



PROJECT: LOW IMPACT DEVELOPMENT

CLIENT: QUEENSTON MANOR

PROJECT BACKGROUND

Queenston Manor Apartments sits on a 7.2 acre parcel of land located adjacent to a master planned community on Houston's northwest side. When Academy Development originally planned the construction of an apartment complex on this site, the economic model required that nine apartment buildings be built in order to generate the required revenue stream. Operating under the premise that all of their detention had been accounted for offsite in the surrounding master planned development, the project came to a screeching halt when it was determined by the County that the volume presumably set aside was no longer available for use by the apartment site.

The engineers at EHRA, Inc. rescued this project with Low Impact Development (LID) and the FocalPoint Biofiltration System.

CIVIL ENGINEER

EHRA, Inc.

LANDSCAPE ARCHITECT

EHRA, Inc.

CONVERGENT VAR

**Construction EcoServices
Houston, TX**



Why use Low Impact Development?

Faced with the harsh reality that this project might no longer be viable due to the amount of site area which would otherwise be lost to a detention pond, the engineering firm of Edminster, Hinshaw, Russ and Associates (EHRA) asked Academy Development if they would be open to a Low Impact Development-based design. The objective would be to reduce peak flows and thereby decrease total detention volume under Harris County's LID Design Guide which requires post and pre-development hydrograph matching. Doing so would allow the developer to recapture the real estate that would have to be occupied by detention facility in the traditional design, and make the site viable for apartment construction once again. EHRA redesigned the project with extensive use of porous pavers in parking stalls, a directly infiltrated underground detention system fed by the porous paver system, vegetated swales and vegetated depressions throughout the common areas which drain through a series of small, decentralized FocalPoint Biofiltration Systems. The design team was able to decrease the surface storage volume requirements for the property enough to reclaim the property needed to build two additional apartment buildings and save the project. For the developers, the 48 additional apartment units meant the difference between success and a cancelled project.



Traditional design with detention pond.



Next Generation LID Design with FocalPoint Biofiltration System.

FocalPoint Biofiltration System

The FocalPoint Biofiltration System is a combination of a high performance, flat pipe underdrain, a clog-proof bridging mesh, bridging stone, and a high performance biofiltration media that flows at a rate of over 100" per hour. What this unique combination of parts creates is a system that provides unsurpassed water quality and drainage characteristics. For the purpose of Queenston Manor Apartments, reliability was an important element in that all of the drainage areas are also common areas and courtyards. It was imperative that the system could be relied upon to drain as designed so that within 24 hours of a rain event, there would be no standing water. By placing the FocalPoint at the lowest elevation in the four landscaped swale systems on site, Construction EcoServices was able to give Queenston Manor a reliable drainage and water quality solution.

Quality Solutions

The Queenston Manor Apartments boast extraordinary amenities including a full service bar on site as well as an infinity pool. One of the most impressive and unique features of the site, however is the use of Low Impact Development practices throughout the property.

