

Prestwich Hight Street: tree planting to deliver multiple benefits

Partners:

City of Trees, Bury Metropolitan Borough Council, University of Manchester, Environment Agency, United Utilities, Muse Developments & Transport for Greater Manchester

Themes



Urban



Water Quality



Green Infrastructure



Water Quantity



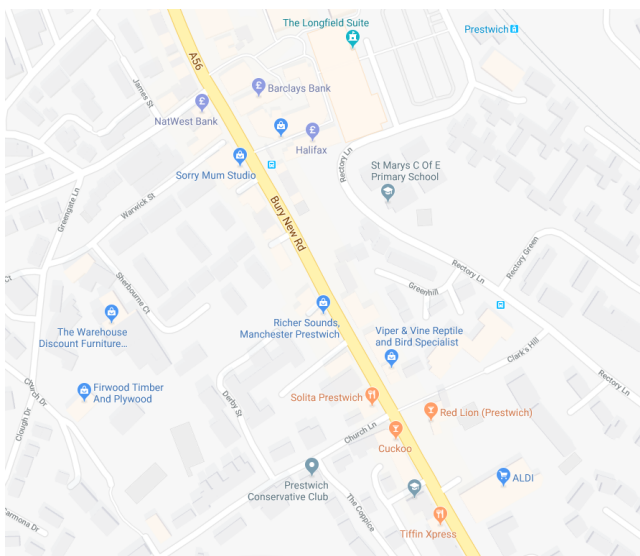
Prestwich High Street

Date carried out

Project delivery was carried out between 2015 and 2018

Location

Prestwich Hight Street / Bury New Road A56, Bury, Greater Manchester



Background

In 2017 Prestwich High Street, Greater Manchester, became the focus of major a £2 million regeneration project that saw the resurfacing and widening of pavements along with the provision of cycle lanes and changes to the highway to reduce the impact of traffic volumes whilst maintaining the flow of traffic through the town. The aim of the scheme was to create a quality environment for shoppers that would benefit local business and attract further investment into the town centre. The local authority, Bury MBC, provided £1.5 million for the project with a further £500,000 from Transport for Greater Manchester.

As part of the improvements to the pavements Bury MBC proposed to plant up to 30 street trees to enhance the appearance and appeal of the town centre and provide a range of other benefits including improved air quality and a more attractive walking environment.

In 2015 City of Trees delivered a street tree planting project on Howard Street where surface water from the road was diverted into 3 specially adapted street trees. The aim of this project was to demonstrate how street trees could be used to provide a natural solution for managing surface water runoff to reduce flash flooding and remove pollution contained in the water before it enters the sewer system.

Project

Trial holes were dug for each of the proposed tree planting locations and it was found that, owing to the presence of underground services, 10 locations were not suitable for tree planting. Of the 20 feasible locations, 12 were suitable for SuDS enabled tree planting and able to receive surface water runoff.

Tree pits were then dug and connections from the road and pavement made to enable surface water to be directed towards the trees. Gulleys on the pavements were installed to take rain water from the pavement or from down pipes off adjacent buildings to the tree pits. Likewise connections into the tree pits were made from the storm water grids in the road. Perforated plastic feed pipes were installed in the tree pits to distribute the water to each tree and a perforated drain pipe was located in the base of the tree pit and connected to the sewer after the last tree pit to accept any remaining water. An impermeable membrane was installed in the tree pits to create a tanked system that would ensure that water could not get into the water table below or any cellars in adjacent buildings.

Modular cells were installed in the tree pits to prevent compaction of the soil medium and allow water and oxygen to migrate to the trees roots.

The tree planting coincided with the wider regeneration of Prestwich High Street which meant that a staged approach to planting was required over a 12 month period from March 2017.



Outcomes

The University of Manchester will monitor the SuDS-enabled trees to determine the total amount of water that is being diverted off the buildings, pavement and road into the tree pits, how long the water is delayed before it is returned to the sewer and the quantity and type of pollutants that are being removed by the trees and the microorganisms in the soil. This is particularly important with respect to the adjacent Prestwich Clough where there is potential for Combined Sewer Overflows (CSOs) to discharge into Danes Brook during significant rainfall events. Slowing and attenuating surface water runoff on Prestwich High Street can help to reduce the frequency of CSO spillages into the brook.



Learning

This project demonstrates how the objectives of regeneration and integrated water management can be combined.

It also demonstrates the advantage of integrating SuDS tree planting into a wider regeneration scheme and how cost savings and technical benefits can be delivered together; if a pavement is to be dug up it makes sense to incorporate tree planting at this stage to reduce cost and disruption later.

Next steps

The University of Manchester will monitor the impact of the SuDS-enabled street trees on Prestwich High Street and feed results back to City of Trees.

Meanwhile, local authorities across Greater Manchester will work with City of Trees to identify suitable locations to deliver similar projects.

Quotes

"This was an excellent example of partnership working bringing together a range of funding streams and combining the technical expertise of Bury Council's drainage engineers and City of Trees street tree planting team, a partnership which we hope can be replicated across Greater Manchester"

Pete Stringer, 2018

Acknowledgements

The Environment Agency and United Utilities have helped to make this project happen by providing the funding needed to pay for the additional costs of creating the specially engineered tree planting systems.

Also local developer MUSE has also provided support as they understand the importance of tree planting in making our urban centres more attractive and prosperous places.

This project is also being supported by the European Union's LIFE IP fund as part of the Natural Course Project which is a partnership of the Environment Agency, United Utilities, the Rivers Trust, Greater Manchester Combined Authorities (GMCA) and Natural England who are working together to seek cost-effective solutions to improve and protect the quality of our water for generations to come



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