

LIBRARIES AS A FACILITATOR OF COMMUNITY ENGAGEMENT IN THE
URBAN ENVIRONMENT

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Libraries as a Facilitator of Civic Engagement in the Urban Environment

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ABSTRACT

Libraries are essential elements to the life of our communities as they provide many assets to community members and act as catalysts for civic engagement. Tightened government budgets in the United States have threatened the ability for libraries to prosper in our communities. For years, the program of the library has been redefined to help validate its need as a member of the public infrastructure. The various technological advances of the past thirty years, as well as a need to bridge the digital divide that has occurred due to these advancements, have fueled these changes. The power of the library to engage the community and provide opportunity is unrivaled by any other typology. How can contemporary libraries maintain their power of the historic typology, address contemporary needs, and adapt to future changes? Through design analysis of significant historic community libraries such as the Carnegie Libraries, observational analysis of contemporary library design, and interviews with library professionals and patrons, design strategies are considered to address the needs of a contemporary public library. The goal is to present architectural design strategies that are forward thinking, learn from the past, and help to maintain the typology of the library within our communities.

INTRODUCTION

The year is approximately 48 A.D. and Julius Caesar is slowly advancing the Roman forces into Egypt when he makes the move to advance towards Alexandria, Egypt. Through this pursuit, it is believed that the Ancient Library of Alexandria was burned to the ground, destroying the largest and most valuable collection of knowledge known to man¹. If we look at the timeline of libraries throughout history, this is one of the most important events to occur due to the large volume of books contained within the Library of Alexandria. Some of the earliest recordings of libraries in the world date back to the Babylonian town of Nippur in approximately 3000 B.C. While this is very important in considering the archiving of knowledge conducted at this time, it wasn't until the Library of Alexandria that books were recorded to be archived². If we consider this record of history, we can derive the beginning of the word "library". The origins of the word library come from Latin. In Latin, liber or libr- represents book, librarius means "relating to books", and libraria means bookshop. These roots in Latin begin to lay the path for what we know as libraries today.

This paper examines the meaning of contemporary libraries, how libraries have adapted to contemporary issues and needs, and why they have adapted. Furthermore, a case will be made why it is important to maintain the incorporation of libraries into our communities without losing or merging the typology with other community-centric programs.

I grew up spending a lot of my time in a library. From a young age I remember walking to the

¹ Chesser, Preston. "The Burning of the Library of Alexandria | EHISTORY." Front | EHISTORY. Accessed March 20, 2018. <https://ehistory.osu.edu/articles/burning-library-alexandria>.

² "Library - The History of Libraries." Encyclopedia Britannica. Accessed March 20, 2018. <https://www.britannica.com/topic/library/The-history-of-libraries>.

local library branch once a week for a youth summer reading class. I remember the excitement of walking through those big glass doors of one of the most exciting places in my community to visit. As I grew up, I began to observe the various demographics of the patrons of that library. It began to spark an interest in the power that a building like this could have over a community. I began to recognize the ability of this building to bring people together of various ages, religions, and races into one building. That power to create community between people was incredible and inspired me to turn to architecture for my academic and professional career.

Over the course of my education and experience in the architecture profession, I have seen a rapid change in the components that go into a library. These components vary based on location and library system, but there is a reason they are being incorporated and it is important to address these as elements of a library program. What we know as a library today is drastically different than it was 20 years ago. Asking the question of "What is a library?" is not simply to redefine the word, but to also address the community-centric design aspect of a library. Libraries are essential to many communities; therefore, I believe that it is important to design them based on the needs of the community.

Libraries take the shape of much more than a structure housing books, they become community centers, civic centers, and cultural centers. As designers, we need to understand all of the elements of library design and to communicate with the community and librarians on what is truly needed and desired. It is easy as designers to say we understand what goes into a library or what is needed, but do we truly know? How many libraries are dysfunctional or see renovations within a few years of opening? How many libraries truly accomplish their job in the best way possible for the community? It is the community that we are designing for after all.

METHODOLOGY

When considering the current state of library design, it is important to visit libraries and consider how libraries have changed. This provides the opportunity to compare and contrast the various programmatic elements present based on location, system size, and various other factors that influence design. In addition to visiting libraries, various interviews of members of the library profession, architecture profession, and interior design profession were conducted to reveal any discrepancies between how libraries are designed through the point of view of the design professionals and librarians. In addition to the various forms of primary and empirical research, other text and case studies was explored in relation to the points in this paper. Specifically, a comparison is made between various aspects of Carnegie Libraries and contemporary libraries such as The Seattle Central Library, TLCPL King Road Library, Dokk1, and the Idea Store. The methodology of the research conducted to support this paper is relevant to current architectural and library discourse because libraries are important elements of the public infrastructure and are constantly adapting to civic needs. It is important to examine how and why libraries have changed by examining the current built form of libraries, the designers of these buildings, and the professionals that occupy the structure on a daily basis.

HISTORY

The concept of a library has existed for thousands of years, dating back to the earliest recorded example in history of an archive in 3000 B.C. During this time, information was

recorded on clay tablets³. The archive of information on clay tablets was also found to exist in ancient China, among other parts of the world. Much of these archives do not exist today due to the various years of war and conquest that destroyed much of civilization. Around 400 B.C., we began to see the early recording of information in books. At this time, books were starting to be constructed out of papyrus and other forms of parchment, which led to the ability to copy information from one text to another with less difficulty⁴. The program for a library from this point forward stayed relatively unchanged until the technological revolution of the mid-20th century.

For much of the 19th and 20th century, libraries were a rarity within many communities. Typically, large metropolitan areas were the only communities that could afford to construct, furnish, stock, and maintain a library. For late 19th century America, much of that would change when Andrew Carnegie chose to donate over 90% of his wealth to provide the same opportunity to knowledge to the country as he had as a child⁵. Growing up in small town in the middle of Pennsylvania, Carnegie was refused the ability to attend his local library based on his working-class title. Following his pursuit of knowledge, Carnegie convinced the local jurisdiction to open the structure for the working class, arguably starting his journey into furnishing the country with knowledge and opportunity. Carnegie went on to become one of the greatest entrepreneurs in American history, and if it weren't for the library, it is possible that he never would have had the ability to facilitate his education and pursuit of success in the way he did. Following the many years of creating a steel dynasty, Carnegie sold Carnegie Steel for almost 500 million dollars, which he then invested back into the very thing that got him to where he was, libraries⁶. Carnegies gift,



Figure 1

Alex Schriener, Carnegie Programming, 2018

<https://www.citylab.com/design/2014/10/how-andrew-carnegie-built-the-architecture-of-american-literacy/381953/>

⁶ Capps, Kriston. "How Andrew Carnegie Built the Architecture of American Literacy."

³ "Library - The History of Libraries." Encyclopedia Britannica.

⁴ "Library - The History of Libraries." Encyclopedia Britannica.

⁵ Capps, Kriston. "How Andrew Carnegie Built the Architecture of American Literacy." CityLab. Last modified November 5, 2014.

estimated to total over 1.3 billion dollars, is still the largest donation to public infrastructure in American history⁷.

If we examine Carnegie libraries from an architectural standpoint, they tend to be rather recognizable within communities, contrary to what was actually desired by Carnegie. Carnegie had set down a standard of architectural plans and elevations for his libraries to eliminate any need to overspend money on architectural design. Carnegie's intent was not to create beautiful and grand structures all over the country, but to create these structures for community, knowledge, and civic engagement. Almost 1700 libraries were constructed in communities and over 800 of those still stand today as libraries. In addition to the existing Carnegie Libraries, many were converted to other community-centric programs such as community centers, art centers, and businesses.⁸

RESEARCH – TYPOLOGY

It is important that as designers we do not allow the library typology to be merged with other community-centric programs. For example, in London, new libraries designed by architects such as Adjaye Associates and Bisset Adams are being rebranded as "Idea Stores".⁹ If we consider this from a typological point of view, the argument can be made that this is an attempt to eliminate the term "library" and replace it with something new, and in this case, Idea Store. According to a Danish website called "Model Programme for Public Libraries", which

lays down a set of design guidelines for libraries in the 21st century, states, "Idea Stores in London have broken away from the traditional library concept. Instead they promote themselves as stores, that wish to engage, empower and enrich the users".¹⁰ If we dig a little deeper into how the Idea Store claims to differentiate themselves from a traditional library, we will see that they state those main differentiating factors are the incorporation of adult educational classes, career coaching, cafes, art, culture, meeting locations, and leisure time activities.¹¹ What is interesting about this is the lack of differentiation of program and services offered at Idea Store in comparison to many other contemporary libraries. Nevertheless, the creators of the Idea Store still felt the need to remove the term "library" and replace it with "Idea Store". As stated by the Idea Store, their three main concepts are to "engage, empower, and enrich", but is this not a commonality between all libraries?¹² Libraries are meant to be places of continued education, community engagement, and opportunity. These main ideals of the Idea Studio can easily be translated to many other libraries, so why is it necessary to change the typology of the building? In a quote from the Idea Store, they described one of the reasons for removing "Library" from the name by stating, "Idea Stores are called Idea Stores instead of libraries because the word "library" has a discouraging effect on some of the users."¹³ For some patrons, libraries may be a relatively intimidating place. Recent changes in program and contemporary design have drastically changed this. The Idea Store mentions that creating a more relaxed and open floor plan helps community members feel more as if the space is theirs. In addition, the Idea

⁷ Capps, Kriston. "How Andrew Carnegie Built the Architecture of American Literacy."

⁸ Capps, Kriston. "How Andrew Carnegie Built the Architecture of American Literacy."

⁹ "Idea Stores: A Revised Library Concept - MODEL PROGRAMME FOR PUBLIC LIBRARIES." Modelprogram for Folkebiblioteker - Modelprogram for folkebiblioteker. Last modified September 20, 2017. <http://modelprogrammer.slks.dk/en/cases/thematic-cases/idea-stores-a-revised-library-concept/>.

¹⁰ "Idea Stores: A Revised Library Concept - MODEL PROGRAMME FOR PUBLIC LIBRARIES."

¹¹ "Idea Stores: A Revised Library Concept - MODEL PROGRAMME FOR PUBLIC LIBRARIES."

¹² "Idea Stores: A Revised Library Concept - MODEL PROGRAMME FOR PUBLIC LIBRARIES."

¹³ "Idea Stores: A Revised Library Concept - MODEL PROGRAMME FOR PUBLIC LIBRARIES."

Stores provide many other examples as to how they created a less intimidating environment through improved programmatic layout, creating a no-rules environment, and redefining the programmatic hierarchy of spaces.¹⁴ This opens a discussion of whether or not changing the name of the structure is necessary. Was it the fact the building was called a "Library" that was truly intimidating community members from patronizing the building, or was it the dysfunction, lack of program, and other contemporary issues that was discouraging patrons? It is important to recognize that even though books volumes are decreasing and that the definition and program of the library is constantly changing that this does not mean we need to replace the word "Library". If we are not careful about how we are removing the word library from community-centric structures, we open up the possibility of the entire typology of the library merging with other community-centric programs, and therefore, the possibility of the eventual disappearance library typology.

On the contrary, the idea of calling a library a "Store" is very practical to how libraries are managed. In recent years, librarians have taken insight from retail marketing to manage their libraries. In an article by Allison Fiscus, the director of the Maumee Branch Library in the Toledo Lucas County Public Library System, titled "Visual Merchandising - Applying Bookstore Insights to Public Library Collections," Fiscus addresses this exact concept as a very viable solution to marketing a library to the public. The author talks about how it is important to learn from the millions of dollars the retail industry has spent to market

their products, which they do successfully, and how to apply those tactics to libraries, which are essentially already giving their "product" away for free.¹⁵ So while changing the physical name of a "library" to a "store" may not be necessary, it is wise as designers and librarians to look at the typology with a more retail centered mindset.

RESEARCH - TECHNOLOGY

The computer revolutionized the way we live life and tackle common tasks. Initially, the computer was designed as a number generating machine able to process numbers faster than humanly possible. This concept can be traced back to the early 19th century, when a man by the name of Joseph Marie Jacquard invented a loom style machine that was used to create fabric designs.¹⁶ This design of this machine influenced the early roots of a computer that was designed in 1890 by Herman Hollerith, which used a similar wooden punch card system. All of these developments contributed to the first "universal machine" designed by Alan Turing in 1936, which could compute "anything that is computable".¹⁷ Turing developed the universal machine for the Allies to break wartime code from the Axis in World War II.¹⁸ Over the next few decades, incredible advances were made in the development of the computer to allow for the portable personal machine¹⁹. In late 1999, families began to see affordable versions of these new devices that they could purchase for their homes. Likewise, computers began appearing in community spaces, such as libraries.

¹⁴ "Idea Stores: A Revised Library Concept - MODEL PROGRAMME FOR PUBLIC LIBRARIES."

¹⁵ Fiscus, Allison M. "Visual Merchandising – Applying Bookstore Insights to Public Library Collections » Public Libraries Online." Public Libraries Online » A Publication of the Public Library Association. Last modified January 23, 2018. <http://publiclibrariesonline.org/>

¹⁶ Zimmerman, Kim A. "History of Computers: A Brief Timeline." Live Science. Last modified September 6, 2017. <https://www.livescience.com/20718-computer-history.html>.

¹⁷ Zimmerman, Kim A. "History of Computers: A Brief Timeline." Live Science.

¹⁸ "World War II's Greatest Hero: The True Story of Alan Turing (Paid Post by The Weinstein Company From NYTimes.com)." The New York Times - Breaking News, World News & Multimedia. Last modified February 4, 2015. <https://paidpost.nytimes.com/the-weinstein-company/world-war-iis-greatest-hero-the-true-story-of-alan-turing.html#.WrfYbGZNPm>.

¹⁹ Zimmerman, Kim A. "History of Computers: A Brief Timeline." Live Science.

RESEARCH – CASE STUDIES

The incorporation of computers into libraries was one of the first large programmatically changes to happen to the library design allowing for another form of information attainment. This led to an increased need for space to dedicate to computers within libraries. For many library systems, this simply just meant renovating existing space, but without adding additional space, something within the existing program had to be removed. For other library systems, this provided an incredible opportunity to design new libraries with an increased focus on technology. A very good example of a library system with this ideology is the Seattle Public Library System, and their Seattle Central Library branch designed by Rem Koolhaas.

The Seattle Central Library is an incredible precedent for contemporary library design, but above all, it is one of the first major representations of a library designed with a program heavy on technological advances. Koolhaas was approached to design the structure in the late 1990's, right in the middle of the development of the world wide web. The Seattle Public Library System took advantage of this opportunity and put an emphasis on designing for the various new technologies. These various technological advances provided community members the opportunity to conduct internet-based research, internet based communication, and digital reading. Furthermore, we begin to see the influence that these new technologies were having on the perception of the program of the library. Koolhaas states that the library is no longer an "institution dedicated to the book, but as an information store where all potent forms of media - new and old - are presented equally and legibly."²⁰

One of the intentions of the designers, Rem Koolhaas and Jason Prince-Ramus, was to create a truly flexible program. The designers state that an issue with allowing spaces to not be truly defined, or using an open floor plan, is that the program no longer differentiates itself from other information sources within a building. To counter this while still striving to obtain the same goal, Koolhaas and Prince-Ramus create a program based on "spatial compartments" that separate the various programmatic requirements of the building into specified floors and areas. This allows a flexibility within each program but maintains an orderly separation between the various compartments.²¹ This concept of spatial arrangement within a library was a new way of approaching the library program. If we examine Figure 1, we can see this tactic used by the

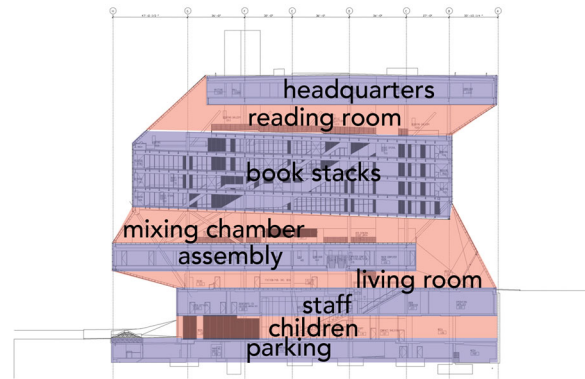


Figure 2

Original Photo: OMA Architects, *Section*, 2004

architect. We also begin to see a large focus on other programmatic elements, other than the traditional books stacks.

²⁰ Seattle Central Library / OMA + LMN." ArchDaily. Last modified February 10, 2009. <https://www.archdaily.com/11651/seattle-central-library-oma-lmn>.

²¹ Seattle Central Library / OMA + LMN." ArchDaily.

The book stacks within the Seattle Central Library are clearly one of the focal points of the design. What really set the library apart is the incorporation of the various new programmatic elements that define a library for contemporary times (or library for the 21st century). At the time, spaces dedicated to technology, performing arts, art, public meeting spaces, and even retail, were relatively rare within traditional library design²². Today, most of us can't imagine a library without these opportunities because we have become accustomed to these elements of a library program. The Seattle Central Library set an example within the library design field of how much the program of a library has evolved over the years. Architect Witold Rybczynski, writing for Architect Magazine about the Seattle Central Library states, "Good buildings don't just fulfil existing functions, they suggest new ones."²³ This is exactly what the Seattle Central Library does, and could be the essence of what the definition of a library truly is today; a building that suggests constant redefinition of its program. We need not define a library as one that resembles the Seattle Central Library, but that we define the ability and need for libraries to adapt.

In 2016, the Toledo Lucas County Public Library System (TLCPL) opened their completely new King Road Library branch. It was the first new library branch to open in the system in over 20 years.²⁴ Prior to King Road, many branches in the system received minor remodels and additions to help compensate for technological advances and the need to expand for increased patronage. The need for a new branch in Sylvania, a suburb on the Northwest side of Toledo, provided a great opportunity to expand the libraries programmatic potential. Prior to this, many libraries in the system had basic technology spaces composed of computers, printers, WIFI, conference spaces, children's

areas, and traditional book stacks. The library system recognized this potential to incorporate new technologies. The largest impact on program for this branch was the incorporation of the Creation Lab, or more commonly referred to, a makerspace. A makerspace is simply an area of a program designated to creation and inspiration through various mediums. For example, these spaces will have elements such as computer labs, 3D printers, recording studios, art studios, photography studios, and

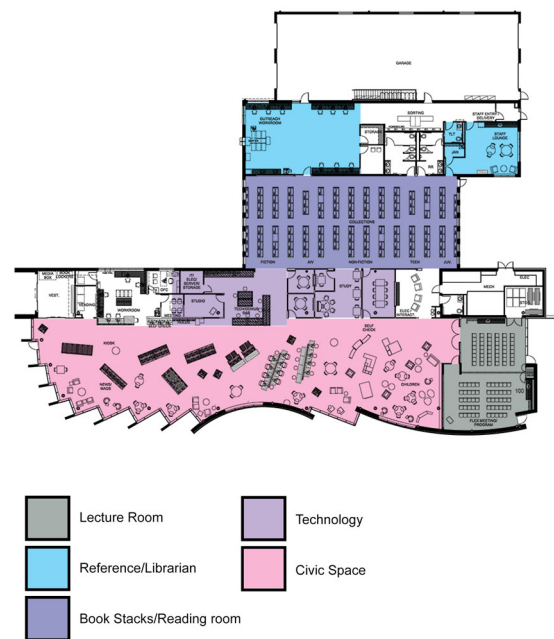


Figure 3

Alex Schrinel, King Road Library Program, 2018

²² Seattle Central Library / OMA + LMN." ArchDaily.

²³ Rybczynski, Witold. "Revisiting Rem Koolhaas's Central Library and Peter Bohlin's City Hall in Seattle." Architect Magazine. Last modified April 22, 2013.

http://www.architectmagazine.com/design/revisiting-rem-koolhaas-central-library-and-peter-bohlins-city-hall-in-seattle_o.

²⁴ "King Road - The Beacon of Light." Toledo Lucas County Public Library. Accessed March 23, 2018. <http://www.toledolibrary.org/construction/king-road>.

other creative mediums. Specifically, The King Road Library Creation Studio has 3D printers, designated computers, a recording studio, and a Create U Memory Lab. In addition to the Creation Lab, the branch houses an additional 12 computers, 2 children's computers, Cafe, 182 person meeting room, self-serve copy-print-scan area, and an outdoor garden.²⁵ The important element to realize when considering the list of spaces above is that all of those programmatic elements are in addition to the book stacks and all of that fits into a 23,000 square foot building.²⁶ Furthermore, the library provides its members with the opportunity to check out digital books through a program called "Overdrive" which now increases the availability of information to many patrons²⁷. It's incredible to think that all of these opportunities exist within a branch library in a library system composed of 19 branch locations and 1 central location.

The elements present in the TLCPL King road branch are becoming more available in library design. This shift in program from traditional book stacks to technology centric programming is both a positive and a negative when addressing the survival of libraries. First, it is possible to view this change in program as a response to the decreasing book volumes present in newly built or renovated libraries. If book volumes are decreasing, less space is needed for books and therefore new program needs to take its place. One can view this change as a positive incorporation of community opportunity. The incorporation of new programmatic spaces, such as a music recording studio may provide an inspired child to pursue a career in music due to the fact that library can now facilitate the child's creative trajectory.

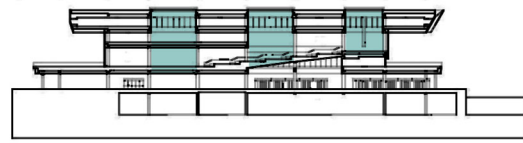


Figure 4

Original Image: Schmidt Hammer Lassen Architects, Dokk1 Section, 2015

Furthermore, it is imperative to recognize the libraries importance within the program of a community. Libraries are places to go for continued education, free education, inspiration, creativity, knowledge, performance, art, and collaboration. Libraries are spaces for civic engagement. Marie Ostergaard, the head of community engagement for Dokk1, the new central library for Aarhus, Denmark, referred to libraries as "public squares".²⁸ Ostergaard is quite right, and many of us may have never thought of a library in this sense. Public squares area gathering spaces and activity hubs for communities. Community members can go to these public squares for entertainment, dining, shopping, relaxation, and meeting with others. Libraries are all of these things. They are the 21st century public square for many communities. Ostergaard mentions while over the 10 year process of designing Dokk1, the goal of the project was not to design a library, but to establish Dokk1 as a cultural hub for the city.²⁹ In the figures below, we can see the similarities between Dokk1 and the New York Public Libraries use of stairs as a public gathering space. This reinforces the goal Dokk1 had in creating a cultural hub for the city, but also in the library as a public square for Aarhus. The New York Public Library, constructed in 1897, is far different in program than Dokk1,

²⁵ "King Road - The Beacon of Light." Toledo Lucas County Public Library.

²⁶ "King Road - The Beacon of Light." Toledo Lucas County Public Library.

²⁷ "King Road - The Beacon of Light." Toledo Lucas County Public Library.

²⁸ Andelman, Bob. "Life Between the Shelves?: Reimagining Libraries As Civic Spaces." Knight Foundation. Last modified April 17, 2017. <https://knightfoundation.org/articles/life-between-the-shelves-reimagining-libraries-as-civic-spaces>.

²⁹ Andelman, Bob. "Life Between the Shelves?: Reimagining Libraries As Civic Spaces."



Figure 5

Original Image: Anne Wermiel, New York Public Library, 2015

but the same principles of a public square and community engagement are present. In a similar argument, Bill Ptacek, the director for the King County Library System, was asked to explain what he believed a library would be in the year 2020. Ptacek stated,

“In 2020, the public library will be a concept more than a place. The library will be more about what it does for people rather than what it has for people.” “Library buildings and spaces will be used in different ways, and services will be provided beyond the building and virtually. The library as a catalyst for civic engagement will facilitate learning and growth for people of all ages.”³⁰

Ptacek’s statement “the library as a catalyst for civic engagement” is a powerful description of what a library is designed to do. This statement alone supports the question of the importance of libraries within communities. Not only is this an accurate representation of where the state of libraries will be in 2020, but an accurate representation of the current state of libraries. The debate of whether or not libraries are needed because of the decline of book volumes,

³⁰ Ptacek, Bill. "The Library As Catalyst for Civic Engagement | Reinventing Libraries." *Library Journal*. Last modified September 5, 2013. https://lj.libraryjournal.com/2013/09/future-of-libraries/the-library-as-catalyst-for-civic-engagement-reinventing-libraries/#_.



Figure 6

Original Image: Adam Mork, Dokk1, 2015

or whether or not libraries are even libraries anymore with the decreased emphasis on books is not what should be debated. The larger issue at hand is how to preserve these buildings for the sake of community engagement. What happens to our communities if these buildings cease to exist? Will it be replaced by something else? Or do we as citizens suffer due to the decision of certain political agendas that see libraries as a dying breed of taxpayer funded community infrastructure.

RESEARCH – CIVIC ENGAGEMENT

The power of libraries to create civic engagement has results in outcomes that prove to deter criminal activity, facilitate employment opportunities, deter homelessness, and bridge the digital divide. In the city of Medellín, Colombia, this very tactic has been used to transform what was a dangerous situation for all citizens into a community rich with civic engagement. Medellín had a murder rate of 381 per 100,000 individuals prior to the election of the Mayor Sergio Fajardo in 2004³¹. Fajardo, who was the son of a local architect, approached

³¹ Kimmelman, Michael. "Fighting Crime With Architecture in Medellín, Colombia." *The New York Times - Breaking News, World News & Multimedia*. Last modified May 18, 2012. <https://www.nytimes.com/2012/05/20/arts/design/fighting-crime-with-architecture-in-medellin-colombia.html>.

these issues presented in Medellin through architecture. By improving public infrastructure, the community experienced more civic engagement opportunities, improved living conditions, lower gang participation, and a rise in civic pride. New contemporary libraries were inserted in the middle of various neighborhoods,

typically composed of unregulated settlements, to create public squares. This initial motion to help the community through public infrastructure evolved into schools, parks, public plazas, and a full transit system³².

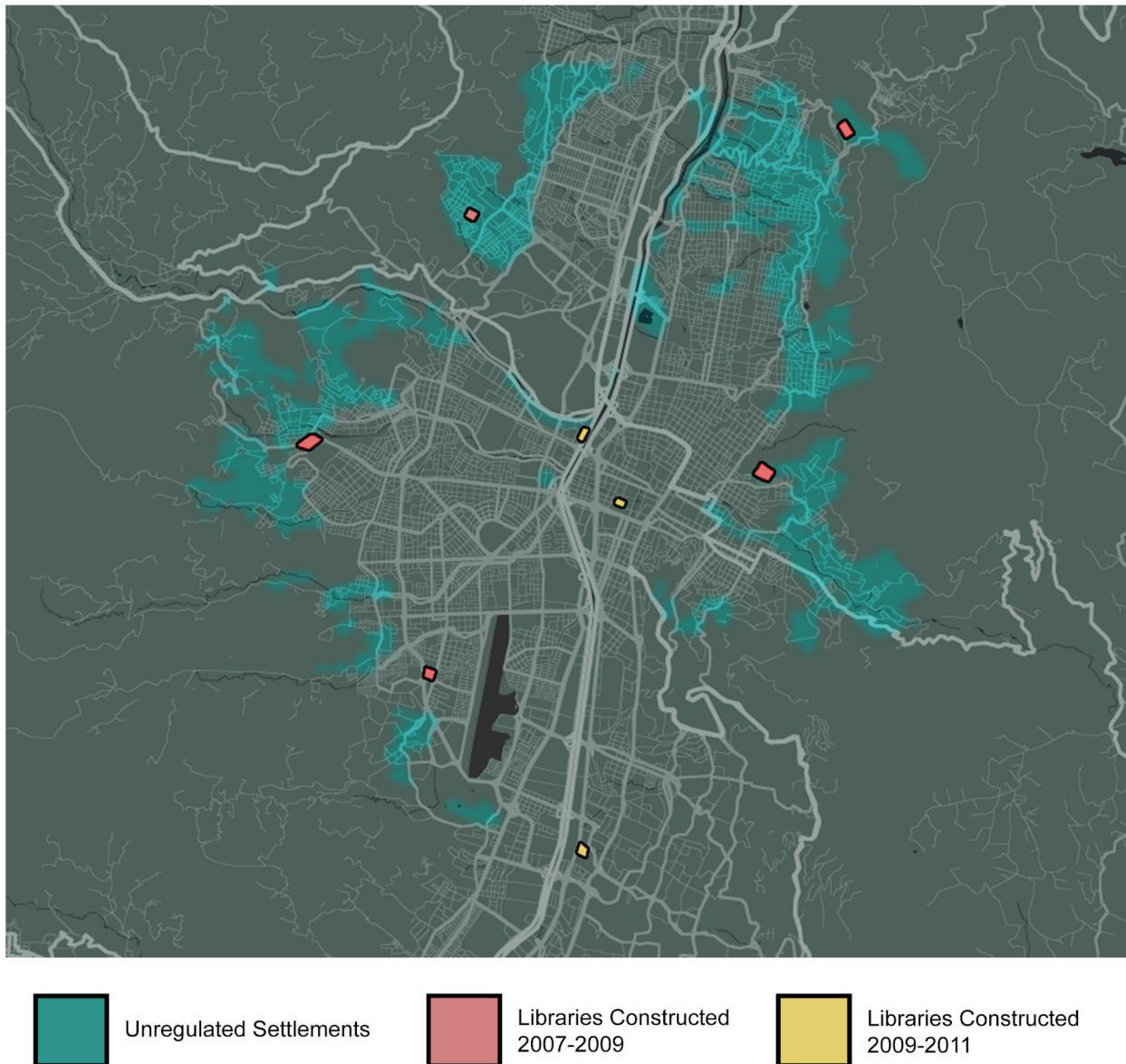


Figure 7 – Alex Schrinel, Medellin Map, 2018

³² Kimmelman, Michael. "Fighting Crime With Architecture in Medellin, Colombia."

As a result, now down to 60 per 100,000 people, the murder rate has dropped significantly in Medellín. This stands as a testament for the importance that community-centric programs have within community. Specifically, the importance of the typology of libraries as members of the urban fabric. In a world where our governments are constantly trying to cost, libraries are often one of the first resources that have their necessity questioned. This constant pressure has forced the library industry as well as architecture industry to try and redefine libraries as a way to help preserve the importance of the typology in the eyes of our policy makers. When individuals are looking for reasons why to eliminate libraries, we should consider Medellín. What would have happened if Medellín would have never constructed these buildings and provided these opportunities to their community? Would the homicide rate have still dropped? Would community pride and engagement still increase? Possibly, but it's doubtful. This is an example of an urban situation that really didn't have the civic opportunity that libraries provide prior to 2004³³. Following the insertion of the libraries, the aforementioned issues significantly improved, proving the power that the library program has on communities.

If we apply this to an urban situation in the United States, we could consider the concept of homelessness and the digital divide present in our communities. The majority of communities in the United States already have libraries and community-centric programs. Nevertheless, this is not reason to assume libraries are any less important to the urban fabric of our communities. Often times, libraries are one of the only forms of shelter open for extended periods of times in a community. You can most likely go to any urban city and find the homeless

seeking refuge in a library, among other public structures. Many will argue that this is a problem and state that homeless members of the community should not be squatting in public places, they don't belong there. I would argue on the contrary. Of all the places anyone could be, the library is quite possibly the most opportune. The library provides many resources to help members of the community get back on their feet. These community spaces should be embracing the less fortunate and support them in their journey to get back on their feet. Architecture can be very powerful, but when you combine architecture and community, incredibly powerful things can happen. The presence of libraries as community engagement catalysts is essential to our public infrastructure.

RESEARCH – DIGITAL DIVIDE

Similarly, the library provides an equal opportunity to technological access. The internet has become a standard amenity for much of the population. Our phones, watches, cars, and kitchen appliances use it, and yet there is still a large portion of the population that does not have internet access. In a recent study conducted by the U.S. Census Bureau, 21 percent of the households in the United States do not have internet access³⁴. In a constantly evolving technological world, internet access is not only becoming a standard to many of us, but it is becoming a necessity for everyday life. Job applications are continually being converted to online processes, so how is it that someone who doesn't have internet access apply for these jobs? We cannot simply expect our struggling neighbors to succeed if we don't provide them with the facilities and opportunities to. An

³³ Kimmelman, Michael. "Fighting Crime With Architecture in Medellín, Colombia."

³⁴ Barker, Stephan. "Libraries Help Close the Digital Divide." Washington Post. Last modified May 1, 2015. <https://www.washingtonpost.com/opinions/libraries-help-close-the->

[digital-divide/2015/05/01/bd6d6e84-edef-11e4-8abc-d6aa3bad79dd_story.html?noredirect=on&utm_term=.244143105be7](https://www.washingtonpost.com/opinions/libraries-help-close-the-digital-divide/2015/05/01/bd6d6e84-edef-11e4-8abc-d6aa3bad79dd_story.html?noredirect=on&utm_term=.244143105be7).

infected wound does not heal without medicine and doctors, so how can one expect our struggling members of society to get back on their feet without some form of assistance? Libraries are that assistance for many people. Libraries bridge the digital divide for the less fortunate. Libraries facilitate opportunity for the less fortunate. The library is essential in our communities as a digital bridge, and we should be sure to not ignore it.

CONCLUSION

Maintaining the incorporation of libraries into our communities without losing or merging the typology with other community-centric programs is important because it facilitates civic engagement, bridges the digital divide, and addresses contemporary needs within the community. The question of how modern libraries can maintain the power of the historical typology, address contemporary needs, and adapt to future changes is examined through various research techniques.

The history of libraries was examined to better understand how we have arrived to what we know as a contemporary library. The impact that the rapid development of technology has had on the library typology is evident through the various new programmatic elements seen in the contemporary library in comparison to libraries such as a Carnegie Library. Furthermore, examining historical precedents of libraries provided a comparison to show which elements of the contemporary library have been derived from historical precedents.

Various contemporary case studies were examined to determine the impact that elements such as typology, technology, and program have on contemporary library design. Typologically, the term of library is being removed from many "libraries" and provides an insight into the possible future of the typology. This also shows the detrimental effects that changing or merging of the library typology can have on libraries and the communities they reside in.

Modern Socio-Political situations have shown the importance that the library has as a catalyst for civic engagement. The various opportunities provided by the library are essential to many members of the community. Libraries help to facilitate education, prevent crime, deter homelessness, and bridge the digital divide.

This research will be applied to a practical design thesis project in Fall of 2018. Various sites will be investigated for the implementation of this research as to design a contemporary library that embodies the various communities' needs presented by each site. The scope of the project will be limited to a metropolitan area within the United States, but the research presented is also applicable to suburban and urban situations.

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Addendum

ALEXANDER M. SCHRINEL
Miami University

WRITTEN THESIS TO DESIGN THESIS TRANSITION

Following the written portion of my thesis, I investigated potential sites that needed some form of social change due to socio-political factors. The three sites that I had examined were Hudson Yards in Manhattan, Lincoln Park in Chicago, and downtown Toledo, Ohio. Following further research, Chicago was eliminated due to a lack of need of a library in the Lincoln Park area. Manhattan quickly became the frontrunner due to the high need for a library based on the demographics and crime statistics of the target neighborhood. Hudson yards at the time was a new development along the Hudson River to the West of Chelsea. I believed this site was ideal based on the potential to integrate it with the school, high line, and residential aspects of the Hudson Yards development, but also due to the proximately to a very large area of lower income housing on the island. This lower income section had little access to a local library, and appeared to have significant potential to be the site for this thesis, Following our presentation of our research at the Miami University Graduate Architecture Symposium, it was decided that New York City was not going to be the site based on the large presence of current investment not only in the Chelsea/Hudson Yards area, but throughout all of Manhattan.

Following the Symposium, further research was conducted into the feasibility and need of the application of this research to the city of Toledo, Ohio. This research led to the decision to move the potential site on the Northwest side of the Maumee river, in downtown, to the East side of the river, the neighborhood called River East. River East, much like the case study conducted on Medellin, Colombia, proved

to be a formidable application of this research based on many factors. These factors include an extremely high crime rate, high gang involvement, and extremely low education rates. The East side of Toledo has acquired a reputation over the past decade as a very dangerous place that you do not go to unless necessary. This factor partnered with the threats of the state to take over the Toledo Public School system not only made this a potential site, but a necessary site for this research. The River East site sits on the river front and was home to the old Toledo Sports Arena before its demolition in the early 2000's. Since then, the site has been vacant with very minimal investment. Furthermore, the entirety of the East side of Toledo has minimal public green space, most of which with limited access for safety. These deteriorating conditions partnered with little help from the city have done nothing to help any of the social issues presented. The intent of the application of this research on this site is to provide civic components not currently available to the residents of River East, but also to use the Library to address the current socio-political issues such as the high crime rates, high gang involvement, and low education rates. The plan to solve these issues to not only design a library with a program specific to the needs of the community but surround it with green infrastructure and programming to engage the public. Through multiple phases, the masterplan for the area intended to rejuvenate the uptown area of River East and restore it to it's great past.

DESIGN REVIEW REFLECTION

Following my design review, I received very valuable feedback that can be applied to revisions of the design in the future. Starting with the masterplan, it was recommended to explore the further development and integration of the existing urban fabric, specifically the housing, into the new "Green Artery" fabric. For example, the presence of what appears to be almost an "island" of existing housing should be addressed. Initially, the intent behind this design move was to mitigate the destruction of any of the existing fabric. The goal over time is to have the

housing slowly infiltrate into this green space and create a more walkable environment. On the same note, the notion was recommended to me to further integrate the "Green Artery" pathways into the existing alleys and area between the houses. This will help to strengthen the concept to mitigate the need to use the street and create a completely walkable environment. Currently, access to the pathways would not be as strong in the center of the neighborhoods as it could be. Lastly, it was recommended to create a narrative journey through the masterplan through the vignettes.

In relation to the building, I didn't receive much criticism, but was asked about the need for the structural grid in between the 4 buildings. The opinion was brought up that the without the grid, the parti was just as strong and made the structure more beautiful. I provided the counter argument that the structural grid was necessary to facilitate the Parti based on the library becoming an anomaly and obeying different aesthetic and programmatic rules. I mentioned that without the grid, we would be having the same discussion but reversed in favor of adding the grid. Additionally, the question was offered of whether to seal off the gap between the buildings. I provided the reasoning that it is not feasibly possible based on the structural grid, but also the intention of the design was to make you experience the site when transitioning between building program.

CONCLUSION

The entire thesis process was one of the most enjoyable times of my academic career. I feel that having two years to study a topic important to me and then develop a solution is the part of my academic journey that has had the biggest impact. More importantly, it provided me the opportunity to learn more about the city that I am from and form a better understanding of the socio-political issues present in Toledo. Furthermore, I believe this process has helped me find my passion in architecture, which is civic related design. I think many of these spaces that interest me so

much are spaces that are essential to everyday life and should be rights to all.

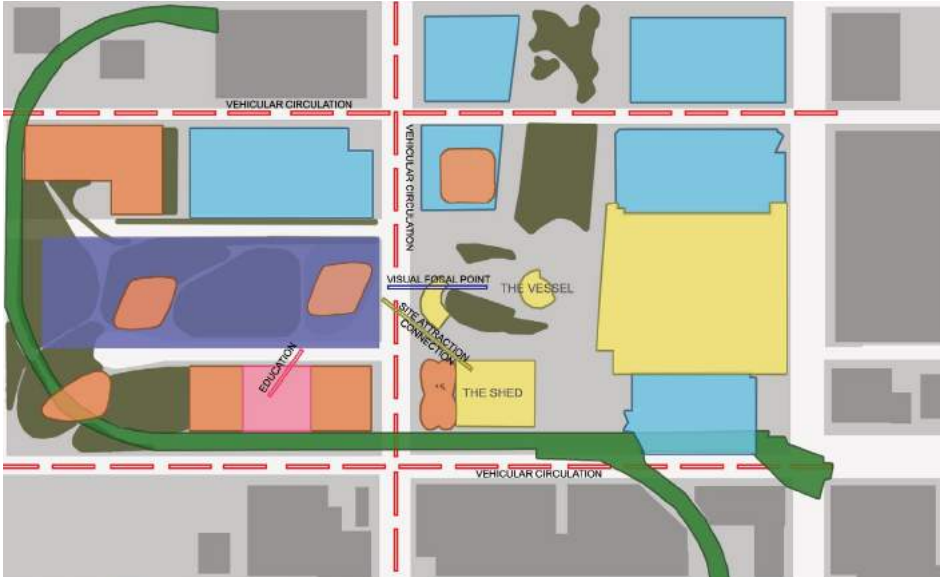
One of the most beneficial elements of this process was the ability to take a broad concept, break it down to its minimal pieces, and then expand those pieces to the farthest reaches that I could. For example, when I started the writing process, my research was focused on the current state of the library program and how to redefine it to keep it as a viable part of our public infrastructure. The more I researched the topic, the more I discovered that it wasn't just about defining what libraries should be today, but that they should morph to meet the needs of the host community. These structures have incredible power to provide education beyond what the American education system can provide in schools. These buildings have incredible power to provide a person the resources to discover their passions. These libraries have incredible power to solve cultural and social issues such as crime, poverty, and education problems. I quickly discovered that it wasn't simply about finding the reasons why the library should continue to be a part of our public infrastructure, but that the library is an *essential* part of our public infrastructure. I provided examples in my research where this exact statement is proven. What would Medellin, Colombia have been like in the early 2000's if they always had libraries in the lower income regions? What would the East side of Toledo, Ohio be like right now if there was a library with the proper resources accessible to all community members?

We owe it to our communities to not turn our shoulder and say, "Oh, well someone else will fix that, it's not my problem." It is our problem. That child who doesn't go to school 50% of the time because he got involved in crime is everyone's responsibility. The unemployed mother who has no access to a computer or the internet to apply for jobs is everyone's responsibility. The library has the power to help mitigate these issues and is essential to our urban fabric for these reasons among many, many more.

While Toledo was the focus of my research, I intend to continue this journey to understand the impact the civic-centered architecture can have on a community. Whatever issue it may be that it can solve is important. As I mentioned in the paper, in a time where government budget cuts seem to be happening every day, it is ever so important to emphasize the need for architecture that provides civic-centered programming.

INITIAL SITE RESEARCH

Hudson Yards, New York City



- PROS:**
- NEW URBAN DEVELOPMENT
 - SOCIAL NEED
 - PROXIMITY TO SCHOOL
 - LARGE RESIDENTIAL PRESENCE
 - HIGH LINE
 - PROXIMITY TO LIBRARIES
- CONS:**
- DISTANCE FROM TARGET REGION
 - LACK OF SITE DESIGN ABILITY

SITE MASTERPLAN



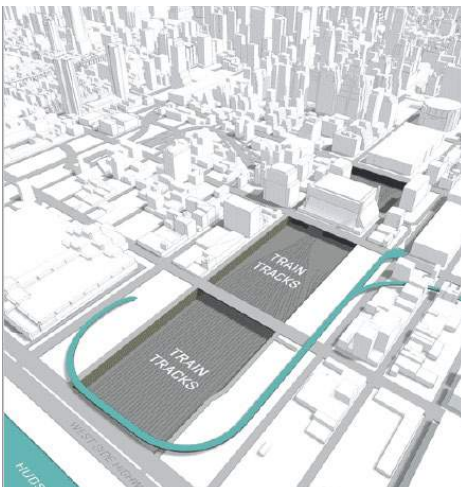
HIGHLINE APPROACH



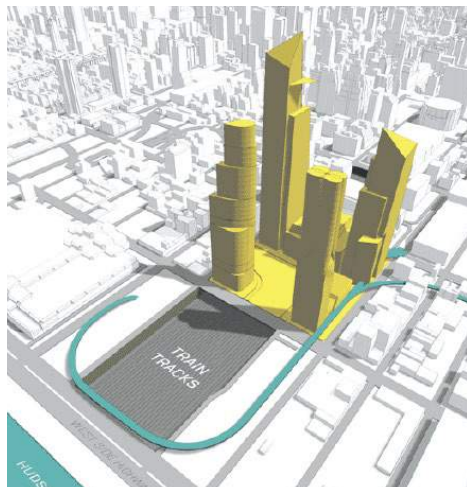
CURRENT SITE CONDITIONS



VIEW TOWARDS VESSEL



EXISTING CONDITIONS



PHASE 1



PHASE 2

INITIAL SITE RESEARCH

Hudson Yards, New York City



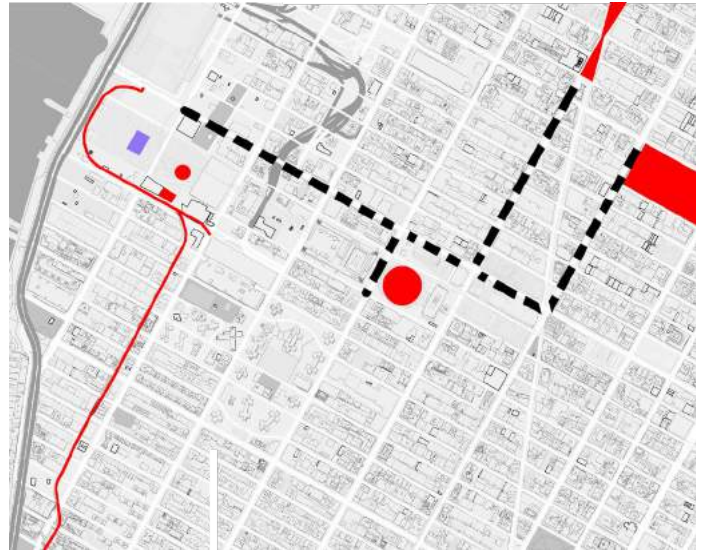
AXIS



GREEN SPACE



SITE LIBRARIES



TOURISM



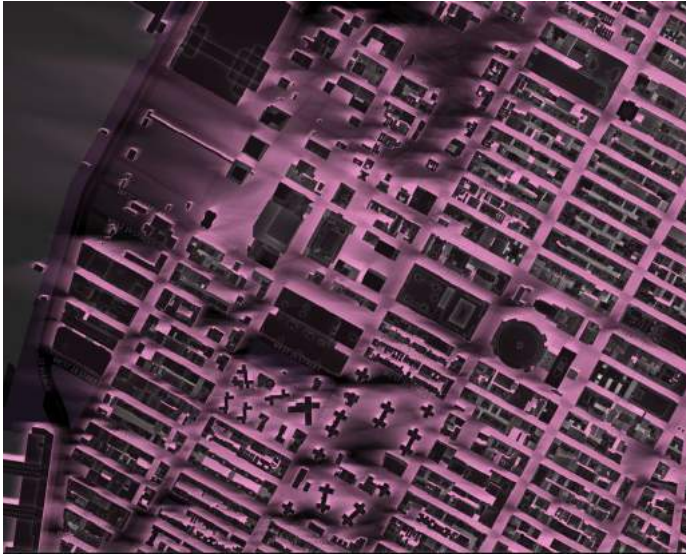
PUBLIC TRANSPORTATION



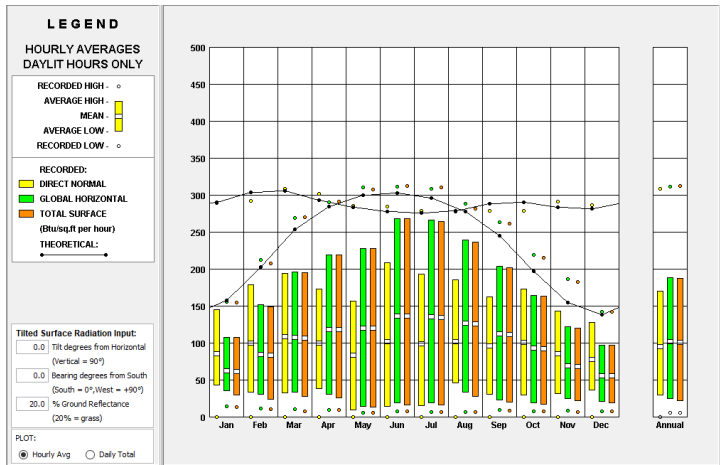
VEHICULAR TRANSPORTATION

INITIAL SITE RESEARCH

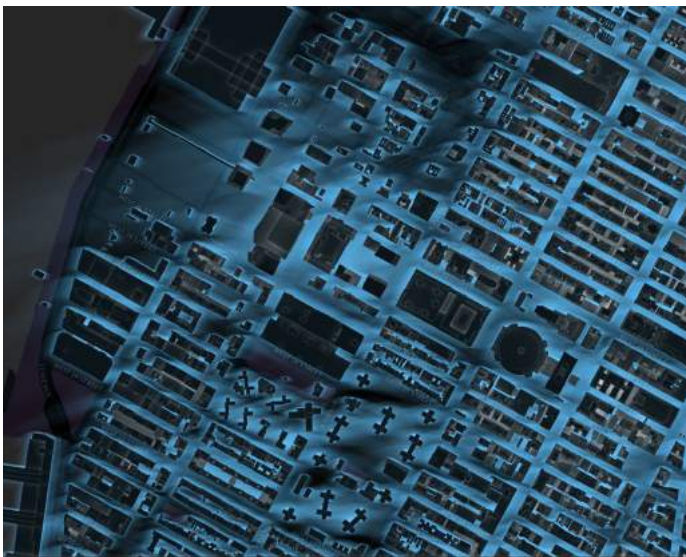
Hudson Yards, New York City



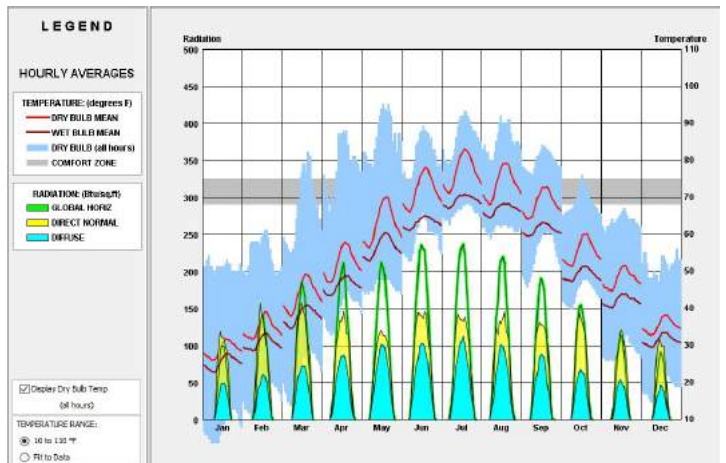
FALL/SPRING SHADOWS



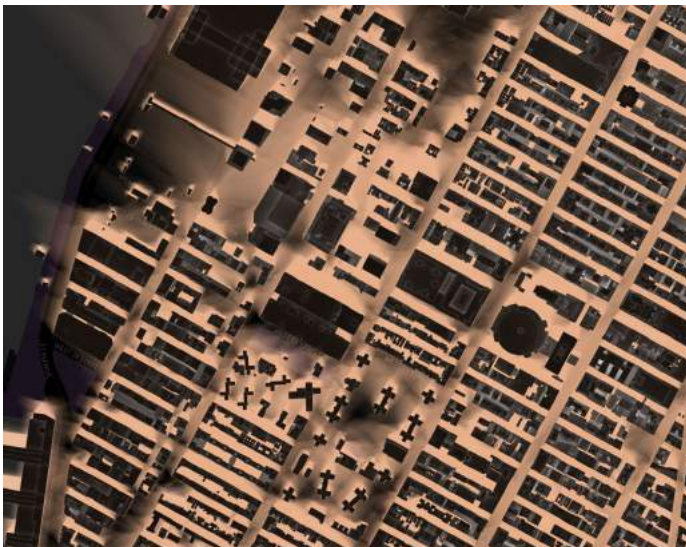
DAYLIGHT HOURS



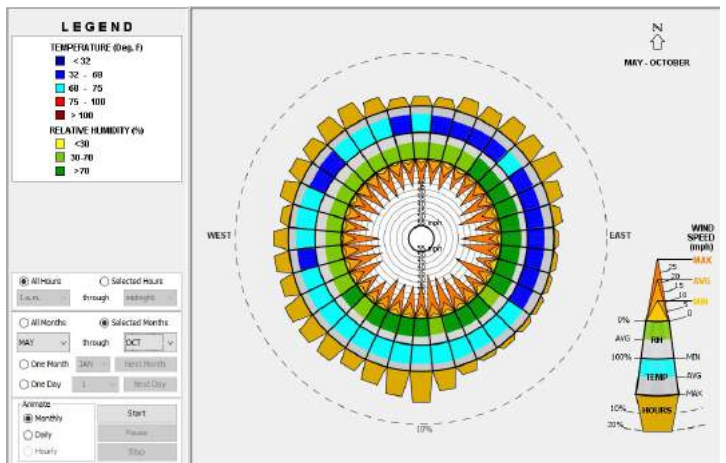
SUMMER SHADOWS



MONTHLY DIAURNAL



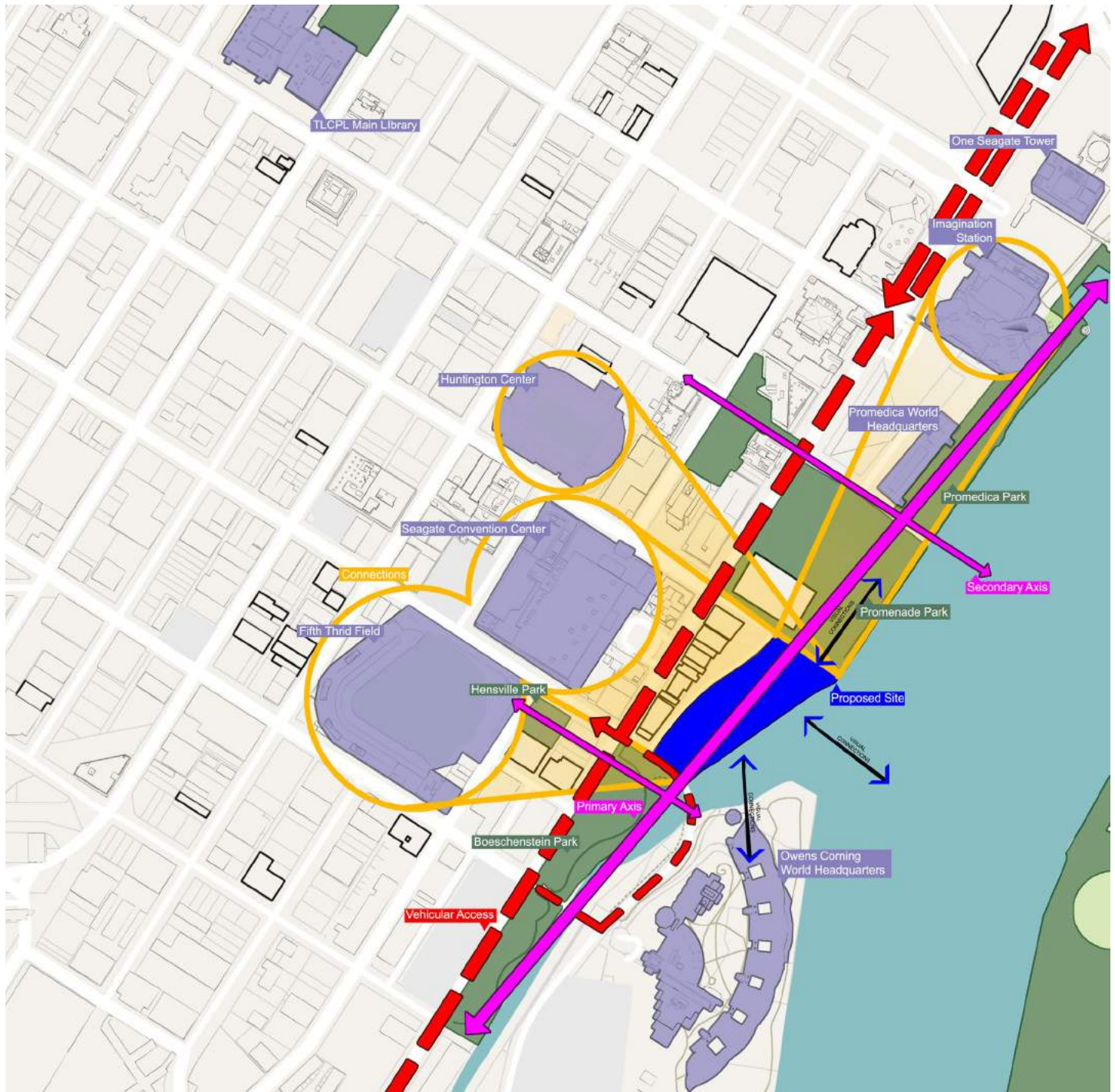
WINTER SHADOWS



WIND WHEEL

INITIAL SITE RESEARCH

Promenade Park, Toledo, Ohio



SITE ANALYSIS

PROS:

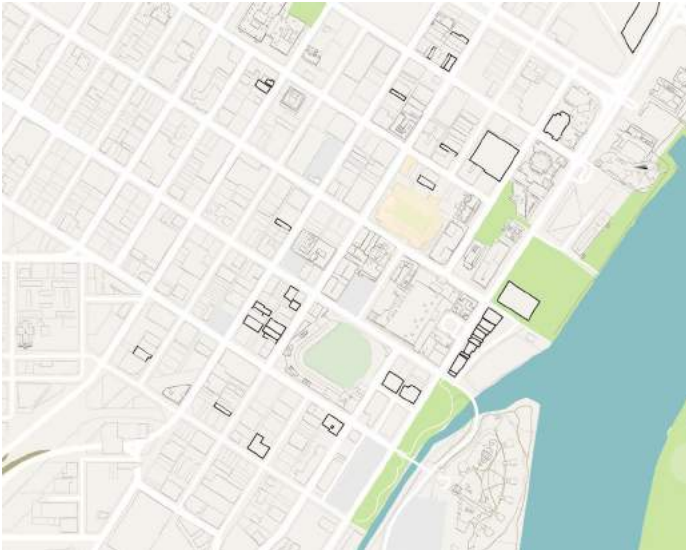
- EXISTING URBAN FABRIC
- PROXIMITY TO LOCAL ATTRACTIONS SUCH AS STADIUMS, VENUES, AND PARKS
- PROXIMITY TO OWENS CORNING AND PROMEDICA HEADQUARTERS
- EXISTING INFRASTRUCTURE
- WATERFRONT

CONS:

- PROXIMITY TO TARGET POPULATION
- PROXIMITY TO MAIN BRANCH LIBRARY (TOO CLOSE)
- LACK OF ADEQUATE PARKING

INITIAL SITE RESEARCH

Promenade Park, Toledo, Ohio



EXISTING SITE

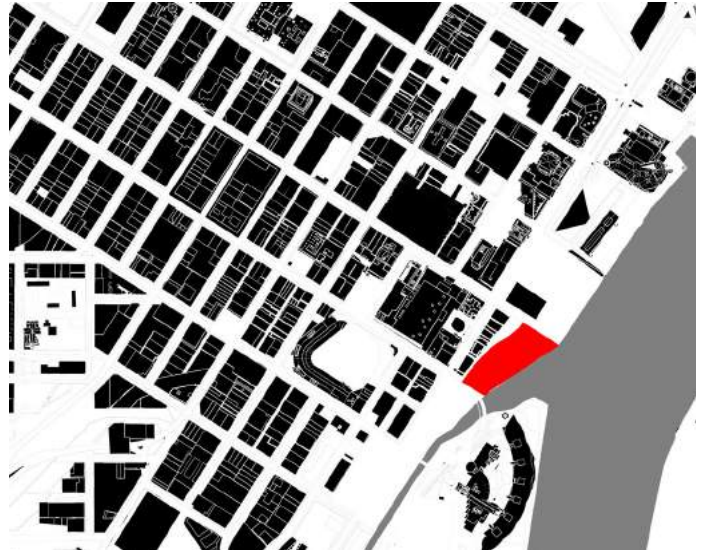


FIGURE GROUND



COMMERCIAL



EXISTING LIBRARIES



TOURISM



VEHICULAR TRANSPORTATION

SYMPOSIUM/THESIS POSTER

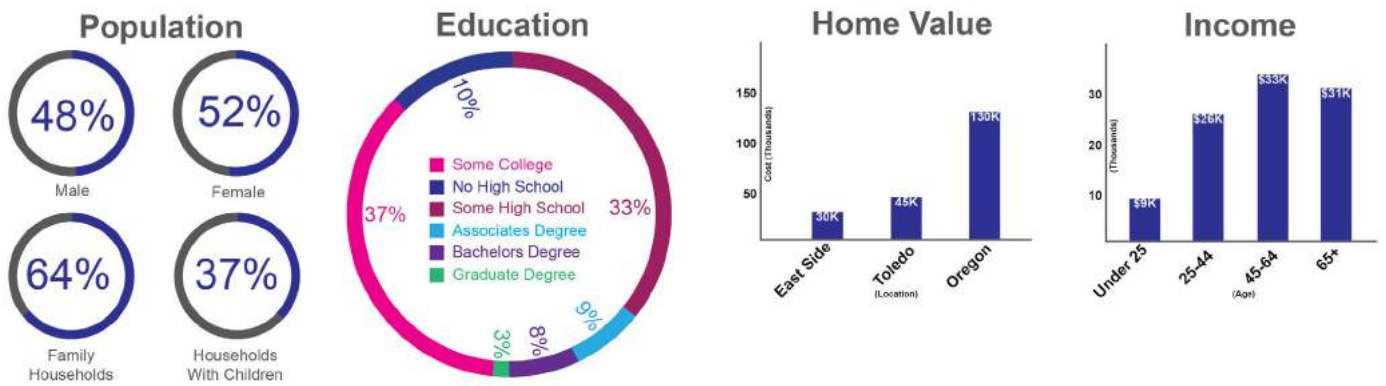


FINAL SITE

River East, Toledo, Ohio



SITE PLAN



DEMOGRAPHICS

FINAL SITE

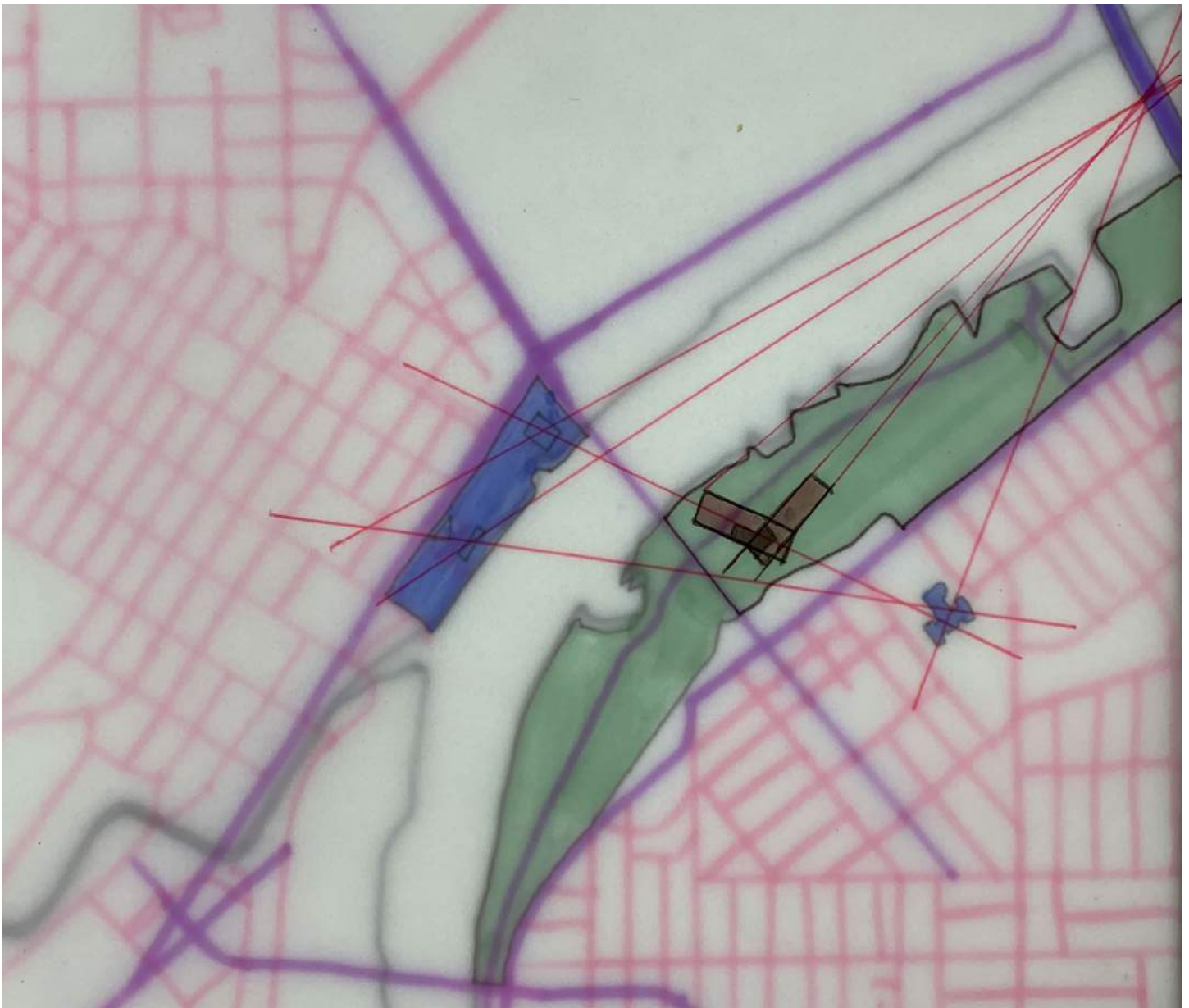
Rliver East, Toledo, Ohio

PROS:

- SOCIAL NEED
- LACK OF LOCAL LIBRARY WITH PROXIMITY TO THE URBAN CORE
- POTENTIAL FOR MASTERPLAN
- LARGE SITE
- WATERFRONT
- VISUAL CONNECTIONS

CONS:

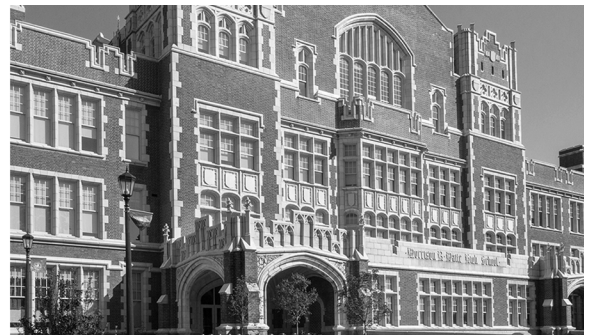
- LACK OF INFRASTRUCTURE
- DIFFICULT SITE WITH CONNECTIONS TO URBAN CORE AND WATERFRONT
- EXISTING HIGH END COMMERCIAL COMPLEX ON SITE



SITE ANALYSIS

FINAL SITE

River East, Toledo, Ohio



SITE AND HISTORICAL CONTEXT PHOTOS

MASTERPLAN CASE STUDIES

Vistula Waterfront - Warsaw, Poland

Architect: WXCA

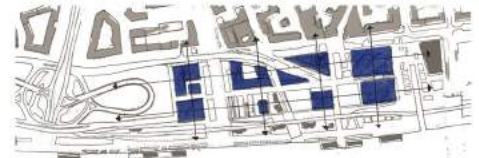
Project Year: 2018-Present



Figure Ground - Existing/New Construction



Green Space



Axis/Focal Point



Visual Connection/Barrier



Buffer Zone



Overlap Analysis

Shipyard District - Gdansk, Poland

Architect: Henning Larsen

Project Year: 2018-Present



Existing Conditions

New Construction

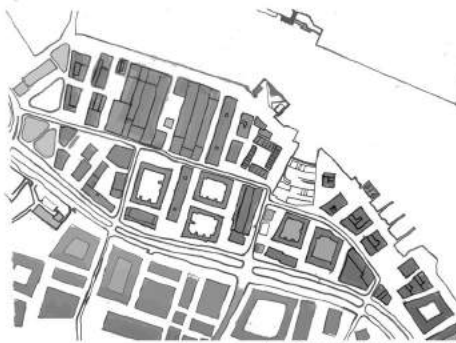


Figure Ground - Renovated/New Construction



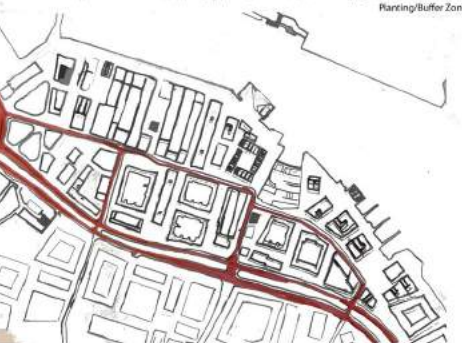
Planning/Buffer Zone



Focal Point/Visual Connection



Pedestrian Buffer Layers/Visual Barricade



Vehicular/Pedestrian Corridor



Existing Fabric/Hard Barrier

LIBRARY CASE STUDIES

Northside Library - Columbus, Ohio

Architect: NBBJ
Project Year: 2017



"Historically, we have seen a library's civic value shift from a place for things, now, to a place for people. Its unique nature is that it maintains the tenants of a public service institution, while embracing the increasing proclivity of people to seek environments to carry out activities that blur the line between research, socialization, knowledge-seeking and play. - NBBJ



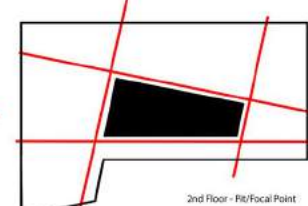
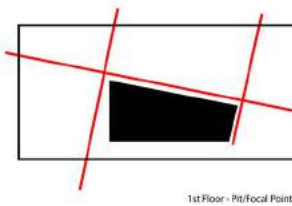
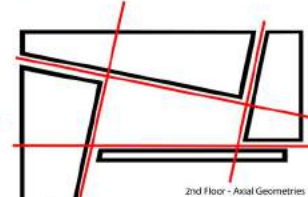
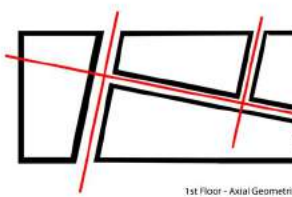
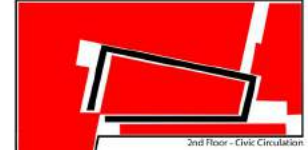
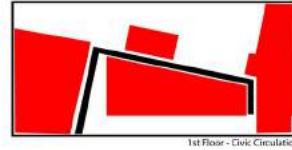
- 1 Entry / Welcome Desk
- 2 Browsing 'Living Room'
- 3 Stacks
- 4 Coffee Bar
- 5 Meeting Rooms
- 6 Staff Area
- 7 Homework Help
- 8 Children's Area

FIRST FLOOR PLAN



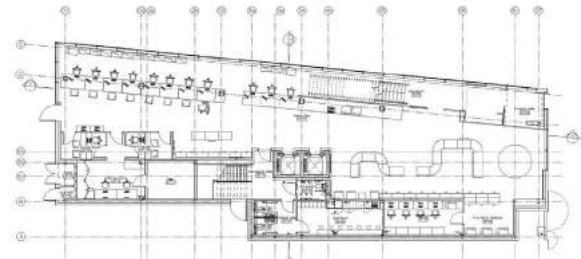
- 9 Ramp Reading Lounges
- 10 Quiet Lounge
- 11 Life Skills
- 12 Teen Area
- 13 Commodity Computing
- 14 Reading Loft

SECOND FLOOR PLAN



LIBRARY PRECEDENTS

Idea Store - London, UK



K.O. Aberdeen Public Library - Aberdeen, South Dakota



LOCHAL Library - Tilburg, Netherlands



*All photos of projects credit to Archdaily.com

PROGRAM DEVELOPMENT - PIN-UP 1

River East - Toledo, Ohio

PROPOSED LIBRARY PROGRAM

CIVIC 48%

Great Hall	14,545 sq ft	25%
Auditorium	4500 sq ft	8%
Lounge	2800 sq ft	5%
Cafe	2000 sq ft	3%
Studio	700 sq ft	1.1%
Studio	700 sq ft	1.1%
Studio	700 sq ft	1.1%
Conference	300 sq ft	.5%
Conference	300 sq ft	.5%

BOOK STACKS 26%

Stacks	10,000 sq ft	17%
Teen	2000 sq ft	3.5%
Multimedia	1700 sq ft	3%
Children	1500 sq ft	2.5%

TECHNOLOGY 9%

Makerspace	2500 sq ft	4.5%
Lab	1500 sq ft	2.5%
Lab	1200 sq ft	2%

OUTREACH 6%

Community Outreach	900 sq ft	1.5%
Career Services	700 sq ft	1.1%
Community Development	700 sq ft	1.1%
Business Incubation	300 sq ft	.5%
Business Incubation	300 sq ft	.5%
Business Incubation	300 sq ft	.5%
Business Incubation	300 sq ft	.5%

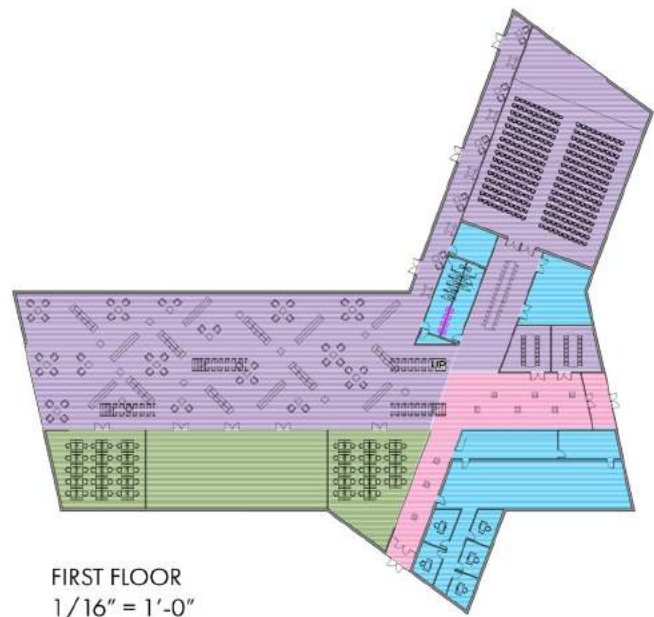
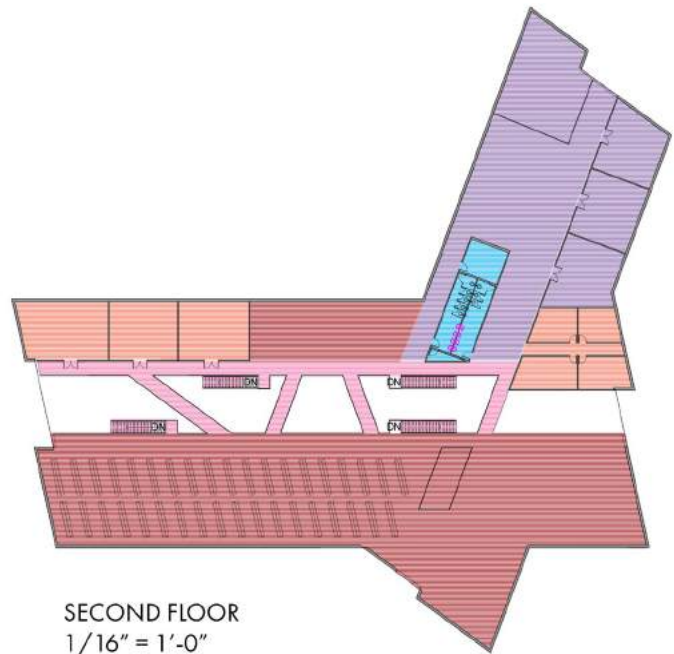
SUPPORT 6.5%

Sorting/Circulation	300 sq ft	.5%
Storage	700 sq ft	1.1%
Mechanical	300 sq ft	.5%
Mens	300 sq ft	.5%
Womens	300 sq ft	.5%
Mechanical	300 sq ft	.5%
Janitor	50 sq ft	.1%
Mens	300 sq ft	.5%
Womens	300 sq ft	.5%
Mechanical	300 sq ft	.5%
Janitor	50 sq ft	.1%
Office	150 sq ft	.25%
Office	150 sq ft	.25%
Office	150 sq ft	.25%
Office	100 sq ft	.2%
Office	100 sq ft	.2%

CIRCULATION 7.5%

Corridors	4000 sq ft	6.9%
Vestibule	200 sq ft	.4%
Vestibule	100 sq ft	.2%

PROPOSED LIBRARY PROGRAM - POTENTIAL EXECUTION

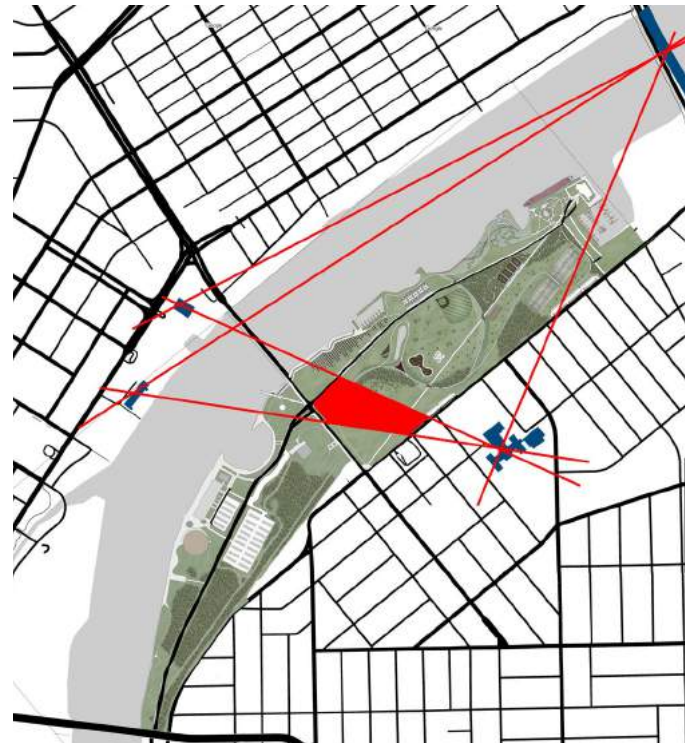


MASTERPLAN DEVELOPMENT - PIN-UP 1

River East - Toledo, Ohio



SITE VISUAL AXIS



AXIS CROSSING ZONE



MASTERPLAN PROPOSAL

MASTERPLAN DEVELOPMENT - PIN-UP 1

River East - Toledo, Ohio

PROPOSED MASTERPLAN PROGRAM

CIVIC

- LIBRARY
- MEMORIAL PARK
- EVENT PAVILION
- COMMUNITY GARDEN
- MARINA
- MUSEUM INTEGRATION
- RIVERWALK

RECREATION

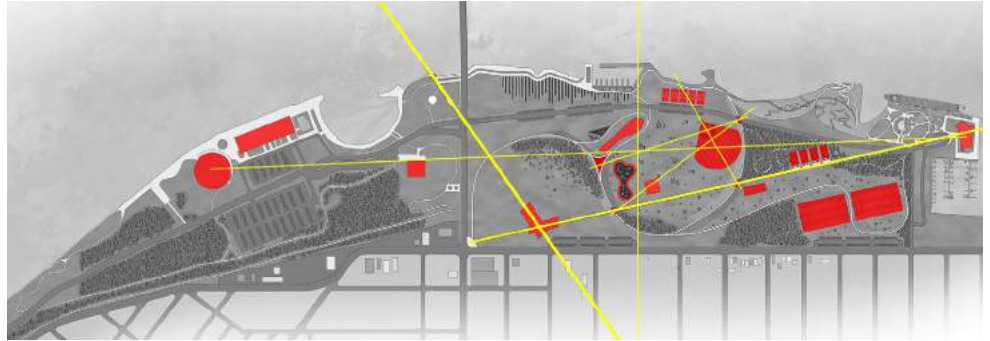
- (2) SOCCER FIELDS
- (5) BASKETBALL COURTS
- (4) TENNIS COURTS
- ALL SEASONS SKATING LOOP
- SKATEPARK
- BASEBALL DIAMOND
- SAND VOLLEYBALL

NATURE

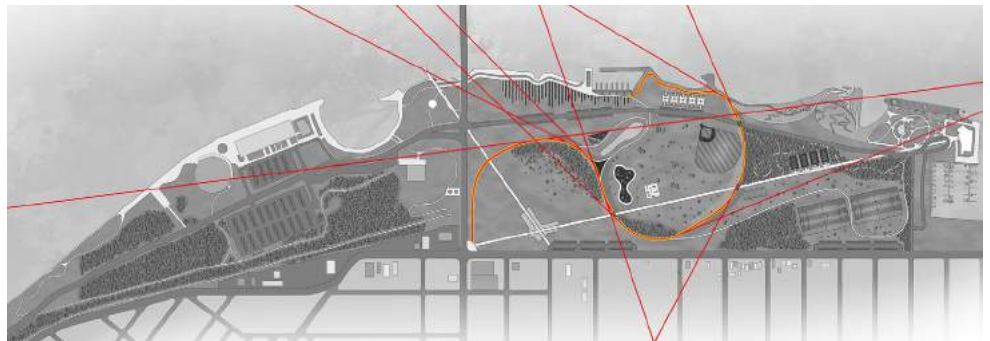
- NATURAL WETLANDS
- EXISTING POND
- NATURE WALK



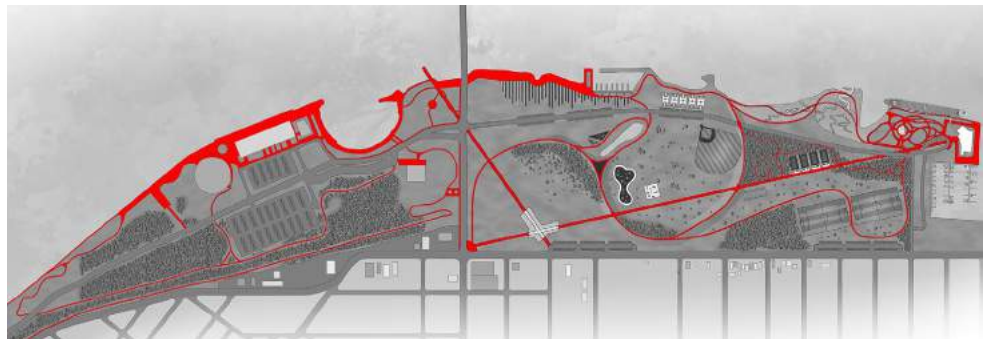
PROPOSED MASTERPLAN PROGRAM - POTENTIAL EXECUTION



AXIAL CONNECTIONS



VISUAL AXIS



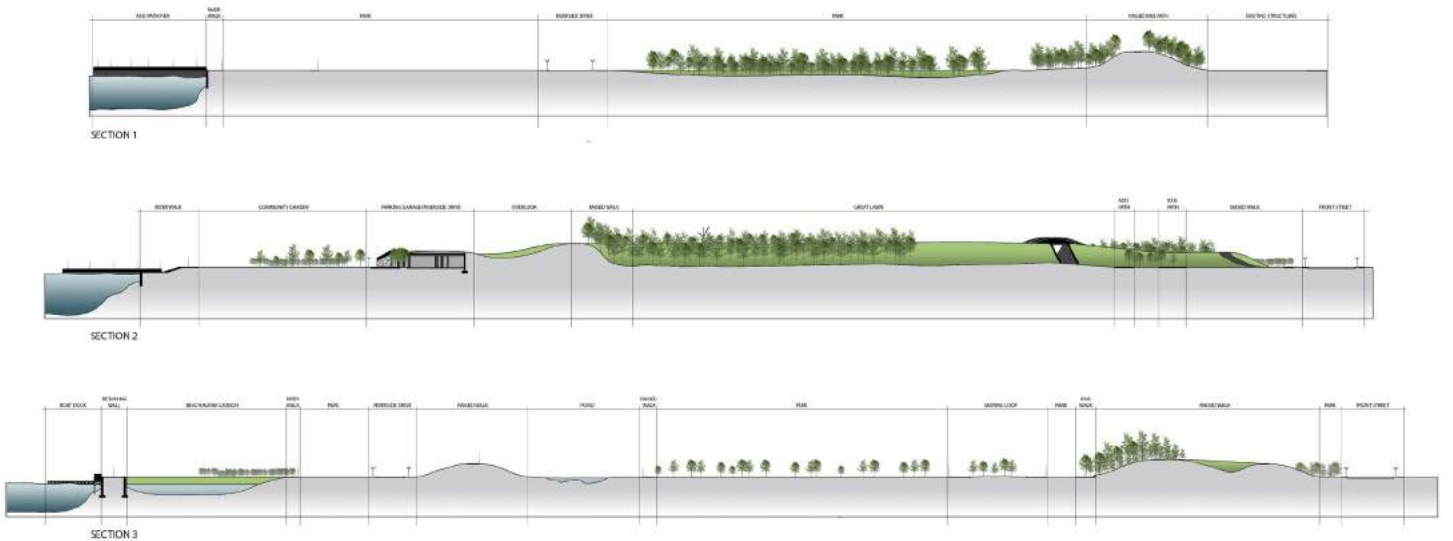
PEDESTRIAN CIRCULATION

MASTERPLAN DEVELOPMENT - PIN-UP 2

River East - Toledo, Ohio



MASTERPLAN PROPOSAL



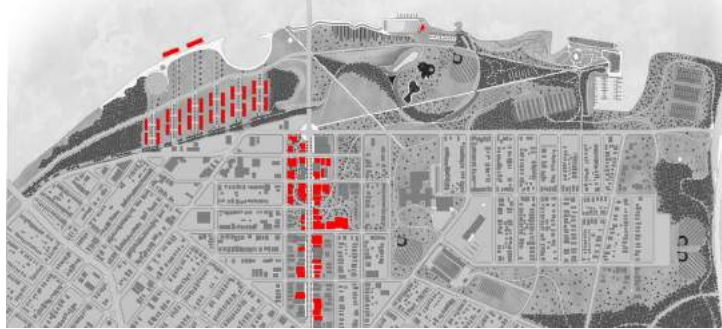
SITE SECTIONS

MASTERPLAN DEVELOPMENT - PIN-UP 2

River East - Toledo, Ohio



PHASE 1



NEW CONSTRUCTION



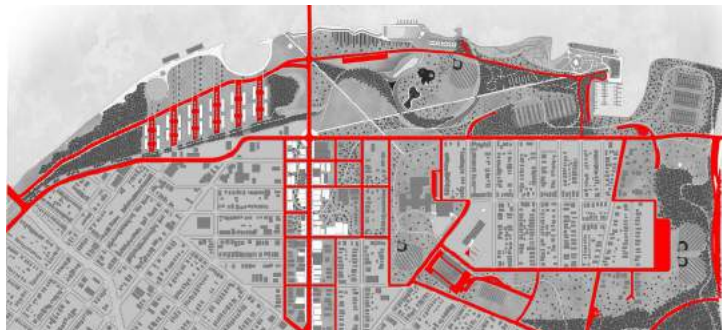
PHASE 2



PEDESTRIAN CIRCULATION



PHASE 3



VEHICULAR CIRCULATION



PHASE 4



VISUAL AXIS



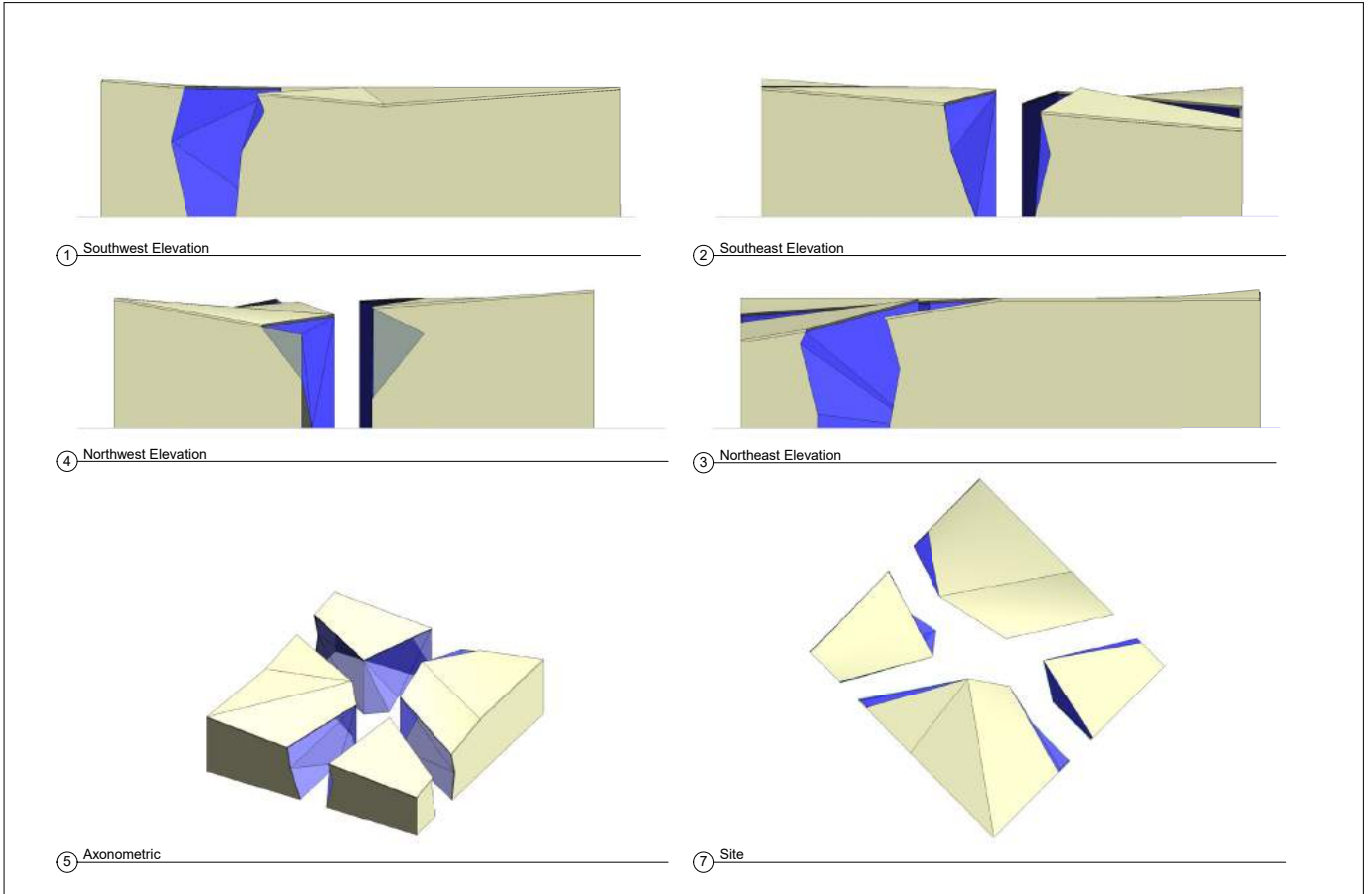
PHASE 5



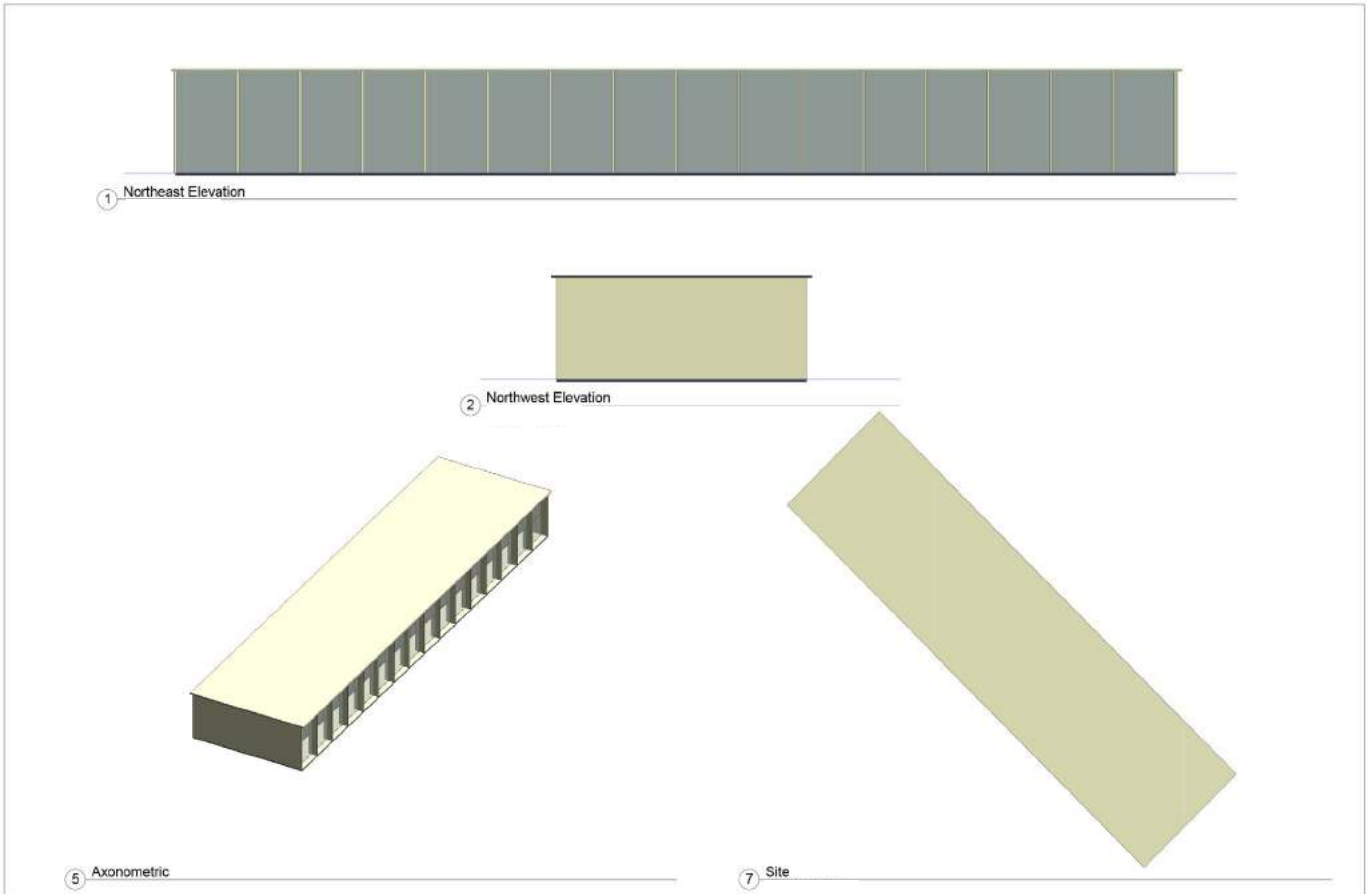
PROGRAMMATIC AXIS

SCHEMATIC BUILDING DESIGN - PIN UP 2

River East - Toledo, Ohio



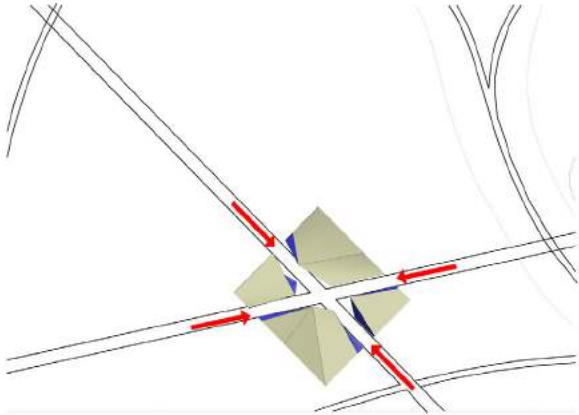
BUILDING FORM - CONCEPT 1



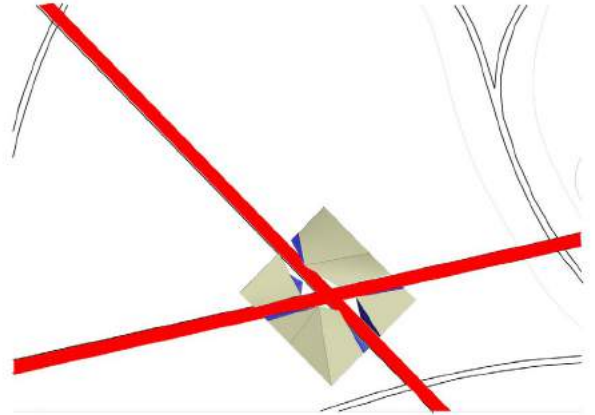
BUILDING FORM - CONCEPT 2

SCHEMATIC BUILDING DESIGN - PIN UP 2

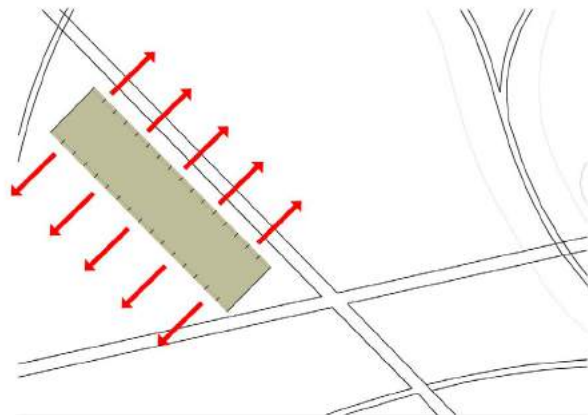
River East - Toledo, Ohio



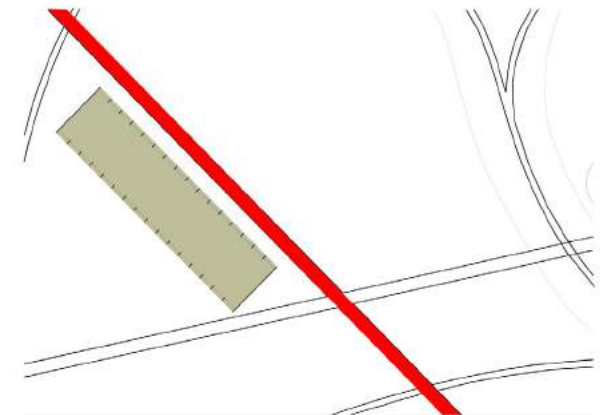
CONCEPT 1 - SITE ACCESS



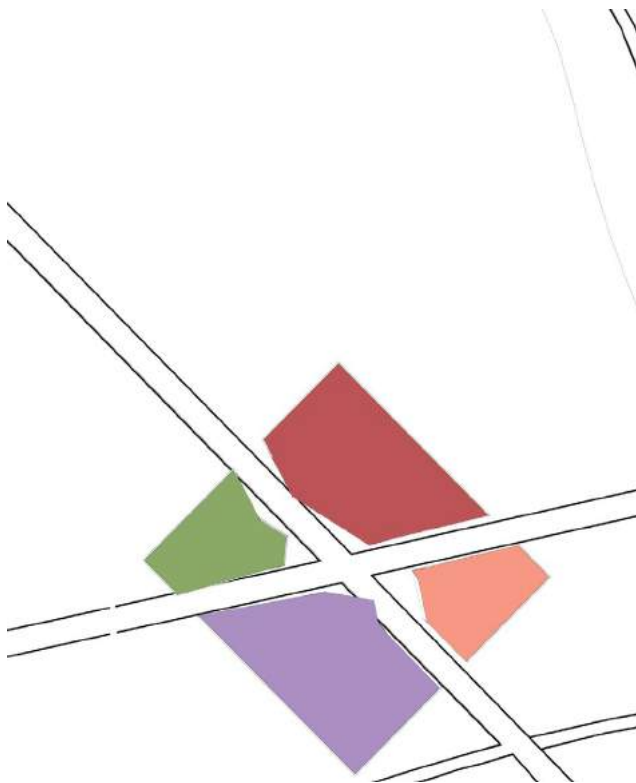
CONCEPT 1 - SITE AXIS



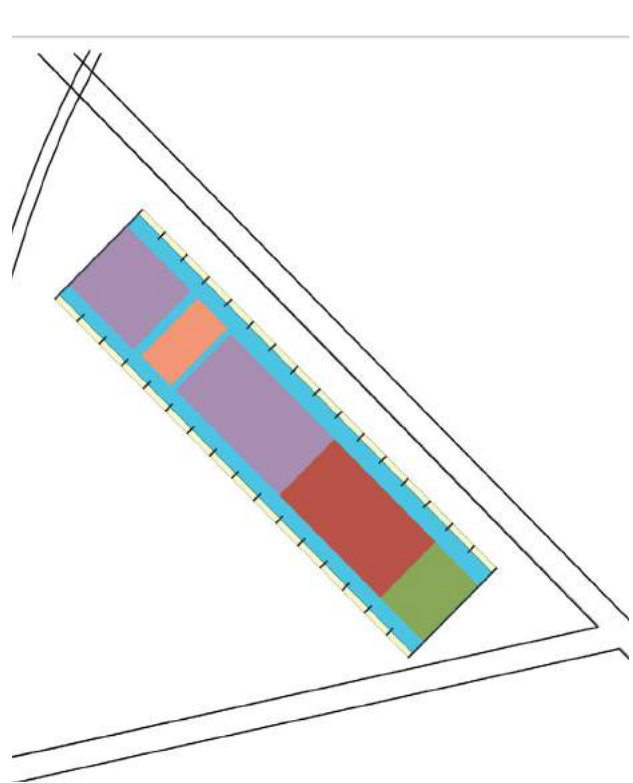
CONCEPT 2 - SITE ACCESS



CONCEPT 2 - SITE AXIS



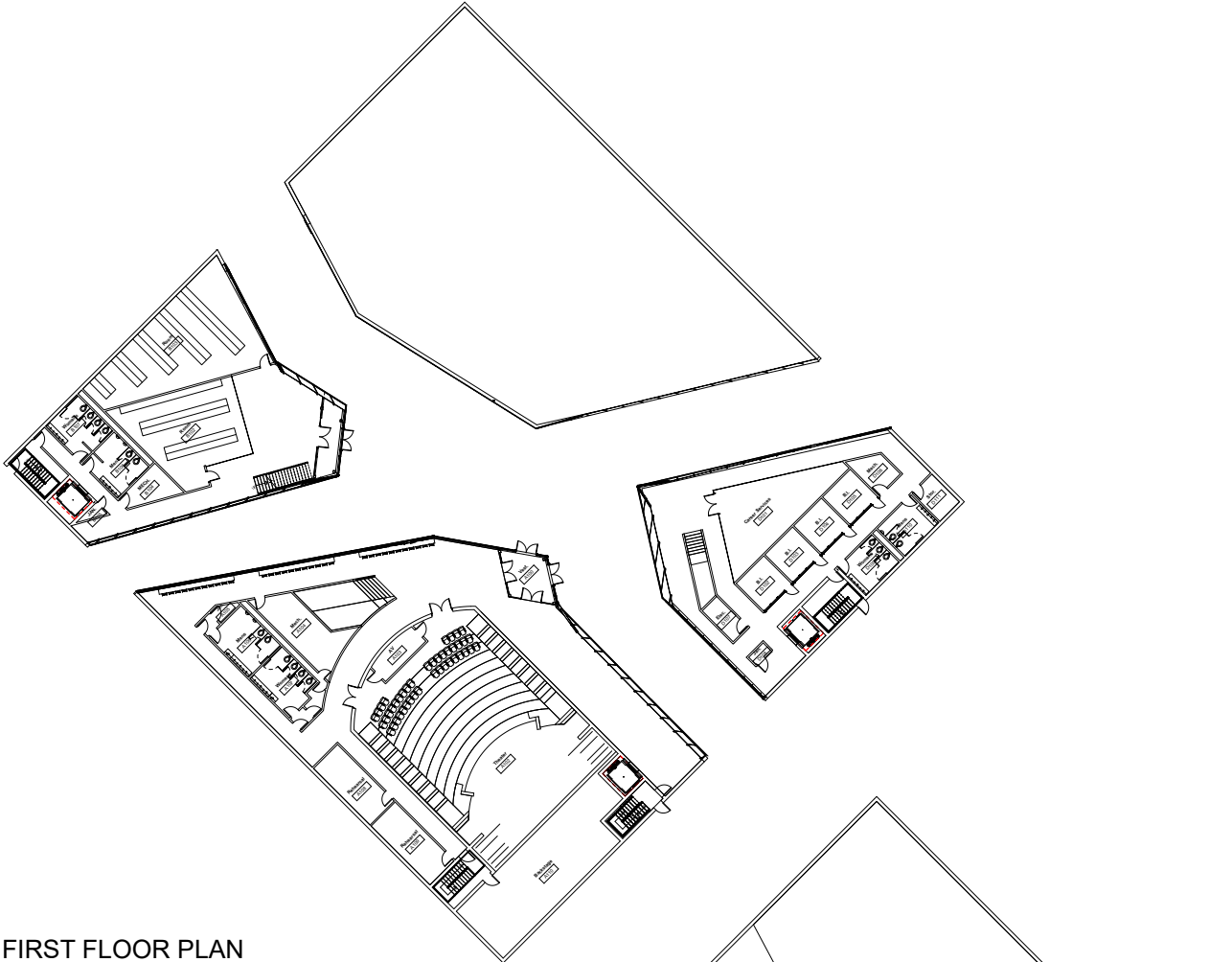
CONCEPT 1 - PROGRAM



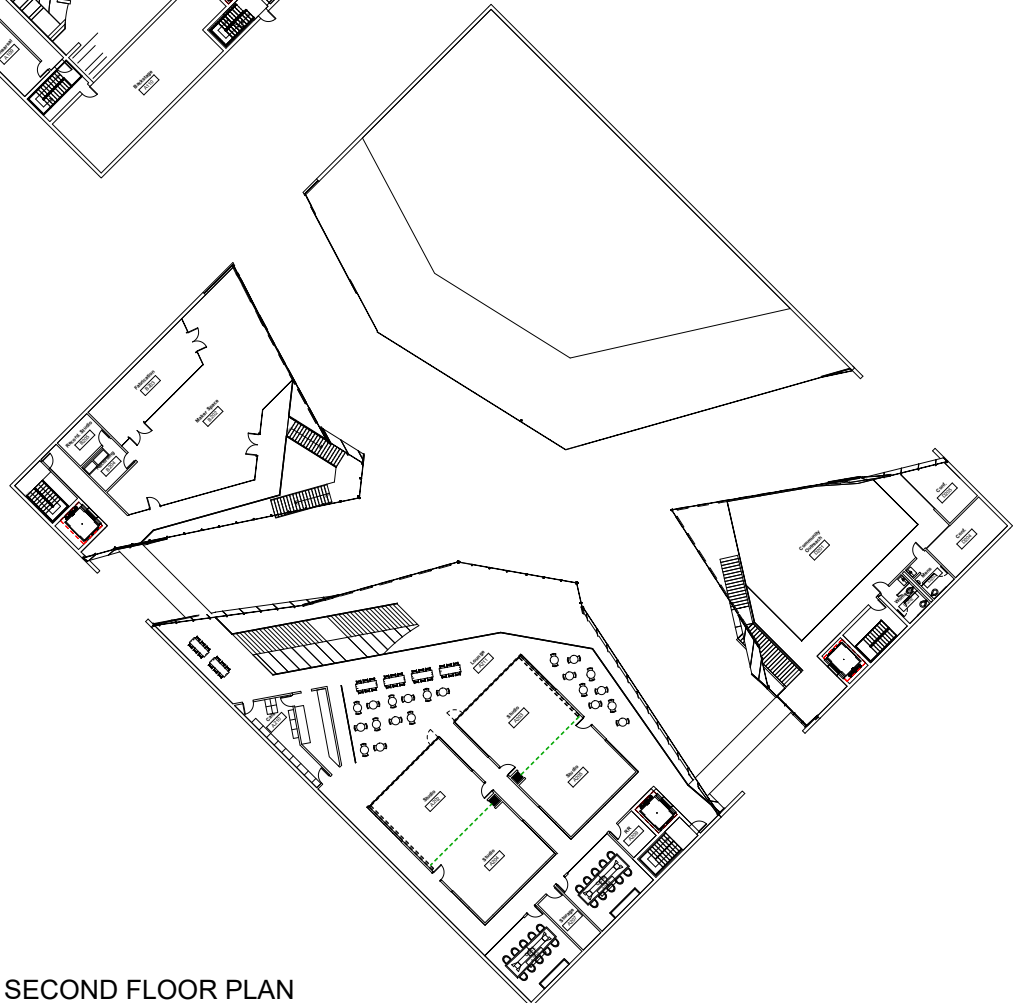
CONCEPT 2 - PROGRAM

BUILDING DEVELOPMENT - PIN UP 1

River East - Toledo, Ohio



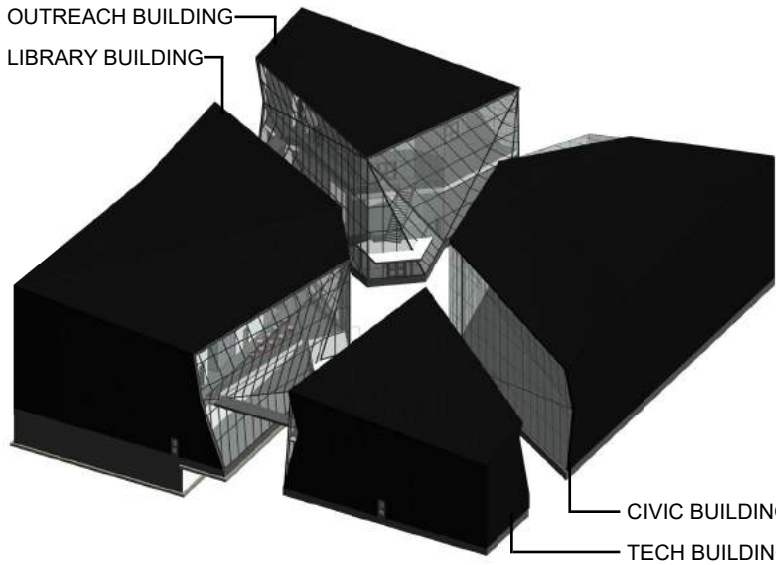
FIRST FLOOR PLAN



SECOND FLOOR PLAN

BUILDING DEVELOPMENT - PIN UP 1

River East - Toledo, Ohio



AXONOMETRIC



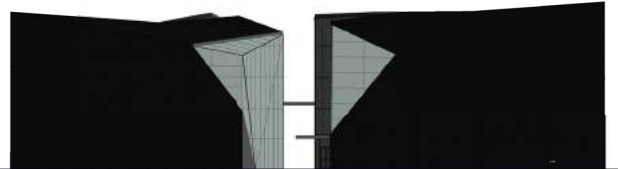
TECH-CIVIC SECTION



CIVIC-OUTREACH SECTION



SOUTH ELEVATION



WEST ELEVATION



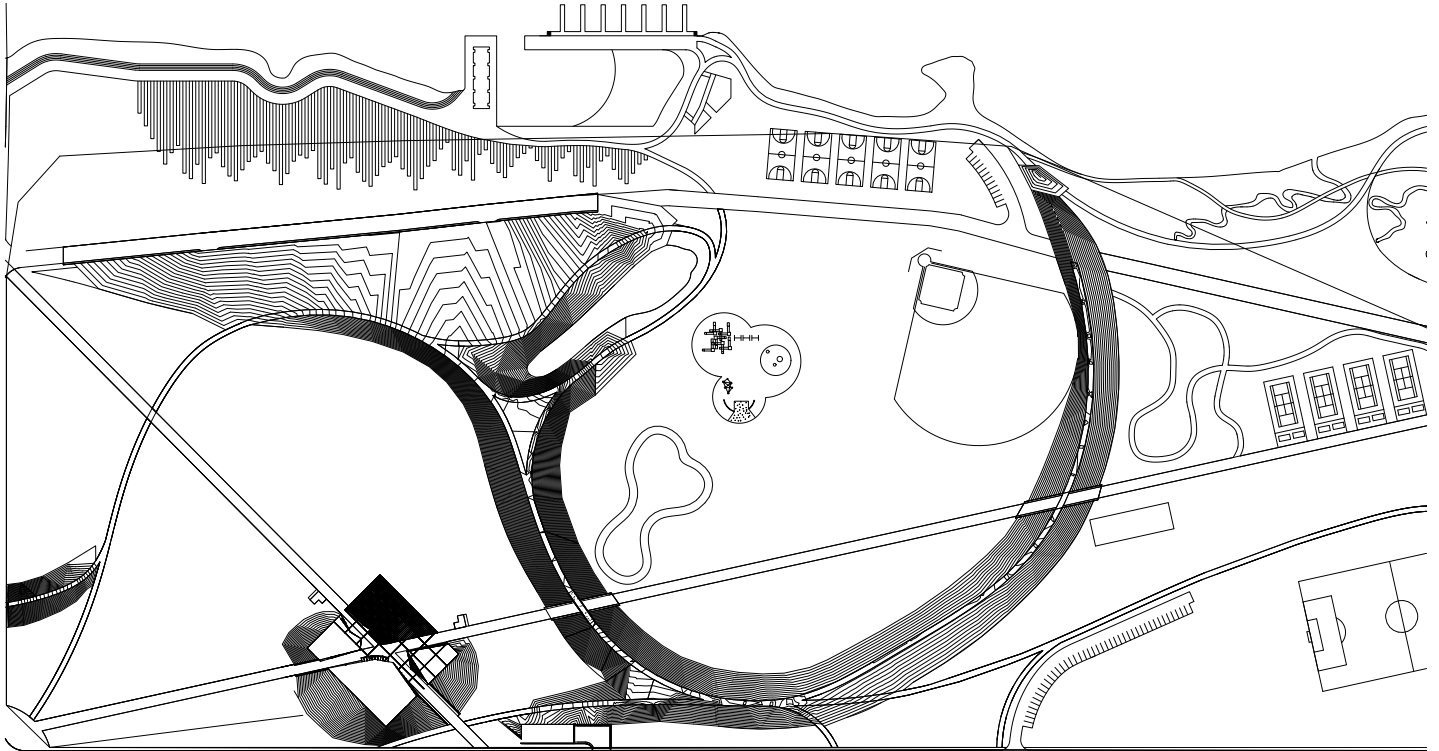
NORTH ELEVATION



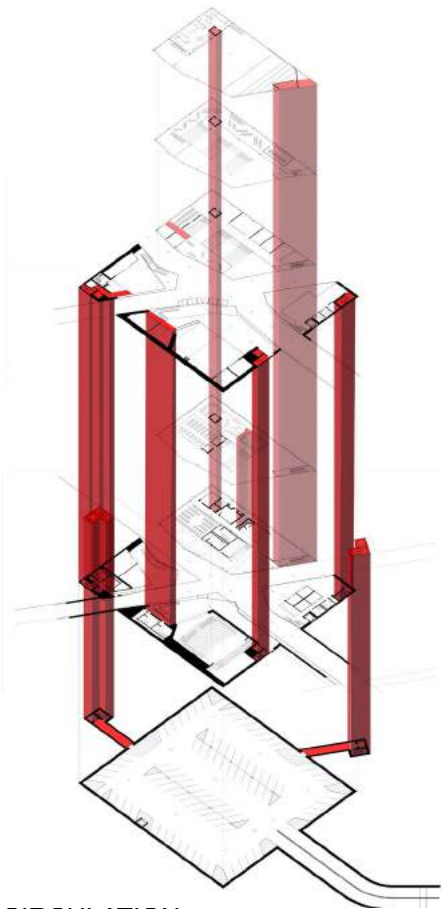
EAST ELEVATION

BUILDING DEVELOPMENT - PIN UP 2

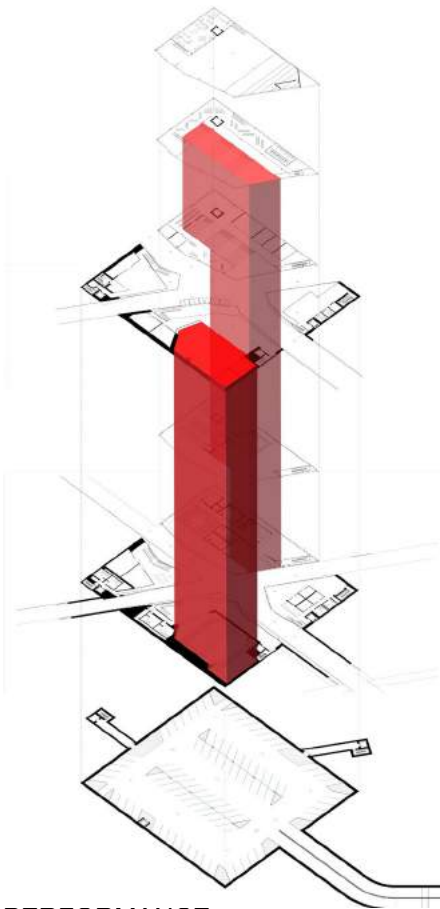
River East - Toledo, Ohio



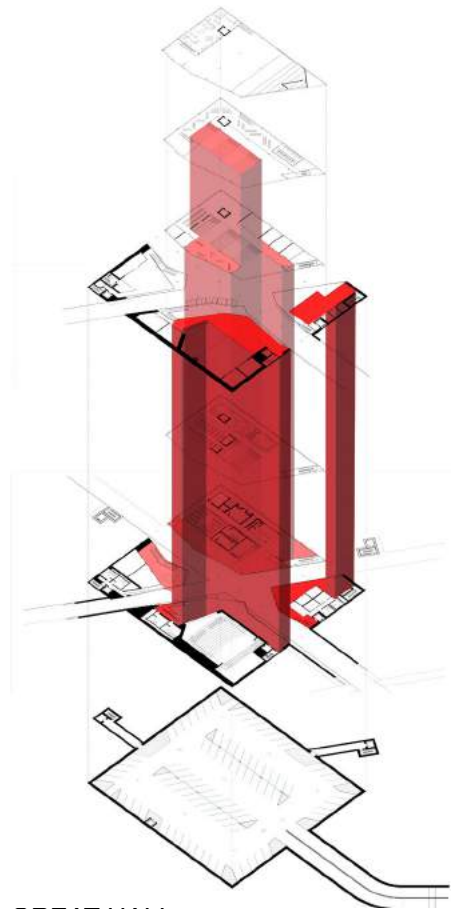
SITE PLAN IMPLEMENTATION



CIRCULATION



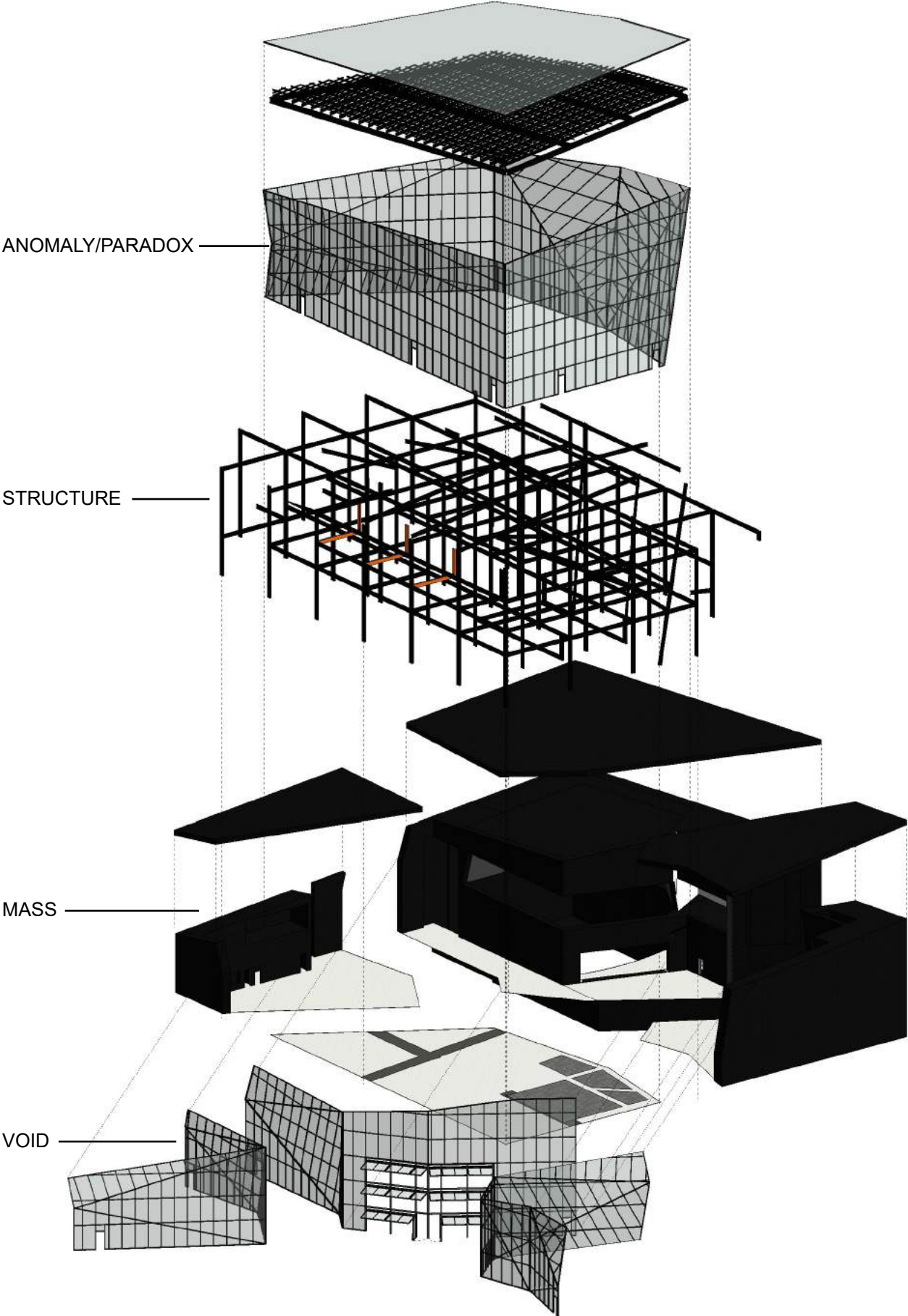
PERFORMANCE



GREAT HALL

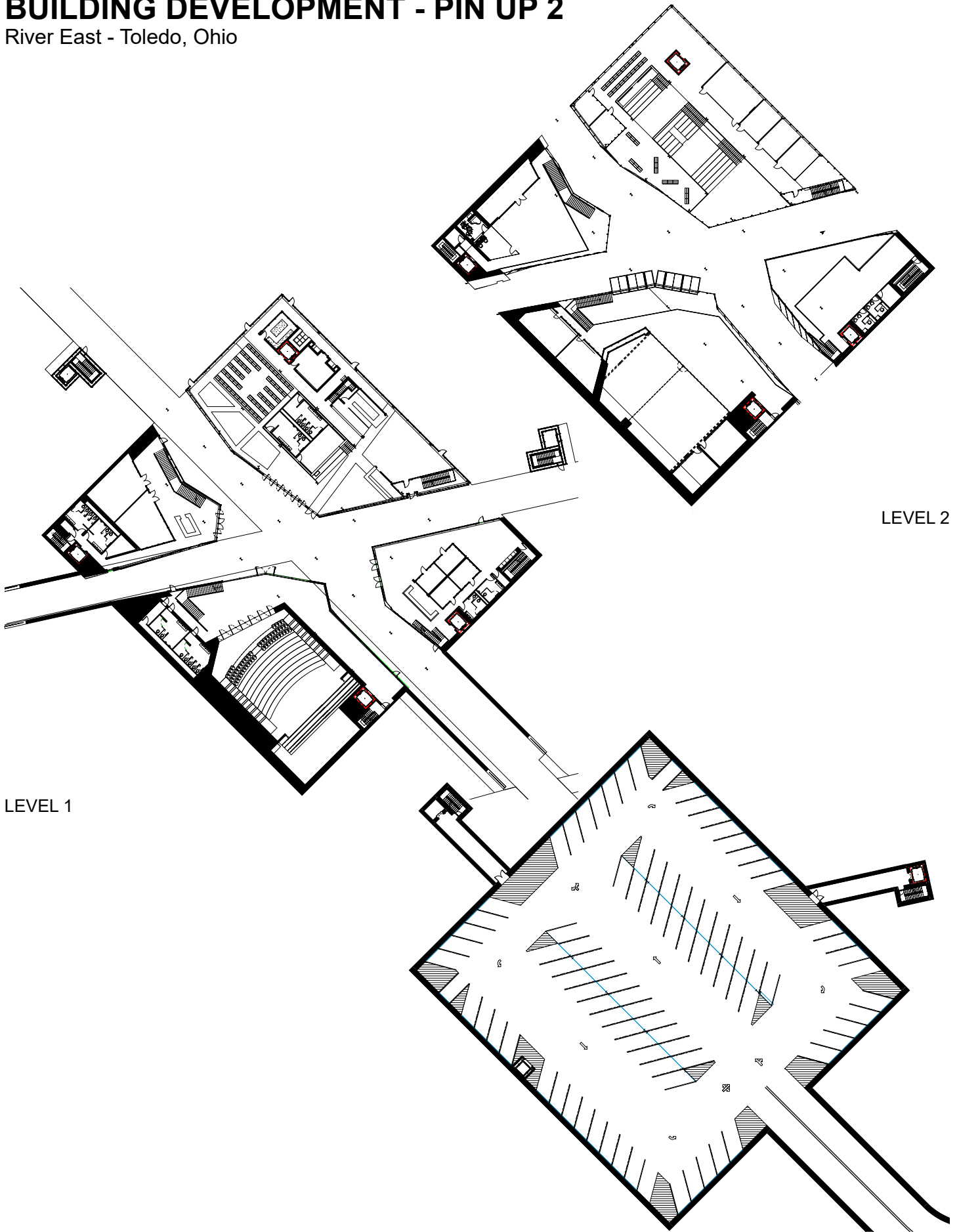
BUILDING DEVELOPMENT - PIN UP 2

River East - Toledo, Ohio



BUILDING DEVELOPMENT - PIN UP 2

River East - Toledo, Ohio



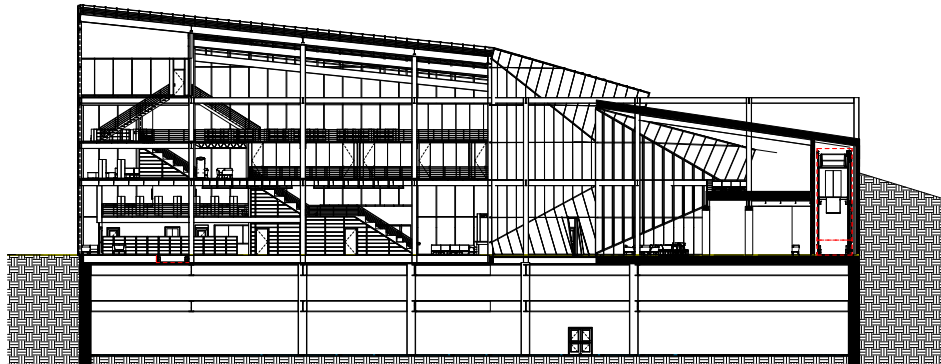
LEVEL 2

LEVEL 1

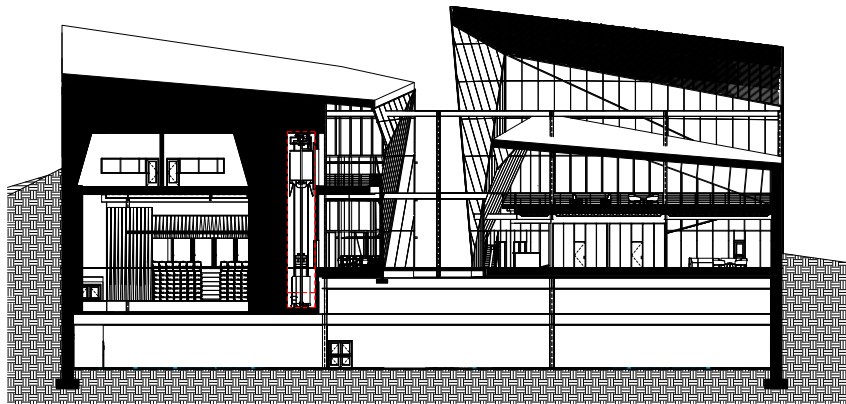
PARKING GARAGE

BUILDING DEVELOPMENT - PIN UP 2

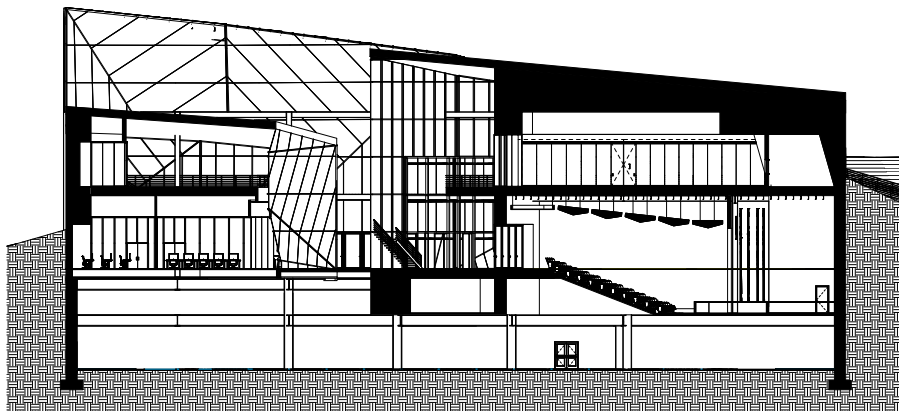
River East - Toledo, Ohio



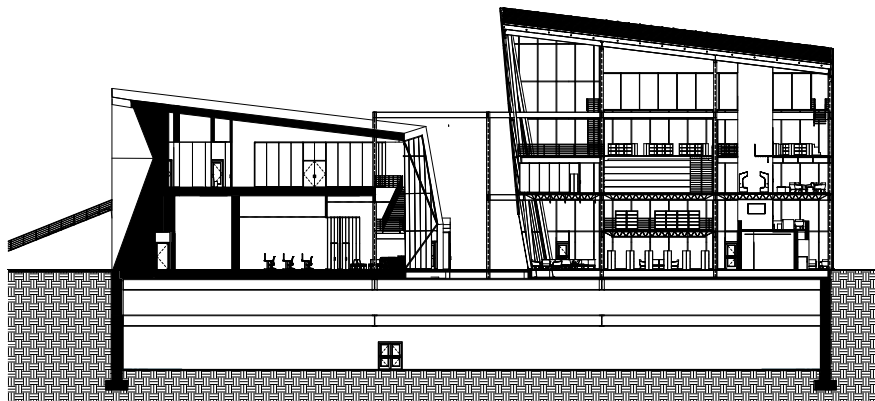
LIBRARY-OUTREACH SECTION



CIVIC-OUTREACH SECTION



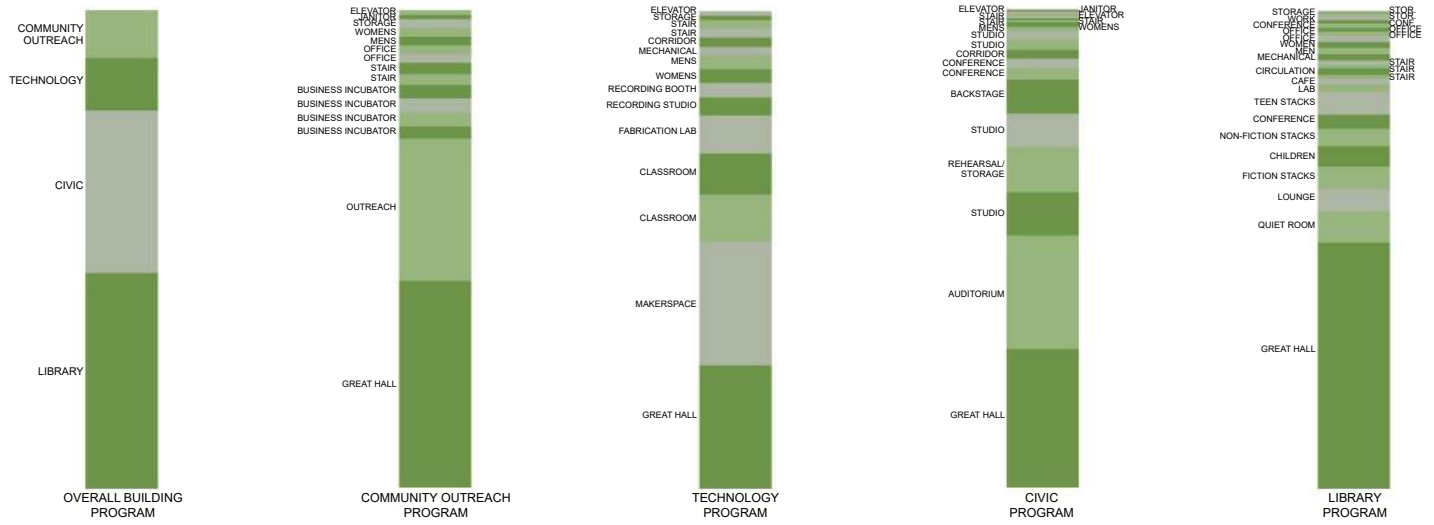
TECH-CIVIC SECTION



TECH-LIBRARY SECTION

FINAL THESIS DELIVERABLES

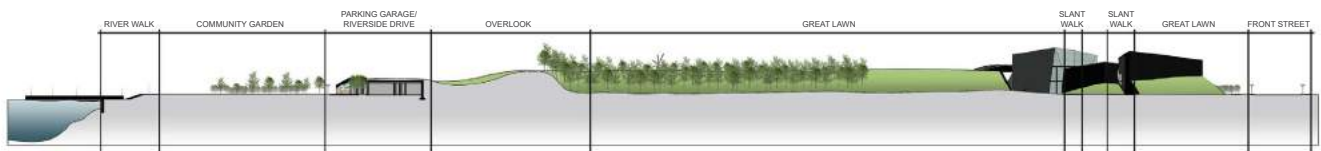
River East - Toledo, Ohio



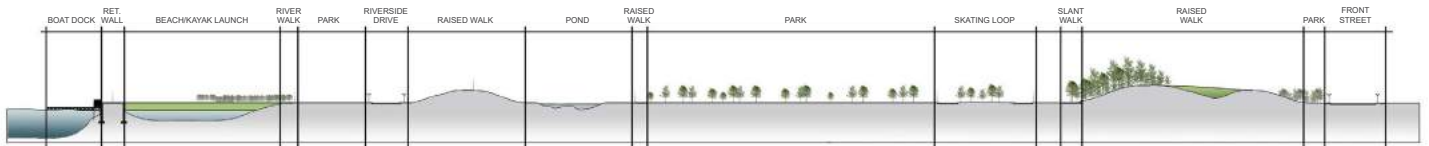
FINAL LIBRARY PROGRAM



SITE SECTION A



SITE SECTION B



SITE SECTION C

FINAL THESIS DELIVERABLES

River East - Toledo, Ohio

THE GREEN ARTERY



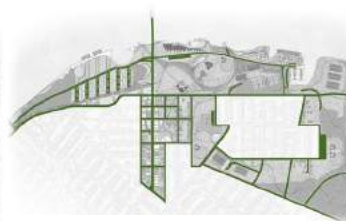
MASTERPLAN



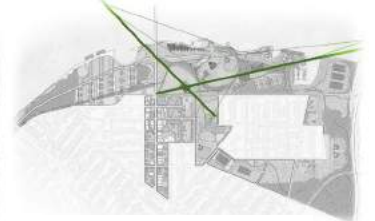
NEW
CONSTRUCTION



PEDESTRIAN
CIRCULATION



VEHICULAR
CIRCULATION



VISUAL AXIS/
CONNECTIONS



CIVIC
PROGRAM



NATURE
PROGRAM



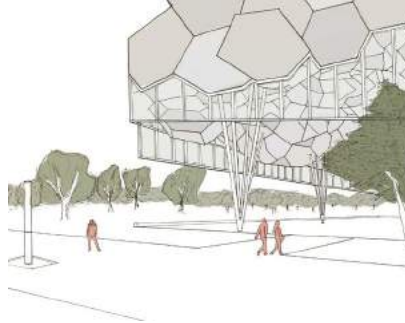
RECREATION
PROGRAM

FINAL THESIS DELIVERABLES

River East - Toledo, Ohio



PHASE 1



PAVILION



ALLEY



PHASE 2



WETLANDS



BIKE PATH



PHASE 3



WOODS/TENNIS COURTS



BIKE PATH BRIDGE



PHASE 4



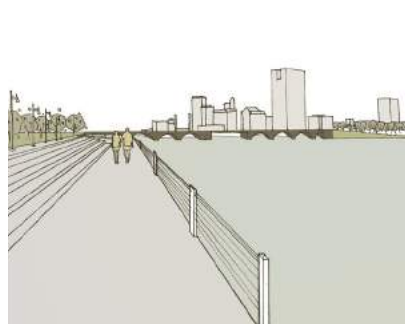
SLANT WALK



GREAT LAWN



PHASE 5



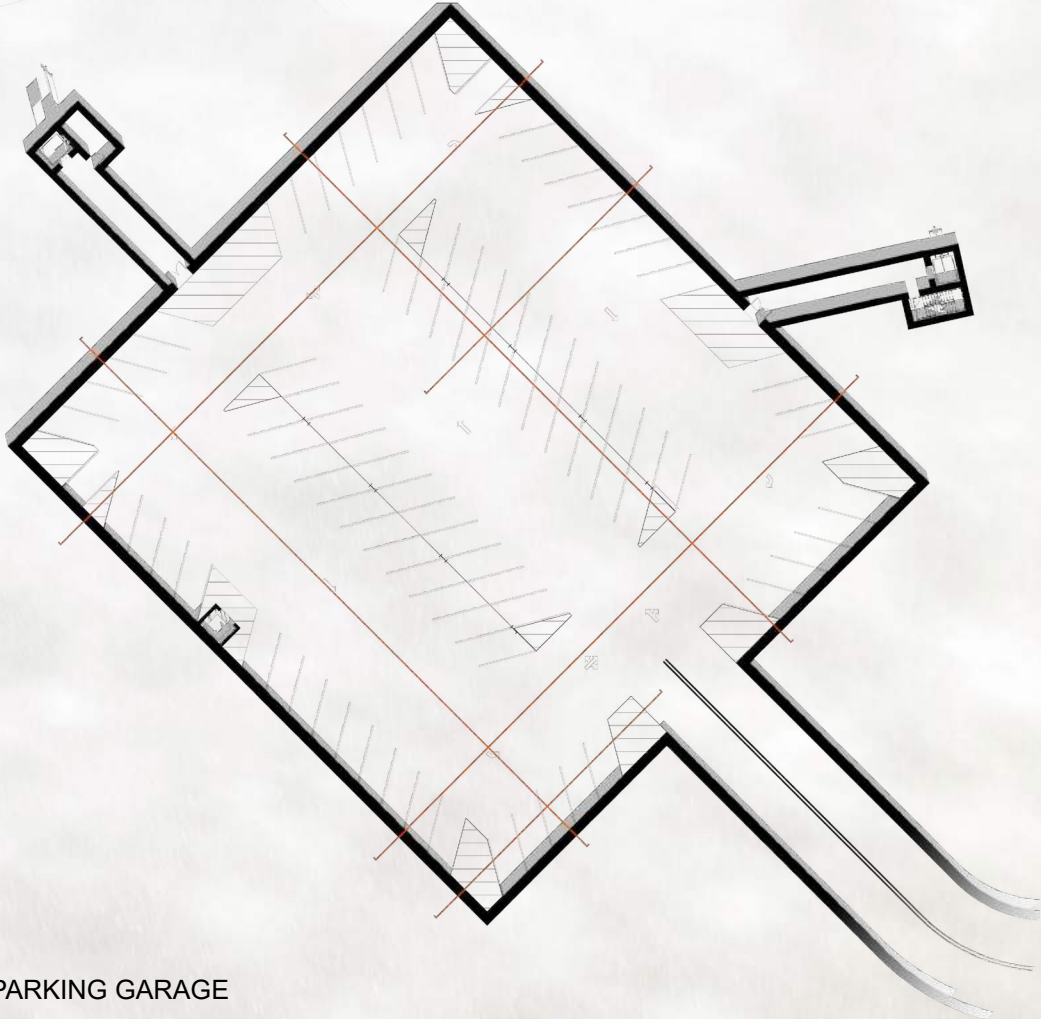
RIVERWALK



SKATING LOOP

FINAL THESIS DELIVERABLES

River East - Toledo, Ohio

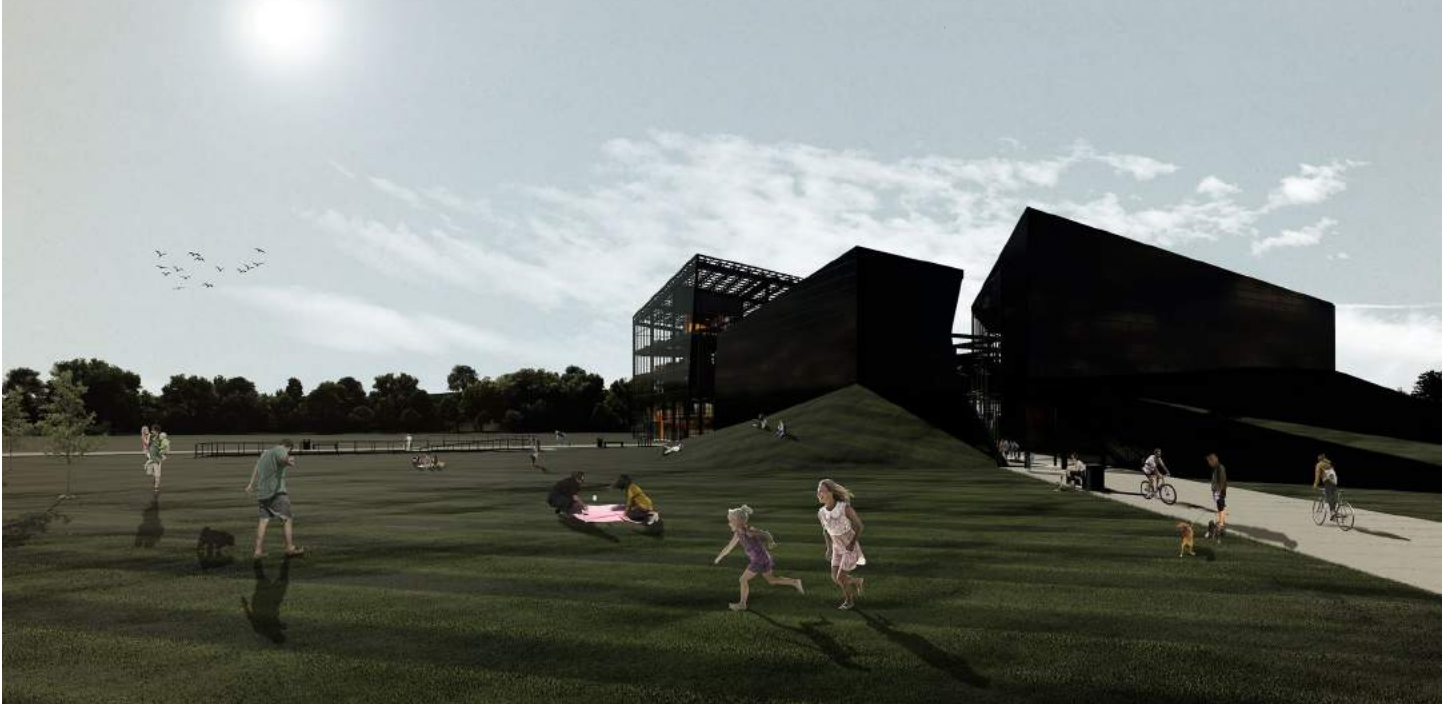
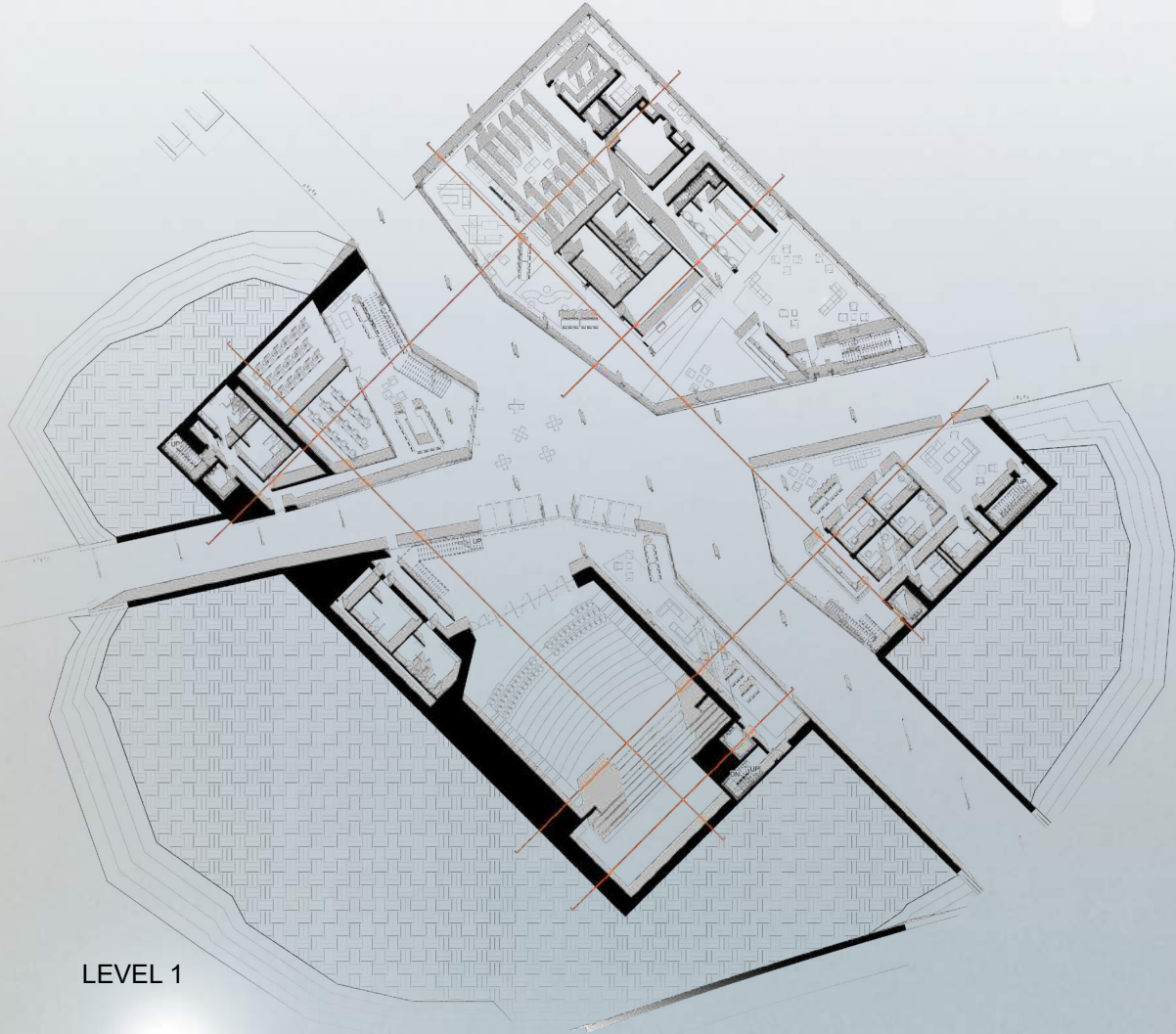


PARKING GARAGE



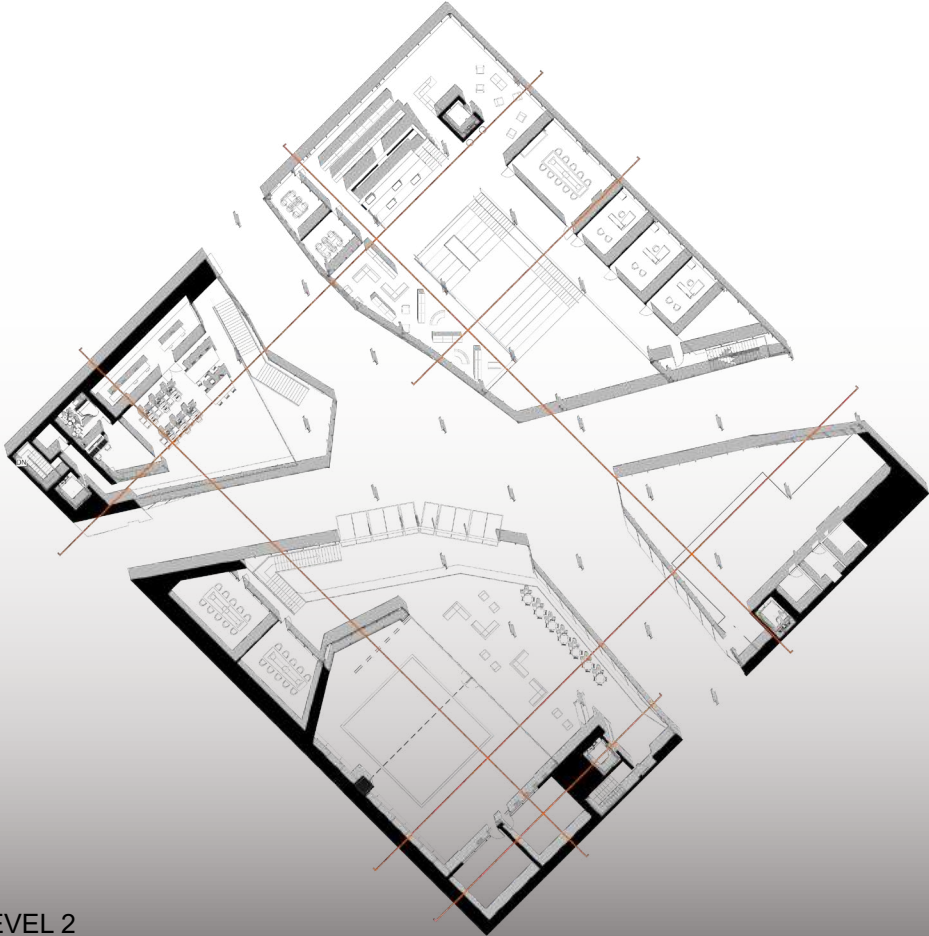
FINAL THESIS DELIVERABLES

River East - Toledo, Ohio

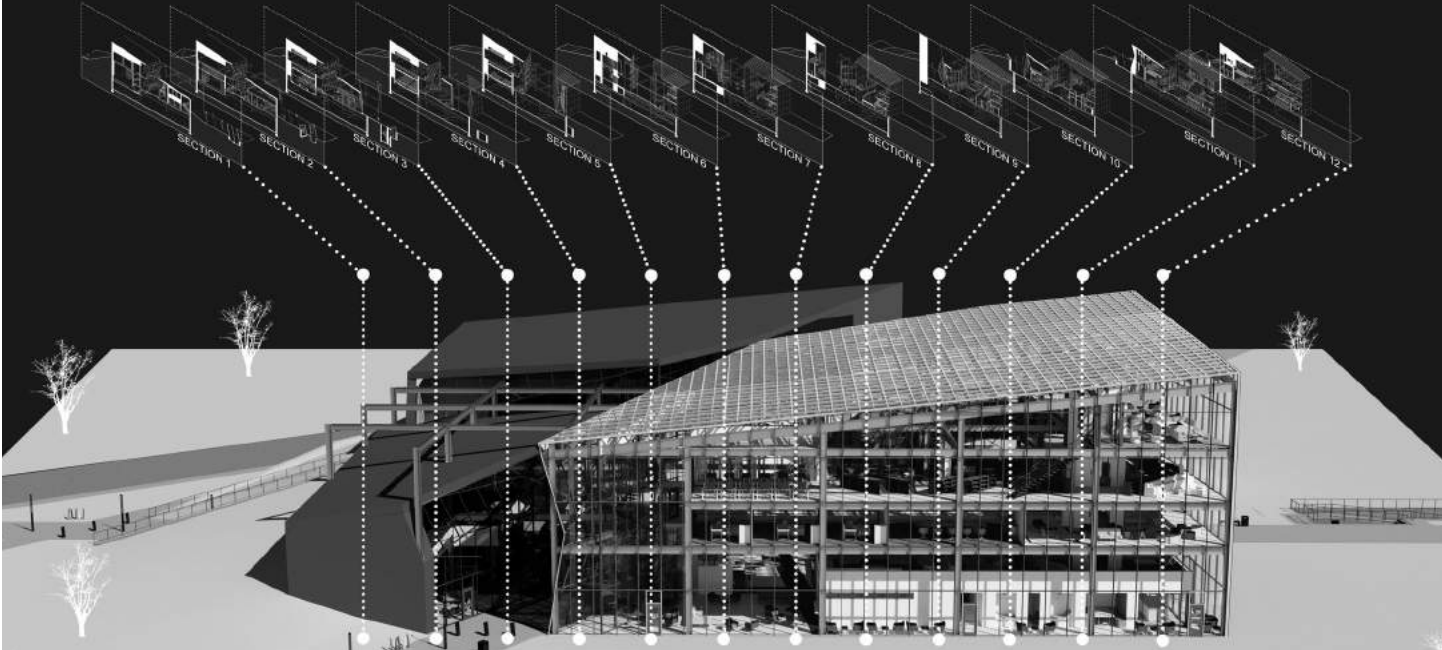


FINAL THESIS DELIVERABLES

River East - Toledo, Ohio

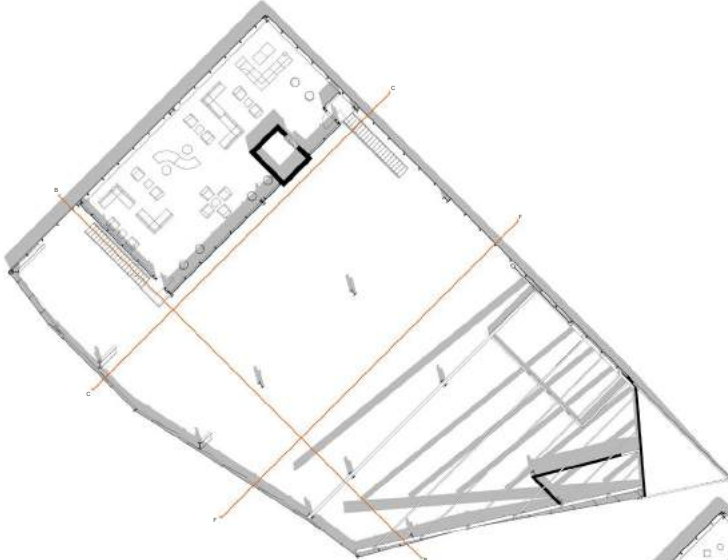


LEVEL 2



FINAL THESIS DELIVERABLES

River East - Toledo, Ohio



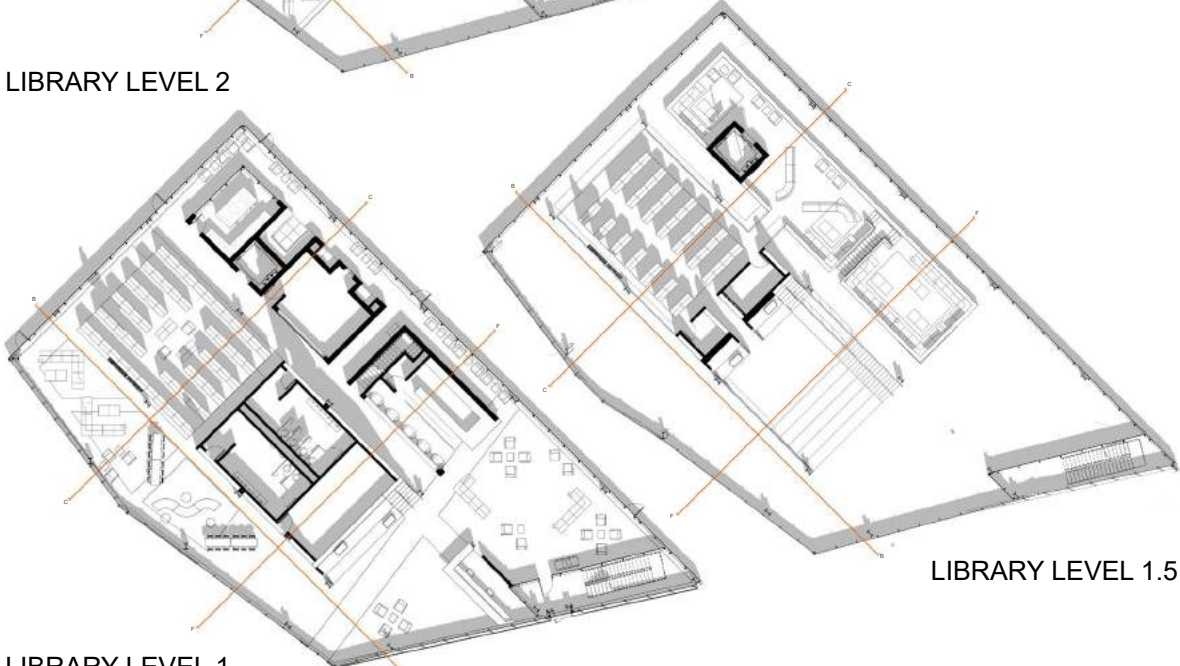
LIBRARY LEVEL 3



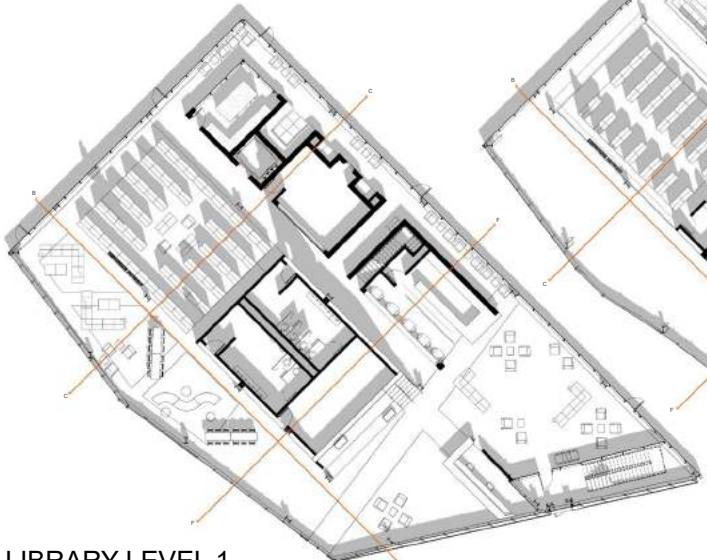
LIBRARY LEVEL 2.5



LIBRARY LEVEL 2



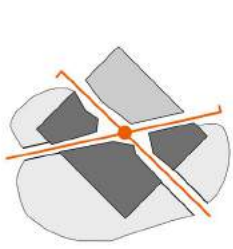
LIBRARY LEVEL 1.5



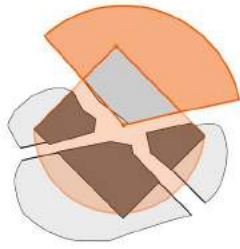
LIBRARY LEVEL 1

FINAL THESIS DELIVERABLES

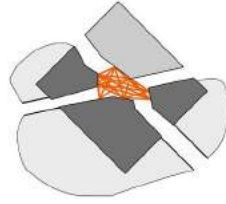
River East - Toledo, Ohio



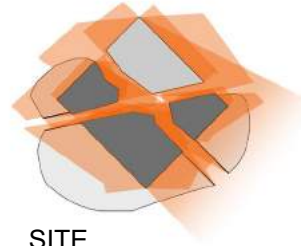
ENTRY SEQUENCE



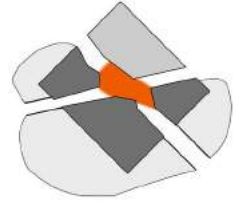
VIEWSHED



CIRCULATION



SITE SHADOW



PLAZA



SECTION A



SECTION B



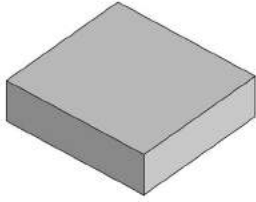
SECTION C



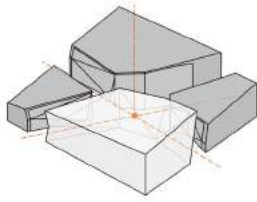
SECTION D

FINAL THESIS DELIVERABLES

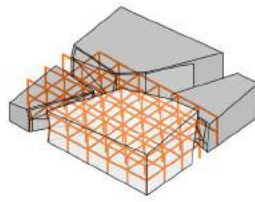
River East - Toledo, Ohio



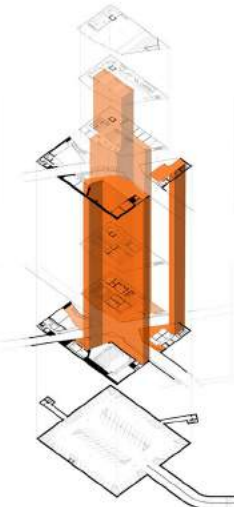
TRANSFORMATION
PHASE 1



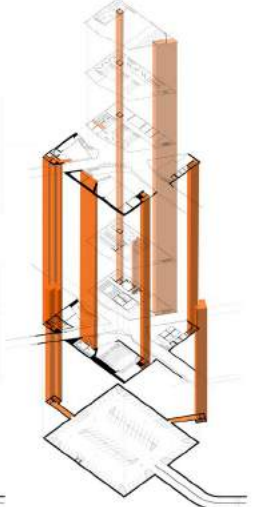
DATUM



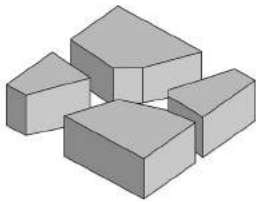
STRUCTURE GRID



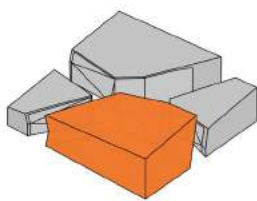
GREAT HALL



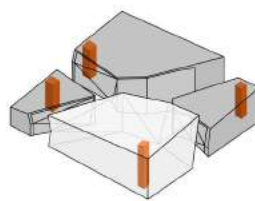
CIRCULATION



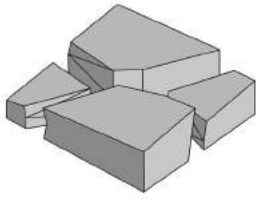
TRANSFORMATION
PHASE 2



ANOMOLY



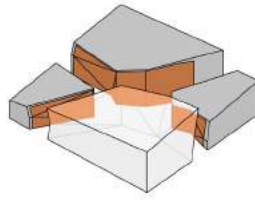
CORE CIRCULATION



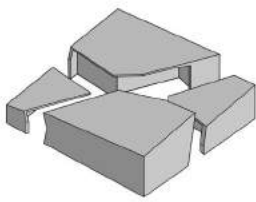
TRANSFORMATION
PHASE 3



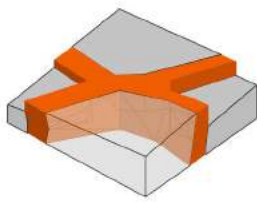
MASS



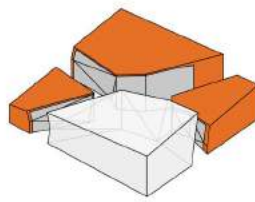
SUBTRACTION



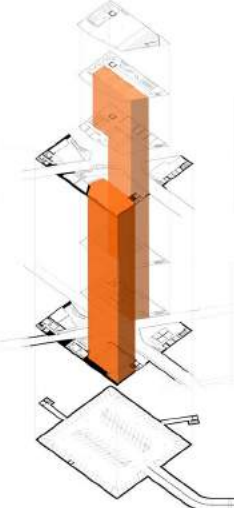
TRANSFORMATION
PHASE 4



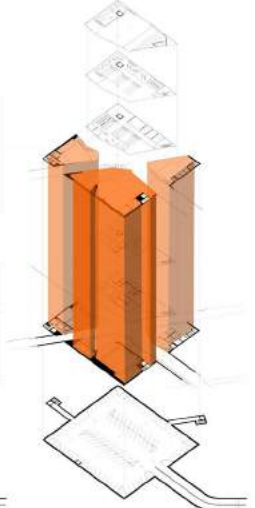
VOID



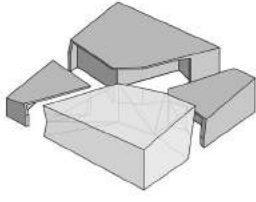
SOLID



PERFORMANCE



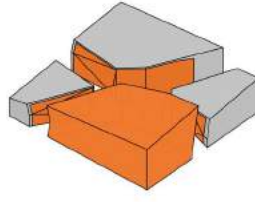
VOID



TRANSFORMATION
PHASE 5



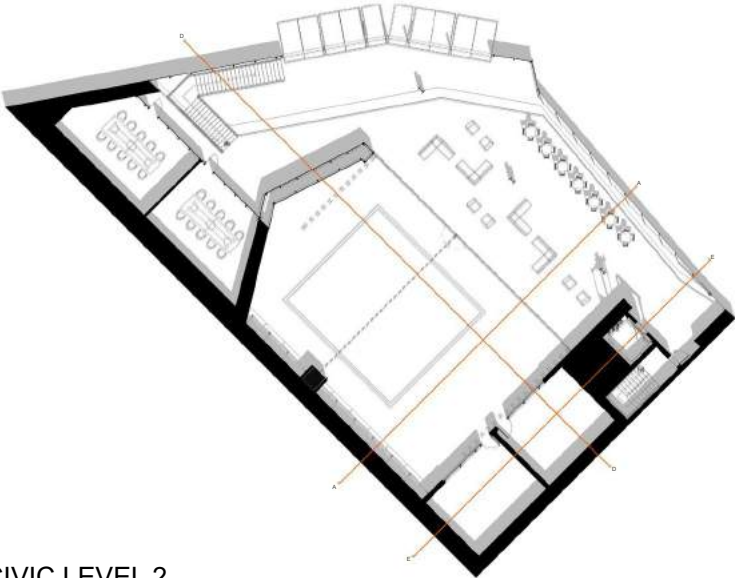
HIERARCHY



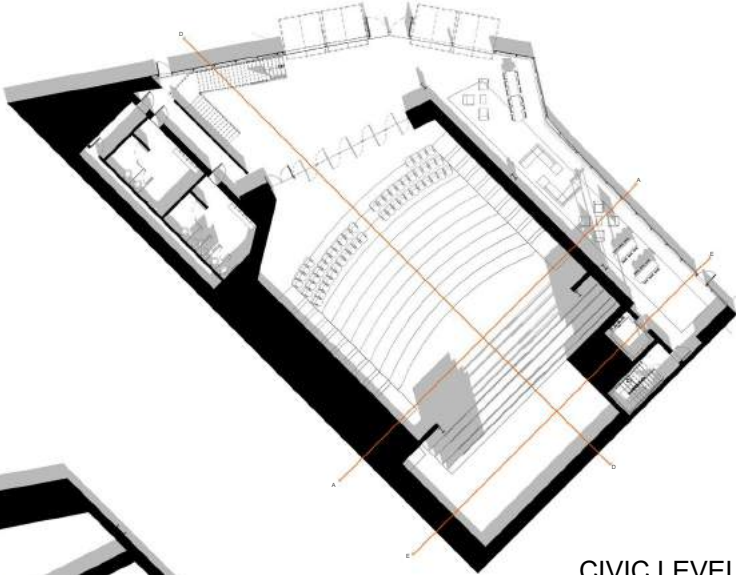
TRANSPARENT

FINAL THESIS DELIVERABLES

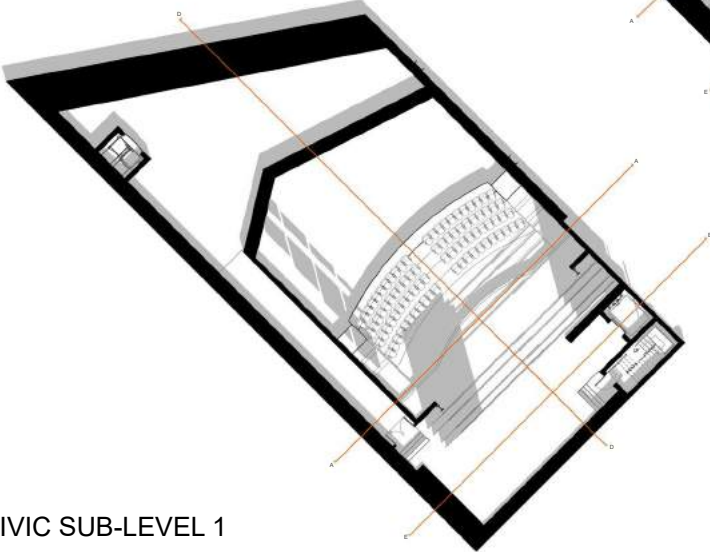
River East - Toledo, Ohio



CIVIC LEVEL 2



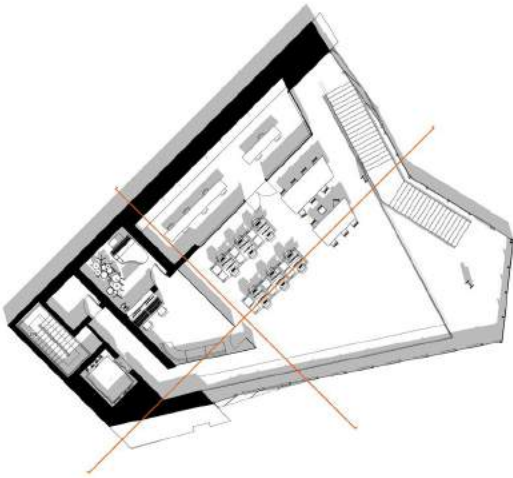
CIVIC LEVEL 1



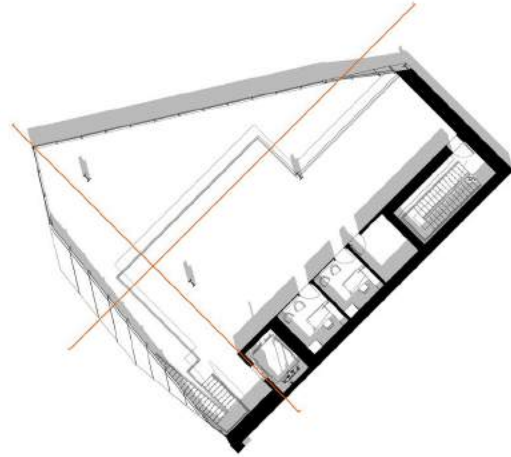
CIVIC SUB-LEVEL 1

FINAL THESIS DELIVERABLES

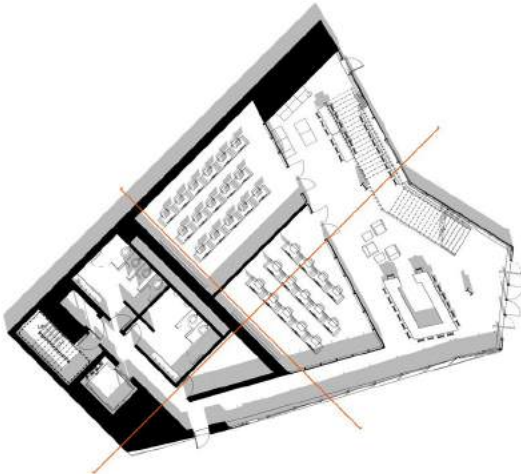
River East - Toledo, Ohio



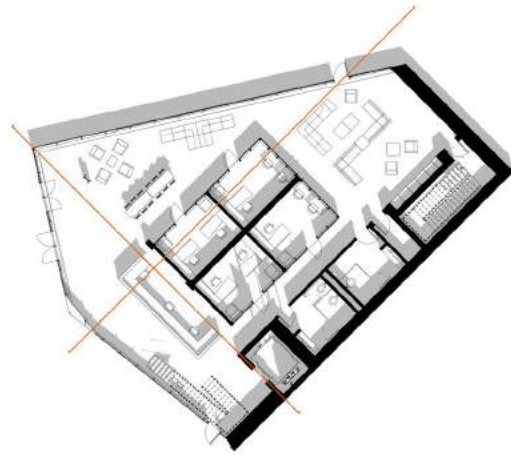
TECH LEVEL 2



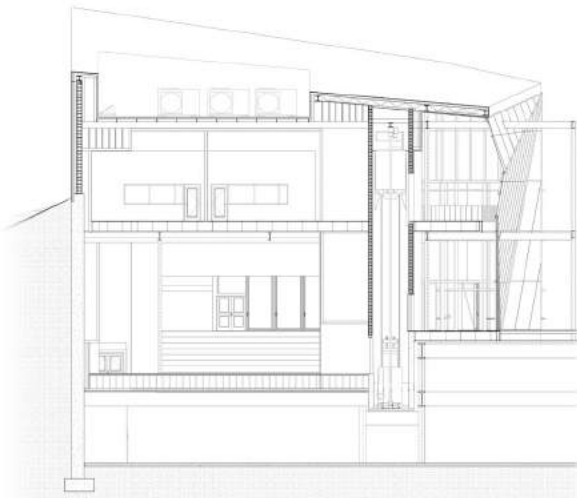
OUTREACH LEVEL 2



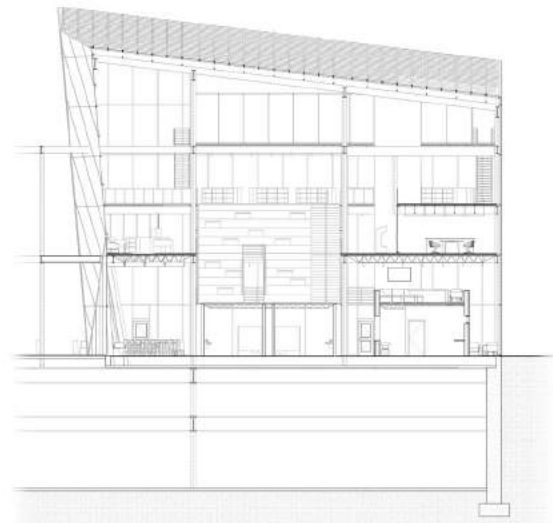
TECH LEVEL 1



OUTREACH LEVEL 1



SECTION E



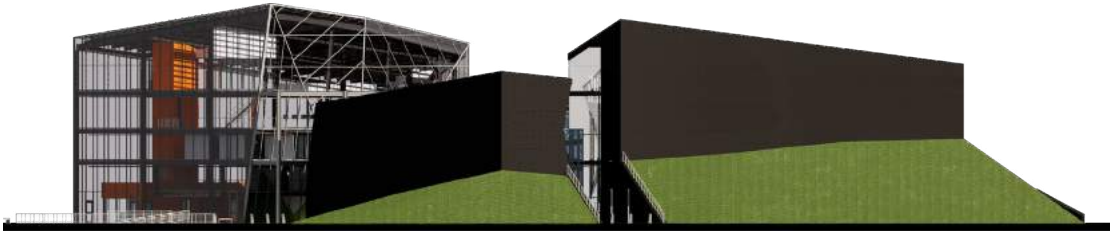
SECTION F

FINAL THESIS DELIVERABLES

River East - Toledo, Ohio



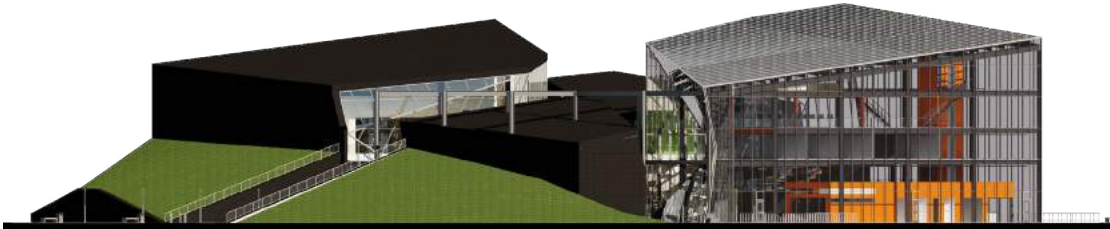
NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION



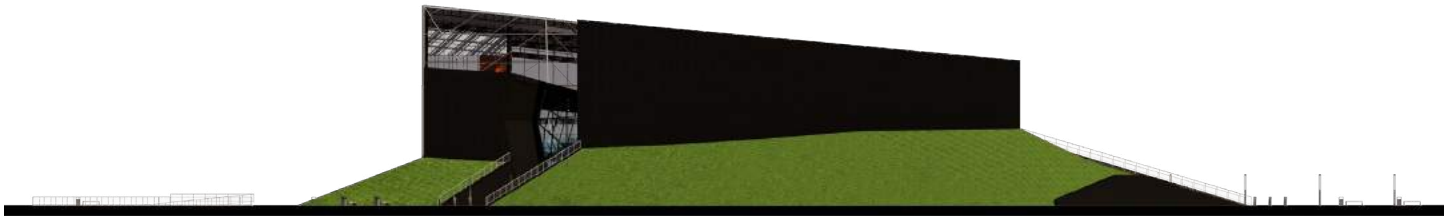
EAST ELEVATION

FINAL THESIS DELIVERABLES

River East - Toledo, Ohio



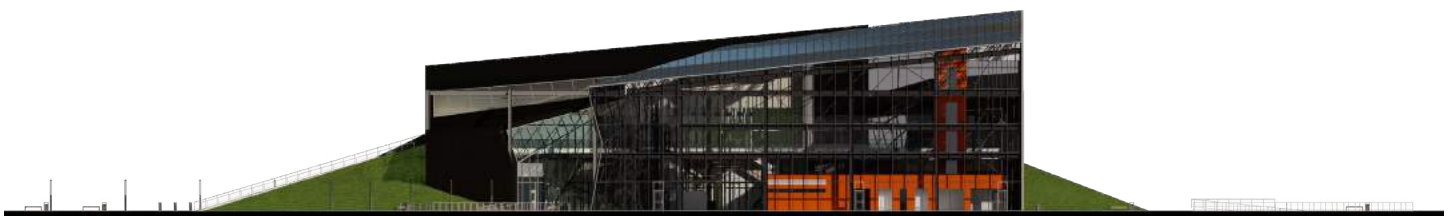
NORTHWEST ELEVATION



SOUTHWEST ELEVATION



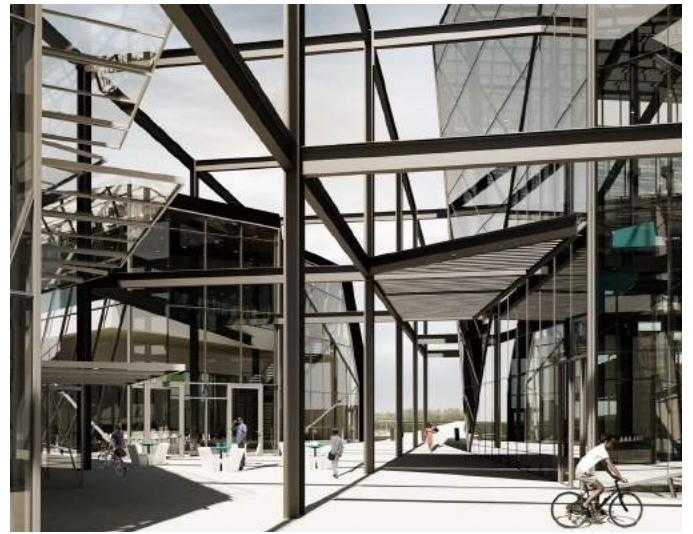
SOUTHEAST ELEVATION



NORTHEAST ELEVATION

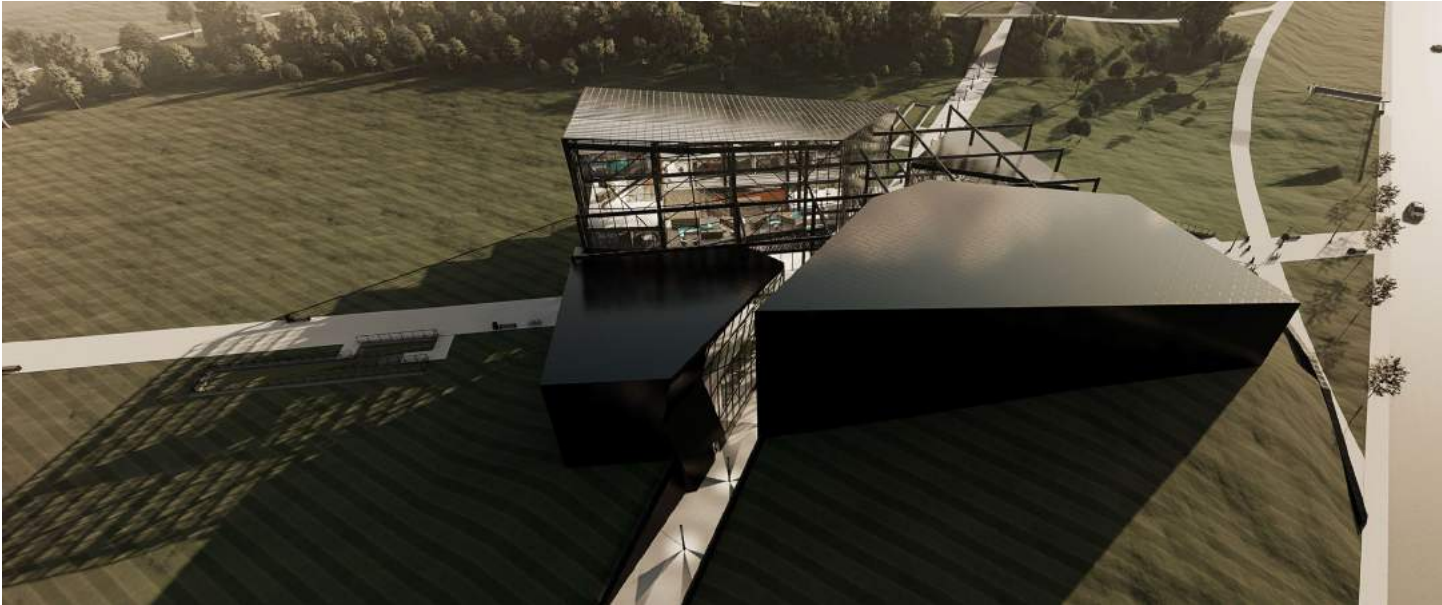
FINAL THESIS DELIVERABLES

River East - Toledo, Ohio



FINAL THESIS DELIVERABLES

River East - Toledo, Ohio



FINAL THESIS DELIVERABLES

River East - Toledo, Ohio



FINAL THESIS DELIVERABLES

River East - Toledo, Ohio

