

Simpson Ground

Introduction

It is proposed to upgrade the existing sports facilities at Simpson Ground playing fields. This will involve the demolition of the existing changing facilities, the formation of a number of new sports pitches to Football Association standards, placement of a new changing facility and creation of a new car park. This document explains the proposed drainage strategy for the new changing facilities and the car park only. The pitch drainage is to be designed by a specialist.

Flood Risk

The new changing facility and 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 = 6973m²

Green Field run-off rate = 72l/sec (1:30yr) , 88l/sec (1:100yr) for entire site

Additional run-off post development = 40l/sec (1:30yr), 57l/sec (1:100yr)

Storage requirement = 365m³

Existing Drainage Infrastructure

A number of United Utility sewers are in the proximity of the site. A 225mm surface water sewer runs along the eastern boundary of the site in a north to south direction. A 450mm diameter combined sewer runs parallel to the western boundary with the Eric Hardy Nature Reserve. The existing changing facilities discharge foul and surface water flows to this sewer via 100mm diameter pipe.

An ordinary water course is present along the western boundary flowing north to south. This runs parallel to the 450mm diameter combined sewer mentioned in the previous paragraph.

Foul Drainage Proposals

It is proposed to route the foul drainage from the new changing pavilion into the combined sewer on the western boundary using a similar route to the existing outfall. The existing outfall is blocked and of unknown condition therefore it is proposed to lay a new pipe. If possible, the existing connection to UU MH 8701 will be reused.

Sewer Water Drainage

To comply with the findings of the Flood Risk Assessment, the additional surface water run-off generated predominantly from the new carpark will be temporarily stored on site before controlled release to the existing ordinary water course to the west of the site.

In terms of storage, this is intended to be provided by using permeable tarmac with a granular drainage blanket below. Infiltration tests revealed inconclusive results and suggest that filtration will not be successful. The FRA has established the required storage volume to be 365m³. The area of the new carpark is circa 4900m² and assuming a void ratio of 30%, the required depth of the drainage blanket is approximately 250mm. The formation of the drainage blanket will be sloped to the outfall where it will be channelled to a collection manhole incorporating a flow control device

before final discharge to the water course. Surface water run-off will be limited to a sub-catchment area of 6973m². The total site area = 7.4ha and the calculated greenfield run-off is 72l/sec. Therefore for the sub-catchment, the greenfield run-off = $0.7/7.7 \times 72 = 6.5\text{l/sec}$.

The ordinary water course will be the responsibility of Liverpool City Council who are the Lead Local Flood Authority. Permission for discharge has yet to be agreed with them.