

Natural Flood Management in Park Woods, Ruislip - A Case Study

Park Woods Ruislip as part of the 726 acre ancient woodland of Ruislip Woods, is a designated Site of Special Scientific Interest (SSSI) and are managed as such in accordance with Natural England's policies.

The woods provide significant attenuation of surface water through the interception, absorption and transpiration of rain water. A single tree can store up to 450 litres of water. However due to the quick response of the catchment and underlying geology, options are being looked at to help reduce the risk of flooding.

Clearance

Some clearance work was suggested drawing on the knowledge and helpful suggestions of some local residents. Council officers met with two residents to discuss these suggestions. This includes the clearing of a pond as well as deepening and widening the ditch entering this pond. A ditch at the back of the properties on the eastern end of Broadwood Avenue has been cleared of overgrowth and dumped garden waste which would reduce the stream capacity and increase the likelihood of flooding.

However in clearing these areas the Council was concerned this could increase the speed at which water would flow from the woods. Then the Council looked at other methods to slow down how quickly water flows down the ditches and reaches the culvert at the rear of No. 60 Broadwood Avenue.

Natural flood management

This aims to slow the velocity of the water by mimicking the characteristics of natural rivers. By making the catchment rougher and restricting the flow of water it becomes more difficult for water to gather momentum in the watercourse. The methods used in Park Woods are known as 'Large Woody Debris' (LWD) and are a common method of natural flood management.

Flagship schemes such as Stroud¹ and Pickering² have identified the potential success that can occur from strategically placed woody debris in attenuating water and reducing the flood risk downstream.



Logs have been placed at various points along the entire watercourse, allowing water to flow underneath during normal conditions. During larger storm events however, the restricted stream size causes water to spill out and attenuate on the floodplain rather than accumulating within the channel itself.

Large Woody Debris

Works through causing an in-channel blockage, which subsequently increases the amount of water flowing on to the surrounding floodplain as a temporary storage area. This can help offset the timing of flood water accumulating at the culvert downstream. LWD also acts as a barrier to other sticks and leaves from blocking the culvert debris screen, instead the sticks and leaves are retained behind the LWD structures. This helps to increase the useful spillage of water on to the floodplain upstream and away from urban areas downstream.

There is a recent shift towards the uptake of Natural Flood Management, which has been highlighted in numerous government statements as a more appropriate management tool to help reduce the risk of flooding. The 21st century saw a dramatic increase in hard engineered structures such as large storage reservoirs and linear walls;

¹ <https://www.stroud.gov.uk/rsuds>

² <https://www.forestry.gov.uk/fr/slowingtheflow>

