

FLOOD RISK ASSESSMENT & DRAINAGE STRATEGY

**NOOK FARM,
CLEATOR,
CUMBRIA CA23 3EY**

INTRODUCTION

This FRA and Drainage Strategy document has been prepared to accompany a Full planning application for the demolition of the existing farmhouse and associated agricultural buildings and erection of replacement farmhouse, detached car port building, stable building, implement shed and workshop plus formation of new floodlit horse arena at Nook Farm, Cleator.

THE SITE

The site has a grid reference of: NGR NY 301760 E: 512615 N.

The area of site to be re-developed is 0.98 ha.

The application site defined by the red line is in Flood Zone 1 (see further details below).

PROPOSED DEVELOPMENT

The planning application seeks Full planning permission for the demolition of the existing farmhouse and associated agricultural buildings and erection of replacement farmhouse, detached car port building, stable building, implement shed and workshop plus formation of new floodlit horse arena.

This Flood Risk Assessment & Drainage Strategy has been carried out to meet the validation requirements of the LPA.

FLOOD RISK ASSESSMENT

Flood zones.

Reference has been made to the Environment Agency Flood Map for planning. The application site as defined by the red line is in flood zone 1. Flood zone 1 is '*Land and property in flood zone 1 have a low probability of flooding*'. This effectively comprises land and property having less than 1:1000 annual probability of river or sea flooding and as such no further assessment is required in this regard.

Following NPPF guidelines and as the area of site to be re-developed is less than 1 hectare, a detailed Flood Risk Assessment is not required.

Reference has also been made to the Environment Agency Risk of Flooding from Surface Water (RoFSW) map which confirmed that the application site defined by the red line is not at risk from other sources of surface water flooding.

There are no reservoirs, canals or other artificial sources within the vicinity of the application site.

SURFACE WATER SYSTEM.

Surface water disposal has been considered in line with the national hierarchy. The approach considers infiltration drainage in preference to disposal to watercourse in preference to discharge to sewer.

Percolation tests have not been undertaken but anecdotal evidence suggests that the underlying soils will not be of a characteristic suitable for infiltration and therefore a SuDS design based on natural infiltration i.e. soakaway, is unlikely to work.

Following the hierarchy, the next option to consider is a discharge to a watercourse. There is an existing watercourse within the blue line defining the applicant's ownership which is partly open and partly culverted. From visual inspection, it can be concluded that the existing farmstead discharges surface water to the existing watercourse via an underground network of pipes or via overland flows.

The nature of the proposed development is such that there is a significant reduction in impermeable area. The footprint of the existing farmhouse and agricultural buildings is 3,085.07m². By comparison, the footprint of the proposed replacement farmhouse and detached outbuildings is 889.32m². This represents a reduction in impermeable area of 2,192.75m² or 71.18%.

Given the significant reduction in impermeable areas, it is considered that a attenuation system with flow control discharge isn't necessary, however this can be assessed further when the detailed drainage design is undertaken.

All new surface water drainage will meet the appropriate standards required by Approved Document H of the Building Regulations.

It is considered that an appropriate strategy has been proposed. The applicant will therefore accept planning condition/s controlling the detailed design and maintenance of the surface water system to be submitted for further consideration should Full planning permission be granted.

FOUL WATER SYSTEM.

The application site is in an unsewered area and is presently serviced by a septic tank. It is feasible that the existing septic tank may not comply with new regulations 'General Binding Rules' (effective 1st January 2020) enforced by the Environment Agency which do not allow septic tank discharge directly into surface water. At the time of submission, it is unclear whether the existing septic tank discharges to the watercourse or directly to ground.

The proposal is to replace the existing septic tank with a new Packaged Treatment Plant (PTP). The PTP would be located in a broadly similar area to the existing septic tank and would discharge either to the existing watercourse (via existing piped infrastructure) or directly to ground.

All new foul sewer drainage will meet the appropriate standards required by Approved Document H of the Building Regulations.

The details of the foul sewer system can be controlled by planning condition/s to be submitted for consideration should Full planning permission be granted.

OTHER RELEVANT FACTORS.

None.

CONCLUSION.

This assessment has considered the implications of the proposed development in terms of flood risk.

The application site as defined by the red line is in flood zone 1 and is at low risk (<1:1000 annual probability) of river or sea flooding. In addition, the area of site to be re-developed is less than 1 hectare therefore no further assessment is required in this regard.

The application site is not considered to be at risk from other sources of flooding.

A surface water drainage strategy has been considered and established that it is unlikely that the underlying soils will be of a characteristic suitable for infiltration and therefore a SuDS design based on natural infiltration i.e. soakaway, is unlikely to work.

Following the hierarchy, the proposal for surface water disposal is to the existing water course within the blue line defining applicant ownership reflecting the existing arrangements.

All new surface water drainage will meet the appropriate standards required by Approved Document H of the Building Regulations.

The application site is in an unsewered area and is presently serviced by a septic tank which may not comply with new regulations 'General Binding Rules' (effective 1st January 2020) enforced by the Environment Agency.

The proposal is to replace the existing septic tank with a new Packaged Treatment Plant (PTP). located in a broadly similar area to the existing septic tank with discharge either to the existing watercourse (via existing piped infrastructure) or directly to ground.

New foul drainage will meet the appropriate standards required by Approved Document H of the Building Regulations.

The applicant will accept planning condition/s controlling the design and maintenance of the drainage systems to be submitted for further consideration should outline consent be granted.

It is considered that there are no flood related issues relative to this application and that a satisfactory drainage strategy has been provided for the development.