

Stoneham Park SUDS

Client:- Brighton and Hove City Council

Contract Value:- £38k

Edburton was employed as the main contractor to install a trial of 5 SUDS tree pits.

- To work as a solution to adding soakaway capacity in areas with flooding hotspots.
- 2 hybrid cell systems for sustainable urban drainage
- 3 structural soil systems (Stockholm), 1 below ground and 2 with gabions
- With added root inspection wells for future observation
- Planted with resistant Elms



Description of works

Brighton and Hove City Council instructed Edburton Contractors to install 5 SUDS, Sustainable urban drainage system, tree pits in Stoneham Park. This is a busy area with a children's play park and adult sports classes and was the ideal location to trial various solutions to alleviate urban flooding.

The decision was made by BHCC and its Parks department to trial an ACO system, a Green Blue Urban system, and 3 variations on Stockholm tree pits. 2 tree pits had gabions with an oak top added for extra seating in the park so parents could supervise their children playing.

This trial was to find the differences in the tree pits and which solution and features would work best at alleviating surface water run-off from highways to reduce the stress on the local drainage system and then be used for future highways projects.

The benefits of these types of tree pits are the reduction in surface run-off into existing systems that are currently getting overwhelmed, they reduce the pollutants in the water, provide resilience to drought for the trees and contribute to urban greening. They help ease flood risk areas, improve the water quality and boost biodiversity, so it's a great solution by combining modern drainage processes and the natural water cycle.

Method of Operations

The first step for the Aco and Green Blue systems was for the team to excavate and create a solid sub-base before laying a hessian membrane to prevent small fines clogging the drainage whilst the soil settles.

The cell systems were then installed and held in a rigid position by adding the side panels and some of the lids before filling them with soil. An excavator was used to fill the main void in the pit and then the team shovelled the soil by hand into the voids in the cells.

Aeration wells and inspection wells were installed for tree health and for future observations, and then the permeable mesh was laid over the cell system and tree planted before finishing with type 1 material and a surface course to mimic the highway construction.

The Stockholm tree pits started the same way with the team excavating and adding a solid sub-base. Next the variations; adding a concrete planting frame, mixing a combination of materials/ structural soil (biochar, compost soil and aggregate stone) which was done using the excavator and washing these materials into each other in the pit void. The team added the materials in layers compacting each layer before planting the tree into the planting frame, adding an aeration well and finishing the surface with permeable paving. Large gabions were constructed around 2 of the tree pits on site and filled with recycled material and topped with oak sleepers.

Risk management

The area of works and surrounding protection zone were barriered off using Heras panels and one of the entrances to the park was permanently closed during the construction.

Signage was installed and attached to the Heras panels at various intervals around the site.

Deliveries and muck away were undertaken with a banksman on site and not after 15.30 hours when the park was noticeably busier with members of the public.

