LAKESHORE EAST
COMMUNITY SCHOOL

Chicago, IL

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Master's Project
Illinois Institute of Technology
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An Urban School for a New Generation of Learners.

01.01 Project Abstract

The aim of this project is to redefine the urban school and create an environment where individual students can acquire the skills necessary to become life-long learners, successful members of society, good stewards of the environment and responsible members of the global community.

01.02 Case Statement

The 21st century provides a variety of challenges to the current education system of the United States and is changing the way educators approach learning. School building is on the rise and school districts are attempting to accommodate the significant population growth across the country (Bersagel et al., 2007). The school building boom provides a unique opportunity to challenge the way traditional schools are designed, thinking of them not as buildings to merely house learning, but rather as places to promote learning and interact with the users and community.

The demands of the 21st century call for highly educated people to serve in our local and global economies. Professional degrees are becoming essential for the upward mobility of our society. Old models of education have proved to be stagnating to our education system as drop-out rates and rates of students attending college have remained consistent over the last few decades (Klonsky, 2008). Increasingly there is less and less room in our workforce for uneducated, or non-degree holding workers, which poses a challenge to the education system. A paradoxical shift is needed in the education system to meet the demands of the workforce and to provide the highly educated employees it requires.

Elementary and Secondary education plays a vital role in the overall education system as students are developing at rapid rates and learning essential skills that will be used later in their lives. Promoting healthy learning habits at a young age can foster life-long learning and provide a solid basis for their success in subsequent years, not only in school but life as well.

Small schools, small learning communities or 'schools within schools' can offer an environment that will promote the skills necessary for children to be successful in the 21st century. A 1989 study by the Chicago Panel on Public School Policy and Finance shows that school size, more so than classroom size and student-teacher ratios, can positively affect the learning outcome of students citing small schools as the second most significant factor in the achievement of students, following income level (Hess and Corsino, 1989). School size is the most important factor in defeating anonymity in schools at any stage, elementary, middle or high school age students. Small Schools, more so than larger schools, can foster stronger supportive relationships between children and adults including teachers, administration and more importantly parents.

Similarly, advances in behavioral and neurosciences are challenging traditional models of learning. Lancastrian and Ford Models of learning of the 19th and 20th centuries were based on the premise that learning is linear and the primary means of instruction was seminar based, with a teacher transmitting knowledge to the student (Nair and Fielding, 2007). However, over the course of the last two decades significant advances have been made in brain-based research including, but not limited to, Howard Gardner's Multiple Intelligences Theory (Gardner, 1983). Brain-based research has challenged the linear learning notion to understanding that people learn at varying degrees learning from different people in different ways at different times (Nair and Fielding, 2007).

Gardner's Multiple Intelligence theory takes this notion even farther by suggesting that there are different 'intelligences' that everyone posses, yet some people are stronger in a few than others. For example a student may be strongest in the Linguistic and Musical Intelligences while another student may be stronger in Logical/ Mathematical Intelligences than others (Gardner, 1983). Brain-based research provides a unique set of challenges to the education system as multiple methods of instruction are being developed to provide optimal learning opportunities to students. Providing different methods of learning to students can create an environment that supports different learning styles of each student while still providing a challenging environment.

The built environment of the school must support these different learning models and provide spaces where students of all ages and stages of development can be successful. Creating an environment where all students can be successful and where different models of learning can be applied is, in essence, creating a sustainable school. The term 'sustainability' is often connected to energy efficiency in architecture. However, sustainability can be applied to a variety of concepts in architectural design. Creating a learning environment that can sustain multiple modes of learning and that can be adaptable to future educational models ensures that the school will have a lasting presence in the community and will retain its importance as a place of learning for future generations. Using daylighting in classrooms is a sustainable strategy to reduce lighting loads in schools and aids in achieving greater energy efficiency and lower cooling loads. However, daylighting has also been shown to improve academic performance and overall well-being in students, providing society with better equipped learners. Incorporating outdoor spaces within the school not only allows the students access to the exterior, but can be used as a tool to teach environmental stewardship to the students. Sustainability will be a central concept to the school as a primary goal will be creating an environment that will be able to serve future generations and create good environmental stewards from all the students.

01.03 Project Development

To Develop my Project I will use the following methods:

1. Chicago Zoning and Building Codes:
   I will conduct an analysis of local zoning and code information to determine permitted uses, municipal requirements and life safety requirements.

2. Qualitative and Quantitative Research Methods:
   Using resources to understand the physical parameters of programmatic spaces and develop a clear qualitative description of the space.

3. Precedent Studies:
   Conduct case studies on educational buildings throughout the country to critically analyze what has been done.

4. Educational Paradigms and Brain-based Research:
   To research and analyze recent movements in educational teaching philosophy and brain-based research to aid in the overall concept and design of the school.

5. Site Analysis:
   To study and explore multiple factions of the site including the Lakeshore East Master Plan, local amenities, available transportation options, demographics and climate.

01.04 Project Goals

The goal of this project is to develop an educational facility that will create a successful learning environment for all its students, that will engage its context and maintain relevance for future generations.

01.05 Project Guiding Principles

• Active Learning:
   The school will provide a high quality learning environment, supportive of a variety of learning models, that will engage its students in the learning process through a hands-on learning approach.

• Personalization:
   The design will foster an environment where strong relationships between students and adults can be formed and sustained. An environment where all students have the opportunity to be known, challenged academically and held accountable for the success of one another.

• Community Connections:
   The design will provide opportunities to connect the school to the community while additionally preparing students to become successful members of society. The design will provide a welcoming environment for the engagement and involvement of the community, as well as utilizing local features and adjoining amenities.

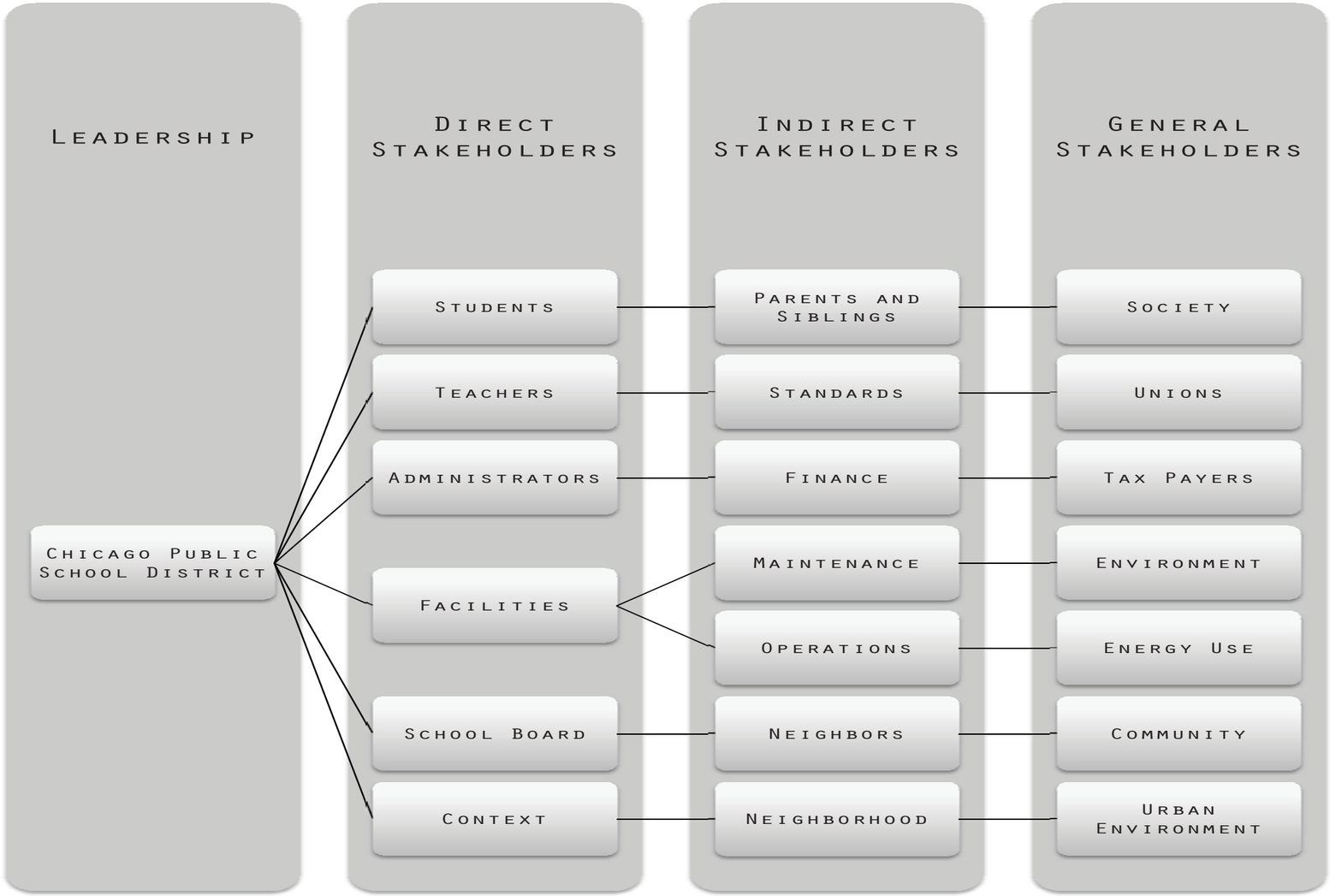
• Environmental Responsibility:
   The design will embody the importance of environmental stewardship and create a sustaining element within the city.

01.06 Project Development

Stakeholders are key to the success of any project. Some of the methods that could be used to engage stakeholders in this process are as follows:

- Community Meetings:
  Public meetings are the most efficient way of getting indirect and general stakeholders involved in a public project. Community involvement can aid in establishing an identity and a feeling of ownership over the project, making it an essential part of the community.

- Focus Groups:
  Focus groups are typically comprised of the direct stakeholders of the project. All of the direct stakeholders listed in the graph are essential to the operations of the building thus making their input fundamental to the success of the facility.



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02.01 PROGRAM SUMMARY

02.02	LEARNING COMMUNITY A	Total	12400
02.03	LEARNING COMMUNITY B	Total	12400
02.04	SHARED SPACES		
	02.04.1 Melody Lab		1760
	02.04.2 Multi-Media Area		2100
	02.04.3 The Commons		3490
	02.04.4 Gymnasium		12600
	02.04.5 Multi-Purpose Spaces		5800
	02.04.6 Central Administration		900
	02.04.7 Student Support		690
	02.04.8 Building Support		2650
		Total	29990
02.05	EXTERIOR PROGRAM		
	02.05.1 Exterior Learning Terraces		2800
	02.05.2 Circulation		10800
		Total	13600
		Total Net Interior Space (sf)	68390
		Gross Building Area (sf)	88907
		Total Net Exterior Program	13600
		Total Program Area	102507

02.02 LEARNING COMMUNITY A

02.02	LEARNING COMMUNITY A K-6TH	Qty	# Students	Total Students	SF/Person	# Staff	SF/Room
02.02.1	Learning Studio	8	30	240	35	8	1050
	02.02.1.1 Breakout Area	1					100
	Total			240		8	9200
02.02.2	Collaboration Area	1	120	120	15		1800
	Total						1800
02.02.3	Teacher's Retreat	2			50	8	400
	Total						400
02.02.4	Restrooms						
	02.02.4.1 Boy's Restroom	2			250		500
	02.02.4.2 Girl's Restroom	2			250		500
	Total						1000

	Students	Staff	Sq. Ft.
Learning Community "A" Total	240	8	12400

02.03 LEARNING COMMUNITY B

02.03	LEARNING COMMUNITY B 7TH-12TH	Qty	# Students	Total Students	SF/Person	# Staff	SF/Room
02.03.1	Learning Studio	8	30	240	35	8	1050
	02.03.1.1 Breakout Area	1					100
	Total			240		8	9200
02.03.2	Collaboration Area	1	120	120	15		1800
	Total						1800
02.03.3	Teacher's Retreat	2			50	8	400
	Total						400
02.03.4	Restrooms						
	02.03.4.1 Boy's Restroom	2			250		500
	02.03.4.2 Girl's Restroom	2			250		500
	Total						1000

	Students	Staff	Sq. Ft.
Learning Community "B" Total	240	8	12400

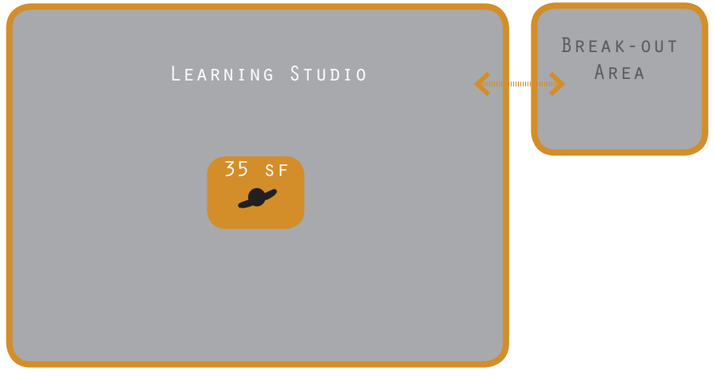
02.03.1 Learning Studio

Number of Students:	30
Sq Ft Per Student:	35 sf [a]
Total Sq Ft:	1050 sf

02.03.1.1	Break-out Area	100 sf
	Total Sq Ft:	1150 sf

Description:

The Learning Studios is the heart of each of the small learning communities. The studios will provide an environment that will support multiple models of learning such as traditional methods of instruction, differentiated instruction, cooperative learning and the flexibility to adapt to future models of learning. Each of the studios will include a breakout area that will support small and large group work including student to student and student to teacher interaction. Natural lighting will be an important design consideration in every studio as natural lighting has been shown to improve academic achievement levels amongst students. Each studio will open onto the central collaboration space which will promote multiple age group and inter-class collaboration.



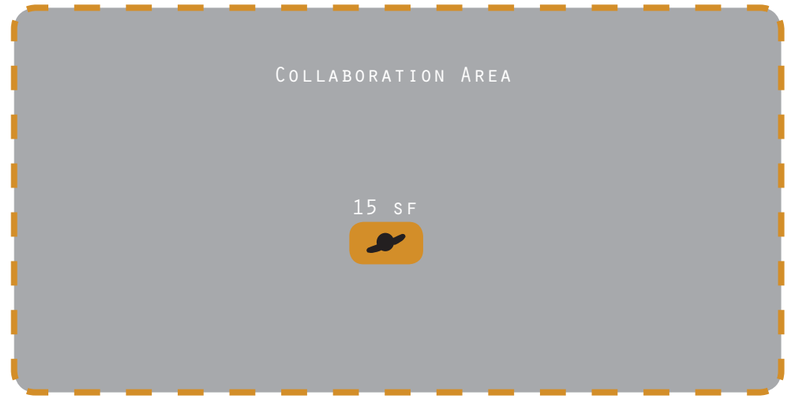
(a) - From Chicago Public Schools

02.03.2 Collaboration Area

Number of Students:	120
Sq Ft Per Student:	15 sf [a]
Total Sq Ft:	1800 sf

Description:

The Collaboration area is the center of each learning community. This area will provide an environment that will promote inter-class collaboration. Research indicates that students who are able to interact with children of different ages and development stages can enhance academic achievement through peer group learning. Additionally the collaboration area provides a place outside the studios where learning can take place promoting the idea that learning can occur throughout the school and not just in designated rooms. A variety of spaces will be incorporated into the area to promote collaboration including group computer work stations, group seating areas, space for large group interaction and individual contemplation. Each collaboration area will be adjacent to both the Creativity Labs as well as the exterior learning center promoting a greater connection between indoor/outdoor spaces.



02.03.3 TEACHER'S RETREAT

Total Sq Ft: 400 sf*

DESCRIPTION:

The Teacher's Retreat offers a place within each learning community to support the needs of the teachers. The space will provide storage for teacher materials and personal belongings. The room will also feature a small work station, copiers and will serve as a break area for teachers. The retreat will also function as an area for teacher collaboration to take place through the incorporation of a small meeting table. The room will include a degree of transparency that will aid in creating a greater connection between the students and teachers, as well as allowing for teacher-student supervision.

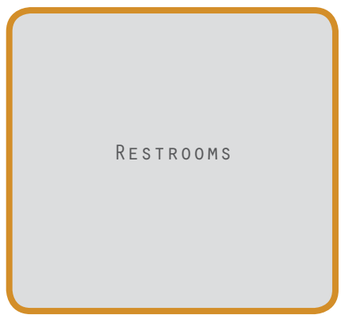
* - 50 sq. ft. provided per teacher, per floor

02.03.4 RESTROOMS

02.03.4.1	Boy's Restroom:	250 sf
02.03.4.2	Girl's Restroom:	250 sf
	Total Sq Ft:	500 sf**

DESCRIPTION:

Each Learning Community will feature its own student restroom facilities with fixtures scaled to the size of the children occupying the space. For security purposes the entrance and lavatories will remain 'open' to the corridor to allow for student supervision, yet allowing for necessary privacy needed for restroom facilities.



** - One Boys, One Girls Restroom provided per floor

02.04 Shared Spaces

02.04	Shared Spaces		Qty	# Students	Total Students	SF/Person	# Staff	SF/Room
02.04.1	Melody Lab		1	60	60	20	1	1200
	02.04.1.1	Large Practice Room	1					200
	02.04.1.2	Small Practice Room	4			40		160
	02.04.1.3	Storage Area	1					200
			Total				1	1760
02.04.2	Multi-Media Area		1	60	60	30		1800
	02.04.2.1	Media Office	1			100	1	100
	02.04.2.2	Media Storage	1					200
			Total				1	2100
02.04.3	The Commons		1	180	180	15.5		2790
	02.04.3.1	Kitchen	1			100	3	300
	02.04.3.2	Office	1			100	1	100
	02.04.3.3	Storage	1					300
			Total				4	3490
02.04.4	Gymnasium		1					8700
	02.04.4.1	Retractable Seating	1					700
	02.04.4.2	Boys Locker Room	1					1100
	02.04.4.3	Girls Locker Room	1					1100
	02.04.4.4	Offices	2			250	2	500
	02.04.4.5	MP Storage	1					500
			Total				2	12600
02.04.5	Multipurpose Spaces							
	02.04.5.1	Activity Room *	2			1100		2200
	02.04.5.2	Meeting Rooms *	2			1800		3600
			Total				0	5800
	* with the ability to be broken into smaller rooms							
02.04.6	Central Administration							
	02.04.6.1	Greeting Area						300
	02.04.6.2	Reception/Admin				200	2	400
	02.04.6.3	Meeting Room						200
			Total				2	900
02.04.7	Student Support							
	02.04.7.1	Guidance Office	2			120	2	240
	02.04.7.2	Wellness Center	1					350
	02.04.7.3	Wellness Office	1			100	1	100
			Total				3	690
02.04.8	Building Support							
	02.04.8.1	Storage/Mechanical	1					2200
	02.04.8.1	Engineer's Office	1			100	1	100
	02.04.8.1	Networking Room	1					350
			Total				1	2650
			Shared Space Totals				14	29990

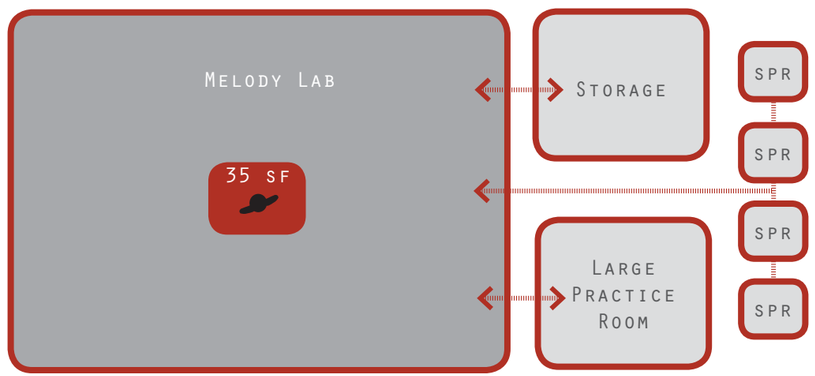
02.05	Exterior Program		Qty	SF/Space	Total
02.05.1	Exterior Learning Area		1	2800	2800
		Total			2800
02.05.2	Circulation				
	02.05.2.1	Parking	1	4000	4000
	02.05.2.2	Drop Off Area	1	1500	1500
	02.05.2.3	Exterior Waiting Area	1	1000	1000
	02.05.2.4	Loading Area	1	1500	1500
		Total			8000
		Exterior Program Totals			10800

02.04.1 Melody Lab

	Number of Students:	60
	Sq Ft per Student:	20 sf [a]
	Total Sq Ft:	1200 sf
02.04.1.1	Large Practice Room	200sf
02.04.1.2	(4) Small Practice Rooms	160sf
02.04.1.3	Storage Area	200 sf
	Total Sq Ft:	1760 sf

Description:

The Melody Lab is intended to be a space where children can experiment with their Musical Intelligences (Gardner, 1983). The melody lab is a space that will be utilized by all Learning Communities and where collaboration between the Learning Communities can occur. The Music Lab will be located adjacent to a performance area where children can exhibit their musical and other performance abilities to other members of the school and the greater community. The Lab will also feature functional storage areas for musical instruments and other storage needs for the performance area.

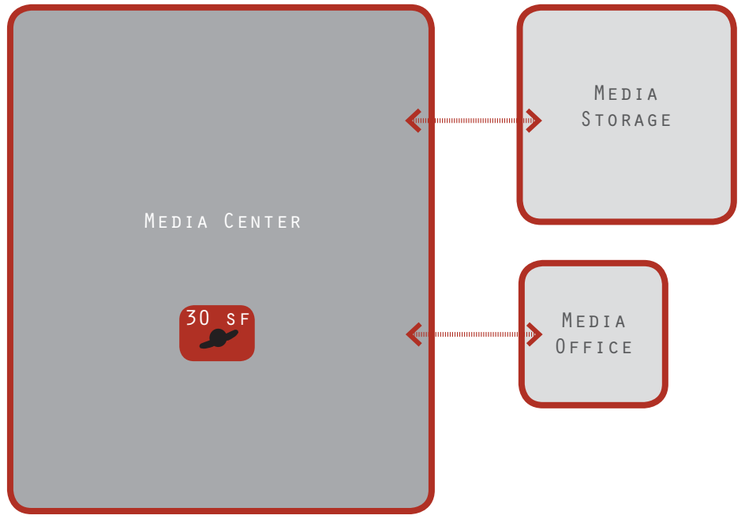


02.04.2 MULTI-MEDIA AREA

	Number of Students:	60
	Sq Ft per Student:	30 sf [a]
	Total Sq Ft:	1800 sf
02.04.2.1	Media Office:	100 sf
02.04.2.2	Media Storage	200 sf
	Total Sq Ft:	2100 sf

DESCRIPTION:

The Media Center will serve as a central component of the learning community as a place where multiple forms of media are stored and shared. Additionally the center will integrate 'cave spaces' and 'campfire spaces' (Prakash and Fielding, 2007) that will promote large group interaction and provide space for individual contemplation. The center will house book stacks and computer stations and will also include support spaces such as a librarian's office and storage room for media.

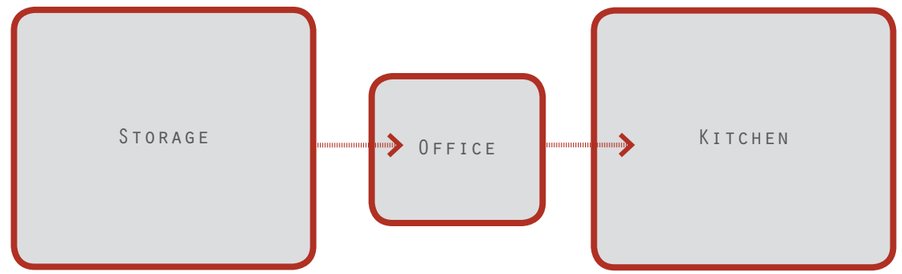


02.04.3 THE COMMONS

	Number of Students:	180
	Sq Ft per Student:	15.5 sf [a]
	Total Sq Ft:	2790 sf
02.03.2.1	Kitchen	300sf
02.03.2.2	Office	100sf
02.03.1.3	Storage Area	300 sf
	Total Sq Ft:	3490 sf

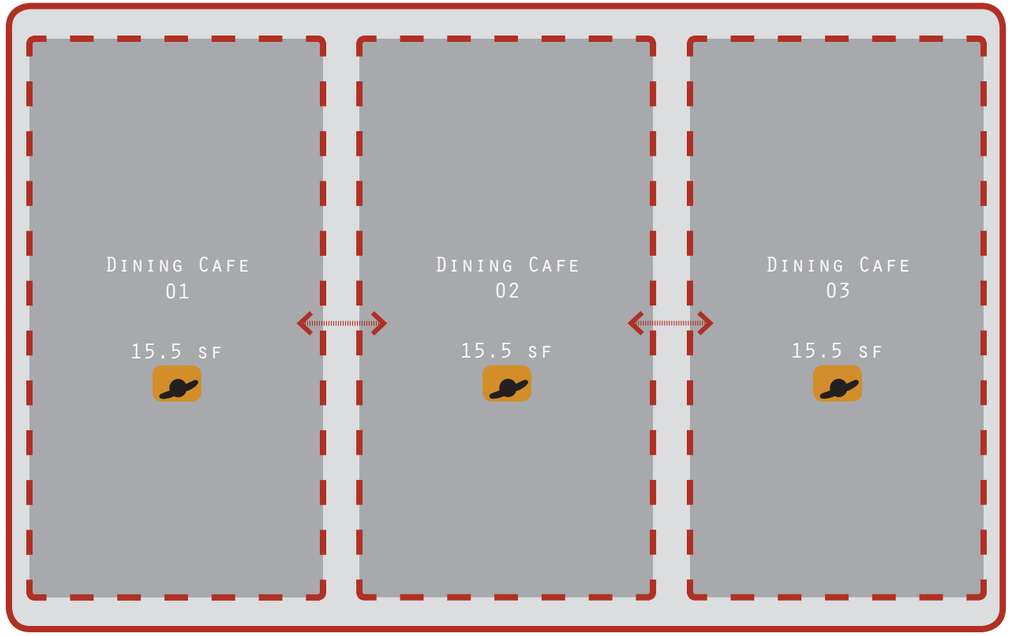
DESCRIPTION:

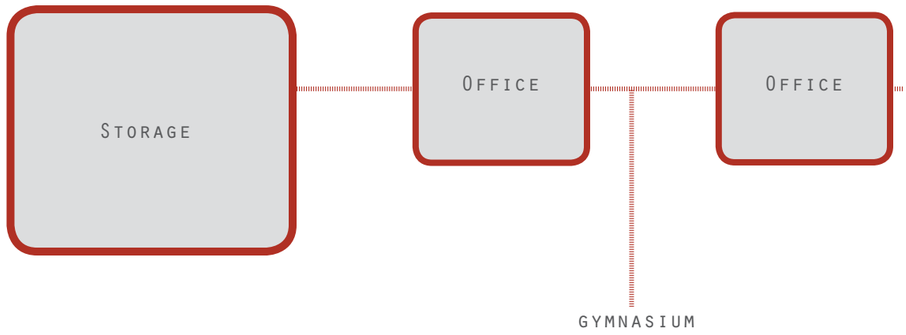
The commons will be included in the shared spaces of the school, serving all of the learning communities. The space will allow for subdivision into smaller dining café's that will support the more intimate and personalized atmosphere of the school. The dining café's are essentially a social space where children can experiment with their inter-personal skills by allowing multiple learning communities to interact. The commons will also feature movable furniture that will allow for a flexible space within the school that can accommodate performance and gathering spaces for the larger school as well as serve community functions. The commons area will be located adjacent to the performance area and support spaces such as the kitchen and storage areas.

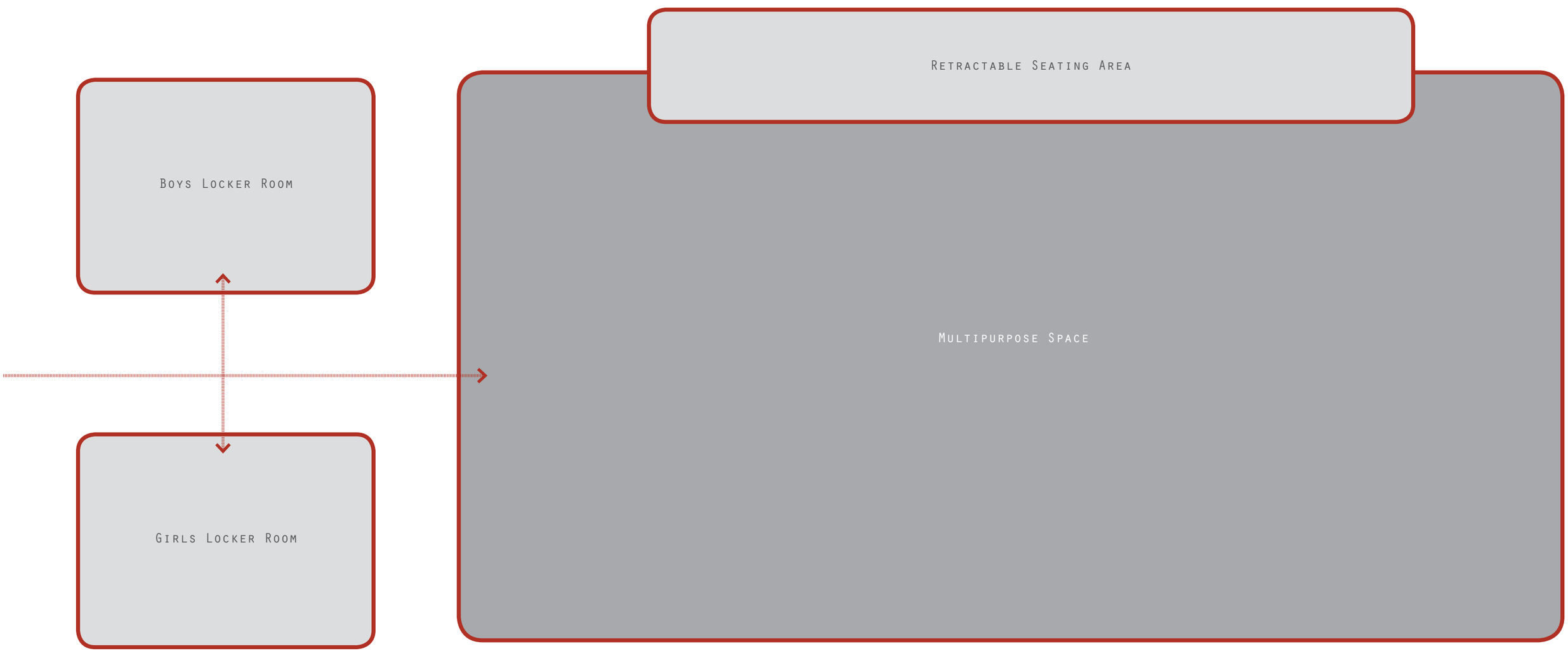


02.04.4 Gymnasium

	Total Sq Ft:	8700 sf
02.04.2.1	Retractable Seating	700sf
02.04.2.2	Boys Locker Room	1100sf
02.04.2.3	Girls Locker Room	1100sf
02.04.2.4	Offices (2)	500
02.04.2.5	Storage Area:	500 sf
	Total Sq Ft:	12600 sf



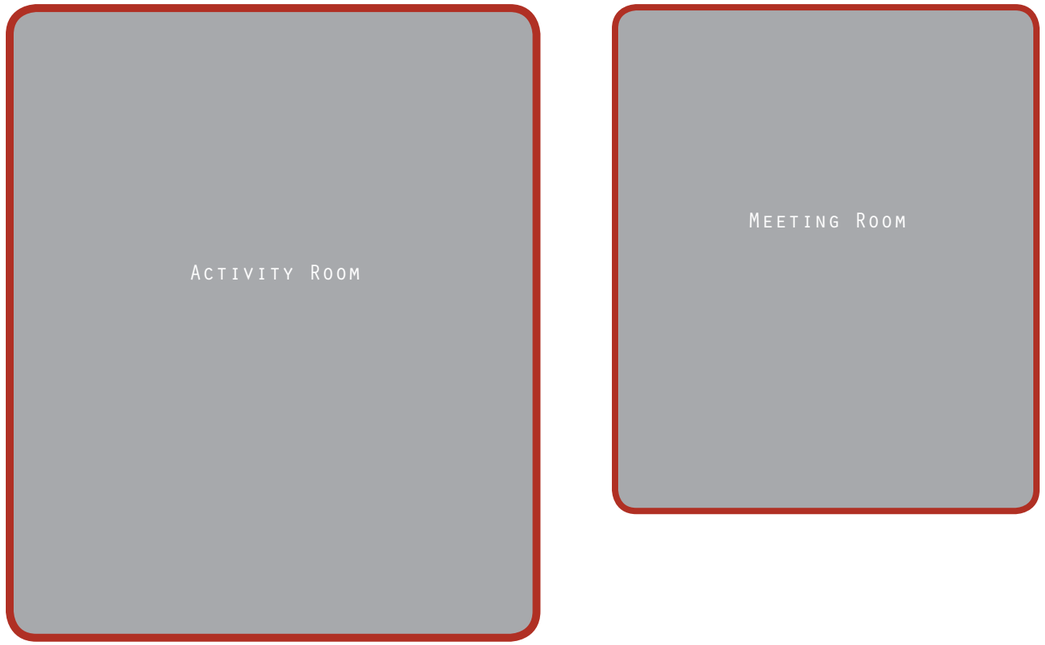



Retractable Seating Area
Boys Locker Room
Multipurpose Space
Girls Locker Room

02.04.5 Multipurpose Spaces

02.04.5.1	Activity Room:	2200 sf
02.04.5.2	Meeting Rooms (2):	3600 sf
	Total Sq Ft:	5800 sf

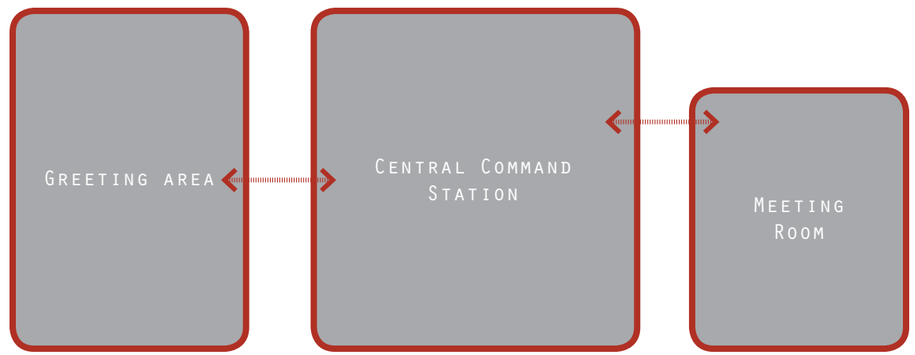
Description:
The multipurpose spaces will serve as areas that can be utilized by both the school and the Boys and Girls Clubs. They can serve as additional collaboration areas during school hours and meeting rooms at night.



02.04.6 Central Administration

02.04.6.1	Greeting Area:	300 sf
02.04.6.2	Reception/Admin:	400 sf
02.04.6.3	Meeting Room:	200 sf
	Total Sq Ft:	900 sf

Description:
The central administration and greeting area serves as the central command center for the greater school and support area for the smaller Learning Communities. The area serves as the primary entrance for visitors and functions and will incorporate a waiting, reception area, central administration and a meeting room that can additionally serve community functions. A welcoming environment will encourage parent and community involvement within the greater school while a level of transparency will allow the central command center to provide monitoring of all users of the building for security purposes. The central command center will also be located adjacent to student services such as guidance rooms and the health center.



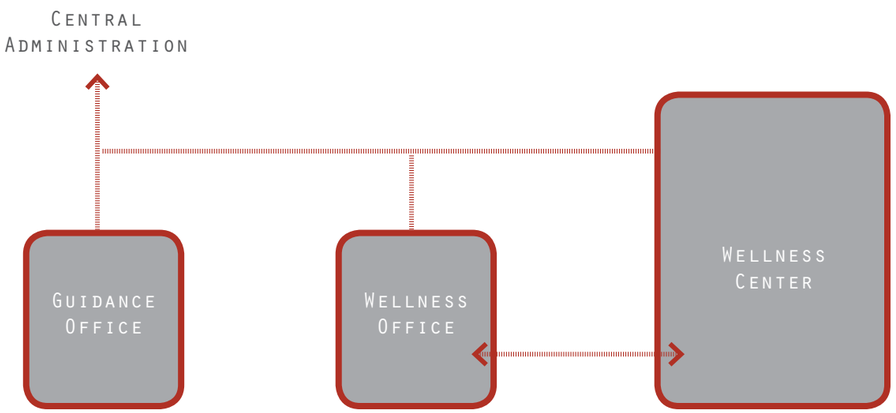
02.04.7 STUDENT SUPPORT

02.04.7.1	Guidance Office: (2)	120 sf
02.04.7.2	Wellness Center:	350 sf
02.04.7.3	Wellness Office:	100 sf
	Total Sq Ft:	690 sf

DESCRIPTION:

The wellness center will serve a vital function by providing basic services to children who are feeling ill or in need of medical attention. The wellness center will be located in an area adjacent to the central administration area, centrally located within the school, and shared by all learning communities. The center will also include a small office for an on-site nurse and storage areas for children's medical supplies.

The guidance offices will also serve as a shared component of the school and be located near the central administration area and wellness center. The guidance offices will provide a variety of counseling services for the students of the greater school. Each office will include a small group meeting area that will promote peer conflict resolution as well as providing necessary space for individual counseling.

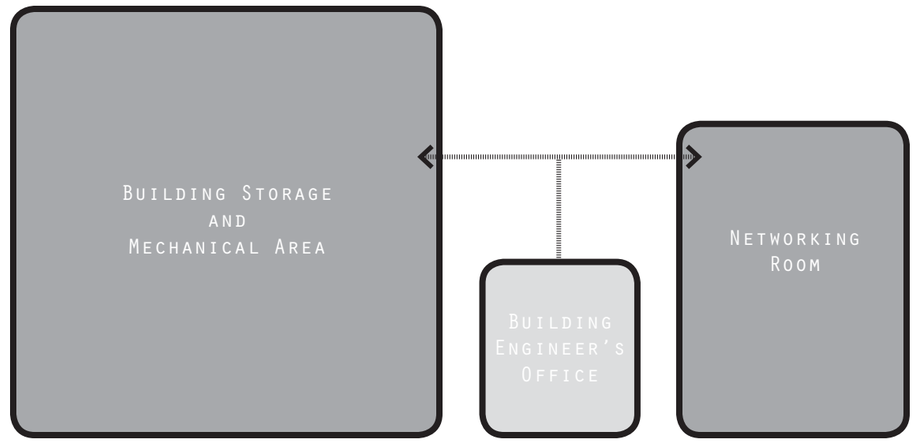


02.04.8 BUILDING SUPPORT

02.04.8.1	Building Storage/Mechanical Room:	2200 sf
02.04.8.2	Building Engineer's Office:	100 sf
02.04.8.3	Building Networking Room:	350 sf
	Total Sq Ft:	2650 sf

DESCRIPTION:

Building support areas provide space for essential building system functionality. This area will include an office for on-site building engineer, building storage, mechanical room and a central networking room for building technological systems.



03 Pre-Design

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03.01 Precedent Studies

Case Studies and research are an integral part to understanding any building typology. The case studies in the following section show examples of what has been done with educational facilities in recent years. Each project includes the basic project data and a brief design overview. Additionally each project includes a 'Project Relevance' section that will address certain aspects of the design that could be relevant to this particular project.

As case studies show what has been done while research can offer insight into what can be done. One of the most prevalent resources that will be incorporated into the design is the 25 Design Patterns outlined in *The Language of School Design: Design Patterns for 21st Century Schools* by Prakash Nair and Randall Fielding. These 25 Design Patterns are identified below and will be used to analyze the case studies as well as an organizing element for the design principles in this project.

Design Patterns:

1 - Classrooms, Learning Studios, Advisories and Small Learning Communities
2 - Welcoming Entry
3 - Student Display Space
4 - Home Base and Individual Storage
5 - Science Labs, Art Labs and Life Skills Area
6 - Art, Music, Performance
7 - Physical Fitness
8 - Casual Eating Areas
9 - Transparency
10 - Interior/Exterior Vistas
11 - Dispersed Technology
12 - Indoor/Outdoor Connection
13 - Soft Seating
14 - Flexible Spaces
15 - Campfire Space
16 - Watering Hole
17 - Cave Space
18 - Designing for Multiple Intelligences
19 - Daylight and Solar Energy
20 - Natural Ventilation
21 - Learning, Lighting and Color
22 - Sustainable Elements and 3D Textbook
23 - Local Signature
24 - Connected to the Community
25 - Bringing it All Together

03.01.1 Alpharetta High School

Location: Alpharetta, GA
Owner: Fulton County Public Schools
Sq Ft: 333,000 sf
Site: 74 Acres

Architects: Perkins + Will
Completion Date: 2004
Students: 1850
Grades: 9-12

Cost: $35 mil (building), $12.4 mil (Site)

03.01.1.1 Design Overview:

- The design features a "school within a school" concept that includes 3 classroom wings, or "houses", served by a core group of teachers allowing teachers to interact with students for their entire high school education.
- Each of the houses connects to an open linear spine that has the buildings shared facilities including: media center, café, administration, art, music and athletics.
- Sustainable features include the use of daylighting, recycled building materials and storm water management through shallow rain gardens.

03.01.1.2 Project Relevance:

- The design of the Houses supports a variety of organizational models making them flexible for different learning and teaching models.
- Art rooms feature large semi-transparent overhead doors that open into a gallery, or student display space.

03.01.1.3 Design Patterns:

1, 3, 4, 5, 6, 7, 9, 14, 18, 19, 22

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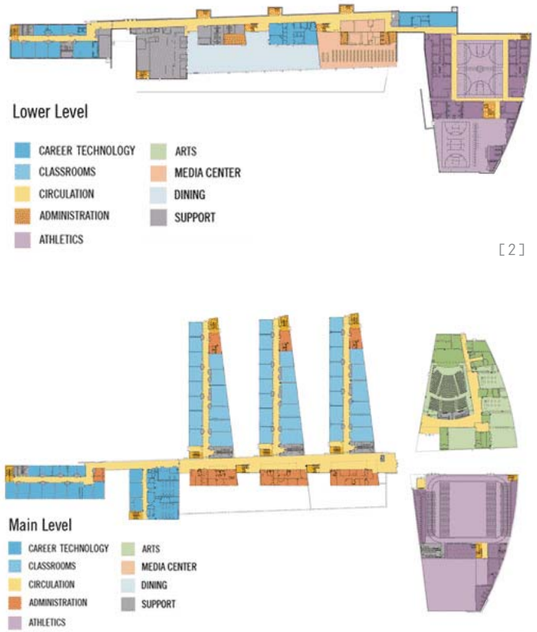

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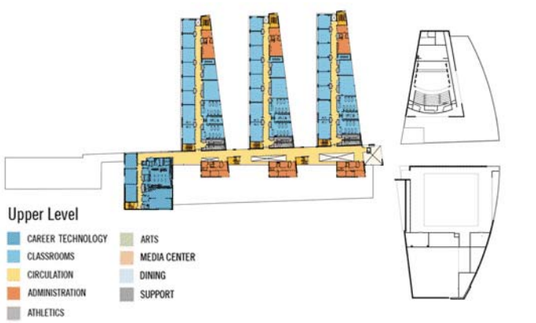

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03.01.2 Benjamin Franklin Elementary School

Location: Kirkland, WA
Owner: Lake Washington School District
Sq Ft: 56,800 s.f.
Grades: K-6

Architects: Mahlum Architects
Completion Date: August 2005
Students: 450
Cost: $10.3 million

03.01.2.1 Design Overview:

- The design of the school uses small learning communities that feature access to natural light, ventilation and are clustered around a central multi-purpose area.
- Ventilation is supplied through louvers through natural convection and exhausted through operable windows and the use of chimneys. All rooms are naturally ventilated and no mechanical systems were used in the construction of the school which aided in lower construction costs and overall operational costs of the facility.

03.01.2.2 Project Relevance:

- Further emphasis is placed on the integration of nature into the design by incorporating outdoor learning areas adjacent to indoor learning areas. The outdoor area features a small creek that is fed by water collected from the roof.
- Small classroom clusters are centered around multipurpose spaces that offer teaching flexibility and options for collaboration.

03.01.2.3 Design Patterns:

1, 2, 3, 4, 5, 7, 8, 10, 11, 12, 14, 18, 19, 20, 21, 22, 23, 24


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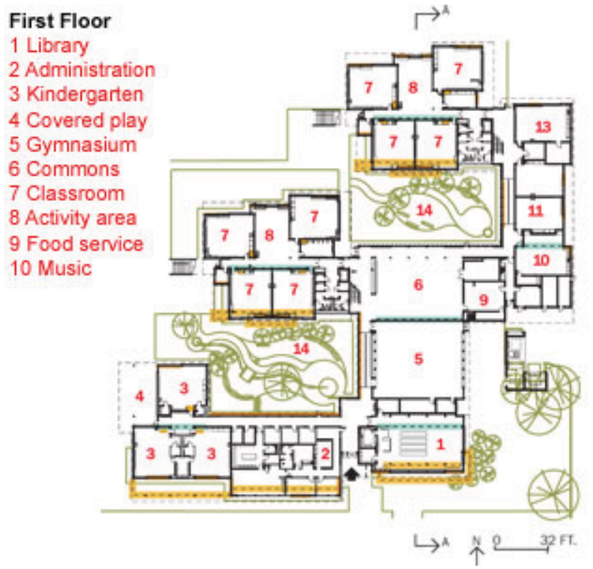

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03.01.3 Burr Elementary School

Location: Fairfield, CT
Owner: Town of Fairfield
Sq Ft: 69,000 s.f.
Site: 15.5 acres
Cost: $14.6 million

Architects: Skidmore, Owings & Merril, LLP
Completion Date: 2004
Students: 500
Grades: K-5

03.01.3.1 Design Overview:

- The school was constructed to serve growing areas of the community and is located in a wetland preserve.
- The design approach uses a standard square, or box, that has more organic elements cut out from the form to produce outdoor areas.
- The interior courts supply daylight to the interior spaces of the building.

03.01.3.2 Project Relevance:

- The design integrates many secure outdoor areas into the center of the building.These outdoor courtyards supply areas for casual eating and indoor/outdoor vistas within the school.
- The building was designed to preserve the natural wetlands that are located on the site. The building makes as little impact on the site using a very compact design.

03.01.3.3 Design Patterns:

2, 8, 9, 10, 14, 19, 20, 22, 23, 24


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03.01.4 The Business Academy, Bexley

Location: London, UK
Owner: Garrard Education Trust
Students: 1350
Grades: K-12

Architects: Foster and Partners
Completion Date: 2003
Site: 33 acres

03.01.4.1 Design Overview:

- One of the first purpose-built, privately funded independent state schools in Europe.
- The design approach is based on the 3E's from the philosophy of schools regeneration company, which supports transparent, open and compact spaces that encourage interaction of all users of the facility.
- The exterior of the building features a double layer of glazing and shading louvers which help to reduce heat gains in the warmer months

03.01.4.2 Project Relevance:

- The design focuses on three courtyards focused on business, art and technology. The courtyard spaces provide a visual linkage between teaching and common areas throughout the facility.
- Movable partitions in the classrooms allow for ultimate user flexibility within the spaces.
- A large mural in the courtyard display's photos of each of the students helping to create an identity for the school.

03.01.4.3 Design Patterns:

3, 5, 6, 9, 10, 11, 12, 14, 19, 22


[7]


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03.01.5 Carl Bolle Elementary School

Location: Berlin, Germany
Owner: Jahn, Mack und Partner
Grades: K-6

Architects: DieBaupiloten
Completion Date: 2008

03.01.5.1 Design Overview:

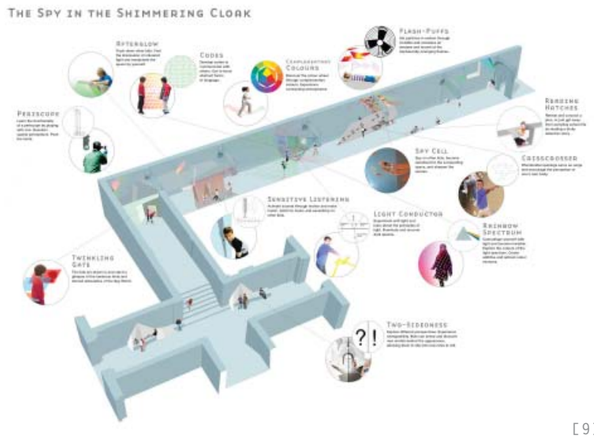
- Bolle Elementary school was a renovation of an existing building in which the architects involved students in design workshops and eventually lead to the story of the 'Spy with the Shimmering Cloak' as the storyboard for the design.
- The storyboard was translated into an exploratory learning corridor that features small alcoves, climbing walls, a student display space, the exploration of the color spectrum and acoustics through the Listening Wall.

03.01.5.2 Project Relevance:

- The design focuses on three courtyards focused on business, art and technology. The courtyard spaces provide a visual linkage between teaching and common areas throughout the facility.
- Movable partitions in the classrooms allow for ultimate user flexibility within the spaces.
- A large mural in the courtyard display's photos of each of the students helping to create an identity for the school.

03.01.5.3 Design Patterns:

3, 5, 6, 9, 10, 11, 12, 14, 19, 22



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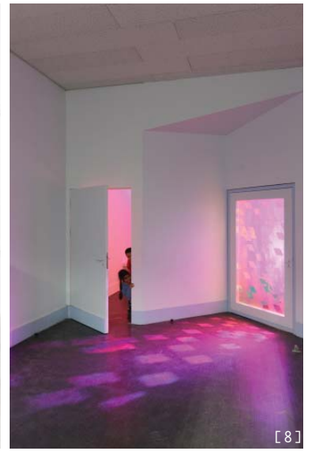
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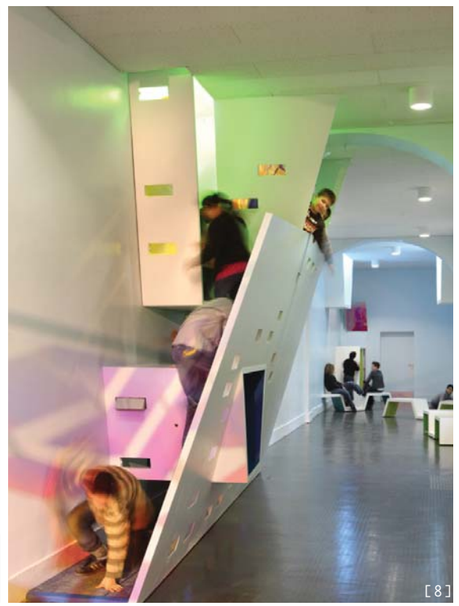
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03.01.6 Clackamas High School

Location: Clackamas, Oregon
Owner: North Clackamas School District
Sq Ft: 265,355 s.f.
Site: 42 acres
Cost: $30 million

Architects: BOORA Architects
Completion Date: 2002
Students: 1800
Grades: 9-12

03.01.6.1 Design Overview:

- The building features 4 two story academic nodes that are connected by the common spaces of the library, administration, arts and physical education facilities.
- Windows, skylights and light shelves provide natural lighting into over 90% of interior spaces in addition to occupancy and light sensors that further help to reduce energy consumption. Solatubes are integrated into the casework at the second story allowing additional light to be funneled into the lower floors. Interior and Exterior windows bring natural light from both the interior spaces and exterior.
- First High school to received LEED Silver certification

03.01.6.2 Project Relevance:

- The academic nodes help students identify with different parts of the school, creating a sense of ownership.
- The school fully integrates sustainability into the design creating a 3D textbook that students can learn and relate to.

03.01.6.3 Design Patterns:

1, 2, 3, 5, 6, 7, 9, 11, 12, 19, 20, 22, 23


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03.01.7 Fossil Ridge High School

Location: Fort Collins, CO
Owner: Poudre School District
Sq Ft: 296,375 s.f.
Grades: 9-12

Architects: RB+B Architects
Completion Date: 2004
Students: 1,800
Cost: $38.5 Million

03.01.7.1 Design Overview:

- The design of the school incorporates innovative technologies, while falling within the same price range as similar high schools in the region.
- External shades and PV sunshades (5.2 kilowatts) control the amount of direct light into the space, while also producing energy. A water pond on the site collects and stores rainwater reducing water runoff into nearby areas. A case study of the performance of fossil ridge has shown a savings of $271,791 in energy and $27,852 in water savings allowing these funds to be redirected into the classrooms.

03.01.7.2 Project Relevance:

- Three learning communities housing 600 students each that are attached to a central courtyard. A large common area at the center of the design serves as a hub of interaction for the school.
- The design of the school integrates a variety of small spaces including soft seating areas, campfire spaces and impromptu meeting and socializing areas.
- The building fully integrates both active and passive sustainable strategies into the design, making it a learning tool.

03.01.7.3 Design Patterns:

2, 8, 9, 10, 11, 12, 13, 14, 15, 19, 20, 22, 23, 24


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03.01.8 Lick-Wilmerding High School

Location: San Francisco, CA
Owner: Lick-Wilmerding High School
Sq Ft: 26,000 s.f.
Grades: 9-12

Architects: Pfau Architecture, Ltd.
Completion Date: 1997
Students: 380
Cost: $11.5 million

03.01.8.1 Design Overview:

- The project was an addition to an existing private school in the San Francisco area. The site features numerous building around a central gathering space in a campus-like atmosphere.
- Different buildings are dedicated to different functions and each building has its own architectural expression.
- The campus design is very sustainable taking advantage of the bay area climate and location.

03.01.8.2 Project Relevance:

- Multi level exterior space allows for a variety of interactions to occur both between students and the environment.
- A variety of hard and soft seating areas are used throughout the site to promote interaction between students.

03.01.8.3 Design Patterns:

2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 20, 22, 23, 24


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03.01.9 Perspectives Charter School

Location: Chicago, IL
Owner: Perspectives Charter School
Sq Ft: 30,000 s.f.
Site: 1 acre
Cost: $4.5 million

Architects: Perkins + Will
Completion Date:
Students: 325
Grades: 6-12

03.01.9.1 Design Overview:

- The project is located on a compact urban site in Chicago, IL.
- The school is comprised of student's whose families primarily fall below the poverty line. The design approach was to create a 'disciplined but intimate learning environment'.

03.01.9.2 Project Relevance:

- The project is located in a compact urban site in Chicago and displays how a very modern building can respond to a primarily traditional are supplying a unique identity for the area.
- The building has a distinct presence and welcoming entry making it an asset to the community.
- The central multipurpose space serves a variety of functions and has become a center of activity and socialization in the school.

03.01.9.3 Design Patterns:

2, 3, 5, 9, 10, 14, 16, 19, 23, 24


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03.01.10 Rosa Parks Elementary School

Location: Redmond, WA
Owner: Lake Washington School District
Sq Ft: 66,402 s.f.
Grades: K-6
Architects: Mahlum Architects
Completion Date: 2006
Students: 550
Cost: $13.6 million

03.01.10.1 Design Overview:

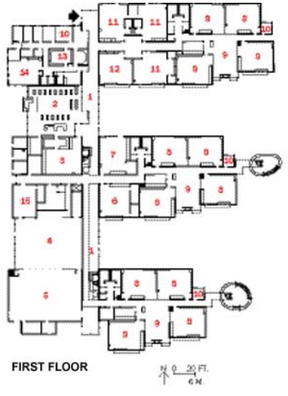
- The building design reflects a "natural parks theme" that includes the use of sustainable design strategies, natural materials, nature trails, wetlands and parks responds to area.
- Interior spaces feature exposed structure in very natural finishes. The interior also features ample daylight through the use of interior and exterior glazing.

03.01.10.2 Project Relevance:

- Features small learning communities centered on a central multipurpose space allowing for flexible teaching styles. Each of the learning communities is directly adjacent to the exterior learning courtyards.
- There is a high level of transparency used in the corridors to help promote interaction and increase the availability of daylighting to interior spaces.
- The architecture of the building responds to its surrounding and creates a local signature and identity for the building.

03.01.10.3 Design Patterns:

1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 14, 18, 19, 20, 22, 23



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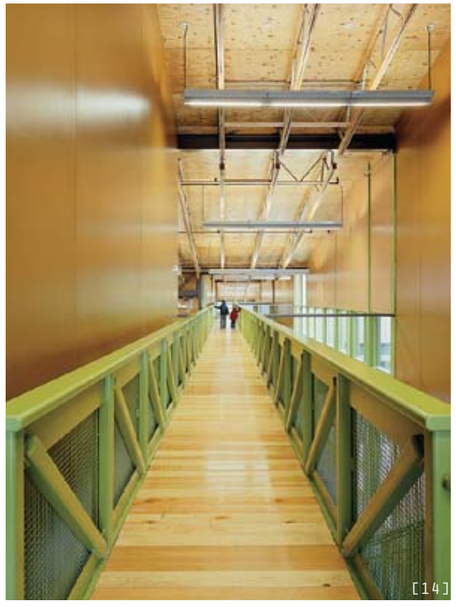

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03.01.11 Rosa Parks Elementary School

Location: Portland, Oregon
Owner: N4C and Portland Public Schools
Sq Ft: 66,863 s.f.
Grades: K-6

Architects: Dull Olson Weekes Architects
Completion Date: August 2006
Students: 575
Cost: $12.8 million

03.01.11.1 Design Overview:

- The building design is centered on a neighborhood model and integrating nature into the design. Bioswales treat and channel storm water on site while the use of native plants mitigates the needs for irrigation.
- The interior design incorporates natural light, reducing electrical consumption and increasing productivity of students. Low-VOC and recycled materials are used on interior finishes and the mechanical systems use a displacement ventilation system.

03.01.11.2 Project Relevance:

- The three R's: reduce, reuse and recycle is fully integrated into the curriculum actively involving the students in creating a fully sustainable school.
- The school is located in New Columbia a low-income housing neighborhood and the school building also features a neighborhood boys and girls club allowing community involvement and further use of the building after school hours.
- The neighborhood model of the school is divided into four clusters each containing 125 students.

03.01.11.3 Design Patterns:

1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 14, 19, 20, 22, 23

[17]


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03.01.12 Sidwell Friends Middle School

Location: Washington, DC
Owner: Sidwell Friends School
Sq Ft: 39,000 s.f. addition, 72,500 s.f. total
Site: 15 acres

Architects: Kieran Timberlake Associates
Completion Date: September 2006
Students: 350
Grades: 6-8

03.01.12.1 Design Overview:

- Full integration of natural and man-made systems that students can use as a building tool.
- Natural ventilation systems are augmented by mechanical assistance and reduce the need for artificial cooling.
- Natural lighting is used throughout the school and reclaimed wood louvers help to reduce solar penetration into the space, but still allows for maximum daylighting.
- PV panels and solar thermal technologies further reduce energy consumption.

03.01.12.2 Project Relevance:

- The central courtyard serves as constructed wetlands that helps to reduce storm water runoff and additionally treats and recycles grey water within the building. Rainwater is collected at the roof and is stored in a biology pond that supports native habitats.
- The design fully integrates passive and active systems such as daylighting, natural ventilation, and water recycling.

03.01.12.3 Design Patterns:

2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 19, 20, 23


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03.01.13 WMEP Interdistrict Downtown School

Location: Minneapolis, MN
Owner: West Metro Education Program
Sq Ft: 102,500 s.f.
Grades: K-12

Architects: Cunningham Group Architects, PA
Completion Date: 1999
Students: 600
Cost: $14.2 Million

06.01.13.1 Design Overview:

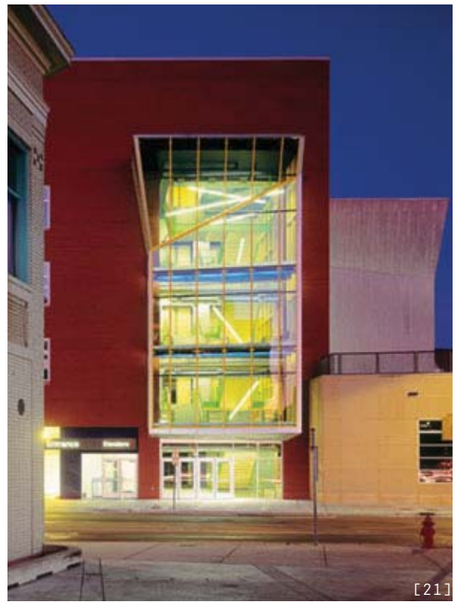
- Multicultural learning center that services 11 school districts.
- The school has partnered with businesses in the area to provide additional off-site learning areas such as sharing gym space with a local YMCA, using a local downtown Library, use of the MacPhail center for music for music and performing classes and teaming up with the school of education at St. Thomas University.
- Daylighting, natural ventilation and a solar wall-heating system are integrated into the design to reduce energy consumption.

06.01.13.2 Project Relevance:

- Features 6 school "houses" that divide up the K-12 years and each house features a communal activity spaces.
- The use of surrounding context for accessory spaces integrates the community into the design.
- The design incorporates a variety of cave and campfire spaces creating a very social and flexible design.

06.01.13.3 Design Patterns:

1, 2, 3, 4, 11, 13, 14, 15, 16, 19, 20, 22, 23, 24, 25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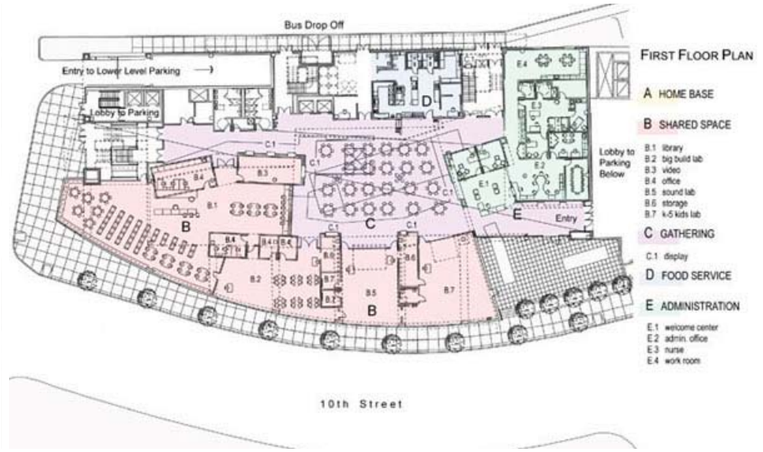

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03.02 Site History


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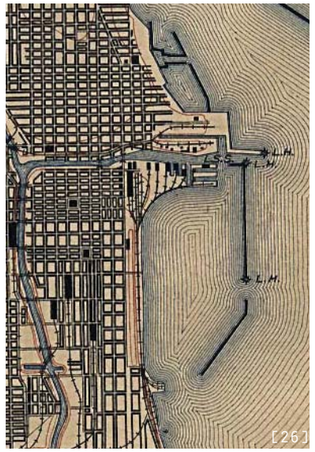
1803 - Fort Dearborn is established along the Chicago River and Lake Michigan.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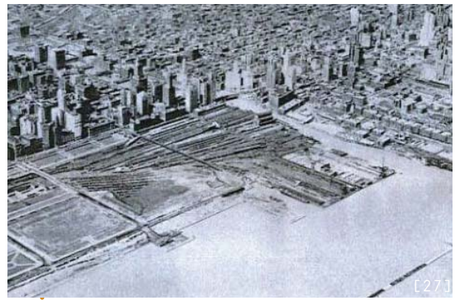
1847 - Large portion of land to the east of downtown, bordering Lake Michigan is granted protection by the city and is named Lake Park. The Park was suffering from erosion and the Illinois Central Railroad agreed to build a breakwater to protect the area in exchange for an offshore train trestle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1852 - Illinois Central Railroad owns right-of-way through Lake Park to the Chicago River Rail Yards


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1837 - City of Chicago officially incorporated

1851 - Illinois Central officially chartered by the Illinois General Assembly


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1871 - Great Chicago Fire. Lake Park becomes a impromptu landfill for fire debris.


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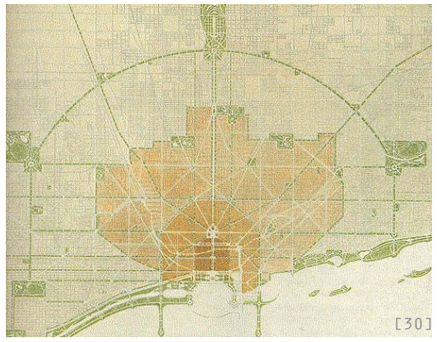
1893 - The Art Institute of Chicago is constructed in Lake Park.

1901 – City transfers Lake Park to the South Parks Commission, which officially changes the name to Grant Park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1909 - Daniel Burnham's Plan for Chicago


[32]

1934 – Final improvements are made to the overall structure of the Park under federal relief funding


[31]

1911 – Construction of the Field Museum begins, as part of Burnham's 1909 plan for Chicago for a network of open space and civic buildings

1850

1900


[33]

1945 – Illinois Central sells airspace rights north of Randolph


[34]

1951 – construction begins on the Chicago Pedway System


[35]

1994 - Metro Golf at Illinois Center, a 9-hole golf course, operates at the old Illinois Central Rail Yards


[36]

1998-Construction begins on Millennium Park on the north ends of Grant Park, completed 2004.

2005 – Construction of the Park at Lakeshore East, the Lancaster and the Shoreham complete the first phases of construction on Lake Shore East

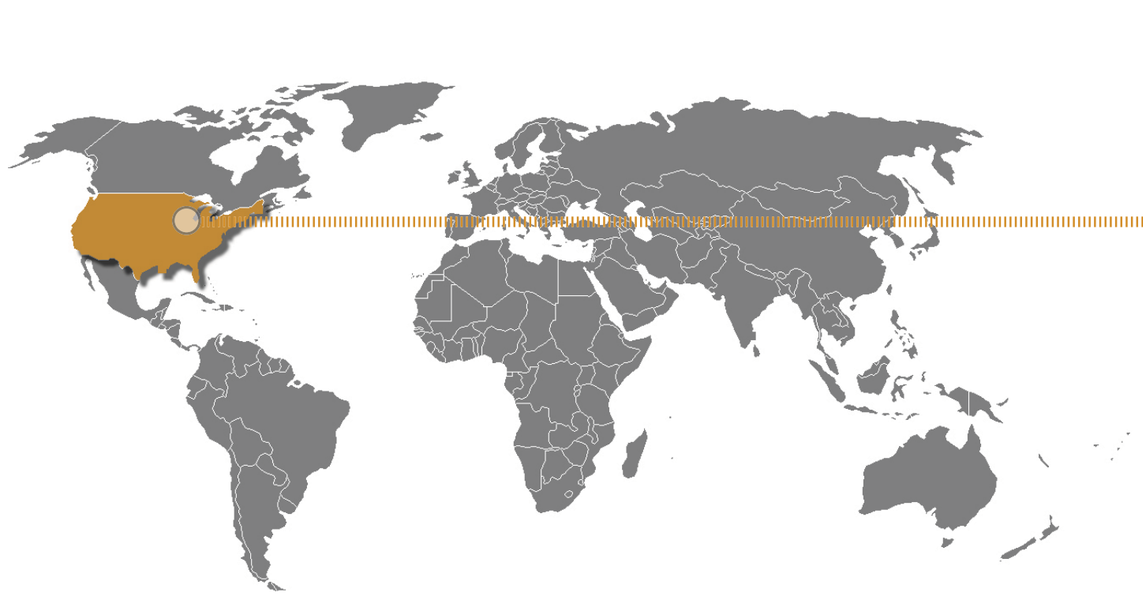

[37]

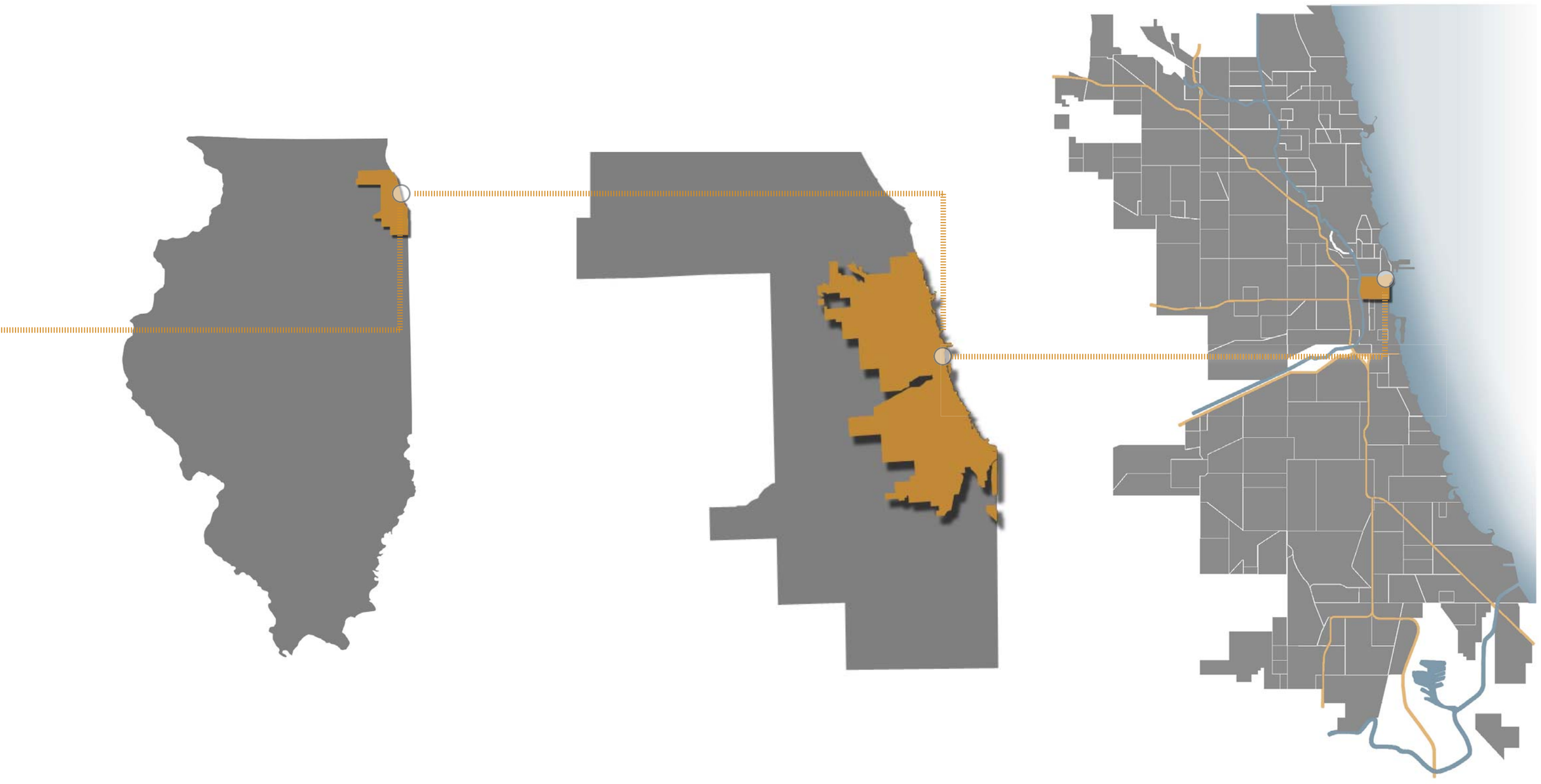
2013 – Estimated completion date for Lake Shore East Development

1950

2000

03.03 Context Maps





03.03.1 The Loop

03.03.2 Green Space

03.03.3 Points of Interest

03.03.4 Cultural Attractions

03.03.5 The Pedway

03.03.6 Highway System

03.03.7 The "L"

03.03.8 The metra

03.04 Lakeshore East Master Plan

Magellan Development Group, LLC
Master Plan: SOM

The master plan for the Lakeshore East Development was designed by SOM and developed by Magellan Development Group, LLC. The development sits on a 28-acre site located in the northeastern area of the Loop in downtown Chicago, IL. The site includes a variety of live, work and play areas including a large 6-acre park at the center of the development. The first tower, the Lancaster, was completed in 2005 and tentative completion for the remainder of the development is scheduled for 2011. The completed $4 billion development will include the following features[1]:

40% open space including a 6-acre botanical park
4,950 residences
2.2 million gross square feet of commercial space
1,500 hotel rooms
Up to 770,000 square feet of retail, including a 100,000 square foot Village Market Center

Architectural Team:

Skidmore, Owings & Merrill
Loewenberg Architects
DeStefano + Partners
Solomon Cordwell Buenz & Associates
The Steinberg Group
The Office of James Burnett
Site Design Group
Studio Gang Architects

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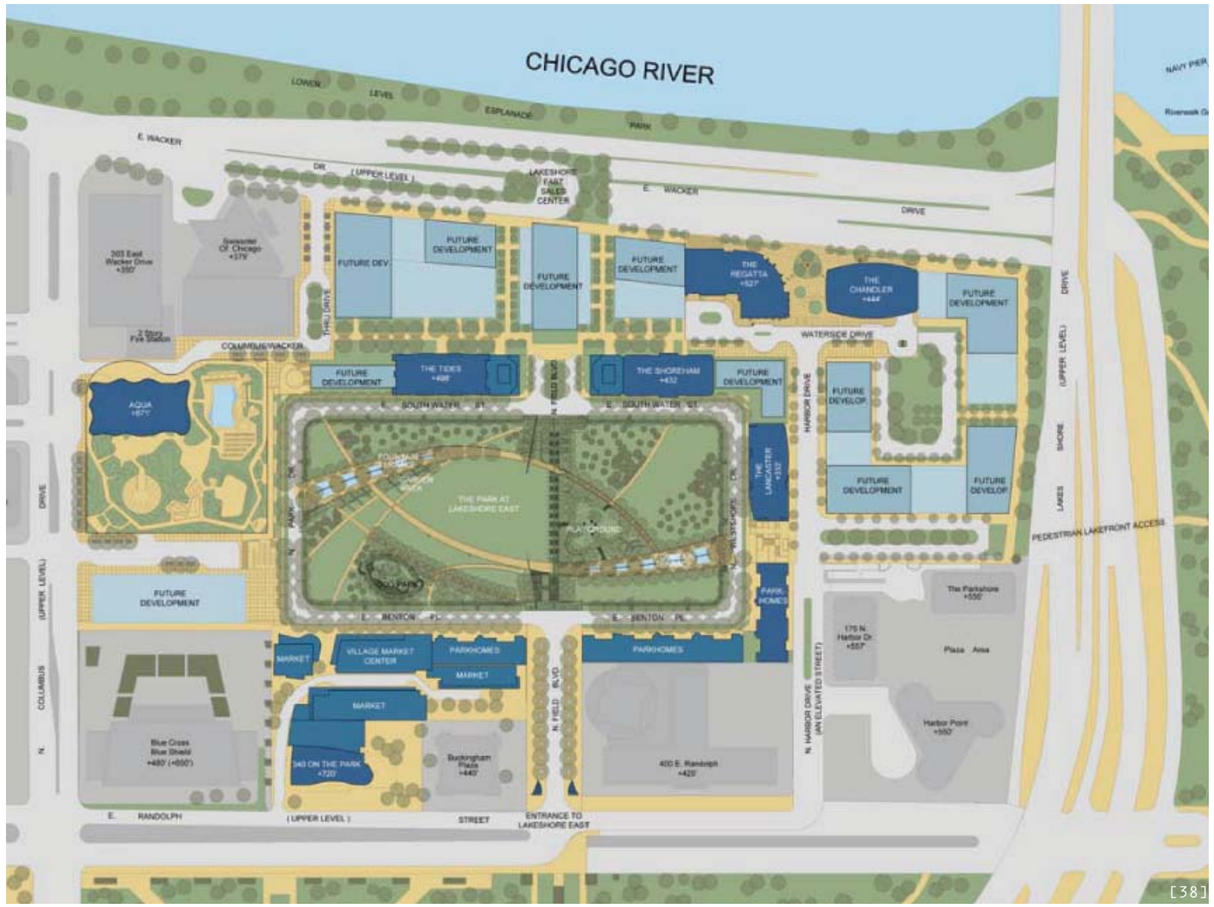

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03.04.1 The Lancaster

201 N Westshore Dr. Chicago, IL
Luxury Condominium Tower

Architects: Skidmore Owings & Merrill
and Loewenberg + Associates.

Completion Date:	2005
Stories:	29
Units:	209

The Lancaster features over 200 luxury condo units. The building also includes a 2500 sq foot 24-hour fitness center, a private club room and a rooftop sun deck. During the summer the Lancaster also features a Farmer's Market every Sunday.

03.04.2 The Shoreham

400 E. South Water Street Chicago, IL
Luxury Condominium Tower
including rental units and retail space

Architects: Loewenberg + Associates.

Completion Date:	2005
Square Feet:	765,000 s.f.
Stories:	46
Units:	548
Parking Spaces:	373 cars
Retail Space:	11,000 sf

The Shoreham was the first tower constructed to include residential rental units in the development. The Shoreham includes a Life Fitness™ fitness facility, business center, game room, sky garden, café, outdoor pool and spa.

03.04.3 The Regatta

420 E. Waterside Drive Chicago, IL
Luxury Condominium Tower

Design Architects: DeStefano + Partners Inc.
Architect of Record: Loewenberg Architects

Completion Date:	2006
Square Feet:	675,000 s.f.
Stories:	44
Units:	325
Parking Spaces:	342 cars
Retail Space:	8,600 sf

The Regatta is a luxury condo tower that features an indoor swimming pool, a rooftop garden and theatre room.

03.04.4 340 on the Park

340 E. Randolph Street Chicago, IL
Luxury Condominium Tower, LEED Certified

Architects: Solomon Cordwell Buenz & Associates

Completion Date:	2007
Square Feet:	1 mill. s.f.
Stories:	42
Units:	344
Parking Spaces:	470 cars
Retail Space:	4,160 sf

340 on the Park was Chicago's first ecologically designed (LEED Certified) high-rise tower. It houses over 300 residential condominium units and includes a wintergarden, club room, fitness center, pool and spa.

03.04.5 The Chandler

450 E. Waterside Drive Chicago, IL
Luxury Condominium Tower

Design Architects: DeStefano + Partners, Inc.
Architect of Record: Loewenberg Architects

Completion Date:	2007
Stories:	35
Units:	304
Parking Spaces:	340 cars
Retail Space:	10,000 sf

The Chandler has distinct views of the river and lake Michigan to the east and houses a signature Shore Club. It also features a media room, private party room, fitness facility, concierge service, an indoor rooftop pool with two landscaped decks.

03.04.6 The Tides

360 East South Water Street Chicago, IL
Luxury Rental Tower

Architects: Loewenberg + Associates, Inc.

Completion Date:	2008
Stories:	51
Units:	608
Parking Spaces:	373 cars
Retail Space:	11,000 sf

The Tides is the second all-rental tower in the Lakeshore East development and includes amenities such as a gym, business center, game room, café, outdoor pool and spa.

03.04.7 Aqua

225 N. Columbus Drive Chicago, IL
Luxury condominium, rental and hotel tower

Design Architect: Studio Gang Architects
Architect of Record: Loewenberg Architects

Completion Date:	2009
Square Feet:	1,987,000 s.f.
Stories:	82
Units:	264 Condominiums, 476 Rental Apartments, 210 Hotel Rooms
Parking Spaces:	1,360 cars
Retail Space:	17,536 sf 5,968 sf in Pedway System 37,165 sf

Aqua features over 100,000 sf of indoor and outdoor recreation facilities. The design of the tower is emphasized by its unique balcony designs that allows each unit to have its own connection to the outdoors.

03.04.8 The Parkhomes

Park at Lakeshore East Chicago, IL
Luxury Townhouses

Design Architect: The Steinberg Group
Architect of Record: Loewenberg Architects

Completion Date:	2009
Square Feet:	133,000 sf
Units:	25
Parking Spaces:	40 cars
Retail Space:	11,000 sf

The Parkhomes are custom designed townomes that offer several plans ranging from 2,900 to 3,900 sf of living space. Rooftop terraces and a connection to the 6-acre shared park offers a unique connection to the outdoors.

03.04.9 The Park at Lakeshore East

Park at Lakeshore East Chicago, IL
Open Park Space

Design Architect: The Office of James Burnett

Completion Date:	2005
Size:	6 Acres

The Park at Lakeshore East features spaces for children play, an enclosed dog park, meadows, ornamental gardens and water features. The park has won numerous awards including:

2008 Mayor Daley's Landscape Award for Specialized Gardens
Named 2006's Best New Park by Chicago Magazine
(August 2006 issue)
Best New open Space awarded by the Friends of Downtown
Best of the Best 2005 award by Midwest Construction Magazine

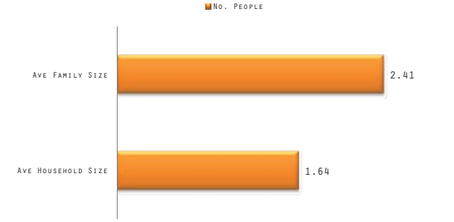
03.05 Demographic Overview

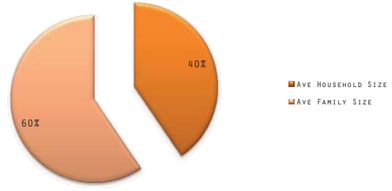
Population [a]:	8,450 people
Population Density:	16,838 people/sq mile
Total Households:	5,152 households
Total Family Households:	1,627 households
Avg. Household Size:	1.64 people/household
Avg. Family Size:	2.41 people/household
Avg. Resident Age:	46 years
Avg. Household Income:	$93,973
Cost of Living Index:	125.9 (high, over 100 national average)
Ave. Property Value:	$532,169

[a] all data from http://www.city-data.com/zips/60601.html

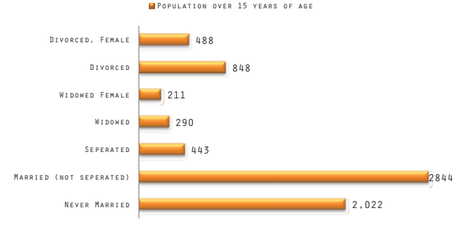
03.05.1 Neighborhood Profile

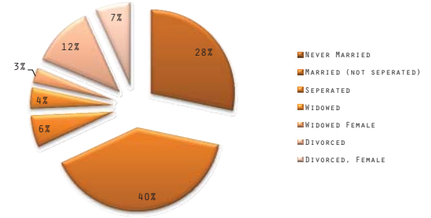
Household Size



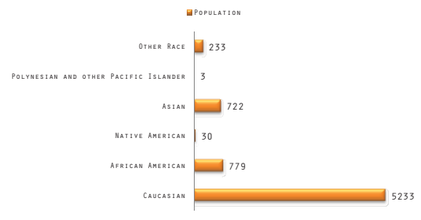


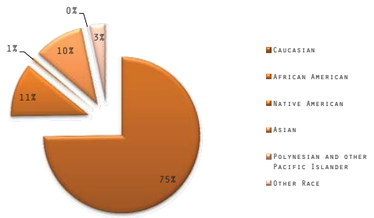
Marital Status



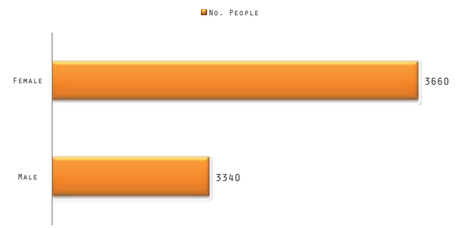


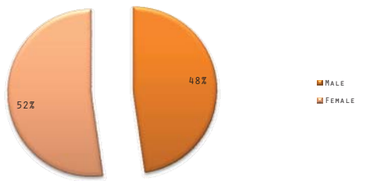
Ethnic Distribution



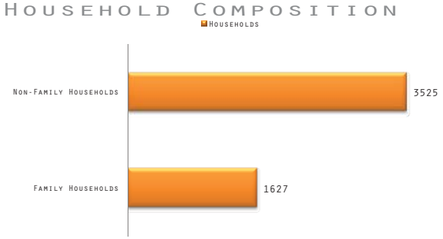


Gender

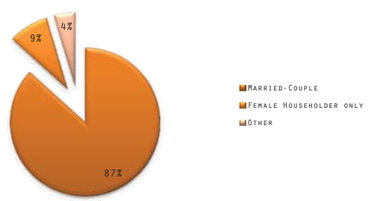




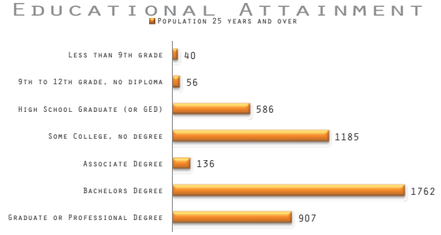
Household Composition



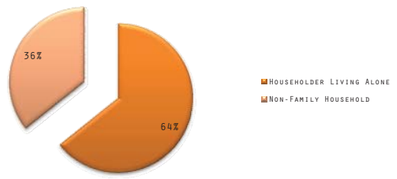
Family Composition

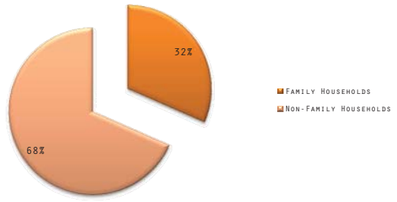


Educational Attainment

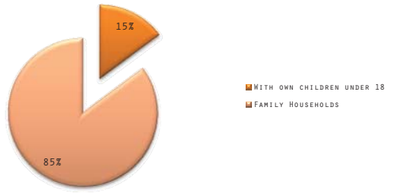


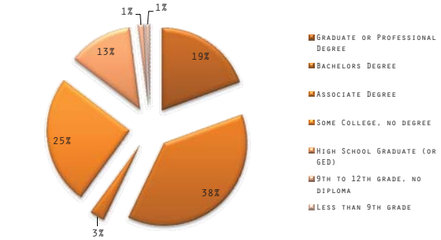
Non-Family Households



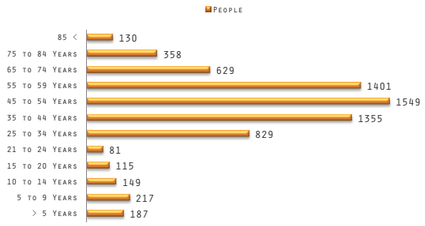


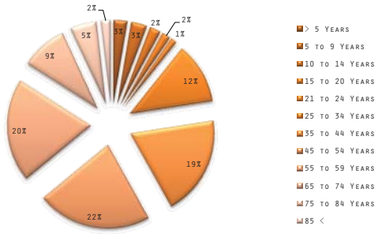
Family Households



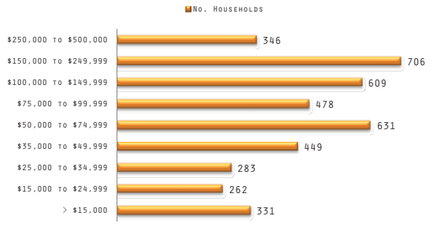


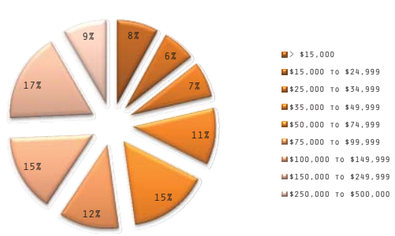
Age Distribution



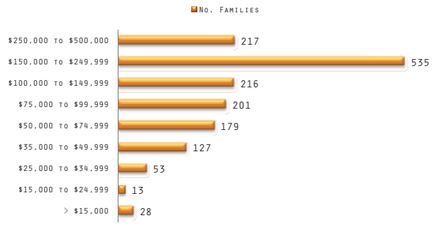


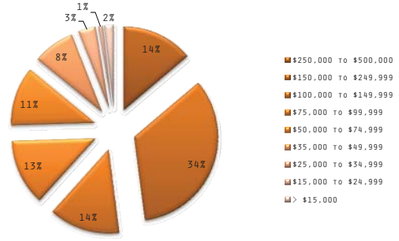
Household Income



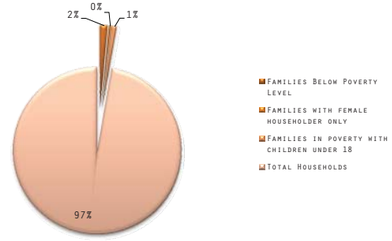


Family Income



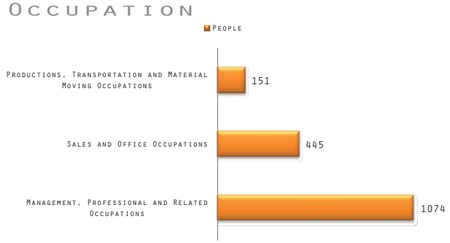


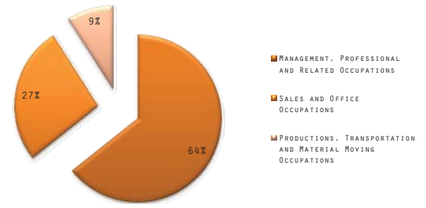
Poverty Status



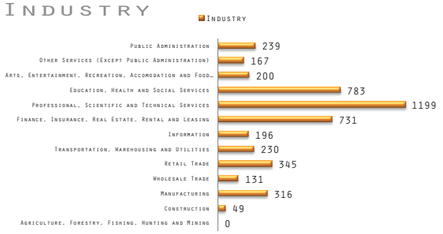
03.05.2 Employment, transportation and housing

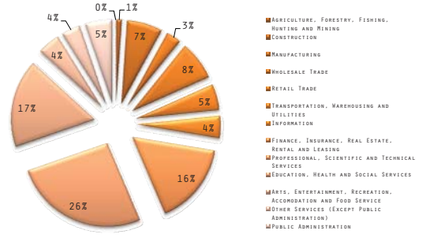
Occupation



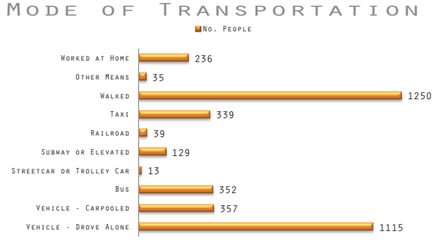


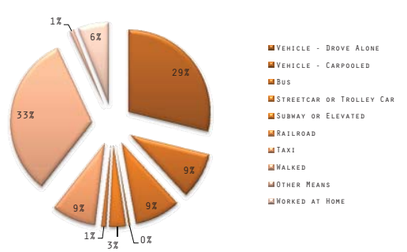
Industry



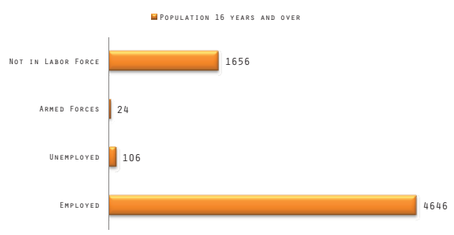


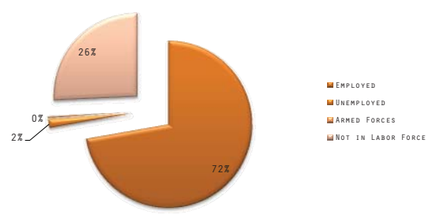
Mode of Transportation



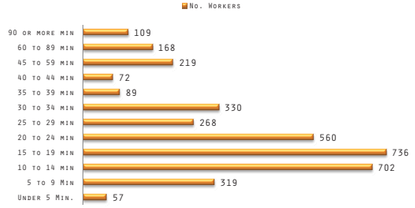


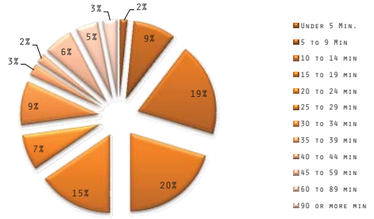
Employment Status



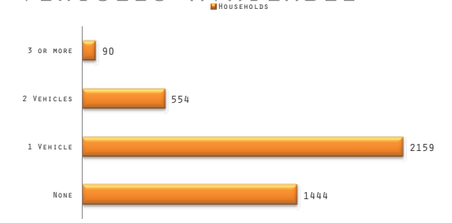


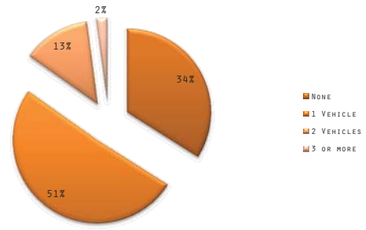
Travel Time to Work



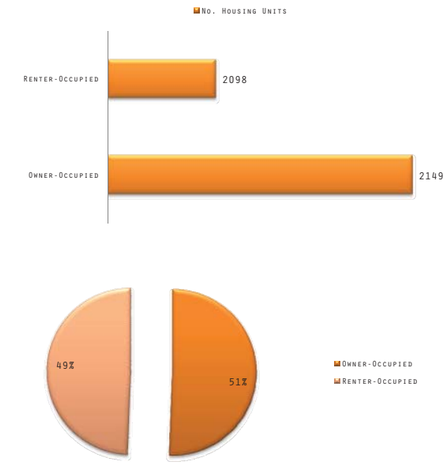


Vehicles Available

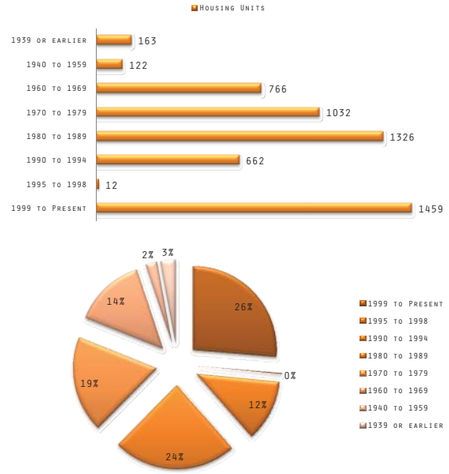




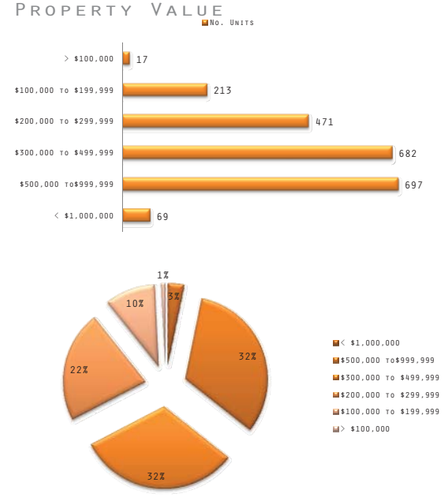
Housing Tenure



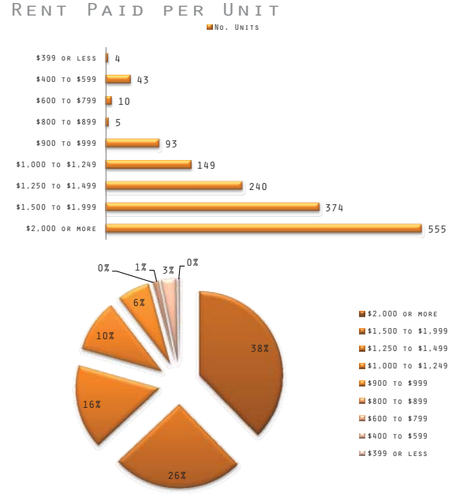
Age of Housing Units



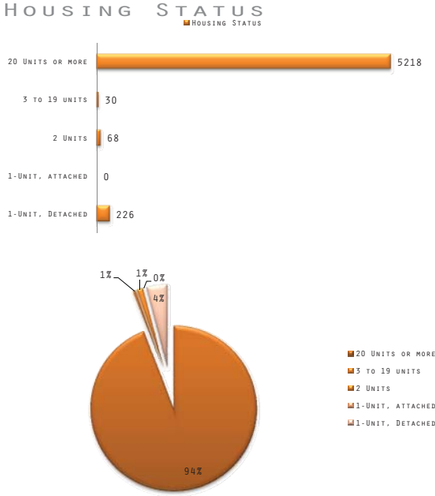
Property Value



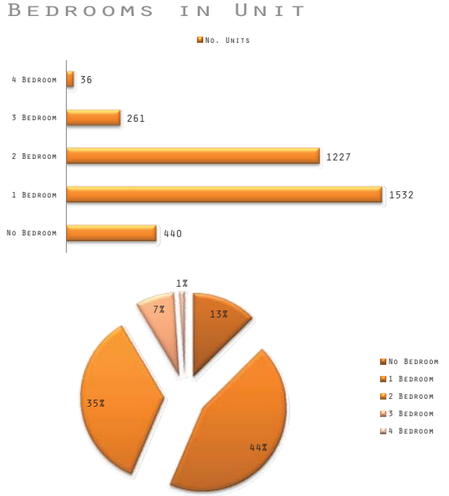
Rent Paid per Unit



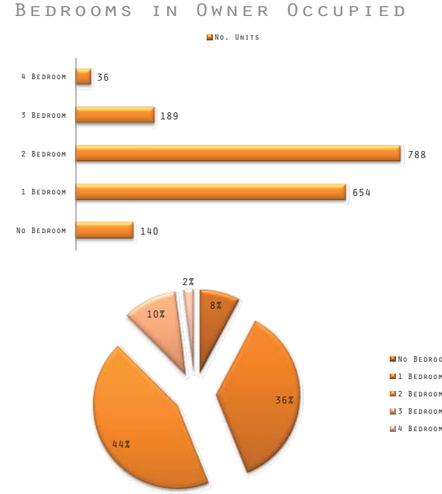
Housing Status



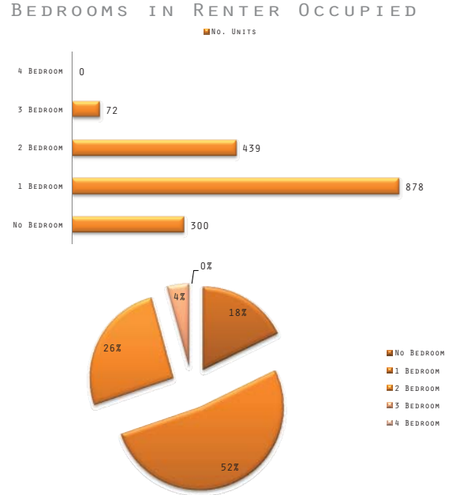
Bedrooms in Unit



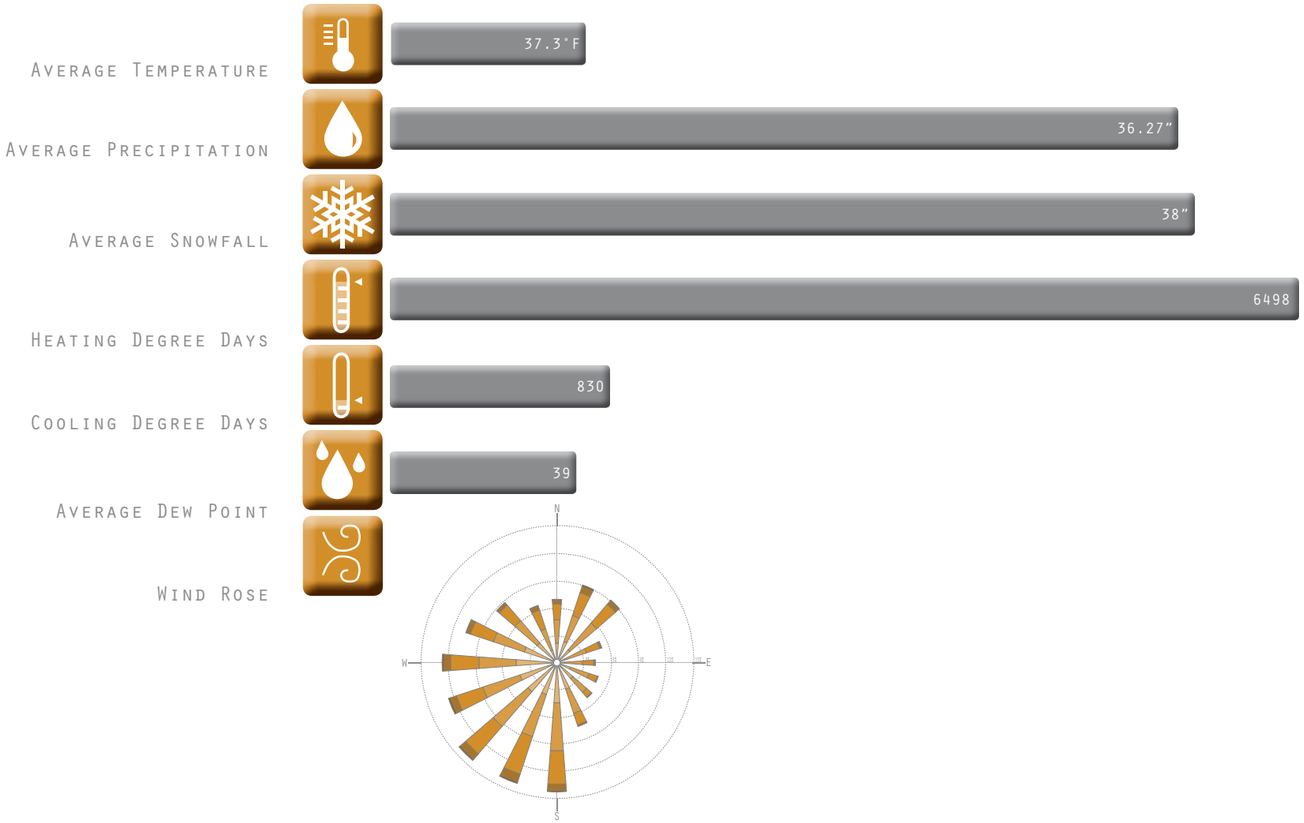
Bedrooms in Owner Occupied



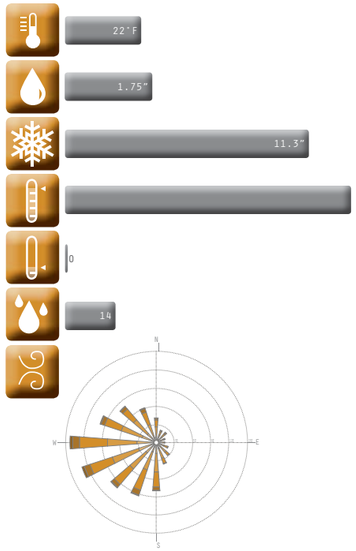
Bedrooms in Renter Occupied



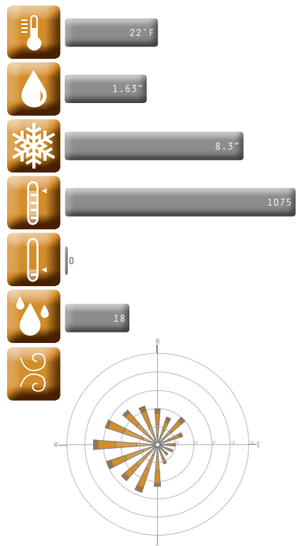
03.06 Annual Climate Analysis



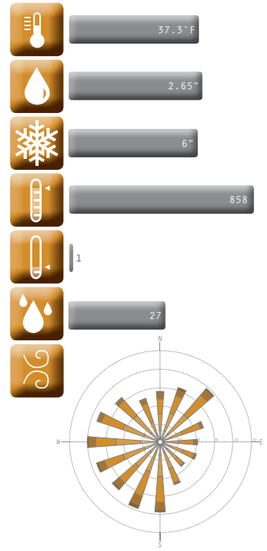
03.06.1 January



03.06.2 February



03.06.3 March



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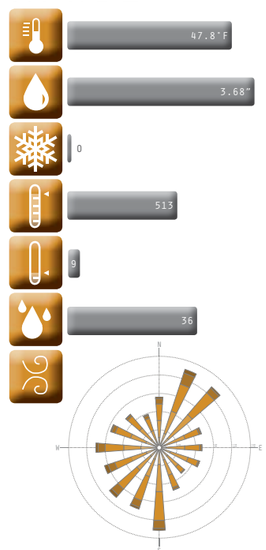
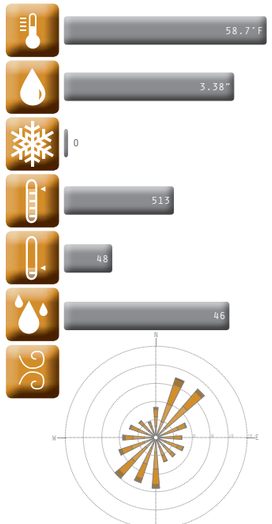


03.06.5 May



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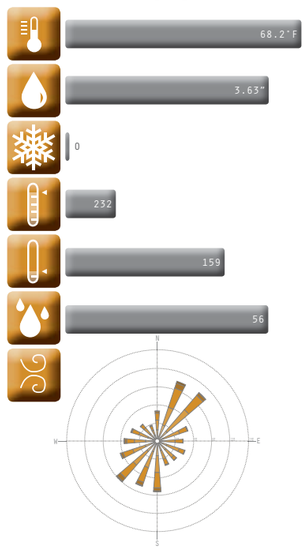

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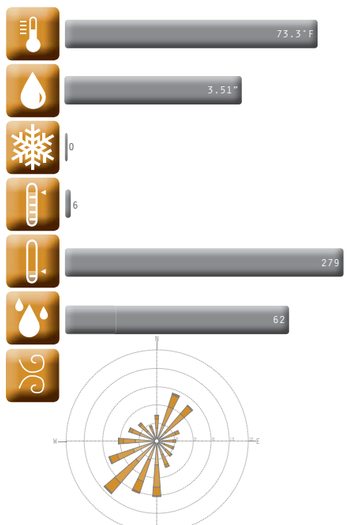

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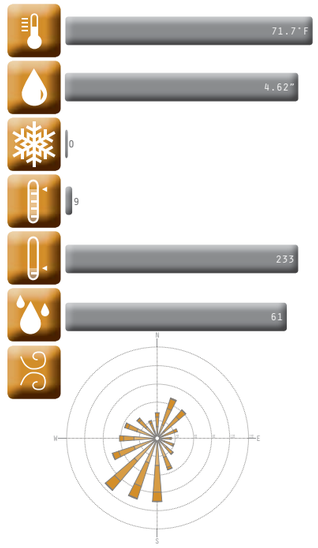
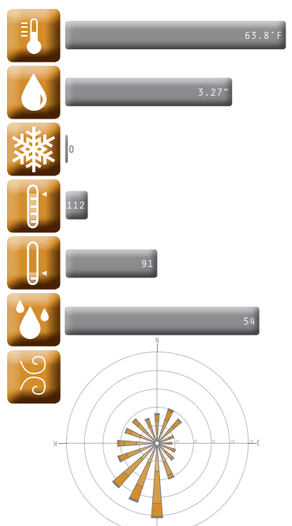


03.06.9 September



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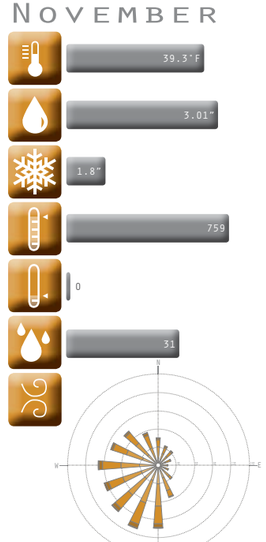

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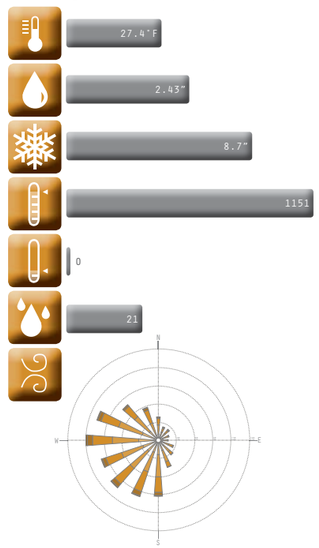
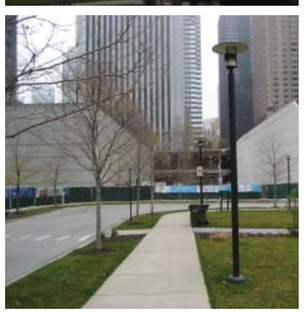


03.07 Site Photos









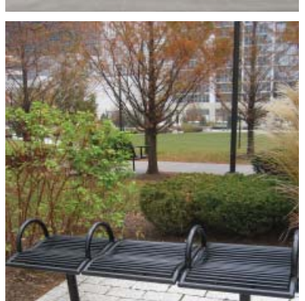














04 Concept Design

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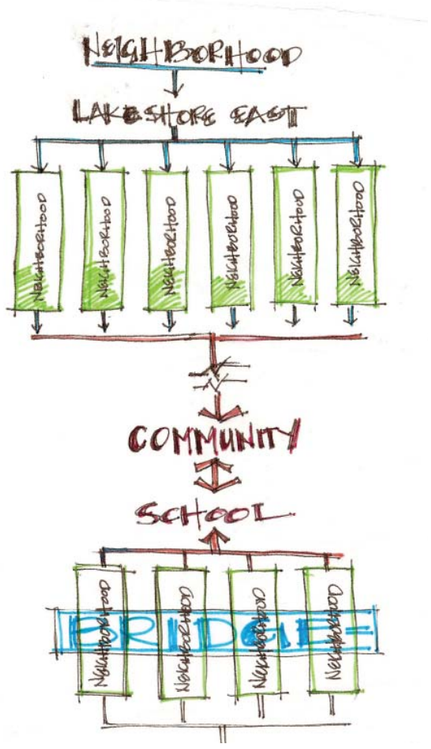
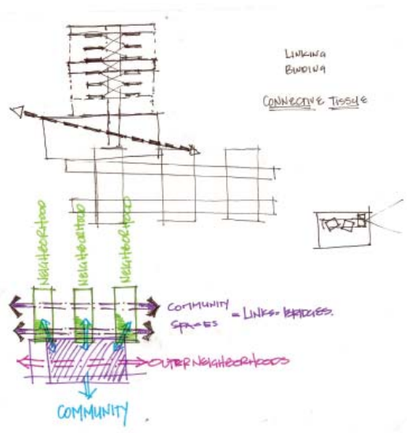
LAKESHORE EAST IS A **NEIGHBORHOOD** THAT LACKS ANY **IDENTITY**, AN INTEREST THAT BINDS THE RESIDENTS TOGETHER. THE INTENT OF THIS PROJECT IS TO TRANSFORM A NEIGHBORHOOD INTO A **COMMUNITY** AND ALLOW STUDENTS TO **ENGAGE**.

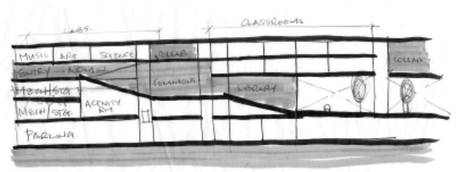
04.01 Concept

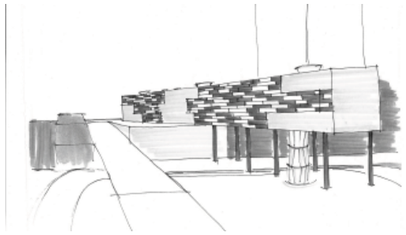
Following the research phase it was apparent that Lakeshore East is lacking any sense of a common identity, something that allows the residents to interact. The intent of this school is to become a catalyst for the transformation of a neighborhood into a community. This is accomplished in two ways; one by allowing the neighborhood to interact in the building by the addition of a Boys and Girls of America Club. The Boys and Girls club allows the school to be used after school hours, seven days a week. Thus the school becomes a community resource, something that can engage residents of the neighborhood and foster interaction. Secondly, to truly foster a sense of community the school is designed to serve the neighborhood, accommodating up to 600 students grades kindergarten through 12th grade. The intent of including all grades is to allow a collaborative environment within the school between different age groups. Additionally, the school will engage the neighborhood by establishing partnerships with community resources. The site is located in one of the most culturally rich areas of Chicago giving it access to a wealth of resources that can be employed by the school. The intent is that through these partnerships students will be able to engage in the resources of the city whether it be through partnerships at the Art Institute, Chicago Cultural Center, the Field Museum, or even through the use of public facilities such as the Pritzker Pavilion or Grant Park. Students will then be exposed to the cultural capital that the city posses and will foster a new generation of learners that will maintain a lifelong relationship with their community. The design for the school became about engaging the only community element in the development, the Park at Lakeshore East. The school extends beyond the traditional site boundaries to engage the community park, making it an essential element in the design.

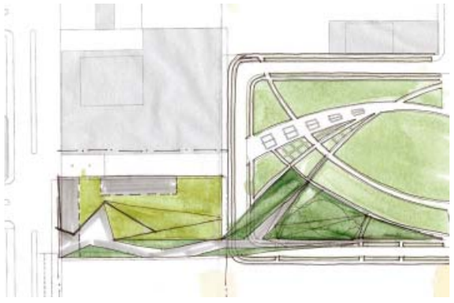
04.02 CONCEPT SKETCHES

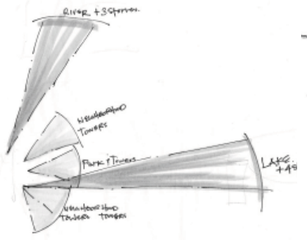


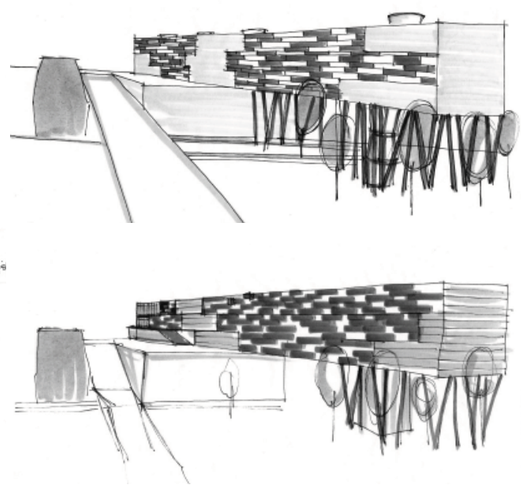


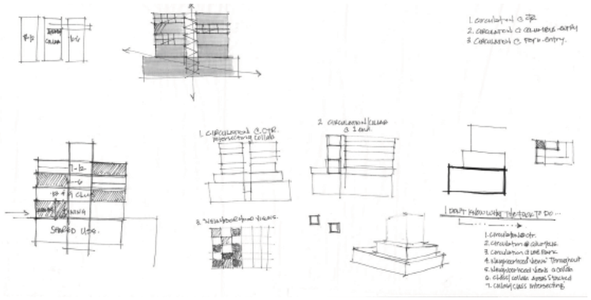


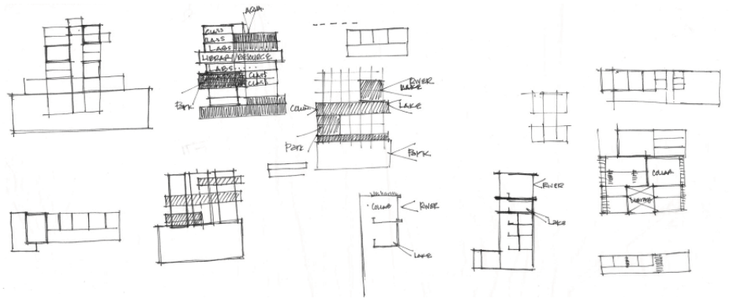


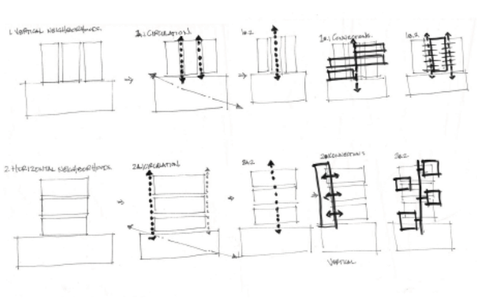




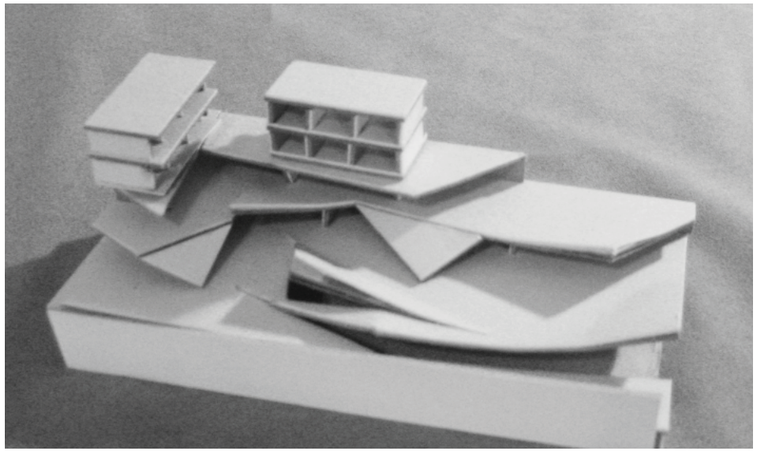


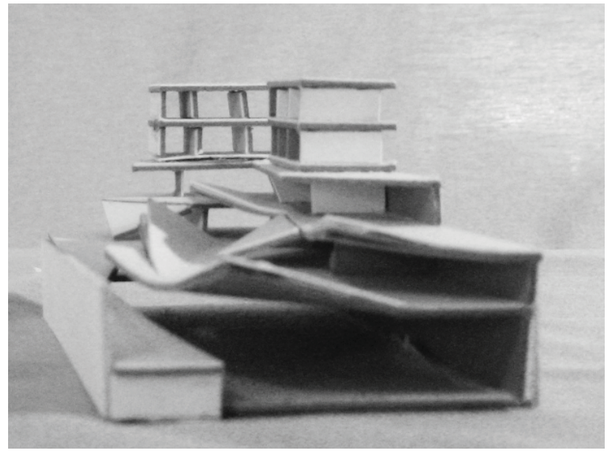


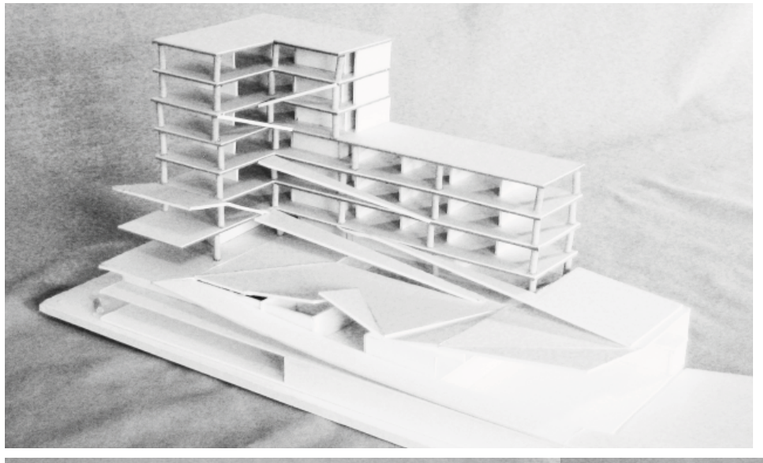


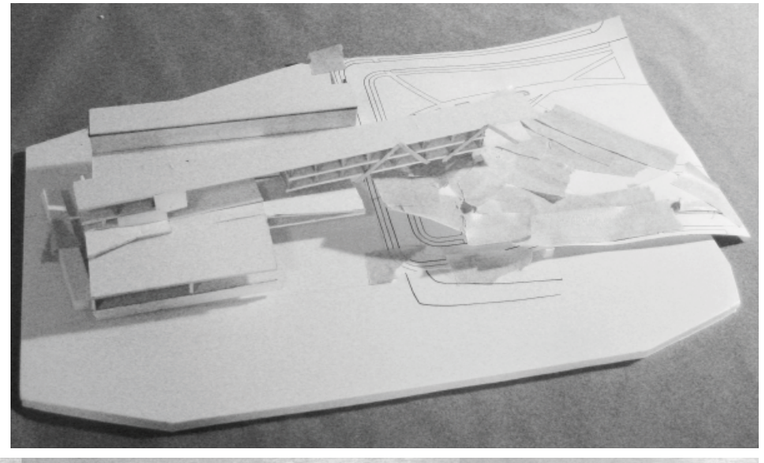


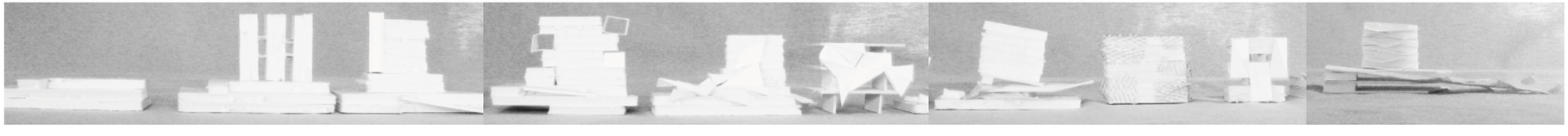
04.03 Concept Models











04.04 concept Diagrams

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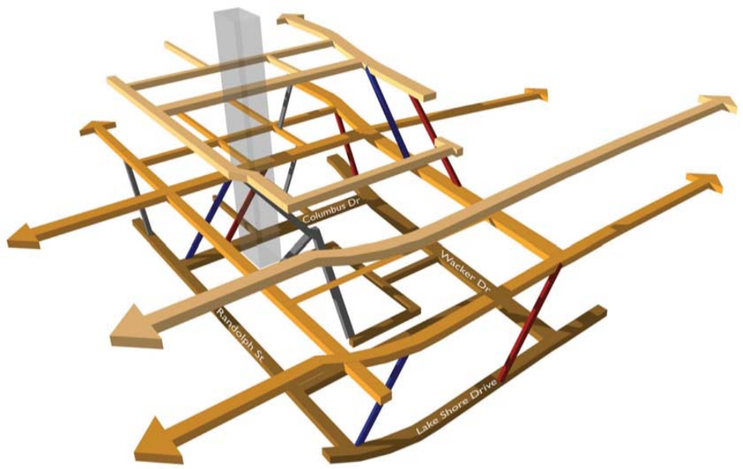

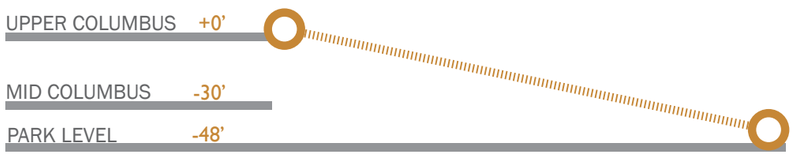

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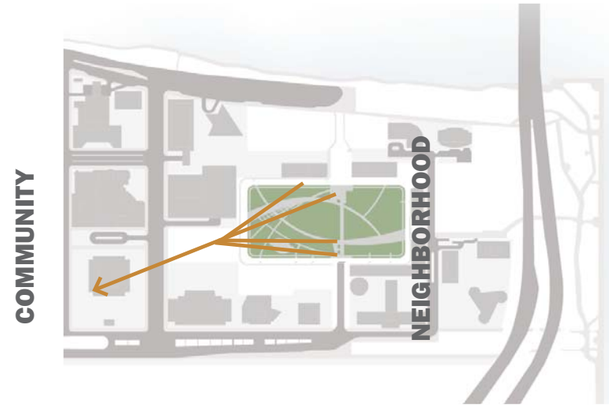

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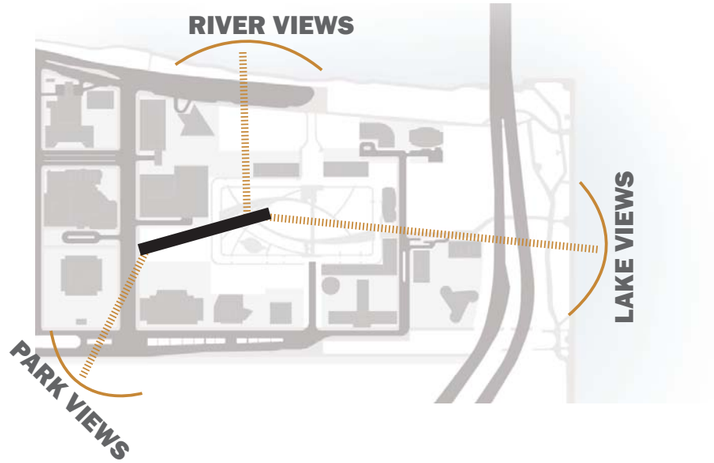
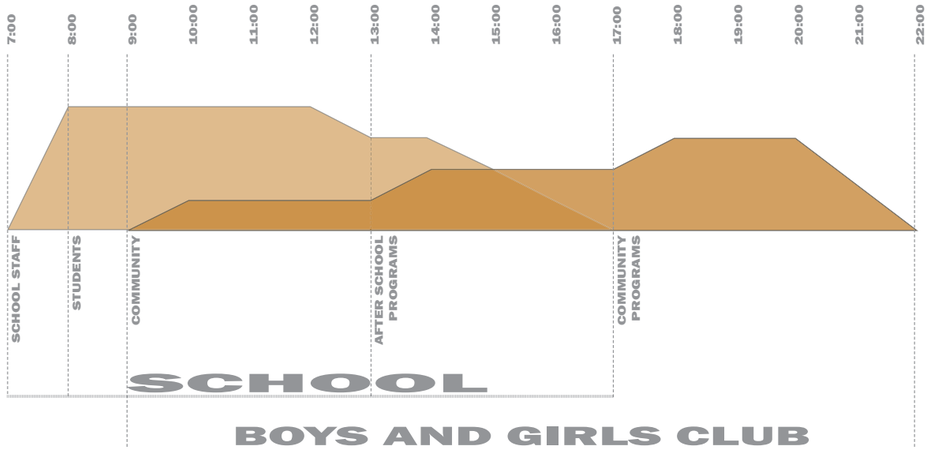


COMMUNITY RESOURCES

1. NAVY PIER
2. HARBOR
3. PRITZKER PAVILION
4. CULTURAL CENTER
5. CITY COLLEGES
6. GOVERNMENT CENTER
7. ART INSTITUTE
8. HAROLD WASHINGTON LIBRARY
9. GRANT PARK
10. MUSEUM CAMPUS

PROGRAM USAGE



PROGRAM DISTRIBUTION

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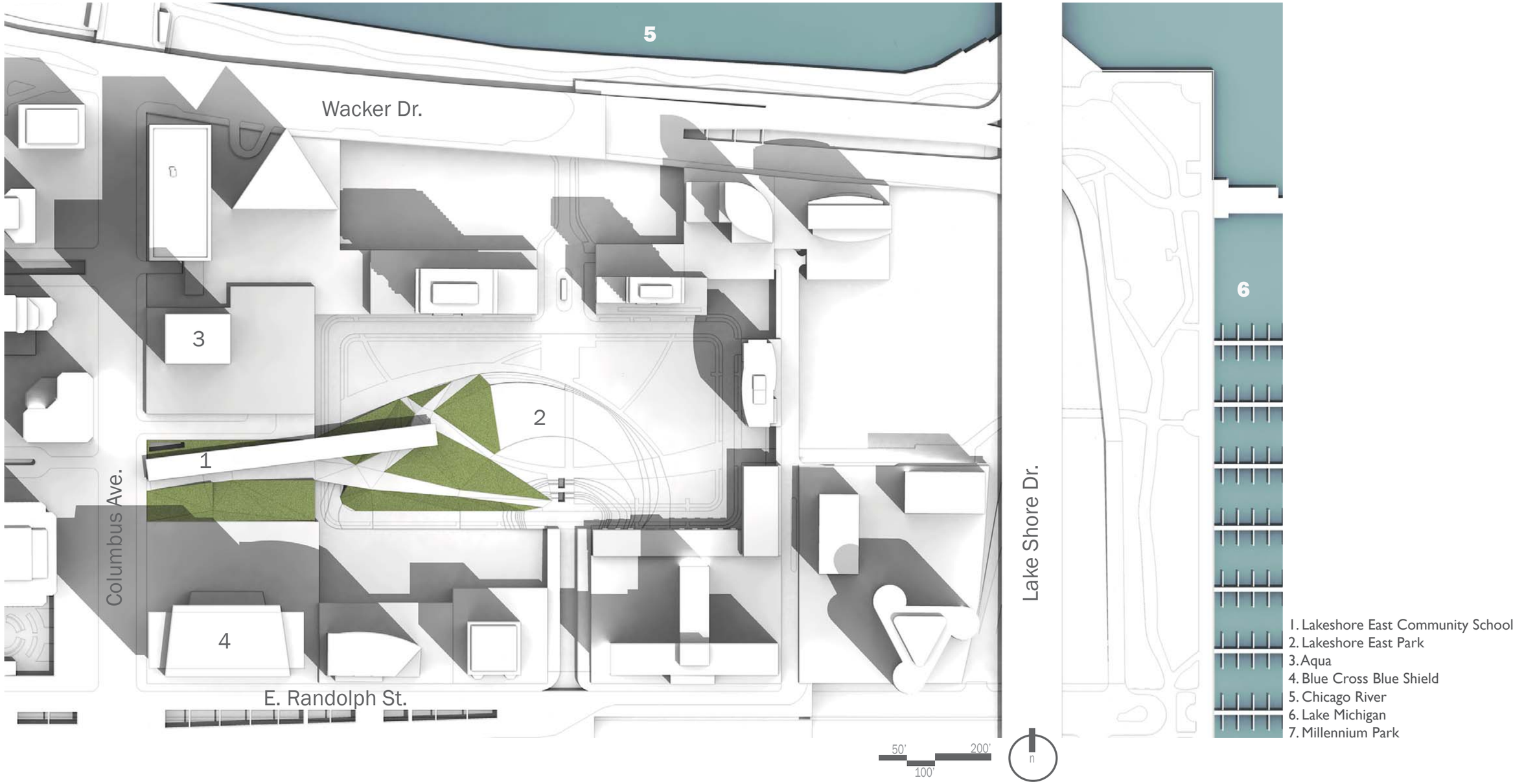
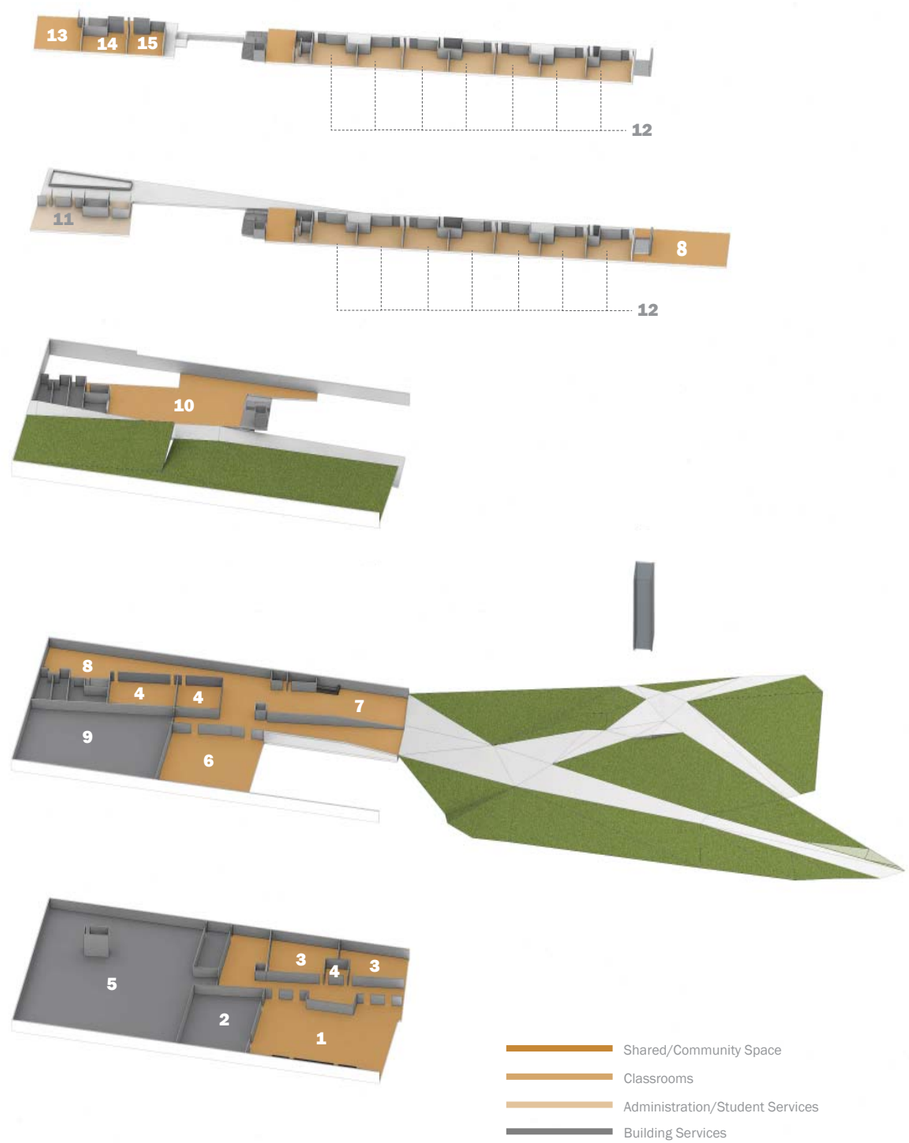
05.01 SITE PLAN



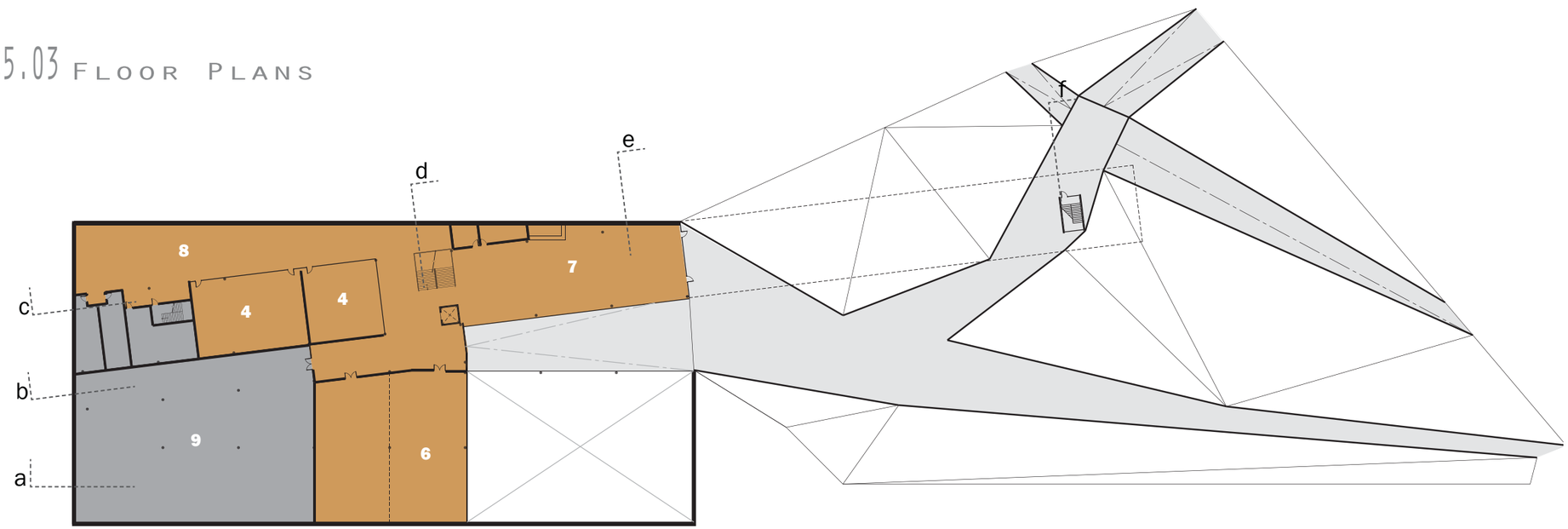
1. Lakeshore East Community School
2. Lakeshore East Park
3. Aqua
4. Blue Cross Blue Shield
5. Chicago River
6. Lake Michigan
7. Millennium Park

05.02 Axon

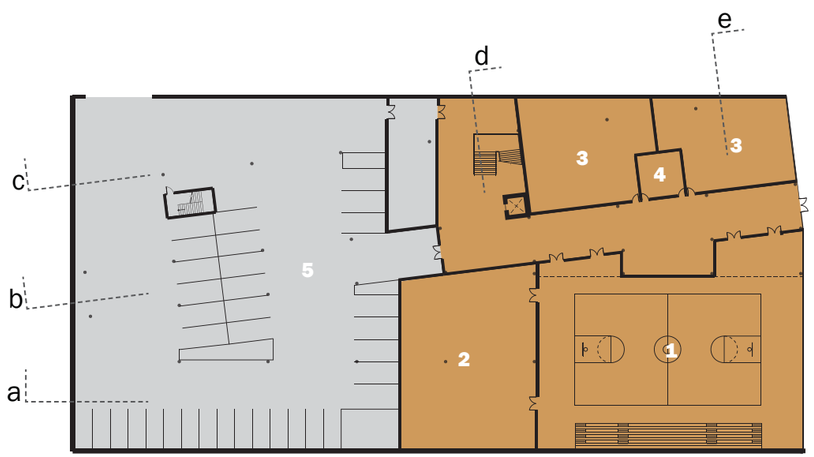


1. Gymnasium
2. Storage
3. Locker Room
4. Meeting Room
5. Parking
6. Rec Room
7. Media
8. Collaboration Area
9. Mechanical
10. Entry/Commons Area
11. Administration
12. Classroom
13. Music Lab
14. Science Lab
15. Art Lab

05.03 FLOOR PLANS

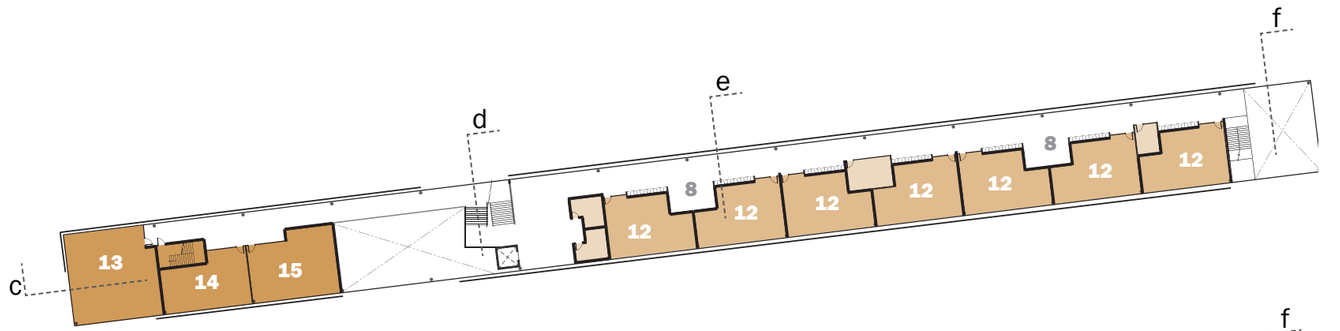


PARK LEVEL +1

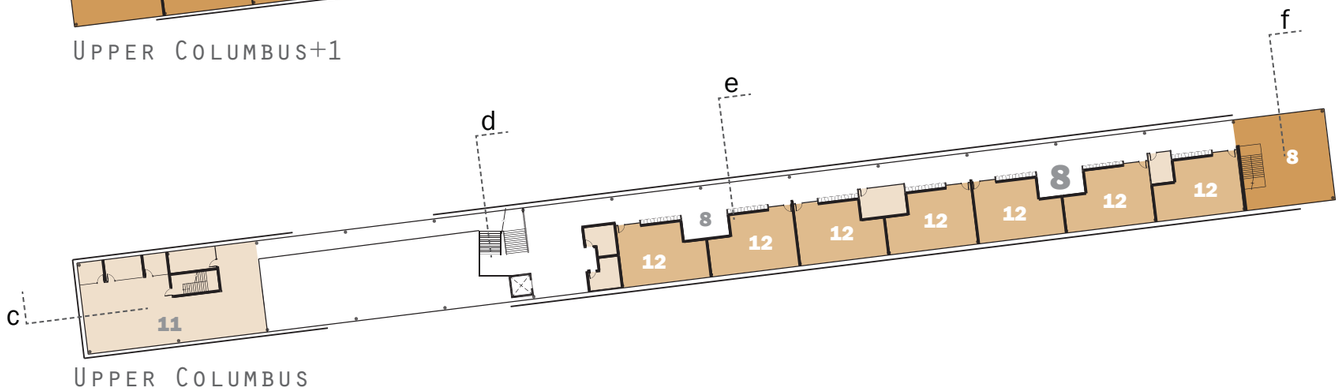


PARK LEVEL

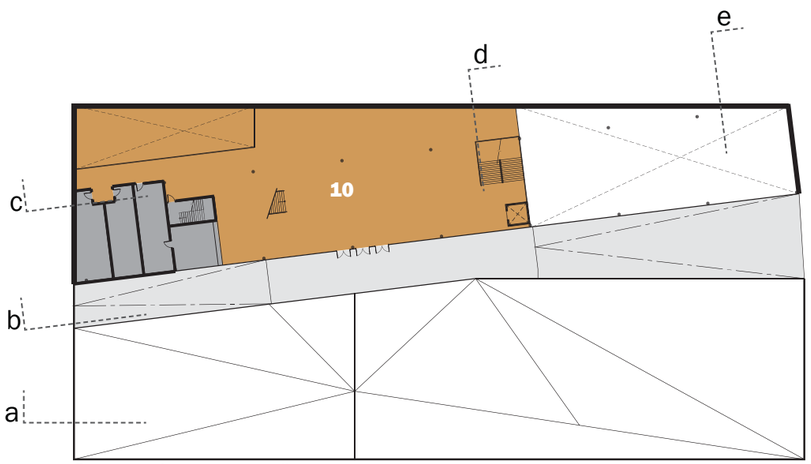
1. Gymnasium
2. Storage
3. Locker Room
4. Meeting Room
5. Parking
6. Rec Room
7. Media
8. Collaboration Area
9. Mechanical
10. Entry/Commons Area
11. Administration
12. Classroom
13. Music Lab
14. Science Lab
15. Art Lab



Upper Columbus+1



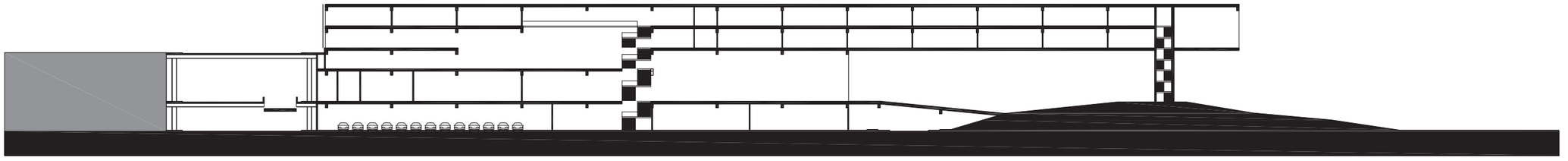
Upper Columbus



Park Level +2

- Shared/Community Space
- Classrooms
- Administration/Student Services
- Building Services

05.04 Building Sections



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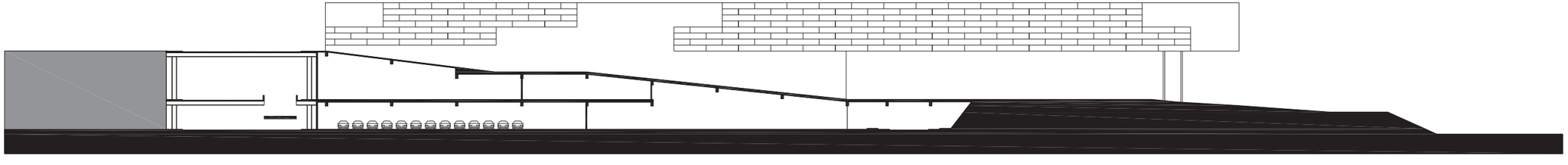

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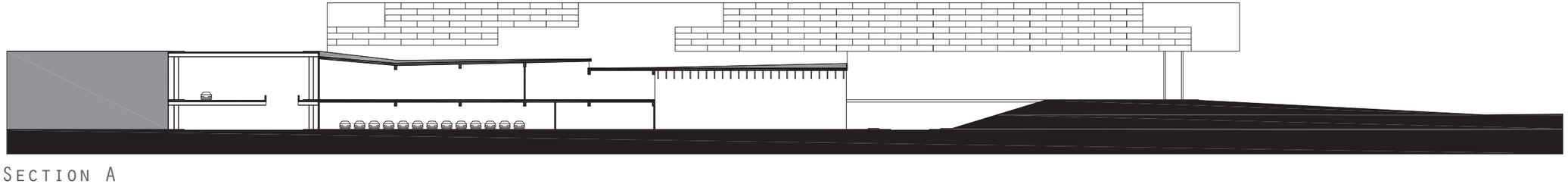

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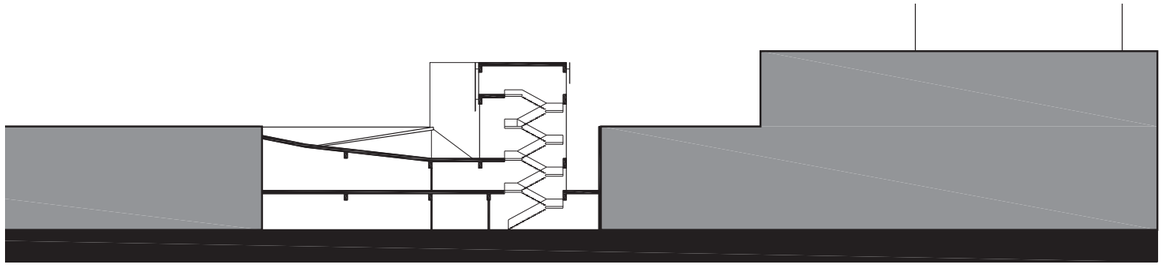

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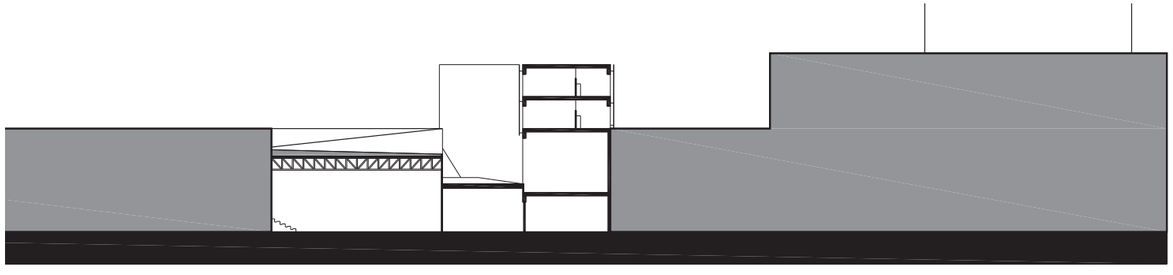

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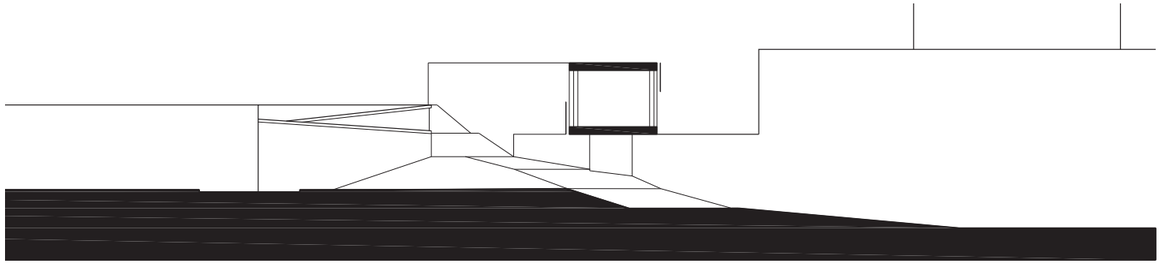

Section D

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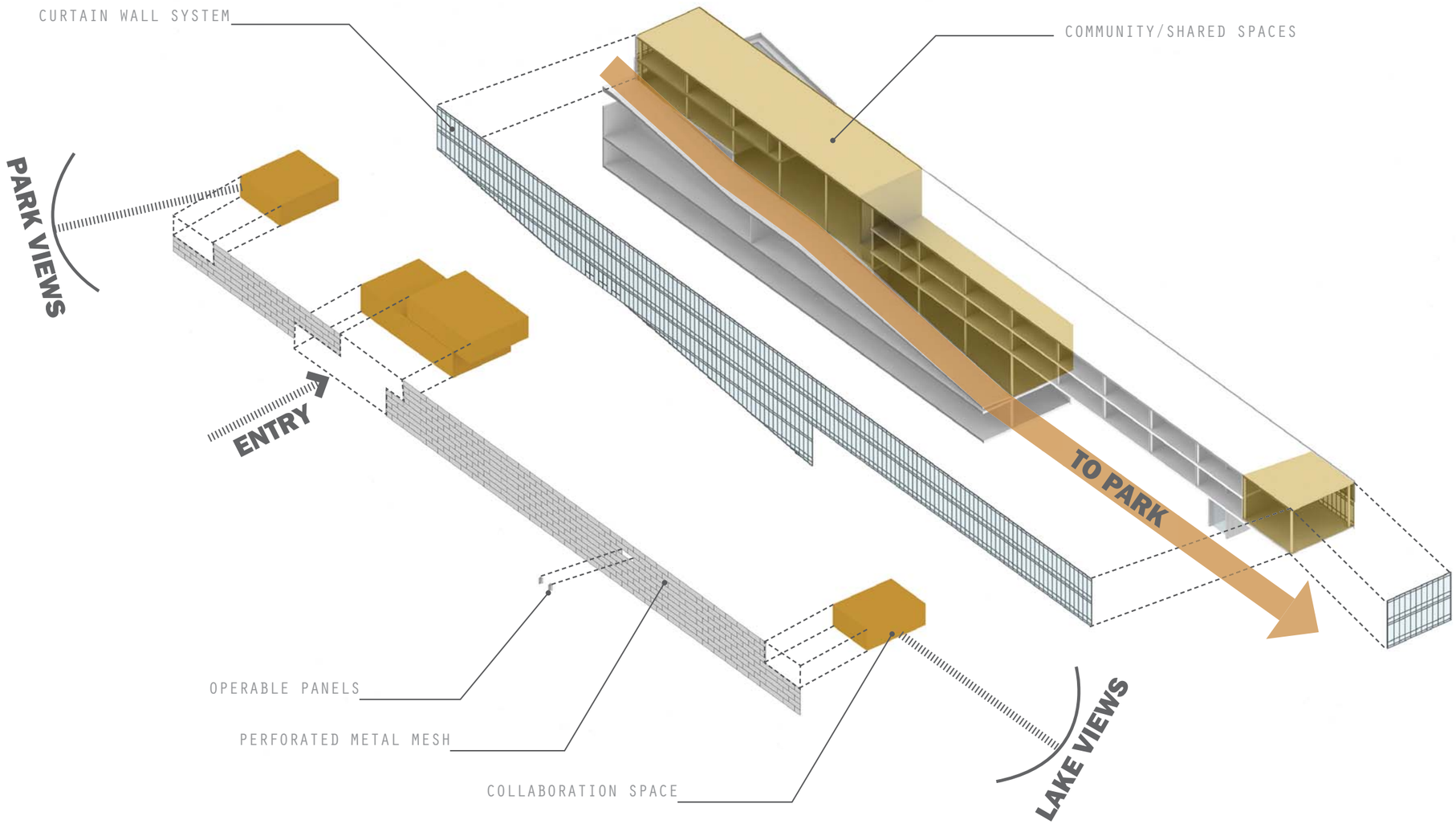
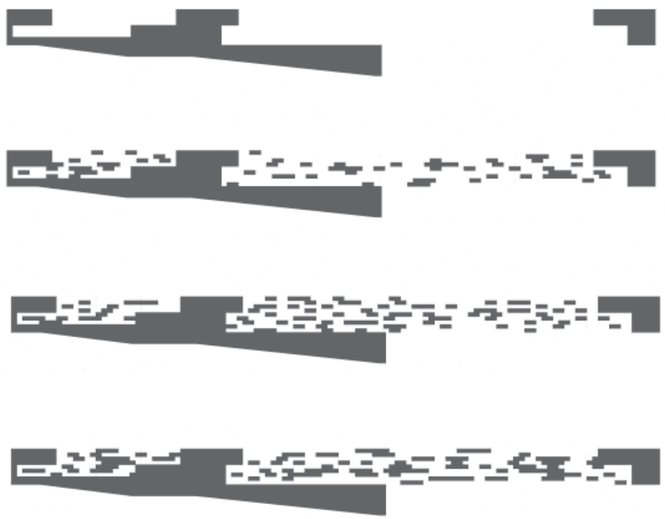
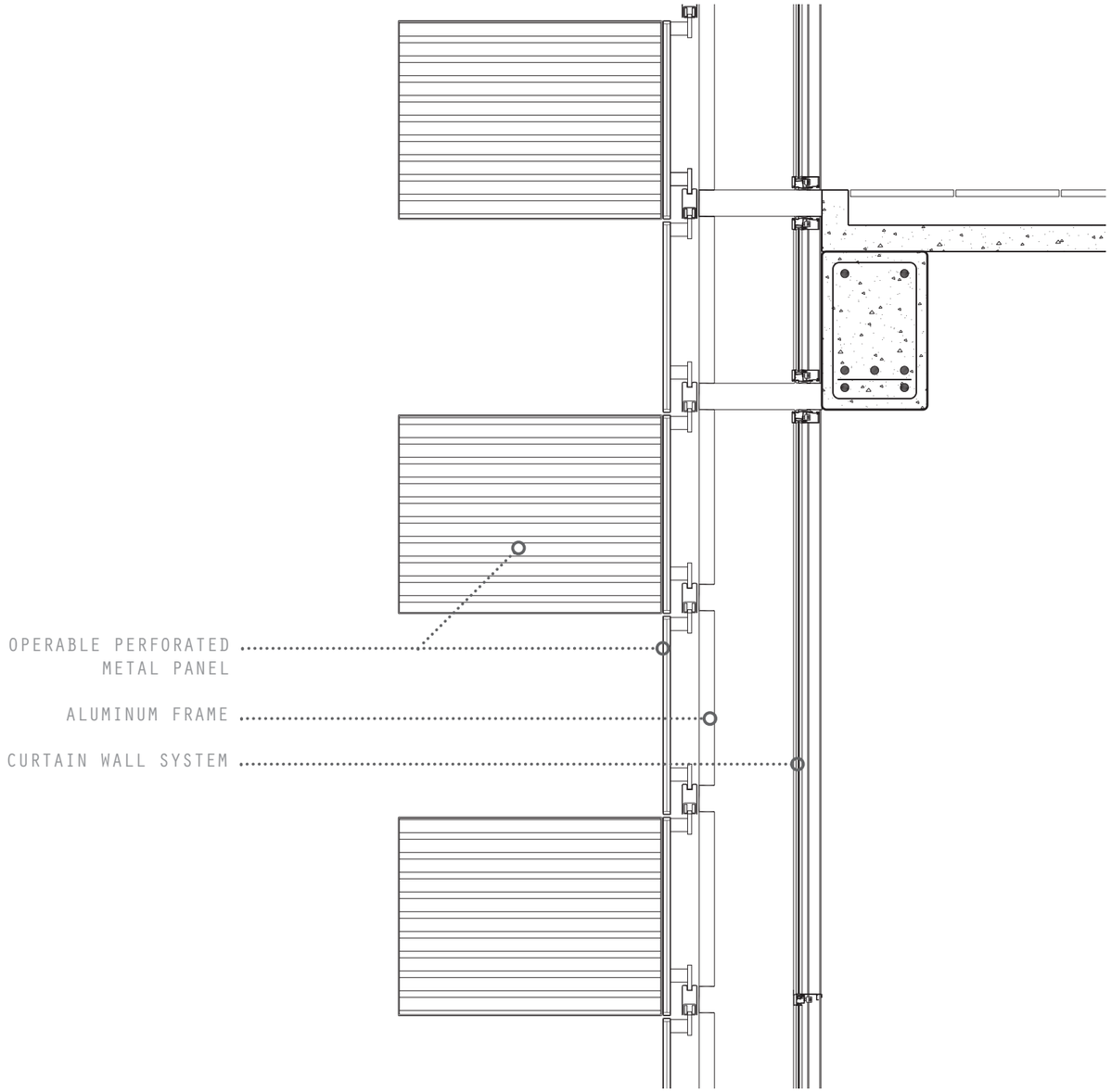

CURTAIN WALL SYSTEM
COMMUNITY/SHARED SPACES
PARK VIEWS
ENTRY
TO PARK
OPERABLE PANELS
PERFORATED METAL MESH
COLLABORATION SPACE
LAKE VIEWS

FACADE SYSTEM: SOLID/VOID





06 RENDERINGS

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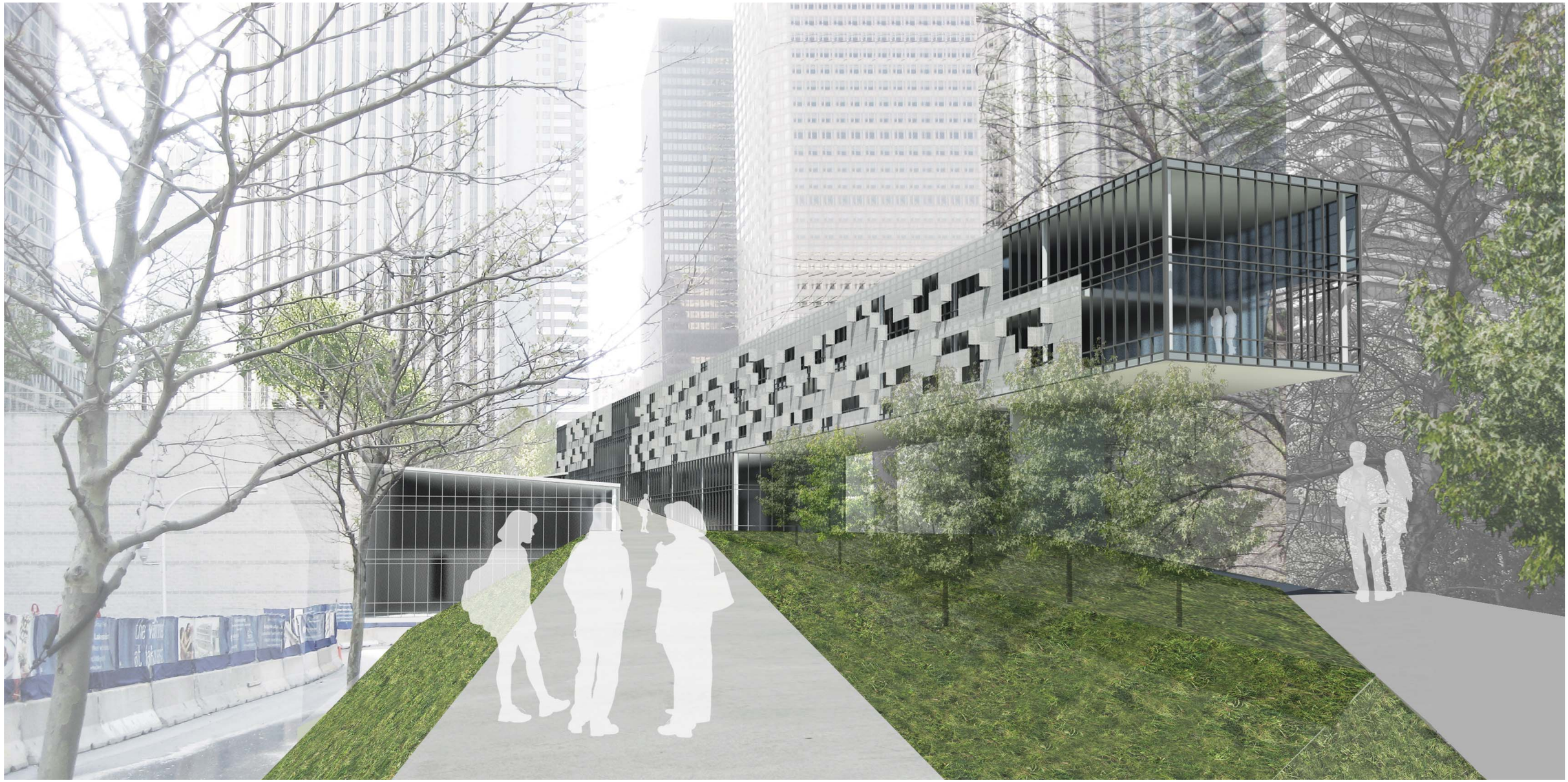
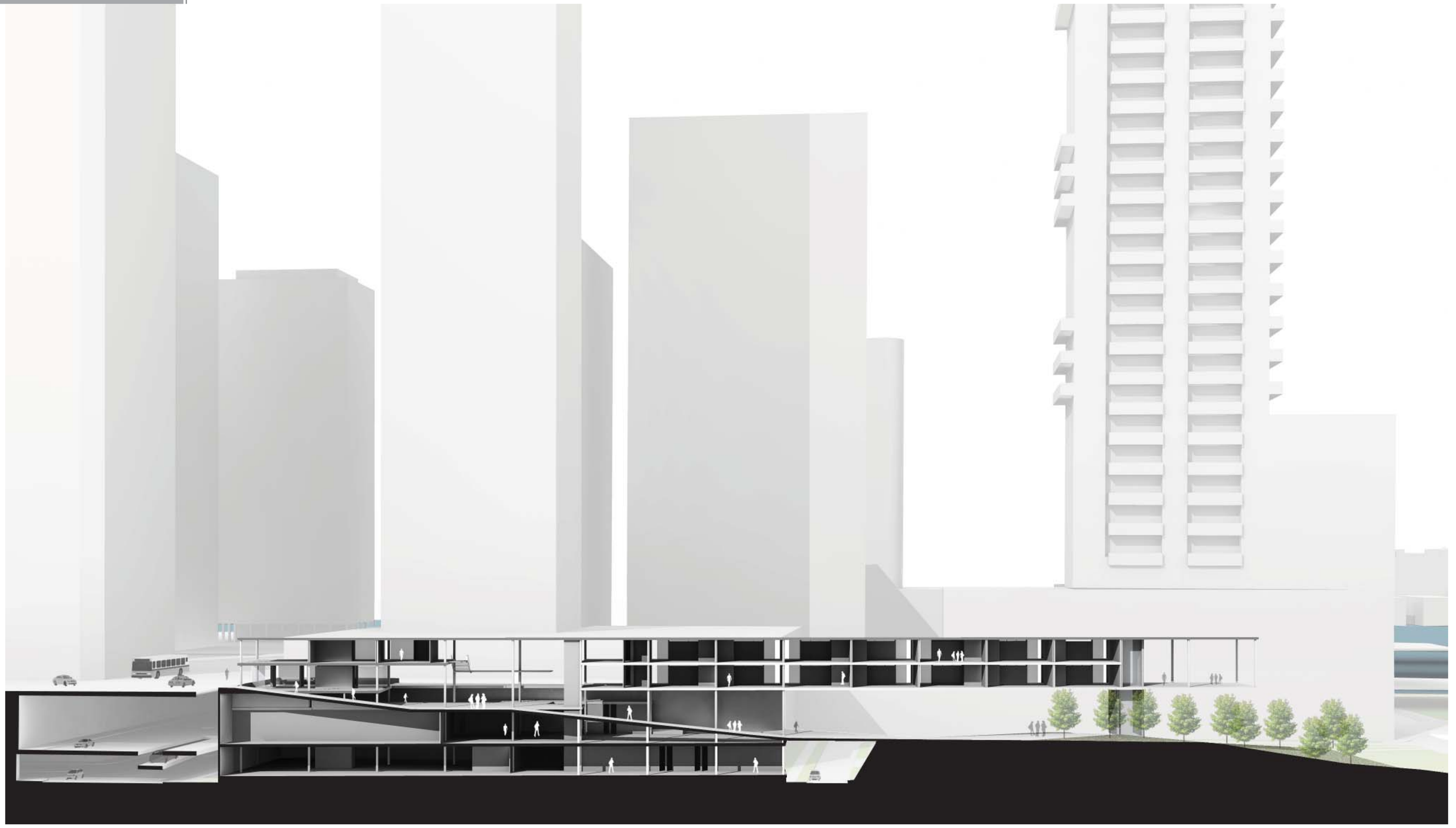
BIRDSEYE

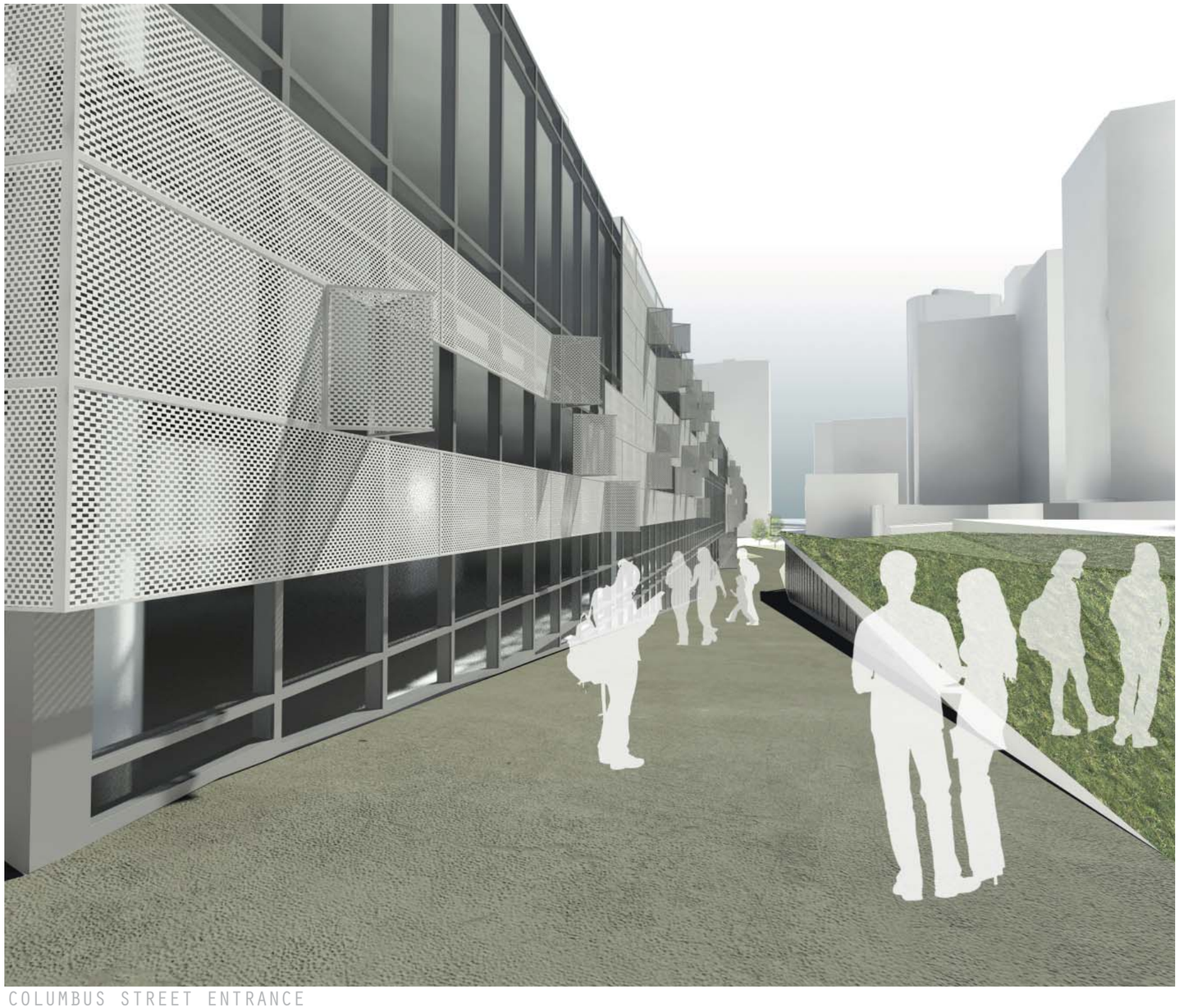


PARK PERSPECTIVE



3D SECTION

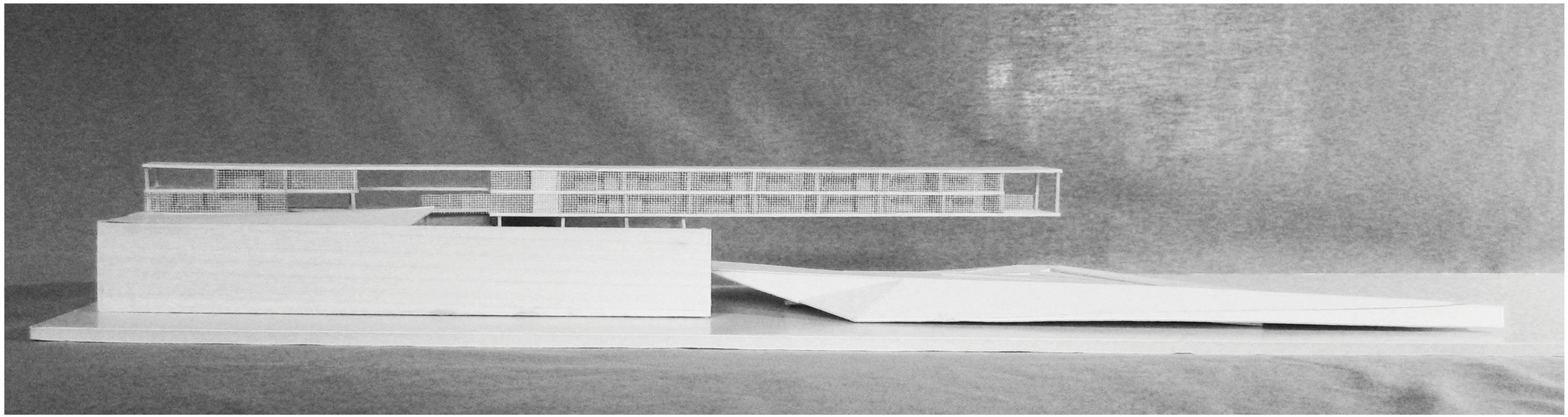
PARK ENTRANCE

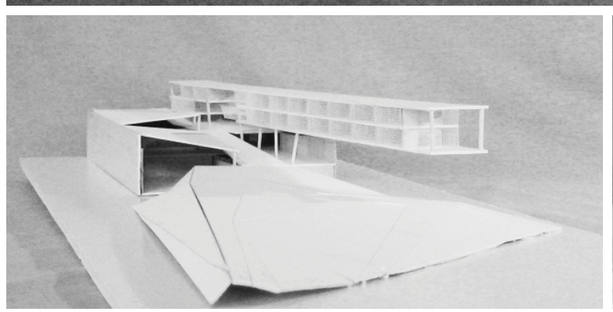


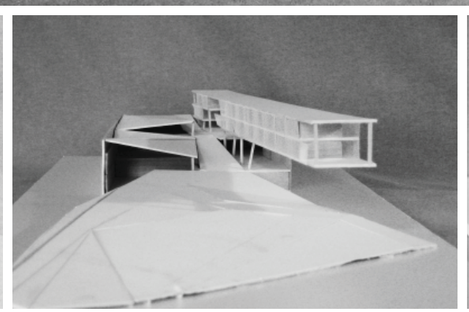
COLUMBUS STREET ENTRANCE

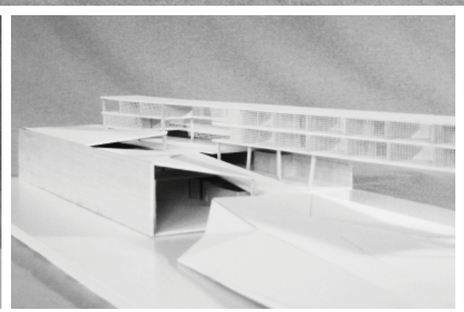
MUSIC LAB - MILLENNIUM PARK VIEW

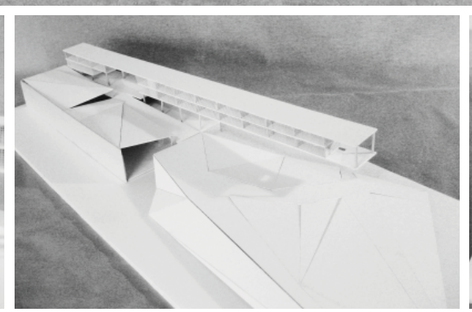
COLLABORATION SPACE - PARK VIEWS

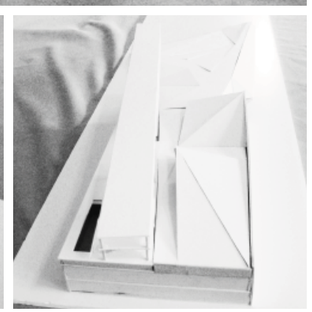




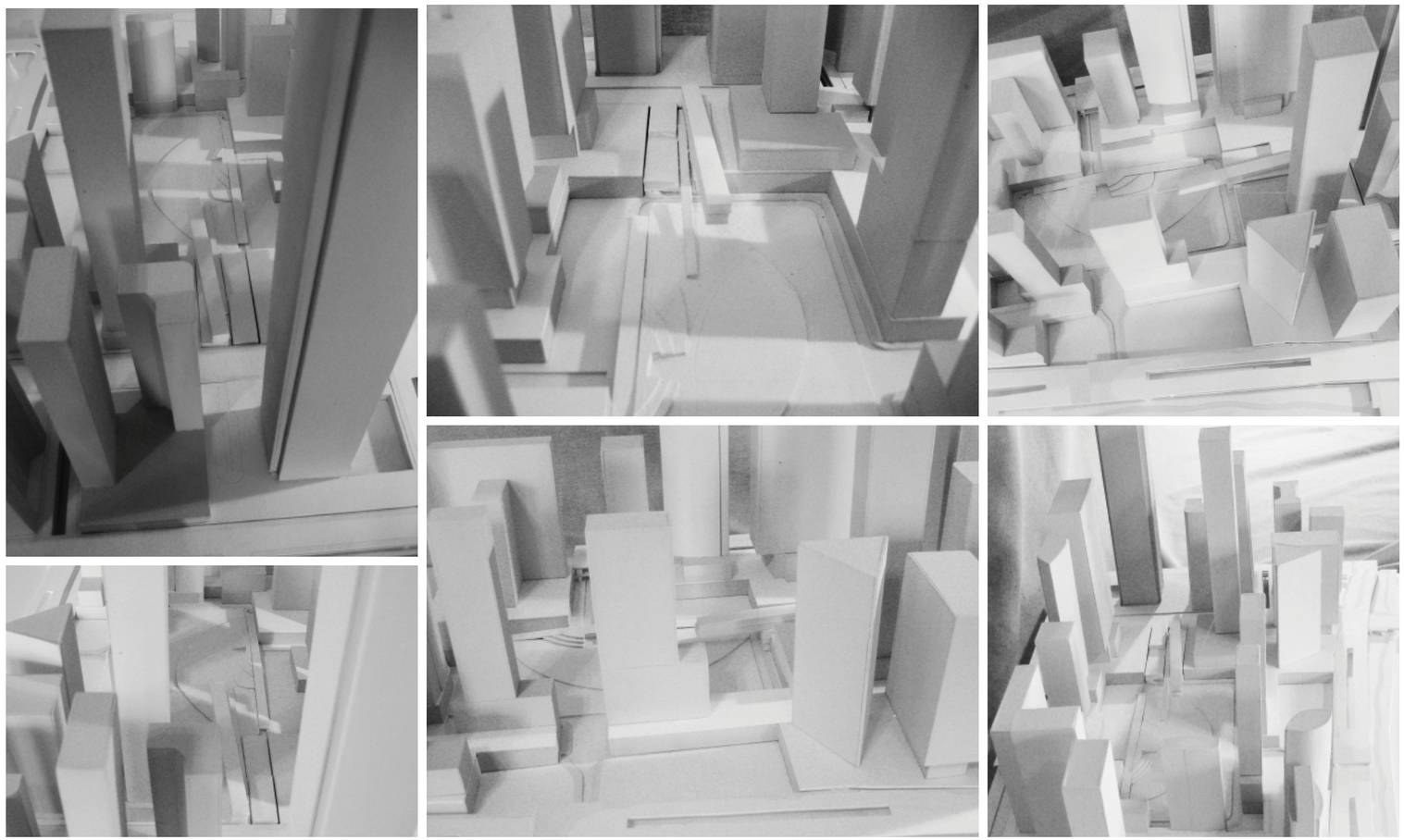








FINAL MODEL



MASSING MODEL

07 RESOURCES

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