



PROJECT: PARKING LOT LID RETROFIT  
 CLIENT: SUGAR LAND CONFERENCE CENTER  
 DATE COMPLETED: MAY 2012

## PROJECT BACKGROUND

Aguirre & Fields, LP, headquartered in Sugar Land, TX specializes in infrastructure planning and engineering across the state of Texas and offers a unique blend of experience encompassing many civil engineering disciplines including land development, site design, roadways and bridges. While searching for new market opportunities within the field of Low Impact Development / Green Infrastructure, they decided to use their own parking lot, consisting of a complete retrofit to market these ideas. The completed lot shows clients how Low Impact Development can be used to increase aesthetic appeal, and increase time of concentration and decrease peak flows. They also installed an R-Tank Reuse System to reduce their annual potable water use by over 50%. The design incorporates a combination of bioswales, the high performance biofiltration system and the underground rainwater harvesting system. Aguirre & Fields not only designs projects with Low Impact Development in mind for their clients, but also is using their own facility as a living laboratory. They now have one of the first LID based sites in Fort Bend County.

CIVIL ENGINEER

**Aguirre & Fields**

LANDSCAPE ARCHITECT

**Davidson Landscape Architecture**

CONVERGENT VAR

**Construction EcoServices  
Houston, TX**

## Retrofits Have HUGE Impacts

Retrofitting Low Impact Development into an existing parking lot can have huge impacts on a watershed. With a 90% reduction in peak flow combined with the 3,500 gallons of water that is captured, the Aguirre & Fields parking lot reduced the discharge rate leaving the site to the predevelopment condition. This means water leaving the site now has no net impact on the watershed.

Not only does the water leave the site at a reduced rate, preventing downstream flooding and erosion, it also leaves the site cleaner than before. With a high performance FocalPoint biofiltration system in place, more than 85% of the Total Suspended Solids are removed from the discharge along with hydrocarbons, phosphorous, nitrogen and other pollutants that can harm the watershed.

If the strategy implemented by Aguirre & Fields was duplicated on all new parking lot expansions, all new urban roadway projects and urban redevelopment, the impacts of the last 100 years of development could potentially be reversed as it relates to both a water quality and discharge volume.

## Experience Matters

Venturing into a new realm of design and development can be challenging for even the most progressive engineering firms without previous experience designing with LID. Even the best laid plans can be sabotaged by poor materials testing or improper installation methods. This is why the design team at Aguirre & Fields has teamed up with Construction EcoServices to provide the best Low Impact Development solution for their parking lot design. Our years of Low Impact Development design and construction experience has led us to the creation of next generation' Low Impact Development solutions like FocalPoint & the R-Tank Reuse System. With the partnership of manufacturers around the world, we seek to create new and innovative ways to raise compliance and lower costs in ways that are simple to design, easy to install, and which offer both performance guarantees and warranties not available with other approaches.

## FocalPoint

A scalable biofiltration system which combines the efficiency of high flow rate engineered soils with the durability and modularity of a highly pervious flat pipe underdrain/storage/infiltration system. While originally developed as proprietary technology, these systems are also available in a tightly specified generic format.

