

Reuse, Remediation, Rehabilitation
Urban Ecological Design For Vacant Structures and Lands
Jefferson Chalmers | Detroit, MI

Davien Graham

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Committee:

Rick Mohler

Vincent Javet

Donald King

Rico Quirindongo

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University of Washington

Abstract

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Davien Graham

Chair of the Supervisory Committee:

Rick Mohler | Architecture

Vincent Javet | Landscape Architecture

In Detroit, abandoned buildings and landscapes lie in ruin, slowly degrading until they are demolished or replaced. This unsustainable cycle leaves behind harmful remnants that damage soils and urban ecosystems, when these sites could provide community amenities or ecosystem services, such as stormwater management, habitat connectivity, or urban beautification. Recently, however, Detroit has embraced adaptive reuse—transforming vacancy into assets rather than discarding them. This thesis proposes an adaptive reuse, remediation, and rehabilitation design strategy for the former Guyton Elementary, a vacant school, and its surrounding vacant lands.

The City of Detroit currently has no publicly announced development, demolition, or renovation plans for the former Guyton Elementary. The building lies vacant, degrading over time. Additionally many of the lots surrounding Guyton Elementary are vacant with patches of dense vegetation that create a characteristic urban forest. These features are assets that make up the urban ecological design strategy of this thesis.

Neighborhood design strategies target the reuse, remediation, and rehabilitation of vacant structures and vacant lands to provide community infrastructure, neighborhood connectivity, and ecological resilience, particularly the management of stormwater which causes detrimental flooding for the community of Jefferson Chalmers.



REUSE, REMEDIATION, REHABILITATION

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Jefferson Chalmers, Detroit, MI

Davien Graham

Architecture Chair: Rick Mohler

Landscape Architecture Chair: Vincent Javet

Committee Members: Donald King & Rico Quirindongo

Helmut Ziewer

for HistoricDetroit.org

Guyton Auditorium
Historic Detroit, 2018



THESIS STATEMENT

In Detroit, abandoned buildings and landscapes lie in ruin, slowly degrading until they are demolished, discarded, or replaced. This unsustainable cycle leaves behind harmful remnants that damage soils and urban ecosystems, when these sites could provide community amenities or ecosystem services, such as stormwater management. Recently, however, Detroit has embraced adaptive reuse—transforming vacancy into assets rather than discarding them. ***This thesis proposes an adaptive reuse, remediation, and rehabilitation design strategy for a vacant school and its surrounding vacant lands.***

Helmut Ziewert

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CRITICAL STANCE

The city of Detroit currently has no publicly announced development, demolition, or renovation plans for the former Guyton Elementary. The building lies vacant, degrading over time. Additionally the lots surrounding Guyton are vacant with patches of dense vegetation that create a characteristic urban forest. **These features are assets that make up the urban ecological design toolkit of this thesis.**

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Guyton Auditorium
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Foreword

I dedicate this thesis project to my city. Detroit is a beautiful gem, people often look at my city as forsaken, or a remnant of a long gone past. I grew up in Detroit at the time the city declared bankruptcy, and through all the hardships, my city remained resilient. To me Detroit is a city of deep roots, strong community, and hustle.

The city didn't just sit by as buildings were abandoned and degraded and lots became vacant, they created a new urban fabric out of the patchwork. To me vacant lots weren't ugly, they were tall grass praries I could lie down in on a breezy summer day, urban gardens with fields to be tended and crops to be harvested, canal edges with wooden docks to sit on while the water crashes against concrete, expansive fields to play in with my friends. The lands of Detroit may be vacant and underutilized, but they are in use by the community. My city taught me to make the best of your current circumstances, not to settle, rather to get greatness out the mud.

Education and Detroit are intrinsically tied to me. School was a second home and my experiences in the Detroit Public School system shaped me to my core. My elementary school, Burton International, particularly imparted values to me that led to my writing of this thesis. I loved Burton, however in 2010 my school was closed and merged with a nearby school. That building meant the world to me as a kid, and it lies vacant to this day. I wanted to do for it what I had seen my community do for other vacant lands and structures in the city. However, I was not alone in the thought to reimagine Burton, a new development is planned for my former school, but my dedication for the adaptive reuse of one of Detroit's historic elementary schools and its surrounding site persisted.

Over the course of a year I found Guyton Elementary in the neighborhood of Jefferson Chalmers, minutes away from my neighborhood in the Marina District. This region of Detroit is historic, unique, and prone to persistent flooding, especially as the climate changes. In 2021 these neighborhoods, and my home, were flooded leading to devastating damages and costs. But the city and neighborhood didn't give up. They rebuilt, and continue to build on. This thesis builds on generations of Detroit hustle, to continue the reuse, remedation, and rehabilitation of vacant structures and lands.

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Julie Parrett, UW Department of Landscape Architecture Chair

Tyler Sprague, UW Department of Architecture Graduate Student Coordinator

Lynne Manzo, UW Department of Landscape Architecture

Reviewers

Alex Anderson, UW Department of Architecture

John Kennedy, SidexSide Architects, Principal + Partner

Tess Schribante, GGN, Principal

Nic Morin, ABLE Studio

Shannon Lee, Mithun

Collarborators

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Ian Tomashik, City of Detroit Historic Designation Advisory Board

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Introduction

Some designers say the most sustainable design is that which already exists; this isn't always true, however in the city of Detroit it is. That's why this thesis proposes a design analysis and strategy for the reuse, remediation, and rehabilitation of a 4.46-acre landscape and its adjacencies as a pilot strategy for an urban design strategy to promote community growth and ecological resilience in the Jefferson Chalmers neighborhood of Detroit, MI.

Jefferson Chalmers is one of Detroit's oldest neighborhoods. Its inhabitants have ranged from Indigenous to French to English to American over the course of 250 years. This trade of hands shaped the land from a marshland with seasonal flooding, to ribbon farms with plots reflected in the current landscape, to a racetrack where Henry Ford got his start. The auto industry, the Great Migration, and its resulting societal upheavals changed this neighborhood from densely packed and busy on Jefferson to a wide stretch of vacant lots and remnant houses.

Recently, the city of Detroit designated Jefferson Chalmers as one of the key neighborhoods to utilize the strategic neighborhood fund (SNF) to receive funds to be one of the city's new economic cores. The site this thesis explores will serve as a small-scale example to utilize the vacant structures and landscapes, and the neighborhood's current context as an example of what could be done on a larger neighborhood scale. This design strategizes community resilience, stormwater management, and adaptive reuse of neighborhood elements.

Guyton Elementary School is located west of Fox Creek on the Jefferson Chalmers border, its situated at the intersection of vacant lots, the new economic core to the north, and 3 large parks and playfields to the south. Given its elevation, location, and significance, Guyton Elementary is perfectly positioned to serve as a central node to the Jefferson Chalmers neighborhood, connecting the community and managing stormwater.

The vision is to approach the site with an interdisciplinary urban design perspective at the neighborhood, block, and site scales, each scale gaining more detail and precise design action.

Neighborhood-scale will focus on a case study on the neighborhood's physical infrastructure, landscape conditions, and the connection from the historic business district in the north to A.B. Ford Park in the south, utilizing Guyton Elementary in the center as a connecting node.

Block scale strategies aim to utilize the 4.46-acre landscape surrounding the former school building and the adjacent 4-blocks northeast of the site that connect to Fox Creek to manage large amounts of stormwater during flood events, provide community space and amenities, and serve as an urban ecological node and network for human and non-human communities. This design scale prioritizes land reuse, greenway connections, and the celebration of water in the landscape.

Site scale strategies will determine the design approaches necessary to retrofit the school into a recreational center and condominium development, prioritizing senior housing, providing services and opportunities for residents, especially those at risk of displacement due to redevelopment. These retrofits include the reuse of the school's basement as a new large cistern connected to a flexible use detention pond.

Core Values

Design for Equitability: Design a culturally responsive urban design utilizing a mixed-use building and landscape meant for the adjacent community surrounding the former Guyton Elementary School

Design for Water: Create an urban design to address the excess flooding risk in the area, celebrating water and connecting the community in the process.

Design for Well Being: Create a design that holistically integrates the architectural and landscape architectural designs on site to foster the benefits of a biophilic design indoors and outdoors.

Research Questions

What design strategies could be adopted to promote connectivity and socioecological resilience?

What stormwater strategies can be implemented to create resilient, flexible, and engaging space?

How can Guyton be adaptively reused to provide community services, support, and shelter?

THEORETICAL FRAMEWORK

This thesis understands the design strategies of architecture and landscape architecture to be inseparable in order to create a cohesive and successful urban ecological design. A guiding principle throughout this project is the integration of design disciplines to facilitate the best reuse, remediation, and rehabilitation for the vacant structures and lands in Jefferson Chalmers.

However, In order to best describe the particular strategies utilized by each discipline, *Architecture, Landscape Architecture, and Urban Design* will be separated in this chapter.

Urban Ecological Design

Socio-Ecological Rehabilitation

This thesis proposes the reuse, rehabilitation, and remediation of a vacant school and its associated landscape. The neighborhood of Jefferson Chalmers plays a key role in design decisions and goals for this project; therefore, community-oriented design practices are embraced. *Comparative Investigating of Adaptive Reuse and Sustainable Architecture with Social Approach* takes a case study and survey approach to identify cultural ties residents and staff have with former houses that have been adaptively reused. The journal says “Social and cultural aspects are one of the important bases of environmental quality.” (Shishavan, 2013, p. 110) This project criticizes that sustainability in architecture today mainly focuses on the physical and financial impacts of adaptive reuse architecture, rather than the cultural impacts spaces can have on people.

This project focuses more on community and the means by which to cultivate that in relation to architecture, rather than the architecture itself. It proposes design processes that create spaces meant to celebrate community, but mainly focuses on the community perceptions of the project's case studies and the definition of community design. This thesis incorporates some of this project's empathy towards the craft of revitalizing a space that has sentimental value to many who engaged with that space's previous use.

The largest scale of this thesis's study is that of urban ecological design. *Frontiers in Urban Ecological*

Design and Planning Research suggests that with the majority of the world population now living in urban areas, urban ecological design fundamentals should be utilized to ensure regenerative futures for the larger urban ecosystem. These 4 methodologies are:

1. Application of ecosystem services
2. Adaptation of settlements for natural disasters
3. Ecological renewal of degraded urban places
4. Linking knowledge to action to affect change

This research article functions more as an informational essay rather than the application of the methodologies it discusses. It raises interesting perspectives with its four methodologies, such as the definition of regenerative design: “Regenerative design attempts to create futures with an appreciation of uncertainty and flux so that subsequent generations are capable of adapting to change on their own terms.” (Steiner, 2014, p. 305), and the 4 methods which will help establish some of the reasoning for designs decisions, especially related to the neighborhood and site scale.

Flood Hazard Mitigation Strategies and Techniques

The city of Detroit has explored various options for flood mitigations strategies for Jefferson Chalmers. There is an extensive amount of literature discussing the current flood regime and the variety of means at the disposal of the municipality to deal with it. The *Lake St Clair Flood Risk Reduction Study For the Jefferson-Chalmers Neighborhood, Detroit, Michigan* utilizes 3 primary planning objectives:

1. *Reduce the risk of flooding due to high water levels and wave run-up of Lake St. Clair in the Jefferson-Chalmers neighborhood;*
2. *Develop a plan that is considerate of the desires and needs of the residents and is acceptable to the City of Detroit.*
3. *Remove the properties located in the Jefferson-Chalmers study area from the high risk floodplain (1%, 100 year event) in order to alleviate flood insurance costs.*

The city plan considers strategies for either closing neighborhood canals or building higher flood walls to deal with concerns of high water levels in the coming decades. The article itself notes that any closure of the canals would be unpopular amongst residents, so building higher flood barriers seems the best option to maintain the character of the neighborhood and provide protection for high water conditions.

Other proposals for stormwater management in the neighborhood have been utilizing the vacant land parcels throughout the neighborhood as a series of raingardens and greenway connections. An experiential method of utilizing stormwater infrastructure as public infrastructure. The city of Detroit has instituted a few projects that utilize vacant lands for stormwater detention, one such being the Cody Rouge Neighborhood Bioretention Gardens, which was a joint venture between the Detroit Water and Sewage Department and the University of Michigan.

Jefferson Chalmers itself has a beautiful character of patchwork urban forests mixed amongst green fields and 20th century post-frame stoop house. Its environment remembers its roots as a patchwork landscape, prone to consistent flooding. Design strategies should celebrate water in the landscape instead of actively fighting it.

Controlled flooding of the canals into neighborhood raingardens reused and remediated from vacant land parcels could be a multifunctional design strategy to reduce flooding damages and associated costs while providing neighborhood amenity and beautification. Paths interconnecting these raingardens would additionally provide residents a means of circulation and direct experience of their ecosystem during high water events.

Landscape Architecture

Vacant Land Remediation

In the city of Detroit, blight has created large urban gaps of vacant land. In recent years residents across the city took action to transform these lots into productive spaces for their neighborhoods

and the larger community. Urban farms in the city have garnered the most popularity. The Detroit Land Bank Authority (DBLA) has created a program to let homeowners affordably purchase side lots and neighborhood lots to repurpose for community use and neighborhood beautification. (City of Detroit, n.d.) However, there is too much land in the city for the current residents to manage properly. Due to this lack of volunteers, many lots degrade, only to be reclaimed by nature in a new hybrid urban-natural ecosystem within the city. These ecosystems offer positive benefits such as carbon sequestration, wildlife habitat, and urban canopy coverage. They also offer negative effects such as pollution, safety issues, and visible neighborhood degradation.

Alternative Uses for Vacant Land in Detroit, Michigan is a master's thesis by Michael Yun that goes into detail about the various needs and uses that could be allotted for Detroit's Vacant lots. Yun describes these landscapes in the context of the ecological services they provide, and looks into the variety of species diversity and abundance that has grown present in the urban ecosystem. The large voids of vacant land have been colonized by vegetation, which now provides ecosystem services to a variety of urban animals; however, these ecosystems go unmanaged, and therefore their productivity is negatively impacted. (Yun, 2008) These landscapes are heterogeneous and typically made up of a mix of native overstory trees (sugar maple, red maple, red and white oak) and some exotic species (some landscape trees like spruces are interspersed throughout the city). Non-native shrubs are typically managed through infrequent disturbances by the city of Detroit, mowing lawns periodically; they remain present in some of the thicker canopied lots and edges. (Yun, 2008)

What Yun proposes is a remediation of these landscapes through a bioremediation process of converting vacant lands to productive prairies to be used in the production of cellulosic ethanol within the city. This management process would include the addition of fire regimes and systematic disturbance to bring back the historic landscapes within the city. (Yun, 2008)

Blue Voids: Stormwater Strategies for Abandoned Lands (Desimini, 2013) begins to approach one of the environmental problems on the Guyton site, which is the proximity to the Detroit River and the flood risk the neighborhood of Jefferson Chalmers is under. Detroit, Philadelphia, and Cleveland serve as case studies for this article's exploration of vacant lot use as green stormwater infrastructure. The

article coins the large spaces of vacant lands as ‘blue voids’ that serve as challenges and potential opportunities for these cities to tackle flooding impacts. The article mentions a hybrid system Detroit has begun considering that tries to deal with the flooding and the current urban fabric in 3 key ways:

- 1. A distributed system that randomly selects vacant parcels across the city
- 2. A concentrated system that selects parcels in the areas already slated for the greatest transformation
- 3. An amplified radial, linear system along all of the major roads

Blue Voids provides a Detroit-specific condition for how designers think the city could attempt to deal with increased flooding through analyzing available space and future opportunity, and considering the optimum use of these spaces for stormwater management. Based on the qualifications listed by the Blue Voids article the Jefferson Chalmers site would be space best utilized for a high concentration of dispersed green stormwater infrastructure similar to condition 2.

Condition 2 as a design strategy would be converting some of Detroit’s vacant lots into retention ponds meant to hold large amounts of water and slowly release it. Retention ponds would be connected with one another, forming interspersed swamps in large storm events that would be indicative of Southeastern Detroit’s historical ecosystem of marshes and swamplands.

Landscape Connectivity

The City of Detroit is incredibly aware of its vacant lands and has created various initiatives to address these vacant areas and stimulate new economic growth and development. These key areas are designated SNF Neighborhoods and are viewed as neighborhood cores that are likely to be economically viable. The neighborhood of Jefferson Chalmers is one of these SNF Neighborhoods. Vacant Land Adaptation in *Detroit’s G7 Neighborhoods* (City of Detroit, n.d.) is a thesis that cultivates a very high-level understanding of its site and its population to design a framework plan for the G7 neighborhood in Northeastern Detroit.

It first gives an in-depth site analysis of the neighborhood using mapping and diagrams to show that the neighborhood is inundated with vacant lands and other socio-economic issues. It then uses these maps to discover opportunities within the landscape. After site analysis, the thesis conducts several case studies on Detroit-based land use strategies. Before conducting any formalized design, the researchers conduct community surveys to gauge an understanding of what they might be interested in for the area. The design itself is on a larger neighborhood scale and serves as a framework plan focusing heavily on urban connectivity and land use.

This thesis cultivates an understanding of vacant lot use in the city and provides a design that combines these varied methodologies. While landscape architecture-focused, it leverages the adaptive reuse of an old structure. This project will help in my high-level neighborhood planning strategy and some of the more detailed site design, but not really with the architecture and adaptive reuse of the school building.

This project reflects the ideal uses for the adjacent vacant lands in Jefferson Chalmers. The neighborhoods are different but similar enough that the data and mapping this project conducts informs site analysis and design understandings for this thesis.

Architecture

Adaptive Reuse

Adaptive reuse in architecture refers to the repurposing of an existing building or structure, typically towards the end of its life cycle, for contemporary use. (Serck, 2024) Currently, the built environment contributes to 42% of carbon emissions, and at the current rate of global urbanization, this number is likely to increase unless we as a society change the way we think about the life cycles of buildings. (Holmes, 2025)

In Detroit, an abundance of abandoned buildings and sites lie in ruin. These structures and landscapes degrade over time, only to be demolished, with something new taking their place. This process of

destruction increases emitted carbon and leaves harmful physical and chemical remnants that degrade the soils and urban ecosystem of Detroit as the site remains unoccupied. Recently, the city has begun to adopt the practice of reusing these degraded sites and repurposing them, rather than starting from scratch, but instead through adaptive reuse.

Case Studies

For instance, in the article, Re-thinking Detroit, 3 adaptive reuse projects were reviewed for their approach, methodology, and success. These projects are (Bottero, Datola, Fazzari, Ingaramo, 2022):

Detroit Central Station

This project’s strategy is to become a new focal point of public use in the neighborhood. The reuse of the ground floor is conservative, while the underground station level reuse will be more ambitious.

The Roosevelt Post Office

This design proposes a rethinking of the spaces within the post office for housing and community use spaces.

1448 Wabash St.

This proposes a multi-use space inside an old warehouse, blending between history, typology, and new development.

These are just 3 examples in a city where adaptive reuse is slowly becoming the predominant building practice. (City of Detroit, n.d.) Adaptive reuse to rehabilitate structures has been studied and practiced many times. In her thesis, “The Adaptive Reuse of the Valkeala High School,” Kajsa Lindholm examines the combination of a co-housing model with the adaptive reuse of a former elementary school in Finland. She maintains the original structure and facade of the building to pay respect to the historical context and decrease embodied carbon.

Additionally, she offers a cohousing approach to increase community engagement and participation among the building’s new residents. An aspect of her project she pays particular attention to is an architectural grafting approach of combining modern design materials and techniques with historical structure in a way that highlights both design techniques and offers additional space for programming. (Lindholm, 2025)

Grafting

“Grafting is a design philosophy aimed at upcycling building stock by attaching new additions (scions) to old structures (rootstock) in a way that is advantageous to both. The practice of architectural grafting connects the two to create an expanded, flourishing, and distinctive work of architecture.” (Gang, 2024, p. 48)

The art of architectural grafting is a term coined by Chicago-based architect Jeanne Gang. In her book, she blends the horticultural practice of grafting with architecture. She emphasizes that in the next 25 years, we face a critical period to either end or significantly decrease our greenhouse gas emissions, and our current standards of building aren’t enough to satisfy this pressing need. Her solution is to utilize the current aging building stock we currently have and use architectural grafting to take full advantage of the structural capacity of these structures to increase their utility and lifespan, to delay their demolition, and keep their carbon embodied. (Gang, 2024, pp. 15, 17)

Gang introduces 10 points of criteria to serve as the “Architect-grafter’s credo:” (Gang, 2024, pp. 48,49)

1 ENVIRONMENT

Architectural grafts must be climate-appropriate and responsive to their environment and context.

2 COMPATIBILITY

Additions must be compatible and find commonality with the original. Identifying and expanding on commonalities enhances the design.

3 REDUNDANCY

A high density of connections between the old and the new on programmatic, structural, and aesthetic levels. Connections should be established in various ways, allowing different buildings to function holistically.

4 PRECISION

Successful grafting relies on a precise fit between the different parts to create elegant onnections.

5 CAPACITY

In grafted architecture, the original building cannot be removed entirely. It can, however, be pruned to promote growth, extend capabilities, and improve overall capacity. The architectural scion must always deliver new benefits to the original, and be inherently weaker than the original rootstock. (Gang, 2024, p. 81)

6 RECIPROCITY

Reciprocal qualities of successfully grafted architecture include materiality, proportionality, or programmatic transformation. Reciprocity implies that the old imparts its time-tested qualities to the new, while the new, in turn, offers something novel back.

7 FLEXIBILITY

The grafted architectural object is flexible enough to accommodate future options. The process of grafting in architecture always preserves opportunities for future changes to unfold.

8 JOINING

In architectural grafting, the joint should provide insight into the project's history to tell the story of the fusion between distinct parts.

9 CARE

A successful architectural urban graft involves taking careful stock of the existing structure or urban fabric and caring about its continuation.

10 PLEASURE

A properly grafted building or city will offer users visual and experiential delight.

Utilizing these 10 points, architectural grafts not only preserve existing buildings but also increase their effectiveness and capacity, decreasing the amount of carbon produced by the built environment.

Biophilic Design

The integration of architecture and landscape architecture is the foundation of this thesis, in order to facilitate this integration biophilic design strategies- use of sunlight, plants, water, biomimicry, etc. in the built environments - were incorporated throughout the project.

To best facilitate a design where biophilia was rooted in the core of the project, the architecture and landscape architecture were developed concurrently. Design decisions made on part of the architecture would immediately impact design decisions for the landscape architecture and vice versa.

Interior spaces should be developed to have views of exterior spaces such as a courtyard full of vegetation and small paths in the rear of Guyton Elementary. The rear of the former school will serve as the integration point of the architecture and landscape architecture. A biophilic design strategy to create a space of integration is a winter garden. In Michigan provide these spaces provide year-round indoor living space, granting opportunities for biophilic design and resulting benefits. Within senior housing, this strategy grants improved cognitive function, reduced stress, and community engagement.

Integrated Design

Together, these frameworks establish a cohesive theoretical foundation in which reuse, remediation, and rehabilitation operate as interdependent design strategies across architecture, landscape architecture, and urban design. In the context of Jefferson Chalmers, these strategies are not applied as isolated interventions but as a continuous system that responds to hydrology, ecology, infrastructure, and community need. The integration of adaptive reuse principles, green stormwater infrastructure, and landscape connectivity positions vacant buildings and lands as active components within a larger urban ecological network. Guyton Korte becomes a primary test case for this approach, demonstrating how architectural grafting, biophilic design, and water-centered landscape systems can work in tandem to transform underutilized space into civic infrastructure. Ultimately, this thesis argues that resilient futures for post-industrial neighborhoods are achieved not through singular design solutions, but through layered, adaptive systems that reinforce ecological function while sustaining cultural and social life.

PRECEDENTS



Grønningen-Bispeparken

Location: Copenhagen, Denmark

Year: 2024

Designer: SLA

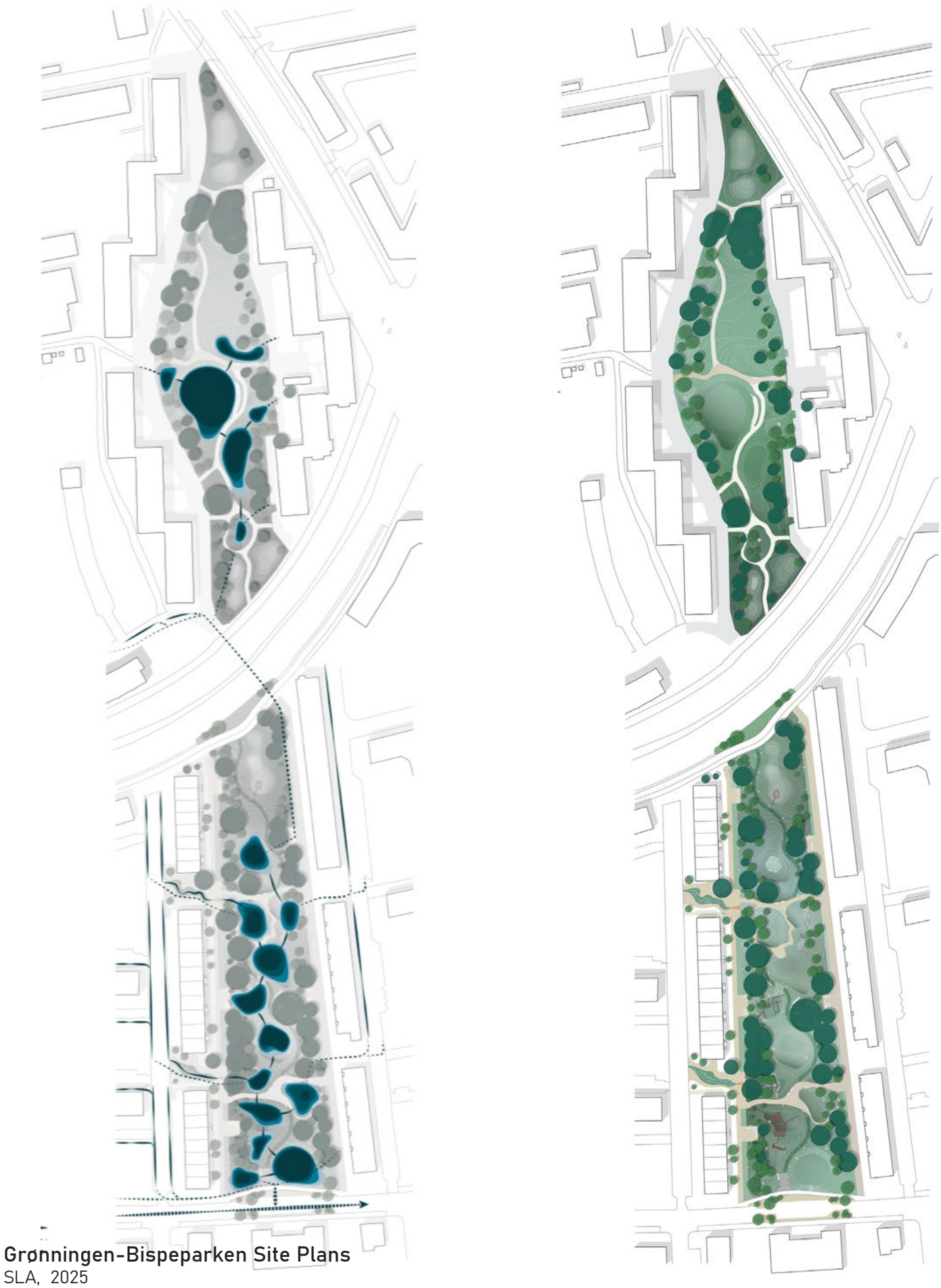
Scale: 4.94 Acres

The city of Copenhagen is at the forefront of climate-responsive design, particularly in addressing urban flooding. Located in Copenhagen’s Nordvest neighborhood, Grønningen-Bispeparken Cloudburst/Climate Park responds to climate change-induced cloudburst events—sudden, intense downpours of rain—while also providing a connected and engaging public space for the community.

Designed between 2020 and 2024, the project was developed through a collaboration among landscape architects, engineers, artists, and local residents. It was also integrated into the City of Copenhagen’s Cloudburst Management Plan. The park occupies a liminal landscape between surrounding five-story residential buildings characteristic of Denmark’s twentieth-century social housing developments. A major roadway bisects the site, separating the private Bispeparken estate (“Bishop’s Park”) to the north from the public Grønningen estate (“The Green”) to the south.

The surrounding neighborhood is home to a diverse population of immigrants and working-class families. A central pathway serves as the spine of the park, connecting spaces for play, relaxation, recreation, and community activities. This pathway also weaves among 18 bioswales that capture and manage stormwater, helping to mitigate flooding during cloudburst events. During dry periods, these rain gardens function as “social swales,” providing flexible spaces for gathering and programming.

Grønningen-Bispeparken Cloudburst/Climate Park celebrates rainfall by making water visible and integral to the visitor experience. The project successfully combines ecological, social, and recreational design, using water as the connective thread that unifies the landscape.



Grønningen-Bispeparken Site Plans
SLA, 2025



Watersquare Benthemplein
De Urbanisten, 2013

Watersquare Benthemplein

Location: Rotterdam, The Netherlands

Year: 2013

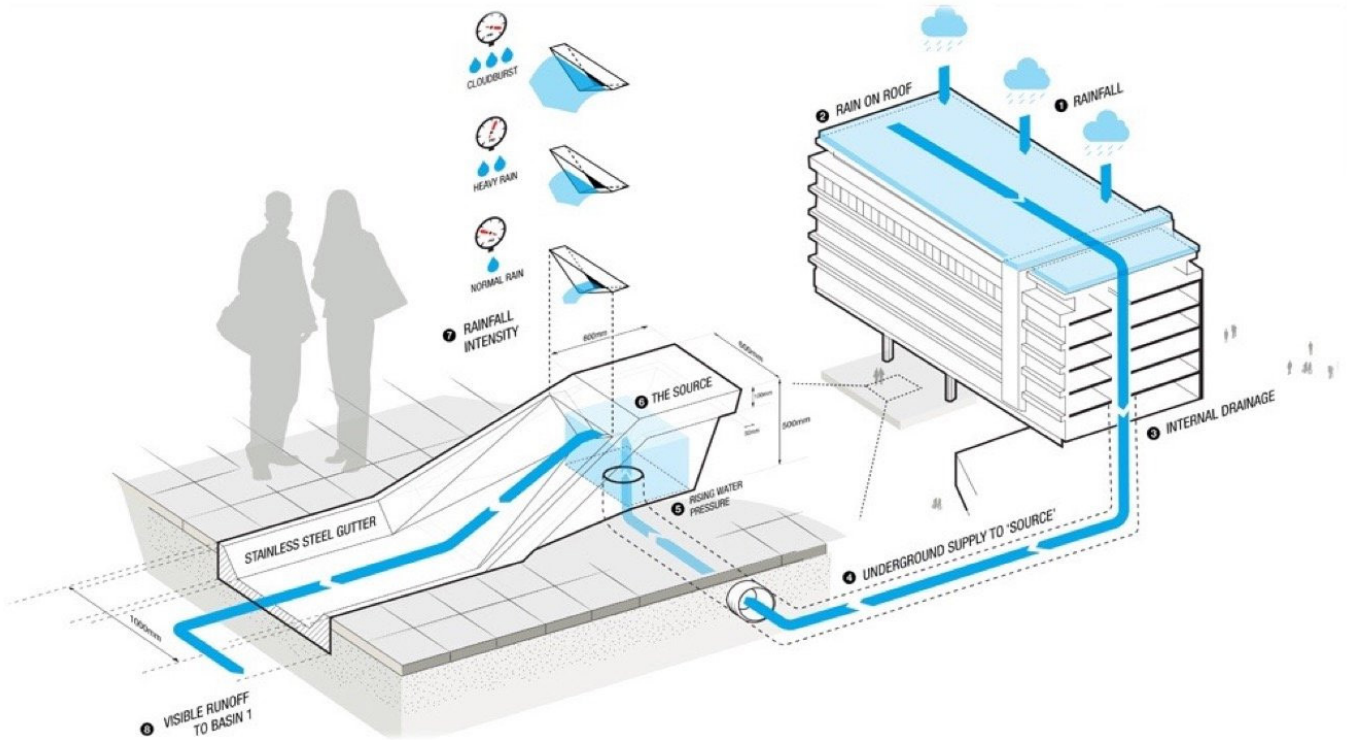
Designer: De Urbanisten

Scale: 3.7 Acres

Benthemplein Water Square is a stormwater storage facility and urban public space located in Rotterdam, the Netherlands. Its design employs a dual-purpose strategy, functioning both as a public square and as critical stormwater infrastructure. As part of Rotterdam's broader climate adaptation efforts, the project contributes to the city's resilience through innovative and multifunctional design.

The project combines stormwater storage with high-quality public amenities, making investments in water infrastructure both visible and beneficial to residents. By integrating ecological function with recreation, the square serves as a central gathering space and an important socio-ecological asset within the neighborhood. During dry weather, the basins function as sports courts and recreational spaces; during rainfall, they temporarily store stormwater through a system of three basins designed to accommodate varying levels of precipitation.

Benthemplein Water Square demonstrates how architectural systems and landscape infrastructure can be integrated to create a multifunctional environment that both protects and engages its community. Water serves as the organizing framework of the project, shaping its spatial character, ecological performance, and social value. This interpretation of water as both infrastructure and public amenity served as a significant source of inspiration for this thesis.



Water Systems Diagram
De Urbanisten, 2013



Flooded Recreation Court
De Urbanisten, 2013

Jefferson Hub
JHub, 2025



Jefferson Hub

Location: Detroit, Michigan
Year: 2025
Designer: Oliver / Hatcher Construction
Scale: 2.9 Acres

Located in Detroit, Michigan, Jefferson School Hub (JHub) is an adaptive reuse project that transformed the former Thomas Jefferson Intermediate School into a collaborative commercial office space. Constructed in 1922 and designed by the architectural firm Malcomson, Higginbotham & Palmer, the building is listed on the National Register of Historic Places. The 120,000-square-foot, three-story structure is located east of the Lodge Freeway along Selden Street.

JHub creatively repurposes former school spaces to support contemporary uses. The original swimming pool has been drained and covered with wood decking to create an amphitheater-style gathering space for presentations and events. Similarly, the second-floor gymnasium now contains small, rentable office suites suited for startups and community organizations.

The project relies primarily on a subtractive reuse strategy, with its most significant intervention being a new entry atrium that transforms the former rear façade into the building’s primary entrance. This contemporary black-box addition contrasts with the historic structure while highlighting the transition between old and new. The atrium encloses what was once an exterior play area, preserving original windows and introducing a mezzanine overlook through a large opening cut into the existing façade. The result is a highly visible expression of adaptive reuse that celebrates both the building’s history and its new function.



Jefferson Hub Event Center (Former Swimming Pool)
JHub, 2025



Bamboo Office Suites (Former Gymnasium)
JHub, 2025

Northwest African American Museum and Urban League Village Apartments
Night Chapel – Micheal Bennett
Photographer: Davien Graham, 2026



Northwest African American Museum | Urban League Village Apartments

Location: Seattle, Washington
Year: 2008
Designer: Donald King Architects
Scale: 2.5 Acres

The Northwest African American Museum and Urban League Village Apartments are part of the adaptive reuse of the former Colman School, a historic building constructed in 1909 in Seattle’s Central District, a neighborhood with deep ties to the city’s African American community. The mixed-use development combines cultural, residential, and community-serving functions within a single historic structure.

Urban League Village Apartments provides 36 affordable housing units, including studio, one-bedroom, and two-bedroom apartments supported through tax-credit financing. The Northwest African American Museum occupies a portion of the building and features rotating exhibitions that celebrate African American history, art, and culture.

The project demonstrates how adaptive reuse can preserve historic architecture while meeting contemporary community needs. By integrating affordable housing and cultural programming, the development reinforces the Central District’s cultural identity and contributes to the neighborhood’s long-term vitality.



Jimi Hendrix Sculpture Park
Photographer: Davien Graham, 2026



Northwest African American Museum and Jimi Hendrix Sculpture Park Site Plan
Northwest African American Museum



Northwest African American Museum Art Gallery
Northwest African American Museum

A BRIEF HISTORY

PRE-COLONIAL

Originally Le Grand Marais, The Grand Marsh, this wetland ecosystem saw regular periods of water inundation.

This land is the ancestral homeland of Anishinaabe nations and various other tribes in the region. They used this land for hunting, fishing, and navigation during times of high water.



1800's

In 1874, George B. Moran drained Le Grand Marais. By 1876 Fox Creek was canalized.

The remaining land was transitioned into ribbon farms and a lighthouse was established on the southern end to aid ship navigation.



Early 1900's

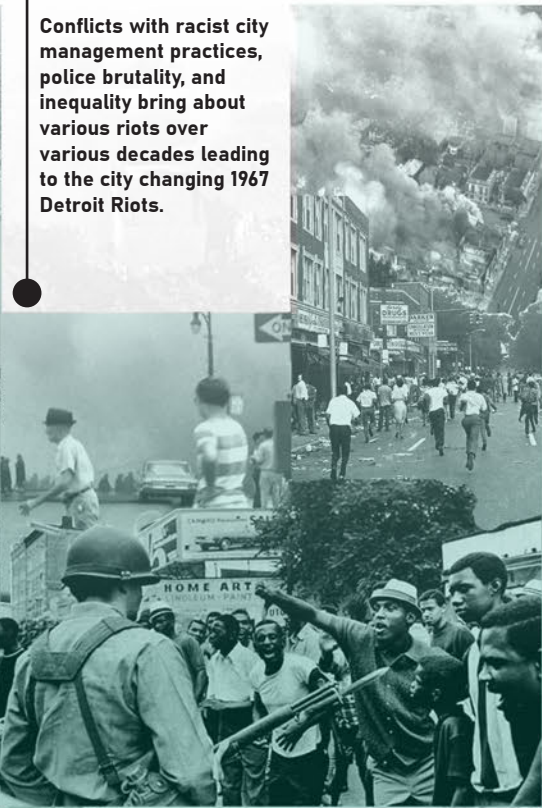
Auto plants west of Jefferson Chalmers start to boom bringing growing labor to the city. These factories transition to war factories during WWI and WWII.

Guyton Elementary is constructed in 1925.



Racial Upheaval

Conflicts with racist city management practices, police brutality, and inequality bring about various riots over various decades leading to the city changing 1967 Detroit Riots.



CURRENT CONDITIONS

Jefferson Chalmers is a neighborhood of rich history and is one of Detroit's only canal neighborhoods. However, this neighborhood was hit incredibly hard by the cities decline and now faces ~17% vacancy rate.

Additionally as climate change worsens, this neighborhood has been severely impacted by flooding. However, community members have taken action in their neighborhood and have tried beautification efforts such as urban gardens and art walks throughout the neighborhood.



COLONIAL ERA

French explorer Antoine Laumet de La Mothe Cadillac sailed up the Detroit River in 1701 and established Fort Pontchartrain. He begins granting long ribbon farm strips to settlers.



GREAT MIGRATION

Through the early 20th century, many black families migrated north from the south in search of better jobs and opportunities and an escape from racial tensions in the south. Detroit was a key stop for migrators.



DETROIT'S RECKONING

Social tensions, economic divestment, and the collapse of the Auto Industry in the region led to a large exodus from Detroit by its white population. This reduced the cities population from ~2 million to ~750,000 in 50 years.

This decline led to large vacancies across the city and a severely reduced tax base incapable of handling the cities maintenance.

In 2013 the city declared bankruptcy, becoming the largest municipality in the country to do so.



FUTURE PLANNING

In 2018 the city conducted various community meeting sessions to adapt the 2025 framework plan for the neighborhood of Jefferson Chalmers aimed at stabilizing housing, making use of vacant land, and revitalizing the neighborhood economic district.



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NEIGHBORHOOD FRAMEWORK PLAN

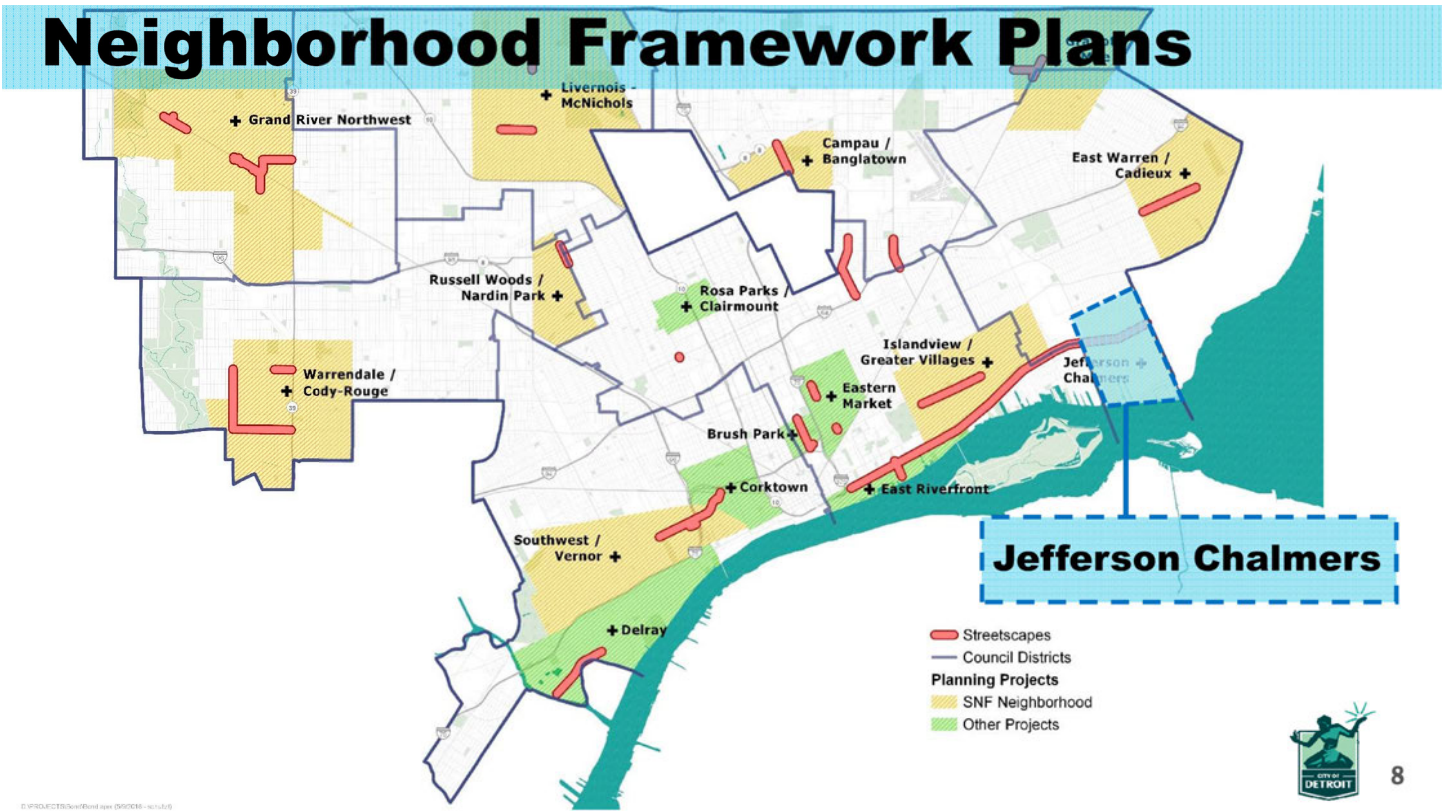
Detroit's Neighborhood Revitalization

Strategic Neighborhood Fund

The Detroit Strategic Neighborhood Fund (SNF) is a public-philanthropic partnership created by the City of Detroit and the nonprofit Invest Detroit. The goal is to revitalize 10 designated neighborhoods areas outside of the downtown core (pictured below). It pools corporate, philanthropic, and public funds to spur inclusive economic growth and prevent displacement. The SNF provides the financial capital to build upon the designs and strategies designated by the neighborhood framework plans.

Jefferson Chalmers Neighborhood Framework Plan

Between March 2018 and February 2019, the City of Detroit collaborated with residents of the Jefferson Chalmers neighborhood to develop the Jefferson Chalmers Neighborhood Framework Plan, which was



Neighborhood Framework Planning and Strategic Neighborhood Fund Designation Areas
City of Detroit, 2018

finalized in April 2019. The planning process included four community meetings focused on strategies for economic, social, and ecological revitalization.

Residents identified landscape design, housing, mobility, and retail development as key priorities, with flooding emerging as a major concern, particularly in residential areas and parks. The resulting framework emphasizes neighborhood stabilization, mixed-use development, parks and greenways, and improved streetscapes. Community members also expressed interest in vacant-lot stewardship, advocating for intentional designs that enhance mobility, connectivity, and neighborhood beautification.

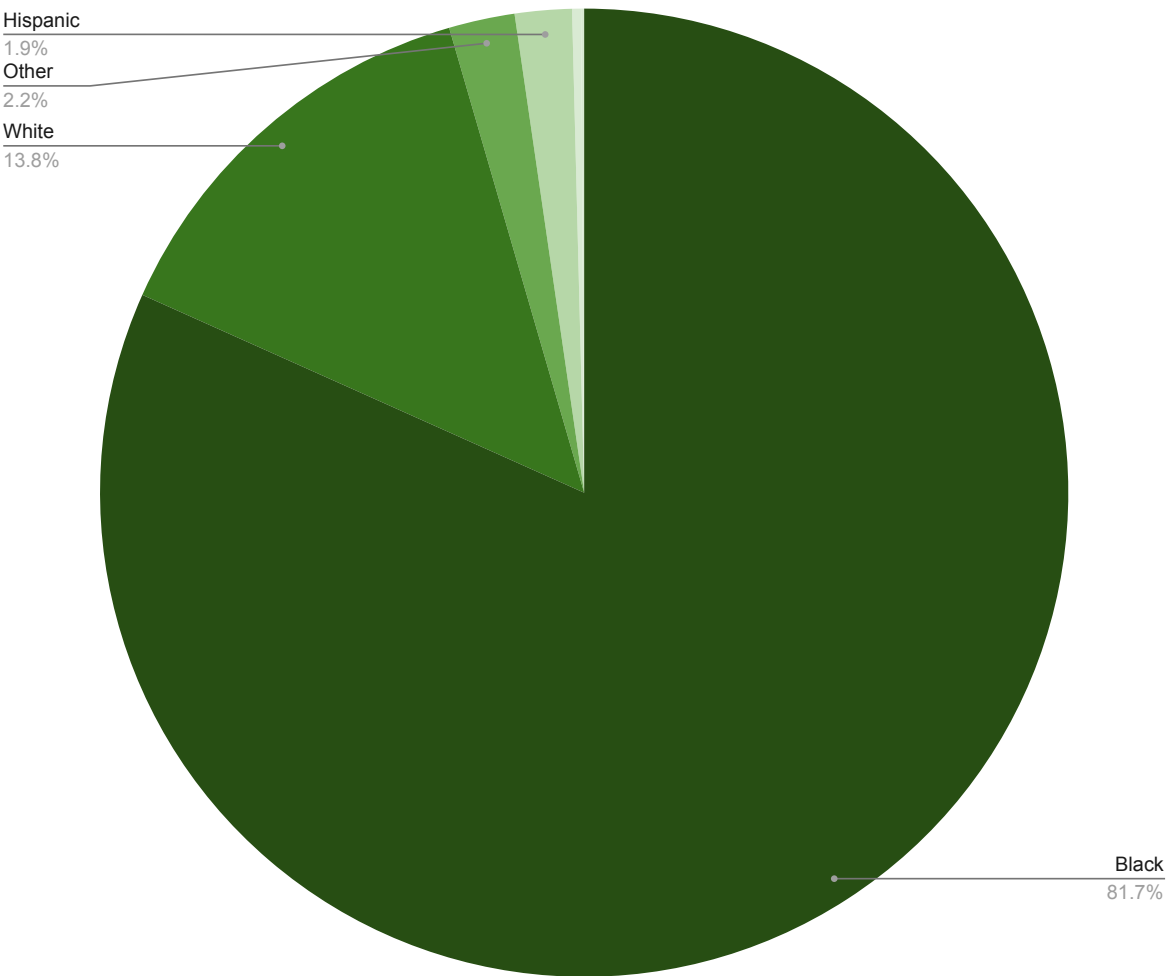
The final plan proposes a network of accessible routes through vacant lots to improve connections to East Jefferson Avenue and neighborhood parks to the south, while prioritizing housing and mixed-use development throughout the southern portion of the neighborhood.



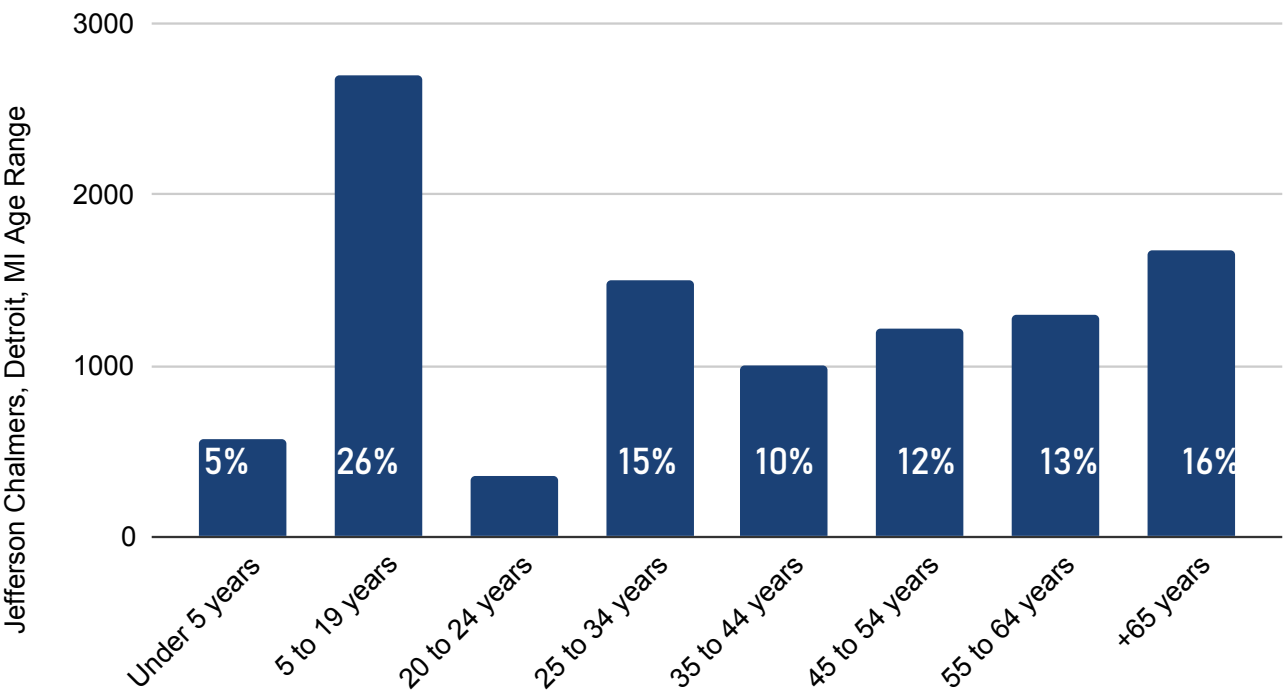
Neighborhood Greenway Connections
City of Detroit, 2018

Neighborhood Statistics

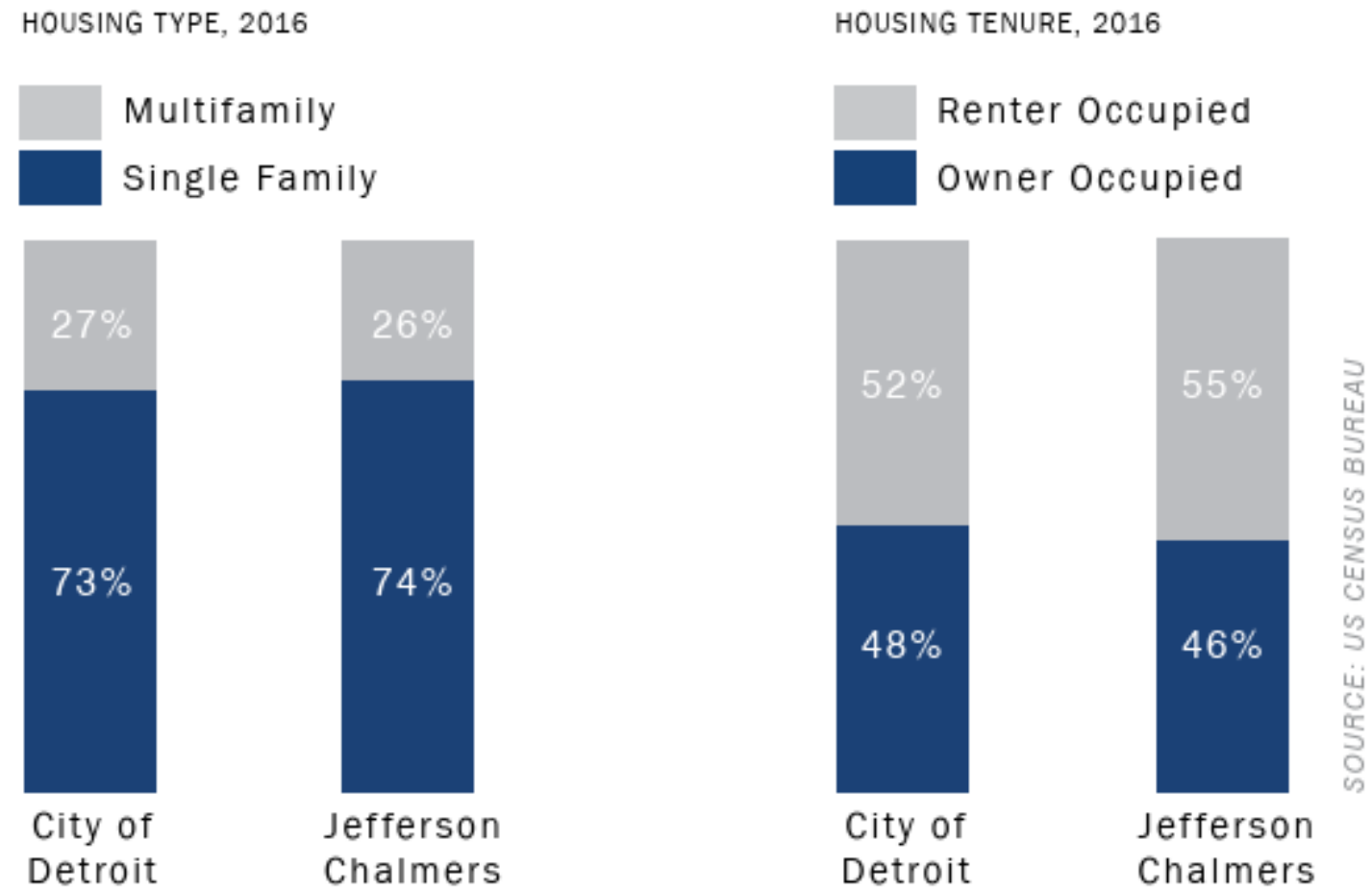
Race



Age



Property Ownership



1

E. JEFFERSON AVENUE

WHAT DO YOU WANT FOR THE FUTURE OF THE NEIGHBORHOOD?

TOP ANSWER: VIBRANT BUSINESS DISTRICT

2

NEIGHBORHOOD FABRIC

DESCRIBE THE CHARACTER OF JEFFERSON CHALMERS:

"HISTORIC, CLASSIC, TRADITIONAL" **34%**

"DOWN TO EARTH, EASY GOING" **20%**

"CARING, GENEROUS, HELPFUL" **17%**

3

WATERFRONT

WHAT IS THE GREATEST ASSET OF JEFFERSON CHALMERS?

ACCESS TO THE DETROIT RIVER **72%**

Neighborhood Survey
City of Detroit, 2018

Neighborhood Recommendations

Neighborhood Intervention Priorities

Community members were interviewed for their thoughts on which neighborhood revitalization initiatives should be given priority. The reuse of vacant lots for ecological benefit, the reuse of the vacant Guyton Elementary, and neighborhood connectivity to the water and canals is what the community of Jefferson Chalmers wants.



Intervention Priority Survey
City of Detroit, 2021

Summary

The residents of Jefferson Chalmers are deeply connected to the neighborhood, with many having lived there for decades. As Detroit invests in neighborhood revitalization, new development should attract future residents while supporting and preserving the community that has sustained the neighborhood through periods of decline.

Residents have expressed a desire for greater connectivity and more intentional use of the neighborhood’s extensive vacant land. These spaces present opportunities for ecologically resilient landscapes that improve pedestrian access, strengthen connections between neighbors, and enhance access to the canal system.

Future revitalization efforts should build upon Jefferson Chalmers’ existing character and assets, using the neighborhood’s established fabric as a foundation for sustainable growth and community-centered development.

REC #11: REACTIVATE GUYTON

- Prioritize restoration of gymnasium and auditorium for **community use**
- Adapt classrooms into approx **40-45 units of rental housing**
- Potential for **many to all units to be affordable at 50% AMI**, which means **\$798/month for a 2BR***
- Potential second phase of infill housing on school grounds or adjacent lots

*Current market-rate rent for a 2BR in Jefferson Chalmers is approx. \$1,525/month

Guyton Reactivation Guide
City of Detroit, 2018

Summary of Final Recommendations



Framework Plan Final Recommendations

The documents final recommendations can be summarized into these 3 themes:

- 1. Reuse of vacant lands to promote neighborhood access and connectivity
- 2. Rehabilitation of historic of buildings and infrastructure
- 3. Remediation of vacant lands to functional ecosystems

Guyton Elementary is among the most highly recommended buildings for adaptive reuse. It occupies a strategic location at the intersection of vacant land, canals, and potential pedestrian connections, creating an opportunity to strengthen neighborhood connectivity.

The community would like to see the former Guyton Elementary transformed into senior housing and recreational facilities, reflecting the needs of an aging population with deep ties to the neighborhood. This programming, paired with a greenway connection between the historic business district and parks at the southern end of the neighborhood, would establish the former school as a new community hub.

RECOMMENDATIONS BUILT ON STRENGTHS

1

STRENGTH: E. JEFFERSON AVENUE



REJUVENATE
RETAIL ON EAST
JEFFERSON AVE.

2

STRENGTH: NEIGHBORHOOD FABRIC



STABILIZE
NEIGHBORHOOD
HOUSING

3

STRENGTH: WATERFRONT



IMPROVE
WALKABILITY +
SUSTAINABILITY

JEFFERSON CHALMERS NEIGHBORHOOD FRAMEWORK PLAN | 41



SITE ANALYSIS



Jefferson streetscape looking west toward Chalmers in 2008
Andrew Jameson, 2008



The Vanity Ballroom
Albert Duce, 2010



Jefferson Chalmers Residential Neighborhood
Unknown Author



Jefferson Chalmers Vacant Land Aerial
Unknown Author



Detroit Abloom; Urban Garden and Greenscape
Detroit Abloom, 2024



Jefferson Chalmers Canal Neighborhood
 Detroit Free Press, 2024



Jefferson Chalmers Neighborhood, Park, and Water Connection
 Detroit Free Press, 2024



Fox Creek
 Planet Detroit, Photographer: Amy Sacka



Inflatable Tiger Dam Flood Control Measures
 Planet Detroit, Photographer: Demetrio Nasoi

Infrastructure

Jefferson Chalmers is bisected by East Jefferson Avenue, which contains the neighborhood’s historic business district and is expected to benefit from SNF investment. South of the business district are long tracts of residential parcels.

The neighborhood's eastern boundary is defined by the Fox Creek Canal, while its southern edge is formed by A.B. Ford Park, Riverfront–Lakewood East Park, and Maheras Park. Along East Jefferson Avenue, building heights are generally low-rise, typically two to three stories, with flat roofs. Toward the neighborhood’s periphery, the housing transitions to two-story single-family homes.

G. Guyton Elementary

Residential

- 9. Dickerson Manor
- 12. Riverpoint Tower
- 13. Jefferson Meadows'
- 21. Apartment Building
- 29. Chalmers Square Apartments
- 42. Windmill Manor

Education

- 10. Carstens Elementary / Middle School
- 11. Davis Aerospace Technical High School
- 24. Matric Human Services Head Start
- 41. Detroit Merit Charter Academy

Community & Faith

- 19. Community Center at A.B. Ford
- 20. Evangel Church of God & Christ
- 22. The River Church
- 31. Hope Community Church - Detroit
- 32. St. John Community Center
- 36. Faith Church

Parks

- A. Fox Creek Park
- B. Hansen Playground
- C. Maheras-Gentry Park
- D. A.B. Ford Park
- E. Riverfront-Lakewood East Park
- F. Mariner Park

Food & Retail

- 1. Joseph's Coney Island
- 2. Strip Mall
- 3. Riverside Liquor Store
- 7. Dollar General
- 14. Riverbend Plaza
- 15. O'Reily Auto Parts
- 16. Comerica Bank
- 17. Detroit's Finest Coney Island
- 25. Detroit Soul
- 27. Get Fresh Studios
- 28. Riverfront Building Supply
- 30. Red Bag Boutique
- 33. Liquor Store
- 34. Hard Hitters Home Improvement
- 35. Yellow Light Coffee and Donuts
- 37. Antidote Detroit
- 39. POST Home Goods Store

Medical

- 8. Gray Family Dental
- 18. Dawn A. Teklinsky, CNM
- 40. Great Lakes Dialysis

Services

- 4. United States Postal Service
- 5. Wayne County Probation Office
- 6. Union Construction Services
- 23. Perry's Check Cashing
- 26. Cliff's Gentleman Barber Parlor
- 38. Magical Crystal Health and Wellness



Elevation

Jefferson Chalmers was historically marshland south of East Jefferson Avenue. When the canal system was constructed, dredged material was redistributed along portions of the neighborhood's southern edge, reshaping the natural hydrology and establishing a more defined but uneven ground plane. As a result, the area retains a broad expanse of low-lying terrain across the central portion of southern Jefferson Chalmers, where water naturally collects and moves slowly toward canal and river edge conditions.

Existing elevations across the neighborhood generally range from approximately 590 to 570 feet, with the primary elevation range for this thesis site falling between 573 and 576 feet. Within this gradient, Guyton Elementary and its surrounding parcels are located near some of the lowest and most hydrologically sensitive points in the neighborhood. These conditions make the site particularly vulnerable to surface flooding and stormwater accumulation during heavy rainfall events.

As runoff moves from higher residential areas toward the canal system and basin edges of Jefferson Chalmers, these parcels function as a natural collection point within the broader watershed. This positions Guyton Elementary and its adjacent lots as strategic sites for integrated stormwater management, where landscape interventions, open space design, and adaptive reuse can work together to slow, store, and filter water before it reaches the canal network.



High 589'

Low 570'



Flooding

The 2016 flood map identified the southeastern edge of Jefferson Chalmers, particularly parcels near Fox Creek, as highly vulnerable to flooding during major storm events. Following the historic 2021 floods, updated floodplain maps expanded the extent of flood-prone areas, indicating that much of the land south of East Jefferson Avenue now faces significant flood risk. This includes many of the neighborhood’s most densely populated residential areas. Flood exposure is expected to increase as precipitation intensifies and climate conditions continue to change.

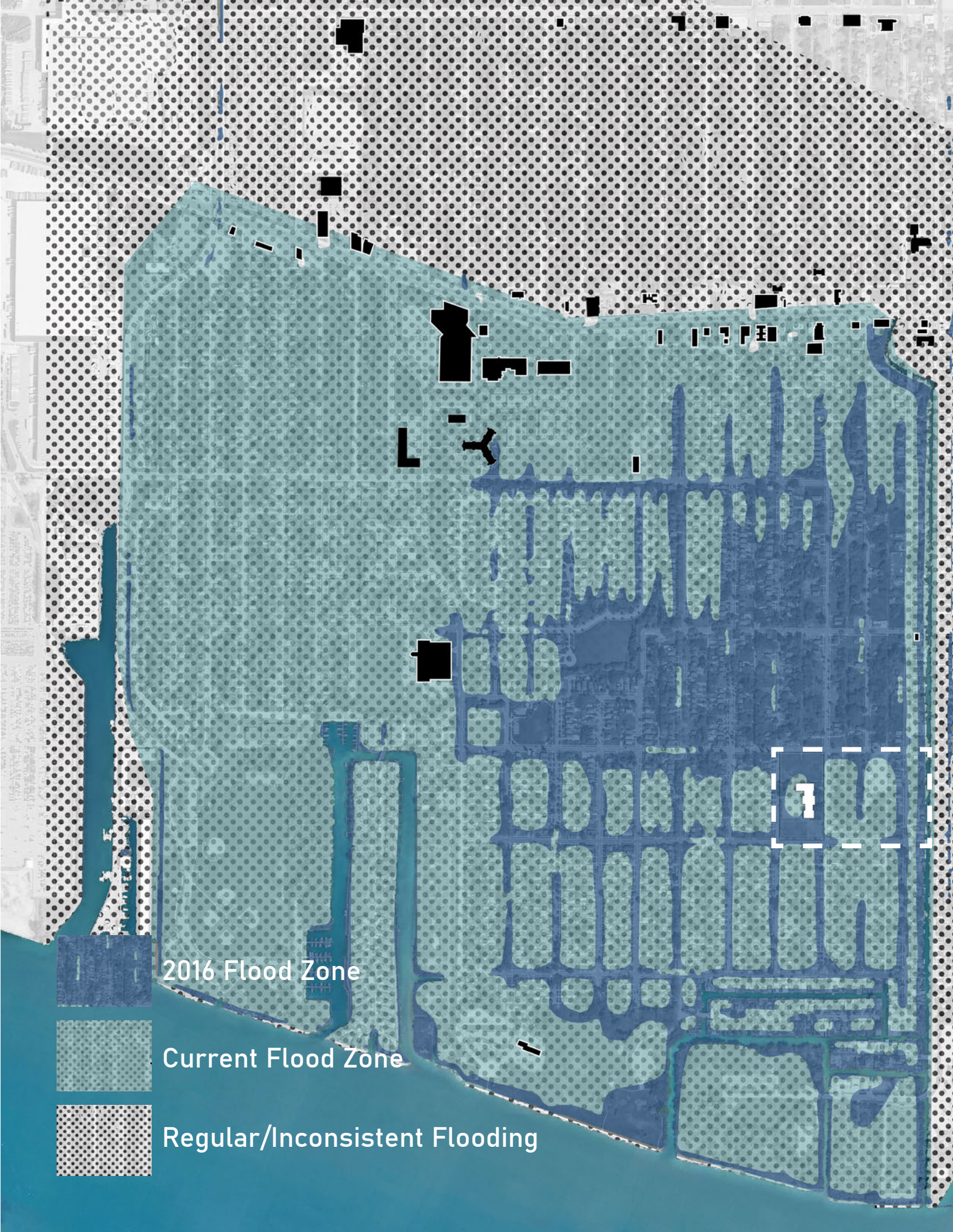
Areas north of East Jefferson Avenue currently experience intermittent flooding; however, projections suggest that by 2050 many of these locations will also be at high risk. As a result, flood management must be addressed at the neighborhood scale.

To reduce flooding and alleviate pressure on Detroit’s combined sewer system (CSS), approximately 20–30% of Jefferson Chalmers’ land area should be converted to green stormwater infrastructure. Utilizing vacant parcels, canal corridors, and public rights-of-way, these systems can absorb, store, and slow stormwater before it reaches the sewer network.

Proposed Green Stormwater Infrastructure Allocation

- 8-12% Canal-edge wetlands
- 10-15% Rain garden lots and bioswales
- 5-8% Green streets and tree trenches
- 3-5% Floodable parks and open space
- 20-30% Total Green Infrastructure Area

Together, these interventions would create a distributed stormwater network capable of reducing flood impacts while improving ecological resilience and neighborhood adaptability to future climate conditions.



Vacancy

Approximately 25% of Jefferson Chalmers’ land area is vacant, representing a significant inventory of publicly and privately owned parcels that are not actively developed. While classified as vacant, many of these landscapes currently serve informal functions, including parking, pedestrian desire paths, material storage, and naturally regenerated forest patches.

The vacancy map reveals a distributed pattern of open land throughout the neighborhood, creating opportunities for both ecological restoration and stormwater management. Yellow dots indicate vacant structures, including both residential and non-residential buildings. Non-residential vacancies include former schools, churches, commercial properties, and a hotel. Collectively, these sites represent a mix of buildings suitable for rehabilitation and structures identified for demolition.

One of the largest concentrations of vacancy occurs within the eastern portion of the neighborhood, where a patchwork of vacant parcels extends from the Historic Jefferson-Chalmers Business District toward Guyton Elementary School. This corridor presents an opportunity to establish a neighborhood greenway that links commercial areas, residential blocks, schools, parks, and future green stormwater infrastructure. By leveraging existing vacant land, Jefferson Chalmers can address flooding challenges while strengthening ecological connectivity and public open space.

Category	Value
Neighborhood Area	~1,408 acres
Vacant Parcels	~1,400
Vacant Parcel Share	~25%
Vacant Land Area	~240–350 acres
Vacant Structures	Residential, schools, churches, businesses, hotel
Potential Uses	Greenways, rain gardens, bioswales, wetlands, urban forest, parks



Vacant Land Parcels

Between Guyton Elementary and Fox Creek there are 66 vacant parcels of land. Vacant in this context is defined as a land parcel that does not have a house or permanent structure on site. Land use for these particular 66 plots is typically storage or yards. The interior lots and alleyways have degraded urban soils with industrial remnants scattered throughout the landscape.

The current lots closest to fox creek are thickets of shrubs and small trees. The levee is at water level and is made up of an out of date retaining wall crumbling into the creek. Small scraps of sandbagging are littered along the creeks edge, a small berm is forming over the remnants.

Residents cut through vacant lots in the neighborhood as a means of access. Currently the landscape is unsuitable for universal access to the shortcuts through the neighborhood these vacant lots provide.



Existing Tree Canopy

The majority of the tree canopy in the southeaster edge of Jefferson Chalmers is a patchwork of thick groves of trees and shrubs clustered together towards the interiors of the lot. Species present in the neighborhood include:

Silver Maple - *Acer saccharinum*

Red Oak - *Quercus rubra*

Basswood - *Tilia americana*

White Cedar - *Thuja occidentalis*

This project attempts to design with the existing canopy in mind, focusing design strategies near existing ecological niches. Removed trees are suggested to be replaced and salvaged wood can be utilized by the proposed maker space in the Guyton Korte Recreation Center.

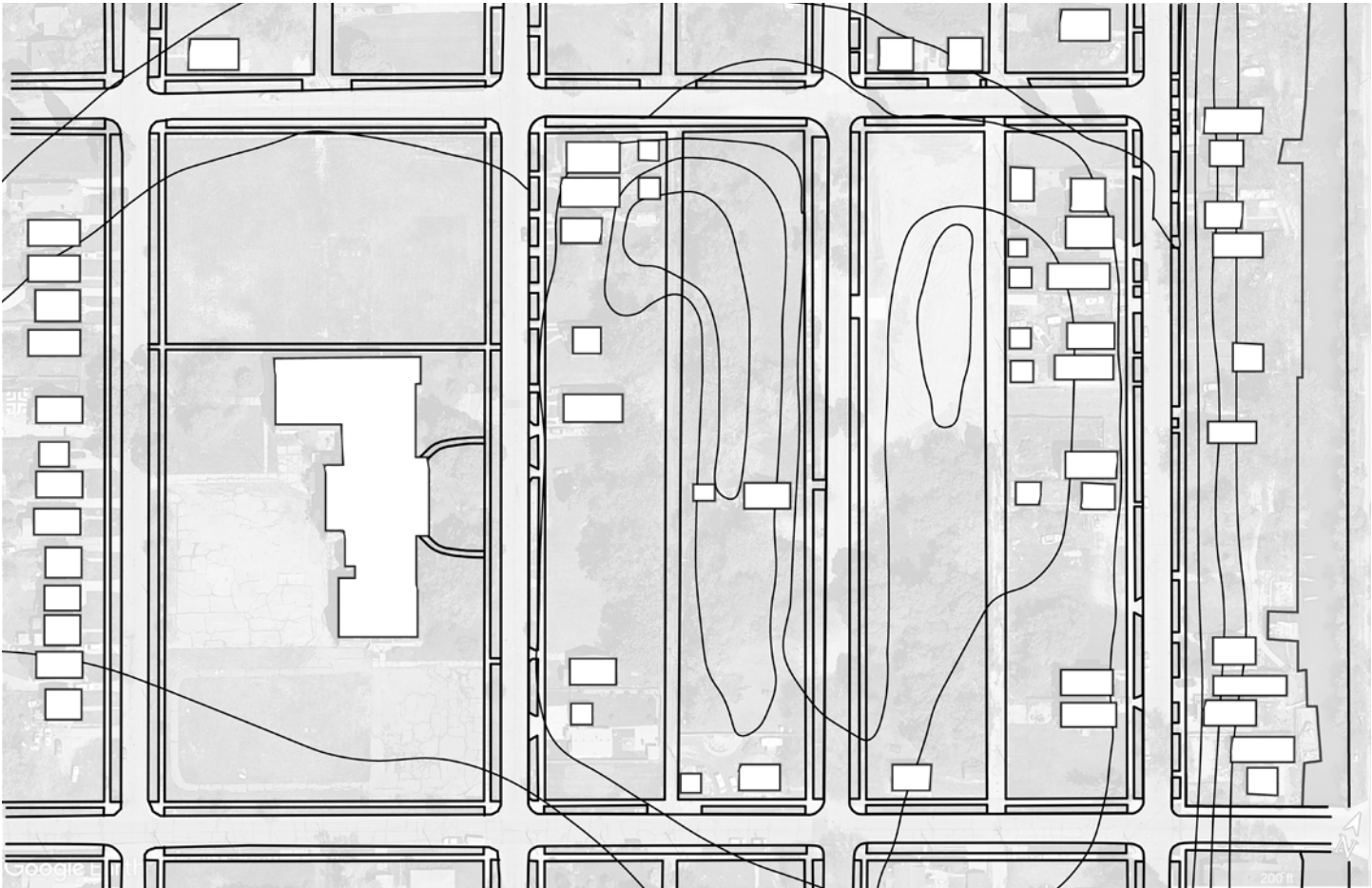


Physical Context

Guyton Elementary and its adjacent 4 blocks to Fox Creek are 1 block south of the lowest lying elevation in the Jefferson Chalmers neighborhood. The block scale shows a topographic elevation of 576' toward the South of and 573' to the Northeast abutting Fox Creek.

The interiors of the lots have a gradual rise towards their centers that make small subtle hills in the landscape. The elevation gradually increases close to Fox Creek rising to 575 nearest the edge. The lowest lying regions are the roads.

Historically this landscape was a series of small rolling hills and marshland, some of that character is still present in today's landscape, similarly the strip style of the blocks are historical remnants from the ribbon farming era of the neighborhoods history.

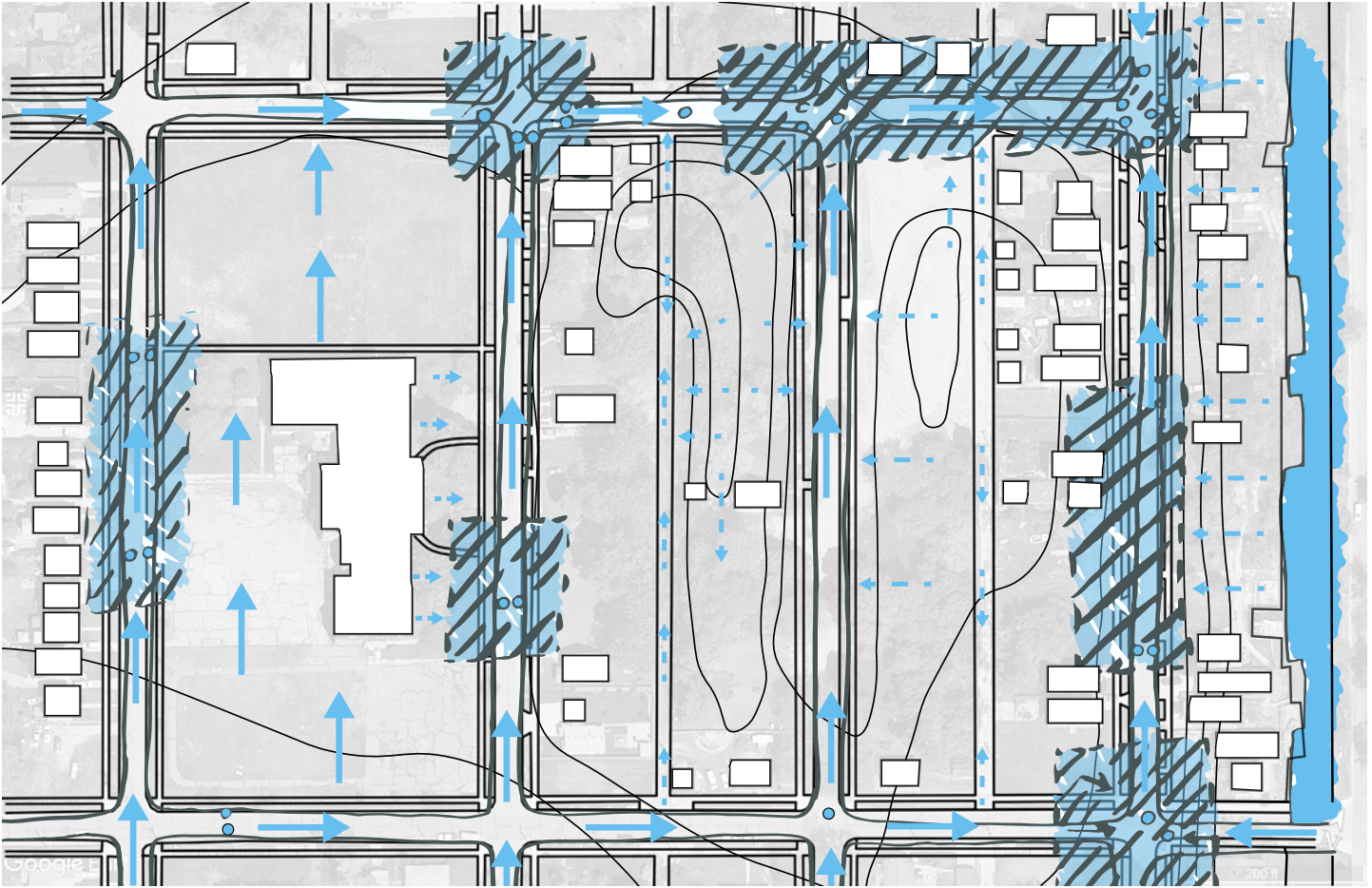


Current Hydrology

Based off on site observations of flooding conditions, and stormwater infrastructure like storm drains and manhole covers (pictured as blue dots in the graphic below), the diagram below was created to depict flooding conditions. These zones should be prioritized in design solutions such as raingardens. Flows of water should be directed away from the highlighted blue zones and detained before these areas become inundated.

By reducing the topography in the interior lots and creating berms strategically, flows of water can be directed into the vacant lots, mimicking the original marsh ecosystem of Jefferson Chalmers past.

The field to Guyton Elementary's north side is large and capable of detaining large amounts of stormwater and intercepting surface flows as they flow towards the northeast.



GUYTON ELEMENTARY



Helmut Ziewers
for HistoricDetroit.org

Guyton Elementary East Entrance
Historic Detroit, Photographer: Helmut Ziewers

Guyton Elementary North Corner
Photographer: Davien Graham



Guyton Elementary South Corner
Photographer: Davien Graham



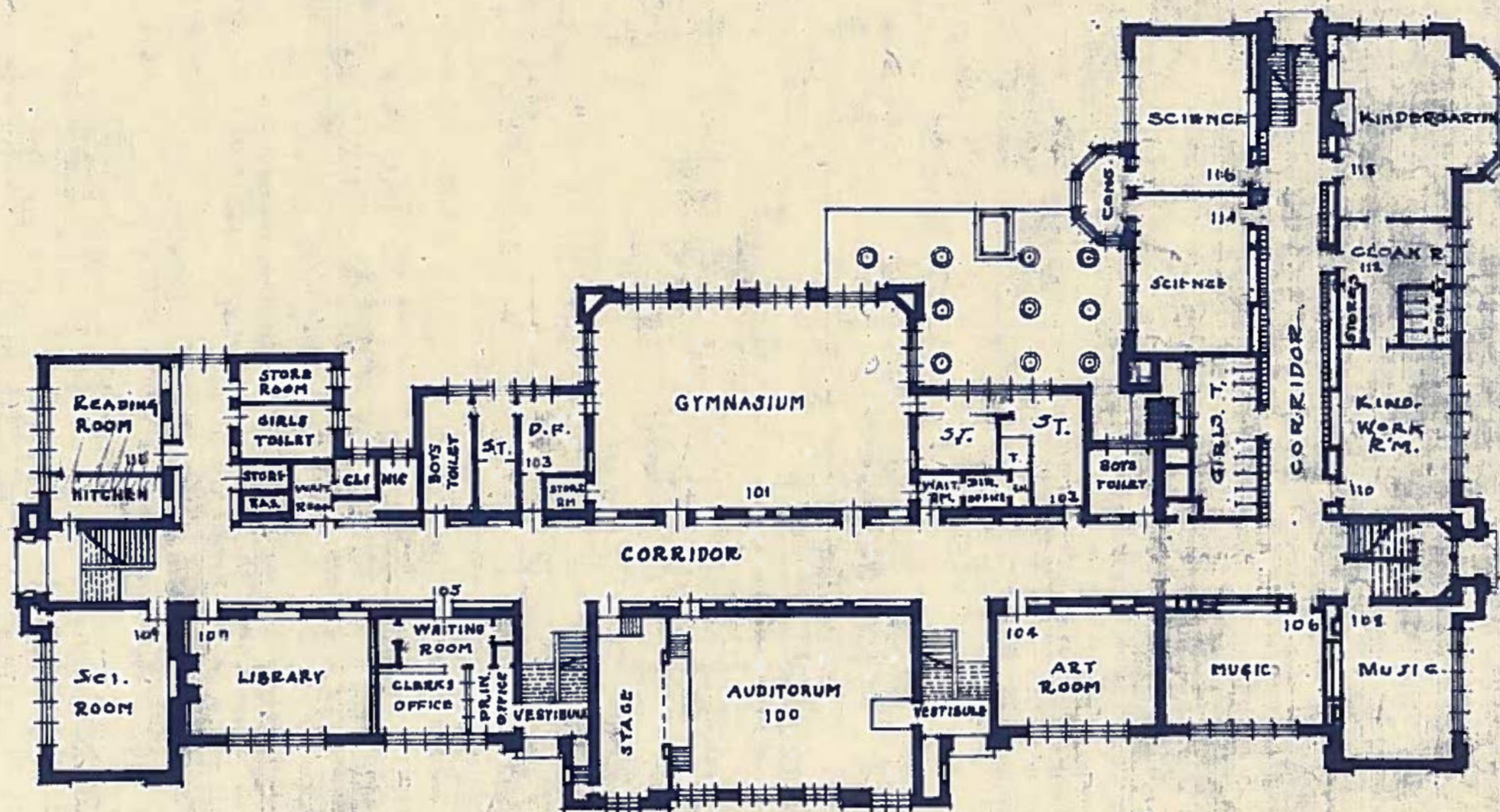
Guyton Elementary West Rear
Photographer: Davien Graham



J.W. GUYTON SCHOOL
FIRST FLOOR PLAN

DEPT OF EDUCATIONAL RESEARCH
BOARD OF EDUCATION
DETROIT MICH.

DRAWN C.N.A. R.H.C.	DATE 1-26-29	CHECKED SLO 9-14-31	DATE 5/3/33	A.I.I.T.	7/25/25
BUILDING CONSTR		1922	BRICK WALLS-CON.FLOORS		



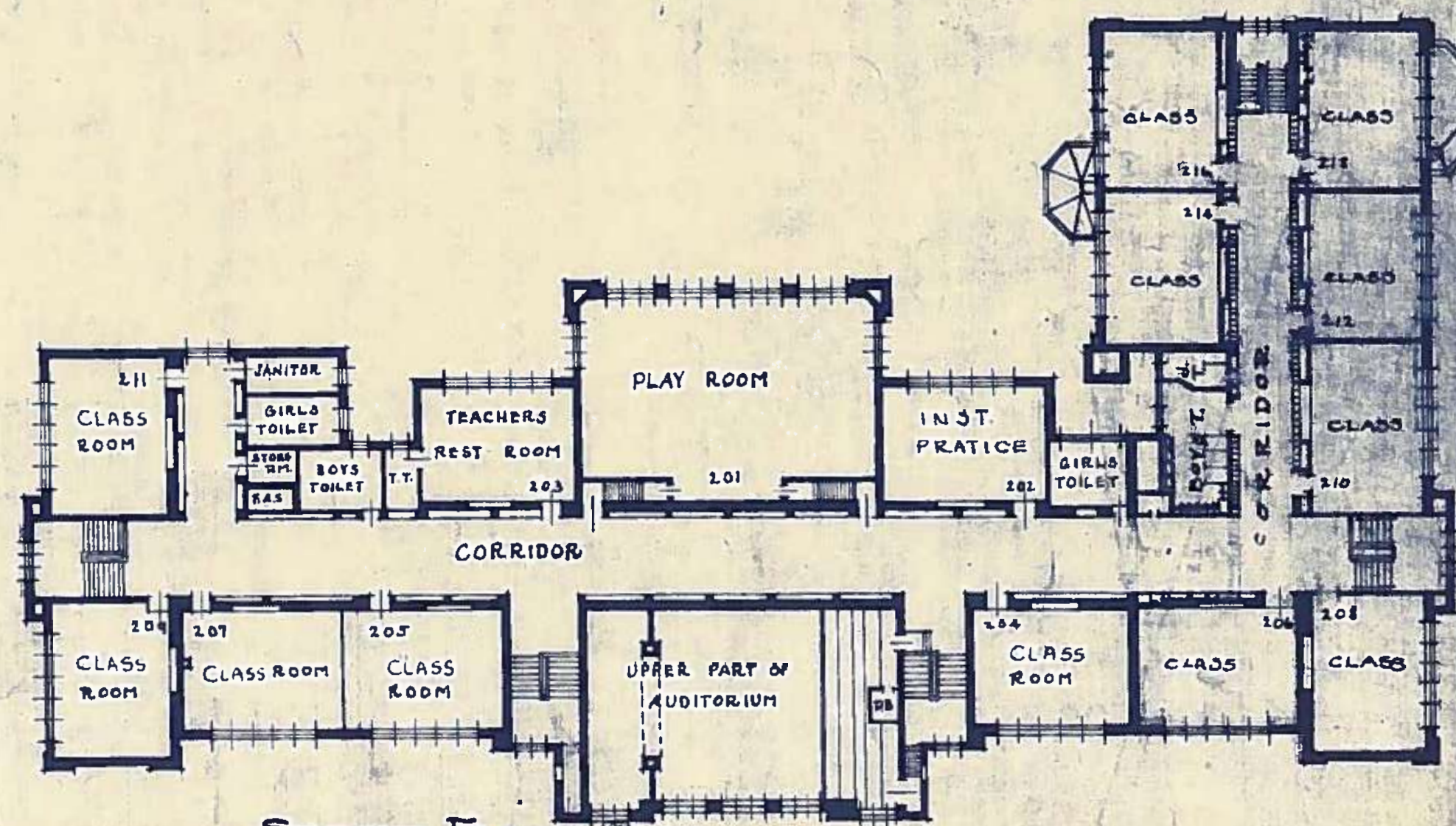
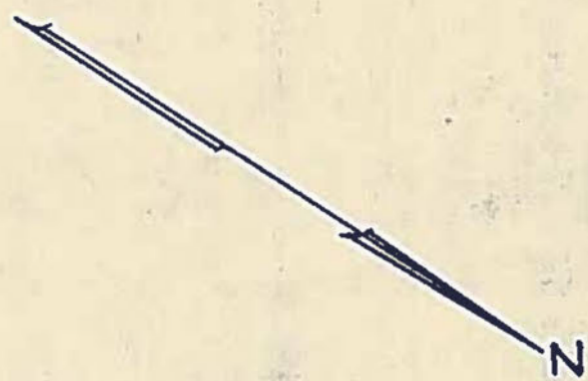
FIRST FLOOR PLAN

Scale $\frac{1}{32}'' = 1'-0''$

J.W. GUYTON SCHOOL SECOND FLOOR PLAN

DEPT OF EDUCATIONAL RESEARCH
BOARD OF EDUCATION
DETROIT MICH

DRAWN	DATE	CHECKED	DATE	BY	DATE
C.N.A. RHC	1-27-25	S.L.O.	5/2/25	H.L.H.	7/24/25
REVISED			7/23/26	G.H.M.	1 FLOOR

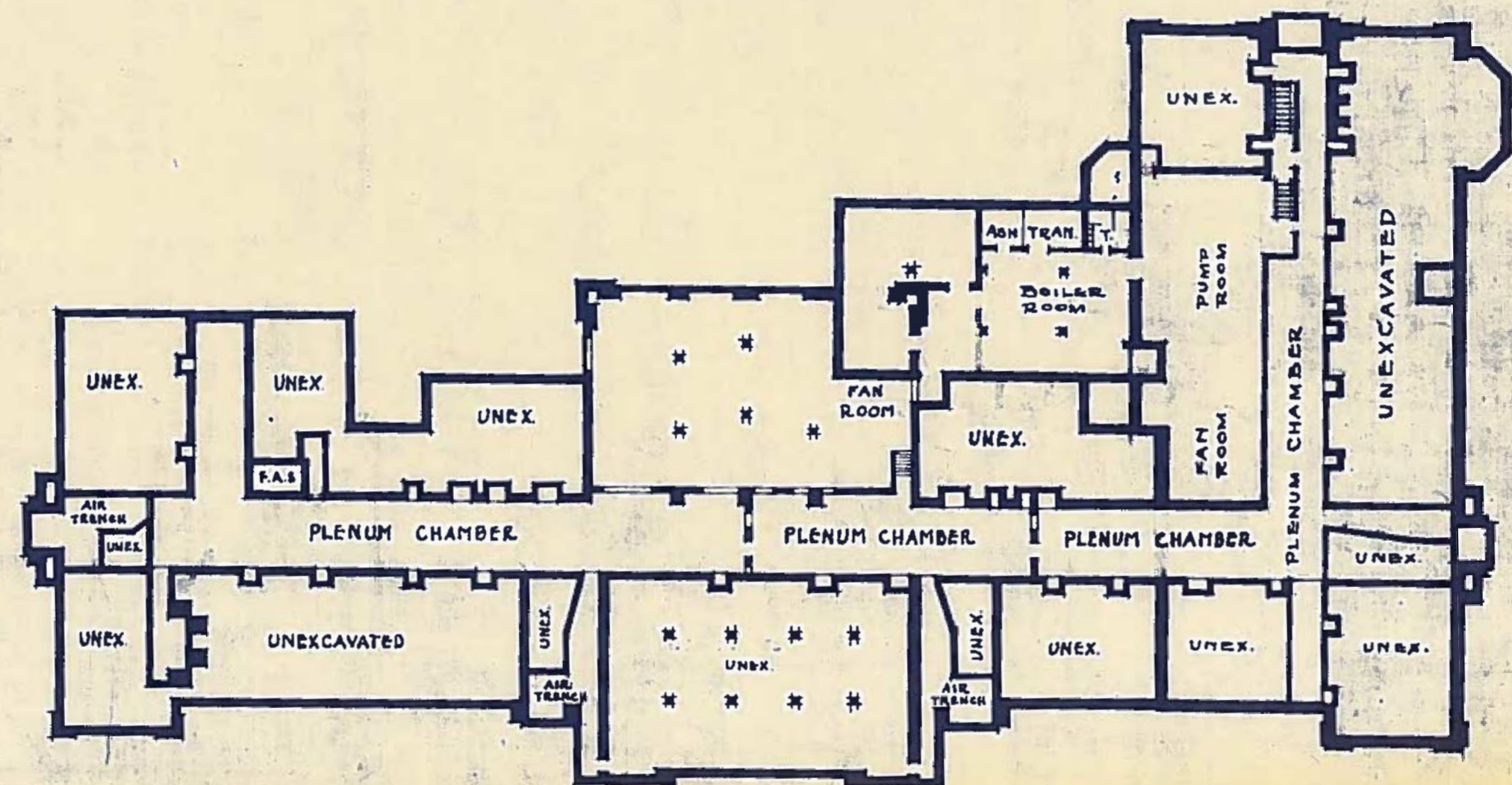


SECOND FLOOR PLAN
Scale 1/32" = 1'-0"

J.W. GUYTON SCHOOL BASEMENT FLOOR PLAN

DEPT OF EDUCATIONAL RESEARCH
BOARD OF EDUCATION
DETROIT MICH

DRAWN	DATE	CHECKED	DATE	
C.N.A. R.H.C.	1-24-25	5/10 G.L.S.	5/3/25 J.H.E.	12.8.72
REVISED		9/23/46	G.H.M.	



BASEMENT FLOOR PLAN

Scale $\frac{1}{2}'' = 1'-0''$

GUYTON KORTE & THE FOX CREEK GREENWAY



AVONDALE ST

MARLBOROUGH ST

PHILLIP ST

MANTISTIQUE ST

ASHLAND ST

KORTE AVE

EXISTING SITE PLAN



ILLUSTRATIVE SITE PLAN

MARLBOROUGH ST

AVONDALE ST

AVONDALE RAINGARDENS

MANTISTIQUE ST

ASHLAND ST

FOX CREEK STEPS

KORTE AVE

THE 'KORTE'

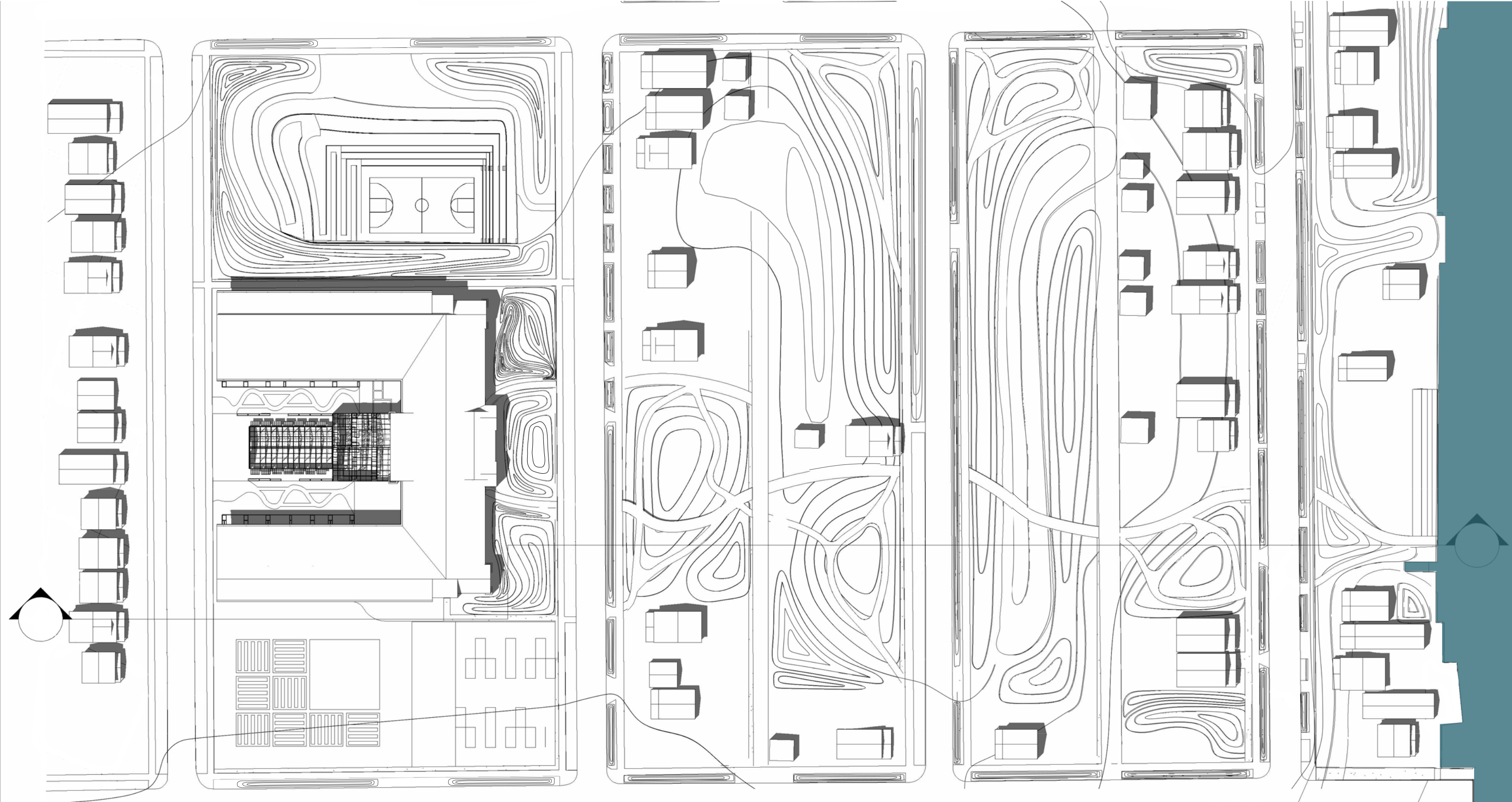
GUYTON KORTE

FOX CREEK GREENWAY

GUYTON GARDENS

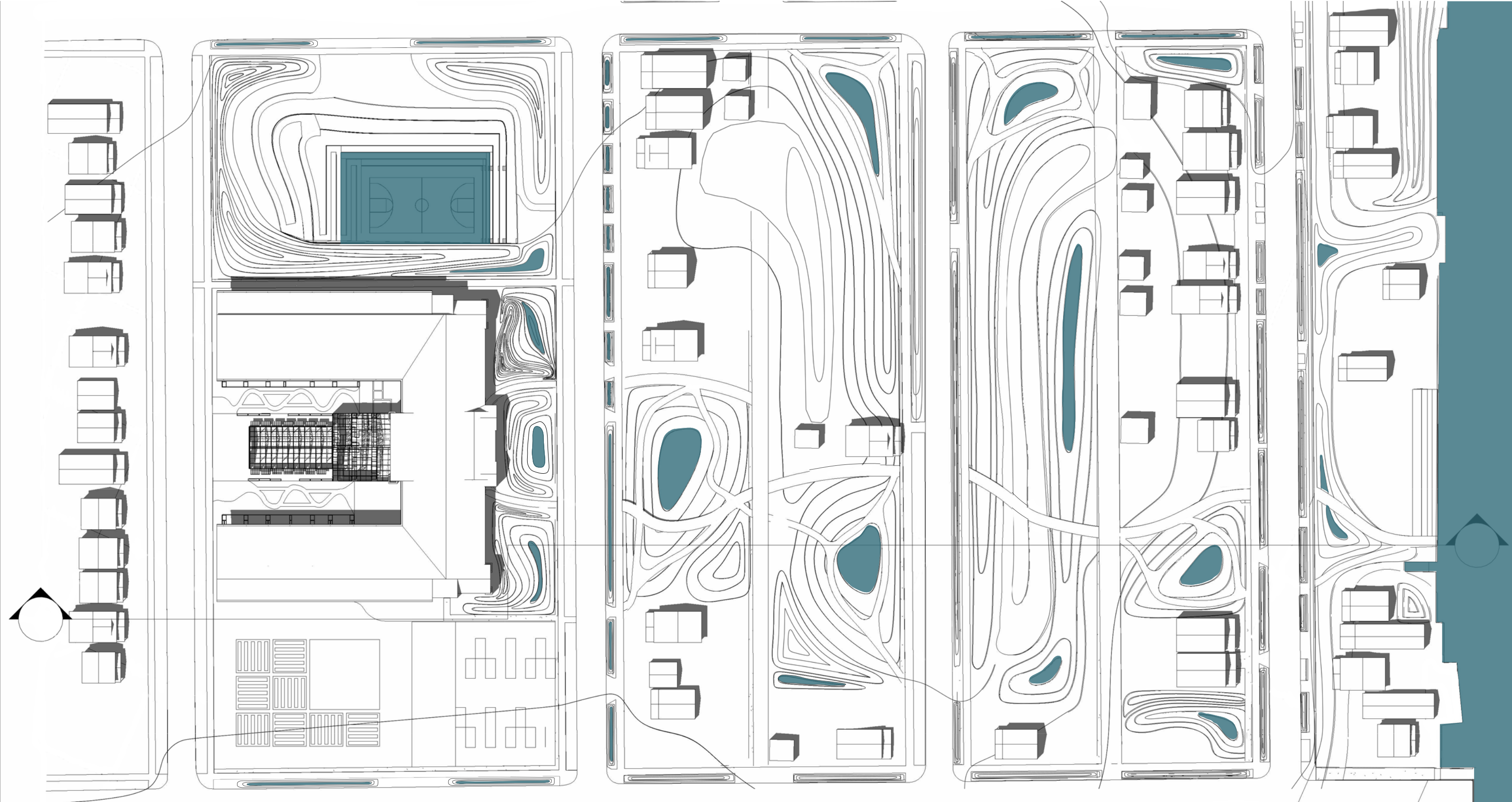
PERMEABLE PARKING



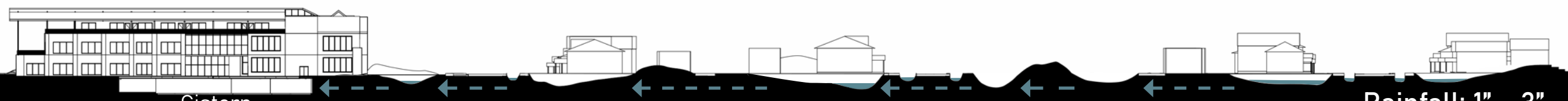
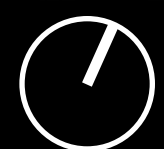


Cistern



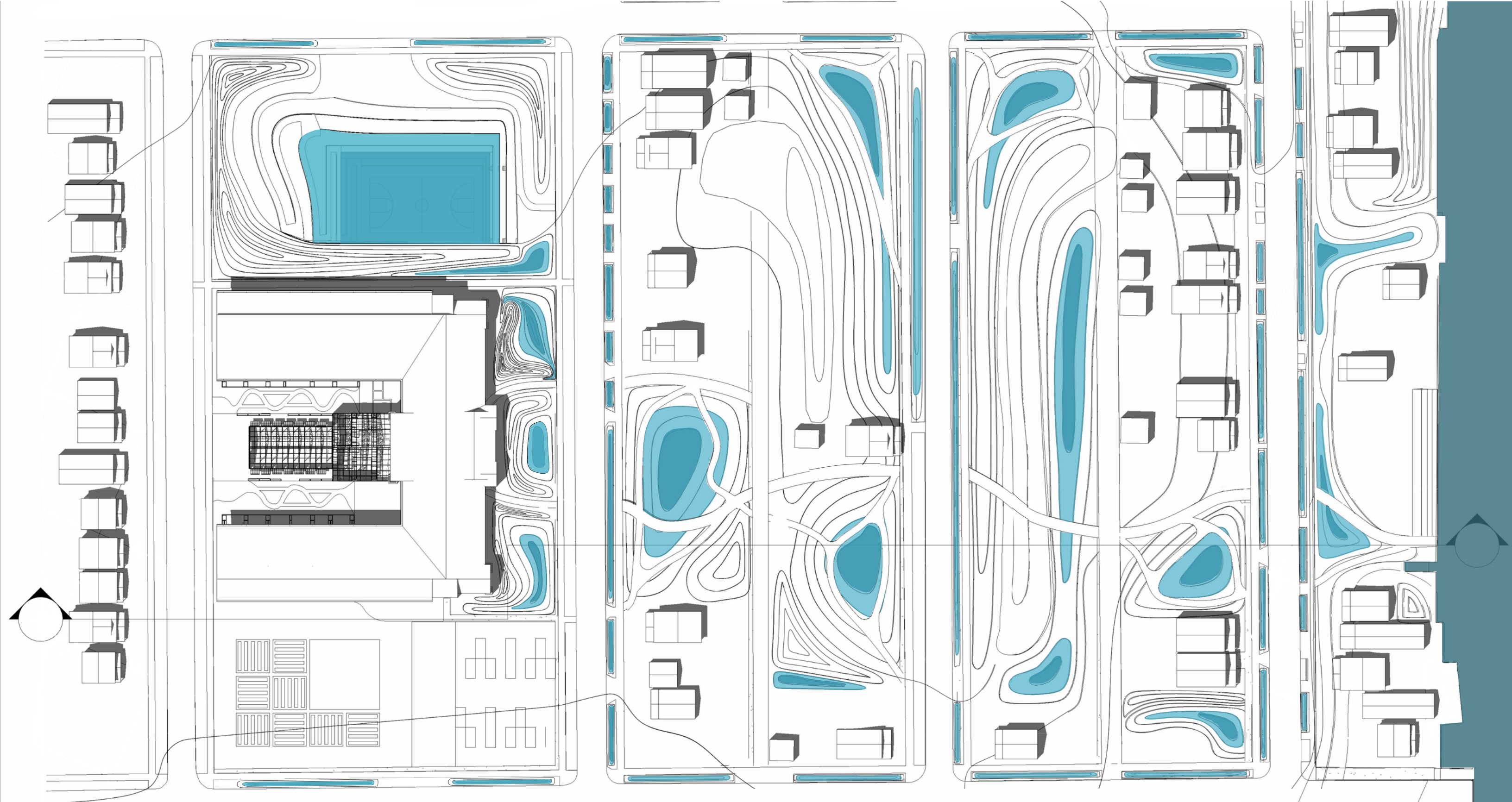


1 Site Plan
1" = 80'-0"



Cistern

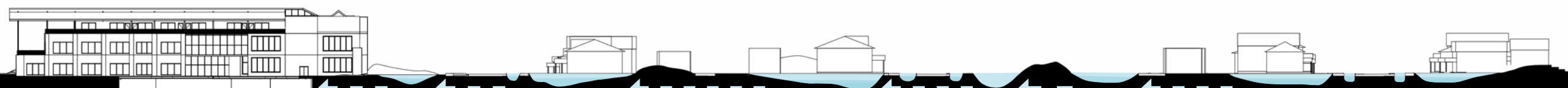
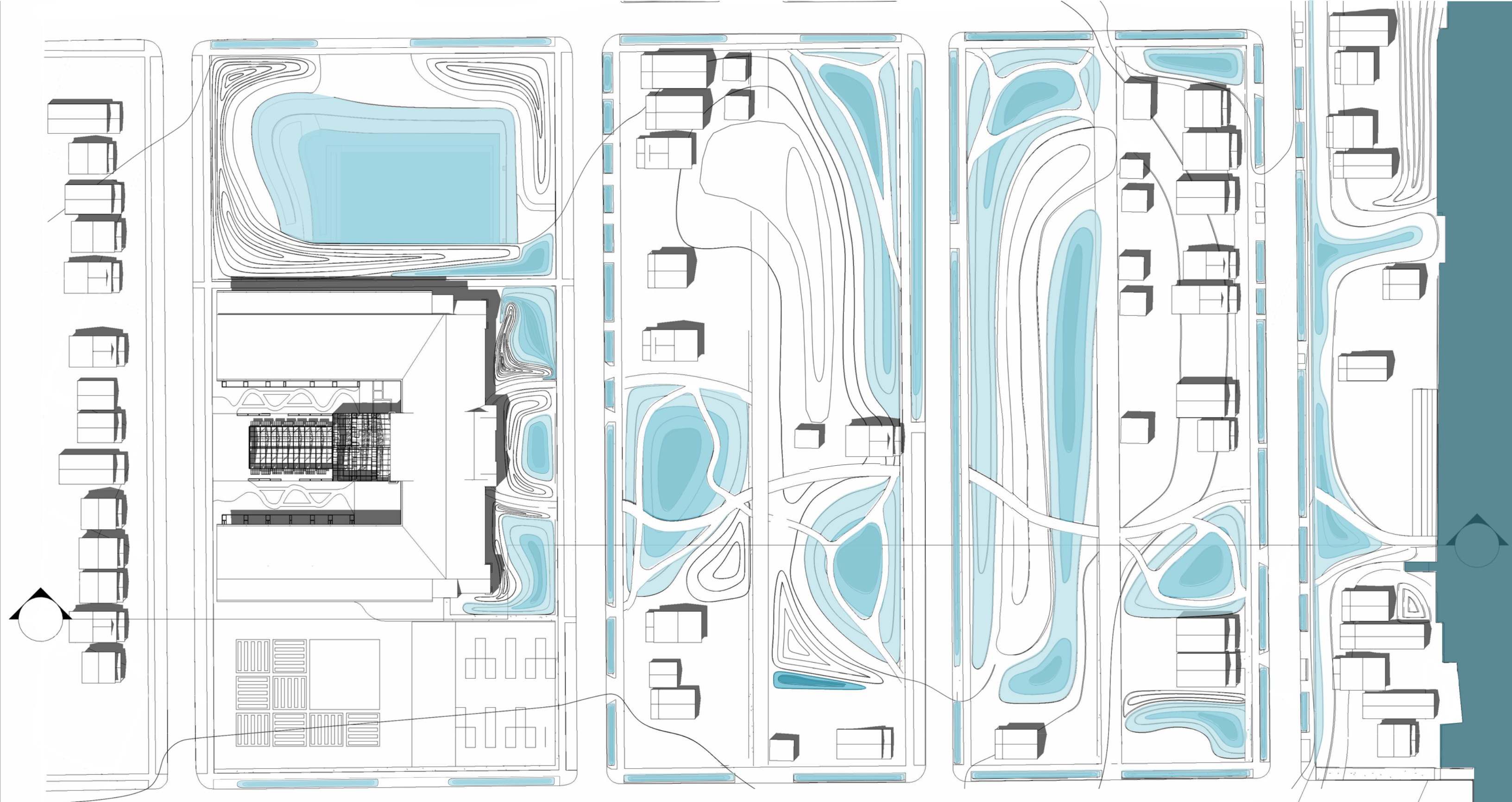
Rainfall: 1" - 3"
~300,000 Gallons



1 Site Plan
1" = 80'-0"

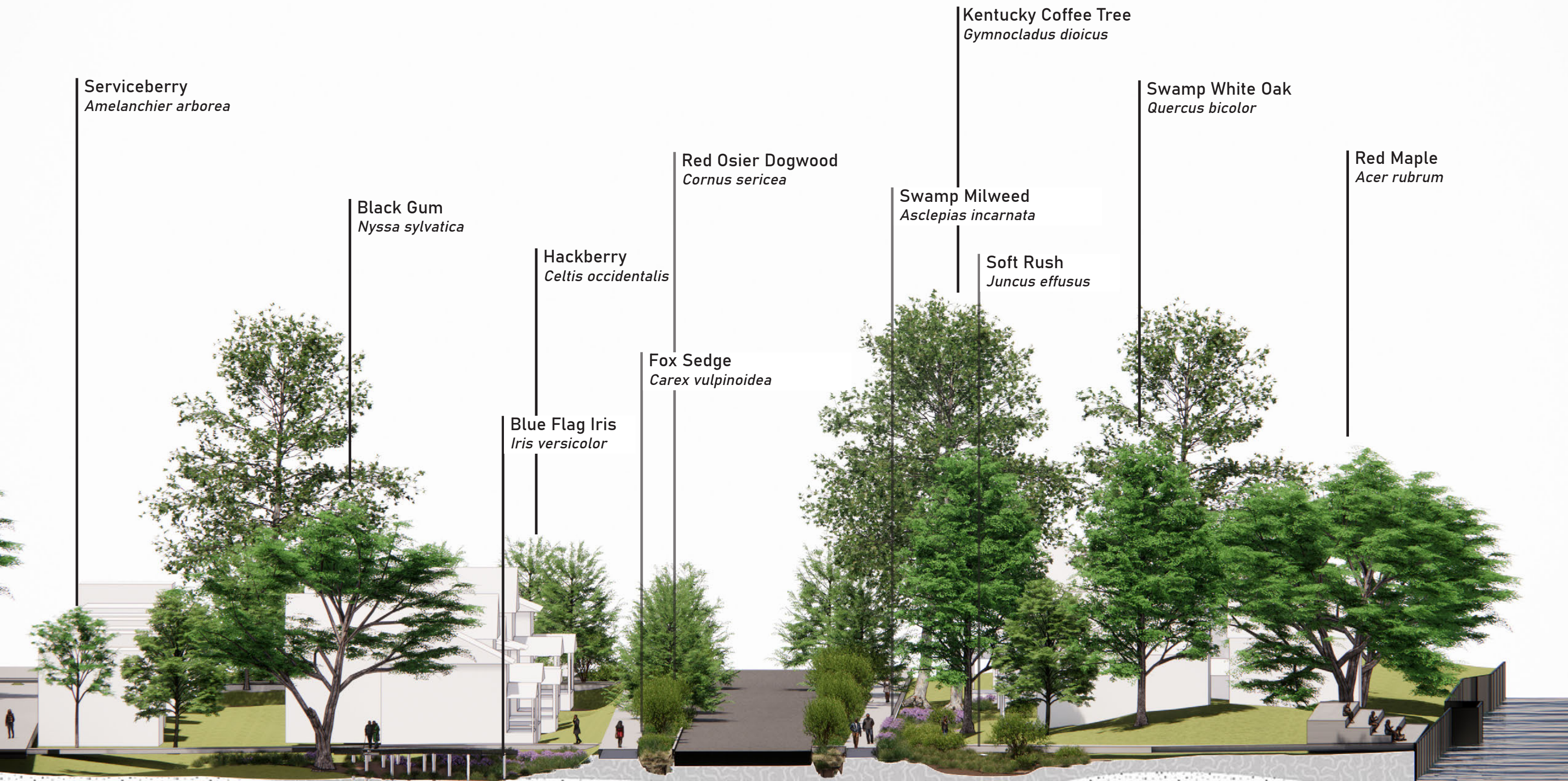
Cistern

Rainfall: 3" - 6"
~1,100,000 Gallons



Cistern

Rainfall: 6" - 1"
~5,100,000 Gallons



FOX CREEK STEPS SECTION PERSPECTIVE



River Birch
Betula Nigra



Pickerelweed
Pontederia cordata



Cattail
Typha latifolia



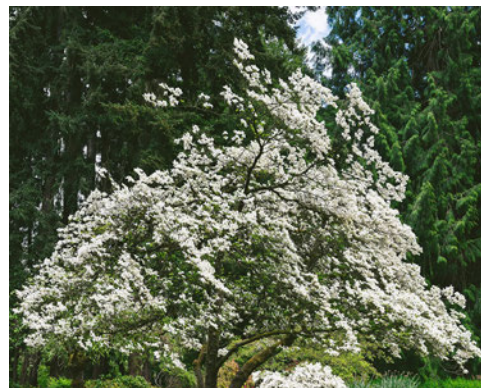
Ninebark
Physocarpus opulifolius



Soft Rush
Juncus effusus



Little Bluestem
Schizachryium scoparium



Flowering Dogwood
Cornus florida



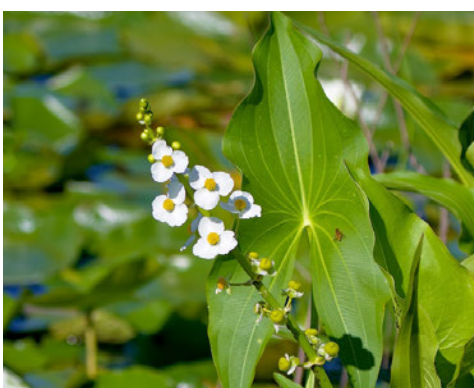
Fox Sedge
Carex vulpinoidea



Softstem Bulrush
Schoenoplectus tabernaemontani



Red Osier Dogwood
Cornus sericea



Arrowhead
Sagittaria latifolia



Prairie Dropseed
Sporobolus heterolepis

Experiential Raingarden

Flood tolerant; Ecologically Resilient; Wildlife Sensitive; Native

Rain gardens are designed to be meandered through and remain impactful in both dry and wet conditions. This diverse planting mix of grasses, sedges, rushes, flowers, and shrubs is intended to enhance ecological resilience, making the system more resistant to climate change-related stressors such as disease, pests, and extreme weather events.

Pollinator species such as the four listed below were selected to support both migrating and native pollinators. Notably, swamp milkweed is known to attract monarch butterflies.



Blue Flag Iris
Iris versicolor



Purple Coneflower
Echinacea purpurea



Cardinal Flower
Lobelia cardinalis



Swamp Milkweed
Asclepias incarnata



Blue Vervain
Verbena hastata



Black Chokeberry
Aronia melanocarpa



Joe-Pye Weed
Eutrochium maculatum



Turtlehead
Chelone glabra



Swamp White Oak
Quercus bicolor



Green Bulrush
Scirpus atrovirens



Nannyberry
Viburnum lentago



Tussock Sedge
Carex stricta

Dewy Meadow

Flood tolerant; Expansive; Prarie; Native; Relaxed

A meadow that sways like waves on a windy day; hints of purple and white emerge among the grasses while dew drips from oak leaves. This mix of grasses, sedges, rushes, flowers, and oak is intended to evoke the calm character of an oak savanna at the edge of a marshland. Tall grasses and moist soils combine with aromatic vervain to create a sense of calm after rainfall.

This planting zone surrounds the edges of the experiential rain garden and serves as a transitional landscape between heavily designed ecological elements and more architecturally defined spaces. The dewy meadow reduces the perceived scale while enriching the sensory qualities of the landscape, maintaining strong ecological function without compromising visual or experiential richness.



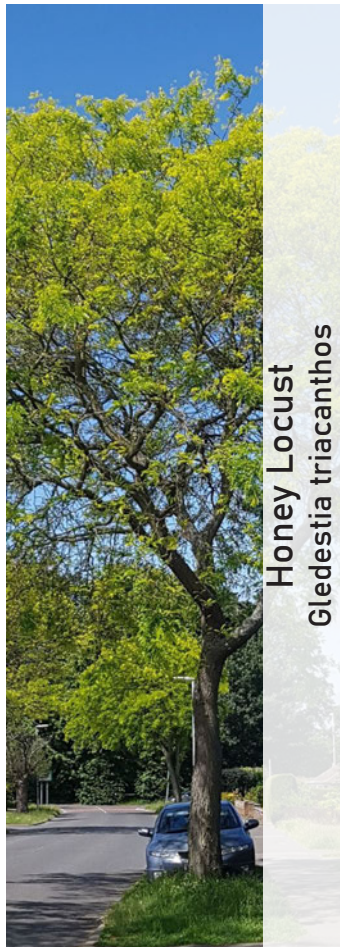
Silver Maple
Acer saccharinum



Serviceberry
Amelanchier arborea



Hackberry
Celtis occidentalis



Honey Locust
Gledesia triacanthos



Kentucky Coffee Tree
Gymnocladus dioica



Red Maple
Acer rubrum



Bur Oak
Quercus macrocarpa



Basswood
Tilia americana

The New Canopy

Flood tolerant; Resilient; Large Canopy; Native; Deciduous

The former marshland ecosystem likely supported many of the same species included in this planting palette. This mix of deciduous trees ranges from approximately 20 to 80 feet in height, creating a layered and dense urban canopy. The trees' large canopies are designed to extend across roads and pedestrian greenways, while also performing well within the wet conditions of the rain garden systems.

The planting strategy places trees within both interior lots and along street edges. Larger canopy species such as silver maple, basswood, and bur oak are primarily located within interior parcels, while more common street trees, including Kentucky coffee tree, honey locust, and red maple, are used along lot edges to establish a continuous canopy over neighborhood streets. Serviceberry and hackberry are distributed throughout the rain gardens as understory and structural layers.



Meyer Dwarf Lemon
Citrus x meyeri



Fig
Ficus carica



Alpine Strawberry
Fragaria vesca



Bay Laurel
Laurus nobilis



Mint
Mentha spp.



Basil
Ocimum basilicum



Passionflower
Passiflora incarnata



Rosemary
Rosmarinus officinalis

Winter Garden

Experiential; Educational; Productive; Restorative

The winter garden is a year-round climate refuge that extends the project's relationship to water beyond the growing season. Fed by the building's expressive rainwater collection system, the greenhouse transforms harvested stormwater into a visible and productive landscape that residents can experience throughout Detroit's winter months. The planting palette combines edible, medicinal, aromatic, and ecologically significant species to create an environment that engages multiple senses while reinforcing themes of resilience and stewardship. Productive plants such as figs, citrus, and strawberries highlight the potential of captured rainwater to support food production, while native shrubs, sedges, and moisture-loving species are interwoven to establish a connection to the wetland ecologies found throughout Jefferson Chalmers.

The layered vegetation creates a warm, sheltered atmosphere that contrasts with seasonal outdoor conditions, offering opportunities for gathering, education, and restoration. As a result, the winter garden functions not only as a greenhouse, but as a living demonstration of closed-loop water systems, ecological adaptation, and community resilience, making visible the relationship between architecture, climate, and the natural systems that sustain urban life.

This space functions as a transitional layer between architecture and landscape architecture; a moment of integration between disciplines as the viewer moves into Guyton Korte.



AVONDALE RAINGARDENS



Guyton Korte

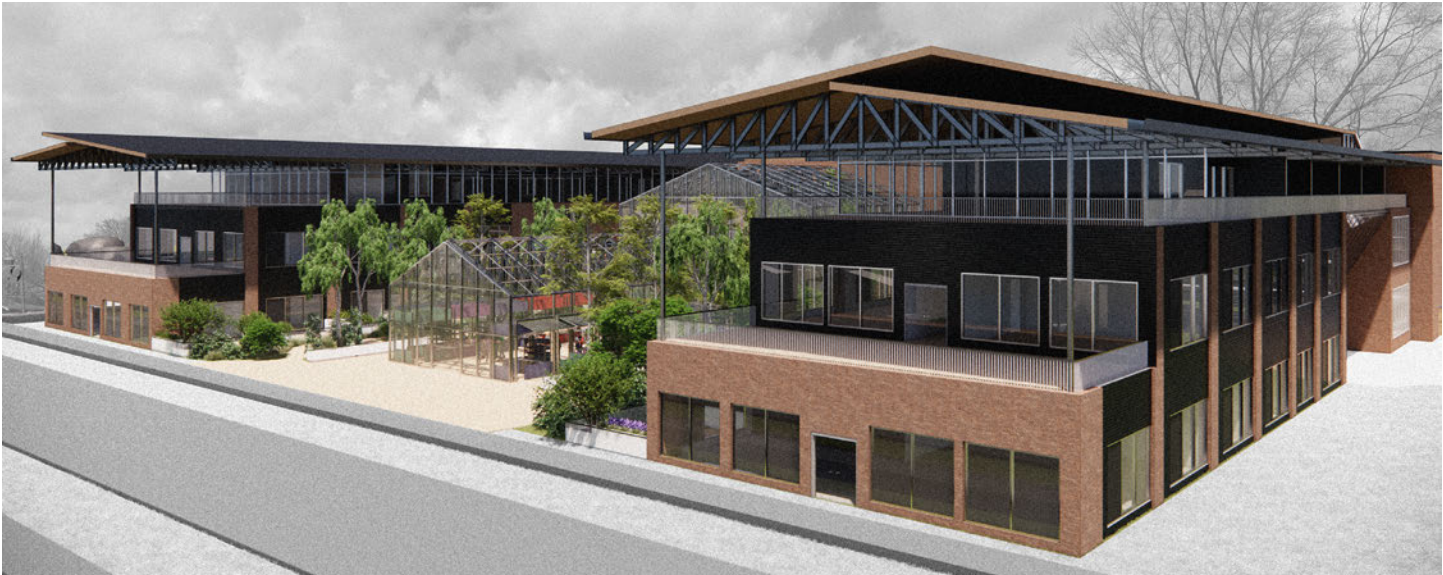
Guyton Korte Recreation Center

Guyton Korte is the adaptive reuse of the former Guyton Elementary School into a mixed-use residential condominium and recreation center. The Guyton Korte Recreation Center incorporates flexible-use spaces designed to adapt to evolving community needs and interests, including a walking gallery, community kitchen, and maker space. These programs function as direct engagement spaces that encourage community activity, collaboration, and shared use.

The ‘Korte’

The Korte is a multi-use sports court and event space that also functions as a detention basin, designed to temporarily store stormwater flowing northeast. It is directly connected to Guyton Korte’s underground cistern and mechanical pump room.

Water detained on-site and stored within the cistern is reused for non-potable building functions and redistributed into the surrounding landscape as irrigation for the extensive rain garden system proposed in this thesis. This creates a closed-loop water strategy that links stormwater management, building operations, and landscape infrastructure.



Guyton Korte Western Entrance



Guyton Korte Residences: Loft Kitchen



Guyton Korte Residences: Loft Living Room



Guyton Korte Residences: Bedroom

Guyton Korte Residences

Guyton Korte Residences is a 61-unit multifamily condominium development designed to provide residents with an ownership stake in Guyton Korte, creating opportunities for aging in place and community-based investment in shared infrastructure. Half of the units are intended for larger households, while the other half are designed for senior living. This mix supports multi-generational interaction among residents, as well as visitors to the recreation center and surrounding greenway.

The design incorporates exposed brick, 20th-century ornamental detailing, and a steel-trussed roof, drawing from the character of the original structure while adapting it for contemporary residential use.

MARLBOROUGH ST

AVONDALE ST

PHILLIP ST

KORTE AVE

LEVEL 1 FLOOR PLAN

1" = 40'



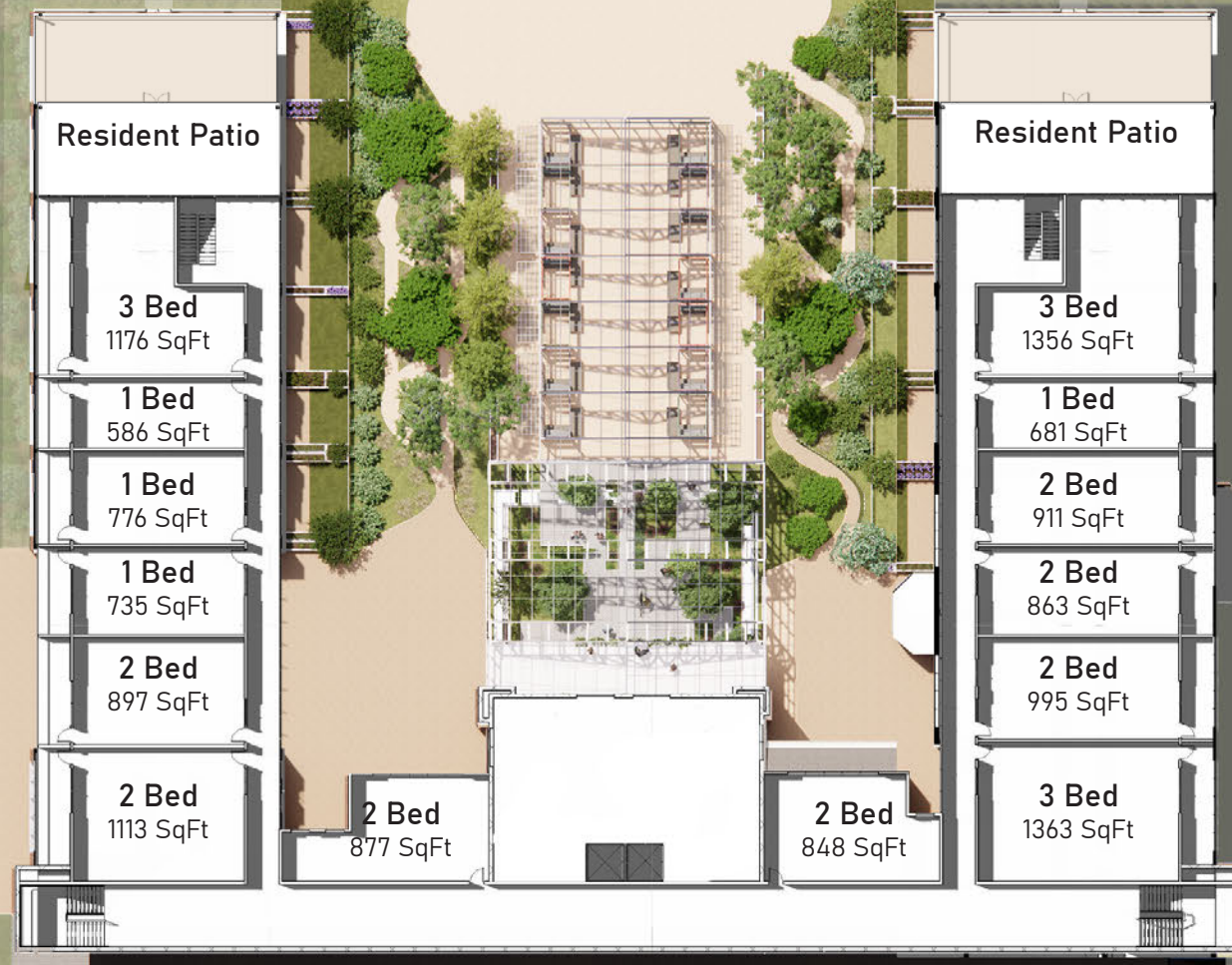
LEVEL 2 FLOOR PLAN

1" = 40'



LEVEL 3 FLOOR PLAN

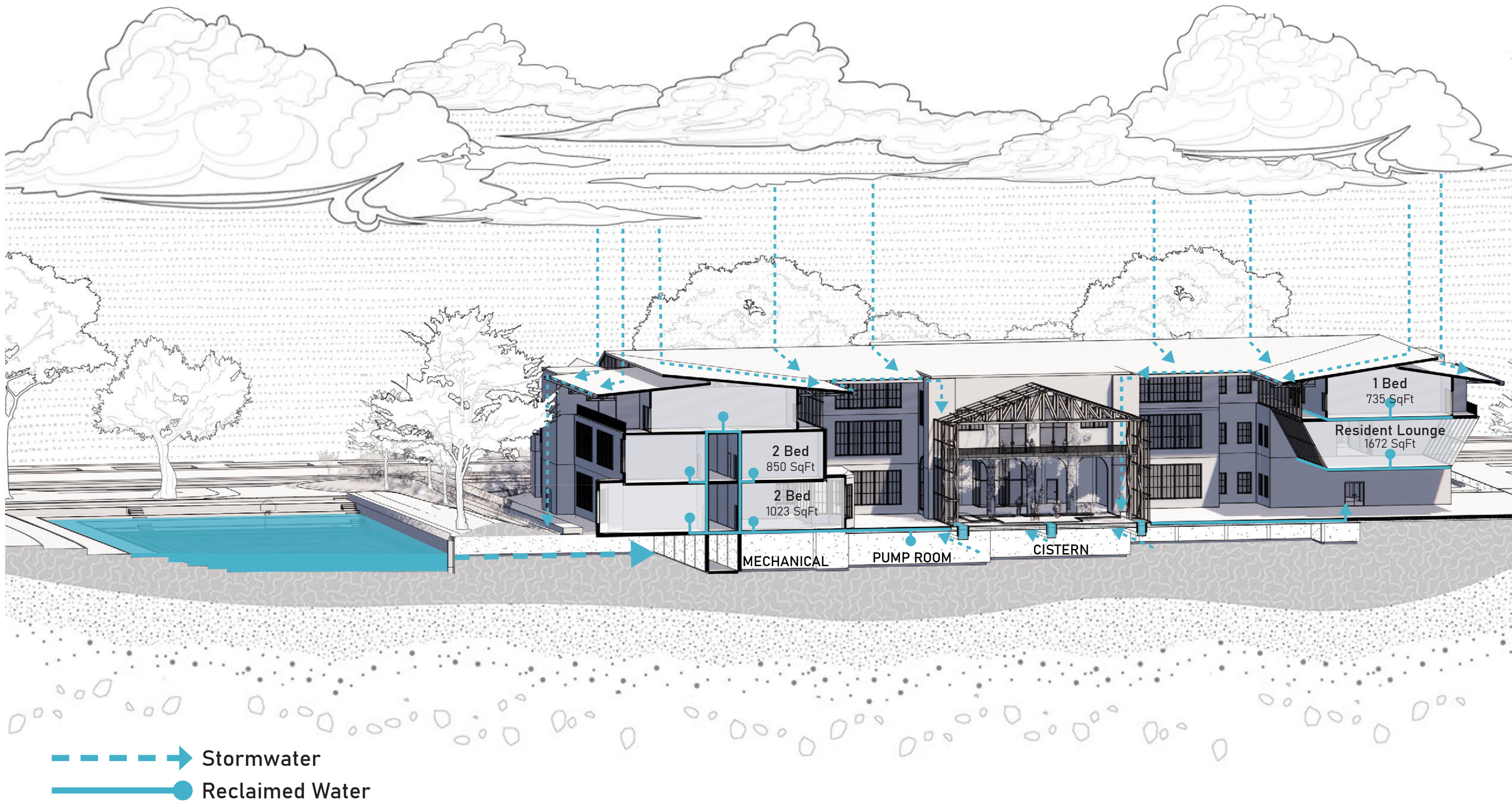
1" = 40'







WINTER GARDEN

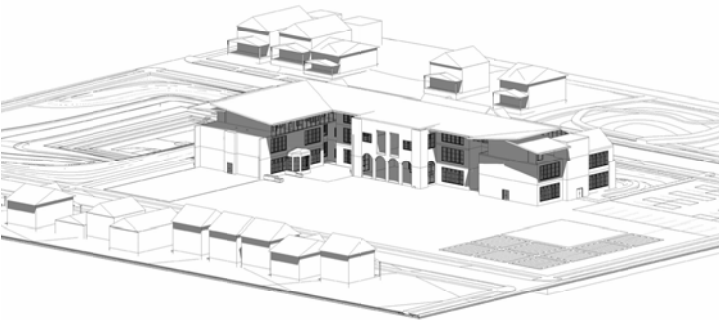


WATER SYSTEMS SECTION PERSPECTIVE

Adaptive Reuse Strategy

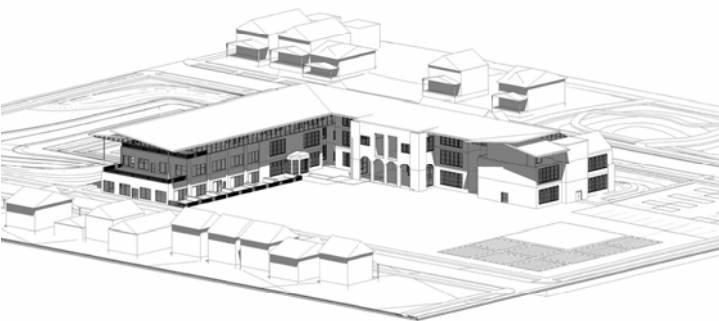
Roof Rehabilitation

The current roof of Guyton Elementary is in disrepair. This thesis proposes removing the western roof to the rear of the building and building up an additional level to add additional units for housing.



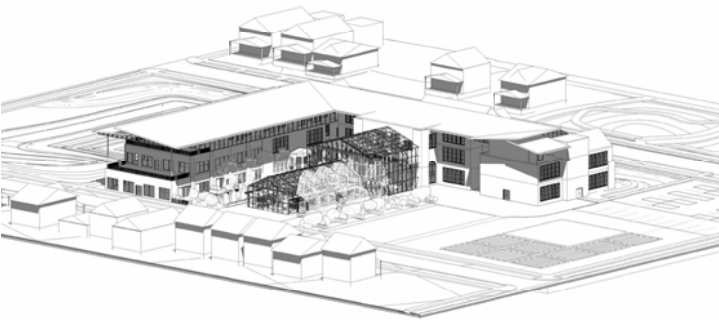
Residential Expansion

The first expansion on Guyton’s North wing will be done in tandem with the ‘Korte’ detention pond construction. These units are larger and meant to be occupied by small families or couples.



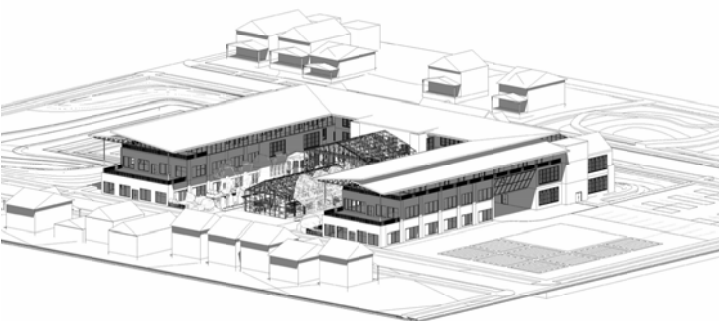
Community Expansion

The former rear of Guyton will be transformed into the new entrance to Guyton Korte. The former gym will be reused as an atrium space with the Winter Garden and Market Hall serving as entry features into the Guyton Rec Center.



Senior Housing Expansion

For the aging population of Jefferson Chalmers the Southern Wing Expansion is dedicated to smaller senior housing units.



Integrated Design

Integrated Architecture and Landscape Architecture

Guyton Korte is intended to create a unified experience between architecture and its surrounding landscape. Neighborhood typologies such as urban farms, farmers markets, and greenhouses are reflected on-site and integrated into the adaptive reuse of Guyton Elementary and its adjacent 4.46 acres. These integrated elements are designed to provide community infrastructure that supports social cohesion, engagement, and long-term neighborhood growth.

Neighborhood Scale Connections

As the historic business district is rehabilitated, more residents are likely to move to Jefferson Chalmers. With these renovations, Guyton Korte is positioned at a key intersection of urban greenway connections and proximity to important neighborhood infrastructure and parks, making it well suited for new uses.



Guyton Korte South Axonometric

Neighborhood Opportunities

Adaptive Reuse

Aside from Guyton Elementary, many other structures in the neighborhood of Jefferson Chalmers are ripe for adaptive reuse and integrated design with their vacant adjacencies.

1. Maheras-Gentry Outpost
2. Stark School of Technology
3. Hotel Savarine
4. Monteith | Detroit Public Library
5. Original Primitive Baptist Church

Landscape Remediation

North of E. Jefferson lies Riverbend, the northern half of Jefferson Chalmers and the location for the majority of the neighborhoods vacant land. This expansive landscape and the southern landscape tracts along E. Jefferson Ave. could serve as further landscape connectivity corridors, parks, and stormwater management sites to promote ecological resilience within the neighborhood.

The southern stretch abutting one of the interior canals could be repurposed to offer a new street end park or transitioned back to housing to give opportunities to waterfront housing to residents.

Urban Rehabilitation

Jefferson Chalmers vacant lands serve as remnants of centuries old history, filled with elements that often go overlooked. The large tracts of land, the canals, and the remnant structures across the neighborhood are often thought of as deterrents to a healthy neighborhood. On the contrary, through reuse, remediation, and rehabilitation these elements can improve the health of the neighborhood and accentuate the beautiful and endearing character of Jefferson Chalmers and the City of Detroit.



Landscape Reuse Opportunities



Main Arterial Roads



Neighborhood Greenway Connections



Conclusion

Reuse

The adaptive reuse of the vacant Guyton Elementary School and its adjacent four blocks is a small example of what could be implemented across Jefferson Chalmers and the City of Detroit. The site lies at a strong intersection of ecological function and community infrastructure. The reuse of these elements reflects an integrated design philosophy that celebrates ecological resilience and performance while facilitating it through intentionally designed community spaces.

Remediation

The current urban soils of Jefferson Chalmers are degraded but ecologically viable. An ecosystem adapted to frequent flooding and freeze–thaw cycles was once characteristic of this region; this thesis proposes remediating these soils to return them to a condition similar to that of Le Grand Marais.

To remediate is to restore to health. In this sense, the adaptive reuse of Guyton Elementary is a remediation of the building, returning it to a functional piece of civic infrastructure, now with an expanded purpose that includes shelter.

Rehabilitation

Rehabilitation is at the core of the City’s plans and aspirations for Jefferson Chalmers. The City of Detroit and the Jefferson Chalmers community recognize its characteristic structures as both historic and endemic to the neighborhood. Rehabilitation efforts that bring these buildings’ original character into the modern era demonstrate respect for the history these structures hold within the community.

Rehabilitating Guyton Elementary is a service to the Jefferson Chalmers neighborhood. As a distinctive example of 1920s architecture, it stands as a historical landmark to be honored and respected.

Urban Ecological Design for Jefferson Chalmers, Detroit, MI

Jefferson Chalmers is a neighborhood where the history is written in the landscape. Every era of Detroit’s history is present; whether that be rusted remnants of industry, 20th century historic and beautiful architecture, lots and roads carrying the legacy of strip farms and race tracks, or lands prone to flooding and water related change. Jefferson Chalmers carries the deep history of it’s city. Beauty like that should be preserved and expressed.

Reuse, Remediation, and Rehabilitation is a design strategy that could be integrated anywhere, it is simply the integration of architecture, landscape architecture, and urban design as a means to perpetuate community and ecological resilience. In spaces like Jefferson Chalmers that are rich with opportunities to activate vacant structures and lands this thesis serves as a guide to strategize uses and programming that provide a variety of services.

This design strategy is at its strongest through replication and connectivity. Vacant lands in Jefferson Chalmers can serve as a interconnected neighborhood greenway, providing stormwater detention, solar energy, urban farming, and community gathering opportunities. Vacant structures can become anchors in this expansive landscape, small nodes attached to the extensive network providing additional spaces for recreation, shelter, or support.

An integrated design approach at the scale of the neighborhood has the potential to create a regenerative landscape that works with natural ecological processes and cycles while also providing support and opportunities for the community that call this neighborhood home.

Guyton Korte and the Fox Creek Greenway are only a small part of what could eventually be the new framework for the City of Detroit’s neighborhood of Jefferson Chalmers.



REUSE, REMEDIATION, REHABILITATION

Citations

4 Guyton. (n.d.). After School Detroit. <https://www.afterschooldetroit.com/schools/4-guyton>

AptFinder. (n.d.). Urban League Village. https://aptfinder.org/property.php?id=Urban_League_Village

ArchDaily. (n.d.). Gronningen Bispeparken climate park / SLA. <https://www.archdaily.com/1026192/gronningen-bispeparken-climate-park-sla>

Autodesk. (2025, March 26). What is adaptive reuse? Repurposing buildings for a sustainable future. <https://www.autodesk.com/design-make/articles/what-is-adaptive-reuse>

Bottero, M., Datola, G., Fazzari, D., & Ingaramo, R. (2022). Re-thinking Detroit: A multicriteria-based approach for adaptive reuse for the Corktown District. Sustainability, 14(14), 8343. <https://doi.org/10.3390/su14148343>

Citizen Potawatomi Nation. (2020, October 30). Oct. 31st marks 257th anniversary of the end of the Siege of Ft. Detroit. <https://www.potawatomi.org/blog/2020/10/30/oct-31st-marks-257th-anniversary-of-the-end-of-the-siege-of-ft-detroit/>

City of Detroit. (n.d.). Adaptive reuse. <https://detroitmi.gov/departments/planning-and-development-department/design-and-development-innovation/zoning-innovation/adaptive-reuse>

Clarke Historical Library, Central Michigan University. (n.d.). Detroit pre-statehood bibliography. <https://www.cmich.edu/research/clarke-historical-library/explore-collection/explore-online/michigan-material/detroit-pre-statehood/bibliography>

Desimini, J. (2013). Blue voids: Stormwater strategies for abandoned lands. Journal of Landscape Architecture, 8(2), 64–73. <https://doi.org/10.1080/18626033.2013.864131>

Detroit Free Press. (2024, October 16). Jefferson-Chalmers residents face neighborhood challenges, wanting to be heard [Photo gallery]. <https://www.freep.com/picture-gallery/news/local/michigan/2024/10/16/jefferson-chalmers-residents-face-neighborhood-challenges-wanting-to-be-heard/75691325007/>

Detroit Historical Society. (n.d.). Ribbon farms. <https://www.detroithistorical.org/learn/online-research/encyclopedia-of-detroit/ribbon-farms>

Doelle, K. (n.d.). Historical architecture of Grosse Pointe: The story of Fox Creek. <https://katiedoelle.com/historical-architecture-of-grosse-pointe-the-story-of-fox-creek/>

[com/historical-architecture-of-grosse-pointe-the-story-of-fox-creek/](https://www.katiedoelle.com/historical-architecture-of-grosse-pointe-the-story-of-fox-creek/)

Facebook. (n.d.). Another stunning basketball court collab with MITM x City Walls Detroit x Detroit Pistons [Facebook post]. <https://www.facebook.com/muralsinthemarket/posts/2473987916153781/>

Gang, J. (2024, November 12). The art of architectural grafting. arc en rêve centre d'architecture. <https://arcenreve.eu/en/explorations/the-art-of-architectural-grafting>

Historic Detroit. (n.d.). Guyton Elementary School. <https://historicdetroit.org/buildings/guyton-elementary-school>

Holmes, J. (2025, March 26). What is adaptive reuse? Repurposing buildings for a sustainable future. Autodesk. <https://www.autodesk.com/design-make/articles/what-is-adaptive-reuse>

Jefferson Chalmers. (n.d.). About. <https://jeffersonchalmers.wordpress.com/about/>

Jefferson Hub. (n.d.). Home. <https://www.jeffersonhubdet.com/home>

Landezine. (n.d.). Gronningen Bispeparken by SLA. <https://landezine-award.com/gronningen-bispeparken-by-sla/>

Lindholm, K. (2025). The adaptive reuse of the Valkeala High School building into cohousing. Aalto University. <https://aaltodoc.aalto.fi/server/api/core/bitstreams/36ac2977-260d-40e7-85e0-ff5ca9f58735/content>

Manistique Community Treehouse Center. (n.d.). Manistique Community Treehouse Center. <https://www.manistiquetreehouse.org/>

Michigan Chronicle. (n.d.). A glimpse at the Great Migration: How Black people built, fought and transformed Detroit. <https://michiganchronicle.com/a-glimpse-at-the-great-migration-how-black-people-built-fought-and-transformed-detroit-pbs-detroit-explores-the-legacy/>

MotorCities National Heritage Area. (n.d.). Detroit Driving Club. <https://www.motorcities.org/locations/detroit-driving-club>

Murase Associates. (n.d.). Portfolio 2935. <https://murase.com/portfolio/2935/>

National Organization of Minority Architects Northwest. (n.d.). History. <https://www.naamnw.org/history>

National Park Service. (n.d.). Native American history in Detroit. <https://www.nps.gov/articles/000/native-american-history-in-detroit.htm>

Oliver Hatcher Construction. (n.d.). Jefferson Hub renovation: Jefferson School / Invest Detroit.

<https://oliverhatcher.com/markets/jefferson-hub-renovation-jefferson-school-invest-detroit/>

Peterson, S., Rauss, A., Shen, Y., & Yen, C. (2020). Vacant land adaptation in Detroit's G7 neighborhoods. University of Michigan Library. <https://deepblue.lib.umich.edu/handle/2027.42/154883>

Potawatomi Nation. (2020, October 30). Siege of Fort Detroit anniversary article. <https://www.potawatomi.org/blog/2020/10/30/oct-31st-marks-257th-anniversary-of-the-end-of-the-siege-of-ft-detroit/>

Reddit. (2022). J Dilla mural (Holbrook & Oakland) discussion post. https://www.reddit.com/r/Detroit/comments/vdbtae/j_dilla_mural_holbrook_oakland_the_detail_is/

Redfin. (n.d.). Jefferson-Chalmers neighborhood land listings. <https://www.redfin.com/neighborhood/186572/MI/Detroit/Jefferson-Chalmers/land>

Seattle Department of Neighborhoods. (n.d.). Colman School landmark designation report [PDF]. <https://www.seattle.gov/documents/Departments/Neighborhoods/HistoricPreservation/Landmarks/RelatedDocuments/colman-school-designation.pdf>

Shishavan, N. S. (2013). Comparative investigating of adaptive reuse and sustainable architecture with social approach. ResearchGate. <https://www.researchgate.net/publication/260598452>

SLA. (n.d.). Gronningen. <https://www.sla.dk/cases/gronningen/>

Sleegers, F. (2014). Landscape frameworks for the revitalization of urban neighborhoods in the context of phytoremediation. In Phytoremediation. https://doi.org/10.1007/978-3-319-10395-2_5

Steiner, F. (2014). Frontiers in urban ecological design and planning research. Landscape and Urban Planning, 125, 304–311. <https://doi.org/10.1016/j.landurbplan.2014.01.023>

Tate, K. E. (2017). Towards equitable placemaking incorporating adaptive reuse for cultural sustainability. University of Oregon. <https://scholarsbank.uoregon.edu/server/api/core/bitstreams/53864277-488a-40f3-bb2b-b038e99eb593/content>

The Architectural Newspaper. (2023, February). Julie Bargmann embraces the urban wilds of Detroit with parking designed for Prince Concepts. <https://www.archpaper.com/2023/02/julie-bargmann-embraces-the-urban-wilds-of-detroit-with-parking-designed-for-prince-concepts/>

The Canadian Encyclopedia. (n.d.). Antoine Laumet Cadillac. <https://www.thecanadianencyclopedia.ca/en/article/antoine-laumet-cadillac>

The Detroit News. (2020, May 24). Moving Michigan: 1800s [Photo gallery]. <https://www.detroitnews.com/picture-gallery/news/local/michigan-history/2020/05/24/moving-michigan-1800-s/4603211002/>

University of Detroit Mercy. (2024, December 12). City Walls: Making Detroit more vibrant. <https://www.udmercy.edu/about/news/articles/2024/12-12-city-walls-making-detroit-more-vibrant.php>

Urbanisten. (n.d.). Benthemplein. <https://www.urbanisten.nl/work/benthemplein/>

Yun, M. (2008). Alternative uses for vacant land in Detroit, Michigan. University of Michigan Library. https://deepblue.lib.umich.edu/bitstream/handle/2027.42/60432/final_masters_myun.pdf;sequence=1