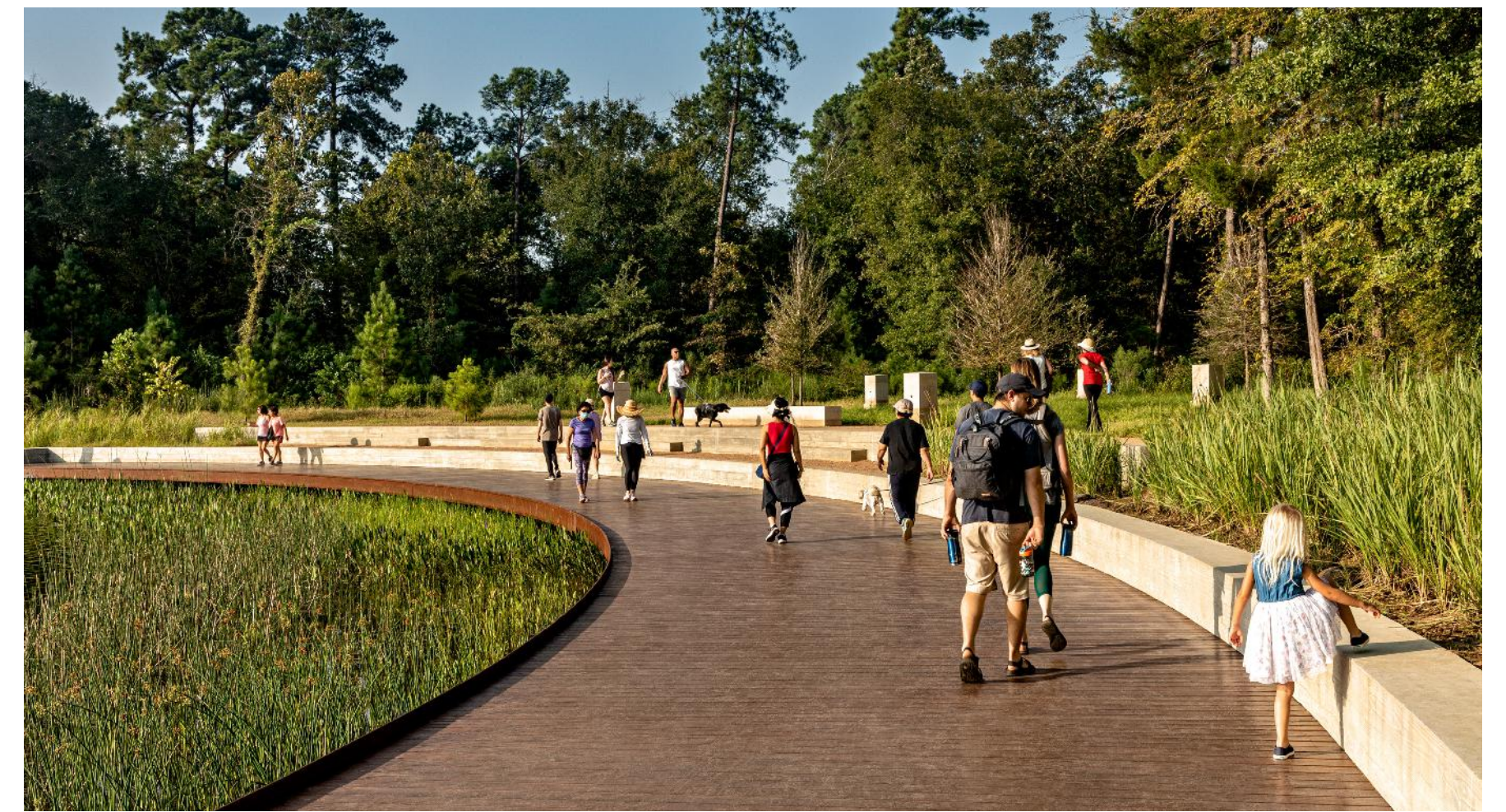
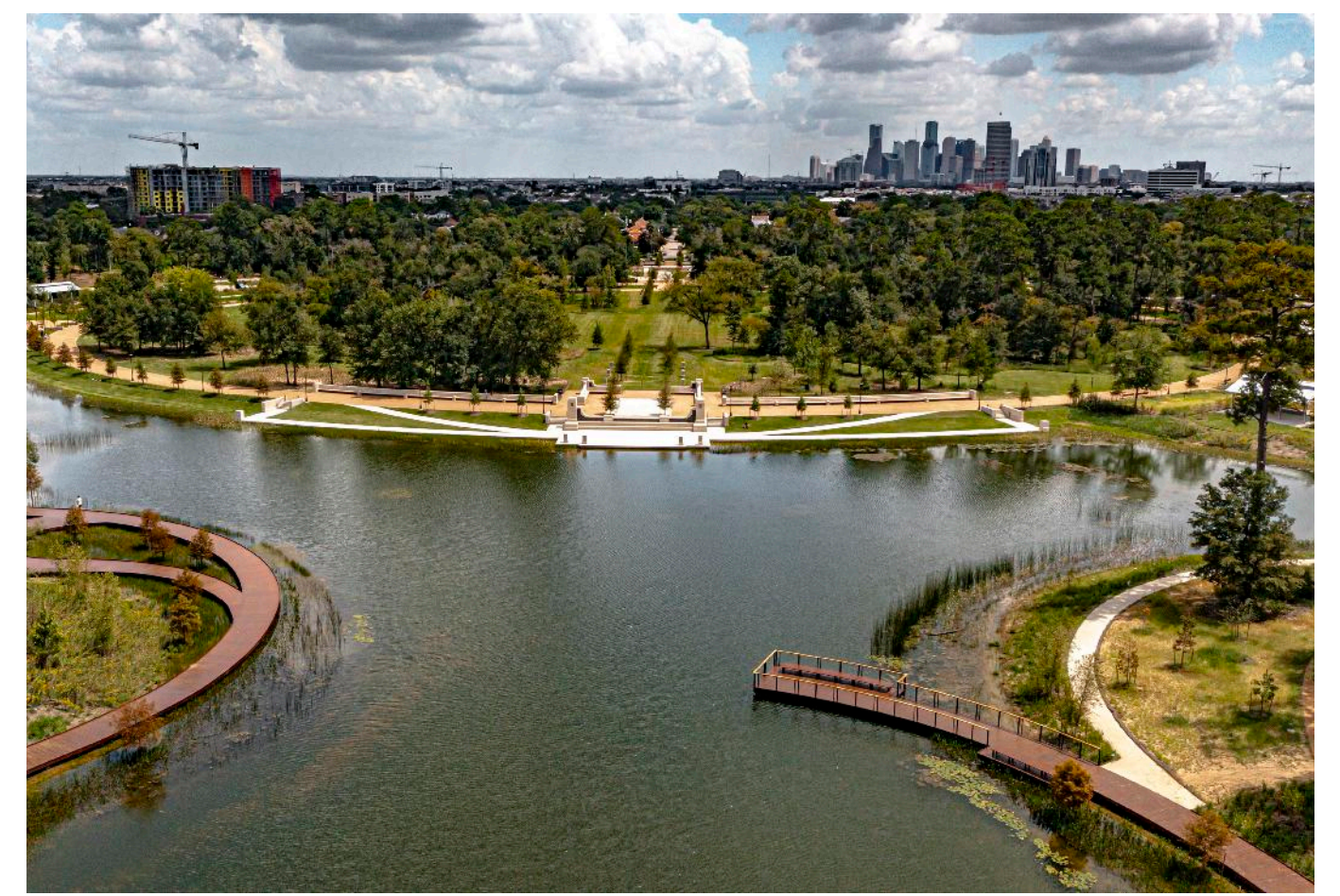
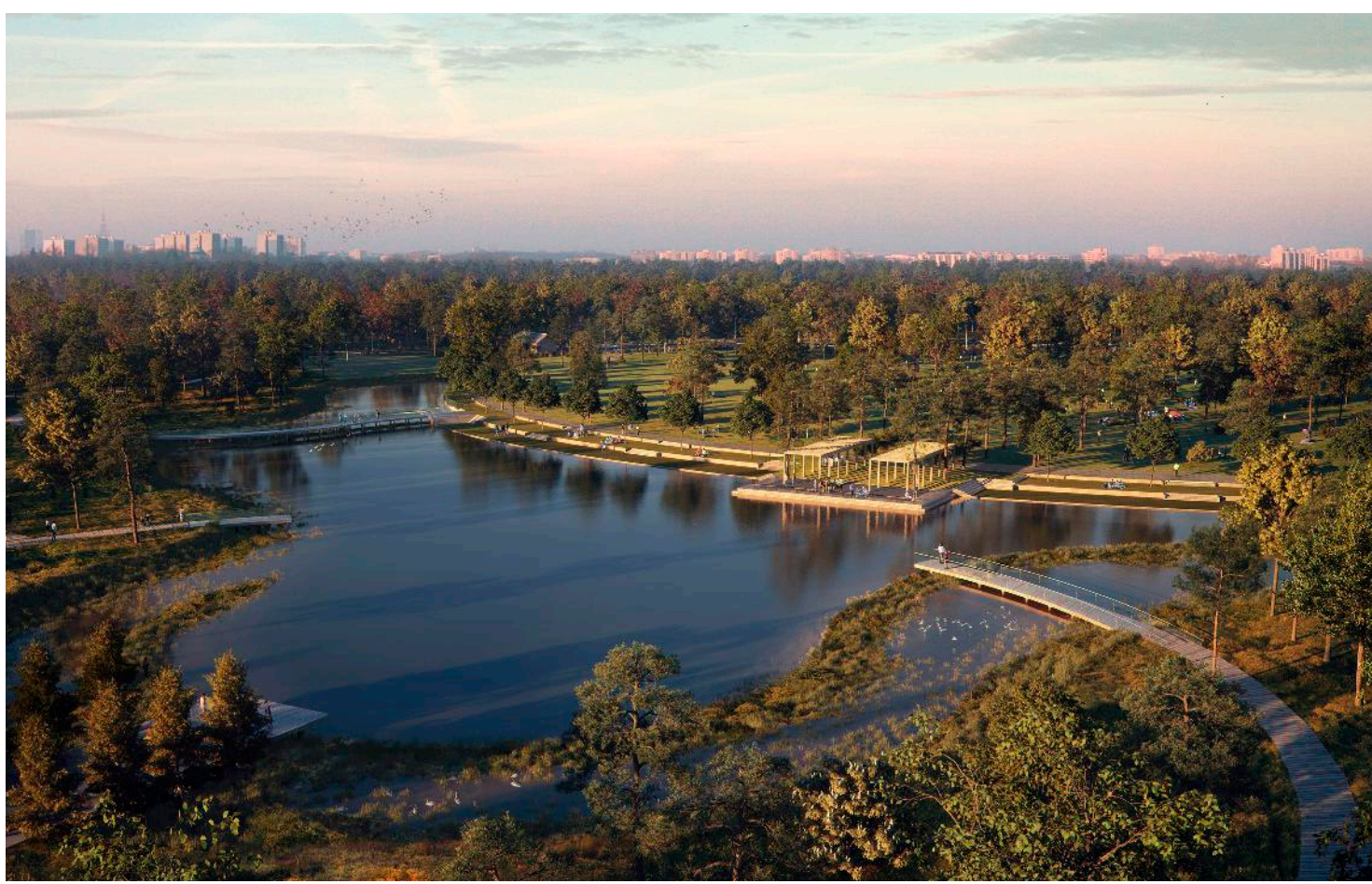


# Flight 93 National Memorial

Southwestern Pennsylvania

**Nelson Byrd Woltz**  
Landscape Architects

*Collaborators:*  
Paul Murdoch Architects / EADS Group / RBA Partners / Sato & Bopanna / MACTEC / HF Lenz Company / Robert Silman Associates / George Sexton & Associates / Biohabitats / Louis Berger Group / US Army Corp of Engineers / Arrow Wallace Pancher / Davey Resource Group and Vanessa Hangen Brustlin



**Clay Family  
Eastern Glades  
at Memorial Park**  
Houston, Texas

**Nelson Byrd Woltz  
Landscape Architects**

*Collaborators:*  
Memorial Park Conservancy / Uptown Development Authority / Houston Parks & Recreation Department / Walter P Moore / English + Associates Architects / Lauren Griffith Associates / Henderson Rogers Structural Engineers / G2LD Gandy<sup>2</sup> Lighting Design / Minor Design / Sherwood Design Engineers / Berg Oliver Associates / Advanced Ecology Limited / James Pole Irrigation Consultants / ETM Associates / Gray & Pape Heritage Management / Hunt Design / Engineers & Consultants, Inc. / 4b Technology Group / DPWPR / Jaime Gonzalez / Olsson Associates / James Sottilo / Professional Service Industries, Inc. / Gorronzona & Associates / Richard White / Fused Industries / Landscape Art / Tellepsen Builders / Shooter and Lindsey / Pin Oak Interests / Renfrow + Co / Trees for Houston / York Bridge Solutions / Mezger / Ernst Seed / WW Bartlett / Schlitzberger Stone Designs

# MECHUMS TRIBUTARY RESTORATION

Charlottesville, Virginia

Located in Albemarle County, Virginia, the Mechums Tributary restoration project sought to repair the health and riparian connectivity between the tributary and the Mechums, Rivanna, and James Rivers.

The project began with the removal of the failing 70 year-old dam. The design prioritized restoring the stream to its original route and ecology, and installing natural infrastructure to enhance habitat and maintain stream form and health. The landscape architect created multiple aquatic habitat types while minimizing downstream sedimentation and erosion, through the formation of log riffle structures, pools, stone cascades, and floodplain meadow zones. Incorporated into the series of intermittent pools is a larger swimhole for cooling off during hot summer days.

With an emphasis on regenerative restoration, natural materials from the dam deconstruction were integrated into the new streambed. All woody debris from the pond clearing process were reused for the toe embankments and habitat creation. Aiding the regrading process, decades of trapped sediment from behind the dam was mixed with site soils and recycled to create new soils for adjacent reforestation and meadow areas. The entire pond site was revegetated with a mix of native perennials, grasses, shrubs, and riparian trees.

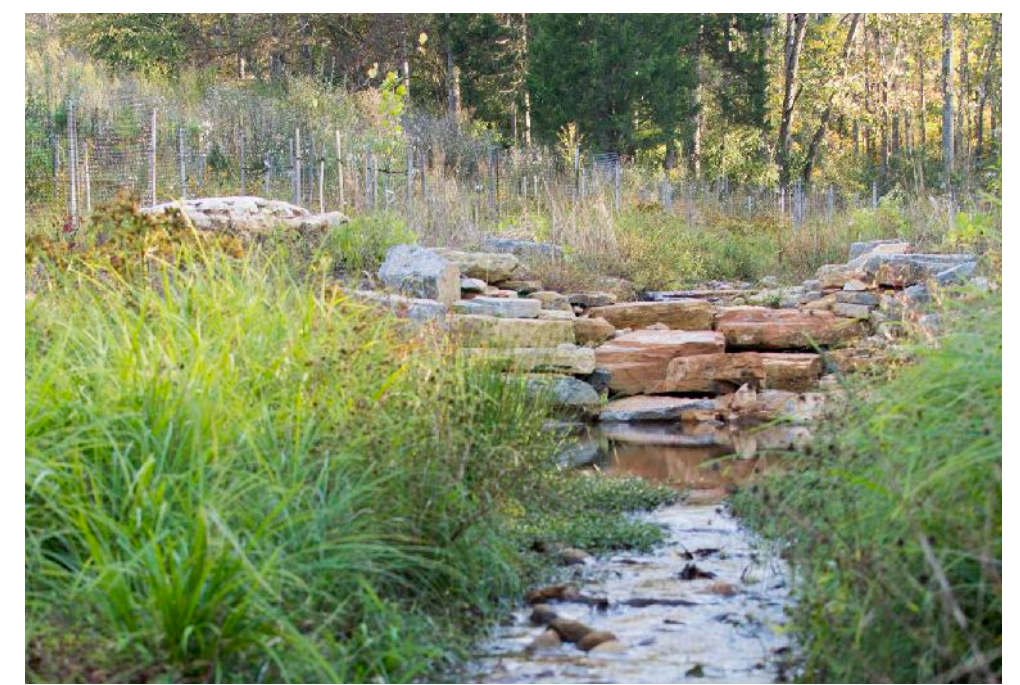


Restored streambed, central cascade, and plunge pool surrounded by meadow and forest restoration.

**BEFORE** A failing dam, high sedimentation, and ecological degradation characterize the original tributary conditions.



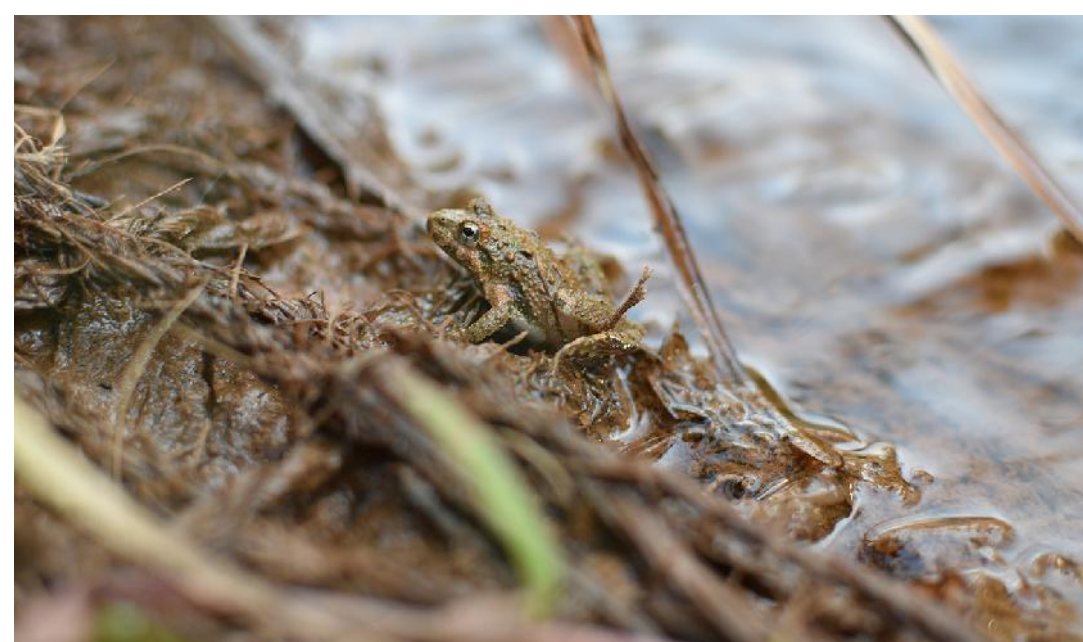
**RESTORED STREAMBED**



**AFTER** Restoration returned the water to its original streambed and added an enlarged plunge pool, meandering widths, and a cascade.

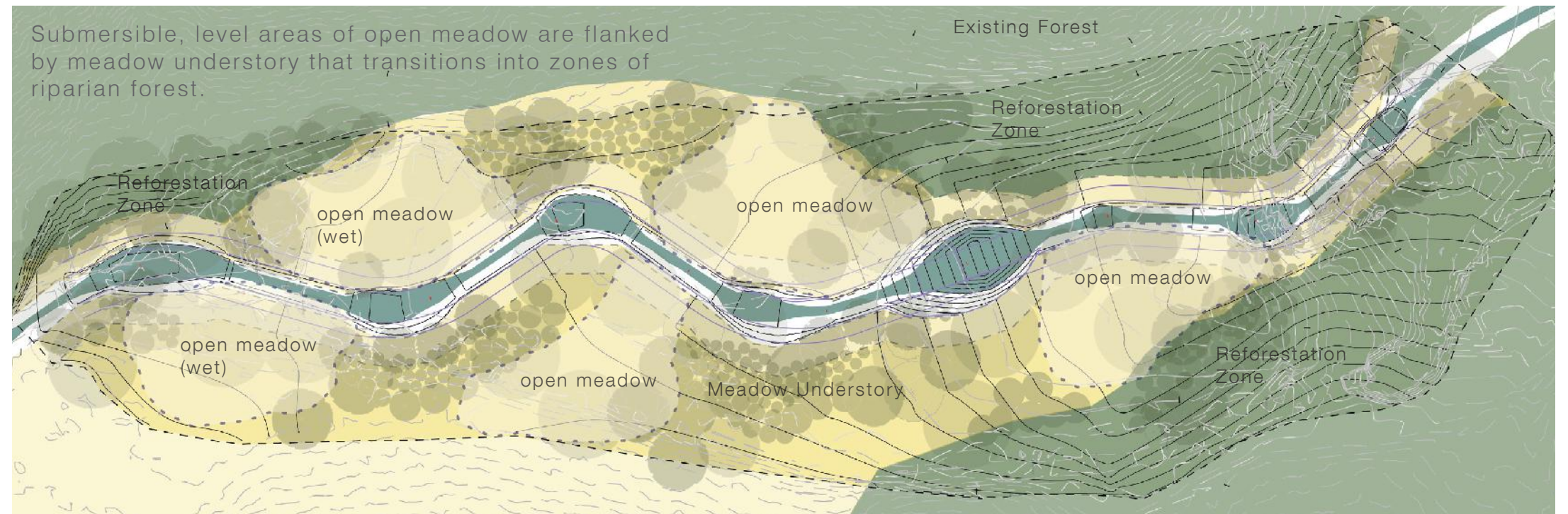


## RIPARIAN HABITAT



Insects, reptiles, and amphibians returned to the Mechums Tributary streambed within the first year.

## SITE PLAN: LANDSCAPE TYPOLOGIES

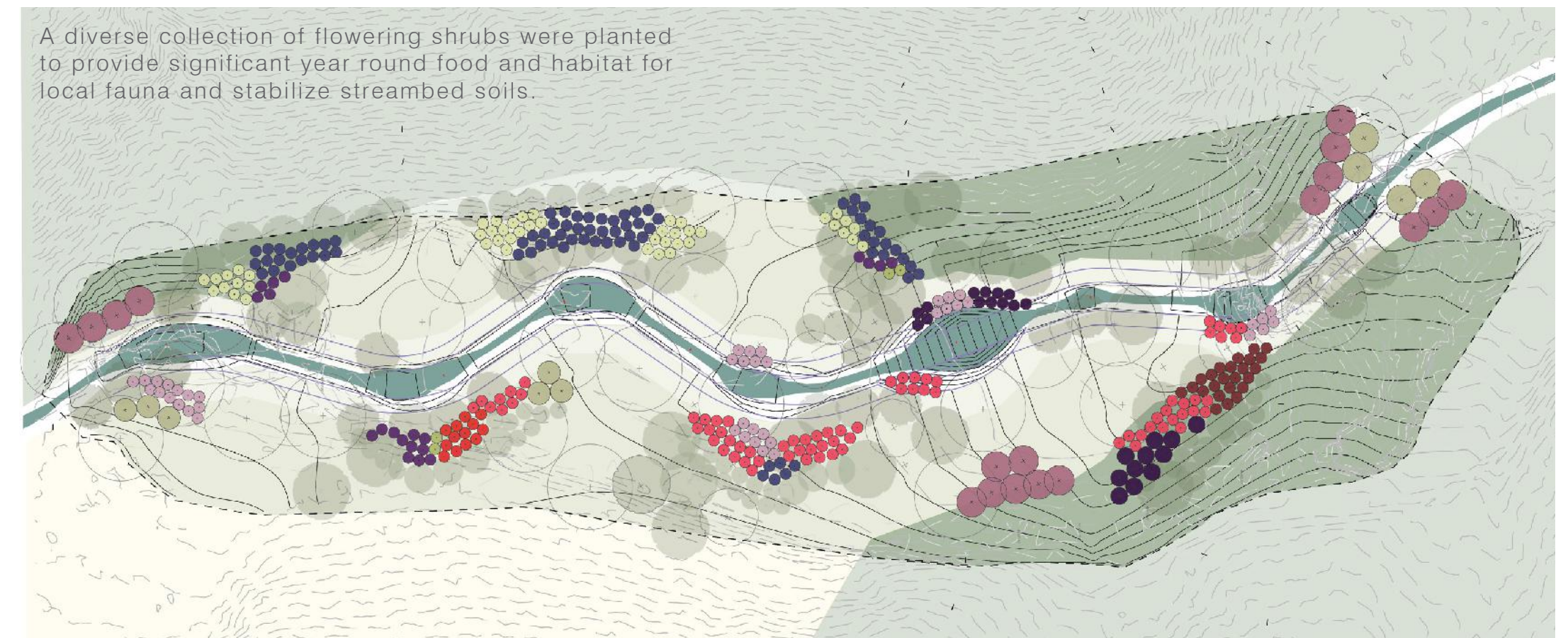


## NATURAL INFRASTRUCTURE



Natural infrastructure creates a varied streambed condition, with riffles of shallow fast water and deep pools of slow water.

## RIPARIAN BUFFER: UNDERSTORY



- *SAMBUCUS canadensis*  
Black Elderberry
- *HIBISCUS moscheutos*  
Rosemallow
- *CEPHALANTHUS occidentalis*  
Buttonbush
- *VIBURNUM trilobum*  
American cranberrybush
- *CALLICARPA americana*  
Beautybush
- *ITEA virginica*  
Sweetspire
- *HYDRANGEA arborescens*  
Smooth Hydrangea
- *VIBURNUM dentatum*  
Arrowwood
- *CALYCANTHUS floridus*  
'Athens' Sweetshrub
- *ILEX verticillata*  
Winterberry Holly
- *VACCINIUM corymbosum*  
Blueberry

## DESIGN ON SITE



The design team was heavily involved in the stream and planting layout, grading, and soil stabilization throughout the construction process.

Managing Principal: Paul Josey  
Design Principal: Mary Wolf  
Project Designers: Dustin Smith  
General Contractor: Environmental Quality Resources, LLC

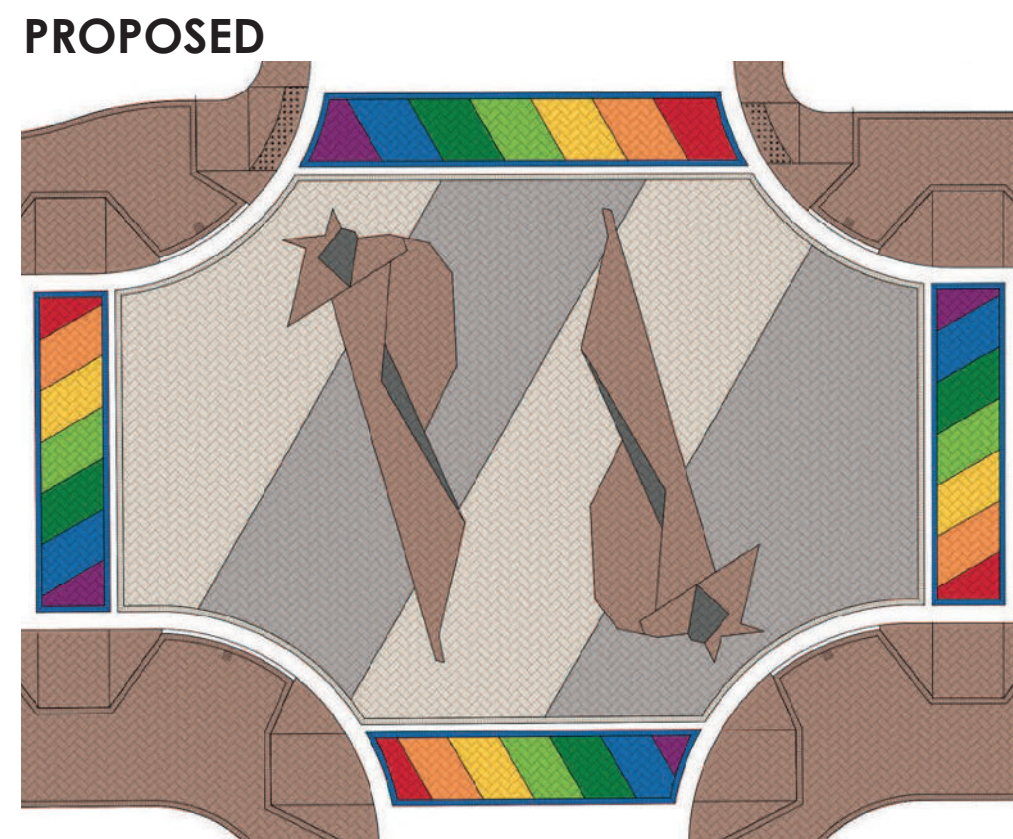
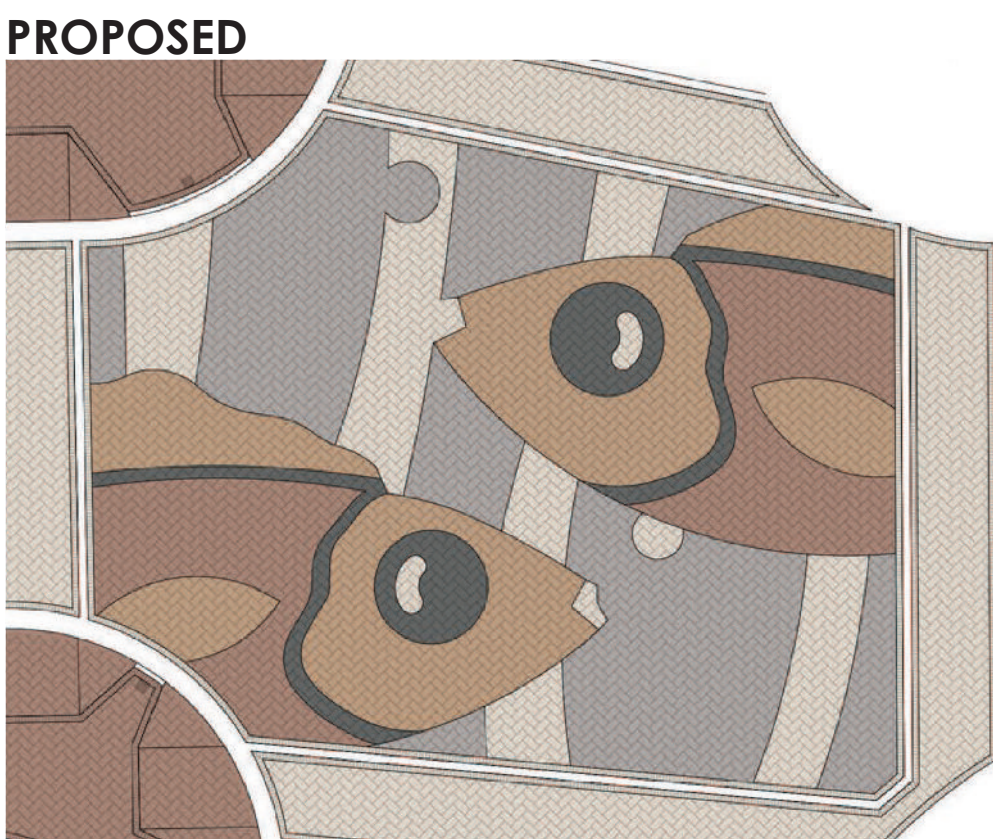
**WOLF JOSEY**  
landscape architects

# 19TH STREET CORRIDOR IMPROVEMENTS

VIBE CREATIVE DISTRICT - VIRGINIA BEACH, VIRGINIA



Image Credit: Lyfted Media



Situated in the city's emerging ViBe Creative District of Virginia Beach, 19th Street is a critical link connecting the Convention Center and new Sports Center to the resort area and oceanfront.

Originally a four-lane road carrying less than 4,000 cars per day, and with narrow, disconnected sidewalks, the team transformed the 0.5-mile roadway into a 3-lane multimodal urban streetscape corridor with on-street parking to accommodate the businesses and residents.

19th street provides a walkable urban district with parking, wide sidewalks, lighting, street trees, and amenities such as seating, custom bike racks, artist-designed paver intersections and 9-foot tall neighborhood identifiers that offer changeable canvases for art.

Attracting new artists and visitors, 19th Street is transforming Virginia Beach's Resort area from a seasonal vacation spot to a year-round destination, full of art and attractions for locals and tourists alike.



# Tuckahoe Middle School

HENRICO COUNTY, VA



When Henrico County hired the design team to guide the renovation of this aging middle school, their primary focus was on creating innovative, adaptable interior learning spaces. Their goals for the site were limited to improving the appearance of the front portion of the site, correcting circulation deficiencies and providing additional parking.

While the landscape architects creatively solved each of those issues, they did not stop there. Recognizing the opportunities presented by the school's unusual campus design, the landscape architects convinced the client to look at the site in a new way. By applying the same educational philosophy and design principles used within the buildings to the exterior spaces, the design team was able to significantly expand the amount of usable space for the school and integrate the entire campus into an innovative, cohesive 21st-century learning environment.

The most dramatic improvements occurred in the school's interior courtyards. Prior to the renovation, the spaces between the buildings were underutilized and neglected, with no opportunities for student use.

By carefully studying students' circulation patterns, the landscape architects added a network of paths that follow the campus' main pedestrian desire lines and encourage students to walk through the courtyards rather than around. By carefully integrating small gathering areas with seating at the intersections of the new paths, the designers created a rich array of new learning spaces for both programmed and informal use.

The landscape architects also worked diligently to identify and preserve as much of the site's existing vegetation as possible. The design team carefully sited the new front driveway and parking areas to protect a grove of large Willow Oaks, preserving one of the campus' most important features. They also were careful to preserve mature trees in all the courtyards, giving those spaces a powerful sense of scale and forming the perfect complement to the dozens of new trees added with the renovation.

**Landscape Architects:** Quinn Evans  
**Architects:** Quinn Evans  
**Civil Engineers:** Timmons Group  
**General Contractors:** Gulf Seaboard





# Alethia Tanner Park

Washington, DC

Collaborators:

Studio Twenty Seven Architecture / Olsson & Associates / Cerami & Associates / Bowman Consulting Group / ECS Mid-Atlantic LLC / CMS Collaborative / Gilmore Lighting Design / Setty & Associates International PLLC / Architectural Playground Equipment & Richter Spielgeräte / Robert Silman Associates / Engenium Group / Irrigation Research & Design / Pentagram

Nelson Byrd Woltz  
Landscape Architects

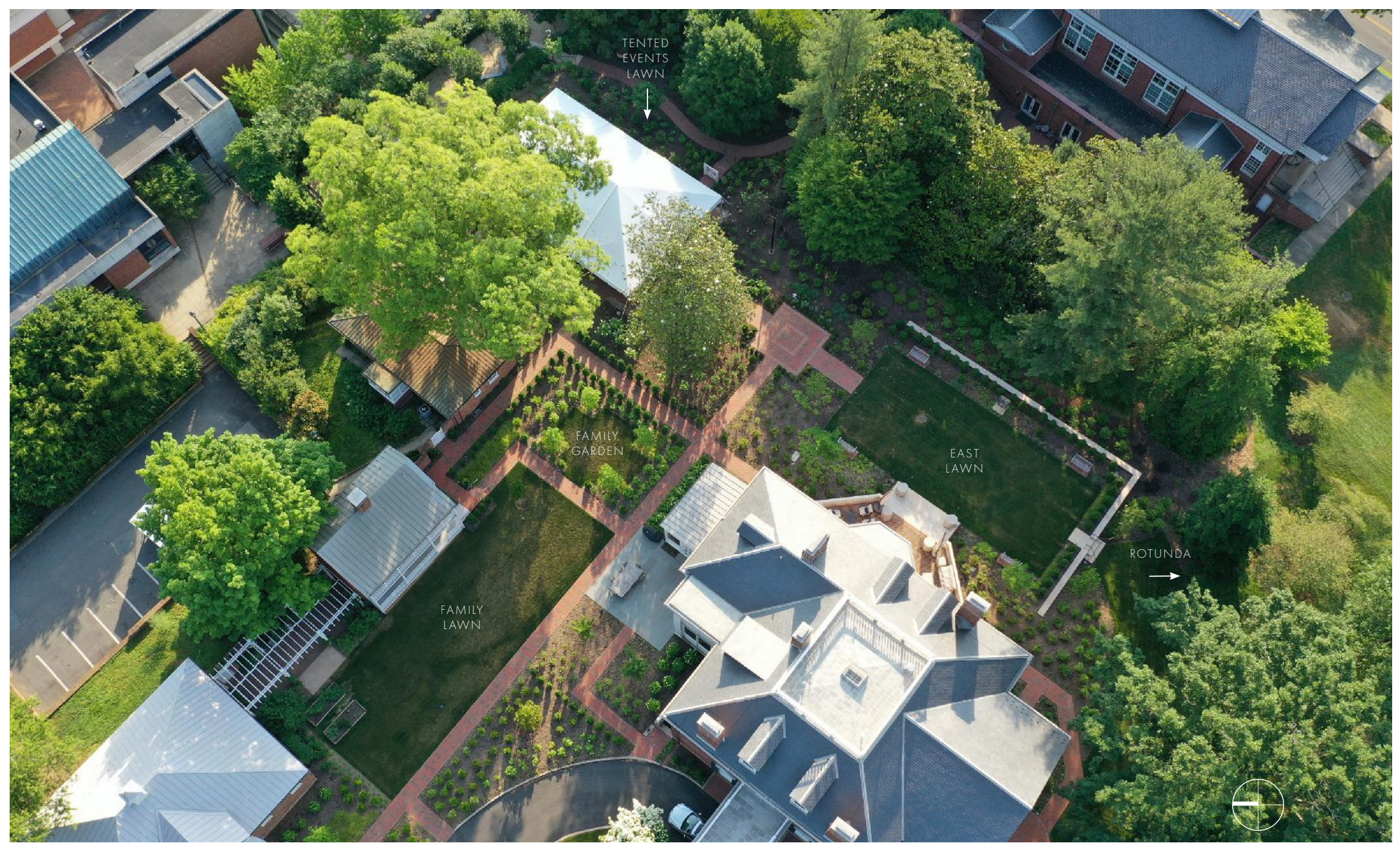
# CARR'S HILL RENOVATION

Charlottesville, Virginia

During the recent transition between presidents, UVA undertook the first comprehensive renovation of the President's House since its construction in 1909. The master plan sought to re-establish a landscape precinct around the house that had progressively been eroded, provide multiple options for University events, and give the President a discreet area for family life. Accessibility was a primary consideration. Taking inspiration from the Lawn and Pavilion Gardens, the design delineates public, semi-public, and private areas, welcoming visitors and students, while providing a comfortable family living environment.

A newly renovated East Terrace (part of the original McKim, Mead & White design) opens onto a raised formal lawn which serves as a forecourt to a new tented Events Lawn to the north, and overlooks the Rotunda to the south. Formerly overgrown and confining gardens at the rear of the house were redesigned to create an expanded "backyard" for the family. Here, a new terrace, renovated pergola, small garden parterre, and an historic guest house frame a central lawn, forming a private courtyard-like environment. As part of the renovation, paths were reconfigured to provide universal accessibility into the house and events areas.

The gardens at Carr's Hill are predominantly comprised of native plants and designed to suit the seasons they are primarily used. The East Lawn, surrounded by flowering shrubs, perennials and bulbs, provides long seasonal appeal with heightened interest in the spring and fall. The family gardens offer year round interest with a stronger emphasis on long-flowering summer blooms. Hedges of boxwoods are used to define public and private zones and provide a backdrop to the flowers, fall foliage and winter structure of the deciduous plants. The southern, front face of the house, is planted to maintain a consistent appearance throughout the year.



The comprehensive renovation of Carr's Hill ensures that the property will continue to serve as a gracious home for the new and future presidents as well as a functional and inviting venue for the multitude of visitors it hosts each year.

## SITE MASTER PLAN



EVENTS LAWN - An accessible, outdoor, tented lawn serves as the primary event space at Carr's Hill.

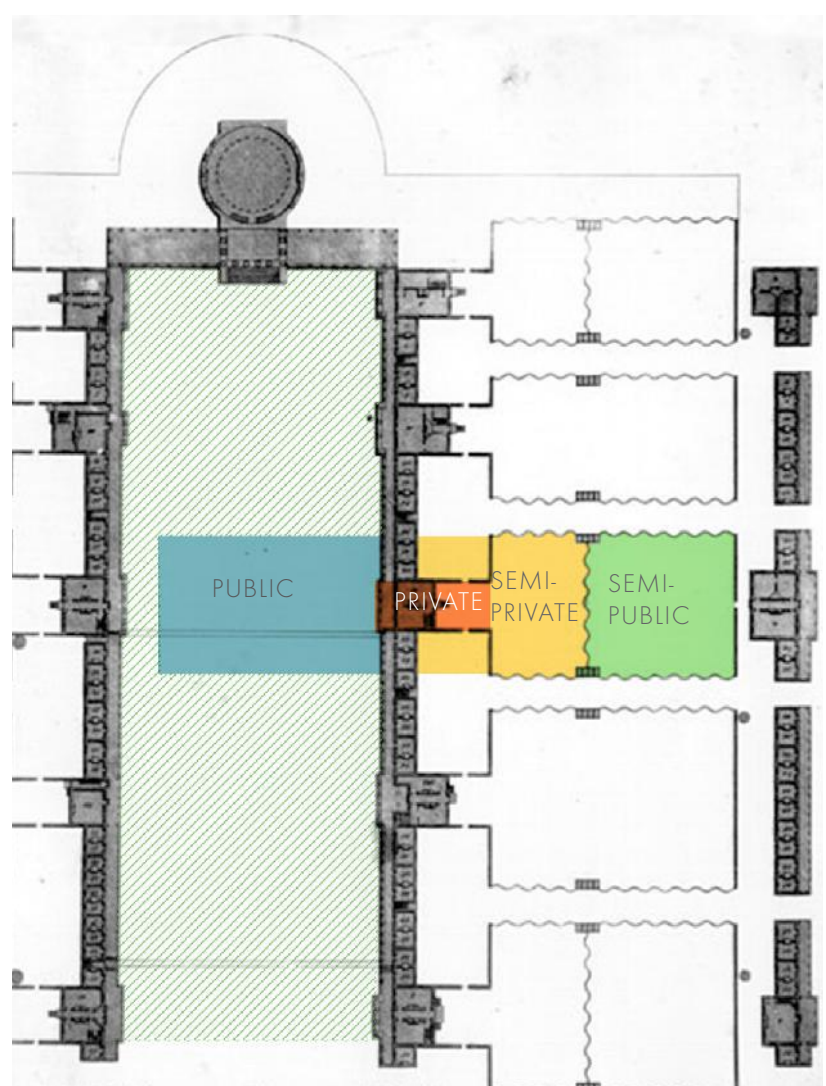


EAST LAWN - A space for events of different sizes, from family entertaining to large University functions.

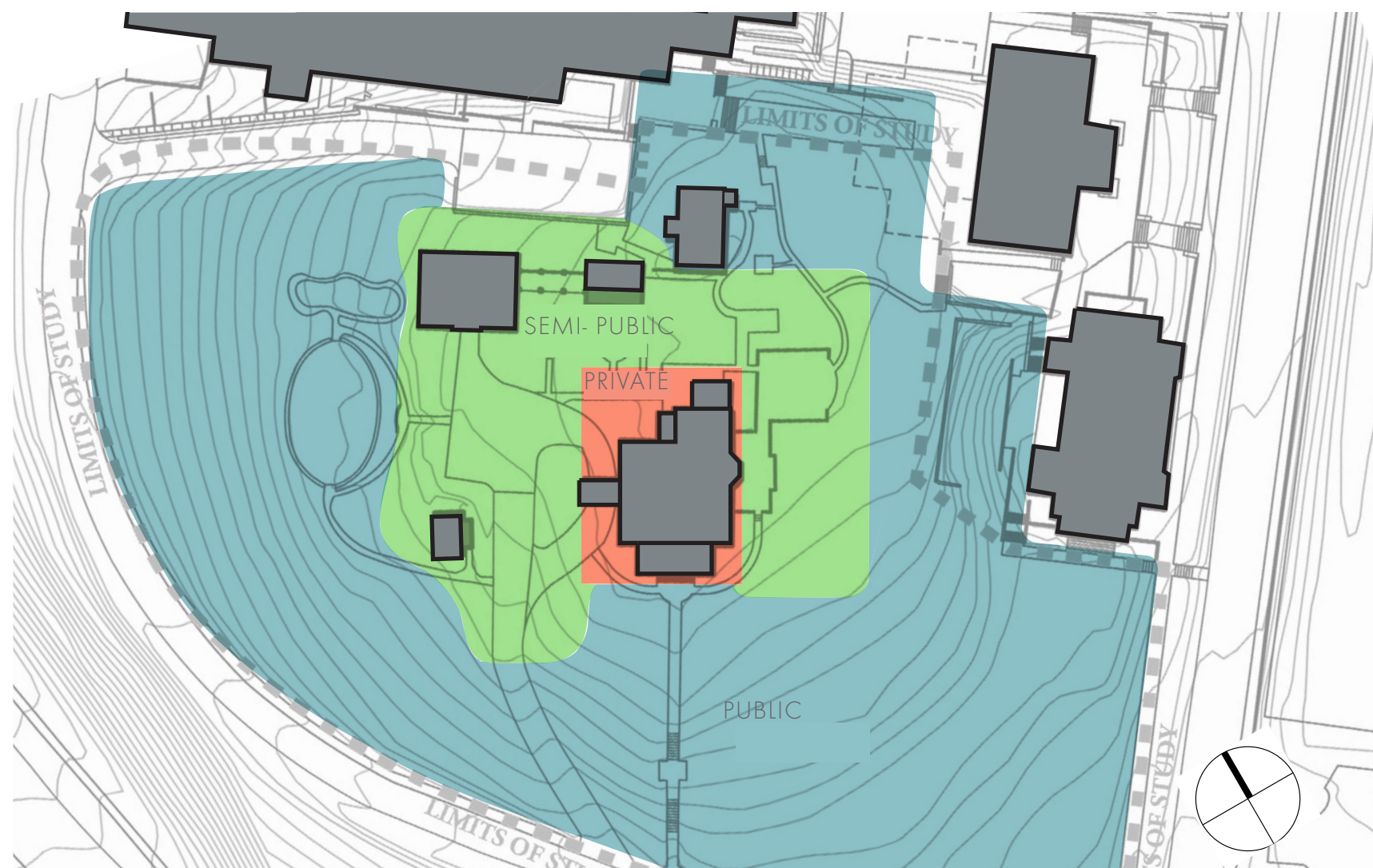


FAMILY LAWN - A private outdoor family precinct was created off of the kitchen and side porch.

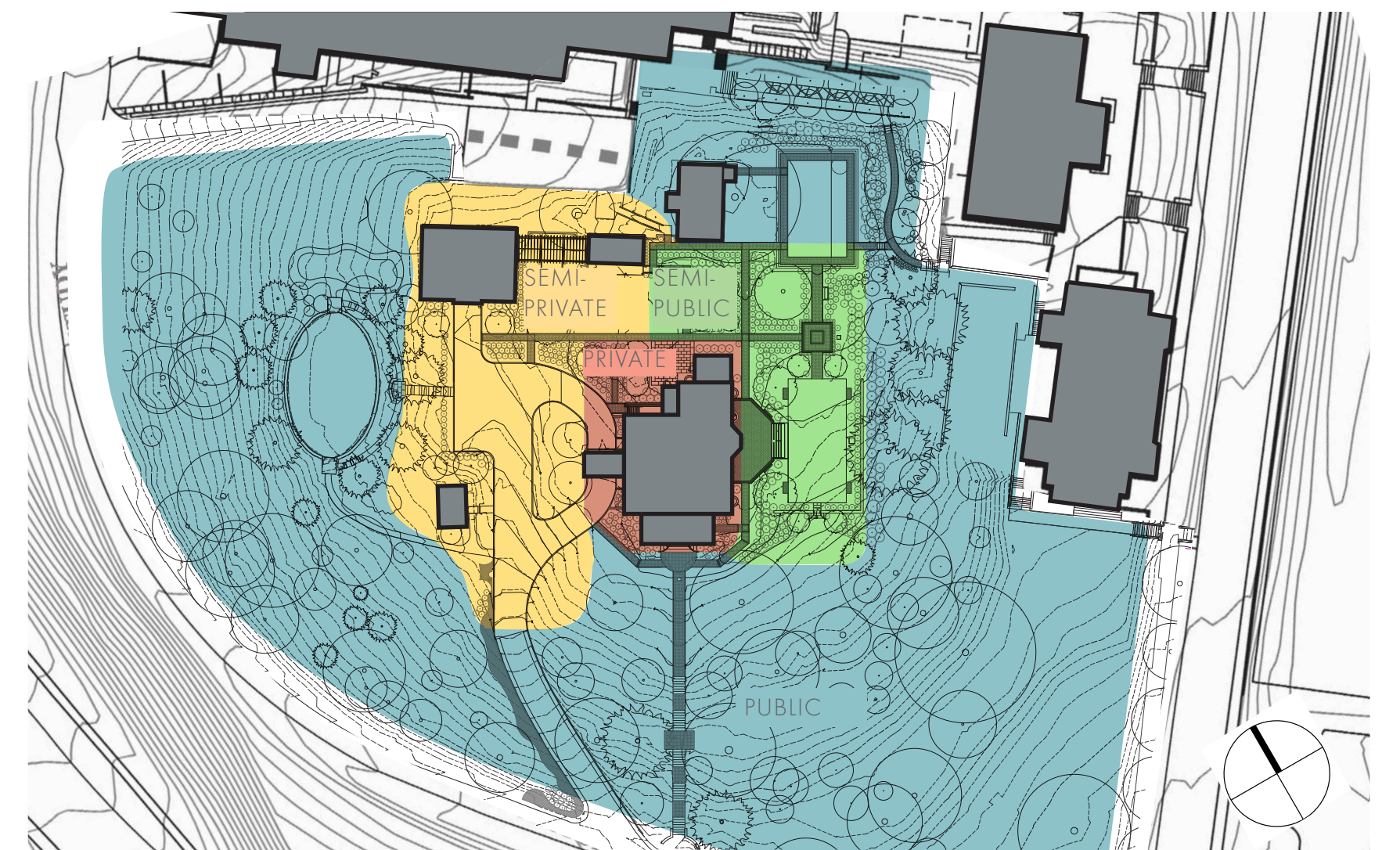
## PRIVACY GRADIENT



PRECEDENT - Student/Public access at Lawn Pavilions

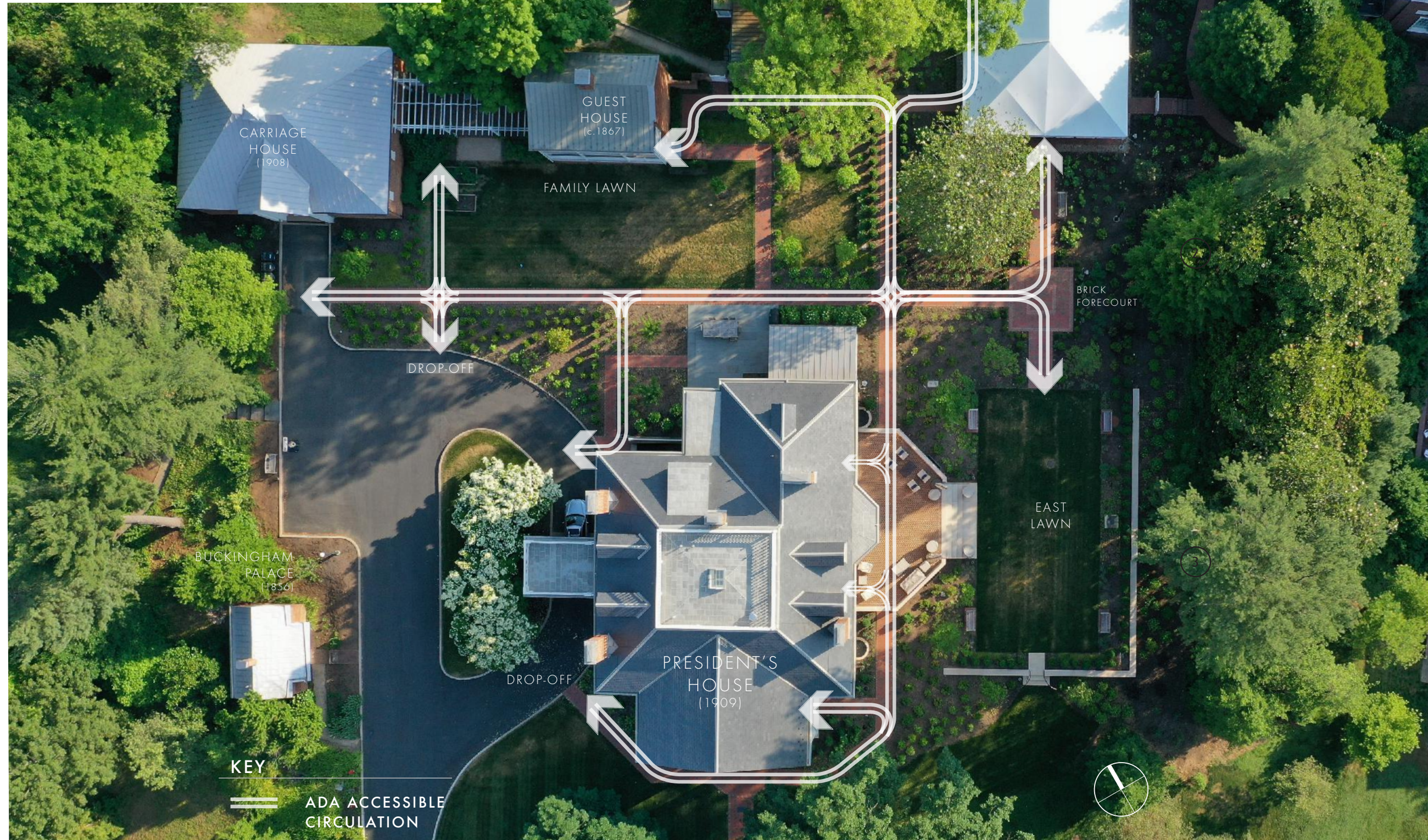


BEFORE - Original Student/Public access at Carr's Hill



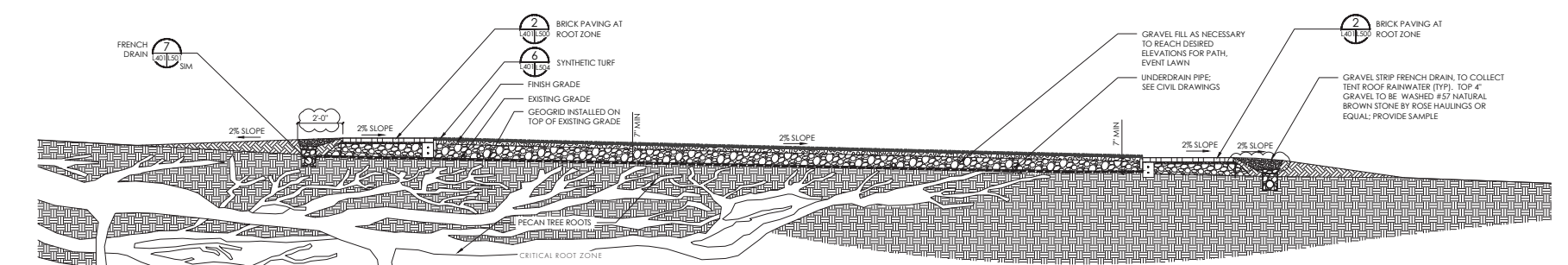
AFTER - Designed Student/Public access at Carr's Hill

## IMPROVED ACCESSIBILITY



## TREE PRESERVATION

The mature canopy trees surrounding the house were preserved through careful siting, grading, and considerable planning and coordination between the design and construction teams.



Managing Principal: Paul Josey  
 Design Principal: Mary Wolf  
 Project Designers: Mary McCall  
 General Contractor: Alexander Nicholson

**WOLF JOSEY**  
 landscape architects

# LEWINSVILLE INTERGENERATIONAL CENTER

MCLEAN, VIRGINIA

## GENERAL DESIGN CATEGORY

McLean is in dire need of low-income housing and affordable childcare and adult care services. The result of a Public Private Partnership between Fairfax County and Wesley Housing Corporation, Lewinsville Intergenerational Center addresses the community's rising social and environmental equity needs by transforming a dilapidated 1960s elementary school, into a cherished community asset. With a limited budget and within a tight site, the landscape architect's role is to address a diverse range of community needs, while seamlessly incorporating sustainable practices through landscape design. This 8.66-acre project includes a Senior Center with childcare facilities, an 82-unit low-income residence "The Fallstead", and a neighborhood park.

The landscape architect's main goal for planning and landscape design was to create inviting amenity spaces that prioritized the health and wellbeing of members of the community at special life stages - seniors and children, by creating nature-inspired experiences and biophilic design throughout the site.

Landscape elements such as meandering paths, gardening spaces, activity terraces, play spaces, and native planting palettes offers the community opportunities for engaging, therapeutic, and restorative outdoor activities. Additionally, a dry creek, rain garden, and recycled materials provide key sustainable elements and storm water management for the site.

The landscape design strategies invite nature into spaces for wellbeing of the young and old, neighbors and residents, bridging multifaceted needs in a healthy safe environment. The project's impact was cited, as a "shining example of affordable housing preservation and the innovative revitalization of aging infrastructure", with the 2019 NACCED Award of Excellence.

This project demonstrates the impact landscape architects can achieve on enhancing public health, safety, and welfare. The landscape architect stayed with the project mission, in continuing partnership with Wesley Housing, including: participation in the Back-to-School supply drive, and fundraising such as direct donations and participation in Team Wesley during the DC 5K run.



SITE PLAN



A CHILD'S EXPERIENCE - AFTERSCHOOL PLAYGROUND



A CHILD'S EXPERIENCE - PLAYFUL ELEMENTS



A SENIOR'S EXPERIENCE - WANDER GARDEN



A SENIOR'S EXPERIENCE - INDEPENDENT LIVING COURTYARD



PLANTING STRATEGY - INDEPENDENT LIVING COURTYARD



PLANTING STRATEGY - INDEPENDENT LIVING COURTYARD



# PURCELL PARK

HARRISONBURG, VIRGINIA

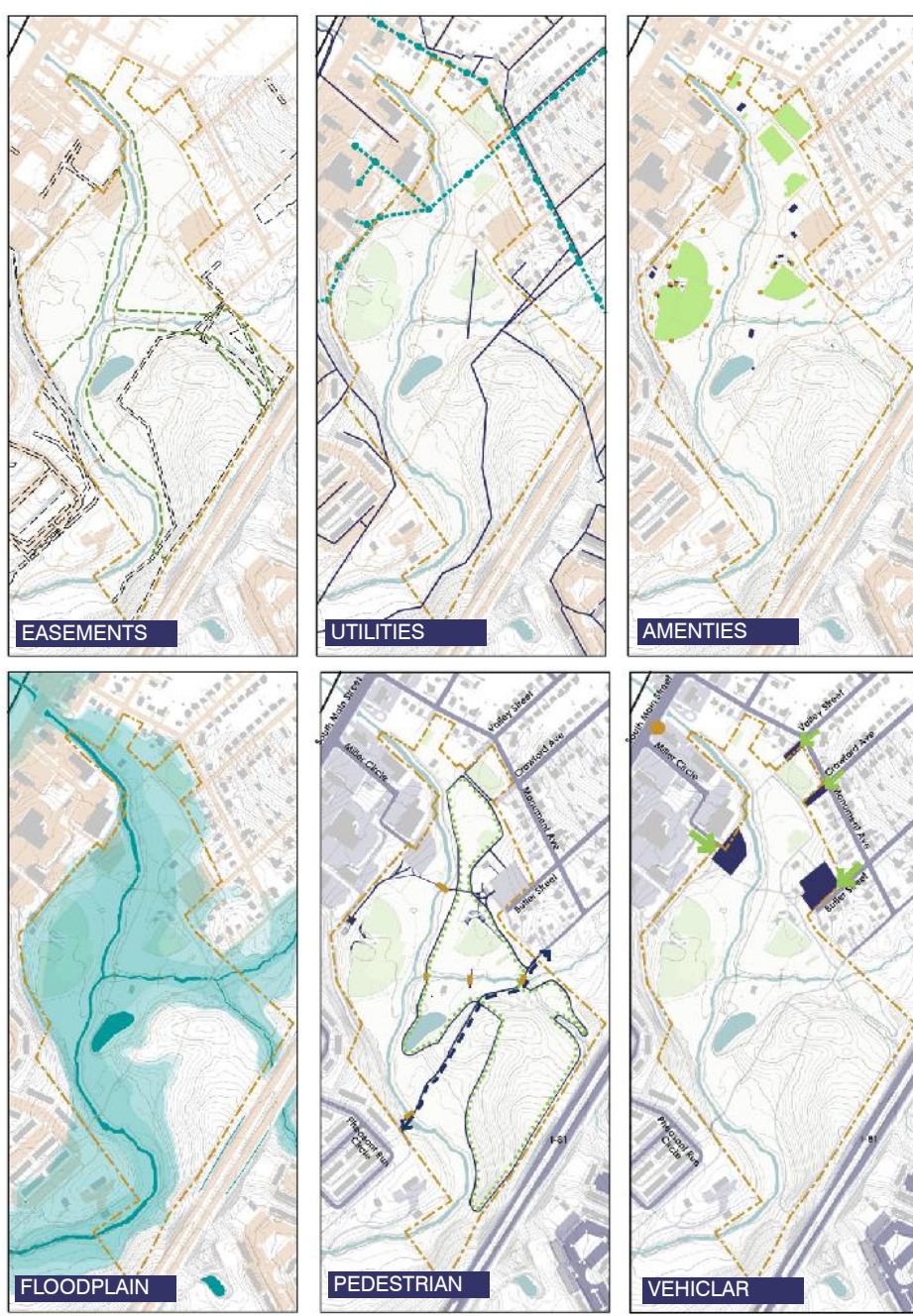
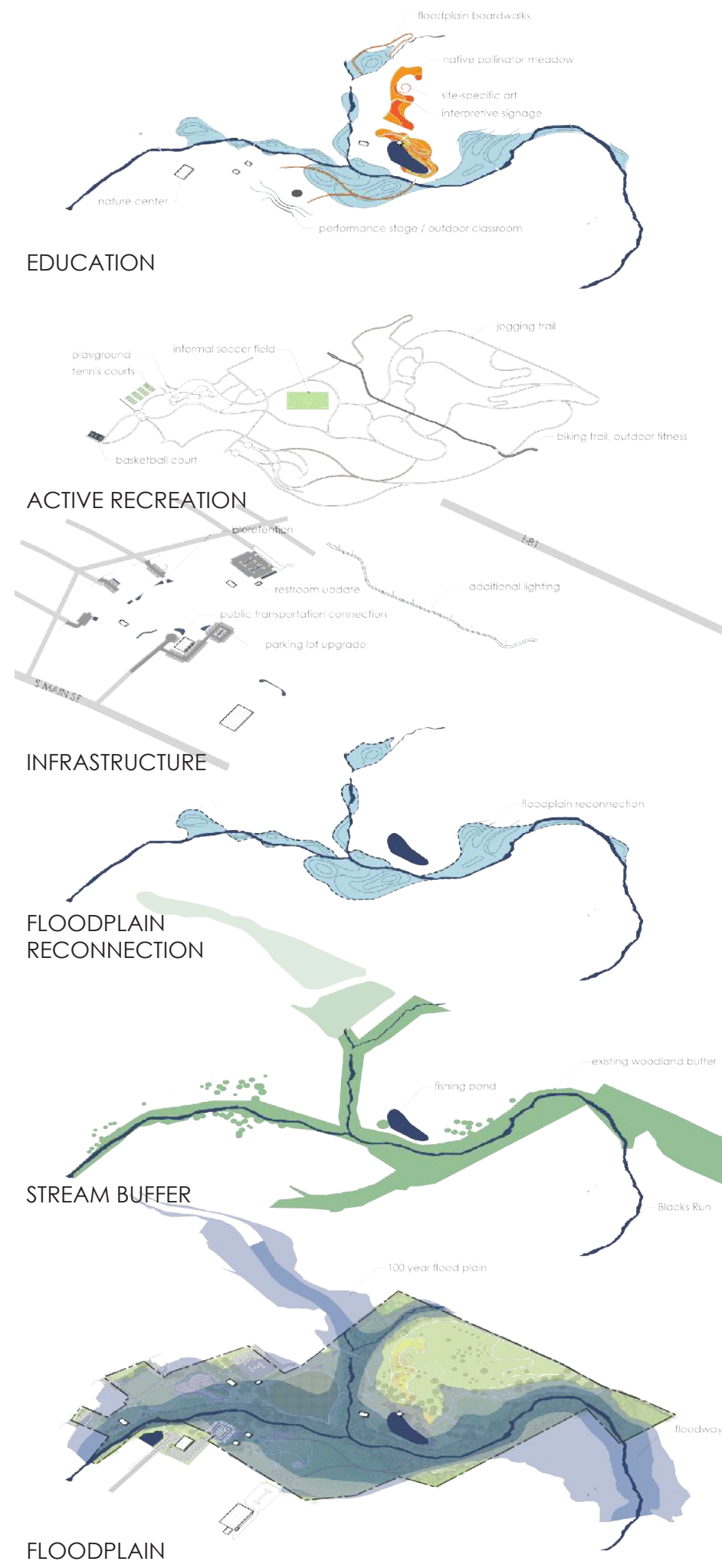
## PLANNING CATEGORY

The City of Harrisonburg has outpaced the Shenandoah Valley region in population growth. This growth, coupled with effects of climate change, has increased the intensity of flooding along Blacks Run, a stream corridor that runs through the city and Purcell Park. By applying principles of resilient design, the proposed masterplan for this 57-acre park envisions Purcell Park as a regional destination that provides great amenities, access to nature, and adapts to periodic intense flooding events by applying recovery and absorption provisions.

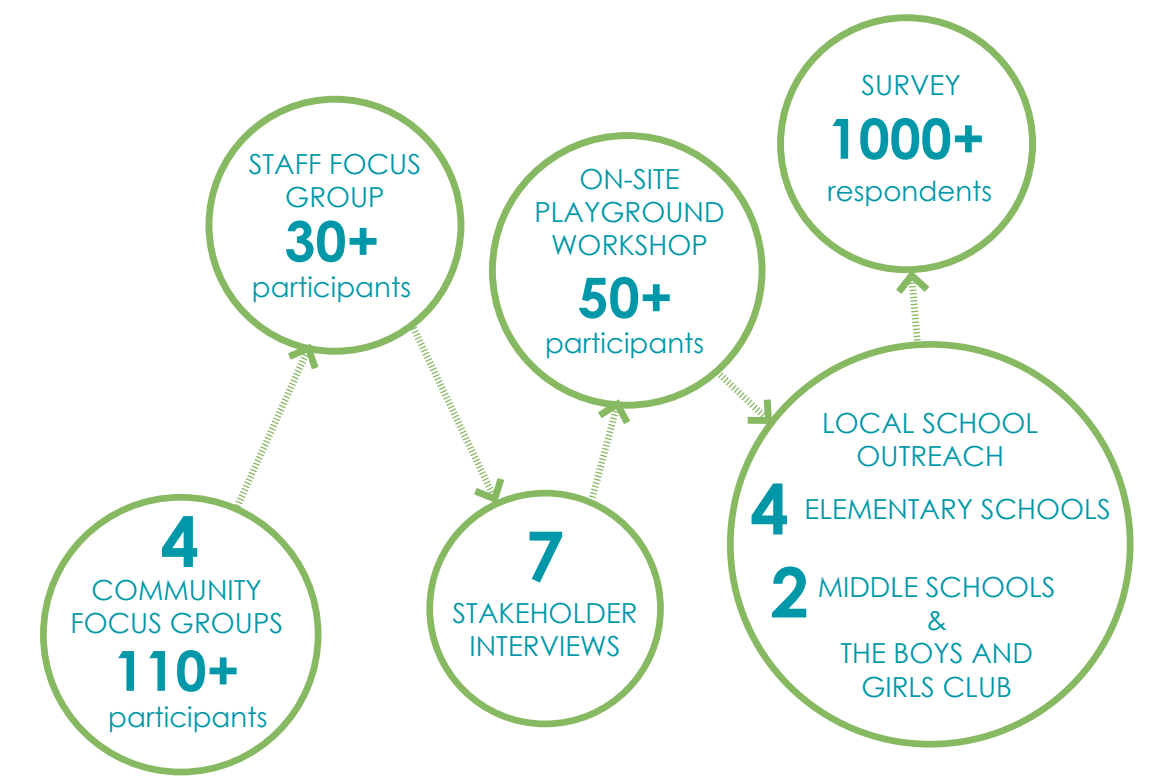
Anticipating interruptions and adapting to a changing climate presents an opportunity to improve the park experience. The Planning Team worked with the city and the community to relocate current ballfields, which are prone to frequent closure due to flooding. Current maintenance costs are diminished by the plan to relocate new amenities above 100-year flood levels. These strategies free up large areas for simple, passive, and flexible systems which are inherently more resilient. Sculpting the topography in select areas along the stream allows for creation of "sponge" areas that temporarily hold floodwaters, reducing peak runoff rates and increasing stormwater infiltration. The proposed use of native plant material further contributes to the overall health of natural communities.

Enjoying nature and walking are the most popular activities at Purcell Park according to planning survey results. Introduction of gravel paths and boardwalks through the proposed "sponge areas" transforms this park into an outdoor classroom for surrounding schools and casual nature lovers alike. Additional trails and missing connections to Blue Stone Trail will allow various Ride and Run groups to complete a five-mile loop within the park.

Extensive and inclusive community outreach during the planning process helped to develop the park program and design solutions that cater to the diverse culture of the city, while improving accessibility for people of all ages and backgrounds.



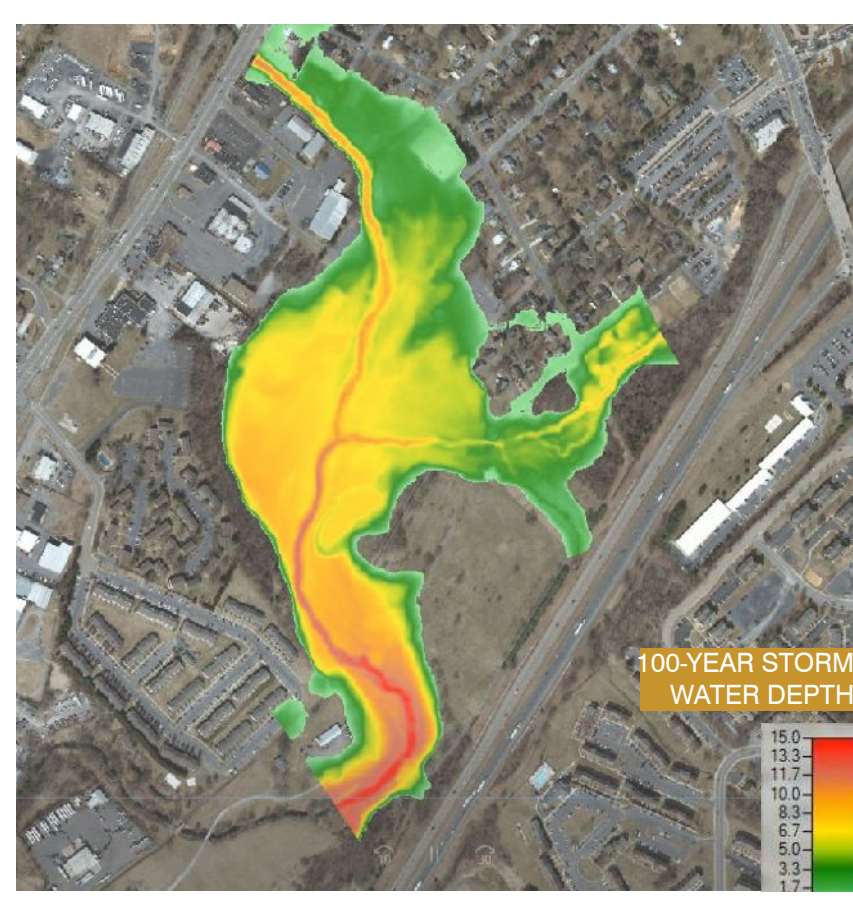
## MASTER PLANNING PROCESS & SITE ANALYSIS



## PUBLIC OUTREACH PROCESS



## STORMWATER/BMP



## PHASE 1 DESIGN FOCUS: PLAYGROUND



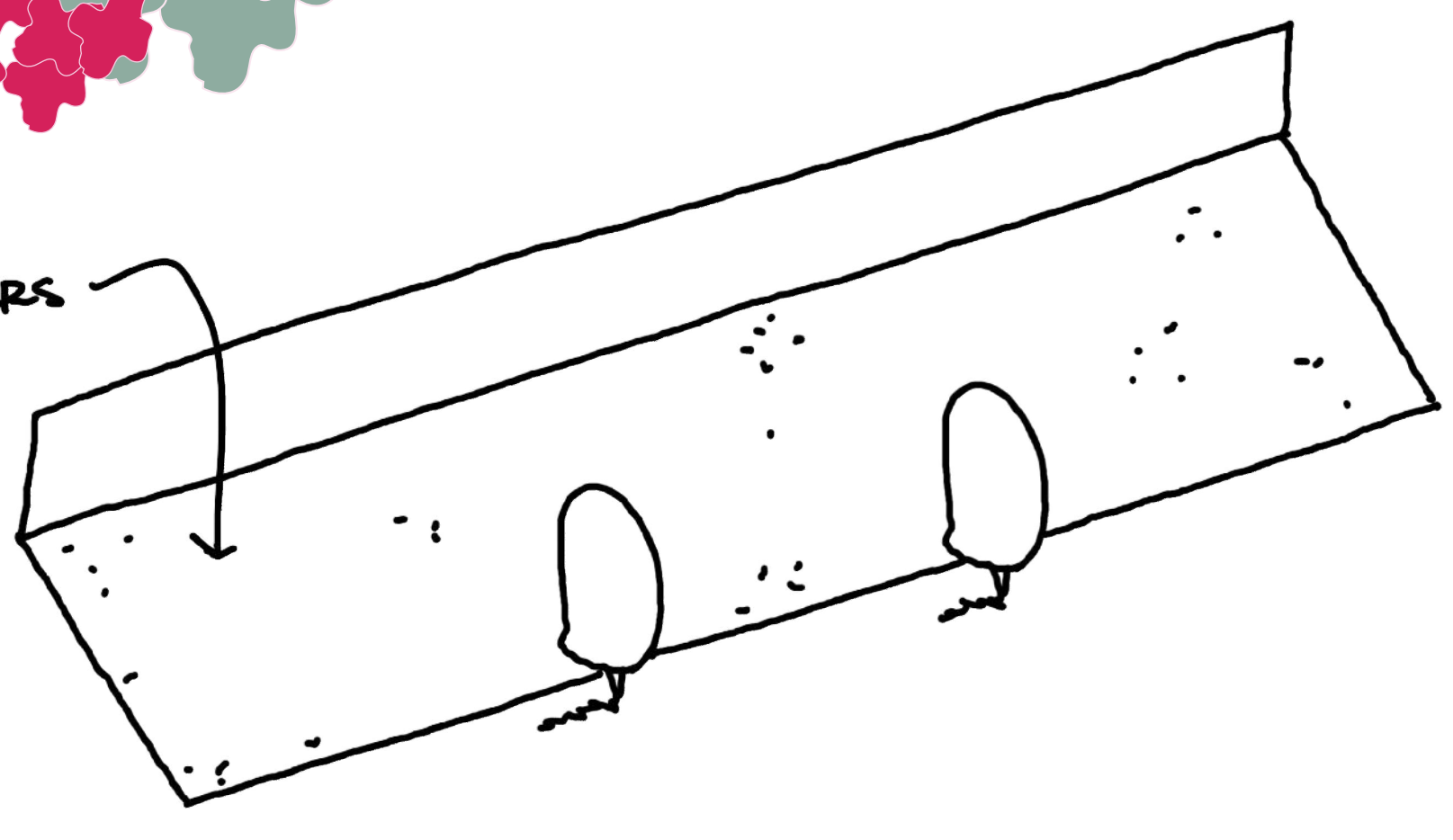
## PHASE 2 DESIGN FOCUS: HILLSIDE + POND



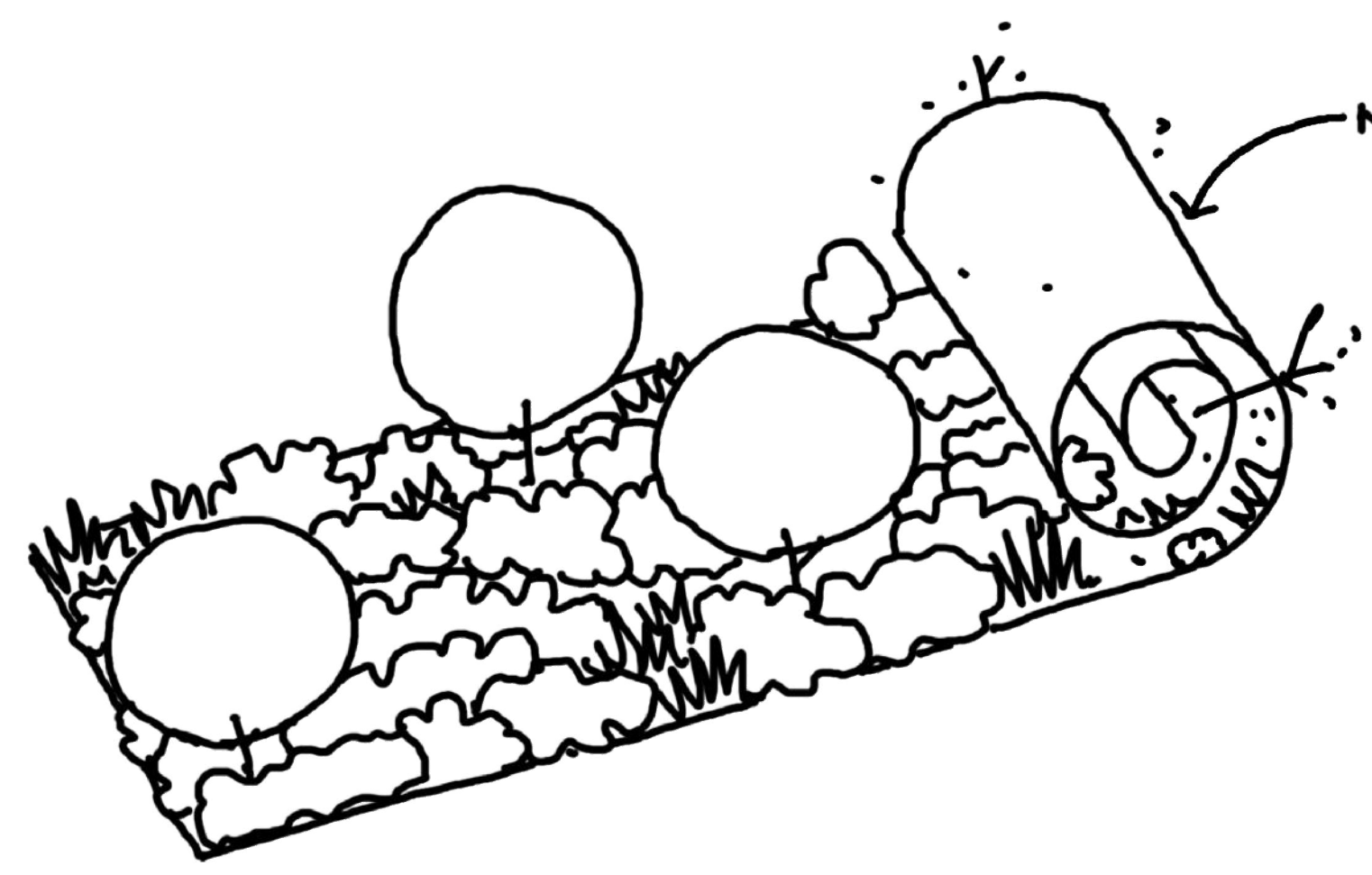
## PHASE 3 DESIGN FOCUS AREA: OPEN SPACE



LEFTOVERS



NATIVE PLANT ROLL



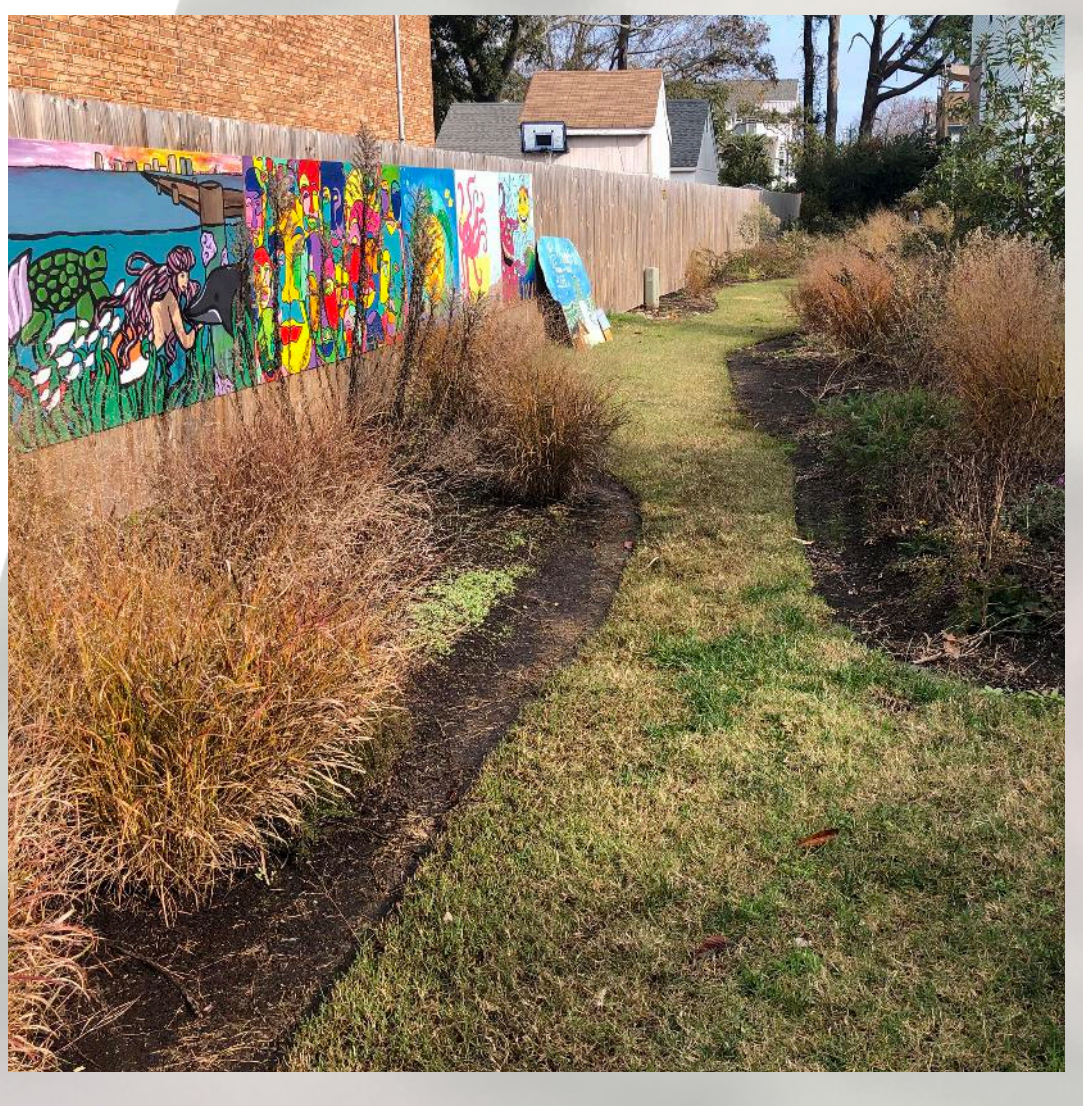
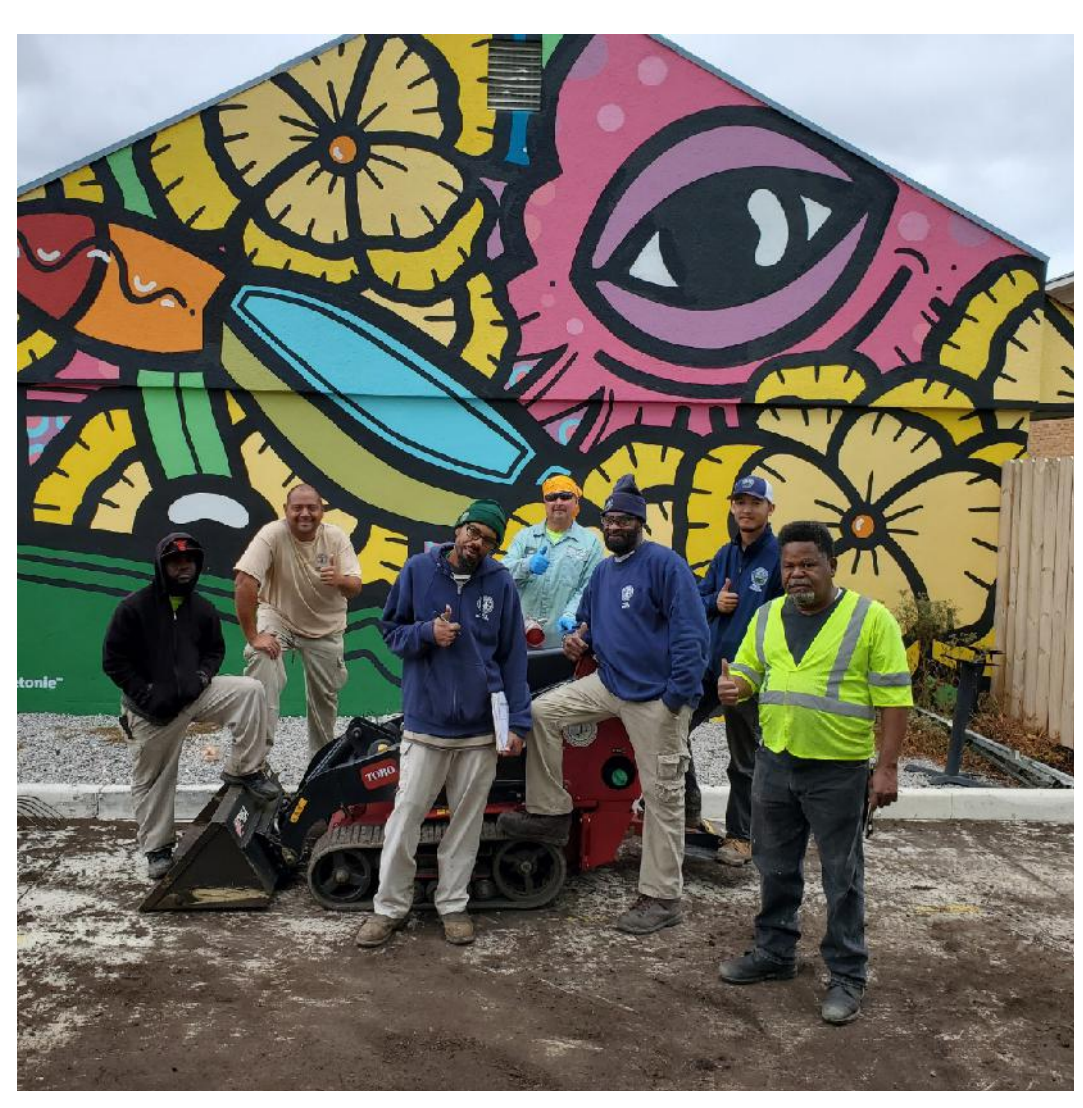
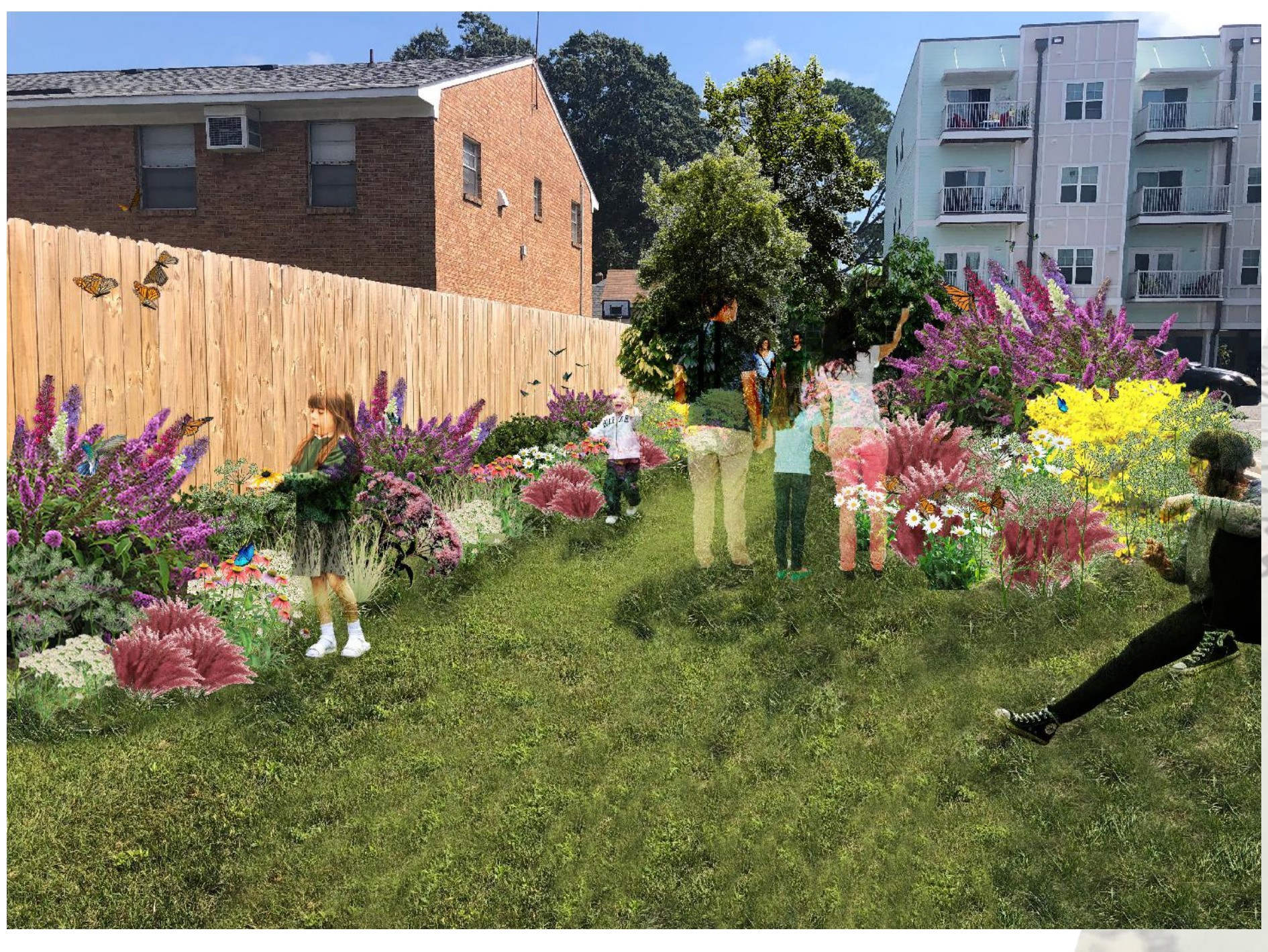
# ViBe Butterfly Garden

Virginia Beach, Virginia

2021 Merit Award for Community Service.

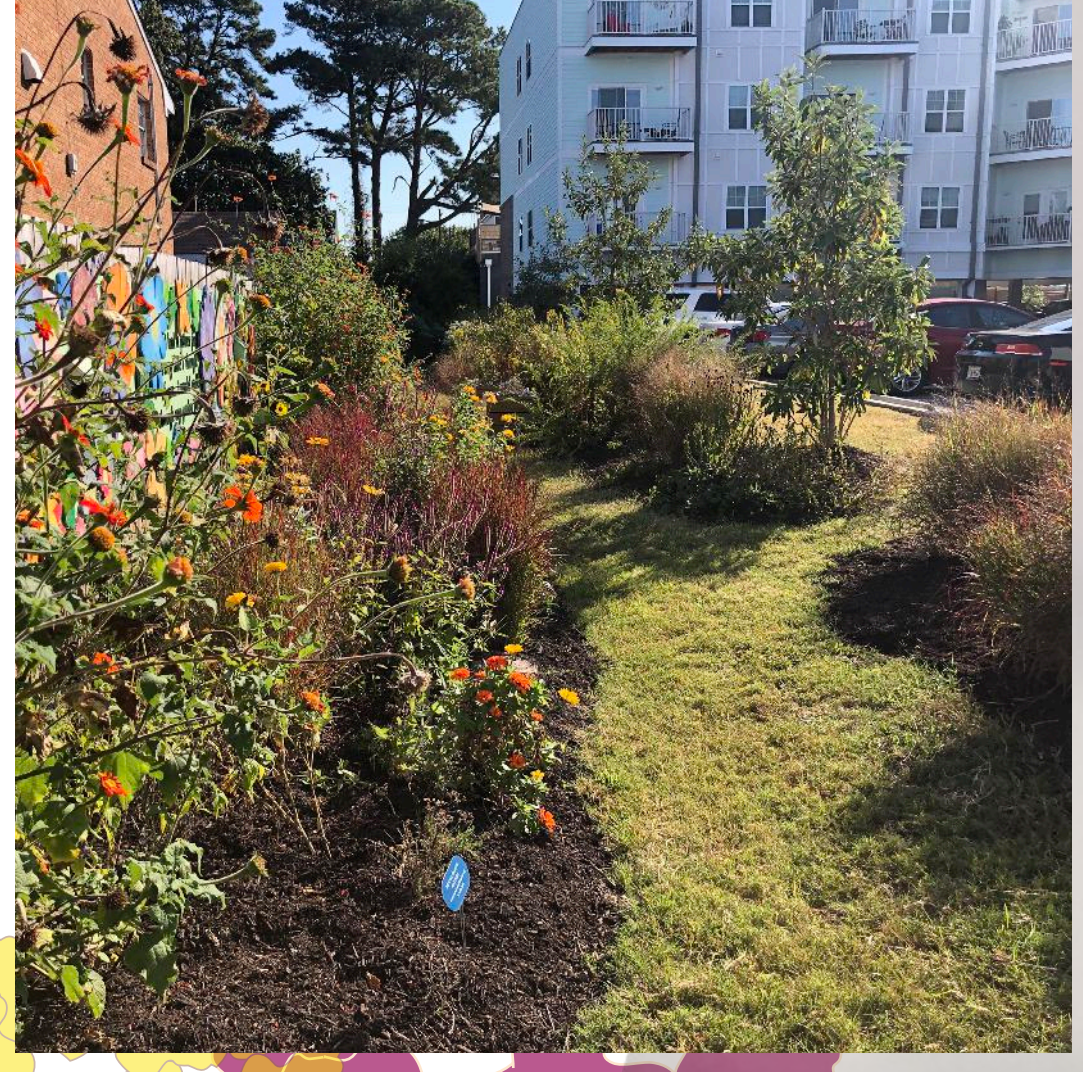
## PROJECT OVERVIEW

The ViBe Butterfly garden is the product of what happens when you merge leftover space with community resilience. This 20' wide, undeveloped alley sat as an unused strip of turf between two apartment buildings in the Virginia Beach Arts district, also known as the ViBe. In 2018, the landscape architect sat with local community members to locate leftover spaces within the arts district, in hopes to incorporate well-designed outdoor spaces. After choosing the site, the landscape architect did research on the types of plants butterflies feed on and designed a meandering space in this unused strip. This leftover space has become a communal place. Many hands have helped this butterfly garden become what it is. Starting with the community members, the inmate crew from the Sheriff department, the children in the school systems, the artists, LynnHaven River Now, the city of VB, the landscape architect and all the volunteers. In choosing this site, we designed a space that flourishes in the spring as a pollinator habitat and contributes to stormwater management but also serves as a remembrance to the hard work and fun the community has put into it. Three years ago, we would not know how much of an impact this butterfly garden would make on the community and how much they would not only be involved, but want to be involved.

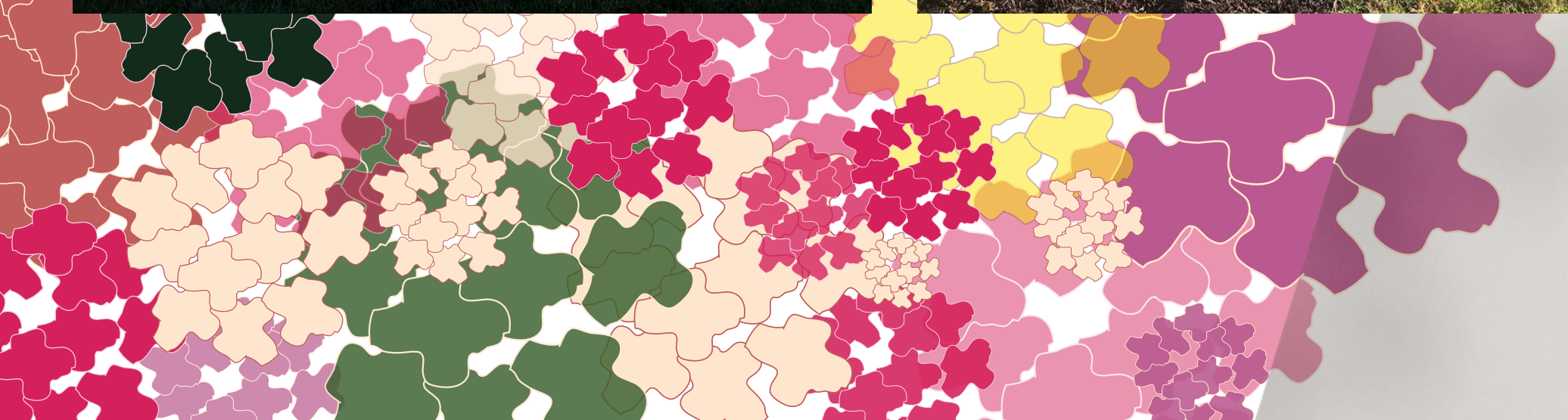


## COMMUNITY ENGAGEMENT WITHIN THE GARDEN

- A portion of the plants were grown from seed by Virginia Beach school children.
- The Virginia Beach Sheriff inmate workforce provided bed prep.
- A girl scout gold project added pollinator houses and educational mural.
- A local non-profit built benches and painted rocks in support of mental health awareness.
- The garden has become a stop on the ViBe District Urban Garden Tour & Scavenger Hunt where you can walk around the art district, looking for native plants.
- Volunteer engagement continues with annual garden clean-ups & plantings.



ORBIS LANDSCAPE ARCHITECTURE - DESIGN AND IMPLEMENTATION.  
 WE WOULD LIKE TO THANK THE FOLLOWING COLLABORATORS...  
 CITY OF VIRGINIA BEACH  
 LYNNHAVEN RIVER NOW  
 THREE SHIPS COFFEE ROASTERS  
 VIBE CREATIVE DISTRICT





VIRGINIA LANDMARK AWARD

# Yorktown Waterfront Revitalization



## PROJECT NARRATIVE

Yorktown's Waterfront has seen centuries of important American history and represents one of Virginia's richest cultural landscapes. The port was a strategic defense in the Revolutionary War and Civil War and was vital for establishing Chesapeake Bay shipping and commerce. By the 1980's, the once busy working waterfront had declined until few remnants of activity remained.

The initial step towards the revitalization of the Yorktown waterfront was implementation of a comprehensive resiliency and shoreline stabilization strategy. This was a critical component in the redevelopment of the waterfront. Primary goals were to provide a series of recreational beaches, protect future improvements from storm events, and minimize flood damage using an innovative breakwater system coupled with beach nourishment and native dune vegetation.

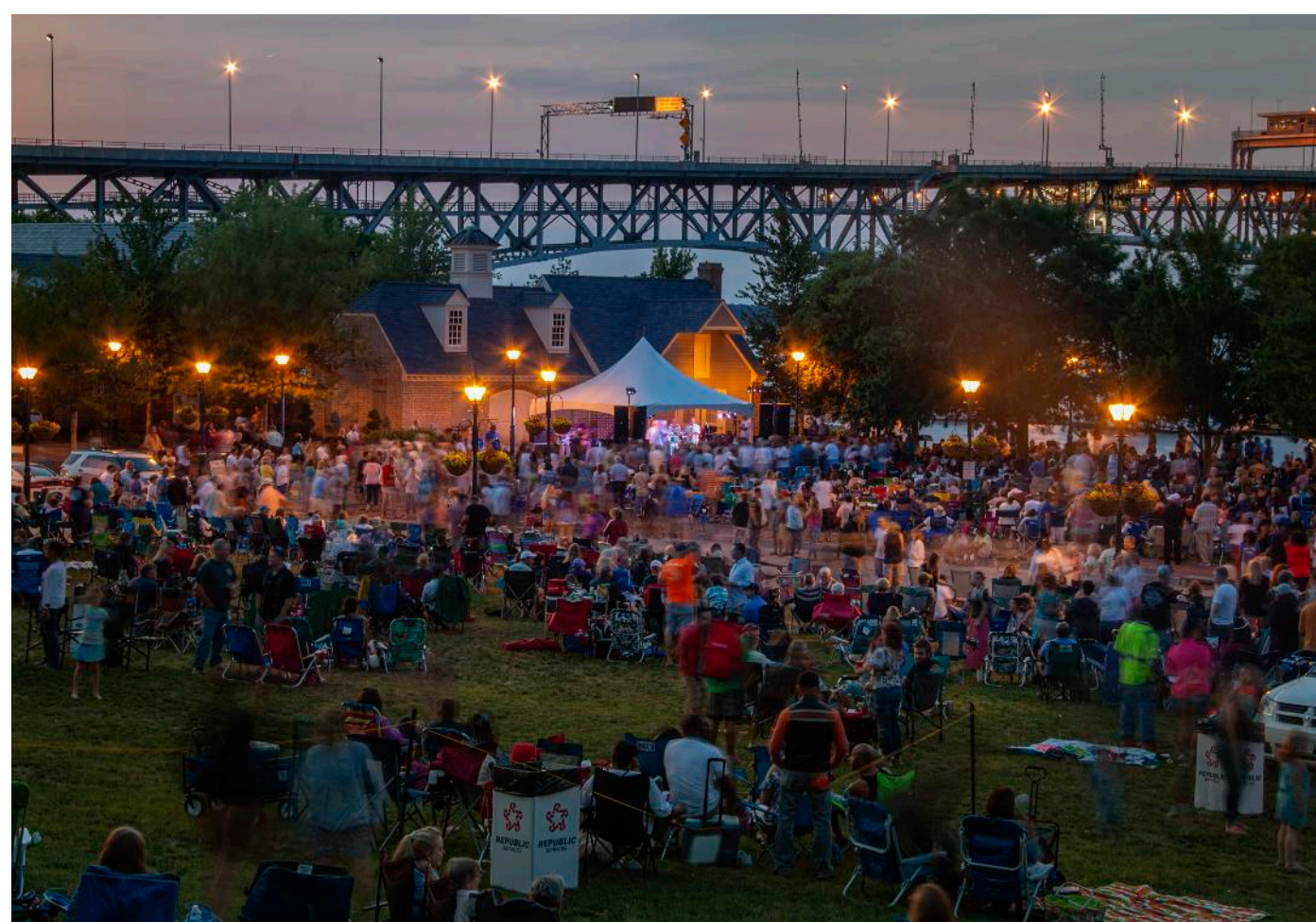
The main pedestrian component of the waterfront was the mile and a half Riverwalk that celebrates the river while connecting the NPS Visitor Center and the American Revolution Museum. Design efforts coordinated with the shoreline stabilization to locate the walkway compatible with the sensitive environment and waterfront exposure. The Riverwalk became the impetus for the revitalization and redevelopment of Yorktown's waterfront allowing for continuous pedestrian access along the river and connecting all the activity nodes including the major focal points of the wharf and Riverwalk Landing.

Today these improvements have transformed the waterfront into a major destination for a diverse population with a series of year-round activities and gatherings, all while proving to remain resilient to major storm events. The waterfront embraces placemaking that celebrates the natural beauty of the river and the site's rich history that links the formal and informal spaces together by the Riverwalk. The County and its collaborative partners have provided access to a waterfront free and open to the public and inclusive for all people to experience.

The design teams included landscape architects, architects, planners, coastal geologists, civil and structural engineers, grant writers, permitting experts and surveyors. Additionally, there was extensive collaboration and assistance from York County staff members along with the National Park Service, citizens, and the riparian landowners. Their guidance and contributions helped provide the design teams a unique understanding and appreciation of the town's history and waterfront. All were required to provide the full range of professional expertise and design services to implement this unique waterfront project.



Waterfront Existing Conditions - 1990's



# EDGEMONT

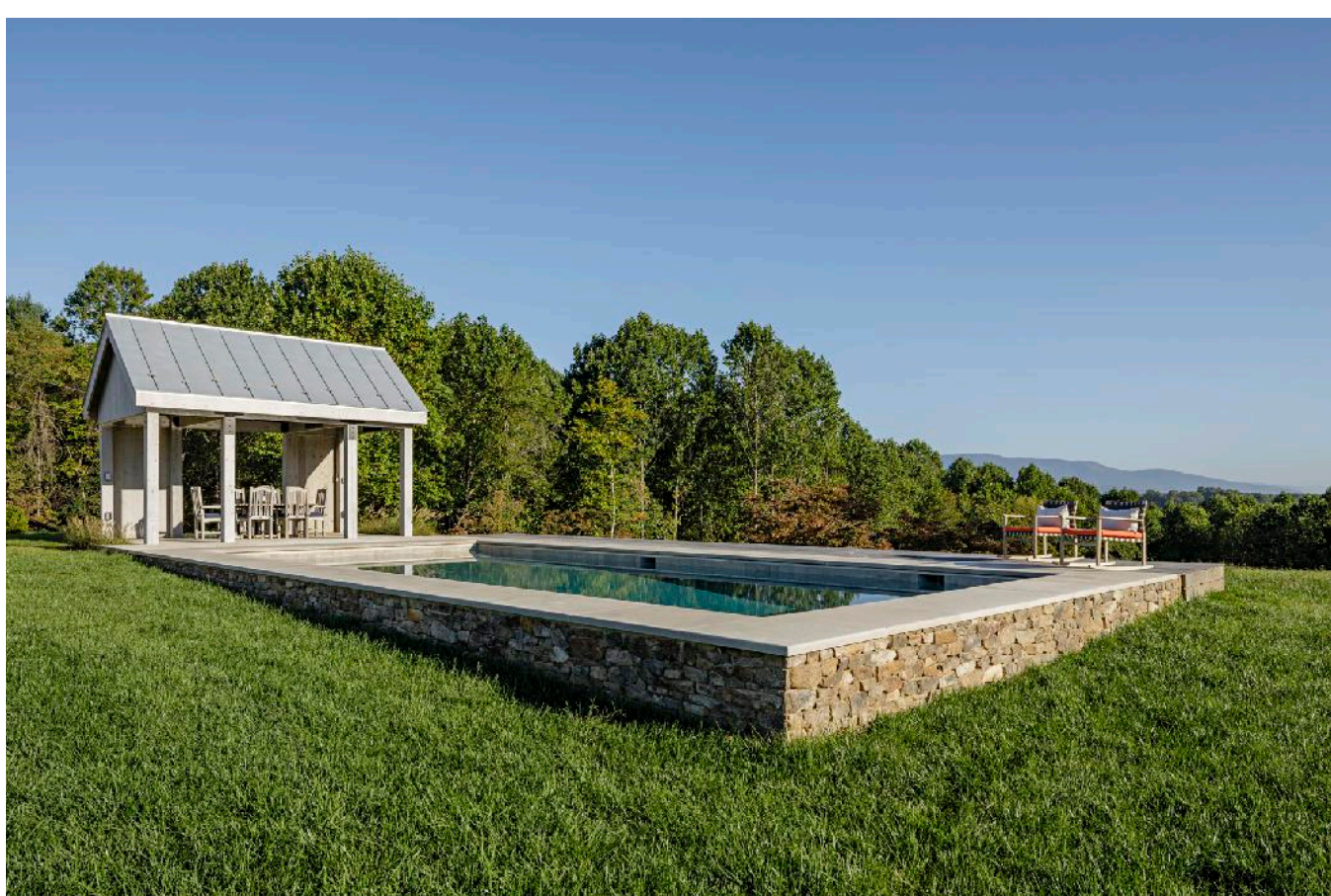
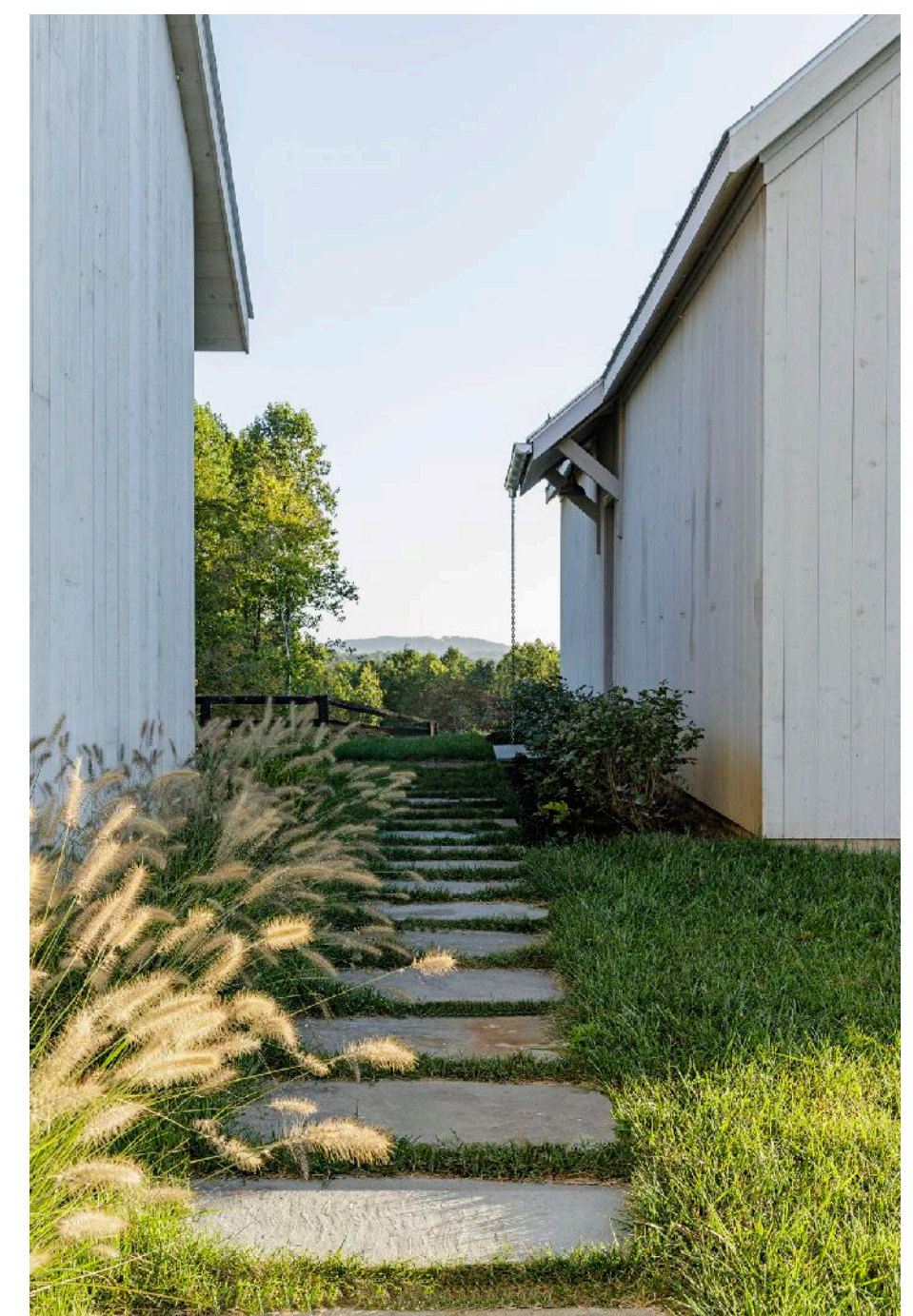
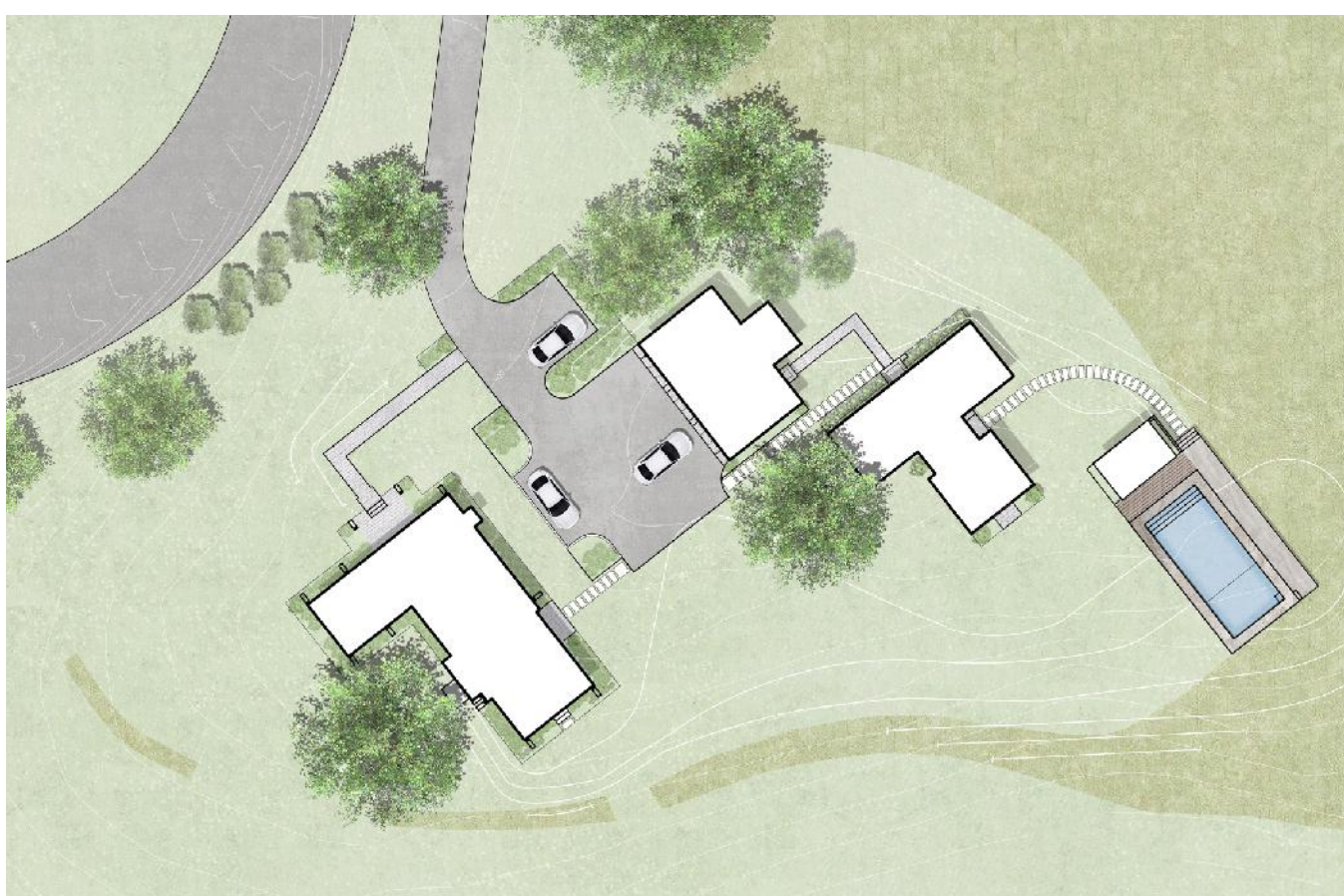
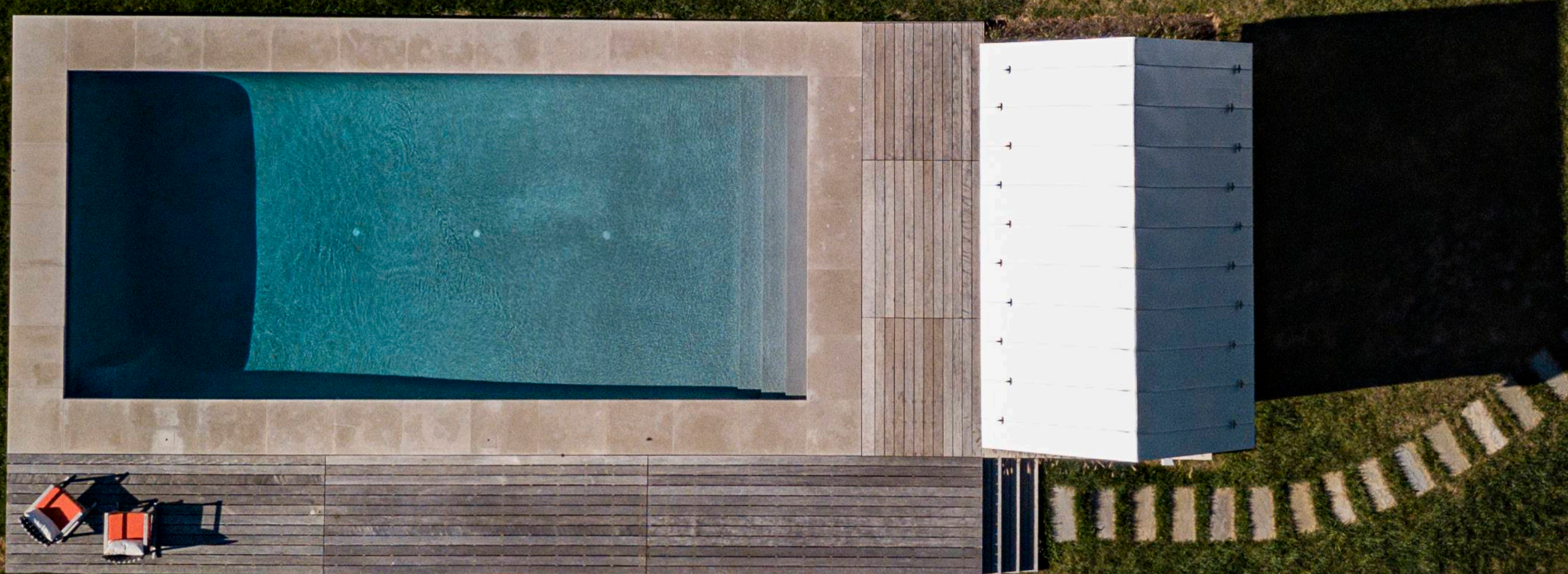
GREENWOOD | ALBEMARLE COUNTY, VA

This 300-acre family farm in the mountains of Virginia has been in the family for forty years and was recently passed to a next generation- the son and his young family. The new stewards began an extensive renovation of the old farm with a mission to expand its facilities to accommodate extended family and to fulfill a responsibility toward the land, plants, and wildlife. The project team worked to blur the edges between young and old, between historic and modern, and between humans and the natural world.

The architect and landscape architect expanded the farmhouse and sited a guest house, new garage, parking, circulation, pool, and pool pavilion. The design team honored the original and historic character of the farmhouse to the front while delineating new structures with a more modern approach further into the site. The new buildings assume the shape and orientation of an auxiliary barn complex. The landscape architect designed a new entry gate, parking, pool pavilion, pool, croquet lawn, fencing, orchard, and planting. The resulting architectural volumes unfold across the hillside and connect previously disparate spaces.

A series of hedge gates transition the site from the classic farmhouse facade to the modern farm buildings complex. Planting and material selections reinforce these shifts from traditional to modern. The front of the house uses vernacular planting with brick paving, the original material on site. At the new additions, however, the planting loosens, using native grassland species to blend planting beds with open pasture and woods beyond.

Stepping through the site reveals dramatic mountain views over a new croquet lawn and pool at the back of the site. The landscape architect sited a pool and pool pavilion to frame the family's favorite mountain view. Conceived as a re-interpretation of an old farm wall, the ground falls away at the pool pavilion to expose a stone elevation. From the historic main house, all one sees is an apparent old stone wall, and the modern pool remains carefully concealed from view.



**ARCHITECT**  
MUSE ARCHITECTS | BETHESDA, MD

**GENERAL CONTRACTOR**  
ACE CONTRACTING, INC | CHARLOTTESVILLE, VA

**LANDSCAPE CONTRACTOR**  
JW TOWNSEND | CHARLOTTESVILLE, VA

**LANDSCAPE ARCHITECT**  
GROUNDED | CHARLOTTESVILLE, VA

**grounded**  
LANDSCAPE ARCHITECTURE & DESIGN

# RIVERBEND

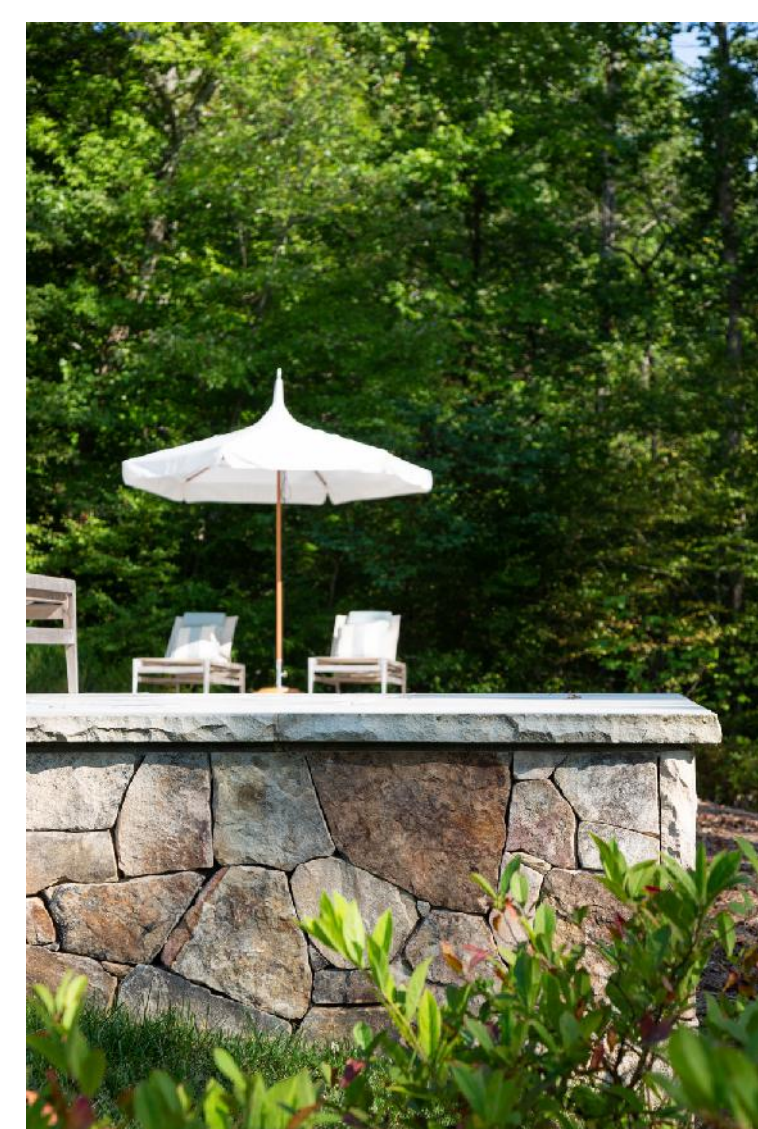
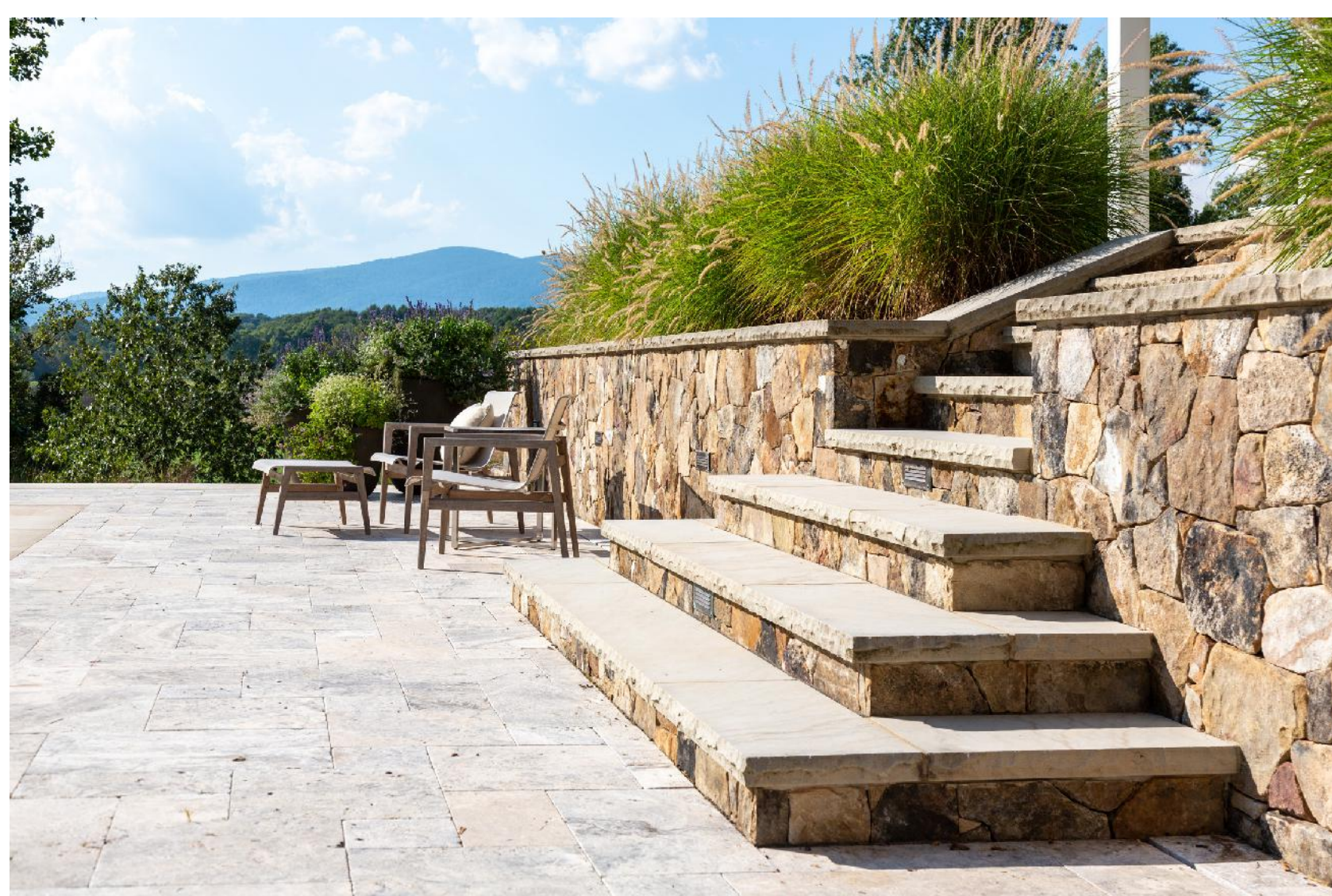
SOUTH RIVER | GREENE COUNTY, VA

This home sits on a 300-acre parcel on the South River at the base of the Blue Ridge Mountains. The owners have spent the past two decades creating varied habitats in the floodplain and fields for hunting, fishing and wildlife forage. The house itself occupies a knoll above a riverbend, the site of their favorite swimming hole. In recent years storm damage and flooding eroded the banks here creating unstable soils that began to denude an extensive lawn leading down from the house to the river's edge. The owners initially engaged the landscape architect to help plant and stabilize the riverbank with riparian plants and to relocate a new family fire pit further uphill and out of the flood zone. The scope quickly grew to include not only the original stability measures but also a new pool, pool terrace, and native understory plantings to soften the transition between pool and river and to help further secure the riverbanks for many more years of enjoyment.

The landscape architect used retaining walls to create spaces that mitigate the steep slopes and to fit usable spaces between them. A new stone retaining wall on the uphill side and a second stone wall retaining the pool edge contain the pool and terrace. Sandstone stairs from an existing lower level of the house now bring circulation more comfortably out to the site.

The new fire pit area uses this same system of upper and lower stone walls, now sited out of the river setbacks and away from flood waters. Built-in sandstone seating tucks into the hillside and the family now looks out over a flagstone terrace sitting atop a low seat wall.

At both the pool and firepit, the landscape architect replaced the eroding lawn slopes with planting beds to hold soil. Drifts of native ferns, fothergilla, rhododendron, carex and river birch hold the riverbank, provide habitat and provide year-round aesthetic enjoyment.



GENERAL & LANDSCAPE CONTRACTOR  
LEE HIGHWAY NURSERY | WARRENTON, VA

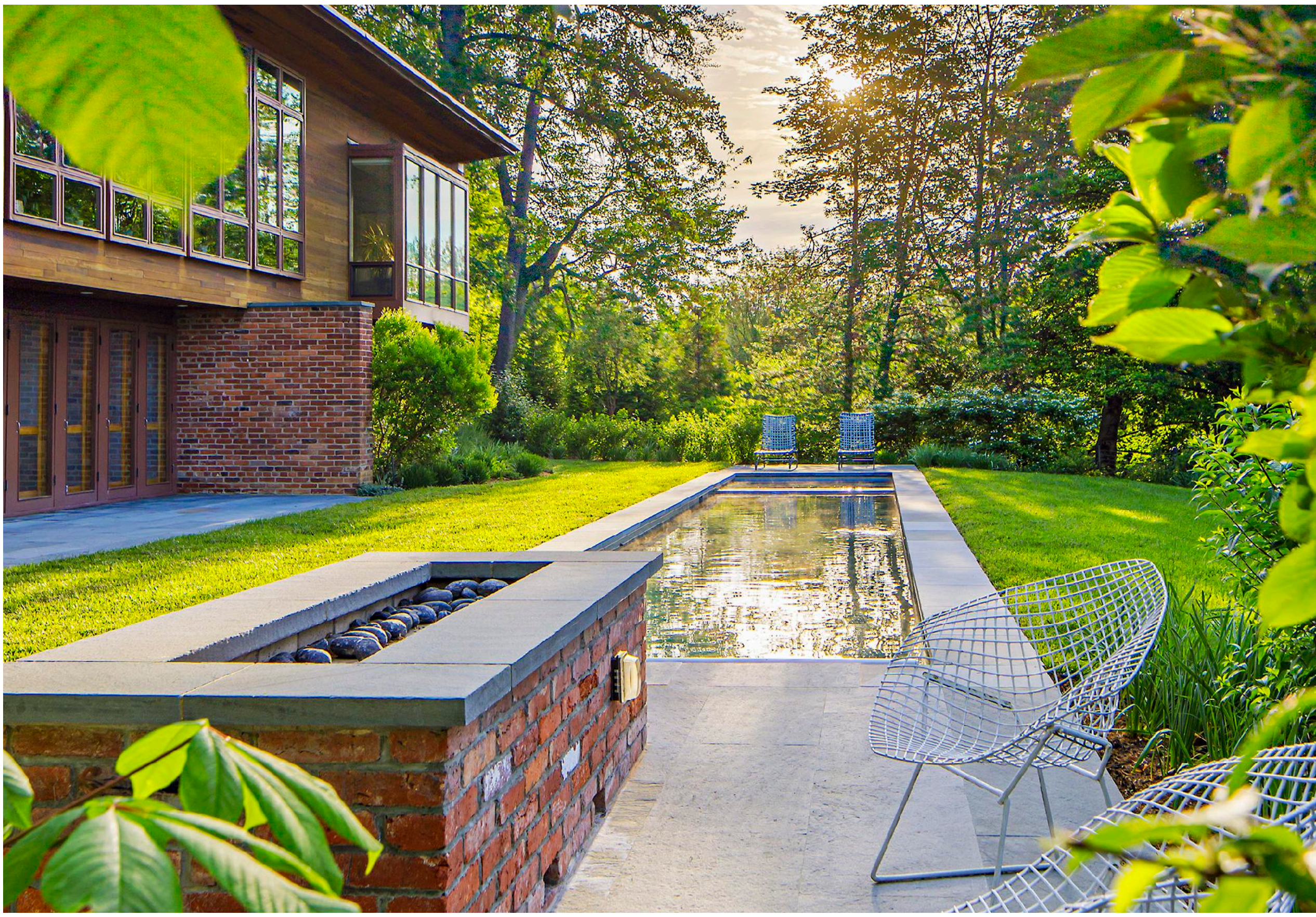
LANDSCAPE ARCHITECT  
GROUNDED | CHARLOTTESVILLE, VA

**grounded**  
LANDSCAPE ARCHITECTURE & DESIGN

# PEGRAM STREET RESIDENCE



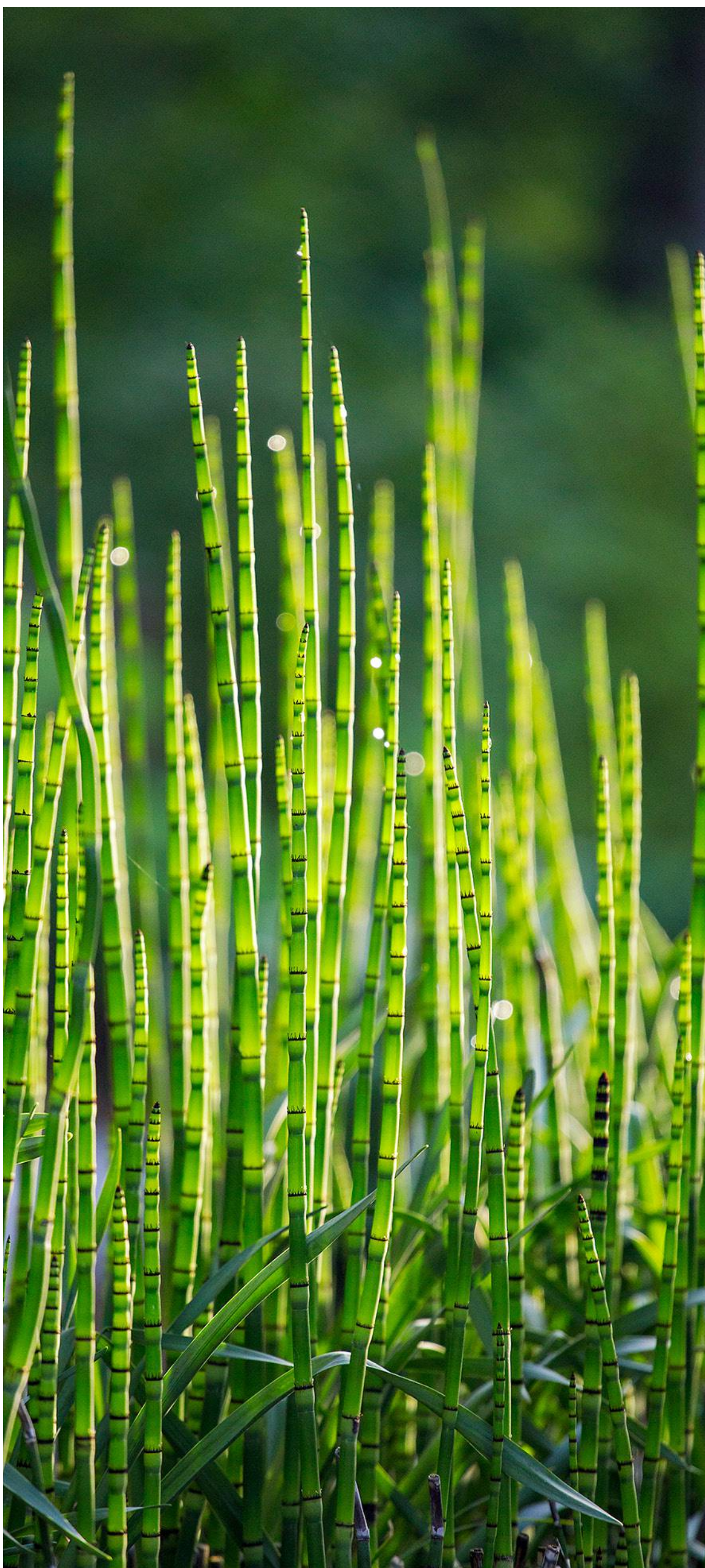
The Pegram Street residence is the site of a Charles Goodman house, first owned by a local journalist and his singer/songwriter wife. Since the '80's, the house had been left in disrepair until a passionate new owner (who also spent a career in journalism) purchased the property, with plans to renovate the existing house, as well as build a garage and guest suite.



The programmatic goals for the landscape were to establish more areas for outdoor living, to establish a pool nearer the residence (the original pool – long abandoned - was at the bottom of the steeply sloped property), create outdoor eating and lounging opportunities and to create a space for a fire element. And perhaps most importantly, the client had plans (which are now in practice) to host summer house concerts, featuring small acts/songwriters, further honoring the house's previous residents.

The rear terrace is regraded to provide a flat lawn expanse and lap pool/spa. An outdoor bar - designed by the architect - makes use of a former utility space.

The aesthetic goals for the landscape were to be faithful to the mid-century aesthetic of the house, while incorporating mostly native plants that were deer resistant and provided year-round bee habitat. Oversized pieces of bluestone mimic the concrete pavers synonymous with mid-century landscapes in warmer climates; masses of ostrich fern and horsetail reed provide lushness to contrast with the otherwise linear site plan.



Landscape Architect: Jennifer Horn  
Architect: Michael Cook  
General Contractor: Perpetual Home Improvement  
Landscape Contractor: Planted Earth Landscaping  
Pool Contractor: Alpine Pools  
Fountain Fabricator: Fountaincraft  
Mason: Serra Stone  
Lighting/Irrigation Contractor: Nature Unlimited

# REDEFINITION

## "STEPWELL"

### PUBLIC SPACE



This project proposed a new *PUBLIC PARK PROTOTYPE* that could be applied at each water collection point. The public park borrows the concept from a traditional *STEPWELL SYSTEM* in India. It combines with bioswales and various plantations to establish an area with a *WATER COLLECTION SYSTEM* and a *PUBLIC GATHERING PLACE* and contains necessary facilities. The water collection pond could be a playground for surrounding residential during the dry season. It also could collect excess surface runoff during the monsoon season, which prevents waterlogging happen along the street. The surrounding filter and purify the plantations will purify the water from the road during the monsoon season and deal with water collected from the surrounding building's roof. The treated water will be stored to irrigate the plants on the site.



# R.E.S.T.

(REACTIVATING ECOLOGY OF SURROUNDING TOPOGRAPHY)

### JAMES MEETS WETLAND

THE NORTHERN MOUTH OF QUARRY FUNCTIONS AS A SPILLWAY TO REGULATE WATER FLOW DURING LOW-LEVEL FLOODS

### MANNING'S RETENTION BASINS

A SERIES OF RETENTION BASINS PLANTED WITH SLOPE STABILIZING SPECIES TO INCREASE THE ROUGHNESS COEFFICIENT FOR SLOWING DOWN THE VELOCITY OF WATER

### HYDRATED QUARRY

SERVES AS A RESERVOIR IN DELAYING THE IMPACT OF FLOODS IN THE CITY

### SOCIO-NEXUS

A CONNECTING GROUND ALLOWING THE INHABITANTS TO CONNECT WITH JAMES RIVER

### CROSS-VANED CORRIDOR

A CHANNEL RUNS ALONG THE WESTERN FLOODPLAIN OF JAMES RIVER WITH CROSS-VANES OF REUSED STONES FROM THE QUARRY

### UNTAMED GARDEN

ALLOWS TO INTERACT WITH THE RESTORED ECOLOGY OF THE QUARRY

### RENEWED ACCESS TO R.E.S.T.

A SHIFT IN CIRCULATION ROUTE

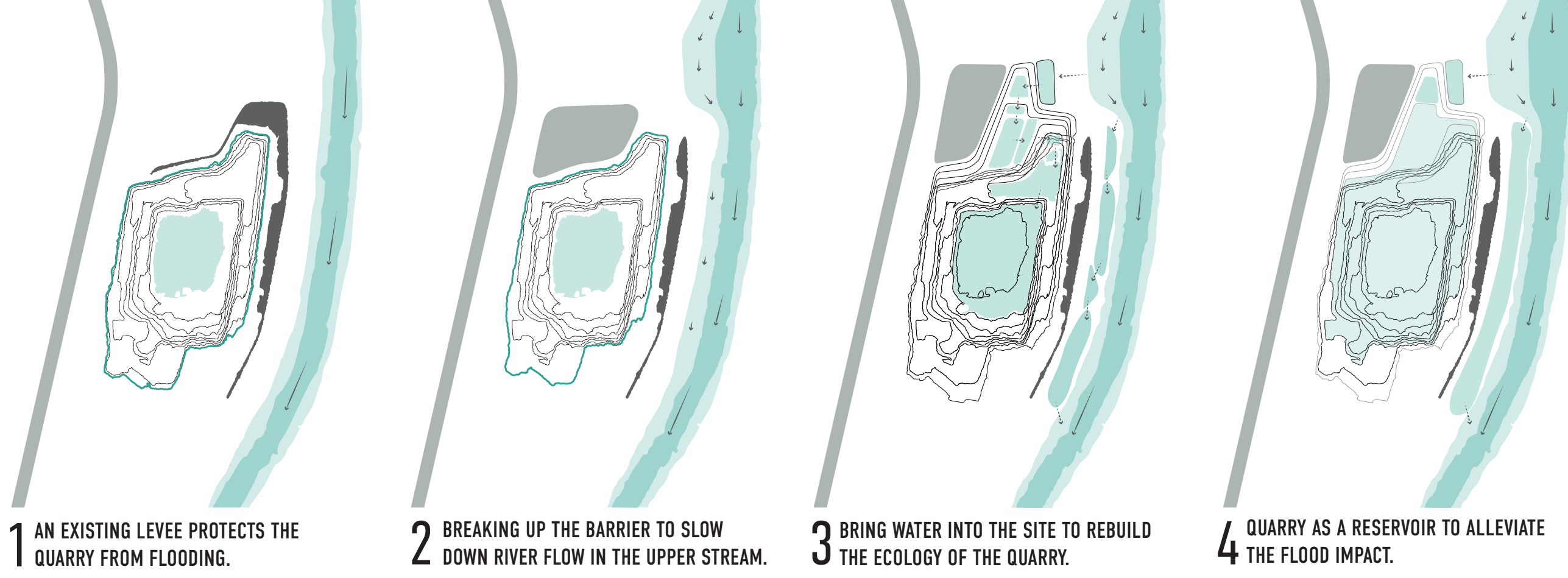
### SHADE-TREET

INTRODUCING STREET TREES (BOXELDER, RED MAPLE ETC.) TO REDUCE THE HEAT ISLAND EFFECT

### COMMUNITY GARDEN

3 ACRES OF LAND FOR INTRODUCING ACCESS TO FRESH FOOD FOR THE COMMUNITY

## DESIGNING QUARRY AS A WORKING LANDSCAPE.



R.E.S.T. INVESTIGATES THE FLUVIAL LANDSCAPE OF JAMES RIVER, RICHMOND, VA AS A MEANS TO REBUILD THE RELATIONSHIP WITH ITS SOCIO-ECOLOGICAL COMMUNITIES. THE SELECTED SITE OF THE TERRACED QUARRY IS SITUATED WITHIN THE FLOODPLAIN THAT WAS ONCE A PART OF THE RIVER AND NOW IS AN ABANDONED, DISCONNECTED LANDSCAPE FROM ITS CONTEXTUAL SETTING. THE PROPOSAL SEEKS TO EXPLORE A NEW VISION FOR THE SITE AS A HYDROLOGIC CONNECTION WITH THE JAMES RIVER. PERCEIVING THIS LAND-WATER TWFOLD, THE DESIGN SEEKS TO SITUATE PAST, PRESENT AND FUTURE BY INTRODUCING QUARRY AS A PALIMPSEST OF OLD MEANDERS OF THE JAMES RIVER.

R.E.S.T. PROPOSES TO TRANSFORM THE MONOLITHIC QUARRY INTO AN EVOLVING TERRAIN THAT INVITES ENGAGEMENT FOR ITS ADJACENT LIFE FORMS AND NATURAL CYCLES OF THE JAMES RIVER. TO ALLEVIATE THE FLOOD IMPACT DURING LOW-LEVEL FLUCTUATIONS (10-YEAR AND 50-YEAR FLOODS, IN PARTICULAR), THE PROPOSAL INTRODUCES WETLAND AS A NATURAL SPILLWAY TO THE NORTH OF THE QUARRY FOR REGULATING THE FLOW RATE OF WATER WITHIN THE FLOODPLAIN. ITS MOVEMENT IS ORCHESTRATED THROUGH A SERIES OF RETENTION POOLS OVERLOOKING THE QUARRY BED. THEY SERVE AS DUAL-PURPOSE BASINS FUNCTIONING AS FILTER MEDIA TO CATCH THE SEDIMENTS FROM THE STORMWATER RUNOFF AND EXTEND THE TRAVEL TIME OF INFUX AT ONCE. THIS PATTERN OF SEQUENTIAL CIRCULATION ALSO EXPERIENCES A MOVEMENT THROUGH A SPECTRUM OF TEXTURES, ACTIVATING THE VIBRANT ECOLOGY OF THE QUARRY AND REPURPOSING ITS AESTHETICS FOR A RENEWED PERSPECTIVE TOWARDS THE FLUVIAL LANDSCAPE OF JAMES RIVER.



**UNTAMED GARDEN.**  
REVIVING THE NATURAL ECOLOGY OF THE QUARRY TO ENHANCE ITS RELATIONSHIP WITH THE NEIGHBORING INHABITANTS.



**MANNING'S RETENTION BASINS.**  
REGULATING THE WATER FLOW TO DIVERSIFY AND STRENGTHEN QUARRY'S ECOLOGY WITH ITS INHABITANTS.



**CROSS-VANED CORRIDOR.**  
WORKING AS A MEDIUM TO ALLEVIATE FLOOD IMPACT AND CELEBRATE AN ACTIVE INTERACTION OF PUBLICS WITH THE RIVER AND ITS ECOLOGY.



# WATER PLAYGROUND

## -Richmond Pocket Quarry Refreshment Wonderland for river, land, and people.

Richmond, Virginia, US

Richmond is a city with a long history of segregation and it's a racialized landscape. Most of the displacement areas were undesirable with the issue of flooding, poor streets and poor transportation. And the problems including drought, floods, erosion, increases in salinity, and nitrogen are part of the concern of the James River at Richmond.

The site - Pocket Quarry is one of the places involved with all the issues mentioned above. The large quarry was once a part of the river, and is near one of the public housing - the Hillside Court. More than half of residents there are 17 and younger, with insufficient space to imagine, create, learn and even see nature around.

The design strategy is to repair the quarry and make it a new interpretive center for nearby communities and a hydrological connection to the community and James River. It has the ability to be a playground both for water and people. To make it a water playground, the objectives here include flood control, quarry repair and community involvement.

For flood control, the strategy is to build berm landforms at the edge of quarry to encounter 2-year, 10-year and 25-year flood events, as well as using natural force - the prevailing wind to distribute the dredging material from James River to create a barrier for flood and a linear playground with changing mounds.

For quarry repair, it's a process of time when plants conquer the site to break the big rock, to seed the ground, to grow up into different species in 5 years, 10 years, 20 years, from grass to shrub, to tree. Plants can also purify the water from both James River and community and they can be gathered at the bottom of the quarry to make waterfalls, diving, public pools and flood water storage to create long term spaces for public imagination and public resources.

For community involvement, when the quarry is under repair and after repair, during normal time and different flood events, it could be a different "playground". The process of phytoremediation could be a chance to deliver jobs for the local community since there will be much maintenance needed. After repair, the earth in the quarry will be good enough for planting big trees, flowery and fruitful shrubs, communities could harvest the food and celebrate the landscape together.

### RICHMOND IN THE HISTORY

**Richmond river system**

**1861** A new and ongoing streamfield redevelopment which prioritizes the waterfront, shielding it from the Fulton Hill neighborhood.

**1922**

**1940s**

**1952** Public housing - Mosby Court

**1962** The James River Drought, floods, erosion, increases in salinity, nitrogen and e-col.

**1970s** Reversible land leased for industrial use

**1972** Protest: Water quality issues have made headlines across the country this past year.

**Material from Pocket Quarry**

### RICHMOND CITY CONTEXT

### POCKET QUARRY CONTEXT

### CONCEPT COLLAGE

**FLOOD**

**QUARRY**

**COMMUNITY**

### PLAN & ACTIVITIES

**FLOOD**

Berm barrier to block flood.

Dredging material in profile as long line of earth.

**PHYTOREMEDIATION**

Phytoremediation in the quarry for water and soil.

Phytoremediation in the quarry for water and soil.

Phytoremediation in the quarry for water and soil.

Phytoremediation in the quarry for water and soil.

### KEY EXPERIENCES IN SITE

Waterfront planting

Make use of rock

Phytoremediation planting

Herbaceous planting

Maintenance

Seating experience

Section 1-1

Section 2-2

Section 3-3

Section 4-4

### PHYTOREMEDIATION-QUARRY REPAIR AND COMMUNITY INVOLVEMENT

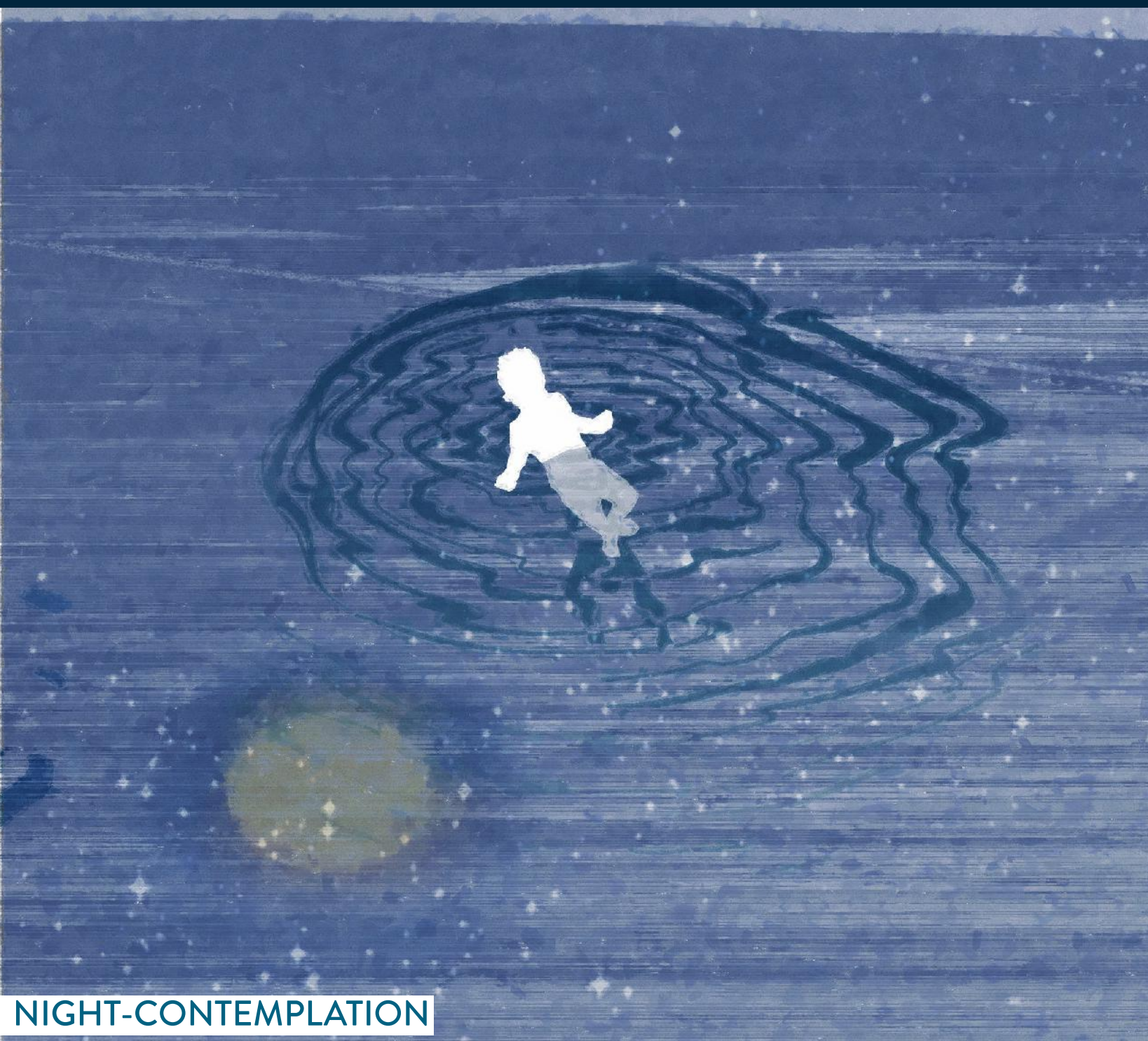
### HYDROLOGICAL CONNECTION

### COMMUNITY GARDEN

### FLOOD CONTROL - EDGE LANDFORM

### WATER PLAYGROUND

### WATER PLAYGROUND



DAY-PLAY NIGHT-CONTEMPLATION

With decks in different heights, people, especially the young, could dive or swim in the central pool inside the quarry based on water level which could be sensed in different flood events and normal time to tell whether it's safe to dive or swim. And the big remains of the quarry is also a wonder land for people to observe the history of rock, to walk up and down, to stop and contemplate. By providing space for water as well as communities, the quarry is a playground beyond for human.

As a studio project, I (Keren Shi) experienced and explored the potential of the site, and listened to the voice of not only people but also the water, the land, the air, etc. With the help of my instructor Alexa Bush, I can keep the design evolving. From sketch, draft, model to rendering, all is done by me with passion and good wish.



1 Workshop



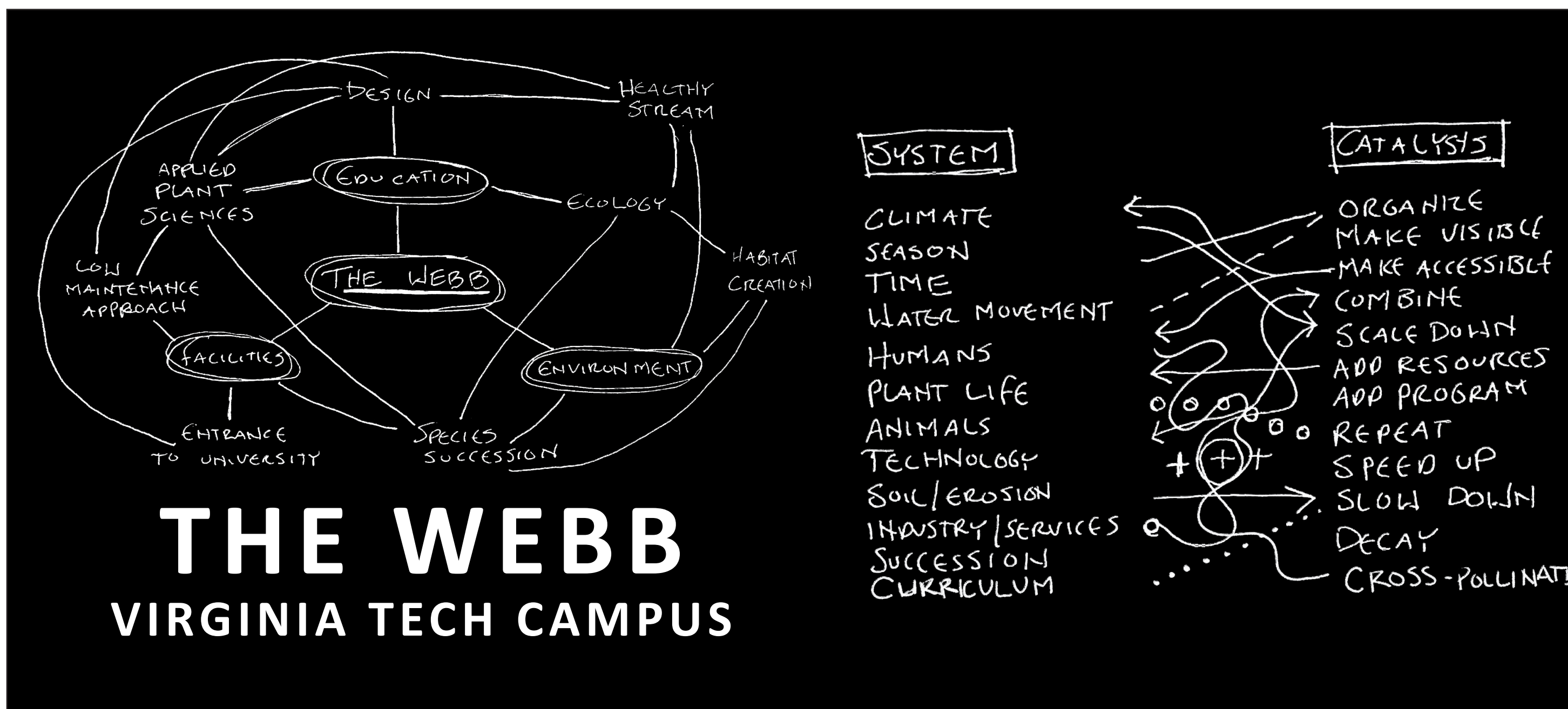
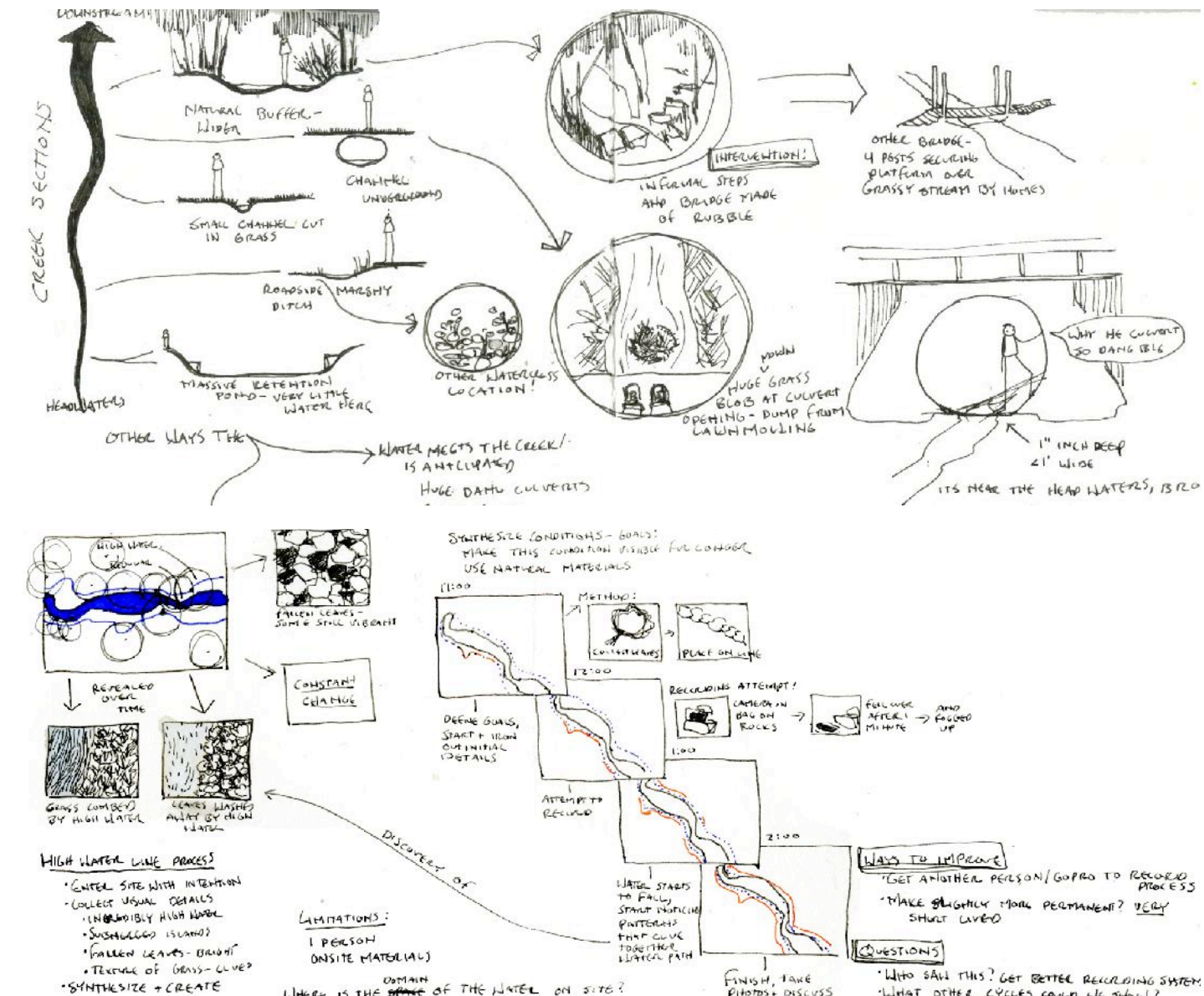
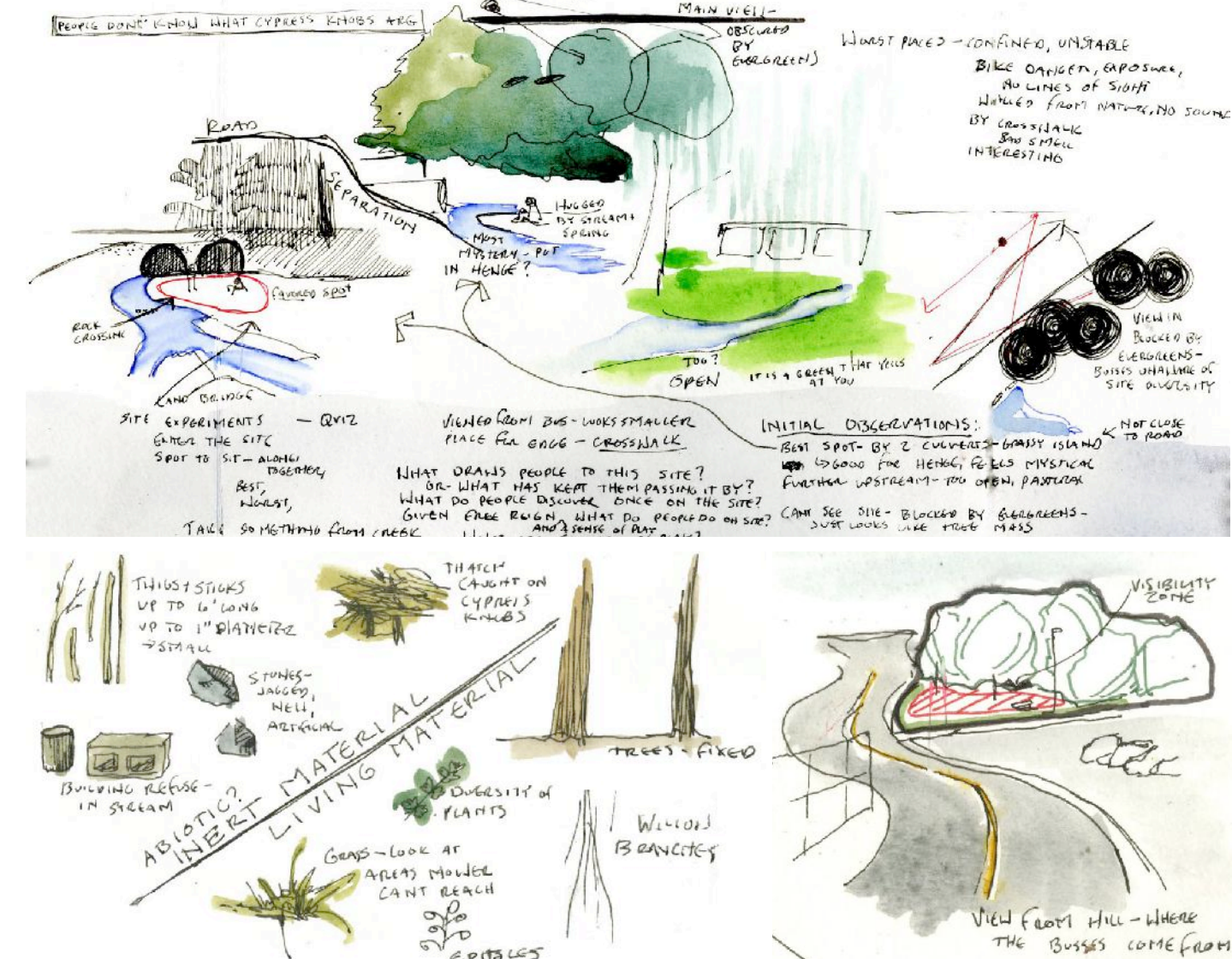
2 Keeping Record



3 Intervention - Make Visible



4 Intervention - Signal and Decay



A central focus of this study was the idea that physical interventions on a site can be used as a way to experiment, iterate, and get real data on how a site functions, as opposed to limiting design action to the confines of one finalized plan. To study this, I found a park next to the landscape architecture studio on the fringes of campus that could become a workshop for this endeavor, fitted out with a small perennial stream (Webb Branch of Stroubles Creek) emerging for its last gasp of air before it is tunneled for about a mile across campus, a mature grove of trees, a spring with a vibrant patch of watercress, some incredibly sturdy picnic tables, a duo of roaming ducks, and many other small details collected over the course of a year.

I made an intervention of some kind at least once a month throughout this project, and I varied my focus and technique I used as a way to test out different methods of analysis: from Lawrence Halprin style workshops, to building small sculptures and letting them decay, to long rambling expeditions through back lots to glimpse the stream before it reaches the site. I also got to talk with a great many people through these interventions, from grounds workers to survey students to the campus landscape architect and a variety of professors, and seeing the site through their individual expertise came to be one of the most important catalysts for interventions. Even in a small, relatively forgotten site, there is such a rich amount of potential to be found through simply being on the ground.

In the end the most significant thing this exploration did was lighten the design process: when multiple interventions are on the table, it allows them to be small, to fail, to be something that is learned from rather than perfectly performed and executed. It also gives new significance and dynamism to the process of design, turning it into an ongoing conversation with the site and everything that passes through it. I look forward to continuing this conversation through many more projects and studies.

# traces in the delta

resurfacing narratives of the river and blues  
yazoo mississippi delta

## on resurfacing + memory

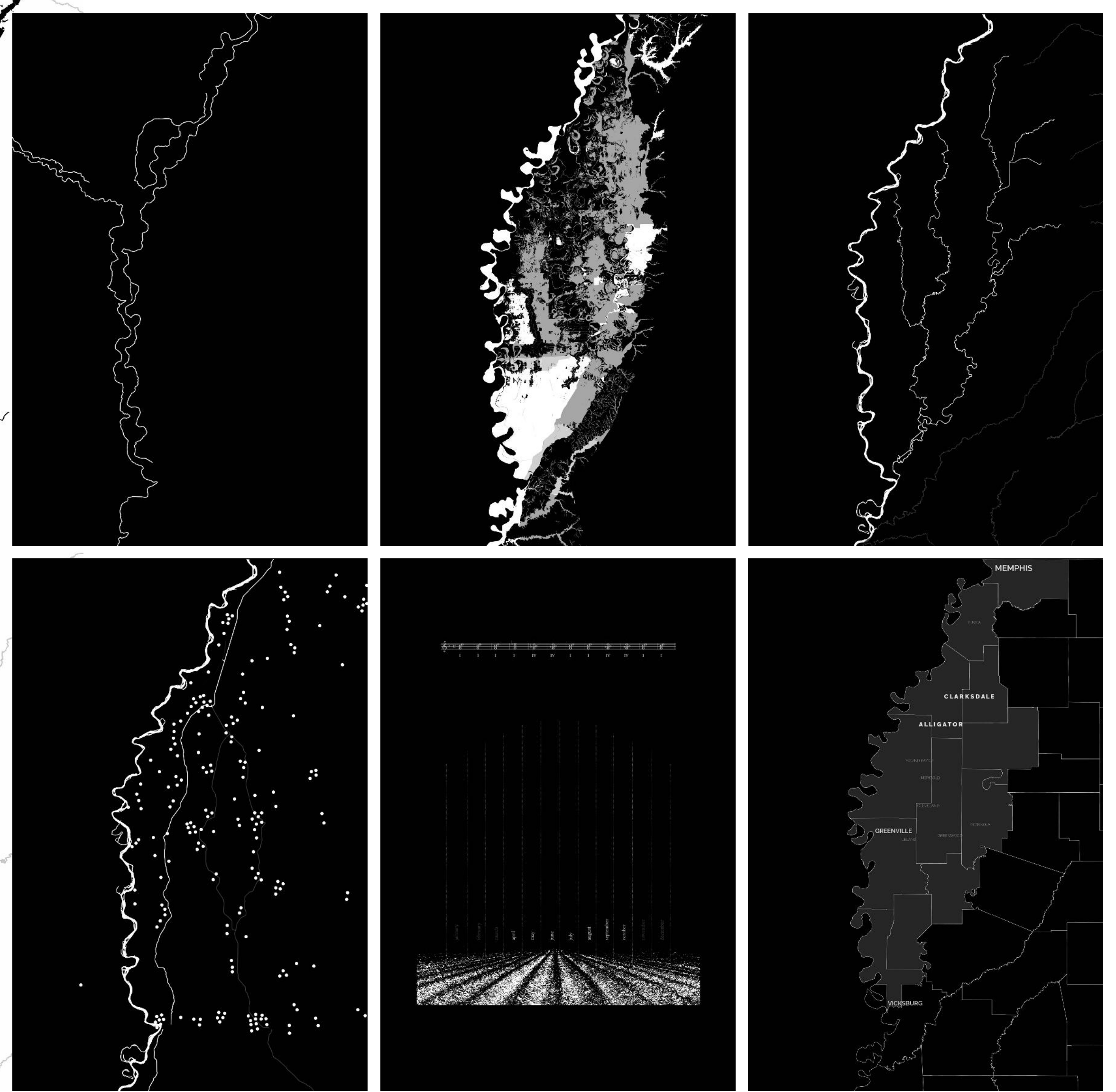
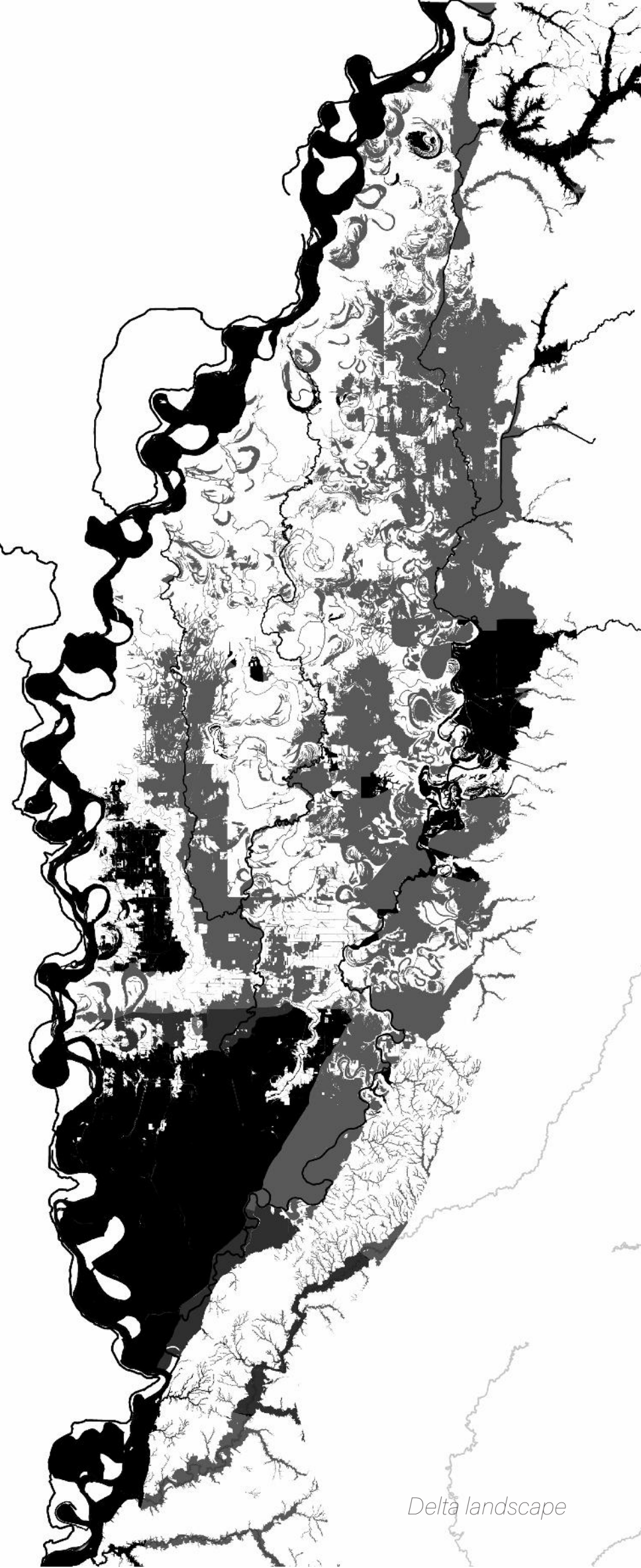
"You know, they straightened out the Mississippi River in places, to make room for houses and livable acreage. Occasionally the river floods these places. **"Floods" is the word they use, but in fact it is not flooding; it is remembering. Remembering where it used to be. All water has a perfect memory and is forever trying to get back to where it was.** Writers are like that: remembering where we were, that valley we ran through, what the banks were like, the light that was there and the route back to our original place. It is emotional memory—what the nerves and the skin remember as well as how it appeared. And a rush of imagination is our "flooding."

- Toni Morrison, Site of Memory

resurface  
verb re • sur • face

1. To come to the surface again. (Oxford English Dictionary)
2. To arise or become evident again. (Cambridge Dictionary)

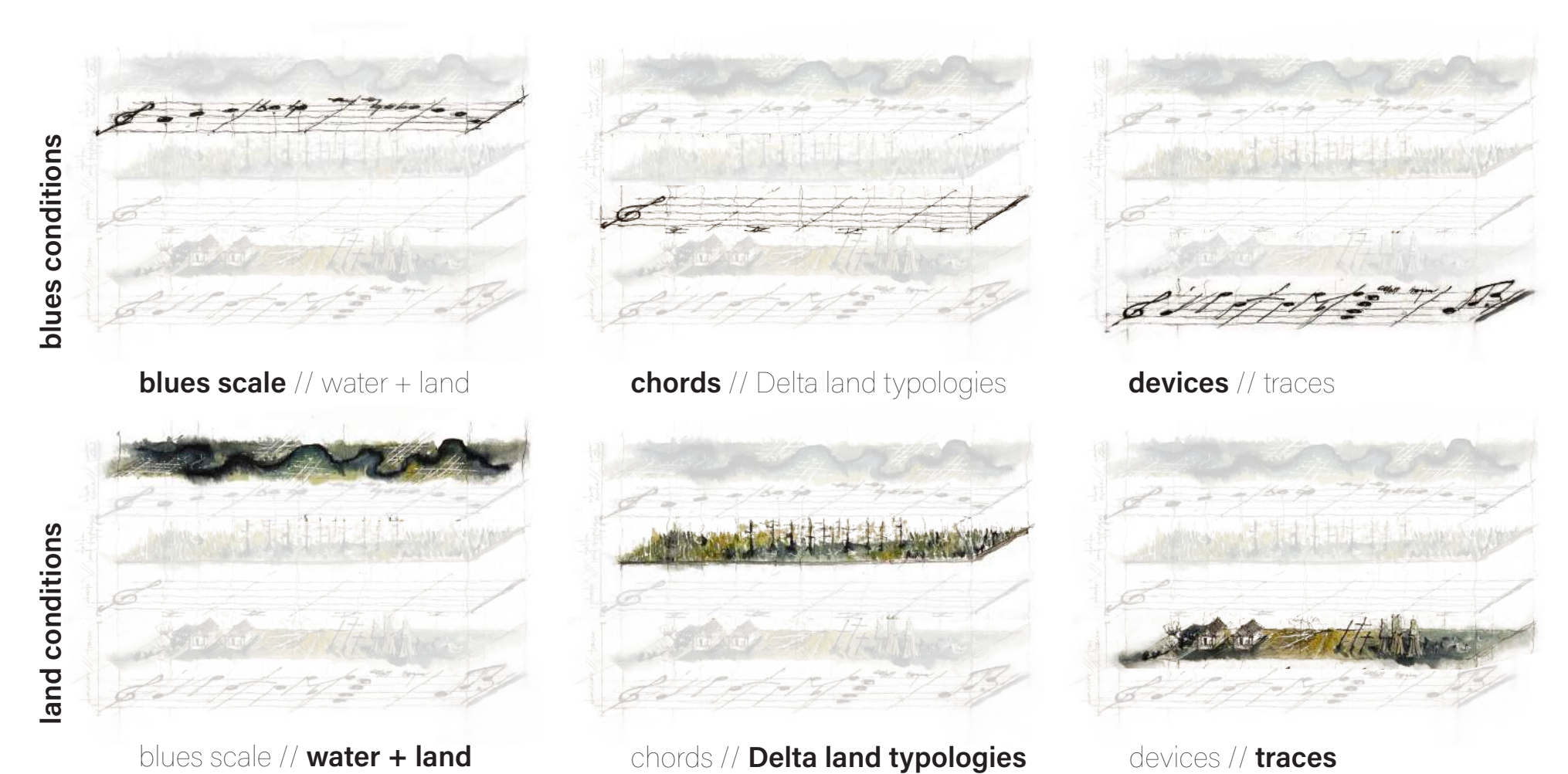
Traces in the Delta is centered in the Mississippi Delta and investigates the intersections of the Mississippi River landscape and the Blues both as culture and form as they exist within the Delta. The blues, both as a music and as a culture, opens the door to new readings of this landscape. Just as landscape is a medium for us as designers, the blues is a medium for musicians and the people of the Delta. Through thoughtful methods of understanding place, this work resurfaces parallels of the blues and delta landscape and sets a precedent for valuing cultural landscapes through different mediums. By providing two interpretations of how landscape architecture, which is deeply rooted in creative methods and a deep understanding of culture and community, my proposals advance how intentional design can articulate the parallels of blues and landscape forms. This work shows the breadth and depth of the blues as well as the delta landscape, and offers a framework to understand the constellation of history, culture, and landscape in this Delta context.



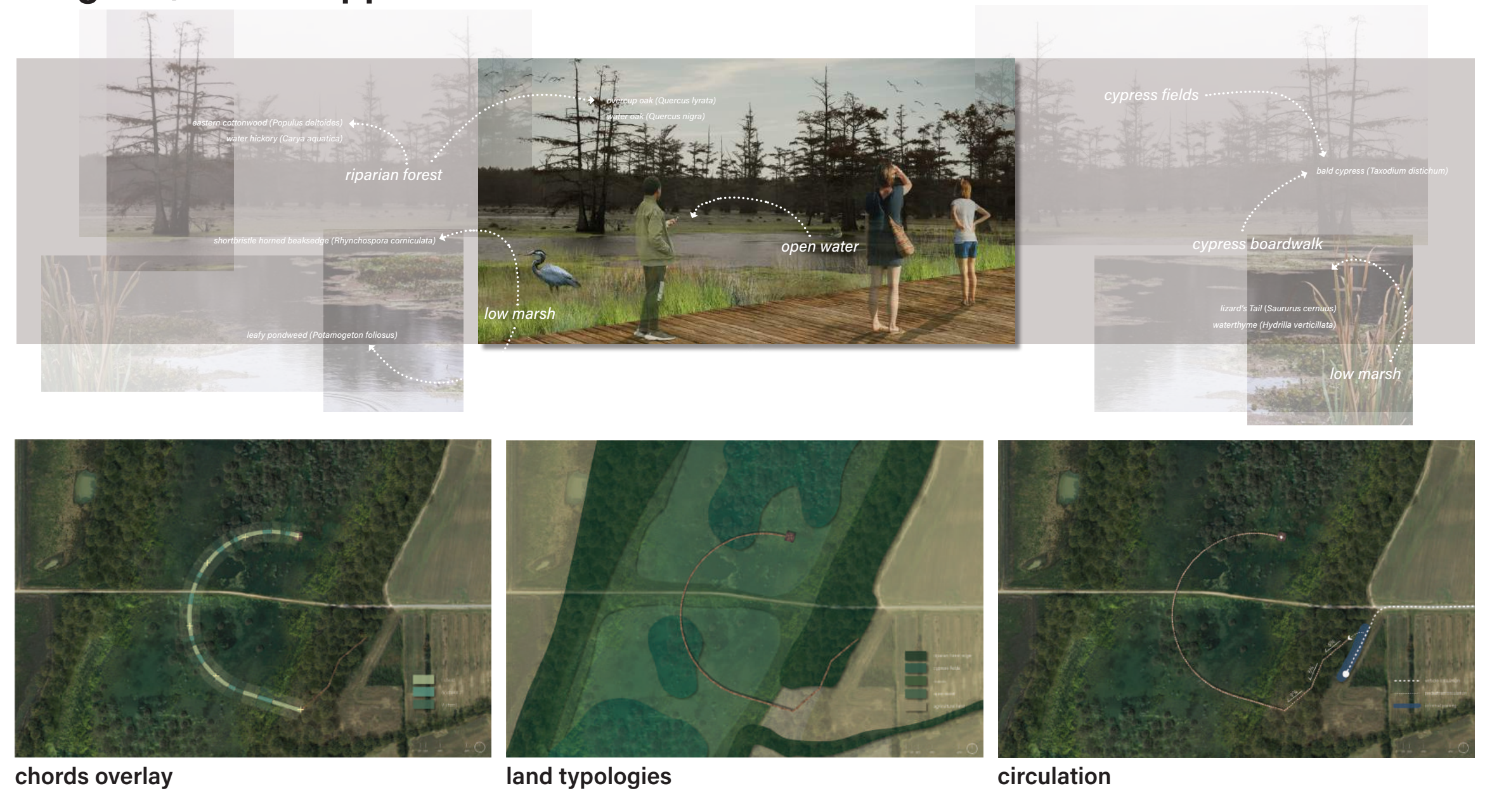
## blues // landscape as form

By breaking down both the blues and landscape into scales, this work connects the two elements as a conceptual framework for design. Each of the design concepts are both tied to a specific blues tunes that represents visceral qualities of these respective landscapes and serves to drive elements of place making, details, and overall form through deconstructing the blues. This blues framework grounds each design and allows parallels of blues and landscape forms to take shape.

blues scale // water + land  
chords // Delta land typologies  
devices // traces



## Alligator, Mississippi

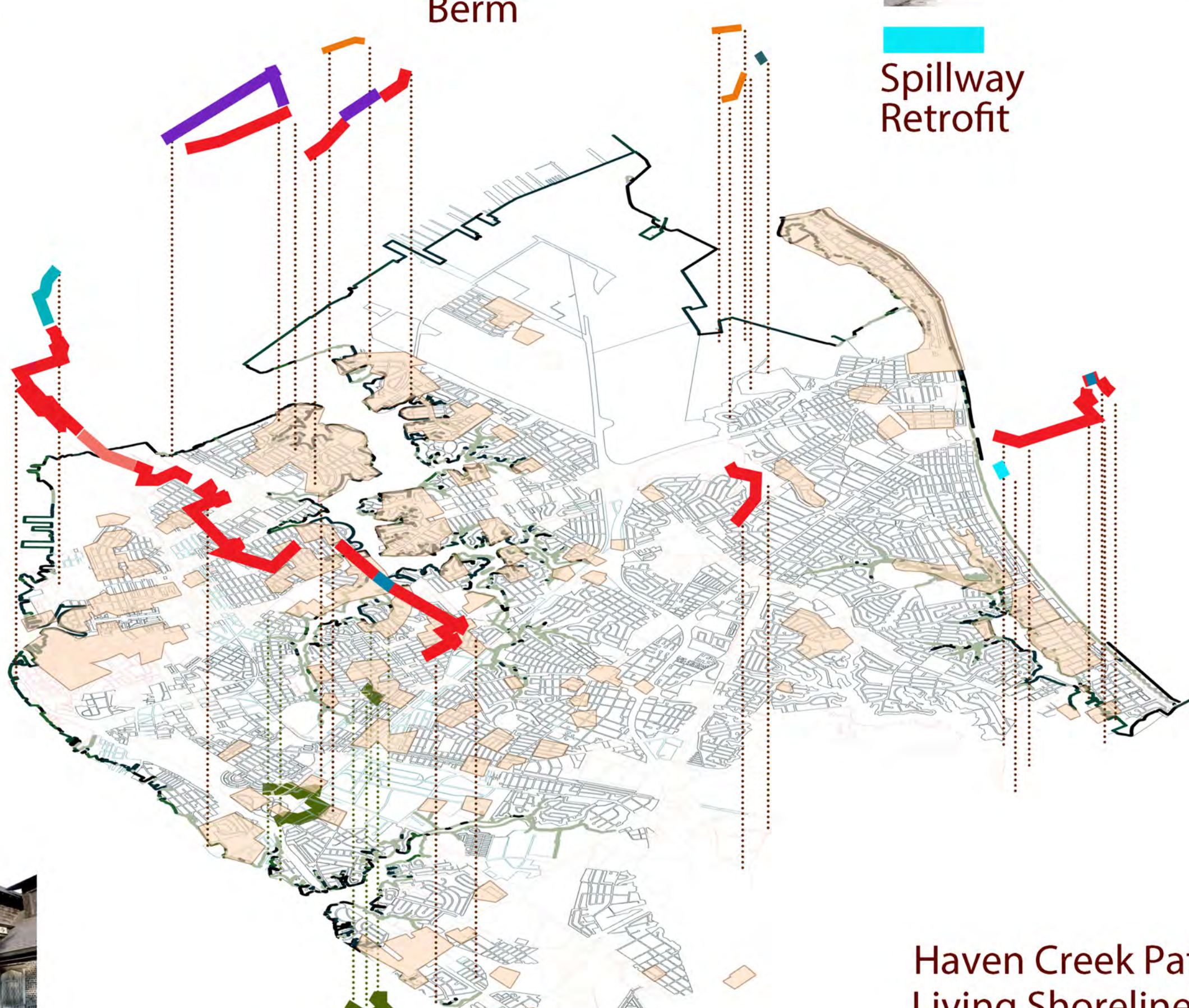
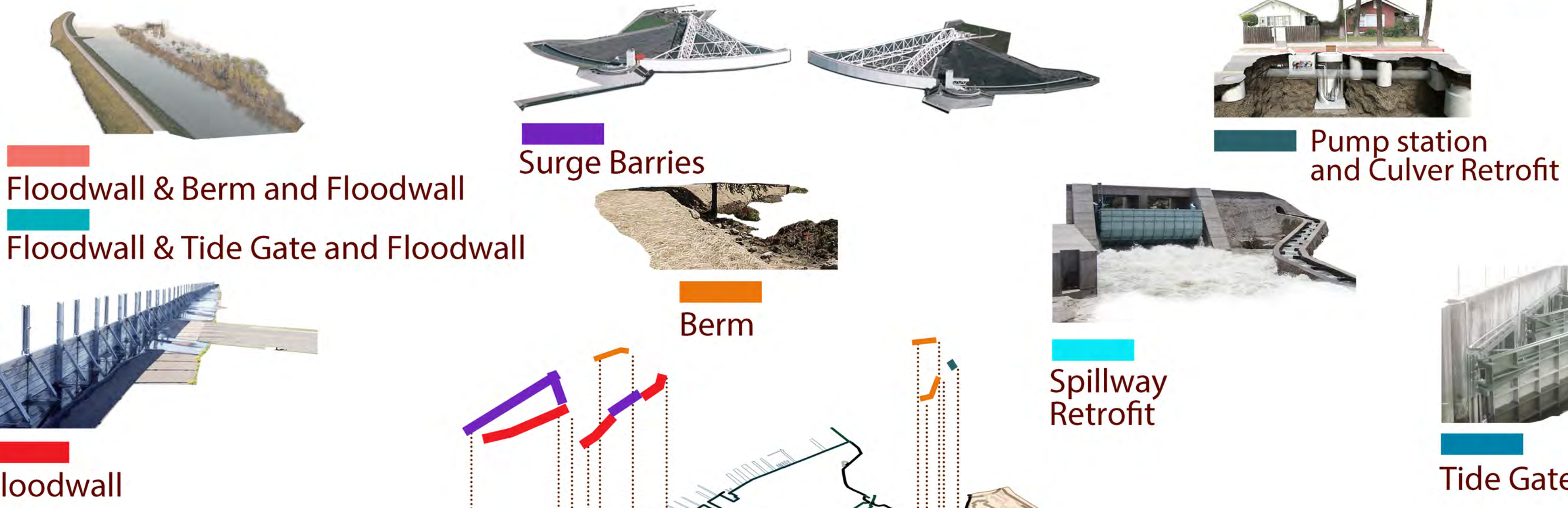
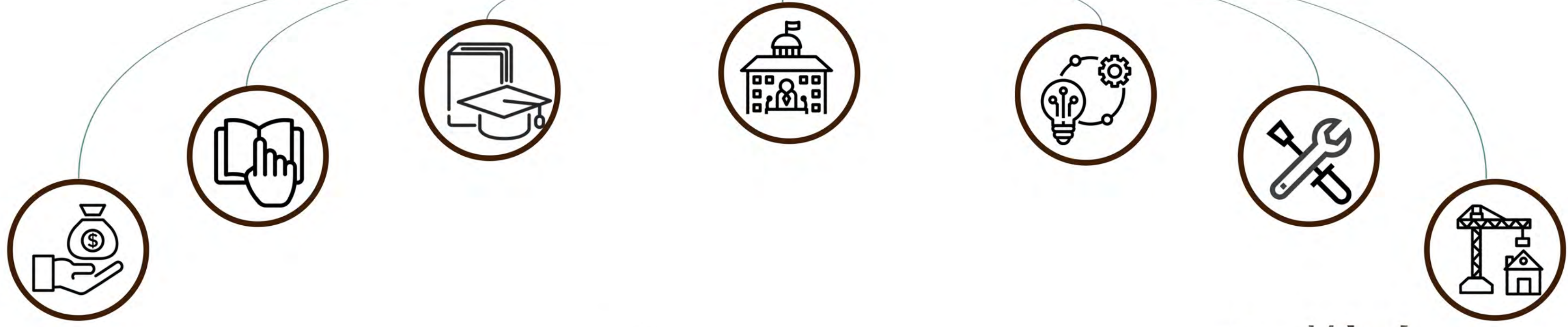


## Clarksdale, Mississippi



TOP - DOWN STRATEGIES

Government related organization



Hermitage Museum and Gardens



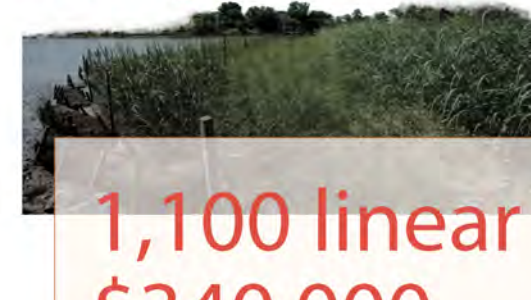
6,500 sq ft

Virginia Zoological Park



500 linear ft  
\$100,000

Colley Bay Living Shoreline



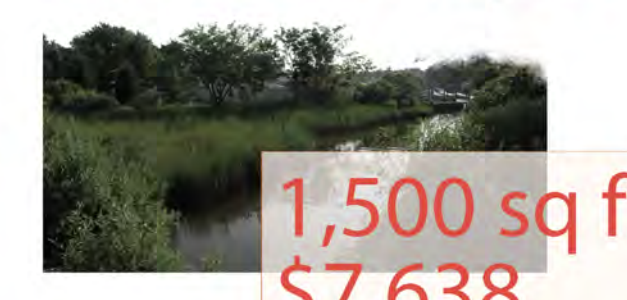
1,100 linear ft  
\$340,000

Haven Creek Path Living Shoreline

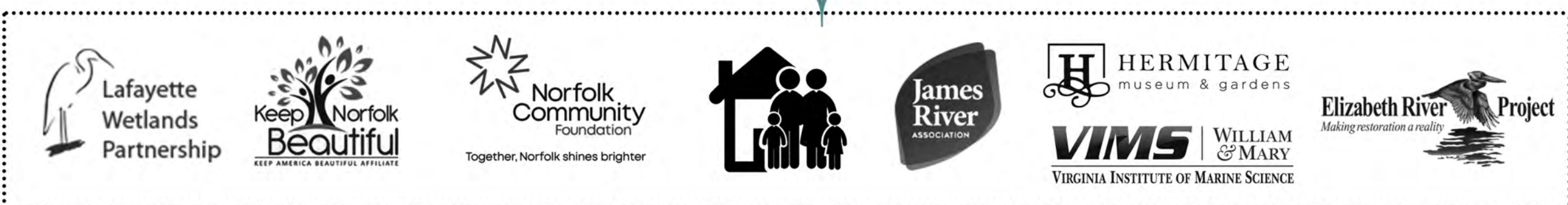


1,260 linear ft  
6,900 sq ft of wetlands  
0.15 acres oyster reef  
\$1,300,000

46th Street Project



1,500 sq ft  
\$7,638



No-profit organization & Local residents

BOTTOM — UP STRATEGIES

# LIVING SHORELINES:

## The resilient edge between top down and bottom up

We wish **LANDSCAPE ARCHITECTS** could function AS A **BRIDGE** to bring **RESIDENTS** and **GOVERNMENT ORGANIZATIONS**, and **NO-PROFIT ORGANIZATIONS** into the same table for this project. The design of this project is to collaborate with the future development needs of the site, soften the existing coastline, and **GIVE NEW FUNCTION** to the shorelines and surrounding areas like the breeding, aquaculture, recreation and education, through government-related organizations, no-profit organizations, and local residents. This project could let people **REALIZE THE CHANGES IN THE ENVIRONMENT** in advance and actively participate in the action of responding to climate change.

Designer: Jiajing Lyu  
Supervisor: Mona El Khaffi  
Darcy Engle

# Sidewalk Revitalization Manual Design

Reimagining Urban Corridors in City of Toronto

Shuwen Xue, Xinyu Tang, Youfang Duan

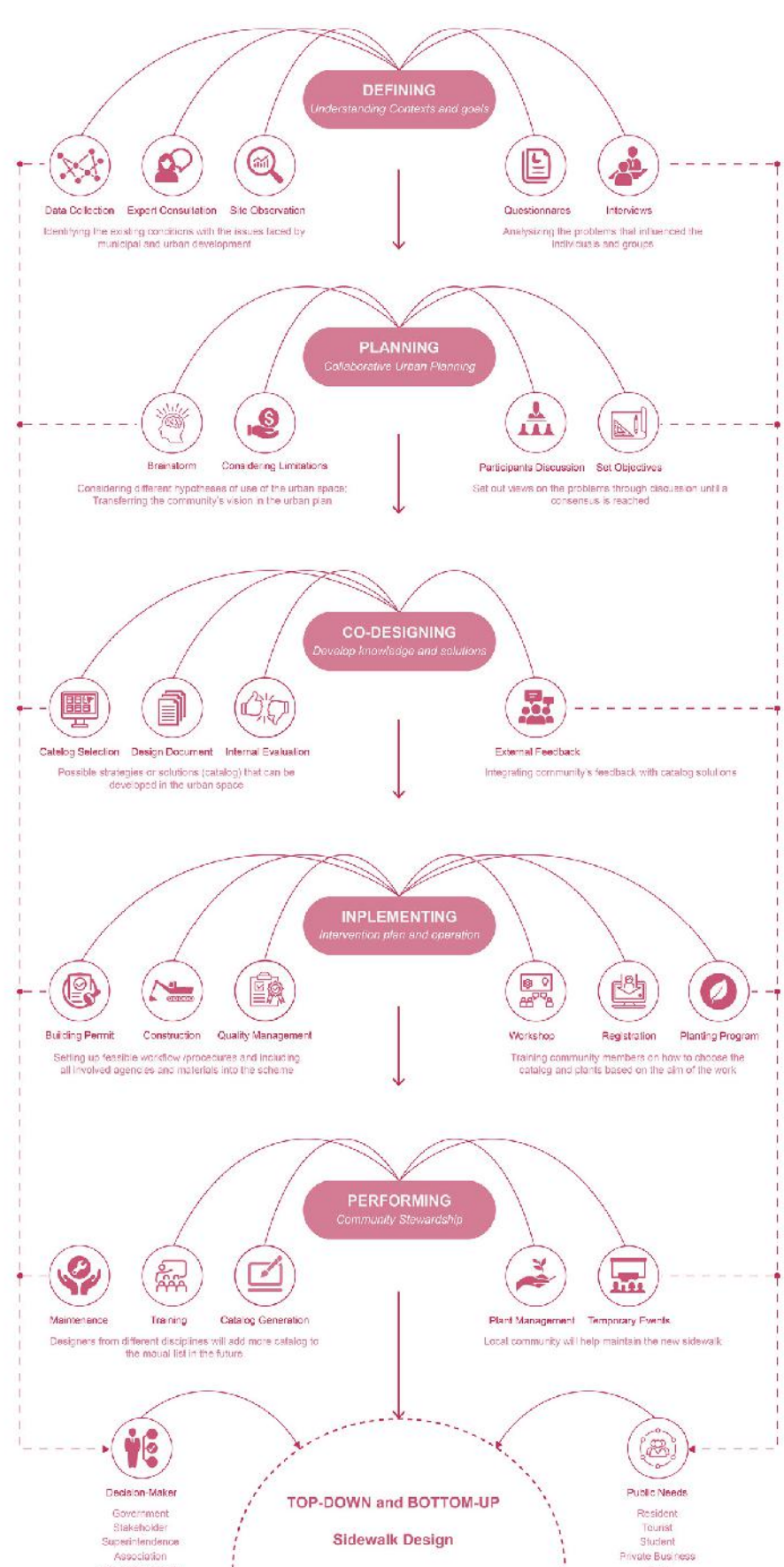
As one of the most repetitive and linear types in urban fabric, sidewalks lay a groundwork for pedestrian flow. Though sidewalk design matters the most for urban life, it is often the most neglected one in city planning. More than being places for flowing, sidewalks are public spaces for staying on a daily basis. Under the pressure of urbanization, Toronto city planners are concerned about traffic and safety. Through investigations on sidewalks in Toronto, three key issues attributed to the failure of sidewalks in Toronto are stormwater, safety and identity. The goal of this project is to look at possibilities to rethink currently underutilized and monofunctional sidewalks and consider new hybrid typologies. We propose a replicable sidewalk design manual which allows decision makers, citizens and agencies to get involved in defining the goals, planning, designing, implementing and performing in this framework. In response to three major problems, a typology catalog covers specific typological strategies to address the issues of stormwater, safety and identity. As such, certain typologies can be selected in activating dysfunctional sidewalks in Toronto during the design stage and hybridized as well as developed after years of development to enrich the walking experience. What's more, after implementing pilot projects in Toronto, the sidewalk manual can also be applied to other cities. By introducing a proactive and replicable mechanism for sidewalk design, sidewalks will facilitate a continuing and dynamic form of urbanity and public life over time.

Project Role: The project is an integrated assignment of Urban Strategies course, which is a core course of the Urban Design Certificate program at the University of Virginia School of Architecture. The course is structured to synthesize concepts, methods and strengths of various disciplines to design and plan for the City of Toronto. Each team focuses on different topics, centered around urban design methodologies and design philosophies to address Toronto's dysfunctional urban spaces. As landscape designers, we examine the sidewalk, a key to Toronto's urbanization process. By rethinking typologies and design strategies of sidewalks, sidewalks can become a promising green network and social infrastructure in Toronto.

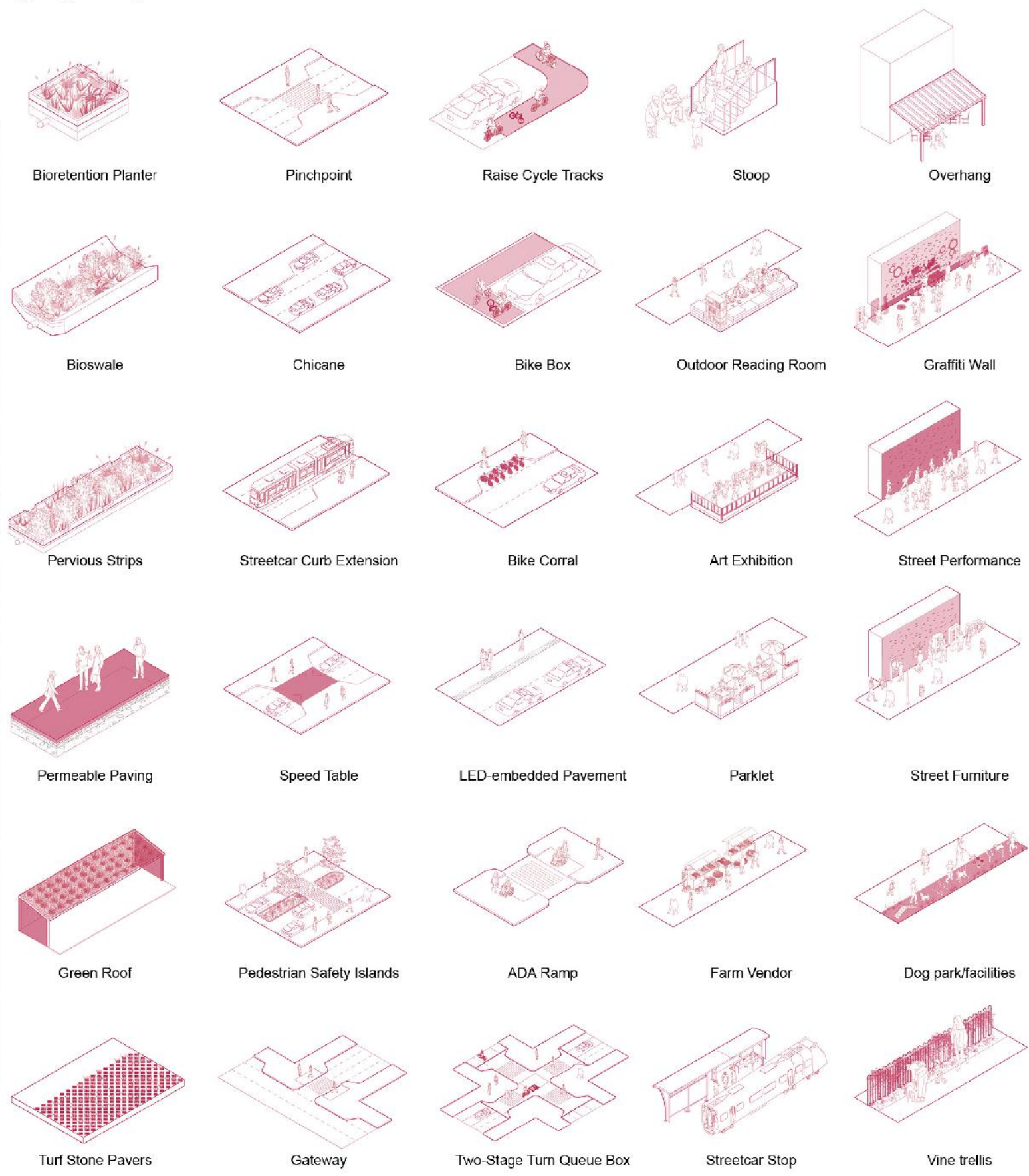


## Sidewalk Revitalization Manual

Manual Workflow



Typology Catalog

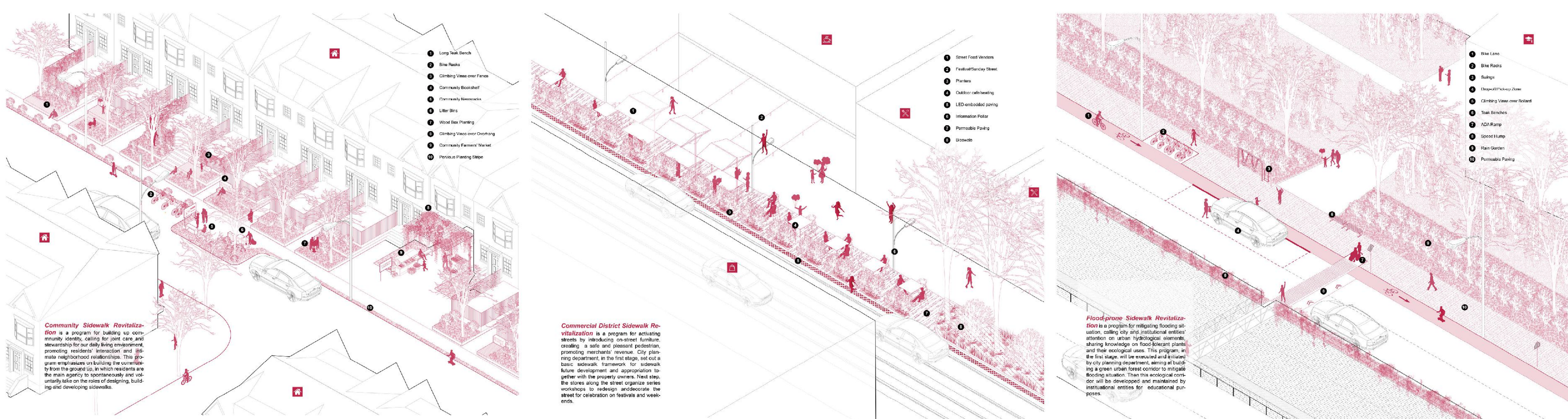


Plant Guideline

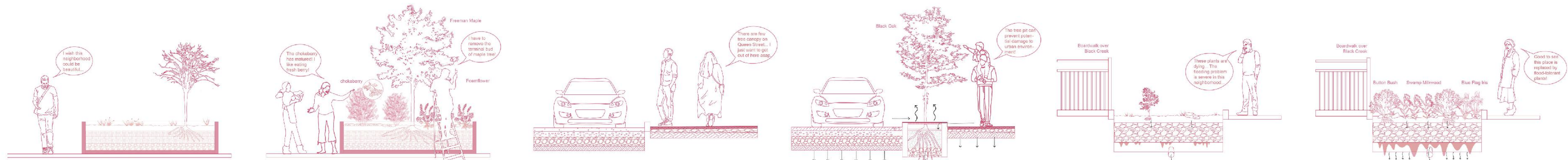
## Dysfunctional Sidewalks in Toronto



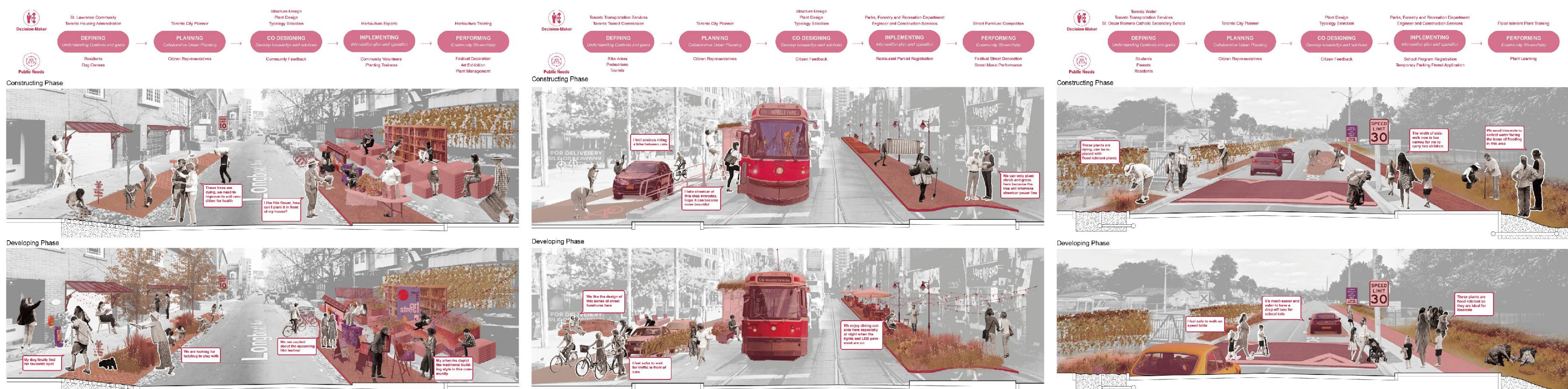
## Vision of Future Sidewalks



## Community Plant Stewardship

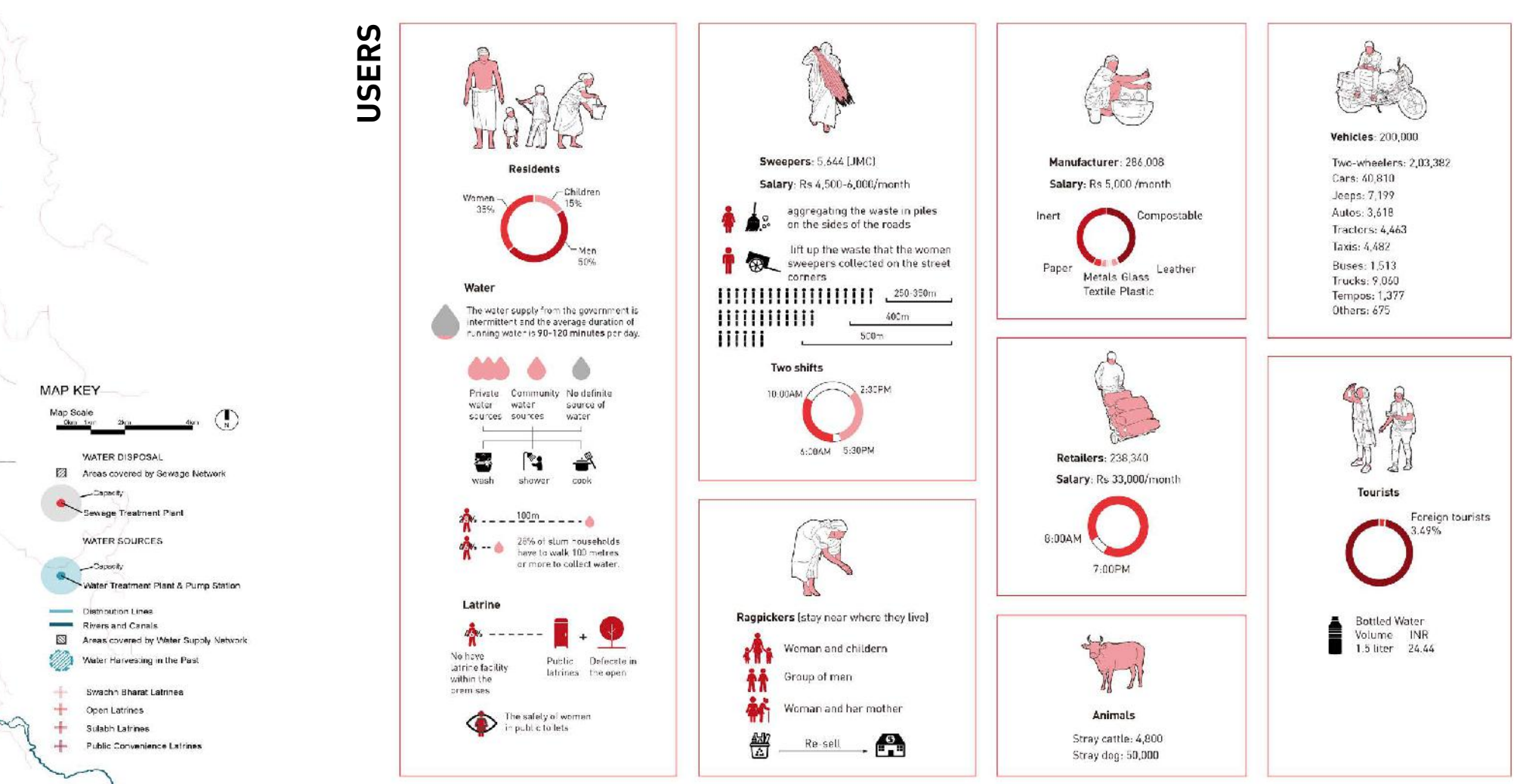
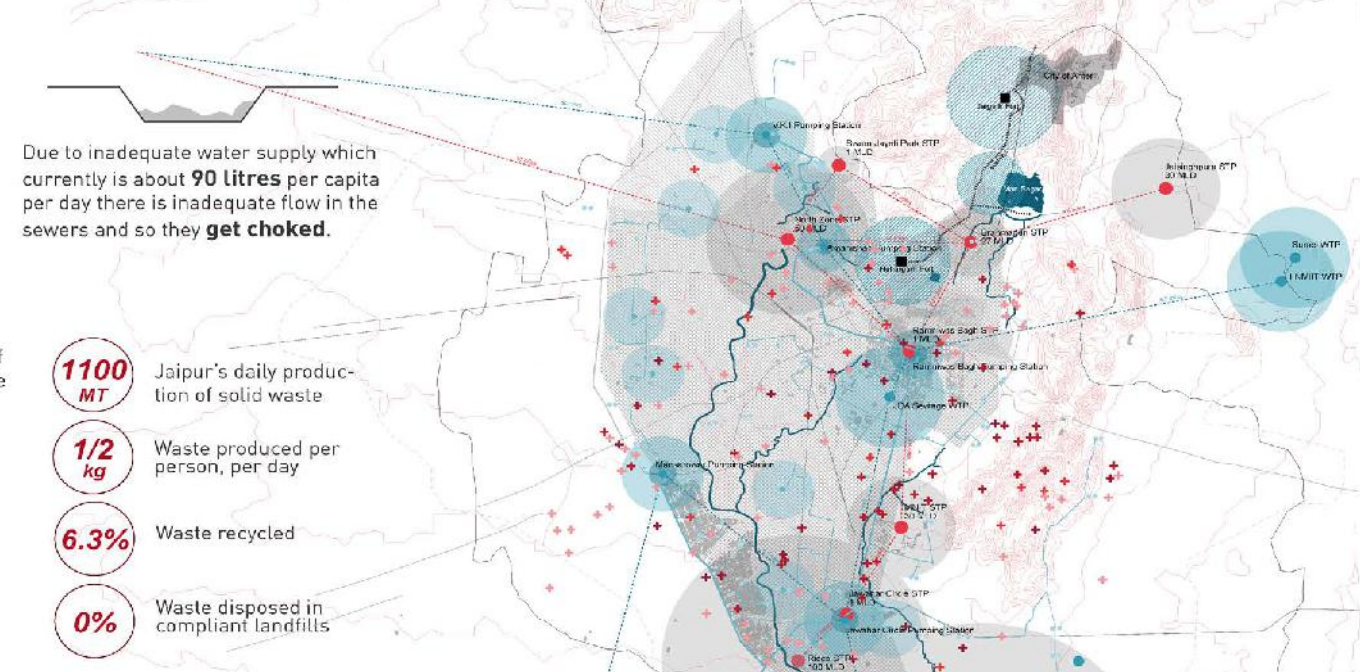
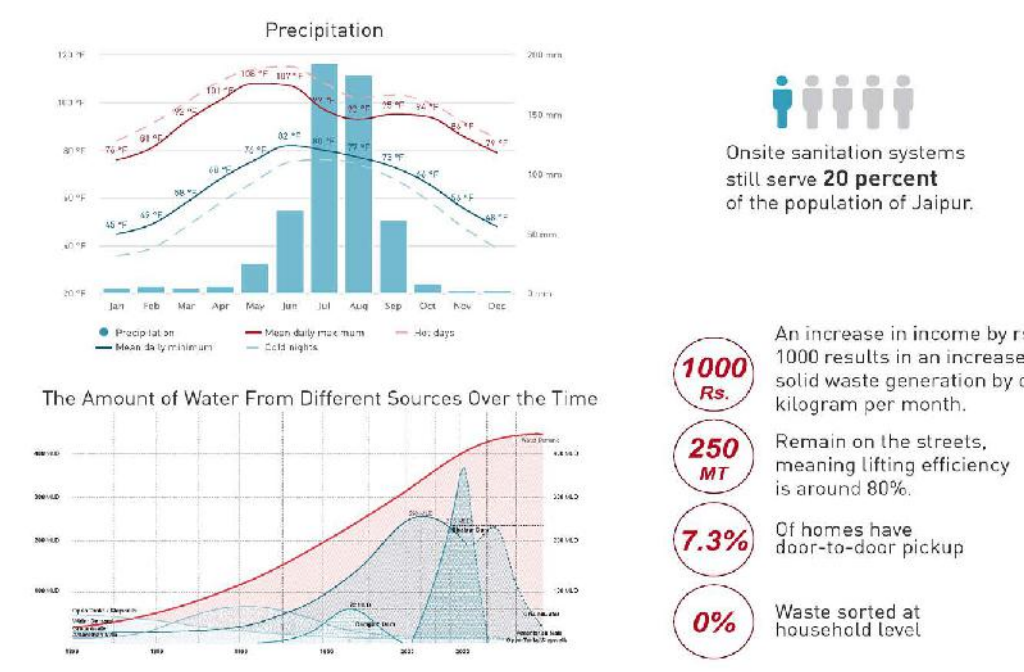


## Temporal Progress Sidewalk Development



# GREEN CONVERGENCE --- Resilient Corridor for Jaipur | Chaoming Li & Xuefei Yang | University of Virginia | Instructor: Maria Gonzalez Aranguren & Pankaj Vir Gupta

Jaipur, the capital and the largest city of the Indian state of Rajasthan, has faced many of the problems associated with population growth in its rapid development, such as water shortages, untreated sewage and heavy solid waste pollution. The site we are working with is along Mount Rd, an important road between Aravalli Hills and slums, connecting the northern and southern part of the city. By creating an ecological corridor with a circular system for both water and waste, we collect and decentralize solid waste and waste water from the surrounding slums, including creating rain gardens to collect and purify runoff, establishing underground sewage system to reuse, building infrastructures to meet residents daily needs, etc. Upon enhancing city resiliency through combining different system into one and increasing area of green space, we also consider its potential economic value, such as tourism and food production.

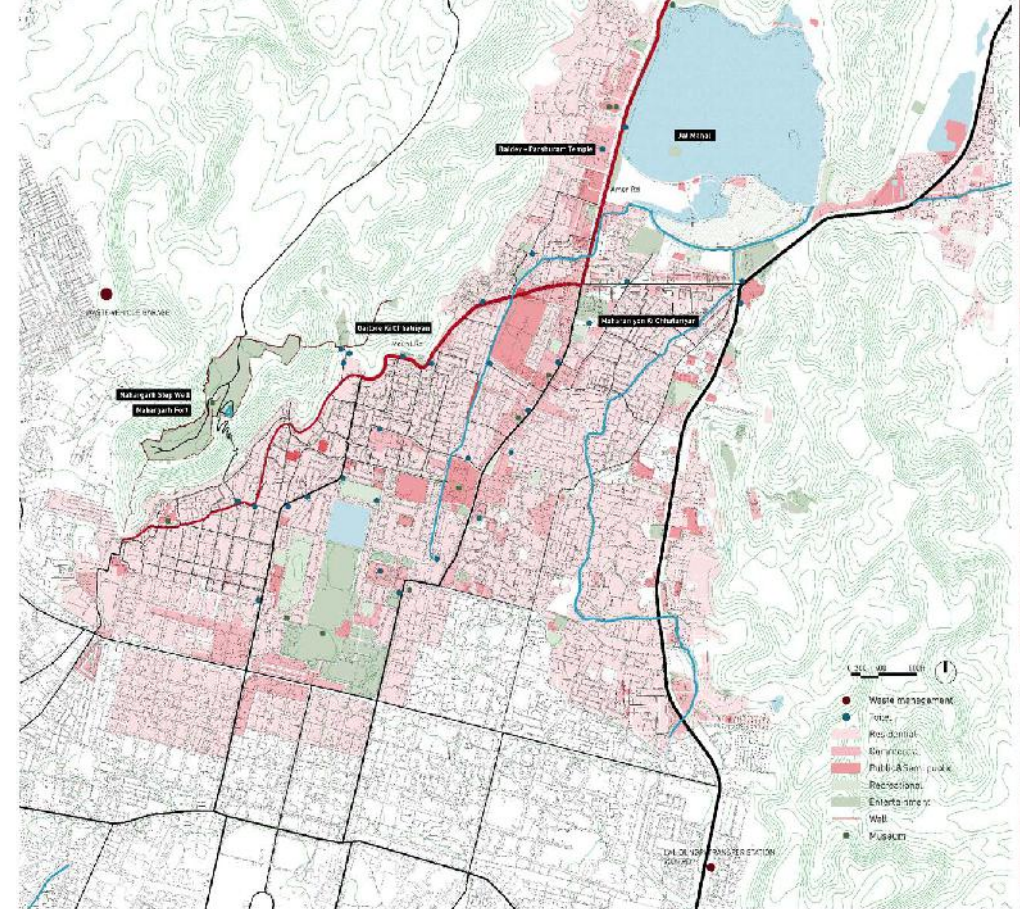


## JAIPUR WATER & SEWAGE & SOLID WASTE

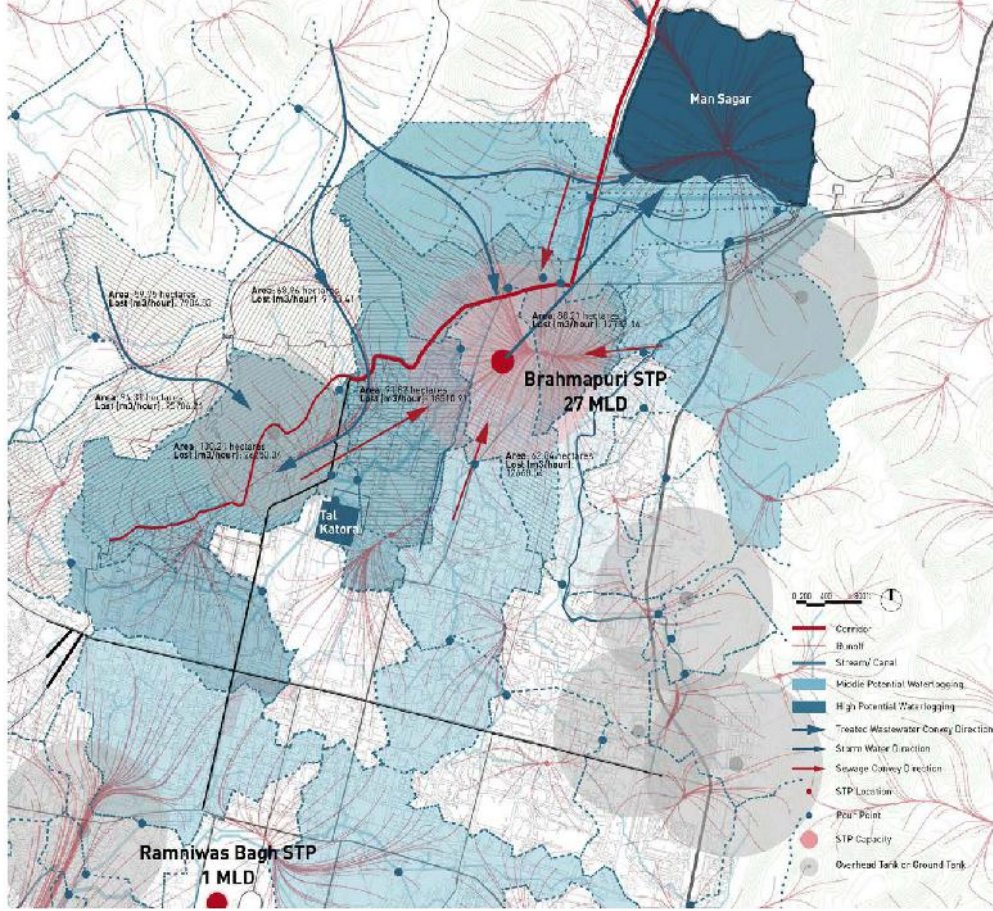


## JAIPUR LANDUSE & WATER ANALYSIS

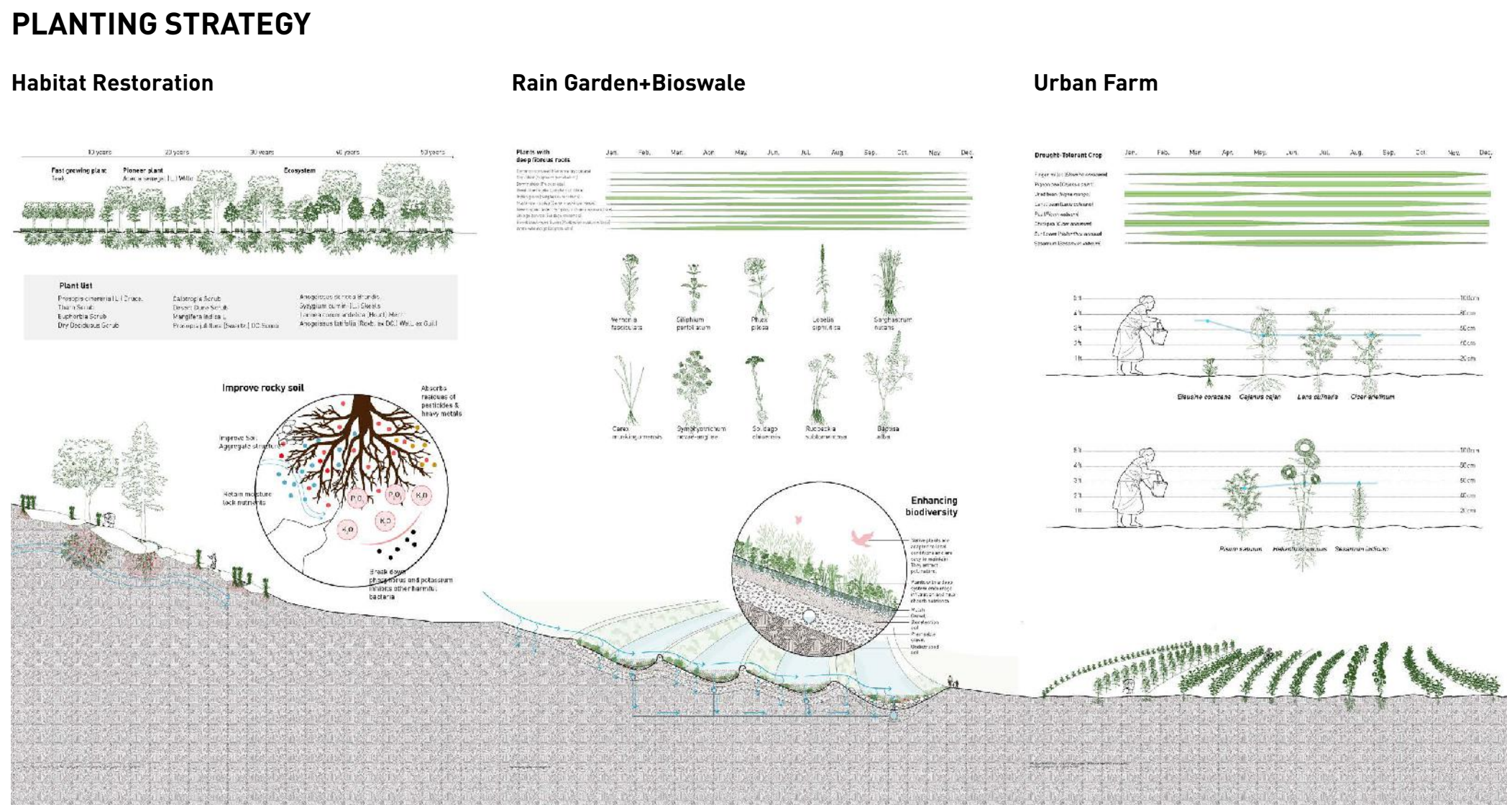
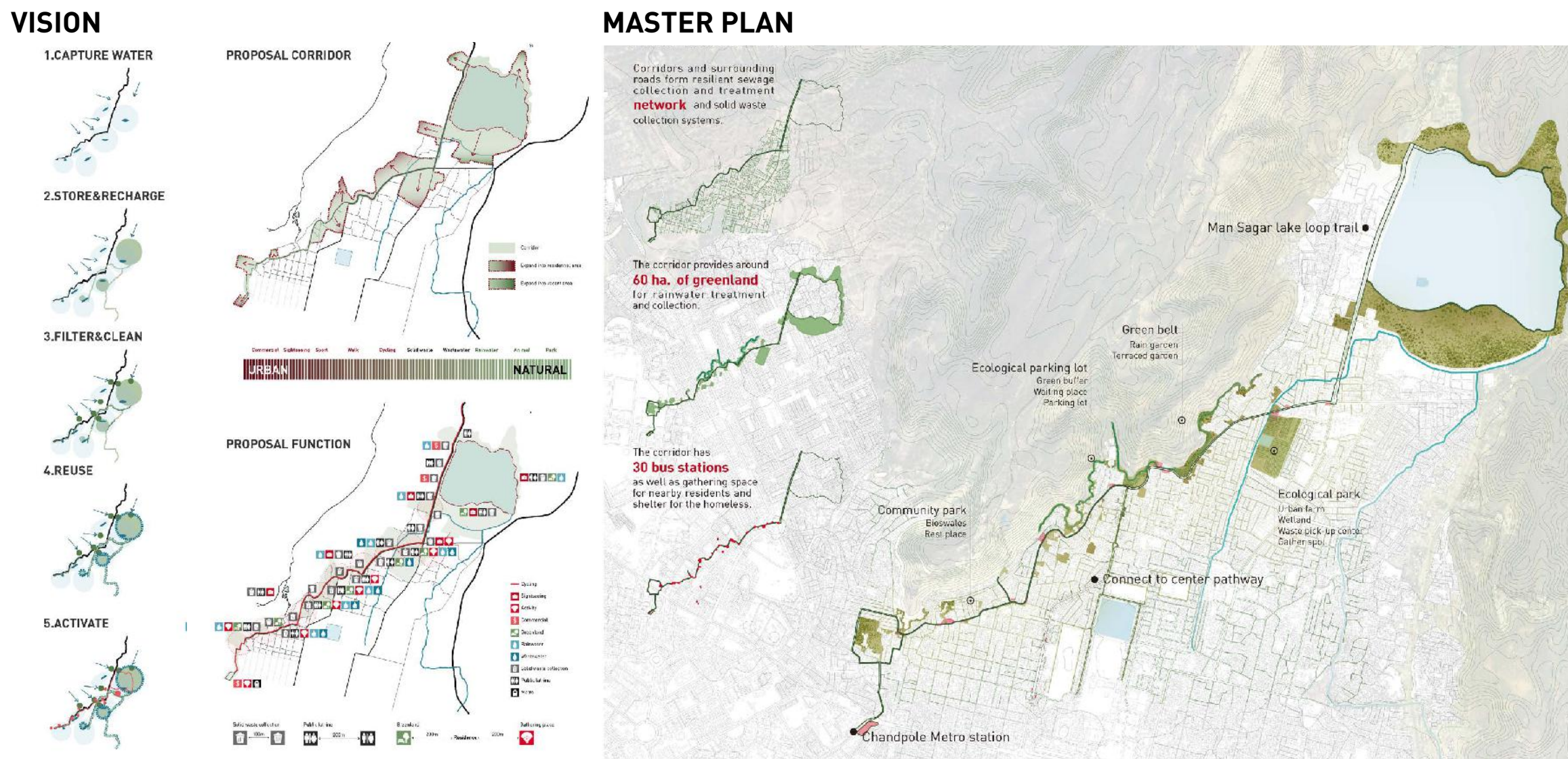
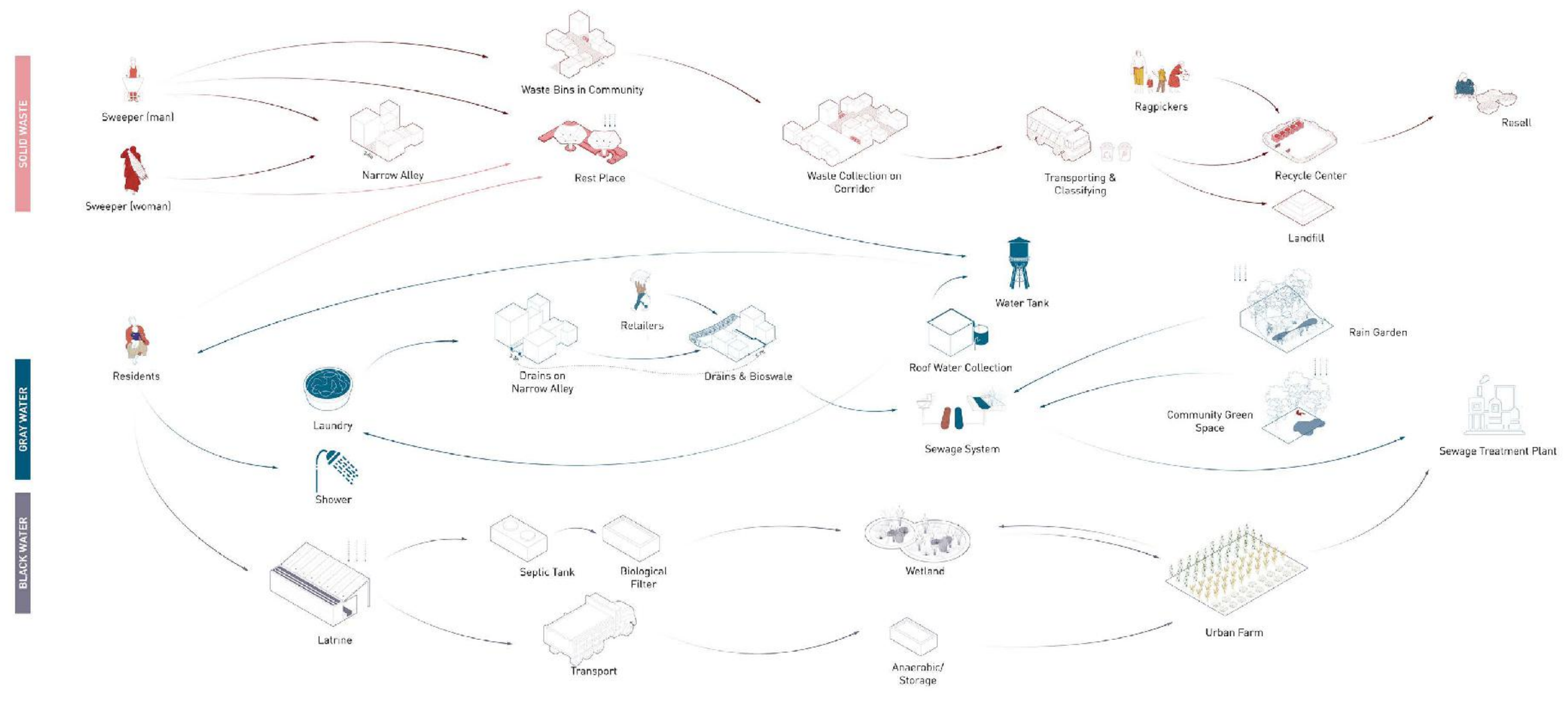
The corridor is **6.39 km** long. The corridor serves more than **102,000** people in the surrounding area. There are **5** attractions around the corridor.



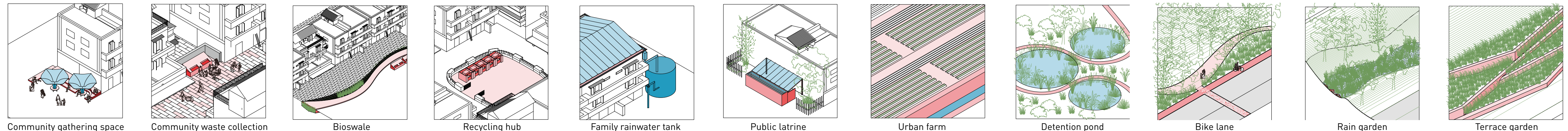
**128.8** liters per person. **533** hectares on watershed. **105,359 m<sup>3</sup>** water lost nearby corridor in a 6.3 cm/hour precipitation.



## WORK SYSTEM

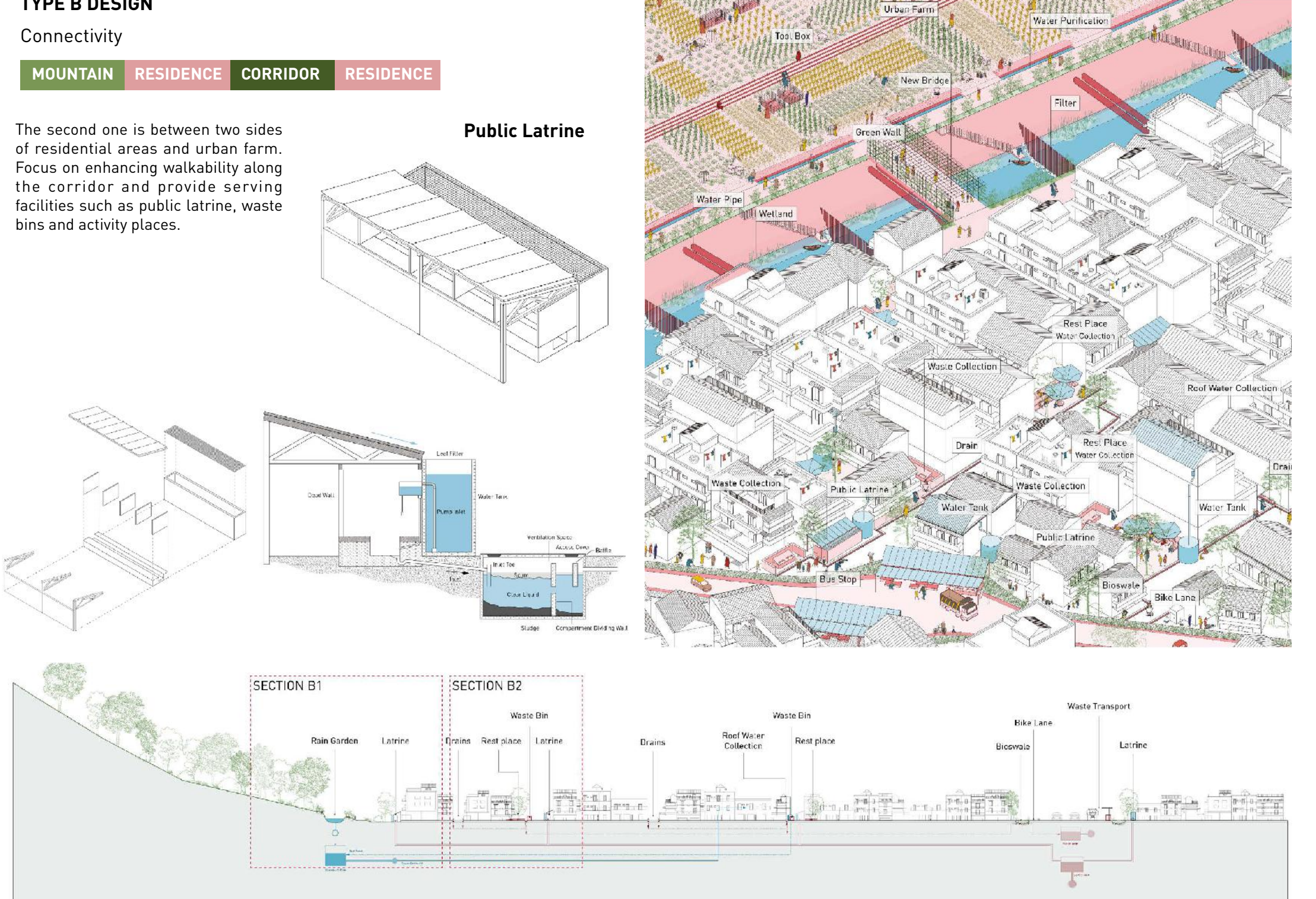
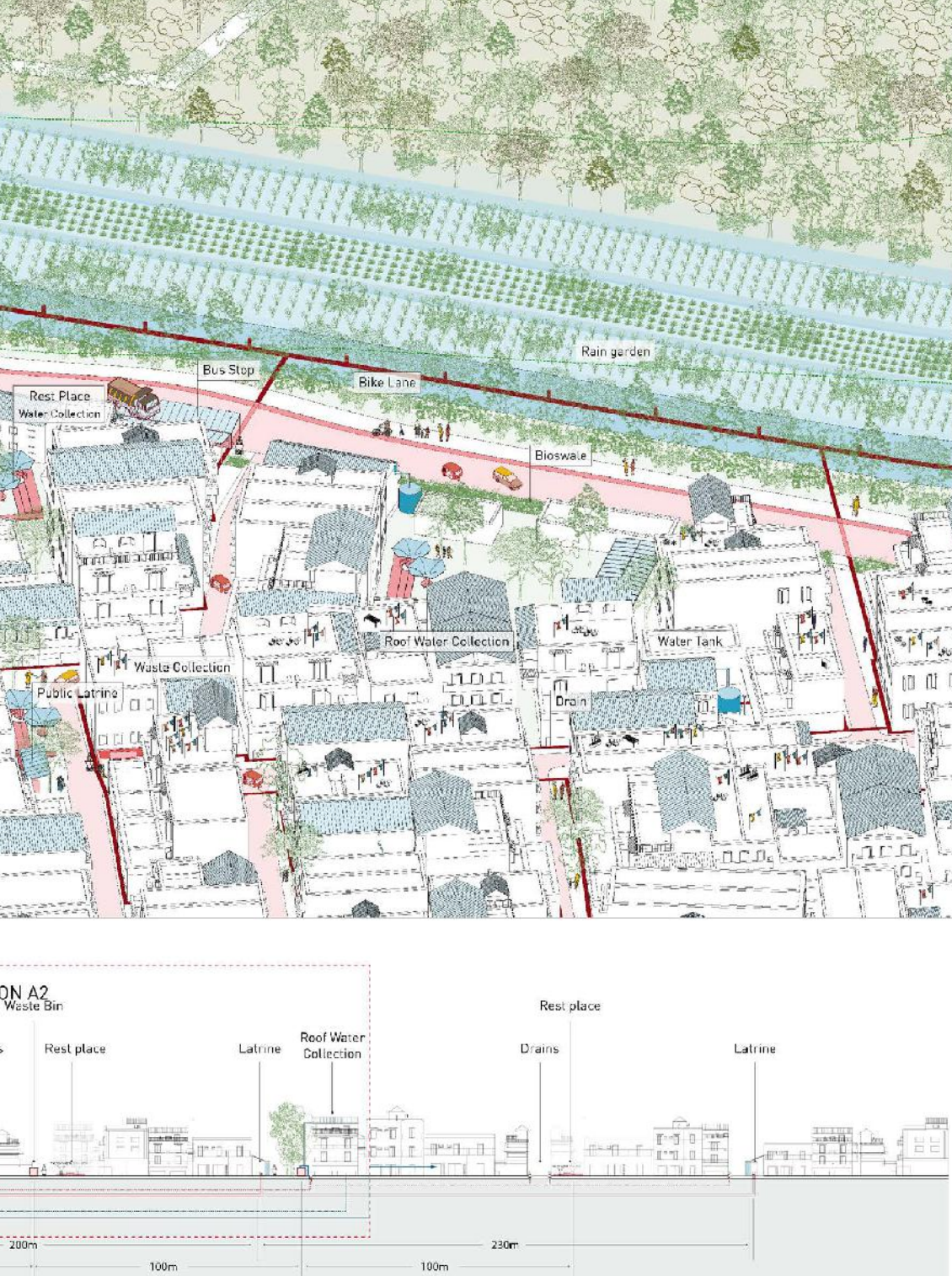
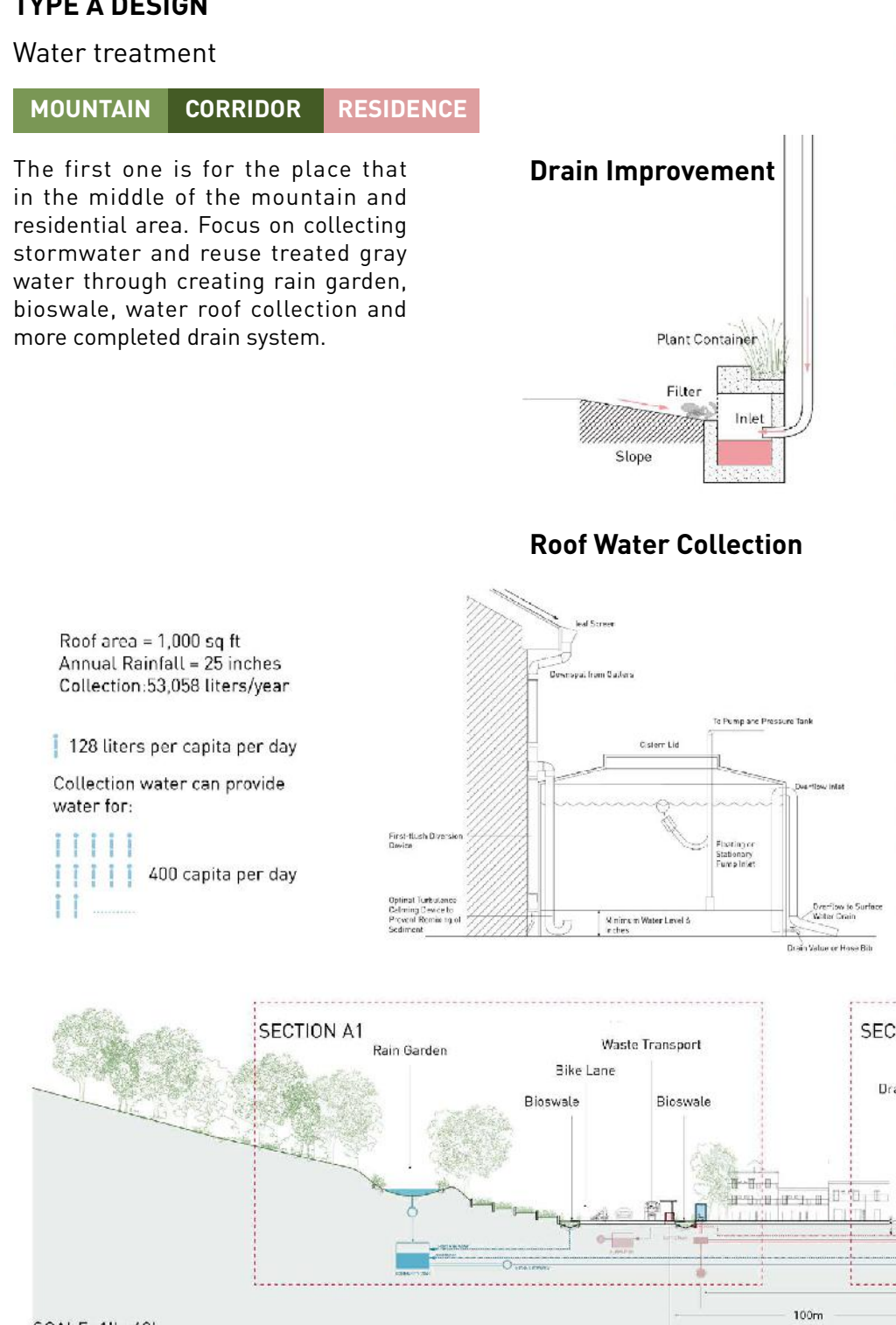


## STRATEGIC UNITS



## DESIGN TYPES

We propose that the corridor could realize ecological, economic and social values, meet the needs of residents for water resources and infrastructure in their daily life, and create a sustainable development model. According to the different areas condition along the corridor, we have 4 types of design.



## CORRIDOR OVERVIEW



## CONTRIBUTIONS

