New Green Square Library to feature innovative underground water storage solution

Construction of the Green Square Library commenced in 2017 marking the long-awaited fruition of an innovative design developed via an open design competition in 2012. Standing out amidst 160 international entries, the winning proposal for the new underground library and plaza was submitted by emerging architecture practice, Stewart Hollenstein.

In its report, the jury said, “It was the only scheme to challenge the notion of placing a building in the plaza, managing to put forward a strong argument for placing the plaza over the library, thereby providing both a building and a suitably scaled urban plaza for the future developments around the site, becoming a beacon and an oasis for the whole Green Square community.” Construction is currently ongoing and will be completed by the end of the year.

Entering the library through a green-walled, open-air amphitheatre, there will be an underground living room filled with sunlight and fresh air, and a lush sunken garden providing an enriching space for children to play. Outside, the plaza will continue this lush garden theme, providing mobile sun lounges under 48 advanced canopy trees with free Wi-Fi enabling access to the library’s world-class e-resources.

Of course, in an established urban area like Green Square, providing enough uncompacted soil and irrigation beneath the hardscaped plaza for newly-planted trees was problematic. Landscape Architecture firm, Hassell, identified Citygreen’s innovative Stratavault tree pit system as the ideal solution – providing a solid structure beneath the plaza to house soil, intercept and capture rainwater, and direct root growth away from surrounding infrastructure.

In addition to intercepting rainwater for immediate irrigation, Hassell also sought a system to store excess rainwater underground – both for irrigation on-demand and for reuse within the complex. Citygreen developed an innovative underground water storage solution, installing several impermeable, welded liners beneath the plaza to act as water storage tanks. These liners are supported by skeletal structures constructed from Stratavault modules, enabling international engineering firm Arup to create tanks in irregular shapes to fit perfectly around existing infrastructure. Each liner is protected by cushioning layers and connected by a network of pipes that feed stormwater into the tanks, and then drain water out for irrigation and reuse.

Citygreen assisted with the design and configuration of the tanks, drawing on previous projects and comprehensive testing to ensure a sound result. Combined, the tanks will provide more than 216000 Litres / 5750 Gallons of water storage, ensuring trees in the plaza will thrive for the enjoyment of all.

Stay tuned for a full report when construction is completed.

For more information on Citygreen’s innovative urban landscape solutions, please visit the Citygreen website.

Source: https://architectureau.com/articles/five-architecture-competitions-coming-to-fruition-in-2018/

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