

"Children desperately need to have a multitude of whole-body sensory experiences on a daily basis in order to develop strong bodies and minds. This is best done outside where the senses are fully ignited and young bodies are challenged by the uneven and unpredictable ever-changing terrain."

(STRAUSS 2015)

PARTNER

11th Street Bridge Park

LOCATION

Washington, DC

PROFESSOR

Dr. Elizabeth Morton

STUDENT TEAM

Tom Roberts

Ana Vicinanza

Rae Ferraiuolo

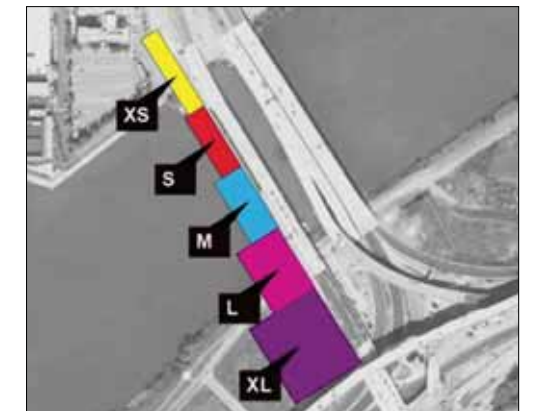


11TH STREET BRIDGE PARK: REIMAGINING PLAY

"We don't stop playing because we grow old; we grow old because we stop playing."
- George Bernard Shaw



OMA/OLIN RENDERING OF THE 11TH STREET BRIDGE PARK PROPOSAL



11TH STREET BRIDGE PARK: REIMAGINING PLAY

INTRODUCTION

This report offers both research-based recommendations and conceptual designs which seek to incorporate play, art, education, and movement across all programming areas of the proposed 11th Street Bridge Park in Washington DC. It is the product of the spring 2016 Virginia Tech Urban and Regional Planning Studio, "Creating Twenty-First Century Play Spaces in Washington DC," directed by Dr. Elizabeth Morton. As park leaders finalize thier designs, our three-member team has developed proposals for enhancements and additional features to further play throughout the park. Although our rendered designs show specific features, our purpose is to demonstrate purely conceptual ideas and methods.

The 11th Street Bridge Park is an ambitious addition to Washington DC's expansive park system. The Park will cross the Anacostia River and unite the historic Anacostia/Fairlawn neighborhoods on the east with the Capitol Hill/Navy Yard neighborhoods on the west end of the bridge. Architectural firm OMA partnered with landscape architecture firm OLIN to create the winning design proposal for the new bridge park, to be built atop existing piers. The OMA/OLIN conceptual design emphasizes the crossing and connection between the two parts of the city. The park will be managed by a dedicated nonprofit, which has collaborated with a wide array of community stakeholders to develop varied programming for the park. The programming will include both active and passive spaces, a performance space and open lawns, a cafe and environmental education center, a play space and gardening plots, and more. Although ultimately the park is likely to draw tourists, the true measure of its success will be how well it serves the neighboring communities.

The recommendations and conceptual designs in this report are rooted in a rich literature of active play and numerous examples of dynamic parks and play spaces from around the world. The unique setting of an elevated, man-made structure required careful study of innovative approaches and their theories and rationales. The resulting proposal envisions a park that invites people of all ages to play, provokes curiosity, inspires awe, and encourages movement.



2.2 11TH STREET BRIDGE LOCATION, SATELLITE VIEW.



2.1

BACKGROUND AND DESIGN THEMES

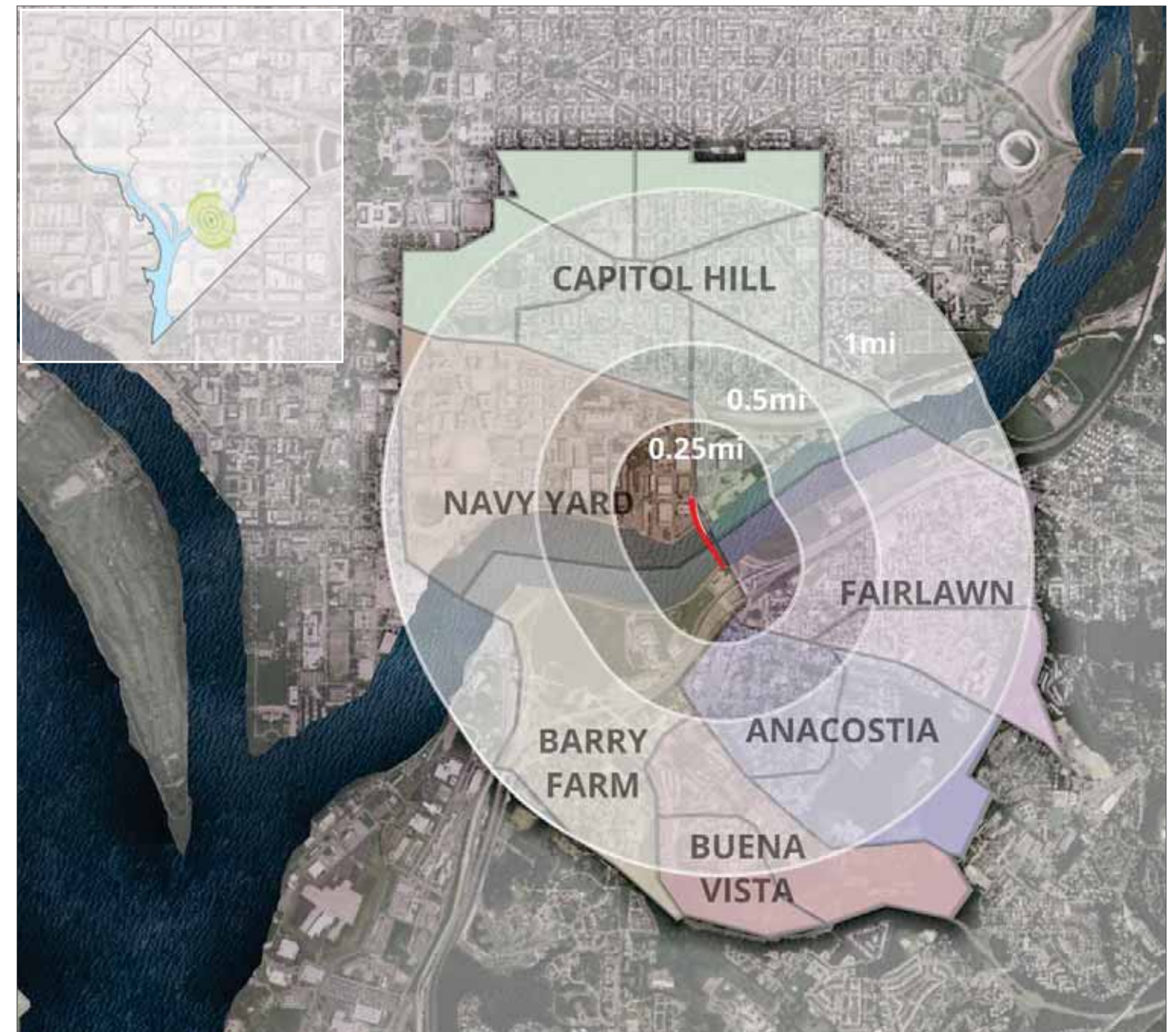
NEIGHBORHOOD CONNECTIONS

The 11th Street Bridge Park leadership has articulated **FOUR GOALS** which have driven all the programming and the design of the park from the beginning:

1. Create a healthy community by establishing a safe place for residents to exercise and play
2. Connect the community with the Anacostia River
3. Reconnect the neighborhoods of Anacostia / Fairlawn and Capitol Hill / Navy Yard
4. Generate new jobs and economic activity

While all of these goals have informed the work of this team, the first three have been most relevant to our play space proposals. In light of consistent community input and national trends in physical activity and obesity, encouraging active play is integral to our design proposal.

Further, due to development patterns and a history of pollution, the river itself has long been ignored as an amenity. This park will cross the river but it will also draw visitors down to the water's edge and into it, opening up new prospects for recreation, education, and enjoyment of nature. Finally, the bridge provides a unique opportunity to connect two parts of the city that have long been very distinct. The graphic to the right illustrates the neighborhoods affected by the bridge park amenity, divided by census tracts and further overlaid by incremental zones of access from a quarter mile radius to a one mile radius around the bridge extents. The walking bridge park will provide local residents and workers within these spheres of influence with public amenities, which we hope will create opportunities for interaction between the disparate communities. This connection is the underlying goal present in all proposed programming enhancements throughout this report.



3.2 11TH STREET BRIDGE AND AFFECTED NEIGHBORHOODS, DIVIDED BY CENSUS TRACTS



4.1

BACKGROUND AND DESIGN THEMES

PLAY DESIGN IN THE LITERATURE

Although play should be for all ages, fundamental to our understanding of child development and how it is fueled by play were the developmental design elements identified in this table adapted from Woolley and Lowe (2013, 61). Woolley and Lowe posit that five primary developmental themes should be addressed in any playspace, including the themes of environment, physiology, creativity, education, and socialization. Each theme is supported by key design elements, which can be introduced to enhance the developmental value of play in a given space.

The environmental theme is supported by design elements which deepen a child's understanding of their environment through the manipulation of movable parts, variable landforms, and natural elements such as mud, sticks, stones, and water. These aspects are present throughout our proposed design enhancements, but are particularly effective in both the primary playspace and the waterplay extension of the educational center. The OMA/OLIN design presented some thematic constraints in terms of the expansion of freeform play zones, as it calls for a largely streamlined set of spaces designed around primarily adult activities. In order to maintain the majority of the original programming, it was necessary to subtly incorporate our play-focused design enhancements by adding elements which were visually consistent with the existing design scheme but which offered clear opportunities for public interaction. For our team, this required a strong connection between the environmental development concept and design for creative development, which also incorporates the use of moving parts in addition to different textures and materials, vegetation and varied landforms, and spatial variety.

Physiological development was another recurring theme throughout our programming enhancements, frequently tied to social development through the use of both competitive and cooperative play opportunities. Social development requires spaces which allow for both small-scale and large-scale interactions, and physiological development requires challenges to both fine and gross motor functions. We connected these respective needs to coordinate socialization and physical play.

4.2 SOURCES: COFFIN AND WILLIAMS (1989); HART (2002); HESELTINE AND HOLBORN (1987); HILL (1980); MOORE ET AL. (1992); NICHOLSON (1970); STINE (1997); WOOLLEY (2007).

DEVELOPMENTAL THEME Key design elements within a play space that can enhance play value		
ENVIRONMENTAL		Value is derived from an ability to be able to understand the environment through the manipulation of movable parts, variable landform and natural elements such as mud, sticks, stones and water.
PHYSIOLOGICAL		The space should provide for physical fitness and challenges in terms of both fine and gross motor functions. The environment should allow for balancing, jumping, climbing and running. Use of sensory elements helps fine and gross motor skills through the manipulation of the materials such as sand, water, loose materials, building blocks and play equipment.
CREATIVE		Enhanced by moving parts, different textures, materials, heights, vegetation and varying landform. Children need to experience a variety of different spaces: high, low, small, large, exposed and protected.
EDUCATION		Cognition is development through exploration of shapes, sizes, numbers and movement in multiple mediums.
SOCIAL		The space must allow for both small-scale and large-scale interactions. Small areas allow for retreat while larger ones allow for team games and social re-enactment.

BACKGROUND AND DESIGN THEMES

DESIGN THEMES AND OUTCOMES

After a thorough review of the site itself, the proposed programmatic design, contemporary scholarly discussion on the subject of play, and varied case studies, our team arrived at seven high-level **DESIGN THEMES** that undergird each of our proposed enhancements. These themes are applied to the entire park rather than a single isolated play area. They represent what the park will inspire in its visitors.

1. Community connections
2. Multigenerational exploration
3. Art and sculpture as play
4. Participation and movement
5. Competition and cooperation
6. Curiosity and education
7. Water and the Anacostia River

In addition to these broad themes, there are several **DESIGN OUTCOMES**, gleaned from conversations with bridge park leaders and research, that our proposal seeks to achieve:

- Spaces must be **VERSATILE**, able to serve different functions and user groups in all seasons
- Programming areas must **FLOW** and intertwine, promoting both movement and mingling through the park
- The park must be **INVITING** to visitors, promoting easy access from the adjacent neighborhoods and across the city in its programming and its physical layout
- The design must respect the **ICONIC** nature of the park, maintaining a consistent aesthetic and promoting the signature “X” silhouette

5.1



5.2 OMA/OLIN NIGHT RENDERING OF 11TH STREET BRIDGE PROFILE

DESIGN THEMES

1. COMMUNITY CONNECTIONS

Our first design theme, **COMMUNITY CONNECTIONS**, was influenced by the 11th Street Bridge Park's mission to unite the two sides of the river despite their historical and socioeconomic differences. On the west end of the bridge park are blocks of office buildings, the headquarters of the Navy, and the Nationals baseball stadium a few blocks further south. The west end of the park is rooted in the revitalized Navy Yard neighborhood and affluent Capitol Hill. On the east end of the park are the Anacostia and Fairlawn neighborhoods, largely populated by relatively low-income residents and small scale commercial establishments. The east end of the bridge park cuts through the Anacostia Park, a strip of green along the river owned by National Park Service. Anacostia Park has several basic sports fields but is largely undeveloped. The park serves lower-density residential neighborhoods with local commercial buildings lining the arterial streets.

	West of the Bridge Park Census Tracts	East of the Bridge Park Census Tracts
Population	22,194	21,007
Unemployment	6.63%	20.71%
Child Poverty	20.46%	53.18%
Median Value of Owner-Occupied Housing	\$648,259	\$255,553
Renter-Occupied Units	50.24%	73.09%

Source: 11th Street Bridge Park Equitable Development Plan. Washington, D.C.

The people and households of Ward 6 on the west and Wards 7 and 8 on the east have different demographic characteristics, but they all call DC home and the park will be a place for all of them. Programming must be engaging to all groups throughout the bridge, for every age and every walk of life—and for more than a single visit. It must also encourage interaction between different individuals and groups. Play, curiosity, beauty, and sensory experience will promote this mingling and positive interaction.



6.2 STREET VIEW OF HISTORIC BUILDING IN ANACOSTIA NEIGHBORHOOD NEAR BRIDGE APPROACH

DESIGN THEMES

2. MULTIGENERATIONAL EXPLORATION

MULTIGENERATIONAL EXPLORATION has two facets:

- 1) Features and programs should be tailored to meet the needs of a variety of ages;
- 2) Features and programs should spark interaction and relationships between age groups.

So often play is thought of as just for children — a playground is only for kids and perhaps for their supervising parents. Our park enhancements seek to expand that preconception. Designers must acknowledge differences in perception and use across age levels. Refshauge et al (2015) notes, “...adults tend to perceive environments as forms, whereas children primarily notice possible actions” (p. 242). A young person may see a playground differently than an adult does, and may see play in more places than an adult does.

Additionally, Jansson (2008) highlighted in a careful study of children’s perceptions of play and play spaces that young people’s needs for play cannot be sufficiently met by a dedicated playground. While this conclusion may be intuitive, it is easy to forget that intentional opportunities for play can and should be spread throughout the entire park and beyond, not just in a confined playground.

By expanding the locations designed for play, adults may be persuaded to play as well as children. An adult or adolescent is less likely to engage in either freeform or coordinated play activity in situations where children are present in the majority unless they are a parent themselves. In a confined playspace scenario, although there may be play elements which would otherwise appeal to an adult of any age group, they are unlikely to view these amenities as accessible to them - or even intended for them in any capacity. By expanding the range of play throughout the park and making it a part of the connective experience between primary amenities, we instantly invite multigenerational interaction.



7.2 KLYDE WARREN PARK WATERPLAY AREA

DESIGN THEMES

3. ART AND SCULPTURE

ART AND SCULPTURE can inspire and be an integral part of play. Sculpture is a visually unifying aspect of all programming elements and is a primary tool in both placemaking and active public engagement. Special attention has been placed on art in this team's design - both because of its aesthetic and educational value, and its potential function in the context of play. Art represents the ideal intersection of the form and function mentioned earlier in reference to adults' and children's perceptions: art that is interactive and sculpture that can be touched, climbed in, or sat upon relates to people on multiple levels. It stimulates their minds and creative spirit through physical interaction and tactile experience.

Our proposal considers the touch and play value of each art element, as well as its the artistic potential. Bright and varied colors are everywhere; sculptures, seating, and climbing are seen as interchangeable opportunities. By incorporating art as a constant play element, we expand the actionable play area for children while enhancing the adult walking experience. The goal here is to foster an awareness of opportunities for creativity in daily life. An isolated, untouchable sculpture may be interesting to view on a single occasion for adults with prior interest, but this is a poor invitation for interaction of any kind. Any static sculptures included in the following design enhancements have a secondary function beyond placemaking through iconography - they can either be climbed, sat upon, crawled under, or shifted through physical force. Sculptures which are not interactive by one of these means will have a kinetic or sound element which engages the senses as a result of pedestrian movement or natural forces. Every piece of art should have a purpose or otherwise be engaging in some way beyond its mere presence.



8.2 DISCOVERY GREEN PARK

DESIGN THEMES

4. PARTICIPATION AND MOVEMENT

The fourth theme, **PARTICIPATION AND MOVEMENT**, is rooted in the needs of the immediate neighborhoods for exciting and inviting spaces for active play and physical fitness. It is both axiomatic and empirically demonstrated that access to recreational infrastructure is associated with increased physical activity in youth (Davison and Lawson 2006). Not only must the park feature play space and whimsical elements, but those spaces and elements must promote active engagement with objects or other people and they must promote movement. This kind of movement contributes to cardiovascular health as well as balance and orientation (Strauss 2015). However, providing the right kind of equipment and features is important.

Children naturally see the actual potential for play in their environments, and the true design and function of the play space will trump any novelty of a specific play piece or clever trick (Jansson 2010, 77). A brightly colored or fanciful object may create an initial draw, but is not enough to generate repeated use unless it affords ample opportunities for different types of play by different ages. Functional elements and programs will ensure positive, engaged participation over the long term.

Achieving measurable progress in increasing physical activity requires not just good initial design of the right spaces and the right equipment. Residents need to know what park facilities are available to them; they need to know how to easily reach those facilities; they need to feel safe once there; and they need to find the space and equipment clean and attractive (Bedimo-Rung 2005). For the bridge park's east end, one acknowledged challenge is that two limited-access highways separate the park and the water from the neighborhood. A related issue also raised by Bedimo-Rung (2005) is that a management structure must be in place so that programming remains vital and the physical condition of the park is maintained. Both the approaches to the park and the management are beyond the scope of our recommendations, but will strongly influence the benefit the community derives from the park.



9.2 KLYDE WARREN PARK ROPE CLIMBING STRUCTURE

DESIGN THEMES

5. COMPETITIVE AND COOPERATIVE PLAY

One lens for looking at play is the interplay between **COMPETITIVE AND COOPERATIVE PLAY**. While cooperative play involving teamwork and working together toward a common goal is natural and beneficial, healthy competitive play is also natural and beneficial.

Competition is the process of comparing skills, essentially showcasing competence. **Children in a competitive environment actually play longer than those in a non-competitive environment** (Pandel 2015).

Structuring the competition to focus on tasks and a child building his or her own competence, rather than simply comparing performance to others or to a scoreboard, builds intrinsic motivation, confidence, creativity, and persistence (Daniels 2007).

These dynamics apply to adults as well. Our concepts have incorporated opportunities for competitive play throughout the park programming. Competition and incremental personal challenge are overtly present in the primary play space and along the running/walking/exercise/play track which runs for a half-mile length in an extended rectangle across the majority of the bridge. The track is designed to be visually intriguing for both children and adults, using bright colors to denote both division of use and invitation to multiple uses. Outdoor gym equipment along the track is combined with playful features like hopscotch and optional obstacle routes. Climbing elements within the primary playspace have a competitive aspect as well, as their progressive difficulty level invites achievement through personal challenge.



10.2 KLYDE WARREN PARK WATER FEATURE

DESIGN THEMES

6. INSPIRE CURIOSITY AND FURTHER EDUCATION

The park should **INSPIRE CURIOSITY AND FURTHER EDUCATION**, the sixth theme. Freeform play and organized play features are integral to achieving this inspiration and teaching opportunity. We seek to infuse an aspect of education into each major programming area through elements that teach directly (interactive sonic signage with historic sound bites) or through self-evident kinetic sculpture (water pumps and manual mill wheels in the waterfall area).

Consistent with the outcome of intertwining program areas, our proposal enhances the overlap among the environmental education center, the waterfall space, and the community gardens. Extending from the waterfall are channels and canals that demonstrate water control and flow, and on the opposite side of the education center is an outdoor classroom ringed by raised garden beds with secondary seating for the public.

Not only do plants and nature teach intellectually, but **“Contact with nature, especially a diversity of plant types, is associated with positive physical, psychological, and emotional well-being in children”** (Freeman et al. 2015, 177-178).

The park integrates vegetation where possible to soften the man-made structure, including grass, trees, and natural boulders that provide balance and variety in the primary play space. This connection with the earth is furthered by programming and features that connect to the water, hydrology, and river ecosystems.



11.2 CHILDREN TRANSPLANT SEEDLINGS TO A PUBLIC GARDEN

DESIGN THEMES

7. WATER AND THE ANACOSTIA RIVER

The seventh theme is **WATER AND THE ANACOSTIA RIVER**. The park is situated in a rich environmental and historical context which can be a great source of inspiration. Currently at the bridge park site there is a simple bike trail and bulkhead at the river's edge, but the park as envisioned by OMA/OLIN features a kayak launch and a learning lab along the water.

Our proposal's design and interpretive elements will help visitors understand the marine ecology as well as the history of the area, while providing them with sweeping views of the city and river. Our proposal enhances the waterfalls on the east end of the bridge, incorporating water play and education. More subtly, blue and green colors and fluid and wave-like visual motifs permeate the park.

The most direct application of this concept is in the appearance of water elements and agriculture within the proposed education center extension. The agricultural area is designed as a semi-contained outdoor classroom experience, providing an opportunity for children to learn about the importance of the water cycle and its effects on plant life. On the opposite side of the education center is a waterfall park extension. A series of canals connect to the waterfall pump mechanism, interspersed with water reeds and tall grasses amongst climable rocks and interactive play elements. This area functions as both a primary public walkway from the street entrance to the cafe and upper deck, and also a public water play area which has flexibility as another outdoor classroom extension of the education center.



12.2 PROPOSED SITE FOR 11TH STREET BRIDGE PARK FROM ANACOSTIA RIVER, PHOTO BY SCOTT KRATZ

PRIMARY CASE STUDIES

INTRODUCTION

This report draws park and playground design inspiration from four case studies, selected for their distinct characteristics applicable to the 11th Street Bridge Park.

1. Klyde Warren Park (Dallas, Texas)
2. Discovery Green Park (Houston, Texas)
3. Louisville Waterfront Park (Louisville, Kentucky)
4. Superkilen Park (Copenhagen, Denmark)

Our team conducted extensive research that included interviews with park leadership to learn more about the parks, their programming, and their operations. We used this background to develop recommendations for the 11th Street Bridge Park.

Each of these four parks receives over one million visitors per year and have become tourist attractions within their respective cities. In each case visitorship exceeded expectations, and all of the cases selected present valuable lessons in designing and running a highly-trafficked public park. Klyde Warren and Discovery Green parks both have a central location within a downtown core, connecting parts of their respective cities which previously lacked for direct walkable connections. Louisville Waterfront Park extends the useful area of its downtown core to the waterfront, and successfully removes the blight of underutilized industrial structures while maintaining an appreciation for the area's historic importance. Superkilen Park is unique in its extended presence through multiple neighborhoods, and was particularly appealing as a case study due to the astonishingly wide variety of cultures represented along its route. Superkilen was an inspiration for visual design drivers of multiple programming zones throughout this project.

KLYDE WARREN

DISCOVERY GREEN

LOUISVILLE

SUPERKILEN

13.2 KLYDE WARREN, 13.3 DISCOVERY GREEN, 13.4 LOUISVILLE, 13.5 SUPERKILEN

PRIMARY CASE STUDIES

1. KLYDE WARREN PARK (DALLAS, TX)

Klyde Warren Park is a 5.2 acre park constructed on top of the eight-lane Woodall Rodgers Freeway in central Dallas, Texas. Opened in 2012 at a cost of \$106.7 million, the park was designed to unite two long-separated neighborhoods of downtown Dallas (Reconnect Austin n.d.). Given the social context and the engineering challenges of essentially being a bridge, Klyde Warren is an important reference for the 11th Street Bridge Park. Additionally, like the 11th Street Bridge Park, it was spearheaded and is operated by a nonprofit partnering with the city, the Woodall Rodgers Park Foundation. Klyde Warren Park's success has led to proposals to cap additional freeway length to expand the park all the way to the Perot Museum of Nature and Science.

Klyde Warren resonates with our design theme of community connections. At a fundamental level, the park simply provides important physical connections. It bridges neighborhoods that were cut by the construction of highways decades ago, better integrating the Arts District, Uptown, the Farmers Market, the primary Central Business District, Victory Park, and the West End. Even when the park is closed, people are allowed to cross the park to get across the city. The park's significance as a connector, however, goes well beyond its role in transportation. With its extensive programming, a children's play area, and two restaurants, it has become a significant attraction in and of itself, drawing visitors from throughout the city and region (Klyde Warren Park 2016).

Programming is an integral part of Klyde Warren Park. Programming is available year-round. Events and programs are only cancelled when there is rain or the temperature drops below 45° F. Michael Gaffney, the Vice President of Operations, said that the park, "has a reputation for having lots of activities and different things to see and do." The park hosts over 1,300 programs and events each year, ranging from workout classes such as tai chi, yoga and, boot camp, to storytime for children. Other activities include chess clubs, various musical performances, and imagination playground. Gaffney stated that, "the programs are an integral piece of the park." These programs are provided with no cost.



14.1

14.2, 14.3, 14.4, 14.5 KLYDE WARREN PARK

PRIMARY CASE STUDIES

1. KLYDE WARREN PARK (DALLAS, TX)

Currently, Klyde Warren Park has one full time employee who manages programming as well as several stewards who oversee the park and play area. Klyde Warren Park contains a variety of unique types of park equipment, like foosball and ping pong tables and tennis courts. Park stewards are responsible for renting out and collecting the necessary equipment. Food trucks, contracting annually with the park, have proven to be another popular aspect of the park.

The park demonstrates innovative engineering solutions for supporting play fields, buildings, trees, and other vegetation on a deck with limited depth. Engineers selected materials for their strength and weight, using a specialty styrofoam product called Geofoam under the fields and using special lightweight soil. The deck was constructed with deep beams that formed trenches, which were used as planter boxes for trees (Reconnect Austin n.d.).

INTERVIEW RECOMMENDATIONS FOR 11TH STREET BRIDGE PARK:

Gaffney (2016) recommended avoiding white materials: “Anything light colored stains. It is very hard to clean, and you will spend a lot of time trying to clean it.” This is especially true in areas near food service. Also, chrome and shiny materials need to be cleaned each day, and despite their constant upkeep show dirt and finger marks.

Overestimate the amount facilities needed. When a park is heavily programmed and popular it will receive a lot of users; facilities, like restrooms, will be used more than initially intended. The overuse of equipment can lead to the increased need for future improvements and repairs.

Choose materials carefully. For example, summer temperatures in Dallas can reach 105° F. During these hot months, people do not want to be sitting or playing on metal equipment.



15.1



15.2, 15.3, 15.4 KLYDE WARREN PARK



PRIMARY CASE STUDIES

2. DISCOVERY GREEN PARK (HOUSTON, TX)

Discovery Green Park is a 12-acre park located in Houston, Texas that opened in 2008 at a total cost of \$125 million. The site was previously used as a parking lot, but now hosts a wide array of active and passive uses for Houston residents. Its primary features include: an amphitheater for music and cultural events; a children's play area; a small lake; an event lawn; gardens; and several fountains. The park is also busily programmed, offering daily fitness classes, Thursday night concerts, partner acrobatics, baby Olympics, juggling, and canine-specific events (Discovery Green Conservancy 2016).

Discovery Green Park is home to multiple temporary and permanent art pieces, primarily large and unique sculptures. These pieces give the park a distinct identity and offer new experiences to its visitors. The concept of temporary sculptural installations was particularly intriguing as a design driver, as it allowed for both customization and another level of community involvement through open invitation to collaborate. A central feature of the primary playspace is a dedicated space for a rotating temporary art piece, partially inspired by the temporary sculptures featured during public events at Discovery Green.

Water is another major element throughout Discovery Green Park. The small lake offers kayaking, paddleboarding, battery-operated watercraft, and ice skating in the winter. Other water features include the the Riley Family Fountain; The Gateway Fountain with water jets; and Dog Hollis' "Mist Tree," a large tree-like structure with eighty different nozzles (Discovery Green Conservancy 2016). The variety of water play elements contributed to the design foundations of our proposed waterplay area in the primary playspace.



16.2, 16.3, 16.4 DISCOVERY GREEN PARK

PRIMARY CASE STUDIES

2. DISCOVERY GREEN PARK (HOUSTON, TX)

INTERVIEW RECOMMENDATIONS FOR 11TH STREET BRIDGE PARK:

Equipment selected for a park should be easy to repair and replace to prevent parts of the park from being shut down. Susanne Theis (2016), the Discovery Green park Programming Director shared that, **"The McGovern Playground is a custom playground that has not held up well to the intensity of use. It has been replaced/repared several times since the park opened in 2008."** The play area of the park should have shaded seating areas for caregivers.

Recognize and understand the park's context, surroundings, and audience. Discovery Green Park was designed as a destination for business and convention travelers, since few people live near the park. Thus, it was programmed to host "destination-worthy events that would give our visitors a taste of the vibrant cultural life of our city" according to Theis (2016).



17.1

17.2, 17.3, 17.4, 17.5 DISCOVERY GREEN PARK

PRIMARY CASE STUDIES

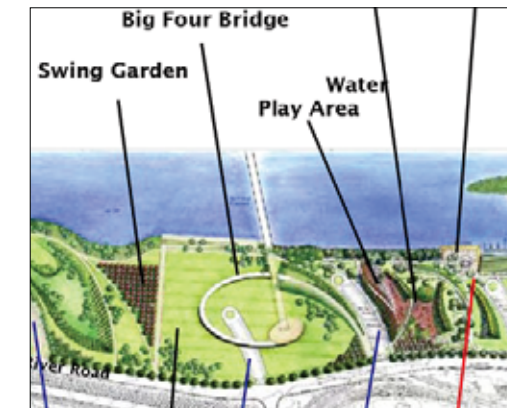
3. LOUISVILLE WATERFRONT PARK (LOUISVILLE, KY)

The Louisville Waterfront Park spans 85 acres along the Ohio River in Louisville, Kentucky. Formerly a series of industrial brownfields, the park is intended to revitalize its neighborhood and extend Louisville to the water, creating opportunities for public activities and displaying waterfront heritage. Its connection to the water and use of existing bridge structures make it instructive to the 11th Street Bridge Park.

The massive project was built in several phases from 1999 to 2013. Stretching across the riverside in a series of “rooms” with different configurations and uses, the park includes a elements for young and old. The Big Four Pedestrian/Bicycle Bridge across the Ohio River, a former railroad bridge, has become a defining feature and a symbolic connection point both day and night. The “exerscape” encourages healthy physical play, using functional equipment that is appealing to kids. The children’s section, part of the first phase, attracted so many visitors and was so successful that it was expanded to five times what was originally planned.

Like Discovery Green, water is integral to Louisville Waterfront Park. “It is what draws people to the park,” says David Kareem (2016), President of the Waterfront Development Corporation. The park’s two large playgrounds include linear fountains, splash pad, and other jets and fountains incorporated in other elements. The linear fountains have become popular for swimming, though they weren’t initially intended for that. The waterplay area is open from 11:00 a.m. until 8:00 p.m. May through September.

The park is also home to a cafe and cafe plaza, the Brown-Forman amphitheater, several lawns, tree groves, walking paths, picnic areas, docks for transient boaters. It is located at the edge of the downtown, in a very urban area, providing visitors and neighborhood families the opportunity to have a recreational outlet.



PRIMARY CASE STUDIES

3. LOUISVILLE WATERFRONT PARK (LOUISVILLE, KY)

The spaces within Louisville Waterfront Park attract different age groups. The equipment meant for the youngest children has been designed to be easy to get on, simple to understand, and remain low to the ground. As the children get older the playground equipment offers more significant movement opportunities. The design also considers caregivers, with seating located to provide good sightlines to multiple play areas. It also avoids hidden spaces. The play space is enclosed by earth berms, which provide a sense of enclosure and containment without an intrusive fence.

Because of the mild climate, water is able to be used almost ten months of the year which assures that the park is used consistently throughout the year. Karem explained, "if there is decent weather, kids will still be in the play areas regardless of the time of year."

Louisville Waterfront Park hosts upwards of 150 events annually. The park directly produces only a few of these programs each year, with the majority produced privately and park staff facilitating in a monitoring role. The park aims to offer a wide variety of events that appeal to all visitors. Karem asserted that "the programming events are very important in keeping the park active."

INTERVIEW RECOMMENDATIONS FOR THE 11TH STREET BRIDGE PARK:

Use quality equipment that is standardized, readily available, and can be repaired easily. Maintenance crews should be able to do the repairs and replacements necessary without having to contract the work out.

Make the play space larger than you anticipate. Karem said that if he had to design the park again, he would "double the wet play area and make the play space larger."

Be aware of the park's surroundings and environmental wear-and-tear. The Louisville Waterfront Park which has been specifically designed to address flooding in addition to typical wear and tear associated with normal weather.



PRIMARY CASE STUDIES

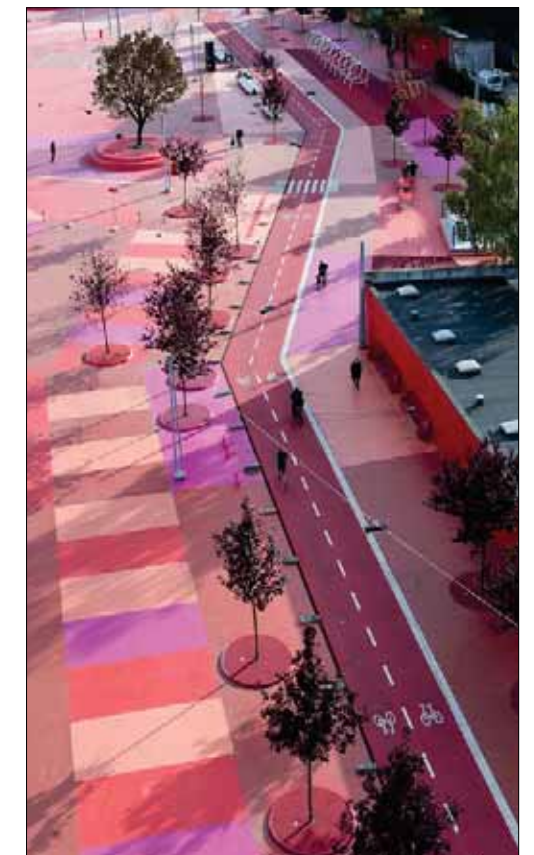
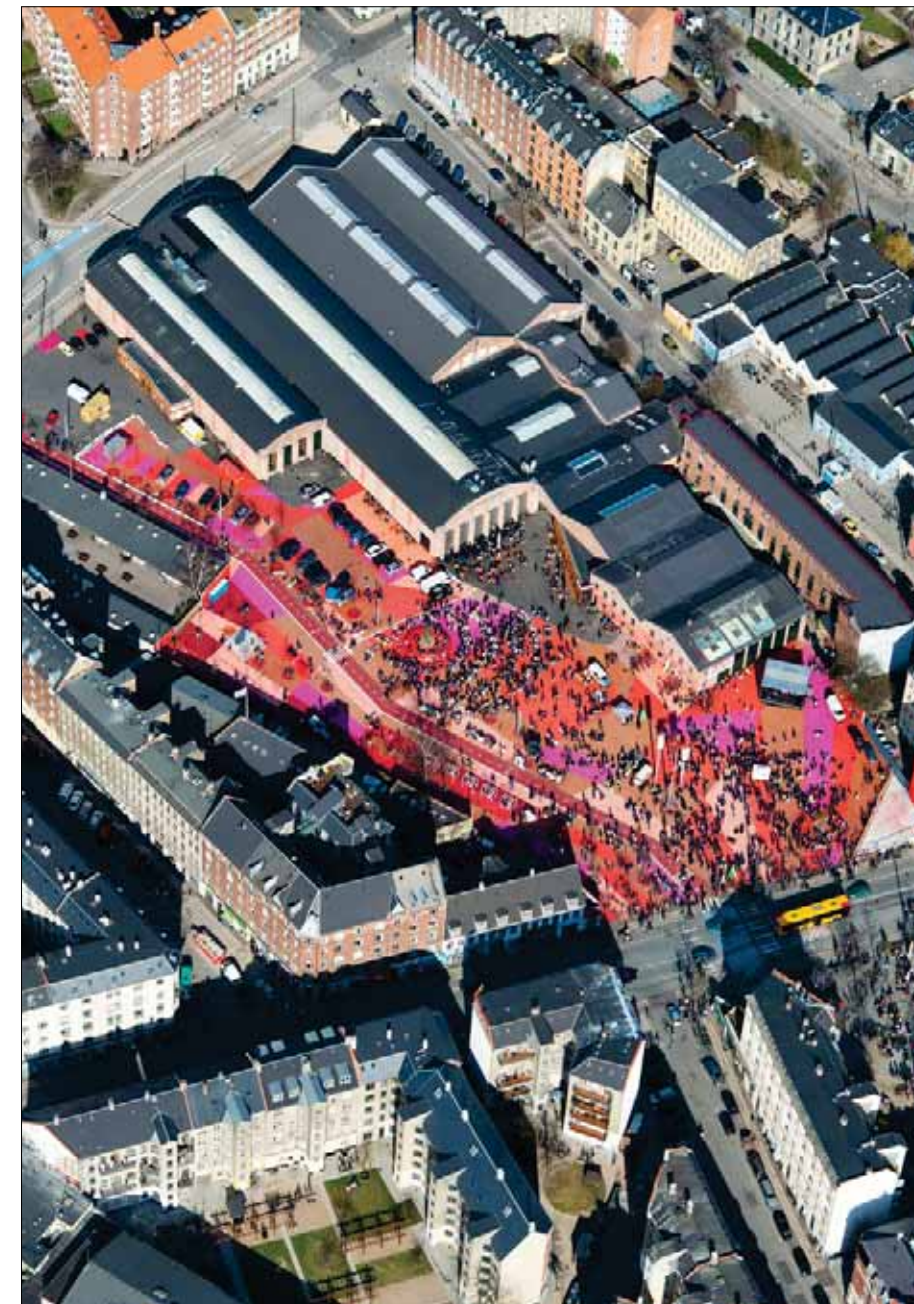
4. SUPERKILEN PARK (COPENHAGEN, DENMARK)

Superkilen Park is a half mile linear public park in urban Copenhagen, Denmark. The park cuts through one of the most ethnically diverse and socially challenged neighborhoods in Denmark, and uses a variety of elements to create an all-inclusive public space. The park takes an intentionally international approach, combining “exercise gear from Los Angeles to sewage drains from Israel, palm trees from China and neon signs from Qatar and Russia.” Striving to pull the best park furnishings and elements from around the world to reflect the diversity of the neighborhood and the city, these objects are labeled in multiple languages to emphasize their variety. The design was a collaboration between Bjarke Ingels Group (BIG), Topotek1, and SUPERFLEX (ArchDaily 2012).

The park is arranged into three distinct zones: green, black, and red. The surfaces let users know which zone they are in and serve to divide uses. The red zone is the market, culture, and sport zone, which includes recreational uses as well as an open-air market. The facades of this zone have been incorporated visually, enhancing the three-dimensional experience. The central square allows for ball games, parades, and ice skating during the winter.

The black zone is the urban living room. During the weekdays tables, benches, and grills serve as a gathering and play space. White lines in the black space curve around the furniture as a way of emphasizing it. The black zone is also home to the large Japanese octopus playground and several cherry trees. The bike traffic through this zone is routed to the side.

The green zone is the area dedicated to sport and play. Facilities include a hockey field, basketball court, ping pong tables, and badminton. There are also grassy hills and lawns for interval training and impromptu workouts. All pedestrian and bike paths are painted green in keeping with the zone's theme. Superkilen's diversity and use of unexpected art and sculptural pieces inspired our proposal's overall approach to the 11th Street Bridge Park.



CASE STUDY EXAMPLES

CASE STUDY SUPPLEMENT

In addition to case studies, our team found inspiration in well-designed landscapes and elements in several other parks around the world.

SWING TIME, BOSTON, MASSACHUSETTS

Swing Time is a standalone exhibit at the Lawn on D in Boston, Massachusetts. The Boston Park is currently home to twenty lighted oval swings as part of their adult playground installment. The swings, suspended on steel rods, emit a blue and purple glow. Commissioned by the Massachusetts Convention Center Authority as part of an initiative to create an interactive public space in Boston, they were part of a temporary installment, but have captured the attention of the planning and design community due to their unique design and surprising level of popularity with the public. The swings were not part of a long-term or master plan, yet they have become a defining element of the park. They appeal to all ages and are used both day and night, lit with internal LEDs at dusk (Gifford 2014).

DARLING PARK, HARBOUR SYDNEY, SYDNEY AUSTRALIA

Darling Park is located in Sydney, Australia. Built to inspire curiosity, Darling Park has an interactive water play space that includes a realistic play canal lock system. It promotes learning, imagination, and fun by allowing visitors to manipulate the water through elements such as a water scoop, a screw, a pump station, and jets (Darling Quarter 2016).

PLAYABLE JOURNEY, HONG KONG, CHINA

Playable Journey, located at Yoho Mall in Hong Kong, China, is a colorful shade structure with swinging seating suspended underneath, designed by the LAAB firm. It was specifically conceived to “bring everyone to one place...kids, parents, couples, youngsters, and grannies – to put away their phones and bond with strangers and loved ones through games” LAAB create the interactive piece out of spheres, dots, circles, and rings to engage people. Playable Journey inspired the hammock grove shade structure (LAAB 2016).



21.1



21.2 SWING TIME



21.3 DARLING PARK



21.4 DARLING PARK

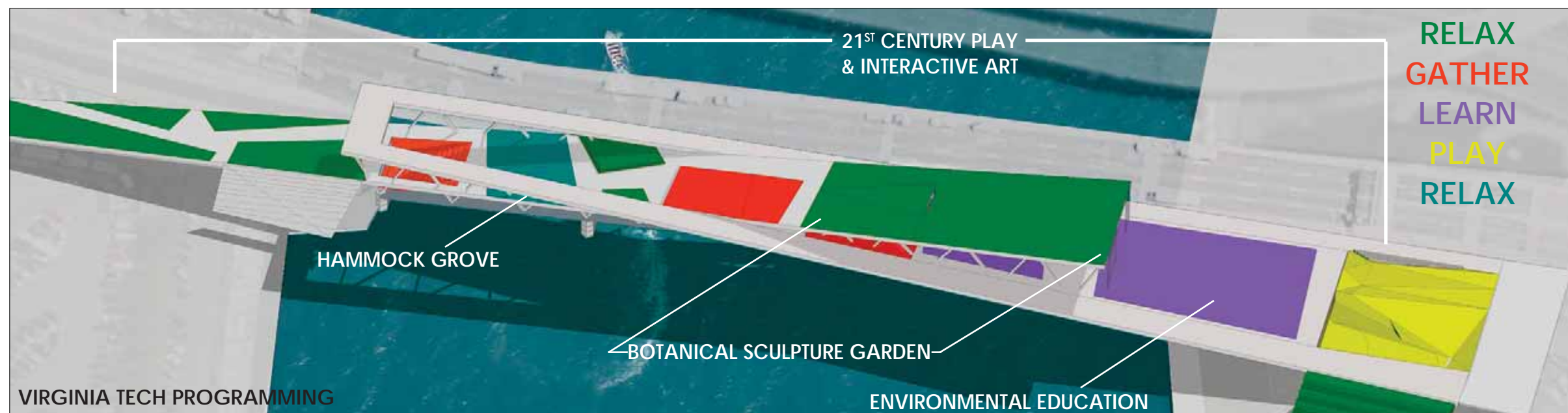


21.5 LAAB PLAYABLE JOURNEY

21.2 SWING TIME, 21.3 DARLING PARK, 21.4 DARLING PARK, 21.5 LAAB PLAYABLE JOURNEY

PROPOSED PROGRAMMING ENHANCEMENTS

(Re)Defined Programming Areas:



22.1

22.2 ORIGINAL DIAGRAMS BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

BROAD CONCEPT

While we incorporate play throughout the park, the primary playspace is chiefly designed for children ages 2-12 and their caretakers. The playspace is meant to provide children from both sides of the bridge with a place that will foster their natural curiosity, competition, movement, engagement with other children, and joyful freeform play.



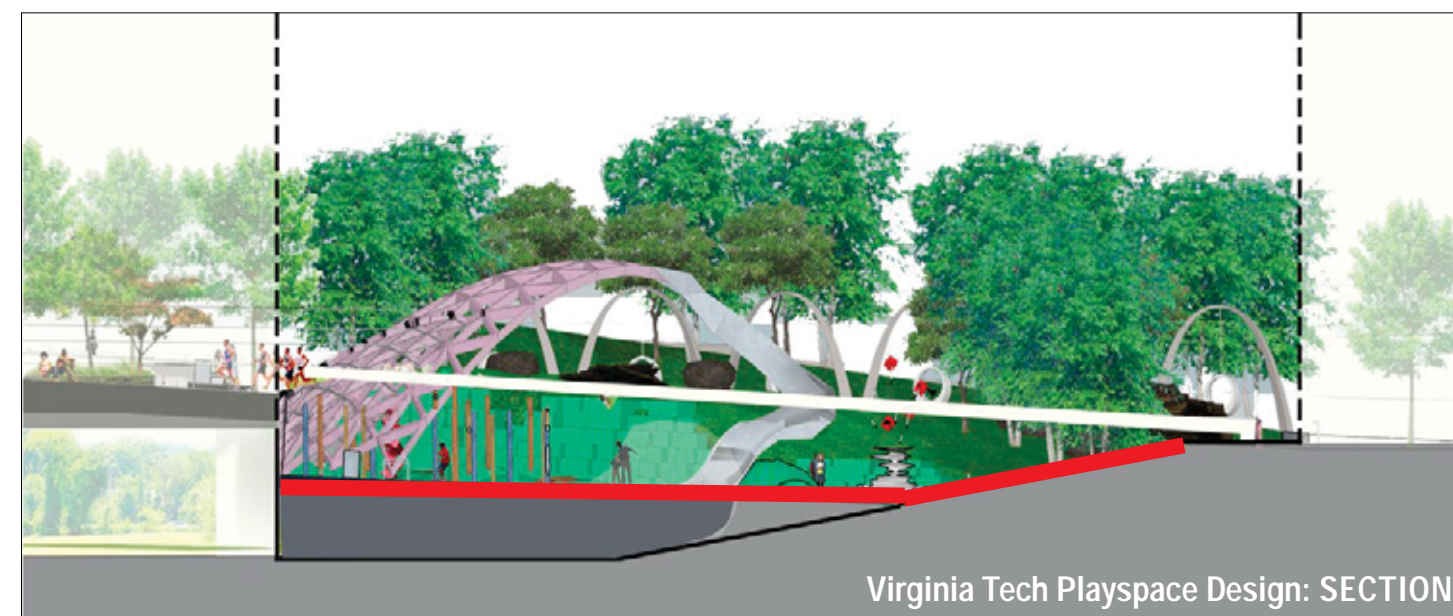
23.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

LOCATION AND TOPOGRAPHY

OMA and OLIN's conceptual design places the rectangular primary playspace at the east end of the park. This portion of the bridge remains on land. The space is sunken relative to the bridge deck, and in the original renderings is open s up under the bridge. Our proposal alters the topography, reducing the overall slope, closes off access under the bridge, and adds a berm along the northeastern side of this rectangular space. It creates a hollow for the play equipment, a hillside ascended by climbing blocks and descended by the slide, a grassy knoll with boulders, and a row of trees.

The OMA/OLIN design proposal for the "21st Century Playspace" (see bottom-right section) called for a fairly dramatic incline for the majority of the space, followed by a small semi-level area which opened directly onto the adjacent Anacostia Road. Our team was concerned about the possibility of children running into the roadway, and felt that the steep incline limited the useful play area. As one of our more drastic programmatic alterations, we decided to close the space to the road and add a tunnel connection as an alternative access to the playspace from the Anacostia Road - and waterfront beyond. (See top-right section). We also reduced the slope of the playspace to create more usable space for children and play equipment. This hollow maintains the grouping of play equipment while creating a sense of enclosure and providing some physical containment - all without any use of fencing to otherwise divide children from the rest of the park. A need for enclosure around the playspace was an issue mentioned by representatives of three of the four case study parks, as was the importance of seating and sight lines for caregivers. In our proposed design adjustment, caregivers can sit on benches in the hollow, on the block wall, or on the grassy hillside and clearly see the whole playspace.

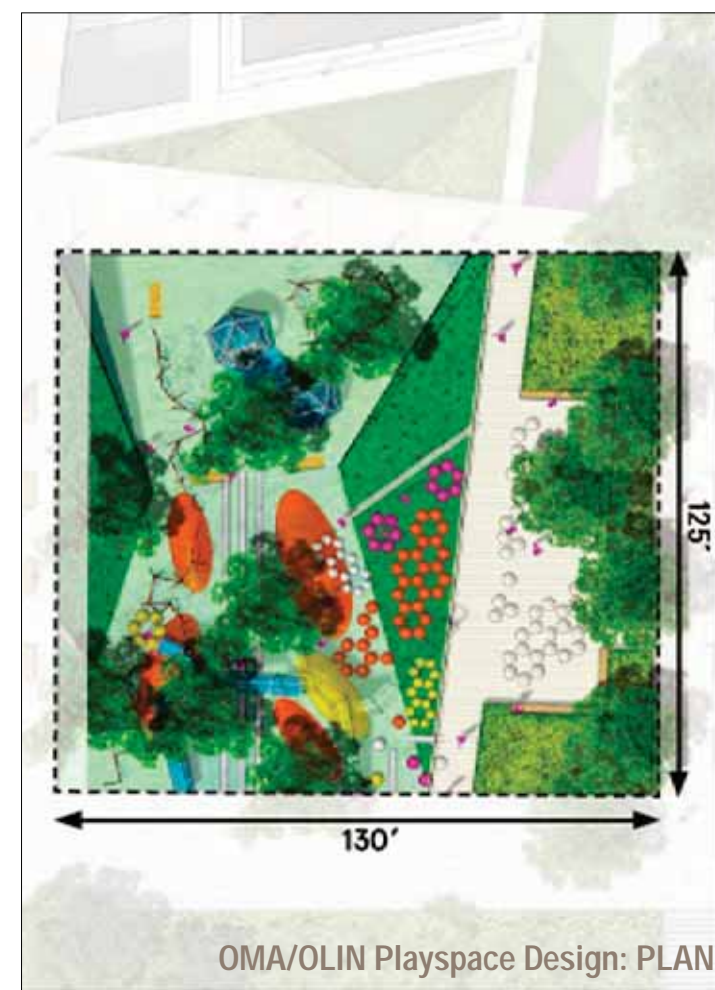


PRIMARY PLAYSPACE

LOCATION AND TOPOGRAPHY

Along the southwestern and northwestern deck edges of the play space, which are above the grade of the space, transparent railings prevent falls and permit visibility. The southeastern edge gently descends from the level of the bridge deck into the play space, welcoming users while maintaining a sense of enclosure from within. The northeastern edge of the space, also at deck level, features a low hill with bleacher-like steps that invite leisurely sitting and people-watching. The steps are made of a light-colored stone and are reminiscent of museum or monument steps.

Play features within the space are designed to appeal to children of different ages and to promote movement. These include a kinetic sound and light wall, a seasonally-rotating feature sculpture piece, climbing mounds, a bouldering wall, a block wall, swings, and a wave-inspired slide. Play elements vary in complexity and difficulty to provide increasing challenge. The theme of art and sculpture is expressed in each feature. Many of the kinetic play elements are intended to stimulate curiosity as well as competitive play, and LED lighting extends the playground's usable hours. Blue and green colors and aquatic motifs such as seaweed and other underwater vegetation reinforce the connection to water and the Anacostia River. Additionally, there is a large active water play area with fountains and jets that will entertain and cool patrons in the summer.

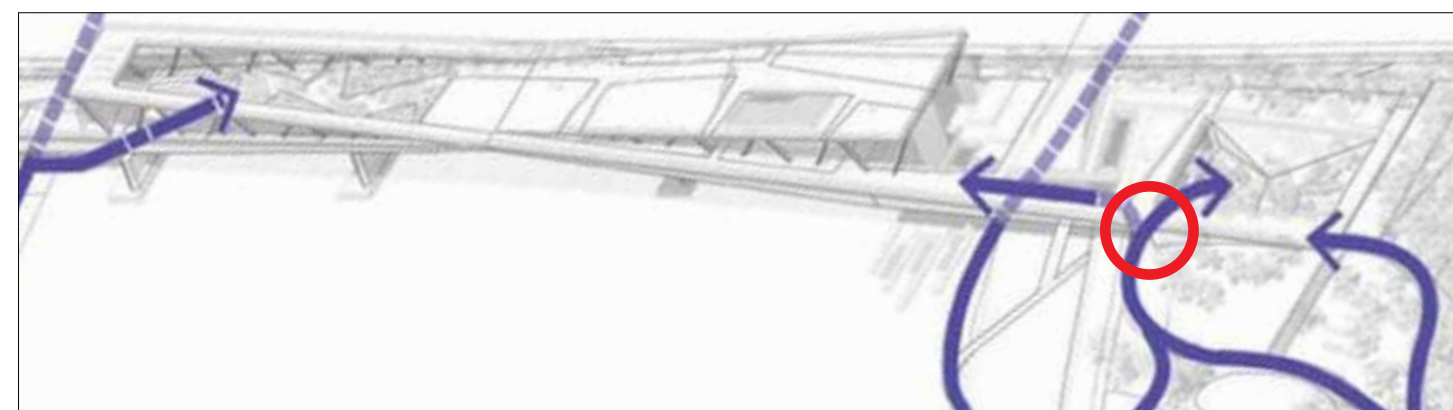


PRIMARY PLAYSPACE

ACCESS AND THE TUNNEL

The grade and access changes were made to address safety concerns, increase usable play space, and accommodate a variety of users. Closing off the large opening directly onto the road reduces the risk of children running directly into traffic or out of supervision. However, the southwestern wall of the primary play space is pierced with a tunnel. The tunnel runs under the bridge deck and emerges from the side of the bridge, below the deck level, in Anacostia Park. This access route will open the play space to the Anacostia Park and to the river drawing patrons in both directions. Its arched vault will provide an opportunity for murals or mosaic art and creative lighting installations as well as a controlled access point. A carefully designed gate at one or both ends can help keep children within their caregiver's supervision and be closed at night. Additionally, the tunnel provides a second ADA-compliant egress for the primary play space.

The playspace tunnel uses LED lighting to create a friendly and welcoming environment. Through the use of colorful LED lights the already colorful tunnel is made more artistically interesting and attractive. The lighting is meant to enhance the existing mosaic tile designs while also providing a connections to the 11th Street Bridge Park from the Anacostia Road. The LED lighting in the park tunnel provides a new layer of visual interest and illuminates the area allowing users to be able to be and feel safe.



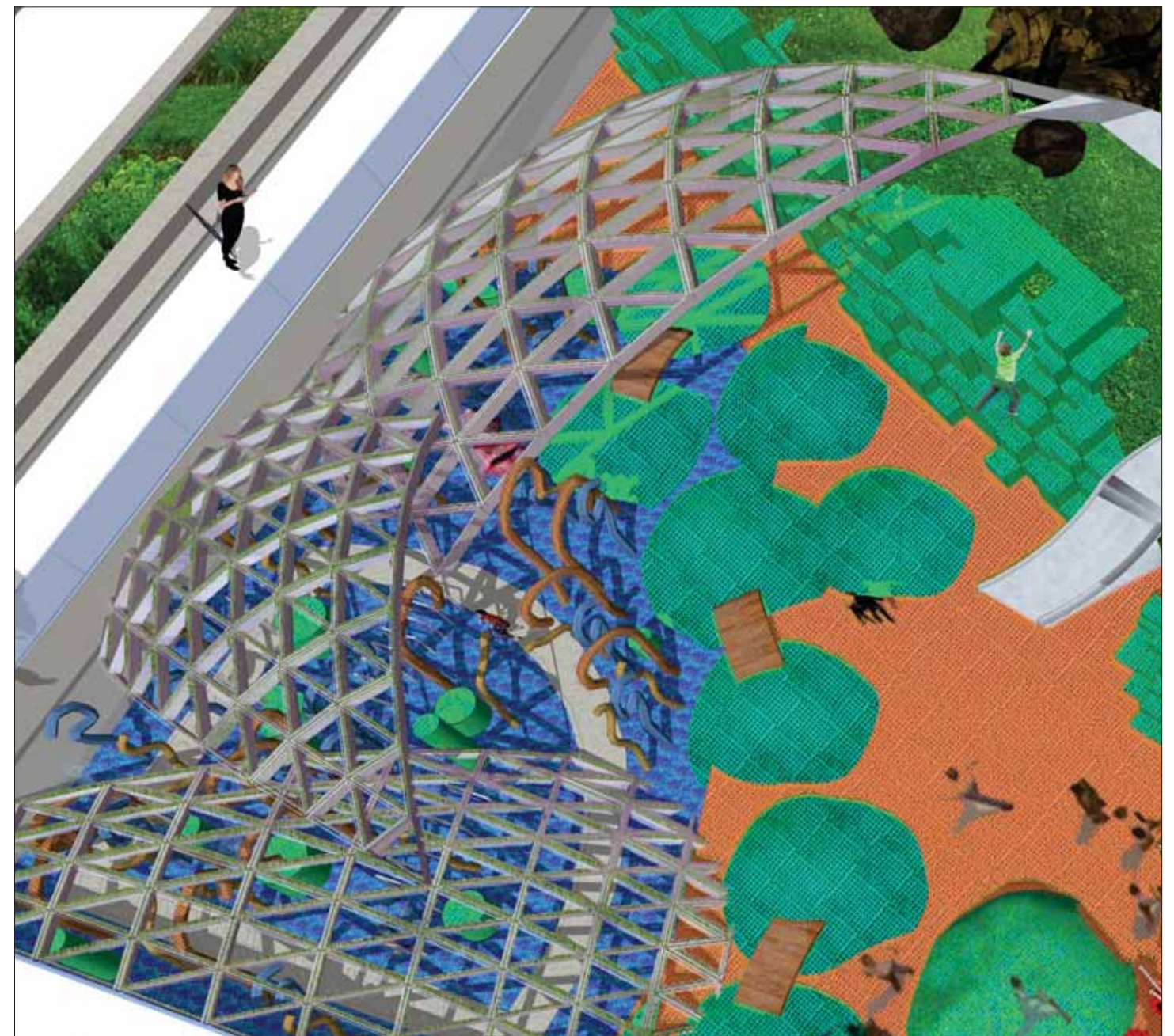
PRIMARY PLAYSPACE

SHADE ARCS

Within the playspace are a series of colorful, climbable arcs which we refer to as the “shade arc.” The shade arc is a shade structure that covers a cluster of water features, inspired by the geodesic “Kaleidome” in Hong Kong’s Shatin Park -- designed by the Laboratory for Art and Architecture (LAAB). The arcs are cantilevered from the bridge structure, rising into the air and arching in a manner reminiscent of ocean waves. In addition to providing shade, this sculptural form creates a visual landmark, climbing activity, and adds to the experience of the water park.

The shade arc shelters an array of play and exercise objects in an undersea forest theme which will provide interesting play opportunities year-round. In warmer months, strategically placed mist-sprayers, fountains, and water jets will make this space a primary attraction for both children and adults. The prismatic metal plates of the shade arc are smooth, but have been outfitted with hand-holds which allow children to climb both the exterior and interior of each arc - up to a safe vertical level. Using the hand-holds, children are able to hang and swing from the shade arcs. The climbable section will be limited to a safe extent of the arc, and handholds may be removed seasonally to account for any potential danger of slippage when the water park is in use.

It was important to our group to include as many climbing and elevation-altering elements into the primary playspace as possible, as this is commonly identified as an important developmental experience for children. The climbing difficulty also creates opportunity for both personal and cooperative challenge, and helps children to develop both fine and gross motor skills as they navigate the connective handholds and refine their balance. A protective rubber matting material is present along the floorscape of the play area, which has been proven to dramatically reduce the incidence of injury on playgrounds. Our collective research has also shown that while there will always be some incidence of accidental injury, children tend to be more responsive to danger than we give them credit for as adults and caretakers. Some sense of optional danger in play is necessary for children to feel challenged.



27.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

CLIMBING ELEMENTS

Climbing is a natural form of play that many of the proposed play elements encourage. Mountable and scalable elements encourage movement, develop balance, stimulate interest through height differences, adapt to different types of play, and facilitate competition. The primary scalable elements are the block wall along the hillside, the bouldering wall, the shade arc, and the natural boulders. Their texture, ease of use, shape, and size vary throughout the park. Natural boulders of varying sizes along the hilltop enhance the aesthetic transition from man-made elements in the play space to the natural area with grass and trees. The boulders offer places to sit or lie, or climb and jump.

Climbing and falling encourage balance and coordination (Ericksen 1984, Strauss 2015), and differences in height and grade changes can make a landscape more interesting and appealing. Both the blocks and the bouldering wall become increasingly difficult as one moves from right to left along the wall, which offers an opportunity for progressive challenge for kids and is appealing to a wider variety of age groups. The bouldering wall can only be climbed in a certain way with static holds, but the block wall could be climbed more quickly and also functions as secondary seating for adults or a type of “fort” perch for children. Children can race to the tops of different structures and challenge themselves to climb higher or find a different element. They can scale the block wall just for the satisfaction of getting to the top, or they can organize narrative role-playing games with a boulder representing a castle or fort.

The block wall also serves as secondary seating where either children or caretakers may sit. With the length of the wall and the varying block dimensions and heights, small children can climb, sit, and play in a manner in which they can still be within close range of their caretakers. It is an extension of the play space function, stairway for the slide, and access route to the swings and grassy hillside above.



28.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

WATER FEATURES

Consistent with the design theme of water and the Anacostia River, water features are prominent throughout our proposal of the park - including the primary play space. Sprayers, misters, and jets have been integrated into the waterplay area directly underneath the shade arc structures. With blue-green colors, undulating surfaces, and marine-themed play devices, this play zone truly becomes an undersea forest when the water is turned on. During the hottest days of the year, jets of water will soak and cool youth in the play area, and the misting water will help to cool the entire playspace. When the season shifts, the waterplay elements maintain a density and tactile interest which inspires hide-and-seek, obstacle-dodging, climbing, and freeform imaginary play. This forest under the shade arcs will still offer places to climb, run, duck, and hang regardless of the season.

Water features within the playspace can be LED-illuminated by either white light or colorful light for evening use. The lighting can be used to make colorful streams of water that children can play in, which our case studies have demonstrated works equally well at dusk - a time which can be the hottest part of the day in summer. LED lighting can also be programmed to change colors, and operated on a timer.

In our case study interviews, representatives from both Discovery Green Park and the Louisville Waterfront Park emphasized how popular water play elements were, to the extent that both would choose to expand those elements if they were to redesign this area within their respective parks. This information influenced our metric in scaling the waterplay area within the primary playspace. The area covered by the shade arcs is roughly one third of the area of the playspace hollow itself, and is roughly half of the level surface area of the hollow. It is entirely possible that demand for this play area in the summer will exceed the maximum occupancy of even these generous area dimensions, but we chose to maintain a variety of useful play areas within this space in order to ensure active play throughout the year.



29.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

ROTATING PLAY SCULPTURE

The rotating play sculpture is a sculptural element located in the center of the primary playspace that will be changed once every year or two. Selected through a community contest in which local artists or groups may submit design proposals, this piece would need to function as both an interactive play piece and as a unique artistic form. Both the competition process and the piece itself offer an opportunity for community engagement, and create a sense of novelty within the children's playspace.

Through this element, the community can become engaged in the park's events. It also provides the local arts community with a new platform for expression and promotion. The park would also gain a novel and unique feature, which may generate additional tourism interest but might also keep the park feeling fresh and interesting for local visitors. Our programming for this element stipulates that it should be both physically interactive and visually or audible reactive to surrounding activity. Ideally this interactive sculpture would incorporate an LED element to maintain interest at night, and add to parkgoer safety.

Examples of interactive elements might be either a sound or light emission which responds to adjacent movement or kinetic interaction. Our group came across similar light-and-sound sculptures which generally rely on motion sensor technology to affect light and sound responses. Theoretically, the responses could be tailored to time of day to appeal to different age groups. Daytime sounds might be more appealing to children (honks, squeaks, carnival music), while evening sounds could draw adult interaction (classic rock music, jazz, game show sounds, etc.).



30.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

KINETIC WALL

The southwestern wall of the primary play space is dedicated to movement and play. Large features that swing, spin, pop out, and light up provide an ever-changing dynamic interaction. Not only do the parts move when pulled or pushed them, but elements independently rotate, light up, or make sounds in reaction to the movements of a person near the wall. There are endless opportunities for multi-sensory exploration, learning, and play. The uniqueness of the wall is meant to draw new visitors and keep local residents returning. Each action of the wall is designed to reward movement through sound and light, which encourages extended physical activity. Both the moving parts and sound/light programming along the wall could be coordinated to promote group activity and teamwork - or competition - among users as well.

LED lighting has been incorporated into the playground equipment, including moving pieces, making the pieces feel more dynamic and engaging to users. Our team made the decision to include LED elements in the programming wherever possible, as the park has been designed as both a daytime gathering space and an evening event space. During evening events, the park will be much safer if it is both lit and occupied. Presumably there will be limitations to the park's open hours, but if it is intended to be utilized for nighttime events then it should be made regularly open to the public during these hours. We expect that the amenities planned by OMA/OLIN will generate enough interest to merit day and night programming, and it is important that evening open hours be constant - rather than events-focused. Consistent open hours will make the park feel more accessible to both locals and tourists, and could be a powerful generator of local nightlife in the immediate area - with positive economic repercussions.



31.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

SWINGS

Perched on the hillside overlooking the play equipment are an arcade of arches, at 90-degree angles to each other, from which swings hang. This unique arrangement was inspired by the Lawn on D Street “Swing Time” exhibit in Boston, Massachusetts, as well as the colonnade of arches at Klyde Warren Park. The swings, large enough for several people at once, have a clean shape and light up at night, providing an interactive element for youth and adults. Their flexible design and siting make them ideal for children playing, adults holding small children, or caregivers supervising children. They emphasize the themes of sculpture as play as well as participation and movement.



32.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

PRIMARY PLAYSPACE

SEATING ON THE HILL

Seating is a crucial element to the success in any park. Seating allows for leisure use; people who are taking a walk can just sit and take a break and observe. Seating also provides caretakers supervising children with the ability to sit and watch the children making the experience more enjoyable for care-takers. The swings are located on hill overlooking the play equipment hollow. Behind them are a row of trees and stadium seating that descends to the track. This part of the primary play space helps to transition into the rest of the park, and provides an adjacent area for older children who may want to talk or have less active play. It also invites people of all ages to lounge for a while under the shade of a tree. This is an ideal spot to incorporate larger trees because it is on land and not part of the bridge structure.



33.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

EDUCATION CENTER

ENVIRONMENTAL EDUCATION & AGRICULTURE

The environmental education center anchors the east end of the bridge, near the primary play space. Its lower level opens on to the river bank under the bridge, and its upper level opens onto the deck. Outside the door onto the deck is an outdoor classroom plaza encircled by raised planter beds. Those beds can be filled with herbs, vegetables, flowers, or other plantings to support the curriculum. Alternatively, the planter beds could be community gardens or managed by the community agriculture program planned for the park. On top of the environmental education center is a grass roof that gently slopes to the level of the deck, providing a secondary gathering space. The grasses above the education center are durable and ornamental. Both this space and the classroom plaza can serve for casual gathering when not occupied by education programs, achieving the versatility outcome of the design.

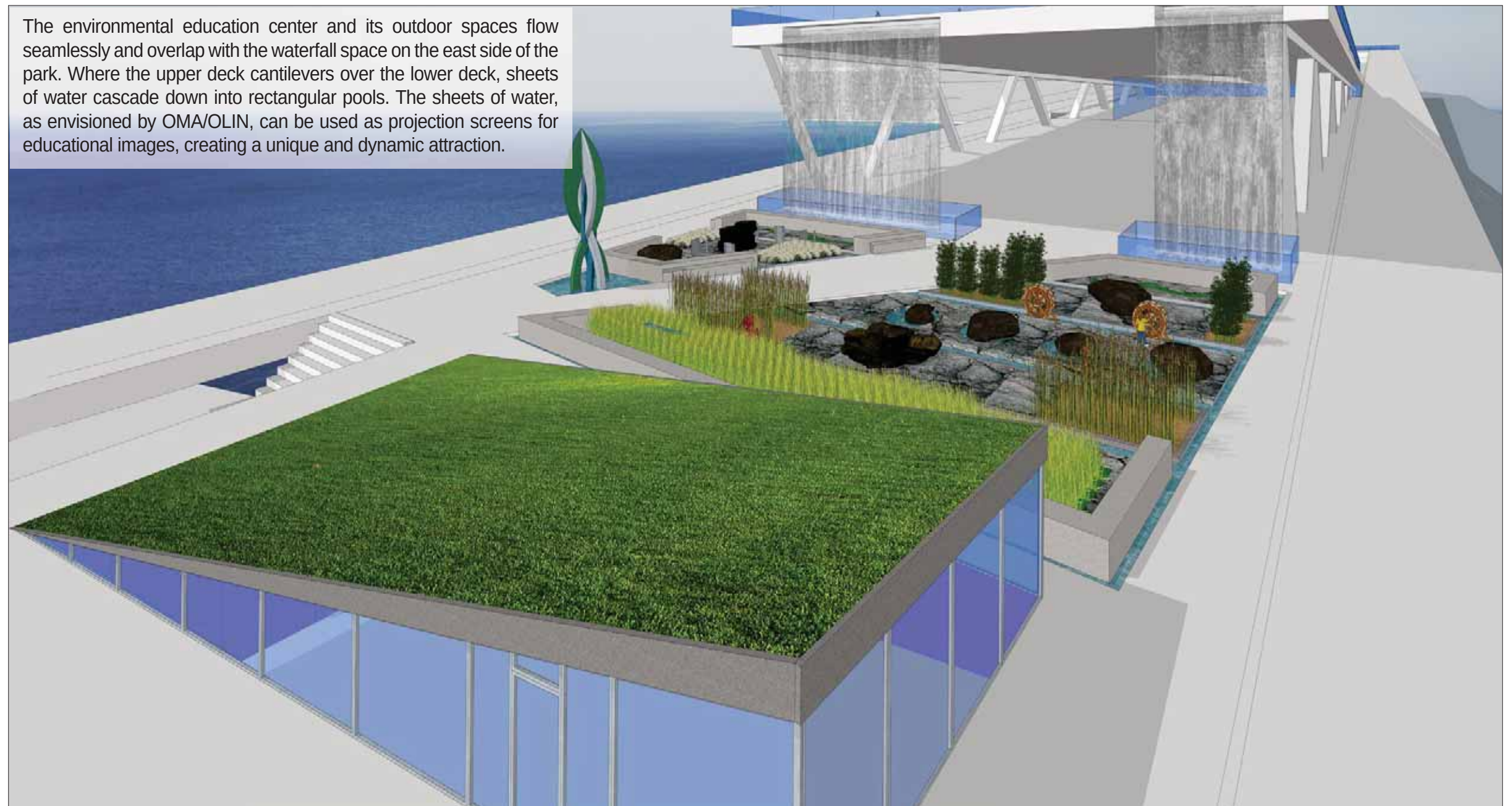


34.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

WATERFALL ZONE

EDUCATIONAL CENTER EXTENSION

The environmental education center and its outdoor spaces flow seamlessly and overlap with the waterfall space on the east side of the park. Where the upper deck cantilevers over the lower deck, sheets of water cascade down into rectangular pools. The sheets of water, as envisioned by OMA/OLIN, can be used as projection screens for educational images, creating a unique and dynamic attraction.



35.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

WATERFALL ZONE

EDUCATIONAL CENTER EXTENSION

Our proposal links the pools under the waterfall to a system of small channels and canals zig-zagging among rocks, plants, and benches. The naturalistic elements have been incorporated to encourage people to pause and enjoy the space. The mix of materials, textures, and sounds are meant to provide a stimulating sensory mix.



36.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

WATERFALL ZONE

EDUCATIONAL CENTER EXTENSION

The channels have also been designed to include locks and gates that can be manipulated, inviting visitors to experiment and see how the water flow changes. These water features could easily be integrated into the education center's curriculum, further blending sections of the park. While the channels are directly connected to the same system which feeds the waterfall mechanisms, this programming area is set at a reasonable distance from the waterfalls themselves to avoid any potential danger to children.



37.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

TRACK

COMPETITIVE PLAY

Encircling the entire park on the perimeter of the deck is a walking and jogging track. It follows the lower deck on the east side, and rises on the upper deck on the west side of the park. OMA and OLIN designed the shape so that two laps along this track would equal one mile. Dedicating this right-of-way around the whole park prioritizes physical activity, making it easier for patrons to walk or jog if they wish.

The surface of our proposed track is soft, resilient rubber, in bright colors with divisional lane lines and start and finish lines. Lane lines help to reduce interference and congestion by separating runners and walkers. Start and finish lines are playful visual clues, especially for youth, to run and to race. This is a direct way of encouraging competitive play that gets people moving. LED lights are incorporated along the track to delineate individual lanes and illuminate the track as whole to make day and night use safer. LEDs are also used to illuminate the sculptures and seating.

Along the inside edge of the track are stations with exercise equipment, such as rowing machines and pull up bars, as well as seating. The seating faces both the water and the park interior, adapting to visitor needs. Additionally, sculptural elements will be placed along the track that will provide artistic visual interest for runners and walkers on the track. These elements enhance the usefulness of the track for all ages and abilities and add to a dynamic atmosphere.



38.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

TRACK

BUFFER ZONES

There are several spots where the track will need to be designed carefully to avoid conflicts with use of the park as a whole. For example, at the western side of the upper bridge deck, the track is spaced back from the edge, allowing a viewing area and creating space for benches overlooking the city.

The area surrounding the primary playspace is also given additional buffer distance from the track lanes, to provide for deck seating adjacent to the play area. By exposing children to the track activity, and by providing opportunities along the track for both play and exercise equipment, we hope to pique children's interest in health and exercise.

This format makes regular exercise accessible to both children and adults on both sides of the bridge, and creates an opportunity for mixing between casual visitors and locals while maintaining a clearly legible division of use. Barring long-term issues of overcrowding due to tourism, the clear visual barriers between these uses should maintain a useful jogging path adjacent to normal walking area.



39.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

SCULPTURE GARDEN

BROAD CONCEPT

The Sculpture Garden covers the upper deck on the eastern side of the park. Gently inclining up from Anaquash Plaza at the center of the park, the curving pathway passes the lawn (the roof of the cafe) and loops around a massive sculpture. The large anchor sculpture is an undulating form suggested by a piece of driftwood washed up on the bank of the river. Visitors can walk under, through, and on top of the sculpture, which is embedded with LEDs to twinkle at night. Surrounding the anchor piece are smaller sculptures, all meant to be touched, as well as several strategically placed trees and planting beds.



40.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

SCULPTURE GARDEN

INTERACTIVE ART

Interactive artwork within the botanical sculpture garden sparks curiosity and wonder among patrons, and invites bolder visitors to climb; these sculptures are not meant to be viewed as objects at a distance. Sculptures have been selected and positioned to encourage movement and participation, art as play, curiosity and education, and make a conceptual connection to the Anacostia River.

The location of the sculpture garden on the upper deck on the east side of the bridge park will draw visitors upwards to view the Anacostia neighborhood spread out below them in the distance. Along the edge of the botanical sculpture garden, as on the west side upper deck extension, there will be ample space for walking observers and bench seating.

LED lighting is heavily utilized throughout the sculpture garden to make the space usable both day and night. Lighting is used to illuminate the sculptures themselves and to provide walking visibility to users along the path. LED lighting is incorporated into the physical design of the primary driftwood-inspired central sculpture to create a unique experiential atmosphere. (See next slide for details). Benches within the sculpture garden are lit with LEDs at their base to highlight their location and invite people to sit. In addition, the path which continuously meanders through the sculpture garden has LED lighting along the edges to illuminate the path, encouraging people to stroll through the sculpture garden at any hour.

One of the smaller sculptures is a negative space Earth (see right). The globe of Earth is made of metal, and a live cherry blossom tree springs up between the continents. This evokes metaphors of the environment, humanity, and technology while referencing the cherry blossom iconic to Washington D.C.



41.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

SCULPTURE GARDEN

NIGHT EXPERIENCE

Lighting this portion of the park are tall, colorful glass tube groupings that light up at night. These tube groupings are reminiscent of thickets and add new texture and color to the park. The central sculpture is illuminated both from underneath using grazing spot lights, and from within the sculpture itself using small-scale white LED's. This allows the sculpture to be seen at night while permitting people to walk underneath it and experience a unique textural series of cave-like spaces which evoke the feeling of a clear night sky, calling to mind primal memories of life amidst nature.



42.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

HAMMOCK GROVE

BROAD CONCEPT

Using OMA and OLIN's original proposal, our group has built upon and expanded the hammock grove. Situated on the western half of the park, the hammock grove will be a destination for lounging, relaxing, and socializing. Hammocks and swings will hang from columns supporting a kaleidoscope of colored translucent panels which shade the area and create a colorful light filter. The shade structure forms a sparkling colorful display visible to those on the upper deck. We recommend either grass or artificial turf underneath the hammock structures to lend a more naturalistic, informal feeling to this section of the park.

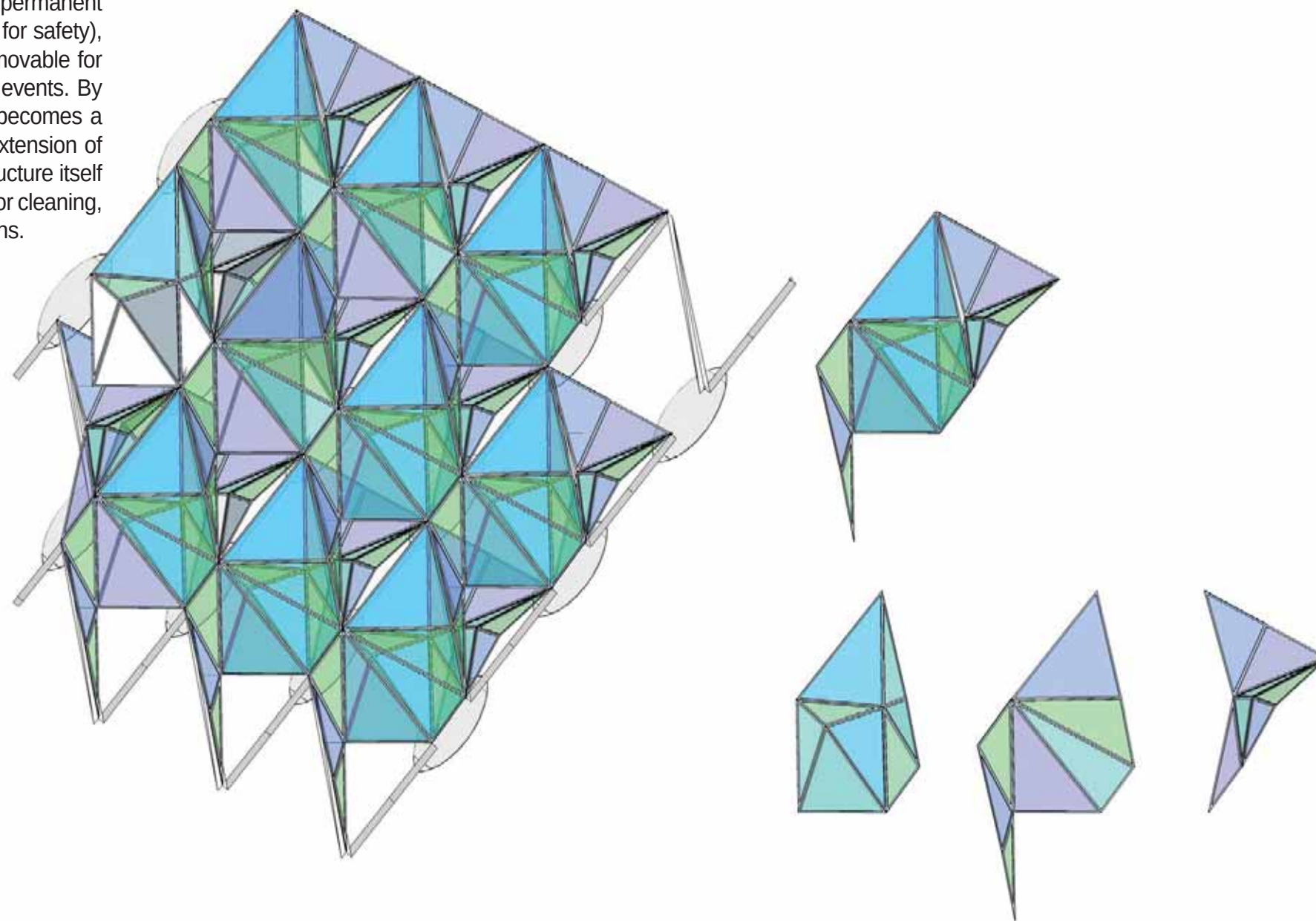


43.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

HAMMOCK GROVE

MODULAR FORMAT

While the support columns are semi-permanent (modular in format but requiring deck bolting for safety), the hammocks themselves will be easily removable for cleaning, for the off-season, and for special events. By removing the hammocks, this space easily becomes a covered mingling plaza and programmatic extension of the adjacent Anaquash Plaza. The shade structure itself is also entirely modular and can be removed for cleaning, replacement, or for seasonal thematic rotations.

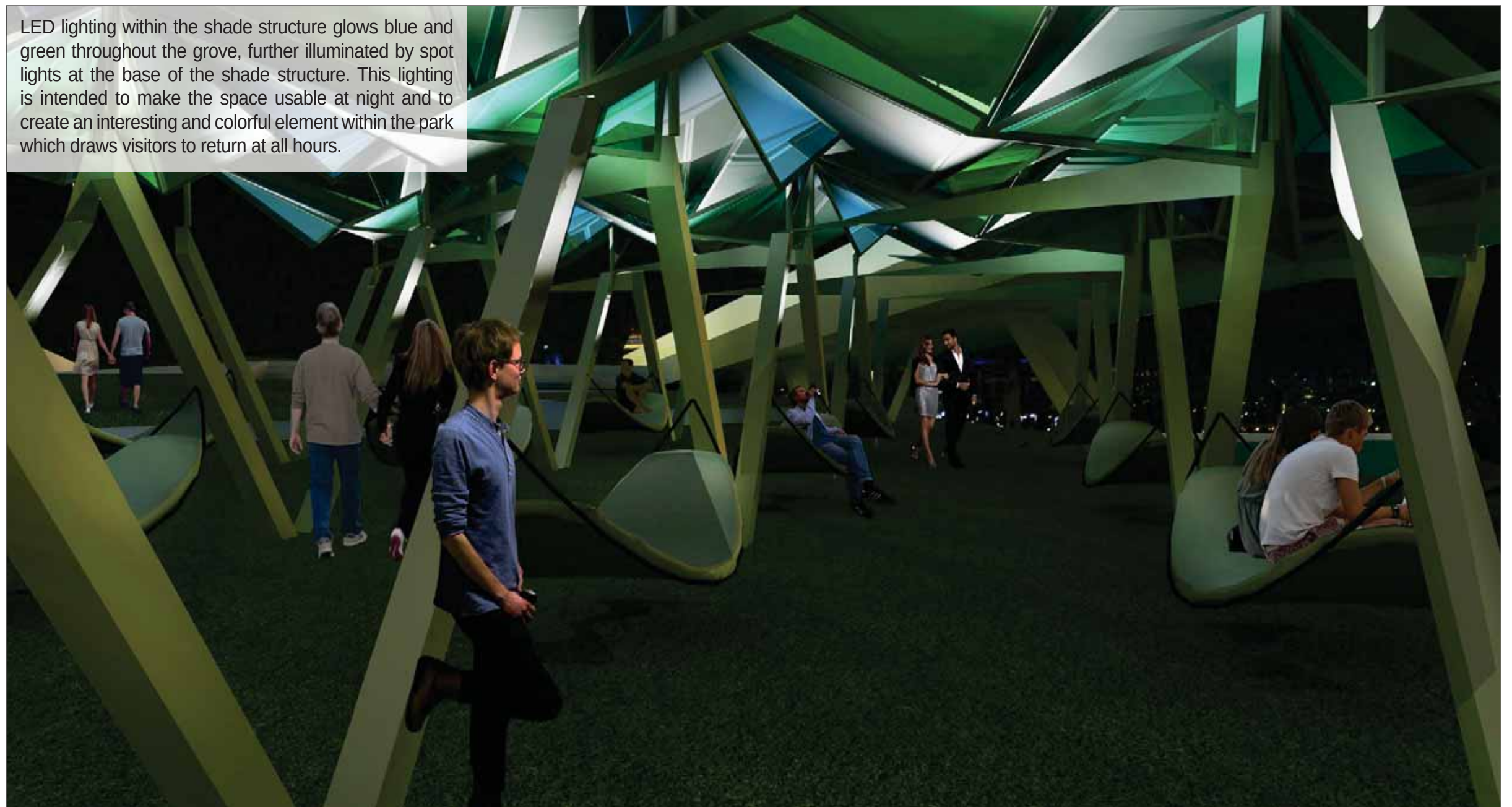


44.2 ORIGINAL AXONOMETRIC RENDERING AND STRUCTURAL DESIGN BY RAE FERRAIUOLO

HAMMOCK GROVE

NIGHT GROVE

LED lighting within the shade structure glows blue and green throughout the grove, further illuminated by spot lights at the base of the shade structure. This lighting is intended to make the space usable at night and to create an interesting and colorful element within the park which draws visitors to return at all hours.



45.2 ORIGINAL RENDERING BY RAE FERRAIUOLO

CONCLUSION

PLAY REIMAGINED

This report has presented research-based recommendations and conceptual designs incorporating play, art, education, and movement across all programming areas of the proposed 11th Street Bridge Park in Washington DC. Our three-member team has developed these proposed enhancements and play features to further play throughout the park. All designs have maintained the OMA/OLIN emphasis on the connection between the two parts of the city. This emphasis was the result of four goals driving Park leadership, including the creation of a healthy community, connecting the community with the Anacostia River, reconnecting the Anacostia / Fairlawn and Capitol Hill / Navy Yard neighborhoods, and generating new jobs and economic activity. Our team also identified the encouragement of active play as integral to our design proposal.

We have posited that play should be for all ages, and that design elements fundamental to childhood development should be addressed throughout the program. Themes of environment, physiology, creativity, education, and socialization have been explored in this context, and supported by design elements throughout our proposed programming enhancements. We emphasized a strong connection between environmentally-driven development and designs for creative devvaried textures and materials, vegetation and varied landforms, and spacial variety. Our team explored the potential for social development and community mixing through both competitive and cooperative play opportunities by creating dynamic spaces which might allow for social interactions. We have connected these respective needs to coordinate socialization and physical play with environmental education and interactive art.

We hope that the primary take-aways from this presentation are the importance and achievability of spatial versatility, with consistent flow and connections between programming areas. The park should be inviting and accessible to all visitors, with a design which accounts for their potential needs. Let's create a space that unites communities and fosters multi-generational engagement in active play. Thank you for reading, and thank you to Scott Kratz of the 11th Street Bridge Park project.

46.1



46.2 ANA VICINANZO AND TOM ROBERTS DISCUSS THE BRIDGE PARK DURING A SITE VISIT

SOURCES

TEXT CITATIONS

ArchDaily. 2012. "Superkilen / Topotek 1 + BIG Architects + Superflex." [Web Page] Accessed March 1 2016. <http://www.archdaily.com/286223/superkilen-topotek-1-big-architects-superflex>.

Bedimo-Rung, Ariane L., Andrew J. Mowen, and Deborah A. Cohen. 2005. "The significance of parks to physical activity and public health: A conceptual model." *American Journal of Preventive Medicine* 28 (2, Supplement 2):159-168. doi: <http://dx.doi.org/10.1016/j.amepre.2004.10.024>.

Daniels, Ann Michelle. 2007. "Cooperation versus competition: Is there really such an issue?" *New Directions for Youth Development* 2007 (115):43-56. doi: 10.1002/yd.222.

Darling Quarter. 2016. "Darling Quarter Play." [Web Page] Accessed March 1 2016. <http://www.darlingquarter.com/play/>.

Davison, Kirsten, and Catherine Lawson. 2006. "Do attributes in the physical environment influence children's physical activity? A review of the literature." *International Journal of Behavioral Nutrition and Physical Activity* 3 (19). doi: doi:10.1186/1479-5868-3-19.

Discovery Green Conservancy. 2016. "History of Discovery Green." [Web Page] Accessed April 1 2016. <http://www.discoverygreen.com/history-of-discovery-green>.

Freeman, Claire, Yolanda van Heezik, Katherine Hand, and Aviva Stein. 2015. "Making Cities More Child- and Nature-Friendly: A Child-Focused Study of Nature Connectedness in New Zealand Cities." *Children, Youth and Environments* 25 (2):176-207. doi: 10.7721/chilyoutenvi.25.2.0176.

Gaffney, Michael. 2016. Klyde Warren Park Interview. Interviewed by Ana Vicinanza April 4 2016.

Gifford, Kelly. 2014. "'Swing Time' lights up the Lawn on D." *The Boston Globe*, September 11 2014. <https://www.bostonglobe.com/arts/theater-art/2014/09/11/interactive-art-piece-swing-time-lights-lawn/4UQQCGiRZ0IPDysO4IYxNK/story.html>.

Jansson, Märit. 2008. "Children's Perspectives on Public Playgrounds in Two Swedish Communities." *Children, Youth and Environments* 18 (2):88-109.

Jansson, Märit. 2010. "Attractive Playgrounds: Some Factors Affecting User Interest and Visiting Patterns." *Landscape Research* 35 (1):63-81. doi: 10.1080/01426390903414950.

Karem, David. 2016. Louisville Waterfront Park Interview. Interviewed by Ana Vicinanza March 2 2016.

Klyde Warren Park. 2016. "Klyde Warren Park." [Web Page] Accessed February 25 2016. <http://www.klydewarrenpark.org/>.

LAAB. 2016. "Playable Journey - Yoho." [Web Page] Accessed February 25 2016. http://www.laab.pro/?portfolio_page=infinite-loop-%C2%B7-yoho.

Pandel, Hannah. 2015. "HEALTHY COMPETITION IS GOOD FOR CHILDREN." *Review - Institute of Public Affairs* 67 (1):30-33.

Reconnect Austin. "Klyde Warren Park." [Web Page] Accessed April 1 2016. <https://reconnectaustin.com/precedents/klyde-warren-park/>.

Refshauge, Anne Dahl, Ulrika K. Stigsdotter, Bettina Lamm, and Kristin Thorleifsdottir. 2015. "Evidence-Based Playground Design: Lessons Learned from Theory to Practice." *Landscape Research* 40 (2):226-246. doi: 10.1080/01426397.2013.824073.

Strauss, Valerie. 2015. "The decline of play in preschoolers — and the rise in sensory issues." *The Washington Post*, September 1 2015. <https://www.washingtonpost.com/news/answer-sheet/wp/2015/09/01/the-decline-of-play-in-preschoolers-and-the-rise-in-sensory-issues/>.

Theis, Suzanne. 2016. "Email Between Suzanne Theis and Ana Vicinanza." March 6 2016.

Waterfront Development Corporation. 2016. "About the Park." [Web Page] Accessed March 1 2016. <http://www.louisvillewaterfront.com/park/>.

Woolley, Helen, and Alison Lowe. 2013. "Exploring the Relationship between Design Approach and Play Value of Outdoor Play Spaces." *Landscape Research* 38(1):53-74. doi: 10.1080/01426397.2011.640432.

SOURCES

IMAGE SOURCES

Numbering is left to right, top to bottom

SLIDE 1: 1.1-1.3 OMA/OLIN rendering; 1.4 OMA/OLIN presentation image

SLIDE 2: 2.1 11th Street site image by Rae Ferraiuolo; 2.2 ArcGIS satellite view, 11th Street Bridge

SLIDE 3: 3.1 LAAB Kaleidome, <http://www.hexapolis.com/2015/05/09/hong-kongs-kaleidome-transforms-park-into-a-wonderland/>
3.2 Map Inforgraphic by Rae Ferraiuolo

SLIDE 4: 4.1 LAAB Kaleidome (see 3.1); 4.2 Chart by Rae Ferraiuolo, based on Woolley and Lowe, 2013

SLIDE 5: 5.1 LAAB Kaleidome (see 3.1); 5.2 OMA/OLIN rendering

SLIDE 6: 6.1 11th Street Bridge site photo by Rae Ferraiuolo; 6.2 Anacostia neighborhood photo by Rae Ferraiuolo

SLIDE 7: 7.1 (see 6.1); 7.2 Klyde Warren Park: <http://www.examiner.com/article/klyde-warren-park-to-pursue-establishing-a-public-improvement-district>

SLIDE 8: 8.1 (see 6.1); 8.2 Discovery Green Park, <http://www.discoverygreen.com/monument-aufantome>

SLIDE 9: 9.1 (see 6.1); 9.2 Klyde Warren Park, photo by Ben Dunham (Flickr.com)

SLIDE 10: 10.1 (see 6.1); 10.2 Klyde Warren Park

SLIDE 11: 11.1 (see 6.1); 11.2 Students from Oakdale Christian School, photo by Jessica Scott.

SLIDE 12: 12.1 (see 6.1); 12.2 A view of the proposed site for the 11th Street Bridge Park from the Anacostia River _Photo by Scott Kratz_Building Bridges Across the Anacostia River

SLIDE 13: 13.1 Klyde Warren Park, photo by Mei-Chun Jau (landezine.com)
13.2 Klyde Warren Park, photo by Dillon Diers (archdaily.com)
13.3 Discovery Green Park, photo posted by member "Shep" on pearljam.com
13.4 Louisville Waterfront Park, photo by Nick Roberts (anacostiatruster.org)
13.5 Superkilen Park, photo by Barbara Steiner (Ed.): Superkilen. A Project by BIG, TOPOTEK 1, SUPERFLEX. Stockholm 2013. ISBN 978-91-87543-02-09

SLIDE 14: 14.1 (see 13.1)

14.2 Klyde Warren Park, Photo 7 of 19, by Dillon Diers Photography (archdaily.com)
14.3 Klyde Warren Park, photo by Wolfgang Demino (panoramio.com)
14.4 Klyde Warren Park Dallas Texas, photo by Youtube member "Jam G" (youtube.com)
14.5 Klyde Warren Park, photo by Sarah Beauregard (kittensandpitbulls.blogspot.com)

SLIDE 15: 15.1 (see 13.1)
15.2 Klyde Warren Park, Photo 9 of 19, by Dillon Diers Photography (archdaily.com)
15.3 Klyde Warren Park, photo by the Conner Family (jeffandsam-theconnerfam.blogspot.com)
15.4 Klyde Warren Park, photo by the Conner Family (jeffandsam-theconnerfam.blogspot.com)

SLIDE 16: 16.1 Discovery Green Park, photo by Petersen Studio (petersen-studio.com)
16.2 Discovery Green Park, photo posted by member "Shep" on pearljam.com
16.3 Discovery Green Park, Bruce Monroe's Field of Light (houstonpress.com)
16.4 Discovery Green Park, photo by Flickr user "erion.shehaj" (flickr.com)
16.5 Discovery Green Park, photo by Architects of Air (365thingsinhouston.com)

SLIDE 17: 17.1 (see 16.1)
17.2 Discovery Green Park, photo by American Association of Airport Executives (aaae.org)
17.3 Discovery Green Park, Suzanne and Ryan, photo by Alex M (alexmp photography.com)
17.4 Discovery Green Park "Push Me Faster," photo by Abel Klainbaum (houstonpress.com)
17.5 Discovery Green Park, photo by "my friend Kim" (whichwayaustin.blogspot.com)

SLIDE 18: 18.1 Louisville Waterfront, photo posted by Mark Hass (realestate3000.com)
18.2 Louisville Waterfront, photo by Louisville-Southern Indiana Ohio River Bridges Project
18.3 Louisville Waterfront, photo by Bravura Architecture (bravura-arch.com)
18.4 Louisville Waterfront Map: http://louisvillewaterfront.com/documents/2015_detailed_park_map_BRIDGES.pdf
18.5 Louisville Waterfront, photo by Hargreaves Associates (hargreaves.com)

SLIDE 19: 19.1 (see 18.1)
19.2 Louisville Waterfront, photo by Speed Demon 2 Photography (speeddemon2.com)
19.3 Louisville Waterfront, photo by the Smithsonian Newsdesk (newsdesk.si.edu)
19.4 Louisville Waterfront, photo by Daniel Montgomery (sojourn.com)
19.5 Louisville Waterfront, photo by Hargreaves Associates (hargreaves.com)

SLIDE 20: 20.1 Superkilen Green Park, photo by Iwan Baan (arcspace.com)
20.2 Superkilen, photo by Mikkel Barker (kopenhavnergron.dk)
20.3 Superkilen, photo by Iwan Baan (iwan.com)
20.4 Superkilen, photo by Iwan Baan (iwan.com)

SOURCES

IMAGE SOURCES (Part 2)

SLIDE 21: 21.1 Lawn on D Street, photo by Hacin and Associates (hacin.com)
21.2 Lawn on D Street, photo by Justin Saglio for the Boston Globe (bostonglobe.com)
21.3 Darling Park, photo by Darling Quarter (darlingquarter.com)
21.4 Darling Park, photo by Paige Johnson (play-scapes.com)
21.5 LAAB Playable Journey, photo by Otto Ricci (laab.pro)

SLIDE 22: 22.1 11th Street Bridge site photo by Rae Ferraiuolo
22.2 Bridge Programming Diagrams by Rae Ferraiuolo

SLIDE 23: 23.1 Location Diagram by Rae Ferraiuolo
23.2 Primary Playspace, rendering by Rae Ferraiuolo

SLIDE 24: 24.1 Location Diagram by Rae Ferraiuolo
24.2 Playspace Section by Rae Ferraiuolo
24.3 OMA/OLIN Playspace Section (edited by Rae Ferraiuolo)

SLIDE 25: 25.1 Location Diagram by Rae Ferraiuolo
25.2 OMA/OLIN Playspace Plan
25.3 Playspace Plan by Rae Ferraiuolo

SLIDE 26: 26.1 Location Diagram by Rae Ferraiuolo
26.2 Playspace Tunnel, rendering by Rae Ferraiuolo
26.3 OMA/OLIN pedestrian access diagram (edited by Rae Ferraiuolo)

SLIDE 27: 27.1 Location Diagram by Rae Ferraiuolo
27.2 Shade Arc, rendering by Rae Ferraiuolo

SLIDE 28: 28.1 Location Diagram by Rae Ferraiuolo
28.2 Climbing Elements, rendering by Rae Ferraiuolo

SLIDE 29: 29.1 Location Diagram by Rae Ferraiuolo
29.2 Water Features, rendering by Rae Ferraiuolo

SLIDE 30: 30.1 Location Diagram by Rae Ferraiuolo
30.2 Rotating Play Sculpture, rendering by Rae Ferraiuolo

SLIDE 31: 31.1 Location Diagram by Rae Ferraiuolo
31.2 Kinetic Wall, rendering by Rae Ferraiuolo

SLIDE 32: 32.1 Location Diagram by Rae Ferraiuolo
32.2 Swings, rendering by Rae Ferraiuolo

SLIDE 33: 33.1 Location Diagram by Rae Ferraiuolo
33.2 Seating on the Hill, rendering by Rae Ferraiuolo

SLIDE 34: 34.1 Location Diagram by Rae Ferraiuolo
34.2 Environmental Education and Agriculture, rendering by Rae Ferraiuolo

SLIDE 35: 35.1 Location Diagram by Rae Ferraiuolo
35.2 Educational Center Extension, rendering by Rae Ferraiuolo

SLIDE 36: 36.1 Location Diagram by Rae Ferraiuolo
36.2 Educational Center Extension 2, rendering by Rae Ferraiuolo

SLIDE 37: 37.1 Location Diagram by Rae Ferraiuolo
37.2 Educational Center Extension 3, rendering by Rae Ferraiuolo

SLIDE 38: 38.1 Location Diagram by Rae Ferraiuolo
38.2 Track - Competitive Play, rendering by Rae Ferraiuolo

SLIDE 39: 39.1 Location Diagram by Rae Ferraiuolo
39.2 Track - Buffer Zones, rendering by Rae Ferraiuolo

SLIDE 40: 40.1 Location Diagram by Rae Ferraiuolo
40.2 Sculpture Garden Approach, rendering by Rae Ferraiuolo

SLIDE 41: 41.1 Location Diagram by Rae Ferraiuolo
41.2 Sculpture Garden - Interactive Art, rendering by Rae Ferraiuolo

SLIDE 42: 42.1 Location Diagram by Rae Ferraiuolo
42.2 Sculpture Garden - Night Experience, rendering by Rae Ferraiuolo

SLIDE 43: 43.1 Location Diagram by Rae Ferraiuolo
43.2 Hammock Grove (Day), rendering by Rae Ferraiuolo

SLIDE 44: 44.1 Location Diagram by Rae Ferraiuolo
44.2 Hammock Grove - Modular Forms, rendering by Rae Ferraiuolo

SLIDE 45: 45.1 Location Diagram by Rae Ferraiuolo
45.2 Hammock Grove (Night), rendering by Rae Ferraiuolo

SLIDE 46: 46.1 11th Street Bridge Site, photo by Rae Ferraiuolo
46.2 Virginia Tech Students visit 11th Street Bridge Park Site, photo by Rae Ferraiuolo