



CASE STUDY

PROTECTING THE TRINITY RIVER USING GSI Slowing Down Runoff + Improving Water Quality = Success

SUMMARY

The first multifamily apartment community along the Panther Island Riverwalk in Fort Worth is open, offering residents waterfront balconies, an infinity pool, and a lounge with views of downtown. Encore Panther Island, located at the intersection of Fourth and North Main streets on the south side of the island, is a 300-unit multifamily community and the first to open in the newly redeveloped area. With the opening comes the first completed section of the island's signature canal, 225-foot-long public stretch developers said was "reminiscent of the San Antonio Riverwalk." The canal replaces the traditional curb-and-gutter stormwater system typically found in cities and, according to developers, will save taxpayers about \$14 million in stormwater infrastructure. With any development that builds a water feature, stormwater quality needs to be addressed to protect that investment from deteriorating.

ENGINEER – Kimley-Horn

CONTRACTOR – Shreve Land Constructors

ARCHITECT – GFF Architects

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PROTECTING THE TRINITY RIVER USING GSI

CHALLENGE

The strict stormwater quality regulations that Tarrant Regional Water District (TRWD) requires for these types of developments can be overwhelming to any development team. In North Texas and throughout the Dallas Fort Worth metroplex, most commercial developments address flood storage/detention and total suspended solids (TSS). Because these types of developments are in such proximity to the Trinity River, TRWD focuses more on water quality pollutants such as bacteria, nutrients, hydrocarbons and metals that require filtration technology versus gravity settling or hydrodynamic separating devices.

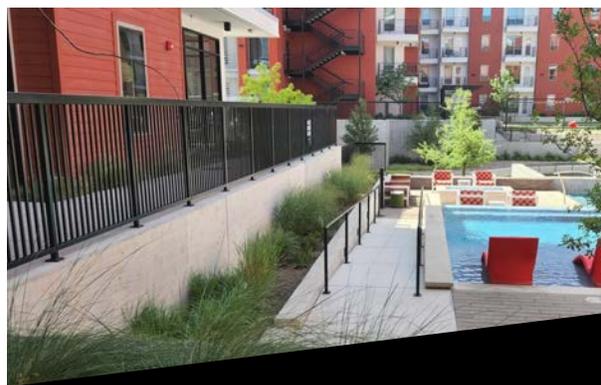
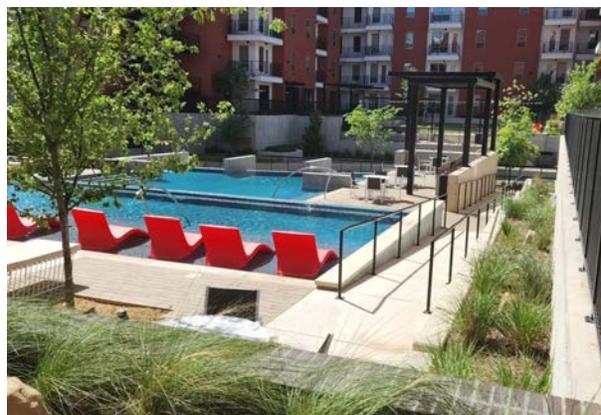
Another challenge was how to direct and slow down stormwater runoff from the apartment buildings and parking garage to 3 planter areas.

SOLUTION

Kimley-Horn and Construction EcoServices teamed to solve these challenges using an R-Tank system to capture runoff from the rooftops below ground, then discharge the flow via three 6" pipes that drained into the stormwater planters. The next step was to address water quality with FocalPoint, a high performance biofiltration system that manages large volumes of runoff within a small space. It consists of an open cell underdrain (R-Tank), bridging stone, high flow engineered soil, hardwood mulch and plants. It infiltrates surface runoff at 100"/hr, which is 10-20 times faster than a typical bioretention soil mix. The high flow rate minimizes the footprint of the system and provides consistent performance and water quality benefits, even when not maintained properly.

FocalPoint managed the first flush flow, or the first 1.5" of rainfall runoff generated by a storm. Any excess surface flow across the planter will splash down into the next planter through a notch cut in the wall of the planter, and finally into a domed overflow drain.

The value of using a high flow biofiltration system not only benefits the General Contractor by lowering construction costs, but it protects the owner from the burden of long-term maintenance costs. The most common question that developers and designers have about GI revolves around maintenance. Since this apartment complex has an enclosed patio, all maintenance must be done by hand, which the FocalPoint planter areas allow for.



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