

# Yeading Brook and the Headstone Manor Park Project

## CONTROLLING WATERS

### Protecting properties and infrastructure



The Headstone Manor Park Flood Alleviation Scheme aims to address surface water flooding in the North Harrow area. The scheme provides basins within the park that will temporarily store water and reduce the risk of the downstream drainage system exceeding capacity during rainfall events.

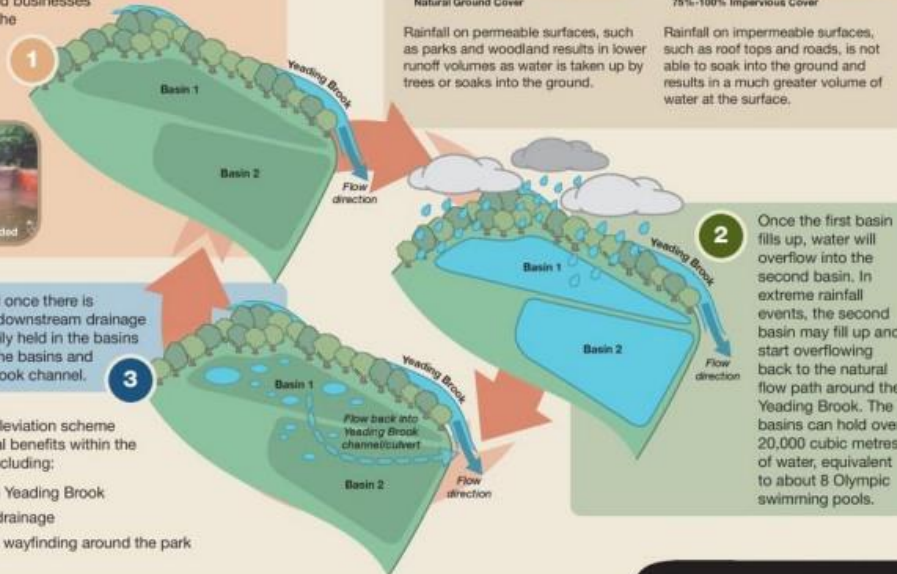
The basins will normally be dry, however during rainfall events, some water will be diverted and temporarily held in the basins instead of entering the downstream drainage network. This will free up capacity in the drainage network, reduce the volume of sewer overflow and reduce surface water flooding levels in North Harrow. This project will increase flood protection for homes and businesses downstream adding to the overall Environment Agency target of 300,000 homes better protected by 2021.



After rainfall ceases and once there is enough capacity in the downstream drainage system, water temporarily held in the basins will slowly empty from the basins and return to the Yeading Brook channel.

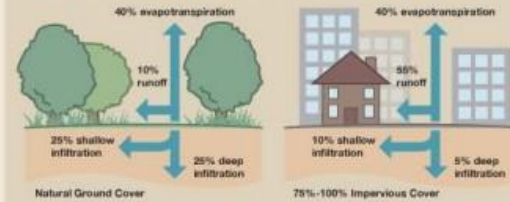
The works for the flood alleviation scheme will also provide additional benefits within the Headstone Manor Park including:

- Improved access to the Yeading Brook
- Improved playing field drainage
- New walking paths and wayfinding around the park



Surface water runoff is becoming increasingly problematic in the UK. Surface water flooding and sewer overflow are occurring more frequently, and the threat of climate change will only worsen these problems.

The increase in surface water runoff in urban areas is largely driven by the change of permeable surfaces to impermeable surfaces, particularly as development seeks to keep up with growing populations.



Rainfall on permeable surfaces, such as parks and woodland results in lower runoff volumes as water is taken up by trees or soaks into the ground.

Rainfall on impermeable surfaces, such as roof tops and roads, is not able to soak into the ground and results in a much greater volume of water at the surface.

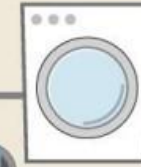
## CONTROLLING THE WATERS

### Filtering and cleaning our water and reducing flood risk

Rainfall in the UK is relatively clean until it lands on urban areas like London where it becomes increasingly polluted.



Rain picks up pollutants including silt, oil and toxic metals from roofs, gutters and roads which then flow into the underground river coming from Harrow Weald



Misconnected plumbing from washing machines, sinks, toilets and baths flow into our rivers causing pollution and public and environmental health risks.



Before the water enters the moat it passes through a narrow pipe restricting water flow during storm events allowing the wetlands to flood and reduce flooding downstream.



Instead of flowing directly into the moat it will now flow into the sedimentation ponds where most of the suspended silts will be captured in the forebay (dirty pond) before flowing into the secondary (cleaner pond) leaving behind finer silts and then flowing into the reedbeds where the water will be cleaned by micro-organisms on the reeds root system.



Aquatic pond weed has been planted in the pond margins to slow water flow which promotes silt deposition, oxygenate the water and provide a habitat for bacteria which breakdown pollutants. This will trap 60-70m3 of silt per year.



The reedbeds are planted with common reed *Phragmites australis* which trap and treat pollutants such as toxic metals, oils, raw sewage and silt. They also provide habitat for beneficial bacteria and algae which digest pollutants and clean the water.



The water then flows through a narrow weir 500mm higher than the water level in the moat slowing the flows, allowing more time for silts to settle in the ponds.