

Urban diffuse pollution mitigation on Moston Brook

Oldham Council



Aerial view of completed attenuation ponds close to Moston Brook

Date carried out

January 2020 to September 2021

Location

Moston Brook, Greater Manchester

Background

Moston Brook is an urban watercourse which flows through Failsworth, Oldham, and Moston in Manchester. The brook is largely bordered by housing, the Rochdale Canal and areas of informal recreational greenspace except for Mill Lane in Failsworth where the brook is directly adjacent to a vehicle processing business.

Project

The project aim was to design a scheme on the greenspace to create a natural buffer between the industrial site and the watercourse.

This project had two elements:

- To examine the effectiveness of a surface water attenuation and pollution mitigation trial project completed in 2016 in which an earth bund, a drainage ditch and a shallow pond were constructed
- To redesign and implement a new scheme to intercept, filter and manage the diffuse flow of this surface water into Moston Brook. The scheme was to be based on site investigations, modelling, and the impacts of future climate change.

Partners

Oldham Council and Manchester City Council working together as the Moston Brook Partnership Project

Themes



Green
Infrastructure



Water
Quantity



Water
Quality



Urban



Evidence &
Tools

Consultants were appointed to review LIDAR maps and to undertake a drone survey to assess the flow of water from the vehicle processing site.

A water flow event was simulated in the model which showed that the existing earthworks were not sufficient. Based on the evidence a design was proposed for a series of connected attenuation features including a long contour drain at the top of the greenspace and four other attenuation ponds with specifically designed contours.

The channel and ponds are designed to be linked and to be free draining allowing for surface water, sediments, and contaminants to be absorbed naturally.

The presence of more water on the grassland and in the ponds will allow a wider range of plants to thrive creating new habitats. On completion the site was sown with wildflower seed to help create more floral interest and diversity.



Ponds capturing water immediately following construction

By absorbing and slowing the flow of water the project will also protect the riverbank and help retain public access across the two footpaths on the site.

Natural Course provided funding, guidance and advice allowing the Moston Brook Partnership to deliver this locally significant green infrastructure scheme.

This involvement has made a larger scale project possible which is built on an evidence-based approach. Other Natural Course projects, research and contacts have provided a solid framework on which to design a scheme which would ordinarily not be carried out by a local authority especially in the current climate.

Outcomes

- Evidence based study and data on surface water flows and effects
- Significantly reduced volumes of contaminated water entering Moston Brook
- Improved amenity and public access due to prevention of surface water flooding
- Enhanced habitat due to introduction of wet areas and water features along with wildflower seeding.

Learning

This project provided the first opportunity for the Moston Brook partnership to work alongside a technical consultancy and to assess the effectiveness of using LIDAR maps, flow modelling and drone technology to design a scheme based on high level evidence. Through careful collaboration the partnership designed a scheme which addresses urban diffuse pollution challenges whilst providing benefits for biodiversity, recreation and geomorphology. This will undoubtedly influence the design of future projects where the partnership will endeavour to introduce multi-functional benefits.

Next Steps

Establishment of citizen science water quality monitoring upstream and downstream of the site along with further biodiversity monitoring.

Project publicity via Oldham Council web site and sharing of case study with engineering colleagues working in drainage and flooding to promote, where appropriate, green infrastructure solutions to water management.

Louise Waters ,secretary Moston Brook Friends Group said...

The Moston Brook Friends Group vision is to have a clean healthy brook; good for people and wildlife. Cleaning up our urban rivers is a challenging task. It is such a positive step to see this project designed and implemented and our citizen science volunteers can play their part by monitoring water quality in the future.

For more information  info@naturalcourse.co.uk