

QUEENSTON MANOR APARTMENTS IMPLEMENTS LID

UNLOCKING DEVELOPMENT POTENTIAL WITH SMART STORMWATER SOLUTIONS

Project Details

Queenston Manor Apartments is a 7.2-acre development adjacent to a master-planned community on Houston's northwest side. Originally, Academy Development planned for nine apartment buildings to generate the required revenue stream. However, the project stalled when Harris County determined that the previously designated offsite detention volume was no longer available.

To overcome this challenge, EHRA, Inc. implemented a Low Impact Development (LID) approach featuring the FocalPoint High-Performance Modular Biofiltration System (HPMBS). This innovative design reduced the need for traditional detention ponds, allowing the project to proceed while maintaining sufficient drainage and maximizing buildable land.



What Convergent Water Technologies Provided

Convergent Water Technologies supplied the FocalPoint HPMBs, an advanced stormwater management solution that integrates seamlessly into LID-based designs. The system combines a high-performance open-cell underdrain, a clog-proof bridging mesh, bridging stone, and a high-flow biofiltration media capable of filtering over 100 inches per hour.

For Queenston Manor, the FocalPoint HPMBs was strategically placed at the lowest elevation within four landscaped swale systems across the site. This placement ensured reliable drainage and prevented standing water within 24 hours of a rain event. By using this system, Construction EcoServices delivered a dependable water quality and stormwater management solution that fit within the development's aesthetic and functional needs.

Traditional design with detention pond.



New design with FocalPoint and LID = 2 additional buildings



Why Queenston Manor Chose Convergent Water Technologies

The decision to integrate FocalPoint HPMBs and LID principles into Queenston Manor Apartments was driven by several key factors:

- **Maximizing Buildable Land** – Traditional detention ponds would have consumed valuable real estate. By using LID techniques such as bioswales and porous pavers, the need for surface detention was reduced, allowing for the construction of two additional apartment buildings and 48 more units.
- **Regulatory Compliance** – The project met Harris County's LID Design Guide requirements by reducing peak flows and matching pre- and post-development hydrographs.
- **Efficient Stormwater Management** – The high-flow biofiltration system ensured rapid drainage, preventing flooding in common areas and courtyards.
- **Cost-Effective Development** – While LID techniques like porous pavers increased upfront costs, the reclaimed buildable land generated sufficient return on investment to justify the approach.

By adopting an LID-based approach with FocalPoint HPMBs, Queenston Manor Apartments achieved a sustainable, functional, and aesthetically pleasing development while ensuring long-term stormwater management efficiency.



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Convergent has decades of experience in developing and delivering problem solving stormwater innovations. Convergent believes that adopting new ideas quickly, and integrating the process of innovation into stormwater regulation, product development and distribution is the only answer to our looming water crisis.

Contact Sales

13100 Wortham Center Dr. Third Floor, Suite 3134
Houston, TX 77065
P: 800.711.5428
E: info@convergentwater.com
W: convergentwater.com