



BIORETENTION RETROFIT

BELLE SHERMAN KENDALL LIBRARY



PROJECT BACKGROUND

The new three-story Belle Sherman Kendall Library at 609 N. Eldridge not only replaces the existing Bell Sherman Kendall Library on Memorial, but it also serves as a community center, complete with a classroom, after school and summer recreational programs, and a fully equipped half-gym. The new Kendall Library will also acquire a LEED® Silver Certification. Contributing to that certification is an underground water harvesting system which is fed by a series of bioswales that is then used to irrigate the surrounding landscape.

DESIGN TEAM

Landscape Architect
English + Associates Architects
Civil Engineer
Othon Engineering
Landscape Architect
Asakura Robinson

CONSTRUCTION TEAM

Installer
Construction EcoServices

LOW IMPACT DEVELOPMENT

As an alternative to traditional parking where the parking spaces slope away from head-in parking medians and toward a series of drive lane drains and catch basins, the Kendall parking spaces were graded toward the head-in parking medians. The medians are comprised of two 100 foot long by 12 foot wide bioswales which receive runoff from the surrounding parking lot, where an engineered soil matrix was placed on the entire surface area of each swale to filter hydrocarbons and TSS found in stormwater runoff prior to being stored in a 30,000 gallon rainwater harvesting system which are directly infiltrated without the need for inlets, and located beneath the swales where the stored water awaits reuse for landscape irrigation.

LESSONS LEARNED

Within six months of the completion of the bioswales, it was learned that high organic content in the soils had clogged the geotextile fabric separating the soils from the underdrain/storage system drastically reducing flow and backing water up into the parking lot to a depth that was deemed intolerable by the library and it's clients. Construction related issues were also suspected of reducing infiltration in the bioswale. The only option appeared to be to completely tear out each of the bioswales and reconstruct them using less organic content in the mix and improved construction oversight in hopes of preventing similar problems in the future. When Construction EcoServices (a Convergent Water Technologies VAR) became involved, the FocalPoint High Performance Modular Biofiltration System (HPMBS) was presented as an alternative design that would not only solve the problem definitively, but save thousands of dollars in redesign and construction work.



FOCALPOINT HIGH PERFORMANCE MODULAR BIOFILTRATION SYSTEM

The FocalPoint HPMBS is a combination of a High Performance, open cell underdrain, a bridging mesh that is clog proof, bridging stone, and an advanced 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. The HPMBS was able to meet the needs at Kendall Library in 70SF what the traditional bioswale unsuccessfully attempted to do in 1200 SF. With a simple retrofit of the two swales, placing the HPMBS at the lowest elevation in each, Construction EcoServices was able to solve Kendall Library's drainage problem with a simple, quick, cost-effective retrofit.