

Heron Eccles

Introduction

It is proposed to upgrade the existing sports facilities at Heron Eccles playing fields. This will include the formation of a number of new sports pitches to Football Association standards, an extension to the existing changing facility, and creation of two new car parking area.

This document explains the proposed drainage strategy for the extension to the changing facilities and the car park only. The pitch drainage is to be designed by a specialist. It should however be noted that the site currently has a comprehensive below ground pitch drainage system which takes surface water to the centre of the north boundary. The outfall at this location has not been verified at this location and will not be used as part of the new drainage proposals.

Flood Risk

The existing site has a changing facility to the north, an informal gravel surfaced car park and a formal tarmacked parking area. The new extension to the changing facilities has a plan area of approximately 280m² and is to be located to the east of the existing building. Two new formal car park are to be located to the south of the site. As the impermeable area of the site will increase and the fact that the overall site is greater than 1ha in area, Mouchel Consulting were commissioned to prepare a Flood Risk Assessment for the site. This document includes the following information:-

Increase in impermeable area = 5010m²

Green Field run-off rate = 131l/sec (1:30yr) , 161l/sec (1:100yr) for entire site

Additional run-off post development = 49l/sec (1:30yr), 69l/sec (1:100yr)

Storage requirement = 440m³

Existing Drainage Infrastructure

The existing changing facilities were constructed approximately 8 years ago. These included a new below ground foul drainage system which surrounds the perimeter of the building and channels waste water to a foul pumping station. A rising main from the pump chamber runs to an existing manhole in the main site entrance before finally discharging to the adopted United Utilities manhole reference 8804 at the junction of Abbotts Hey Avenue and Greenleigh Road.

The roof run-off from the existing pavilion is collected in below ground drainage pipes and routed to a land drain which runs towards the northern boundary. The outfall beyond the northern boundary is un-proven.

Foul Drainage Proposals

The new extension will have limited foul discharge volumes. It is proposed to connect this into the existing below ground system and is routed to the foul pump station.

The new building is in close proximity to the pump chamber and will possibly need it to be relocated to the north to avoid a foundation clash. The rising main will be diverted locally.

Surface Water Drainage

To comply with the findings of the Flood Risk Assessment, the additional surface water run-off generated predominantly from the new carparking will be temporarily stored on site before controlled release to the existing surface water sewer in Abbots Hey Avenue.

The surface water run off will be collected in trapped road gullies before being piped towards a full retention fuel separator. The discharge from the separator will pass into a blow ground attenuation tank providing 440m³ of storage. Downstream of the attenuation tank will be a vortex control device limiting discharge to 6.8l/sec. Downstream of the flow control manhole will be a surface water pump station which is required as the site levels fall east to west meaning that gravity discharge is not possible. A rising main from the pump station will be laid to an existing surface water manhole at the front entrance which also acts as the discharge point for the drainage from the existing car park.

The discharge rate has been calculated as follows:-

Sewer water run-off will be limited to a sub-catchment area of 5010m². The total site area = 14.2ha and the calculated greenfield run-off is 193l/sec (0.01% + 30%cc). Therefore for the sub-catchment, the greenfield run-off = $0.5/14.2 \times 193 = 6.8$ l/sec.