CASE STUDY

Multifunctional Stormwater Design in Downtown NOLA

SUMMARY

Thirteen15 is a historic renovation project located in the New Orleans Central Business District directly across from Duncan Plaza and City Hall. Due to the size of the property, the City of New Orleans development regulations required a Stormwater Management Plan for the project. These requirements were met through a multi-tiered approach to stormwater management that involves:

- **Rain Gardens** - to collect and filter roof runoff from the historic building
- **Soil Cells** – to detain water and provide an uncompacted soil zone for tree roots to inhabit
- **Stormwater Planters and Bioretention Cells** – incorporated into the streetscape along the curb and gutter
- **Permeable Pavers** – used extensively within the site's courtyards

Despite its relatively small size, the design team at Batture was able to implement enough green infrastructure to manage over 4,650 cubic feet of stormwater runoff.

STORMWATER SYSTEMS | COMPLIANCE | EROSION CONTROL
Providing National Stormwater Compliance with Regionally Customized Solutions.
greenrisetech.com | 629.230.2150

CHALLENGE

The team at Batture was presented a design challenge to meet the development requirements for the City of New Orleans. The first 1.25" of rainfall must be detained and filtered using a combination of grey and green infrastructure. New Orleans prides itself on being unique, and this extends into stormwater management, where they are leading the charge in southeast Louisiana in green infrastructure construction. Retrofit projects in dense urban environments are always a challenge since they are limited on space to manage stormwater runoff. Construction EcoServices has provided turnkey solutions for projects like this before, sometimes with underground detention below an existing building. In this case, an underground detention could have been used, but the design team wanted to provide a multifunctional design for the future residents that combined grey and green infrastructure. The outdoor courtyards were selected to become a multifunctional hardscape and landscape to manage stormwater runoff.

SOLUTION

The two courtyards on either end of the building are designed to be 99% permeable. They feature a series of stormwater management and filtration elements including rain gardens, permeable pavers, soil cells, and raised stormwater planters. Batture teamed up with Greenrise Technologies to design a soil cell system below permeable pavement that provides healthy soil for the rain garden and trees. Trees aren't always thought of as stormwater management tools, but they can be very effective at managing urban runoff. The design consisted of a double stack Stratavault System below permeable pavers, which was adjacent to a rain garden and raised stormwater planters. The system is 90% void and can support vehicle traffic, or in this case pedestrian traffic. The soil within the matrix gives tree and plant roots adequate space to grow, even in dense urban hardscapes. Urban areas don't provide the most suitable soil environment for tree roots and the compacted soil can force roots to damage surrounding pavement and utilities. Stratavault is a great tool for designers that want to ensure the longevity of trees and to integrate them into the stormwater management design. Bioretention soil was used to fill the soil matrix and the voids in the bioretention soil provide temporary detention.

Greenrise Technologies provided design assistance to Batture and installed the Stratavault System for Hernandez Consulting. The multifunctional design was cost-effective for the owner since it satisfied the detention and water quality component, while providing healthy soil for the rain garden and trees to provide a shaded and beautiful landscape for the future tenants.

ABOUT GREENRISE

Greenrise Technologies is focused exclusively in the stormwater marketplace. Our business units provide solutions involving turnkey compliance assurance services, engineering sub-consultancy and cutting-edge stormwater management systems to all segments of the development, design and construction markets where those pursuits intersect with the rapidly evolving stormwater regulations.

Greenrise Technologies

STORMWATER SYSTEMS | COMPLIANCE | EROSION CONTROL
Providing National Stormwater Compliance with Regionally Customized Solutions.
greenrisetech.com | 629.230.2150