

Jericho Lane

Introduction

It is proposed to upgrade the existing sports facilities at Jericho Lane playing fields. This will include the formation of a number of new sports pitches to Football Association standards, placement of a new changing facility, placement of health and fitness 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. It should however be noted that the site currently has a comprehensive below ground pitch drainage system which takes surface water to the south east corner of the site presumably into Jordan River.

Flood Risk

The existing site has a small changing facility to the north west corner which is to be demolished. 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 = 6302m²

Green Field run-off rate = 68l/sec (1:30yr) , 83l/sec (1:100yr) for entire site

Additional run-off post development = 39l/sec (1:30yr), 55l/sec (1:100yr)

Storage requirement = 355m³

Existing Drainage Infrastructure

A number of United Utility sewers are in the proximity of the site. A major foul sewer crosses the site from the south east corner upto the north west corner. A 1800x1200 combined sewer runs parallel to the western boundary along Jericho Lane and a 300mm diameter surface water sewer is present in Otterspool Drive.

Foul Drainage Proposals

It is proposed to route the foul drainage from the new changing pavilion into the combined sewer at the junction between Jericho Lane and Otterspool drive noding at Manhole 5903 (CL=14.75, IL=12.45m).

The length of the new drain will be circa 150m. Taking the FFL floor level as 15.25m, a gravity sewer laid at approximately 1:60 will be possible. However the depth of excavation may make it more economic to provide a package foul pumping station adjacent to the new buildings. This will be a dual pump system with 24hr storage. The rising main can be laid at nominal depth thus reducing excavation costs.

The choice of either a gravity or pumped system will need to be explored during the tender stage.

The pumped solution is shown on the attached drawing.

Surface 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 surface water sewer in Jericho Lane. Depending on UU's preference the connection will be made at either existing Manhole 5902 or a new saddle midway between MH 5902 and MH 6801. The invert levels to these two manholes needs to be established.

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 355m³. The area of the new carpark is circa 5000m² 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 surface water sewer. To aid the collection of water, slotted pipes will be incorporated in the drainage blanket. These will be laid to falls towards the outfall chamber.

Sewer water run-off will be limited to a sub-catchment area of 7195m². The total site area = 7.4ha and the calculated greenfield run-off is 68l/sec. Therefore for the sub-catchment, the greenfield run-off = $0.72/7.4 \times 68 = 6.6\text{l/sec}$.