paths bridging the divide. The extension of the city all the way to the waterfront will also extend the economic sector, the offices, the commercial retail, the restaurants, all providing a boost for the city.



"the 642 million invested to date in the waterfront renewal has generated \$1.6 billion in gross output for the Canadian economy and approximately 8400 full time years of employment, 70 per cent of which were in the Toronto region."

- Toronto Waterfront economic report 2009

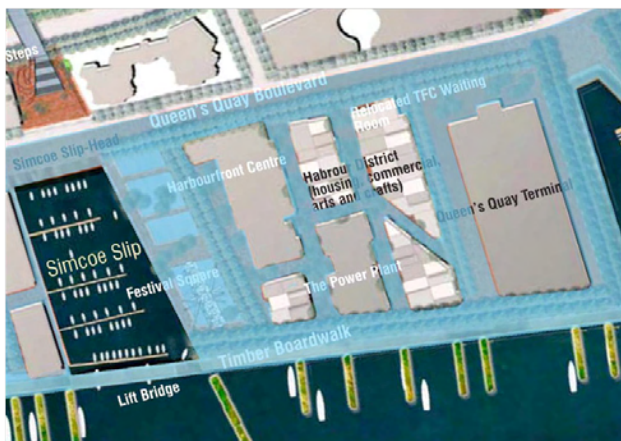




At a more pedestrian scale, connectivity was an issue along the water, with the existing docks. The individual slips inset into the coast divided the boardwalk into a series of short lengths, so the proposal connects them all into one long stretch, with new finger slips, allowing people to walk from one end of the coast to the other on the boulevard or directly over the water.



the proposal is comprised of pockets of dense development in walkable neighborhood style, and parks spaces. The dense mixed-use developments allow for people to walk along the water to small village like nodes rather than driving to each and every destination. This entire concept results in the utilization of the entire waterfront, moving people through the entire project.

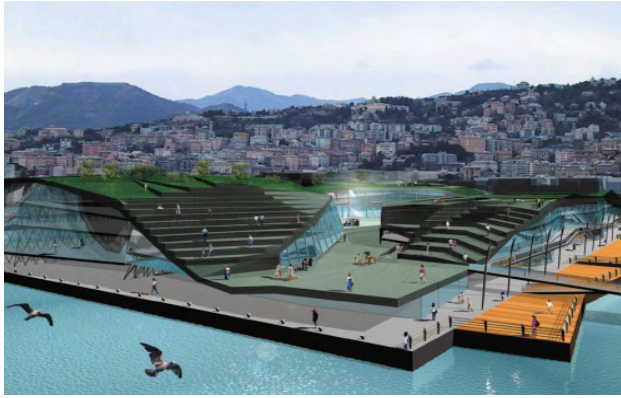


The mix of uses across the entire site is an interesting move as well. A combination of commercial and private, open park space and industrial buildings, and boat slips along the entire length create a variety of programs that will activate the space at all times.

Genoa, Italy

The city of Genoa faces a similar issue in disconnect between industrial and the rest of the city as Buffalo and Toronto, but in a less physical manner. The roads between the coast and the hillside city are not as dividing, raised up and allowing extremely easy access to the water. The divide exists in the social ideas of industrial work versus “civilized” city life. The port waterfront is viewed by the fashionable and cultured residents as a lower class working area. Renzo Piano’s project on the eastern side of the port has begun bridging the gap, creating a public space with an ice skating rink, public docks, and market space to bring people to the water. The port will always be a port, but showing the people of Genoa that it is truly part of the city was the goal of the competition to redesign a central pier of the waterfront.





UN Studio: Ponte Parodi

Genoa, Italy

2001 - 2011

"The Ponte Parodi project establishes a new city attractor based on the proliferation of experience. A three dimensional piazza located on the waterfront combines a variety of programs including a cruise terminal, wellness, cultural and leisure program, all of which bring liveliness to the old harbor. With its low-slung, undulating outlines the piazza provides a park with sport fields, beaches and other public functions while emphasizing the view of Genoa and its Alpine setting."

- UN Studio (<http://www.unstudio.com/nl/unstudio/projects/ponte-parodi>)



Program includes a cruise terminal, a "3D Plaza," a wellness center, exhibitions, cinemas, offices, an auditorium, and retail.

This project serves as not only a precedent for waterfront mixed-use development, but an inspiration in form and site attitude. The 3d plaza is formed by the ground raising up to form the walls and roof of the buildings, as well as create open park space. The entire project is multiple programs, but could potentially be one building. It takes several very different uses and ties them together through a flowing green system.



Eisenman Architects

Cidade da Cultura de Galicia

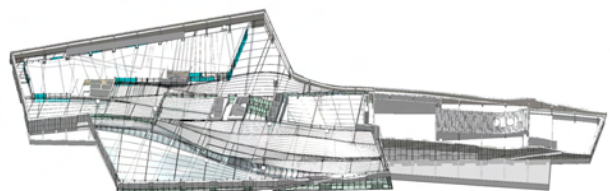
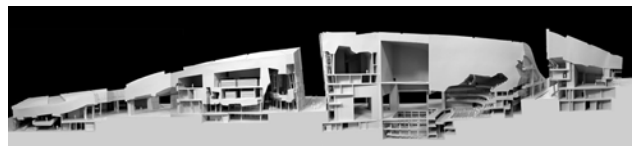
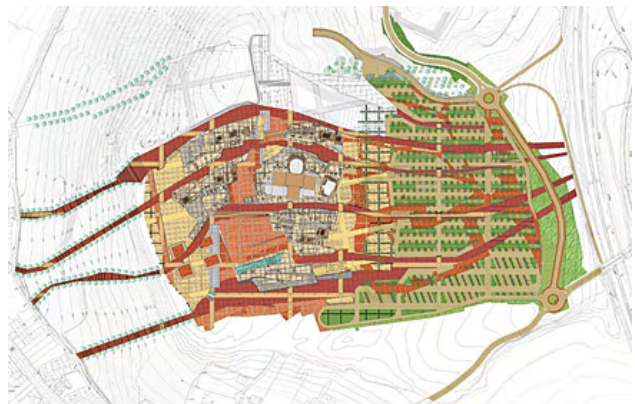
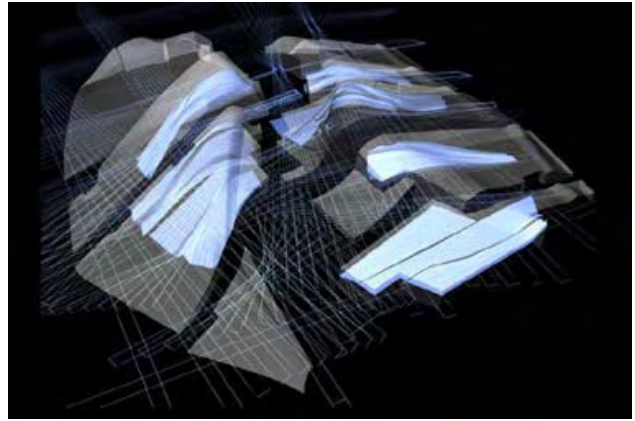
[City of Culture of Galicia]

Santiago de Compostela, Spain

1999 - Under Construction (2011 anticipated completion date)

1,526,322 total square feet

Santiago de Compostela is home to one of the most famous and most visited pilgrimage cathedrals in all of Spain. The city is an interesting mix of medieval layout and an attempt to move into a modern technological society. The City of Culture, located on a hill overlooking the city center, will house the Museum of Galician History, a New Technologies center, the Galician Library and Periodicals Archive, a Central Service Building, and a Music Theatre. More importantly, the form is complex, but the inspiration is simple. The street plan of the original medieval city is laid over the topography of the site. On top of that is laid a Cartesian grid. The combination of these three pieces is manifested through 3D modeling, with volumes formed by the intensity of interaction between the maps. The overall form is one of spectacular continuous hillside sliced by public open spaces. This huge 1.5 million square foot project is one structure, six buildings united by an encompassing form.

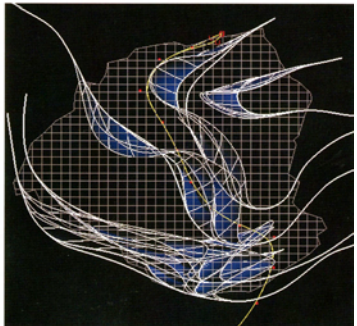
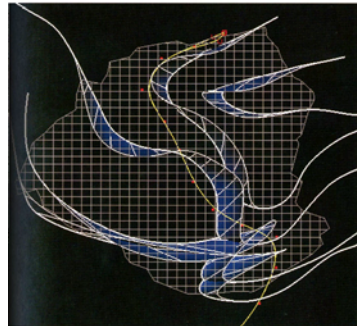
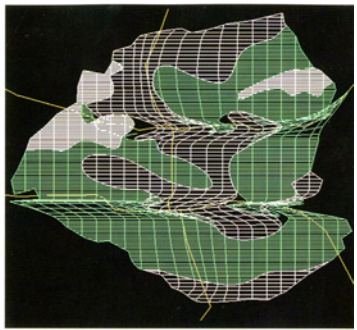
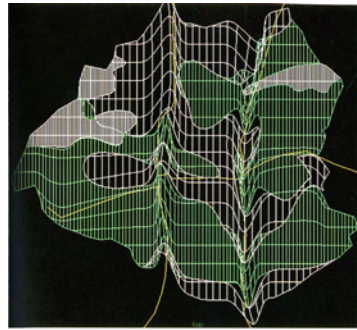
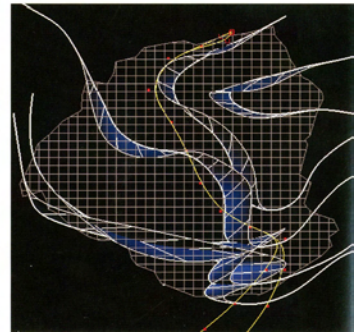
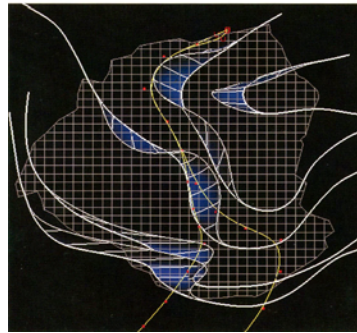
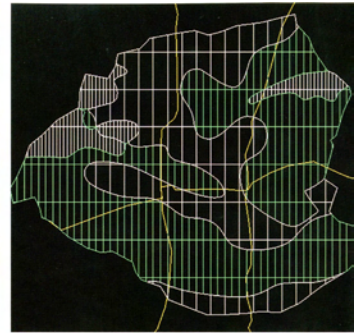
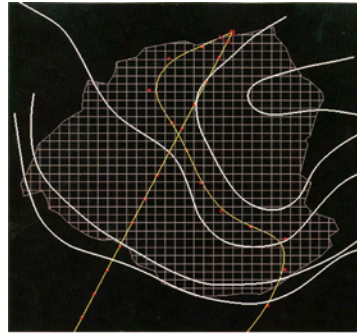
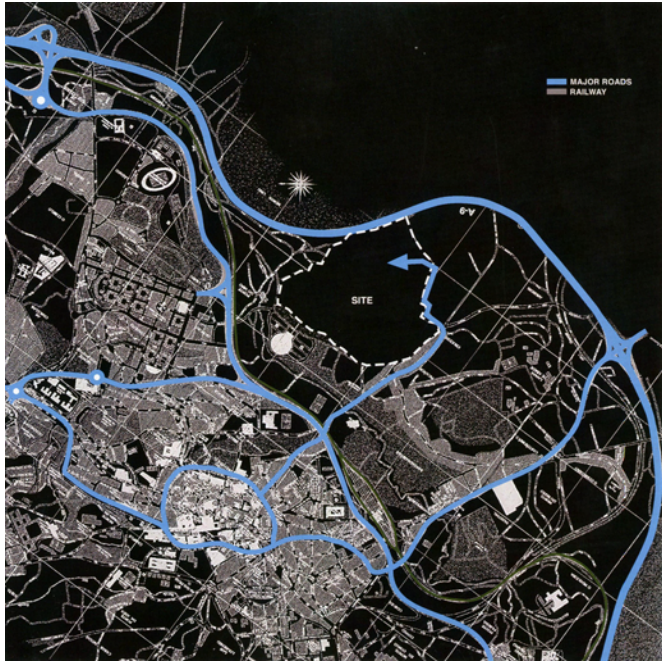




one would assume that the volumes of the buildings and the heights the slopes rise to would correspond to the needs of the spaces within. The interior, however, is shaped in an entirely different manner than the exterior slopes would suggest. A drop ceiling hangs from the roof to divide the large interior volumes further, into circulation, gathering spaces, etc. In a building with such dynamic exterior forms, I feel those slopes should be reflective of the interior volumes more so than of the code than devised them.

This all encompassing form is something I am looking to create as well. The major difference is that Eisenman's project is strictly hill from the outside, while I am no looking to completely hide that there are in fact buildings present.





The design process for this project is intriguing, with the layers of information woven together to achieve one unified form. The medieval city extend out to this new hillside village through topography and geography. Site information completely dictates every shape in the project, making the seemingly ambiguous forms extremely site specific.



Curitiba, Brazil

largest city in southern Brazil
Pop: 1.8 Million

Curitiba is known worldwide as a the example of Urban transit design and as an ecological city. The Curitiba Master Plan, implemented in 1968, closed certain pedestrian-traffic heavy roads to cars, and created a star roadway system, with five major roads leading to a convergence at the city center. These five roads have separated opposite direction car lanes, and two dedicated bus lanes down the center. Further from the center, zoning restricts to lower density to avoid heavy traffic on smaller streets.

The busses that run down the center of these major axis are part of possibly the best city bus system in the world, the Rede Integrada de Transporte. Serving as a model for cities such as Bogota, Guatemala City, Los Angeles, Panama City, Cebu City, and a future system for cities in Afghanistan.

The color coded bus and rail system efficiently moves 85% of the Curitiba population with many specific lines:

- orange:** regional buses to and from transit hubs
- red:** above ground express busses in dedicated lanes running like trains with connected cabins
- green:** run outside the city in rings
- yellow:** conventional city street
- grey:** express busses from suburbs to downtown
- blue:** run between medical centers
- white:** tourist sightseeing busses

The transit system in Buffalo is pretty good, just under used. A free street level light rail line runs down the main center of Buffalo, then goes underground further out, at which point you have to pay. A bus system connects all the regions around the city back to the center, with dedicated university lines. The RIT in Curitiba may be so well used because of the efficiency. More busses go to fewer stops each, so commutes are quicker, with less stop and go, on and off, as well as the specific site busses that only go between specific destinations.





Known as "The Ecological City," Curitiba makes a point of emphasizing recycling and re-use. Cambio Lixio, a merit system, is in place to reward people for recycling with bus tickets or food, and 70% of the city's garbage is recycled. (ICLEI) Re-use is a concept underlying much of what the city does. Old busses are converted into mobile offices, work spaces, or transport vehicles for city equipment like playground parts. Land near flood areas is converted to park space and those living there can move to new low-income housing villages in safer areas. Underutilized or unkempt sites are re-used for parks and recreation. The grass in the parks is nearly all maintained by a shepherd and his grazing "municipal sheep."



Through all this a city-wide community is created bordering on socialism, where the betterment of the city makes life better for everyone.

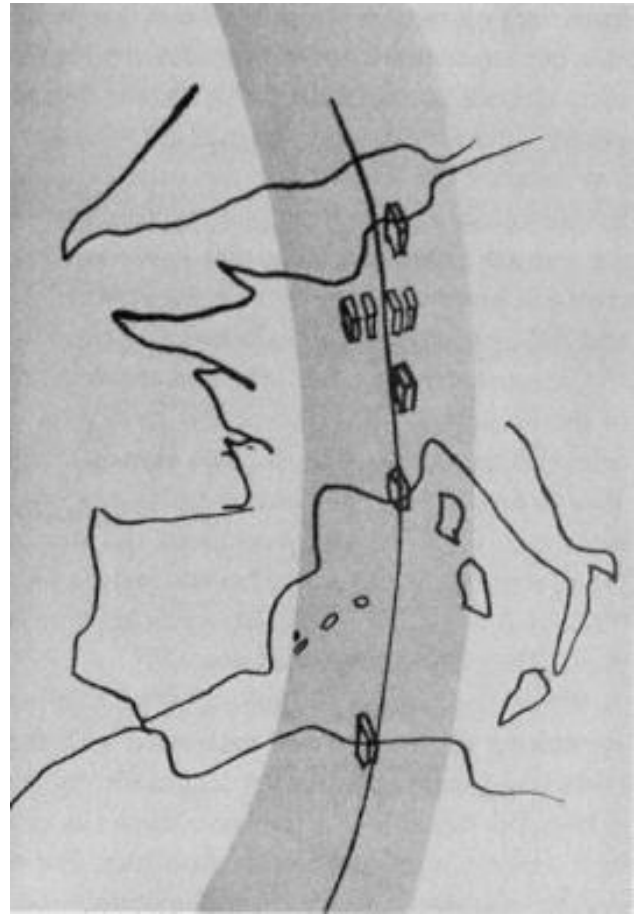


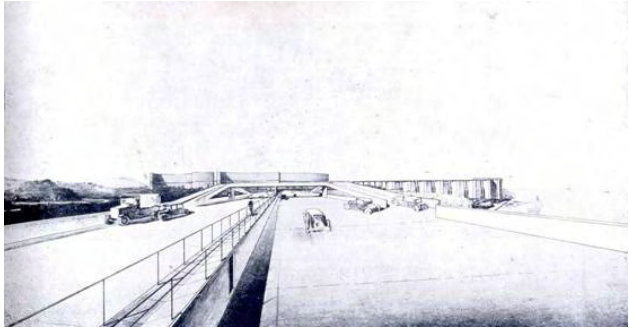
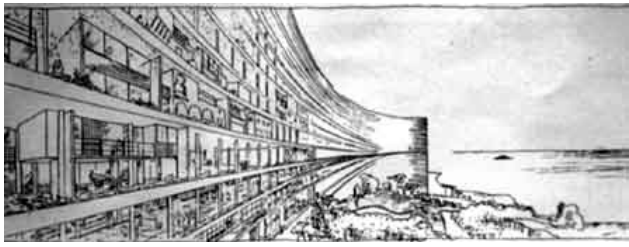
Le Corbusier
Algiers Proposal, Algeria
1930's

Corbusier's proposal for this then-French colony was in response to a master plan unveiled for the city that he thought to be less than perfect. It did not reflect the new technological age the world was entering, so he spent 11 years developing his Plan Obus for Algiers.

His plan to make Algiers a new world city was in line with France's wish to spread their influence into Africa, almost a manifest destiny of sorts. Corb designed a modern structure, a meandering building with a level roof that would act as a highway through the city. Much of the city's population would live in this long linear building under that highway.

Corbusier devised a plan to be idealized dwelling, a combination of the mythic feminine and romantic landscape and modern technology in the service of the colonial needs. The plan included three key elements, a business district that resembles a walled fortress, with tall curved walls building it up the hill, a residential district, a resort like structure right on the water, connected to the center by a large bridge, and a long, possibly endless livable highway. The highway was a mixed use community development, with businesses, shopping, and plenty of housing. The top of the mammoth linear structure was a super highway connecting all the nearby cities. The concept was that it could be expanded indefinitely as more housing and infrastructure was needed.





Corbusier's plan had several issues, beginning with Corbusier's obvious favoring of the European colonists. The plan had complete disregard for Algerian social and religious traditions and there was an implied segregation of the workers and the Europeans. The scale of the project presented another problem. The monumental scale not only did not mesh with the existing fabric, it created its own fabric, ignoring and replacing the traditional city. It created an issue we are seeing again today in the Middle East, with over scaled and under populated projects. The difference is Corbusier's design was never built. The city rebuked the idea for the entire eleven years Corbusier worked on the plan and WWII and the Algerian Revolution ended France's control and influence in Algiers.



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