

Green Infrastructure Projects in Northeast Ohio,

Different Scales, Different Projects

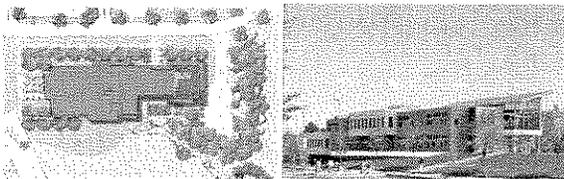
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Tom Evans, ASLA, LEED AP
Green Infrastructure Design Services Director

Green Infrastructure Projects in NE Ohio: Different Scales, Different Types

- College Buildings
- Municipal Stormwater Retrofits
- Green Streets
- Stream and Wetland Restoration
- Campus Green Infrastructure Masterplan
- Watershed Restoration Masterplan

Cuyahoga Community College Eastern Campus Health Careers Training Building



- 60,000 square feet
- 1.5 ac site
- \$15 M project

Cuyahoga Community College Eastern Campus Health Careers Technology Building

Designed to comply with OEPA water quality reqmts

LEED Silver Elements

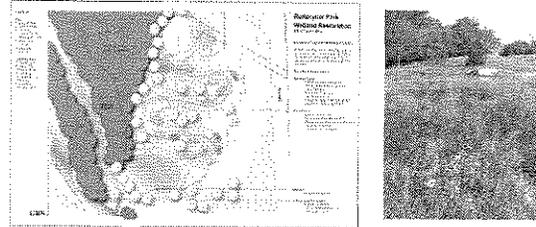
- Permeable paving in courtyard
- 4 Raingardens integrated in Design
- Sustainable Courtyard
- Green Roof demonstrtion
- Cistern, 28,000 gallons, 2 weeks irrigation supply
- Vegetated discharge channel

Cuyahoga Community College Eastern Campus Health Careers Technology Building

LEED vs Code Reqmts

- Some City Engrs only recognize BMPs in ODNR Rainwater and Land Development Manual
- Don't recognize cistern as BMP
- Must follow raingarden design from manual

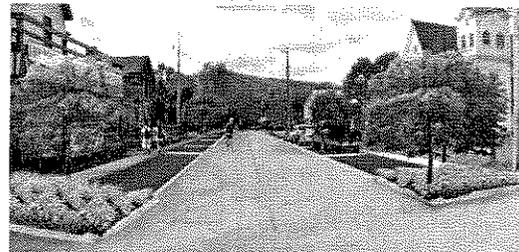
Stormwater Retrofits Reifsnyder Park, Stormwater Treatment Wetland



Stormwater Retrofits Reifsnyder Park, Stormwater Treatment Wetland

- Owner: City of Canton
- Goals: Reduce pollutant, phosphorous loading in Nimishillen Creek to comply OEPA concerns
- Objective: Install 1 acre stormwater treatment wetland at 36" storm sewer discharge.
- Demonstration project for multiple future installations.
- Construction Cost: \$125,000
- Construction Completed: 2003

Green Infrastructure Demonstration Project Ohiopyle, Pa.



Green Infrastructure Demonstration Ohiopyle, Pa.

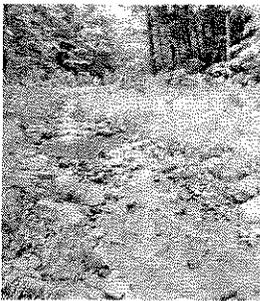
- Purpose: Reduce Infiltration to sanitary sewers and reduce excessive discharges, address agency concerns.
- Borough wastewater plant capacity overwhelmed by summer tourism
- 4 blocks, 1900 LF of bioswales, permeable paving in parking lanes, 41 rainbarrels.
- Homeowner manual, Public Education
- Construction Cost: \$ 1.0 million ARRA funding
- Status: Bids Rec'd, Const Start Nov 2009

Stream Restoration: Upper 40 Stream Restoration



- 1500 LF floodplain restoration
- Create 8 ac/ft storage
- Reduce peak by 35%
- Park creation

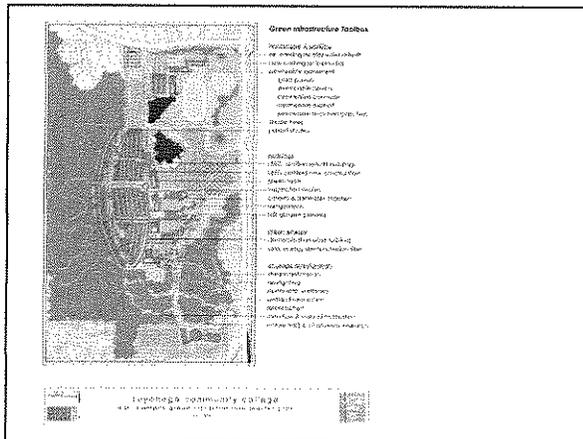
Stream Restoration: Foster's Run Stream Restoration



- 1500 LF new stream channel
- Multi stage channel
- Existing ravine
- Severe erosion/sedimentation
- 4% average gradient
- Extensive HEC RAS modeling for velocity management

Stream Restoration: Upper 40/Foster's Run Restoration

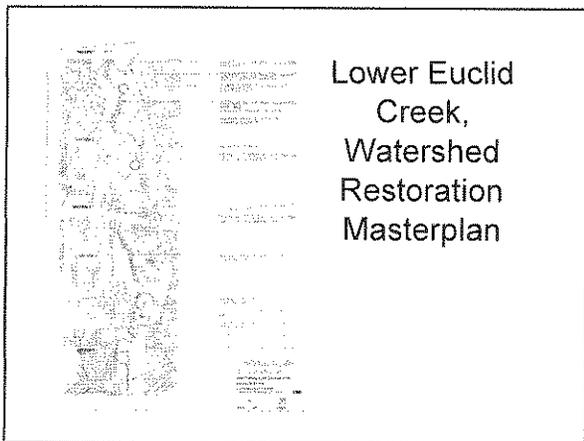
- Purpose:
- Restoration of 2 mile tributary of Chagrin River
 - Relieve severe erosion, sedimentation and flooding
 - Restore public access
 - Restore habitat
 - Total Cost: \$2 million
 - Joint project between Mayfield Village, Cleveland Metroparks
 - Funding: Clean Ohio Conservation Fund, 60%



Green Infrastructure Masterplan for Cuyahoga Community College, East Campus

Purpose:

- Provide for campus expansion, 8 new buildings
- Develop campus as a teaching tool for innovative Green Academy program
- Demonstrate entire Green infrastructure toolbox
- Provide research opportunities
- Reduce stormwater runoff at watershed headwaters
- Reduce future stormwater fees
- Cost: Project by Project



Lower Euclid Creek, Watershed Restoration Masterplan

Identify feasible flood relief sites in built out, highly urbanized watershed

- Relieve flooding thru floodplain restoration
- Remove fish barriers, Enhance habitat, Enhance QHEI scores
- 2 mile Greenway Masterplan to enhance mature neighborhood
- Linkages to State Park, Metropark
- Cost: \$ 10 M
- Status Masterplan completed 2007

Questions?

Contact Information

Tom Evans, ASLA LEED AP
URS Corporation, Cleveland
Landscape Architecture/Green Infrastructure Manager
216-622-2400
Tom_Evans@urscorp.com