



BIRMINGHAM TOUR BOOK



Southeast Stormwater Association
11th Annual Regional Stormwater Conference

October 19 – 21, 2016



BIRMINGHAM FORWARD

— MAYOR WILLIAM A. BELL, SR. —

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WELCOME

Birmingham, the largest city in Alabama, is located in Jefferson County. The Birmingham Metropolitan Area is known for its economic and social history as well as its many points of interest. The discovery of massive quantities of iron ore in its surrounding mountains and the subsequent development of a railroad transportation system led to an era of prosperity and growth. Known as the "Magic City" of the south, Birmingham was founded in 1871 and quickly became a thriving city due to its flourishing iron and steel industries. During the 1960's, Birmingham became the focal point of the Civil Rights Movement and today proudly displays much of that history in its Civil Rights Heritage Trail System. Faced with the challenges to traditional industries that occurred in the late 20th century, Birmingham reimagined its economic base to become a leader in the healthcare, educational and financial sectors.

Many decades of an industrial based economy led to the unintended consequence of pollution in the area's five riverine watershed systems - Cahaba River, Five Mile Creek, Shades Creek, Valley Creek, and Village Creek. With the support of many of those same industries working in partnership with state, regional, and local governments, a corner is being turned toward more robust and improved riverine ecosystems. Jefferson County and the City of Birmingham's Stormwater Management Programs have been proactive leaders in the region and have developed strong water quality monitoring programs to address the nonpoint source runoff from our collective MS4s. Together, we still have a long way to go to achieve even many of the improvements already implemented by industry as they have worked to address their point source runoff. But from our many efforts has sprung a new vision: local government planners are beginning to rely on the creation and implementation of watershed management plans and developed hydrologic models, and new stormwater related ordinances, policies, and revised stormwater management programs are being produced to correct deficiencies that have led to poor water quality from past development. The regional river systems are no longer being looked at as a liability but as the resource gems that they are. It is anticipated that this new vision for the Birmingham Metropolitan Area will lead to the implementation of modified and new development controls, which will further improve stream water quality that can lead to stream segment delisting and achievement of TMDL obligations.

We hope that this site tour illustrates just a few of the many positive initiatives that the Birmingham Metropolitan Area is implementing to improve water quality as well as enhance quality of life throughout the region.

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Birmingham Botanical Gardens



Projected Total Project Cost: \$50,000,000+

Project Design Team:

Oasis Design Group
(Master Plan Architects)

Biohabitats
(Conservation Planning)

Hatch Mott McDonald
(Surveyors)

Carraway and Associates
Nimrod Long and Associates
(Blount Plaza Conceptual Design)

ZEN Associates
(Japanese Gardens Master Plan)

Project Description

The Birmingham Botanical Gardens Master Plan was completed in 2010 to preserve the important history of Alabama's most popular free cultural institution while creating a broader vision for its future. The Master Plan focuses on the Birmingham Botanical Gardens' role as a natural science-based educational institution; a role model for environmentally-sound best management practices; an important venue for events and activities; and a plant collections-based living museum. Goals include restoring an urban stream, minimizing or eliminating erosion and stormwater runoff, promoting percolation and biofiltration, reducing potable water usage, harvesting rainwater for re-use, making greenhouses energy-efficient, and reducing and re-using organic waste. Several new buildings will

replace outmoded ones and are envisioned as LEED buildings, including a new maintenance building which will be partially earth-sheltered with a green roof. A unique partnership among the City of Birmingham leadership, Birmingham Parks and Recreation staff, and the Friends of Birmingham Botanical Gardens board, staff, and members is integral to the process of making the Master Plan vision a reality.

Purpose of the Project

- ✧ Increase green infrastructure components such as bioretention, green roofs, permeable paving, etc. whereby increasing infiltration and stormwater reuse that falls on and drains through the property
- ✧ Create educational opportunities using the new green infrastructure components
- ✧ Incorporate sustainable practices for facilities, collections, staff and visitors
- ✧ Provide accessibility for all

Key Intended Outcomes

- ✧ Restore and expand Alabama Habitat Gardens, showcasing the state's varied ecosystems
- ✧ Improve the Gardens' entrance, parking, lake, conservatory, production and maintenance areas while incorporating LID/GI practices
- ✧ Create and improve accessible routes
- ✧ Promote sustainability through education and practice

Problems Overcome

- ✧ Flooding and drainage challenges from three sub-watersheds and two adjacent developments (under construction)

Notable Benefits/Outcomes

- ✧ Reduce erosion, reduce nutrient runoff
- ✧ Reduce irrigation costs (anticipated)
- ✧ Improve energy efficiency (anticipated)
- ✧ Position the Birmingham Botanical Gardens as a model steward of the environment

Children's of Alabama Benjamin Russell Hospital for Children



Total Project Cost: \$300,000,000

Project Design Team:

**Giattina Aycock Architecture Studio
HKS Inc.**
(Architectural Contractors)

MackNally Land Design
(Landscape Contractor)

BE&K Building Group
(Construction Management)

Hoar Construction
(Principal Contractor)



Project Description

The 12-story, 722,000 square foot Benjamin Russell Hospital for Children offers quality care in a healing environment that is responsive to the needs of children, their families and staff. The facility offers opportunities to create new knowledge in the treatment, prevention and potential elimination of diseases that impact children. When the hospital opened in 2012, it became Alabama's

first Leadership in Energy and Environmental Design (LEED) certified hospital building under LEED version 2.2 for new construction and the largest LEED-certified project in the state of Alabama. Achieving LEED Gold Certification, the design's sustainable features include the recycling and reuse of building materials salvaged from the demolition of 2 outdated existing buildings on the construction site, selection of low emission building materials, reduction of construction activity pollution, and rooftop landscaping to reduce heat absorption and stormwater runoff. A highlight of the effort to gain LEED certification is the rooftop gardens

that are planted with native sedum to provide insulation and oxygenation as well as a healing garden installed outside the Neonatal Intensive Care Unit. Up to 30,000 gallons of condensate collected from the air conditioning system is used for irrigation and to cool equipment. Designated green spaces on campus, 140 bicycle racks, and the orientation of the building all contribute to the hospital's Earth-friendly profile.

Purpose of the Project

- ✧ Meet the pediatric healthcare demands of Birmingham and Alabama
- ✧ Focus on family centered care
- ✧ Create an environmentally friendly and sustainable environment
- ✧ Provide spaces that offer respite for patients, families, and staff

Key Intended Outcomes

- ✧ Meet the requirements of Sustainable Sites Credit 7.2 to reduce the heat island effect of the roof
- ✧ Provide a green roof in areas that could be viewed from patient rooms so that typical roofs would not be viewed from occupied spaces.
- ✧ Provide a positive distraction for patients and their families
- ✧ Reduce the effects of stormwater runoff from roofs

Problems Overcome

- ✧ Dust from soil blowing into outside air intakes during construction

Notable Benefits/Outcomes

- ✧ 100% stormwater reuse for irrigation
- ✧ Reduced heat absorption
- ✧ Educational tool for the hospital
- ✧ Gained a major donation from the McWane Foundation
- ✧ Contributed to the achievement of LEED Gold Certification

Rotary Trail



Total Project Cost: \$3,500,000

Project Design Team:

Goodwyn, Mills and Cawood

(Project Management, Design)

Jane Reed Ross

(Construction Administration)

A.G. Gaston Construction

(Construction Management)

Clements Dean Building Company

(Principal Contractor)

BL Harbert International and Daniel Steel

(Gateway Contractors)

Vision Landscape

(Landscaping Contractor)

Project Description

Completed in the spring of 2016, Rotary Trail is an eastward extension of Downtown Birmingham's award-winning Railroad Park that runs along a depressed rail bed known as "the Cut." A gift to the citizens of Birmingham from the Rotary Club of Birmingham, the linear park is a centerpiece of the Jones Valley Trail, which when completed, will connect Red Mountain Park to the historic Sloss Furnaces as part of the Red Rock Ridge and Valley Trail System Master Plan - a visionary, long-term plan for more than 750 miles of greenways and street-based trails. The Rotary Trail itself is 1,500 linear feet long, 26' wide and up to 16' below grade. Original depth was 22' below grade but it was raised 6' to accommodate the new storm water system and allow more light to filter to the deepest areas.

Part of the trail's success is its engagement with the surrounding residents and businesses, various points of entry, picnic tables, solar charging stations and a small outdoor amphitheater. The four-block urban canyon which was accessible only at either end now features entry points at each intersection to engage the street level activity via steps

and ramps that are marked with new signage that mimics the main gateway's design. To improve water quality from stormwater runoff, a new filtration system and stylized stonework reminiscent of creek beds functions as stormwater swales that partially filters debris and pollutants before entering the storm sewer system and Village Creek.

Purpose of the Project

- ✧ Create vibrant unique green space, to reclaim an abandoned rail bed in the middle of the city and connect Railroad Park to Sloss Furnaces

Key Intended Outcomes

- ✧ Promote healthy active lifestyles by enhancing trail connections in Jones Valley through the middle of downtown
- ✧ Filter debris & pollutants from stormwater runoff before reaching Village Creek; improve water quality of runoff in the rail bed right-of-way

Problems Overcome

- ✧ Flooding and drainage challenges
- ✧ Creating a design that reflects the city's past and future for all of Birmingham
- ✧ Accessibility and security; site access during construction

Notable Benefits/Outcomes

- ✧ Reduced debris and pollutants to Village Creek, Governor's Award, Water
- ✧ Conservationist of the Year, 2015
- ✧ Bringing the city and so many entities together for a common goal
- ✧ Birmingham Business Journal "Real Estate Deal of the Year" 2016

Railroad Park



Total Project Cost: \$22,000,000

Project Design Team:

Tom Leader Studios

(Landscape Architecture)

Schoel Engineering

(Civil Engineer)

Macknally-Ross Land Design

(Associate Landscape Architect)

Giattina Aycock

Architecture Studio

(Associate Architects)

Bhate Geosciences

(Geotechnical Engineer)

Project Description

Railroad Park was designed to be the “living room of the city” as a green space destination for the residents of downtown, as well as those working and visiting the city. Over 19 acres of brownfields have been transformed into an exciting urban oasis. The design was approached with two guiding principles: incorporate and promote stewardship of the environment and honor the legacy of the railroad in the growth of the city. A number of unique features were incorporated in the plans for the park, including a rain curtain, lake/stream system, amphitheater, outdoor pavilion with catering kitchens, playgrounds, large open lawn and an elevated rail trail. The lake/stream system is integral to the site and harvests, filters and recirculates stormwater. Previously a flat site, the park’s topography has been contoured to create different rooms, providing opportunities to view the trains and city skyline, accommodate large musical events, and experience quieter settings in the strolling garden and along the stream walk.

Purpose of the Project

- ✧ Promote environmental stewardship
- ✧ Offer an alternative to conventional stormwater design

Key Intended Outcomes

- ✧ Capture and reuse stormwater
- ✧ Incorporate LID practices into design
- ✧ Integrate stormwater detention

Problems Overcome

- ✧ Brownfield site
- ✧ Constructing a lake and pumped recirculation system that needed to flow continuously
- ✧ Site grading difficulties due to existing railroad right-of-way
- ✧ Working around major utilities that could not be disturbed
- ✧ Complex vacations and dedications of railroad right-of-way

Notable Benefits/Outcomes

- ✧ Reduced area flooding
- ✧ Reduced nutrient runoff
- ✧ Created a teaching venue through signage throughout the park
- ✧ Stimulated redevelopment in the surrounding area