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Westfield Farm, Earl Shilton

Addendum to Existing FRA

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Item	Subject
1.0	INTRODUCTION
	IDOM has been instructed to prepare a drainage strategy drawing and addendum to the approved flood risk assessment (FRA). The update includes a change to the proposals for a specific parcel of land that was included within the approved FRA. The parcel of land is located to the west of Westfield Avenue, Earl Shilton, Leicestershire. A site location plan referenced 22416G-IML-GEN-XX-DR-D-0100 is appended to this Technical Note.
	The approved FRA (ref 20851/12-14/3703) was undertaken by Mewies Engineering Consultants Ltd for the larger development which included provision for this site to be developed as a commercial development. The approved FRA provides details for a holistic drainage strategy for the whole development as well as providing information relating to flood risk and run off rates.
2.0	CHANGE OF USE
	The approved FRA includes this parcel of land as commercial development. The current proposal is to provide a further 18 residential dwellings. The change of use has no impact on either flood risk, the total impermeable area or the overall drainage strategy for the larger development.
3.0	SURFACE WATER DISCHARGE RATE
	Section 5.3 of the approved FRA provides assessment of the greenfield run off rate. These updated proposals make no changes to the approved rate. The approved greenfield runoff rate for the wider development is 59.3 l/s which, when applied pro-rata of the site area, translates into a rate of 3.82 l/s/ha.
	The proposed development parcel area is 0.583 ha, which gives a discharge rate of 2.2 l/s for the surface water network.
4.0	FLOOD RISK
	The approved FRA confirms that this parcel lies within Flood Zone 1 and is not at risk of fluvial flooding in storm events up to 1 in 1000 years.
	There are no proposed changes that affect the risk of flooding made within the approved FRA.
	The Surface Water flood maps do show a low risk of surface water flooding in the ecological area to the west of the site which is not being developed and therefore does not affect the proposals.
5.0	SuDS
	As part of the wider whole site surface water network, and in accordance with the approved FRA, for the larger development, swales have been provided to convey and treat surface water runoff to attenuation basins and flow control is provided. This parcel connects to the wider network (as proposed in the approved FRA) and therefore benefits from the holistic SuDS solution.
	In keeping with the solutions provided for the adjacent parcels, all surface water runoff from this parcel, including that from roads, drives and roof water is being routed through permeable paving which provides additional water quality benefits and attenuation.
	A proposed drainage layout showing the SuDS features is appended to this note.

Westfield Farm, Earl Shilton

6.0	SURFACE WATER DRAINAGE STRATEGY
	The Surface Water drainage network has been designed with the requirements set out in the approved FRA. to accommodate 40% climate change in a 1 in 100 year storm as per DEFRA local guidance for catchment peak rainfall allowances. Full hydraulic calculations are appended to this report
	The site is relatively level, falling towards the north west. The highest level to the south is approximately 108 mAOD, with the lowest point being approximately 104 mAOD.
	The proposed outline drainage strategy briefly consists of a gravity network with a hydro-brake flow control and 2 attenuation tanks alongside permeable paving before discharging into the existing surface water pipe (provided as part of the larger scheme).
	Permeable paving has been used to provide water quality benefits and water collection throughout all private roads, driveways, and parking areas. In addition, at the northern end of the site the permeable paving is extended to 0.5m deep to provide part of the required attenuation.
	SW discharge is limited to 2.2 l/s and attenuation tanks are provided. The first tank is located towards the south of the site under the road/parking bays of plots 5-7, the dimensions are 6.5m x 12.5m x 0.8m giving an approximate volume of 73m ³ . The second tank is located to the east of the site in the public open space outside of the root protection zone of the existing tree, the dimensions are 8m x 12m x 0.8m giving an approximate volume of 72m ³ .
	The site is relatively level and as such a second flow control device is provided on manhole S3 in order to balance the attenuation around the site. The second control is set to 2 l/s.
	Note, level raising at the west and north of the site will be required to ensure a gravity network and connection can work. If this isn't possible a pumped solution will be required.
7.0	FOUL WATER DRAINAGE STRATEGY
	The proposed outline drainage strategy consists of a gravity network connecting into an existing foul manhole. Foul drainage has been kept out of highways where possible to minimise number of service strips required.
	Note, level raising at the west and north of the site will be required to ensure a gravity network and connection can work. If this isn't possible a pumped solution will be required.
	Note that where foul pipes (and services) cross permeable paving an impermeable paving strip will be required