The City of Richmond
Green Alley Program
A Tale of Two Alleys

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Chicago Green Alley Program

• Began in 2006
• Over 100 alleys completed

• Monitored regularly
• Sustain garbage truck use and snow plowing

Source: Chicago Green Alley Handbook
Introduction to “Green” Alleys

• What is a Green Alley?
  • Porous surface
  • Allows rainwater to infiltrate

• What are the Benefits?
  • Reduces the rate of stormwater runoff
  • Reduces stress on the combined sewer system
  • Filters silt and pollutants
  • Heat reduction

Source: Chicago Green Alley Handbook
What was ARB’s problem?

5th Street

12th Street
Pervious Technology

• Porous Asphalt
  • Less tar and smaller aggregate than conventional asphalt
  • Conventional installation equipment used

• Pervious Concrete
  • Aggregate with no fines
  • Work in smaller batches and cure covered

• Permeable Interlocking Concrete Pavers
  • Aggregate filled joints
  • Imitate the cobblestone look
City of Richmond Green Alleys Program

5th Street Alley
Grand Opening September 2010

12th Street Alley
Currently Under Construction
5th Street Green Alley Overview

Design Constraints
- Steep slope
- Several entrances
- Primarily cobblestone w/ asphalt ramps
5\textsuperscript{th} Street Existing Utilities

- 8" CONCRETE APRON WIDTH VARIES
- PERMEABLE PAVER SYSTEM
- CONCRETE APRON WIDTH VARIES

- #8 STONE
- 4" #57 STONE
- 6" #2 STONE
- IMPERMEABLE LINER
- UNDERGROUND POWER DUCT BANK

EXISTING SUBGRADE

8" CONCRETE PER VDOT AND CITY STANDARDS
Post-Construction
12th Street Green Alley Overview

Design Constraints

- Steep slope
- Several utilities and roof drains
- Primarily cobblestone covered with asphalt
12th Street Existing Utilities

- 8" Concrete Apron Width Varies
- Permeable Paver System 5.0' x 5.0'
- Concrete Apron Width Varies
- Underwater 6" Gas Line
- Underground Telephone Duct
- Existing Subgrade
- Underwater 6" Water Line
- Underwater Power Duct Bank
- Underwater Cable TV Line
- #8 Stone
- 4" #57 Stone
- 6" #2 Stone
- Impermeable Liner

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Lessons Learned

- Chose locations wisely
- Get stakeholder feedback & buy-in
- Underground utilities coordination
- Cross-department coordination
- Experienced installer
Maintenance Requirements

• Winter/Snow Treatment
  • Plows are acceptable
  • Salt is acceptable, sand is NOT acceptable

• Surface Cleaning
  • Vacuum annually
  • Inspect annually for clogging, etc.

• Pavers can be reused after underground utility repair
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