

TECHNICAL NOTE

Project: [0202] Land North Of Milton Road, Adderbury

Aims

- Evaluation of Forge Engineering proposal given in report Phase 1 Sports Pitches SuDS Calculations and FEDS-218132 Phase 1-Sport Pitches' Sustainable Drainage System Layout
- Site Visit and evaluation of currently installed drainage system

The report Phase 1 Sports Pitches SuDS Calculations and FEDS-218132 Phase 1-Sport Pitches' Sustainable Drainage System Layout was reviewed following a site visit and feedback to the Parish Council from the Cherwell District Council.

Evaluation of the Report and Design

The main findings on the evaluation of Forge Engineering proposals are:

- The FEDS reports failed to state that there is an existing ditch running north of the site and that this ditch is a natural draining system for the site. The FEDS proposal does not include a discharge into the ditch even though this is the natural way in which the field drains. It also failed to note that the proposals (sport fields) do not increase or include any impermeable areas whatsoever and therefore does not change the hydraulic load of the ditch. The ditch is being maintained by the landowner the land.
- The report has not used the latest investigation on draining sports fields. This report does not take into account the natural permeability of the ground within the design and how the underground pipe work and the soil mixture can reduce run-off from the playing fields. This is proven as the soakaway tests undertaken over the site provide good infiltration rates. These findings were not taken into account in Forge's calculations. Therefore, the Forge reports overcalculate the amount of storage water required for the sport fields.
- The drainage calculations allow for a run-off coefficient of 0.35 over the whole site. This is clearly an over design of the attenuation system as it means that 35% of the whole area is completely impermeable. This run-off coefficient is substantial and does not correspond to the reality of the surface of the sport fields which is grass with a good infiltration rate.
- The Forge report and calculations do not take into account the substantial infiltration provided by the principal and lateral carrier pipes. This means that the FEDS run-off for the site is substantial and does not reflect how the pitch drainage system is working and managing the water.

- The calculations do not allow for surface water storage within carrier pipes and trenches. This is a substantial volume of water that is stored within the pipework and the bedding of the trenching.
- The drainage proposals shown in the drawing FEDS-218132 Phase 1-Sport Pitches' Sustainable Drainage System Layout, states that the attenuation system should have a depth of 400mm. It is not possible to build this proposal as the carrier pipes are deeper than this level.
- The drainage layout FEDS-218132 Phase 1-Sport Pitches' Sustainable Drainage System Layout shows that the MUGA is connected to the pitch drainage layout. However this is no longer the case as the MUGA is permeable and will form part of the phase 2 drainage system. The phase 2 has been changed following a new planning application for the site.

Evaluation of the installed drainage system

- The installed drainage system consists of 100mm perforated pipes with 160mm carrier drain. See installed drainage layout for details in picture below.

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SITE DETAILS Adderbury Sports Field Milton Road Adderbury	SCALE	NOT TO SCALE	160MM		INDICATES DRAIN WITH STONE BACKFILL
	DRAWING No.	7777.2	100MM		
	DRAWN BY:	BH	80MM		
	DATE	20.06.19	OUTFALL		



Picture 1: Installed drainage layout

- The perforated pipework allows for infiltration into the ground and reduction of the water velocity throughout the site.
- The water will come out of the system and infiltrate into the ground along all its route.
- The current infiltration basin is being surcharged by water from the highway causing occasional overtopping during extreme rainfall event. This will be prevented as part of the phase 2 design.

The findings above show that the attenuation proposed by Forge is over designed and does not represent the site reality. Moreover, it is unbuildable as it is too shallow and won't permit for water to enter it through the necessary field drainage system.

It is concluded that a modifications to the current drainage design as shown in phase 1 report attached will be implemented as soon as possible and before the development is completed , as under Condition 3 Application no:18/00220/F.

Kind Regards

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