

Ellingham Consulting Ltd

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This note has been prepared to support the planning application for the proposed conversion of an agricultural building to form two dwellings at Dotterell Hall, Cambridge Road, Balsham, Cambridgeshire, CB21 4HE. The site has been the subject of a previous application and gained Prior Approval for the change of use of agricultural buildings to form three dwellings under 23/01613/PRIOR.

This Note has been prepared to provide details of a scheme for the provision and implementation of surface water and foul water drainage.

Existing Site

The proposed development is within an existing agricultural holding. The site is in Flood Zone 1 and has a very low risk (annual probability less than 0.1%) of surface water flooding.

The site consists of two agricultural buildings, several smaller structures that adjoin the two barns, and the surrounding hardstanding.

Existing Site Drainage

Details of the existing drainage are shown in Figure 1.

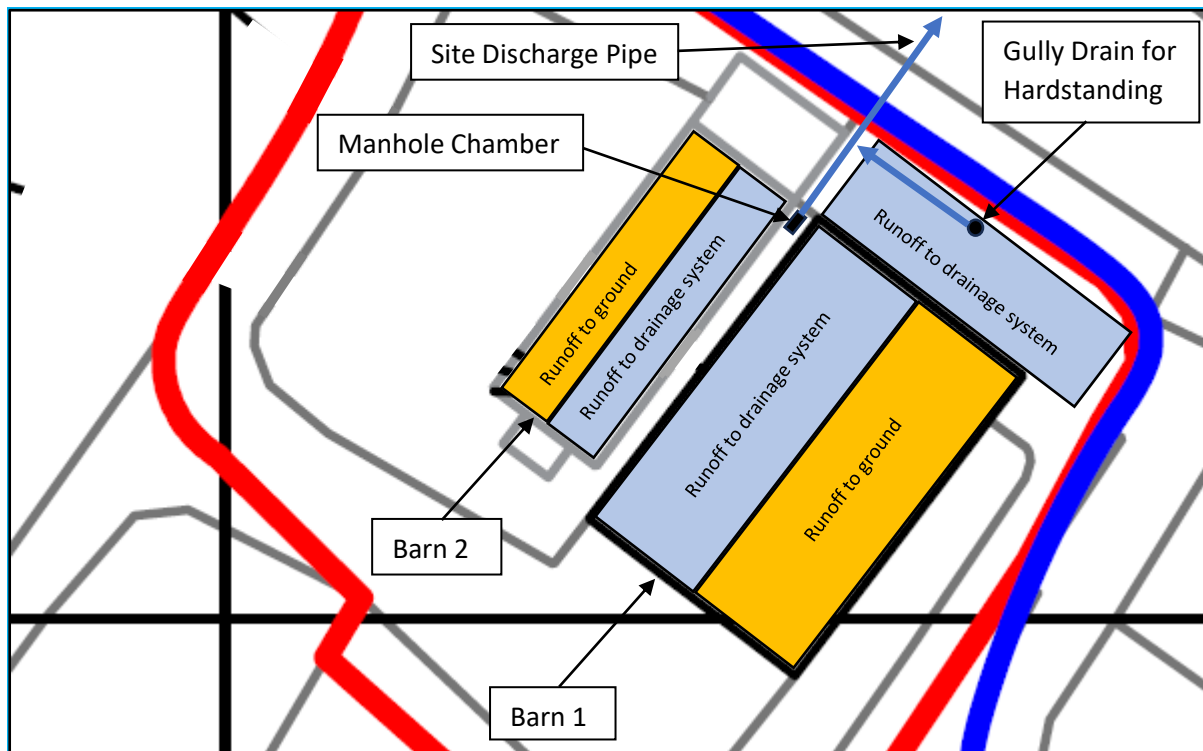


Figure 1 – Existing Drainage

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Photographs of the drainage gully and manhole chamber identified in Figure 1 are shown in Figure 2.



Figure 2 – Existing Site Drainage System

In summary, runoff from impermeable areas is discharge to the surrounding ground except for the roof runoff from one half of each barn and surface water runoff from the hardstanding which drains to a site discharge pipe.

There is a roadside watercourse approximately 30m north east of the barns. An inspection of the ditch did not identify the outlet of the site discharge pipe and therefore it is considered likely that the site discharge pipe drains to a soakaway that is located between the site and the roadside watercourse.

The management of surface water from three primary impermeable areas is described in Table 1.

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Element	Area	
Barn 1 (South East Barn)	500m ²	Roof runoff from north western half to drainage system
		Roof runoff from south eastern half to ground
Barn 2 (North west Barn)	200m ²	Roof runoff from north western half to ground
		Roof runoff from south eastern half to drainage system
North East Hardstanding	350m ²	North west part to surrounding ground as sheet runoff
		South east part to drainage system

Table 1 – Existing Impermeable Areas

It is estimated that 350m² of roof area and 175m² of hardstanding drains to the site discharge pipe and to soakaway.

Proposed Development and the SuDS Hierarchy

The proposed development consists of the alteration Barn 1 to form two dwellings. Barn 2 will be demolished and the hardstanding at the site will be removed. The total roof area of the two dwellings will be 400m².

As a consequence of the proposed development the impermeable area within the site will be reduced from 1,050m² to 400m².

The online British Geological Survey maps indicate that the site is likely to be underlain by New Pit Chalk Formation - Chalk. The superficial deposits at the site are not recorded however within nearby areas there are Alluvium Fan Deposits of clay, silt, sand, and gravel. The underlying chalk and potentially the superficial deposits will support infiltration.

Based upon the BGS Maps and the existing method of surface water management it is proposed that surface water runoff from the roof of the dwellings is discharged to soakaway.

Surface Water Management

Surface water runoff from the dwellings will be captured in a tradition gutter and pipe system. It is proposed that roof runoff from the development is discharged to the existing drainage system.

At present 525m² of impermeable area discharges to the drainage system. Post development the impermeable area discharging to the drainage system will reduce by more than 20%. Based upon the performance of the existing drainage system discharging runoff to the existing infrastructure is considered to be an appropriate approach.

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The access and parking areas within the site will be gravel enabling infiltration at source.

An indicative arrangement for the management of surface water is shown in Figure 3.

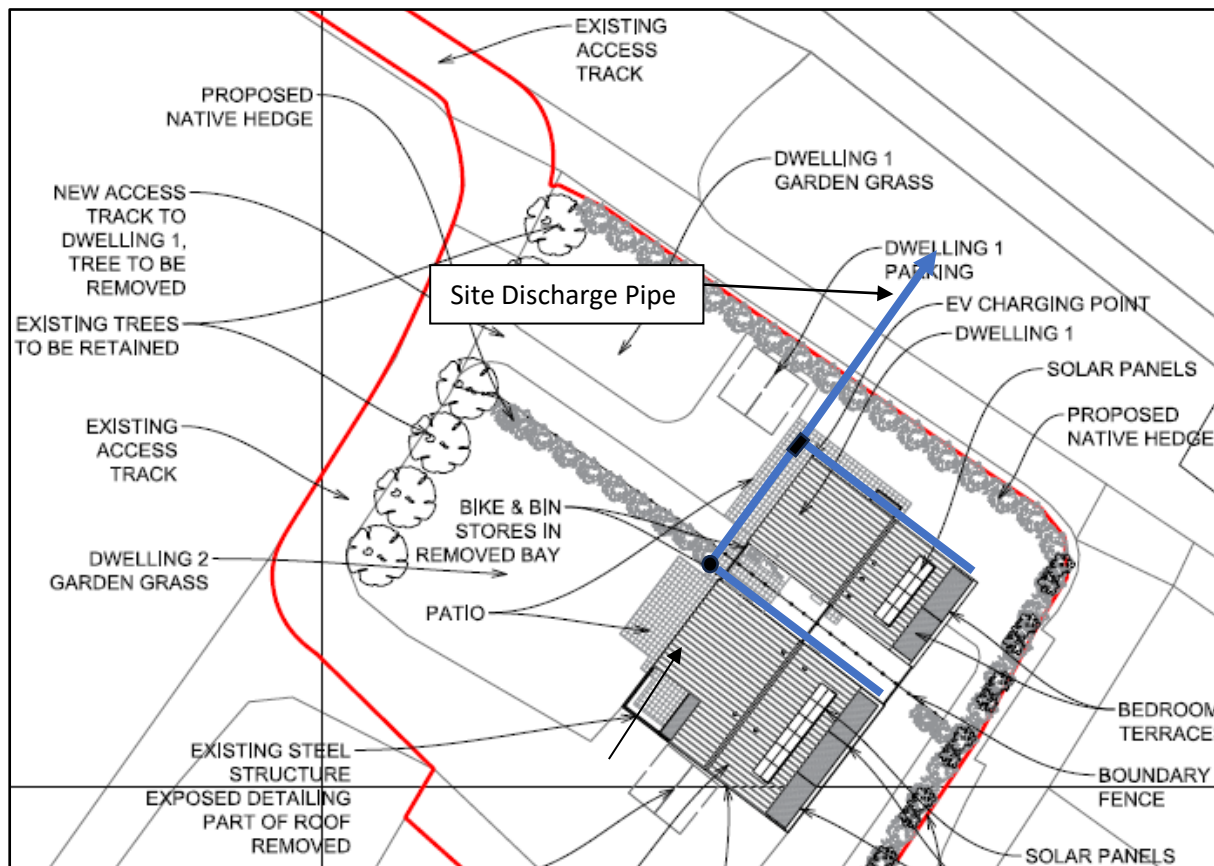


Figure 3 – Indicative Arrangement for the Surface Water

Should there be an exceedance event, ground levels fall in a northerly direction and therefore any overland flows would discharge to the roadside watercourse.

Foul Water Management

It is proposed that a biodisc package treatment plant with capacity to receive foul water from two dwellings is installed. The treatment plant will be on the boundary of the plots to the north west of the dwellings alongside the existing access track. The discharge from the treatment plant will be piped to the roadside watercourse with an outfall close to the access from Cambridge Road.

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Management and Maintenance

The applicant will be responsible for the management and maintenance regime of the foul drainage infrastructure and the owners of the dwellings will be responsible for the surface water management.

Summary

The proposed development reduces the impermeable area on site from 1,050m² to 400m². It is proposed that roof runoff from the two dwellings is discharged to an existing drainage system. The impermeable area discharging to the drainage system, which it is anticipated discharges to a soakaway, will be reduced by over 20%. Access and parking areas will be gravel enabling infiltration at source.

It is proposed that foul water from the dwellings is treated within a biodisc plant with an outlet discharging to the watercourse alongside Cambridge Road.

This note provides the details of a surface water drainage scheme and foul water drainage scheme for the proposed development. This note has been prepared to support the planning application for the proposed conversion of an agricultural building to form two dwellings at Dotterell Hall, Cambridge Road, Balsham, Cambridgeshire, CB21 4HE.

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