

Sustainability Stars Forum Featuring:

The Treehouse, MetroNational

Jersey Meadows, HCFCD

Stonebrook Estates, Terra Visions

Kendall Library, City of Houston



Stonebrook Estates

Terra Visions, LLC.

Presented by

Randy Jones, Terra Visions, LLC

Michael F. Bloom, P.E., ENV SP, R. G. Miller Engineers, Inc.



Project Summary Information

- **Purpose:**
 - Develop residential community while meeting drainage and stormwater quality requirements in a cost effective manner.
- **Type:**
 - Residential Neighborhood Development
- **Status:**
 - Lots and infrastructure fully constructed.
 - Homes 55% completed.



Firms and Sustainability Elements



- **Professional Service Providers:**
 - Aguirre & Fields
 - R. G. Miller Engineers, Inc.
- **Key Sustainability Elements:**
 - Low Impact Development Techniques – “Natural Drainage Features”
 - Stormwater Quality Treatment Using Bioretention Systems
 - Reduced Use of Concrete Storm Sewers



Why Sustainability Was Used



- Create Distinctive Front Entry Along Busy Major Thoroughfare
- Reduce Detention Volume
- Enhance Open / Green Space
- Reduce Storm Sewer Drainage System Costs



Cost & Size

- **\$11.4 million**
- **51.4 acres**
- **135 lots, both 70' x 125' and 80' x 130'**

DRAINAGE SYSTEM ELEMENTS	HYBRID DEVELOPMENT
Development Area	51.4 acres
Total Number of Lots	135
Storm Sewer and Bioswales	\$675,000
Detention Basin	\$213,000
Storm Water Pollution Prevention	\$7,000
TOTAL	\$895,000
Number of LID Lots	92 (68%)
Number of Traditional Lots	43 (32%)
Prorated Drainage System Cost Per LID Lot	\$6,615 / lot
Prorated Drainage System Cost Per Traditional Lot	\$6,660 / lot

Lessons Learned



- **Erosion & Sediment Control is More Challenging**
- **Protect the Bioretention Systems!**
- **Construction Sequence is Unique**
- **Paving Contractors not Used to Single Cross Slope Roads**
- **Might Consider Removing Fence Separation Between Bioswales with the Residential Areas in Future Projects**



Traditional Drainage

Low Impact Development

Ulrich Intermediate School

Assurion

Google

Spring Cypress Rd

Spring Cypress Rd

Cutten Rd

Spring Cypress Rd

Cutten Rd

Loch Darg



Bioretention System

