

SITES CERTIFIED PROJECT

WASHINGTON CANAL PARK

2013

SITES GOLD

Washington, DC, United States



THE Sustainable
SITES
Initiative®

■ SITES CERTIFICATION

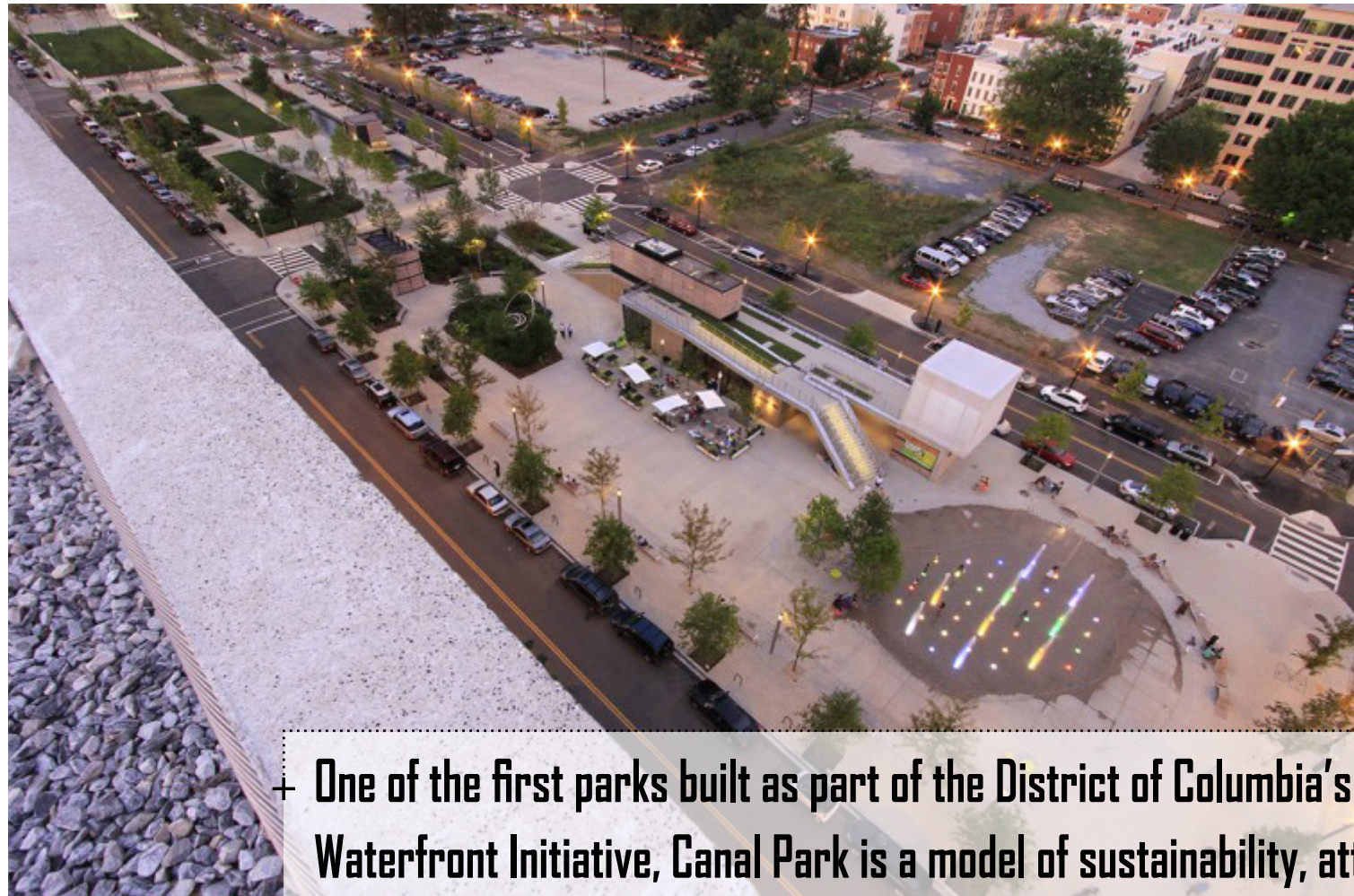
Address: Washington, DC

Project Size: 3 acres

Project type: Open space - Park

Former Land Use: Brownfield

Terrestrial Biome: Temperate Broadleaf & Mixed Forests



+ One of the first parks built as part of the District of Columbia's Anacostia Waterfront Initiative, Canal Park is a model of sustainability, attaining both SITES and LEED Gold certifications, and establishing itself as a social gathering place and an economic trigger.

Washington Canal Park

SITES PILOT PROJECT (2013) **156***

Site Selection 21/21

Pre-design Assessment + Planning 4/4

Site Design - Water 23/44

Site Design - Soil + Vegetation 25/51

Site Design - Materials Selection 9/36

Site Design - Human Health + Well-Being 27/32

Construction 11/21

Operations + Maintenance 14/23

Monitoring + Innovation 22/22

*Out of a possible 250 points and 9 bonus points

Certified 70–84, Silver 85–99, Gold 100–134, Platinum 135–200

PROJECT BACKGROUND

Site Context

Canal Park is a linear, three-block, urban park situated in the Capitol Riverfront neighborhood of southeast Washington, D.C., a rapidly developing mixed-use community with 4,700 residents, over 32,000 daytime employees, and almost 3 million annual visitors. Formerly a parking lot for District school buses, the site is the location of the historical Washington City Canal system.

In the short time since the park opened in 2012, it has become a gathering point for the neighborhood. Local pet owners walk their dogs, the business improvement district has sponsored concerts and events in the park, and nearby office workers use the movable tables for al fresco lunches.

Project Background

Canal Park is a three-acre urban park built on the site of a former school bus parking lot in southeast Washington DC. It occupies three linear blocks in the rapidly-growing Capitol Riverfront neighborhood, near the Navy Yard and Nationals ballpark. The name comes from the canal that used to connect the Anacostia and Potomac Rivers. The canal was paved over in the early 1900's.

Funding for the park came from both public and private sources: the District and Federal Governments; the DC Housing Authority; JBG, WC Smith and other developers and stakeholders in the Capitol Riverfront neighborhood.



■ DESIGN INTENT

Washington Canal Park was envisioned to be a socially impactful, highly sustainable, and symbolically powerful public space.

Although only three acres, from the outset,

Canal Park was imagined to be a great space in a city of iconic spaces – one that would give an individual identity to the Southeast District of Washington, D.C.. It needed to be a flexible and adaptable social space for a neighborhood whose residents were yet to be completely defined – a park that could offer amenities to residents of market-rate and worker housing equally, to allow people a place of their own, whether a single urban dweller seeking a quiet destination or a family of many members enjoying opportunities for recreation. Canal Park offers amenities to

Celebrate Life, Together.



PROJECT TEAM

Client: **WC Smith**

Landscape Architect: **OLIN**

Architect: **Studios Architecture**

Civil Engineer: **Vika Capitol, LLC**

Civil Engineer: **Nitsch Engineering**

Structural Engineer: **SK&A Structural Engineers, PLLC**

MEP Engineer: **Joseph R. Loring & Associates, Inc.**

Geotechnical Engineer: **Soil Consultants, Inc.**

Environmental Consultant: **Environmental Consultants and Contractors, Inc.**

Environmental Design & Lighting Design: **Atelier Ten**

Irrigation Design: **Lynch & Associates, LTD**

Sculptor/Public Art: **David Hess**

Ice Rink & Fountain Design Engineer: **Bonestroo**

Signage Content: **Cultural Tourism DC**

Cost Estimating: **Davis Langdon**

Public Space Management: **ETM Associates, LLC**

Commissioning Agent: **Advanced Building Performance (ABP)**

General Contractor: **James G. Davis Construction Corporation**



■ STRATEGIES



+ **Stormwater Management:**

6,000 square feet of linear rain gardens and 46 bioretention tree pits surround the perimeter of the site to capture, detain, and treat stormwater runoff. Two underground cisterns located under the south block hold up to 80,000 gallons of water collected from the park and neighboring streets. Two interactive water features, one made up of 42 programmable water jets and the other a 20-ft by 135-ft thin skim of water, utilize stormwater runoff captured and treated on site. A 10,000 square foot seasonal ice skating rink provides a



+ **Treatment System for Reused Stormwater:**

The treatment system for the reused stormwater targets contaminants identified as potential risks. A combination of bioretention, filtration and ultraviolet (UV) disinfection are used to reduce concentrations of total suspended solids (TSS) to 0.14 mg/L and to remove 100% of biological pollutants. To maintain quality, water in the system is tested weekly and only organic, biodegradable products are used to maintain vegetation on-site.



+ **Multi-Functional Pavilions:**

Three pavilions, one in each block of the park, are designed to evoke the floating barges that were seen in the Washington City Canal that once ran through the site. The two smaller pavilions, approximately 200 square feet each, provide a stage on the middle block and storage for park amenities. Located in the southern block of the park, the main pavilion is 9,000 square feet and contains a 65-seat full-service restaurant with additional outdoor seating, a skate rental booth, and utilities supporting the park and ice rink. On the top of the pavilion is a 1,200 square foot accessible vegetated green roof and light cube with 20-ft by 20-ft panels that can project art images, light shows, or videos.



+ **Safe & Flexible Open Space:**

Eighty energy efficient lighting elements throughout the park provide a safe space for nighttime activities while minimizing electricity use. Vertical illuminance levels surpass the 10 lux minimum recommended for pedestrian zones. Flexible spaces and amenities throughout the park include open green spaces, a children's play area, and 25 movable tables with chairs and umbrellas. They are used for a variety of programs and events.



+ **Encourage Fuel Efficient and Multi-modal Transportation:**

The park is located within 1/4 mile of a Metro station with 9,500 average daily riders and four Capital Bikeshare stations. Thirty-nine bike racks are provided on the site. Two dual charging stations provide four charging ports for plug-in electric vehicles, with each port supplying 7.2 kW of output power.

■ FINAL DESIGN

Located on three acres of what was recently relegated as a **Parking Lot** for district school buses, this three-block long park is situated along the historic former Washington Canal system. Inspired by the site's

waterfront heritage, **OLIN's** design evokes

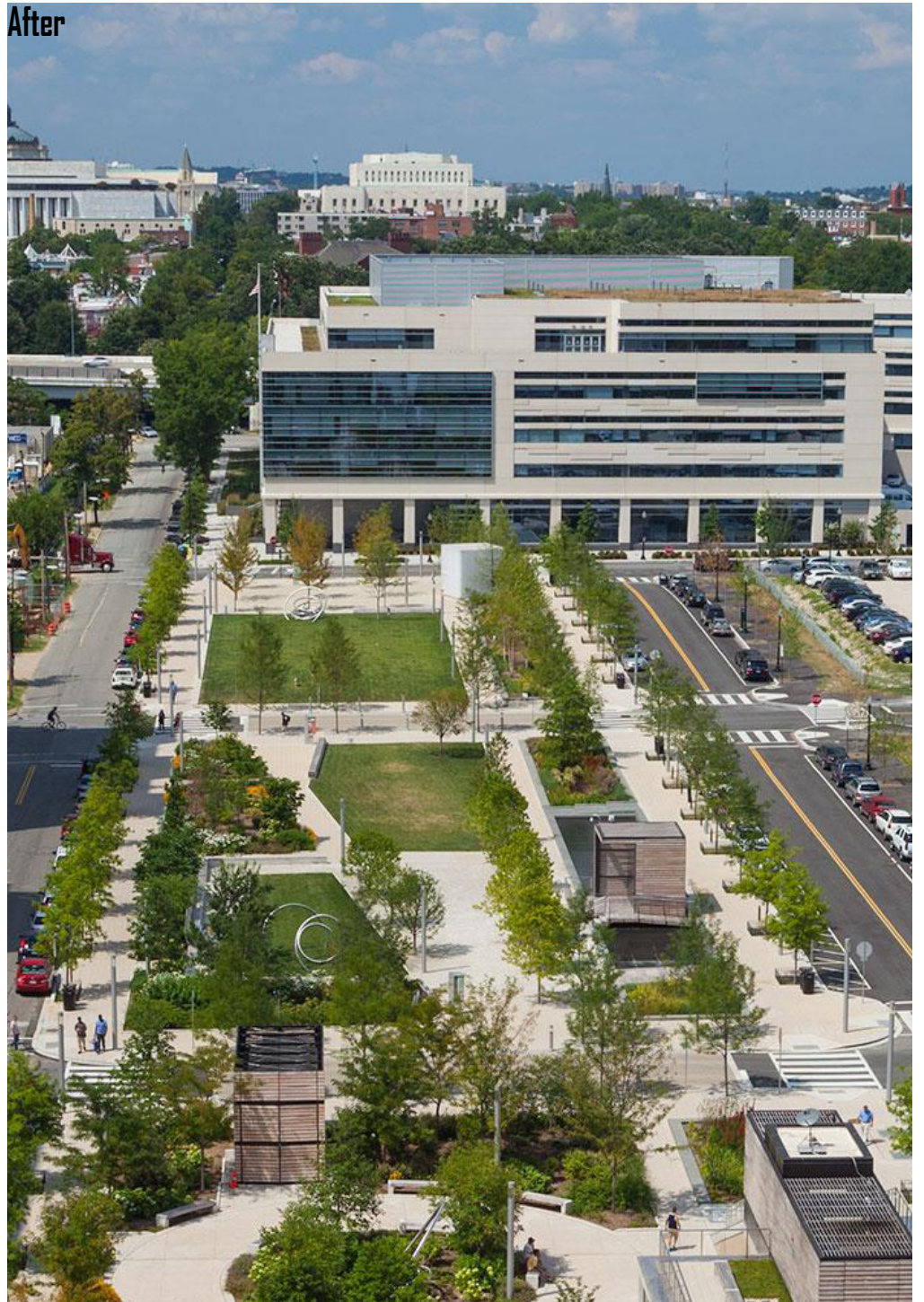
the history of the space with a **Linear**

Rain Garden and **Three Pavilions**

reminiscent of floating barges that were once common in the canal. Through a close collaboration with OLIN, STUDIOS Architecture designed a 9,000-square foot pavilion to host a café and dining area, as well as utilities that support the park and ice rink. Approximately 150-200 square feet each, a second pavilion serves as a stage in the middle of the park, while a third offers storage for park amenities. Custom David Hess sculptures are located on each of the city blocks.



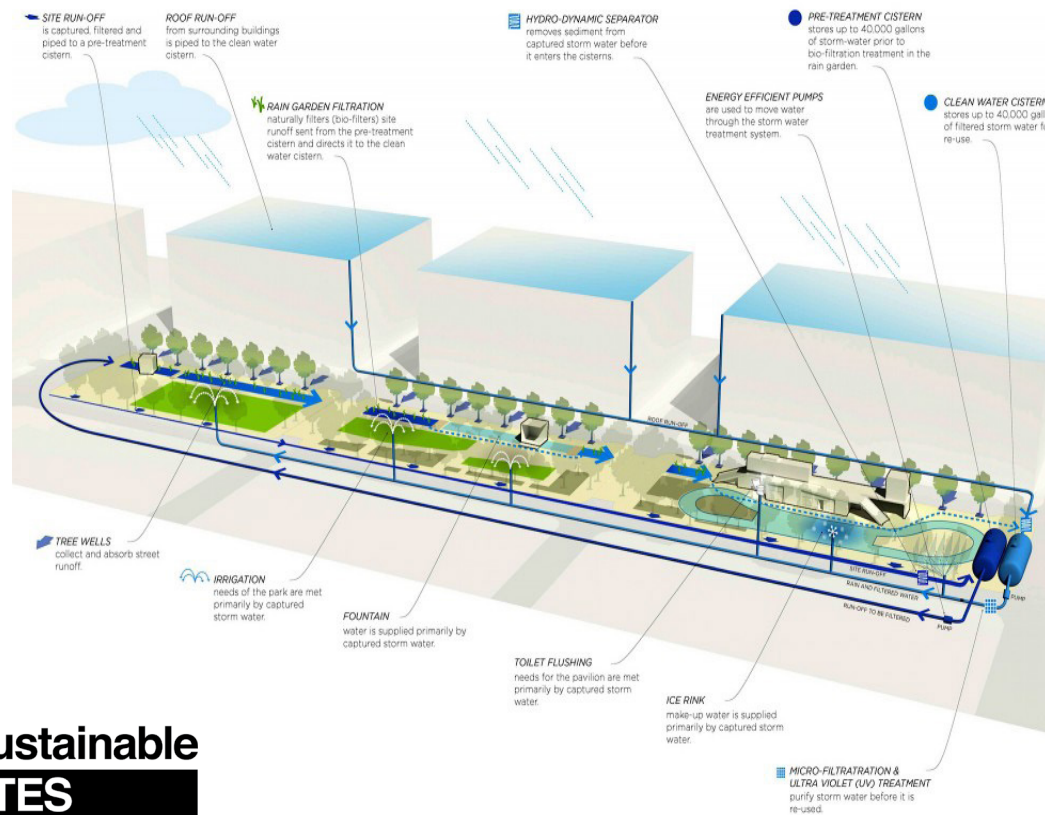
Before After



FINAL DESIGN

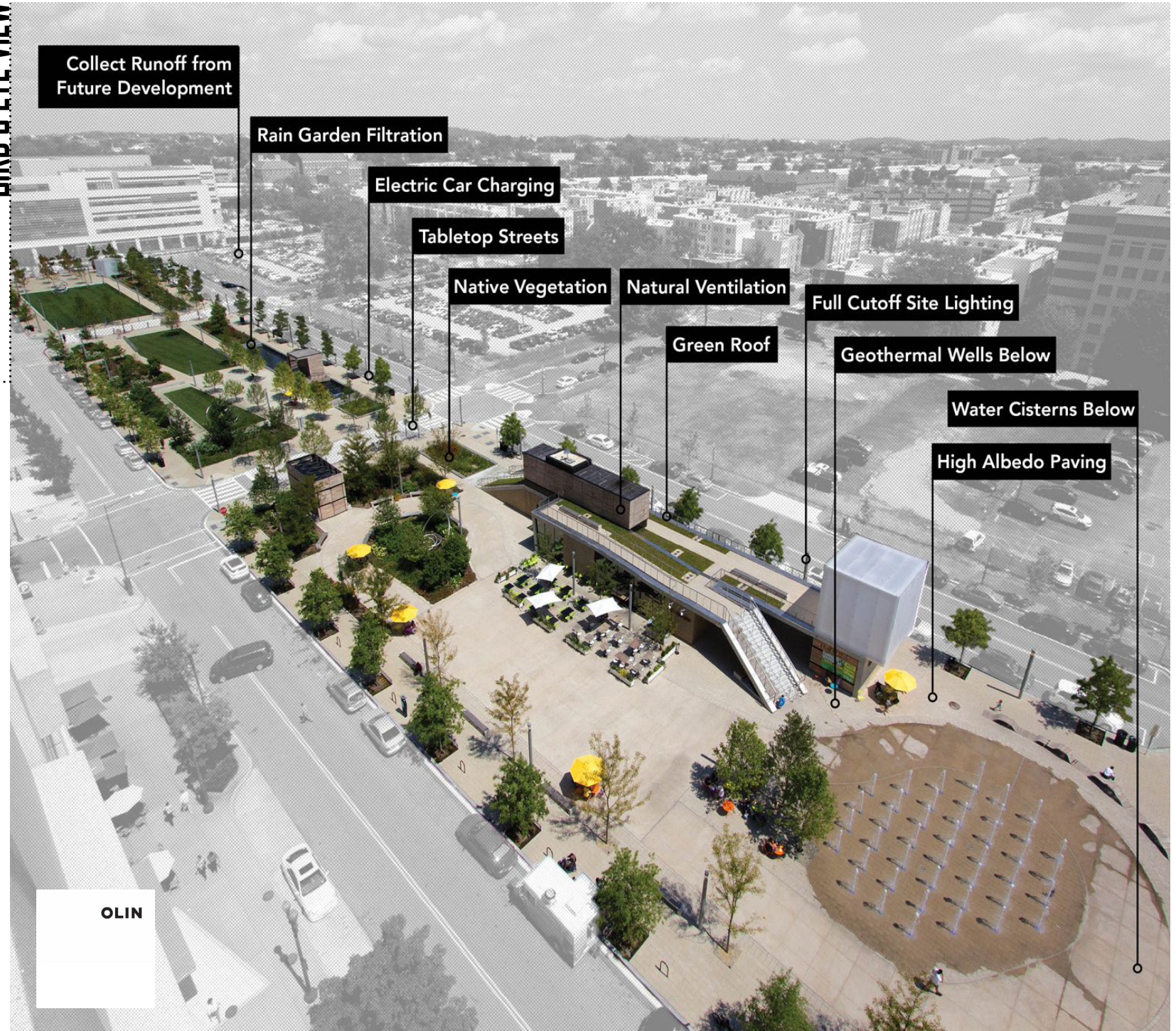
The three-block-long park is designed to be the leader in urban environmental strategies: Canal Park was realized as a “beautiful machine” that holistically engages the neighborhood it serves. Canal Park’s linear rain garden functions as an integrated stormwater system. Water is captured, treated and reused, satisfying up to 95 percent of the park’s water needs. This equates to a savings of 1.5 million gallons of potable water annually. Twenty-eight geothermal wells provide a highly efficient energy supply for utilities, reducing Canal Park’s overall energy use by 37 percent. Other sustainable design elements include dark-sky lighting elements, high albedo paving and site elements that encourage sustainable practices, such as electric car charging stations, bicycle racks and recycling bins.

SUSTAINABLE SYSTEM



THE Sustainable SITES Initiative®

BIRD'S EYE VIEW



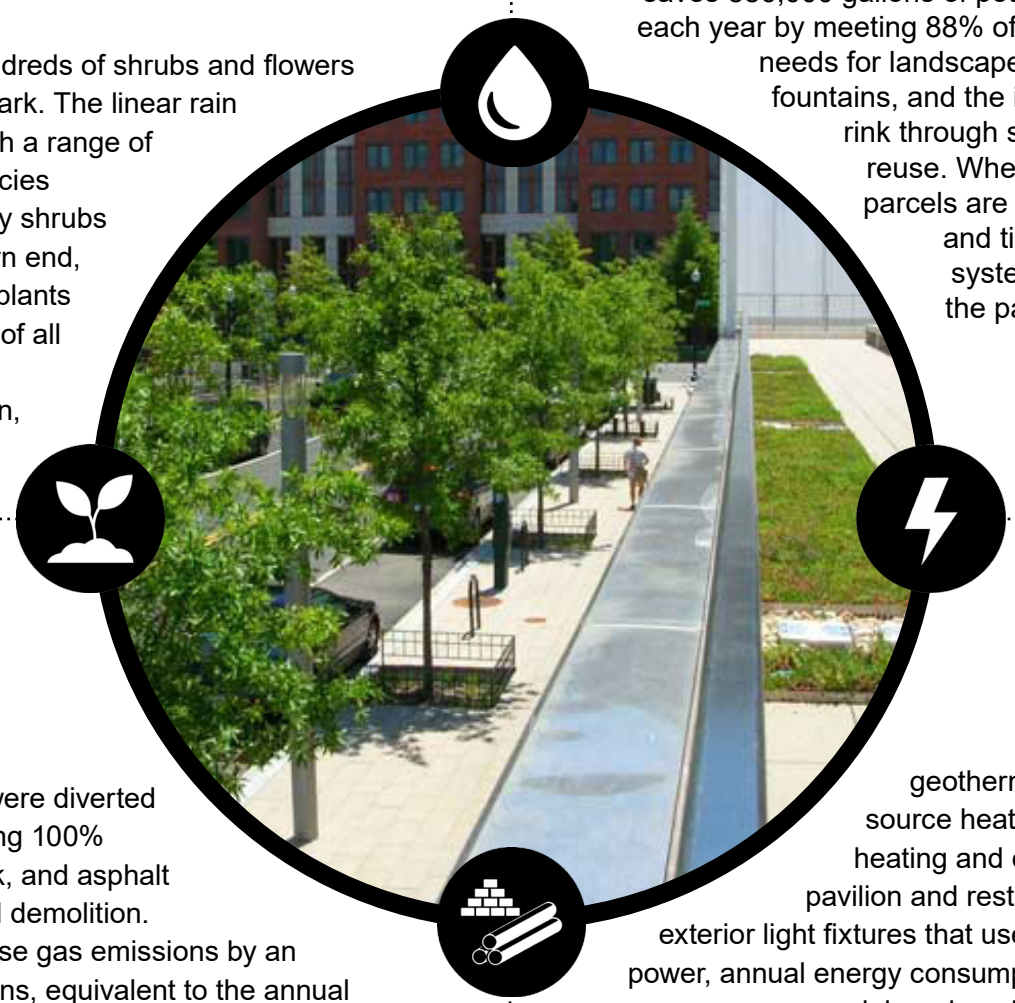
VALUE OF SITES

+ Plants + soils

Over 150 trees and hundreds of shrubs and flowers are planted within the park. The linear rain gardens are planted with a range of native and adapted species transitioning from woody shrubs and trees at the northern end, to shallow herbaceous plants in the south. Over 50% of all plants, and soils for construction were grown, and harvested within 500 miles of the site.

+ Materials

1,782 tons of material were diverted from landfills by recycling 100% of concrete, brick, block, and asphalt during construction and demolition. This reduced greenhouse gas emissions by an estimated 157 metric tons, equivalent to the annual emissions from 33 passenger vehicles. 100% of the wood used to construct the benches, bridges and pavilions was obtained from forests certified by the Forest Stewardship Council (FSC).



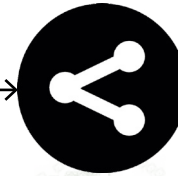
+ Water

95% of average annual runoff from the site and neighboring streets, approximately three million gallons per year, are captured and treated. This saves 886,000 gallons of potable water each year by meeting 88% of the park's needs for landscape irrigation, fountains, and the ice skating rink through stormwater reuse. When adjacent parcels are developed and tied into the system, 99% of the park's water needs can be met.

+ Energy

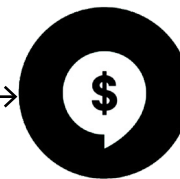
By using geothermal ground source heat pumps for heating and cooling the pavilion and restaurant and exterior light fixtures that use 67% less power, annual energy consumption in the park is reduced by 12.6%.

ENVIRONMENTAL FEATURES



SOCIAL

- + Draws almost 28,000 annual visitors through year-round programming and special events.
- + Provides well-designed space for visitors with 86% of survey respondents describing the park in positive terms.
- + Provides an inviting space that encourages social interaction between visitors.
- + Provides a safe space for 94% of survey respondents who had been to the park at night, with 70% of respondents perceiving the neighborhood as safe in 2014 compared to only 6% in 2007.



ECONOMIC

- + Reusing stormwater currently saves \$4,600 annually and could ultimately save \$5,200 annually.
- + Saving almost \$26,000 per year in utility costs by using geothermal ground source heat pumps for heating and cooling the pavilion and restaurant.
- + Increased property values of the parcels adjacent to the park by 14.5%, compared to a citywide increase of 13.6% during the same time period.
- + Within the larger 500-acre neighborhood, it is estimated that projected new development will produce \$2.28 billion in tax revenue and more than 21,000 jobs.