



Green Infrastructure & Stormwater Management CASE STUDY

Ridgefield Community

Location: Wilmington, NC

Client: John Galarde

Design Firm(s): H Burkert & Co. HBC

Landscape architect/Project contact: Heather M Burkert

Email: heather@hburkert.com

ASLA Chapter: North Carolina

Project Specifications

Project Description: The project was already under construction using conventional stormwater when the client contacted me about redesigning with low impact design. His development infrastructure costs were exceeding \$2 million with the whole site having to be filled and graded and every tree cut down. We were able to cut his development costs from \$2 mil to \$889,000 and added open space, 4 additional lots, and reduced stormwater maintenance costs.

Project Type:

Mixed use

Part of a new development

Design features: Bioretention facility, rain garden, bioswale, rain barrels, and spreaders.

This project was designed to meet the following specific requirements or mandates:

State statute, county ordinance, developer/client preference

Impervious area managed: greater than 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: greater than 5 acres

The regulatory environment and regulator was supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? Added value for "green" real estate and more open space for neighborhood parks and trails.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: None)

Related Information: Estimated costs to complete:

- Sewer System, \$179,000
- Water System, \$177,340
- Storm Drain, \$30,000
- Storm Water Ponds, \$40,000
- Clear and Fill, \$35,000
- Erosion control, \$45,000

Roads:

- Rough grade, \$20,000
- Stone, \$75,000
- Fine grade / asphalt, \$100,800
- Entrance/sidewalks, \$30,000
- Grade shoulders/seed, \$10,000
- Irr. common areas/ponds, \$35,000
- NHC tree mitigation, \$20,000
- Survey & Civil Eng. Fees, \$45,000

TOTAL: \$889,140

ADD 4 HOMES & LOTS: \$500,000

Was a green vs. grey cost analysis performed? Yes.

Estimated costs to complete:

- Sewer System, \$200,488
- Water System, \$177,340
- Storm Drain, \$595,308
- Storm Water Ponds, \$100,000
- Clear and Fill, \$750,000
- Erosion control, \$50,000

Roads:

- Rough grade, \$15,000
- Curb and stone, \$150,000

Cost impact of conserving green/open space to the overall costs of the site design/development project: Saved \$1.5 mil

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Significantly reduced costs (10% or greater savings). See earlier questions.

Number of jobs created: 4

Job hours devoted to project:

Planning and Design: 137

Construction: Not available

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

I can send a spread sheet with the hydrographs.

Community & economic benefits that have resulted from the project: The project has been stalled due to the economy.

Project Recognition

Lower Cape Fear Stewardship Award 2009

Additional Information

Links to images: www.hburkert.com