OSY Hydroponics System

London

Brookfield Multiplex Construction Europe Ltd

BIG Challenge 2015 submission category: Temporary

Project overview

The project consists of a free standing, recirculating, pump-based hydroponics system.

The reservoir, full of nutrients, pumps the water up to a pipe system that flows through the top pipe to the lower one, until it is drained back into the reservoir to re-start the cycle.

Each pipe hosts three grow sites, containing net pots filled with clay pebbles .

The project required the collaboration of members of the sustainability and the construction teams, both from Brookfield Multiplex and subcontractors - 10 people in total.

The system has been placed in different locations around the site welfare building (viewing platform on the top floor/roof, bistro café (canteen), reception and 1st floor hall).

Site materials were reused to build the structure. The only procured items were the pump system, seeds and nutrients required for hydroponic system.

Photo: Planting the seeds and placing them in the pots with pebbles

Everything was bought at a local store, coming to a total cost of £29.

What were the biodiversity conditions on site, prior to the enhancement?

Site was 100% hardstanding before works started, there was no biodiversity on site.

Were there any specific conditions that led to you carrying out this work?

Raising awareness with the workforce of the potential for ecological enhancements in an urban environment, showing them that not much is required to build a small urban farm that can provide herbs for the café to use.

Posters of the local store were displayed by the hydroponic system to advertise them, which made people aware of the possibility to find specialised planting stores in Central London.

What were the biodiversity measures taken?

The hydroponic system is replicable and easy to build, with most materials being reused from site.

Pipes were part of the MEP package, timber was reused from general construction waste, bucket was already available on site.

This system is portable; it has been moving around the site (viewing platform on the top floor/roof, bistro café, reception, 1st floor hall) and it could be transferred to another site after completion of this project.

It is innovative, as hydroponics systems are not as popular as other farming methods.

The system will contribute to the healthy dietary plan of the site staff by farming herbs (basil) that could be used by the bistro café on site.

The project required the collaboration of the Sustainability and Construction team along with our subcontractors and raised awareness to enhance and protect the biodiversity.

Toolbox talks were delivered to explain how the system works and what a hydroponics system is.

The project contributed to team building, as it engaged members of sustainability team, construction team and subcontractors

How would you best describe the project?

An enhancement.

Photo: Work in progress – pipe system A

Further information

Materials were already available on site – pipes from the MEP installation, timber from general construction waste, plastic cups from bistro café waste.

First, a stand was built using the timber – the stand was at an angle to help its stability. Pipe tubes were cut at the desired length, holes for the cups which were going to hold the seeds were then perforated and then the pipe system was assembled with a degree of inclination to facilitate the water flow.

After being assembled, the pump was linked to the pipe system. The pipes and pump were placed on the stand, filled the bucket with rainwater, and the nutrients were added to the water.

When the system was ready, for the seeds were planted in reused plastic cups filled with clay pebbles. The pump was plugged in and ready to go.

Opportunity for improvement: Connecting the water pump onto batteries that could be sun charged by solar panels to reduce the carbon emissions of the operating pump.

What was your personal motivation for carrying out the enhancement?

The key motivation was to raise awareness and to see our own project completed, up and running, basil growing and used in the bistro café.

Everyone who helped on the project showed a high degree of interest to learn more about biodiversity and initiative by bringing their ideas on board.