WAFSCM Conference

Green Infrastructure at Summerfest

Alyssa B. Schmitt/Project Engineer

Carrie Bristoll-Groll, PE, CFM
Principal Civil Engineer/CEO
Stormwater Management
We tailor each stormwater management system to fit the site geology, topography, soils and proximity to the receiving waters. There’s no “one-size-fits-all” approach.

Stormwater Solutions Engineering, LLC
Specializing in comprehensive storm water management planning, drainage design, flood control, hydraulic analysis and integrated site design. Our mission is to provide stewardship of our lakes and streams through quality engineering and environmentally sound design.

Markets Served
Services Offered:

• Drainage Design (storm sewer, ditch, culvert)
• Hydraulic Analysis and Hydraulic Report
• Stormwater Management/Green Infrastructure
• Aquatic Organism Passage
• Grading and Erosion Control
• Stream Restoration
• Regenerative Stormwater Conveyance (RSC) – NEW SERVICE
• Training for all areas
Stormwater Solutions Engineering Staff

Project Engineers

Carrie Bristoll-Groll, PE, CFM
Karen Springob, PE
Adrienne Cizek, PhD
Alyssa B. Schmitt

Technology and Support

Harlan Groll
CADD/Eng. Tech

Bill Bristoll, PG, LEED-AP
Geology/GIS

Anthony Groll, Business/Quality Manager

Established 2002!
Journey:

• Brainstorm
• Initiate a Conversation
• Grants
• Design
• Involve our friends!
• Construction-Completion
• Awards!
Brainstorm

• **Meeting with staff** to determine a best location in the City to showcase GI

• **Brainstorm** what GI and where? Summerfest became a top choice due to location along the shore of Lake Michigan, and the presence of many visitors annually.

• Initiate a **conversation** – Meeting with Summerfest staff to discuss possibilities that work with their future plans

• **Grants!** We assisted in the application process for MMSD and Fund for Lake Michigan grants.
Milwaukee World Festival (MWF)

- 501 (c) not-for profit Wisconsin corporation
- MWF leases, from the City of Milwaukee, an approximately 75 acre parcel of land, the Henry W. Maier Festival Park
- MWF owns, operate and produces “Summerfest”, the World’s Largest Music Festival®
  - An 11 day summer music festival
- MWF also develops, manages and maintains the buildings and properties
Grants

MMSD: $72,100

Fund for Lake Michigan: $25,000
Budgets

Estimated Costs
• Bioswale: $41,250
• Porous Pavement: $56,550
• Green Roof: $32,500
• Stormwater Trees: $2,475
• GI Subtotal: $132,775
• Design: $19,916
• GI TOTAL: $152,691

Actual Costs
• Bioswale: $39,971
• *Porous Pavement: $77,789
• Green Roof: $24,528
• Stormwater Trees: $6,422
• GI Subtotal: $148,710
• Design: $23,250
• GI TOTAL: $171,960

*Porous pavement was lined to prevent contaminated infiltration
Location

- Drained to Combined Sewer
- Proximity to Lake Michigan
- Visibility
- 1.1 million visitors per year
Preliminary Design

• Prevent infiltration into contaminated soils
  – Former brownfield, comprised of various landfill materials
• Remove connections to the combined sewer
  – All impervious site
• WDNR 5:1 porous pavement run-on-ratio
Summerfest – Existing Conditions
Design

- 3,650 sq-ft **Bioswale**
- 2,400 sq-ft **Porous Pavement**
  - 2,000 sq-ft Driveway
  - 400 sq-ft Sidewalk
- 630 sq-ft **Green Roof**
- 18 **Stormwater Trees**
Products and Specialty Firms

SPANCRETE

RePlenish™

new eden

Landscape Architecture

HANGING GARDENS

STORMWATER SOLUTIONS ENGINEERING
Construction:

Aggressive Project Schedule

• Had to move into building only 6 months after construction permit was issued
• Construction was completed in the winter months
  - Temporary heating
  - Snow removal
• Stormwater and Landscaping took place in April and May
Summerfest – Site Plan
Summerfest – Post Construction
Before/After Porous Pavement
Before/After Porous Sidewalk
Award Winning Project

- Anticipated Silver or Gold LEED Certification
- MMSD Green Infrastructure Signature Series
- MMSD Green Luminary Award:
Conclusion

• Volume of **100-year event flow** captured, treated and released to Lake Michigan: **16,000 cubic-feet**
• Volume of **average annual runoff** captured, treated and released to Lake Michigan: **45,000 gallons**
Questions?
Thank you!

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