



Ref: 2020-48c

FLOOD RISK ASSESSMENT

SITE: CROFT END FARM, NURSERY ROAD, BECKERMET

DATE: 20th SEPTEMBER 2021

1) Introduction

Prior to submitting the planning application the Applicants paid for a pre-application consultation service that aims to ensure that the planning application is submitted with an agreed scope of works.

Copeland Council's pre-application response enclosed advice from Cumbria County Council's Flood & Development Management Officer that confirmed the scale of the site does not warrant a Flood Risk Assessment but observed that part of the site was in Flood Zone 2. A conflicting consultation response has been received during the course of the determination of the planning application that requires a further response to ensure:

- a) All development is delivered in accordance with the submitted plans, which ensures all development is within the Flood Zone 1 area; and
- b) The drainage hierarchy has been considered when considering surface and foul drainage at the site.

The enclosed topographical survey in **Appendix 1** demonstrates that the landholding's land levels are at their highest point towards the centre and eastern areas of the site, with land levels falling gradually towards the north, south and east, with the lowest points being on the existing concrete hardstanding area at the northwestern portion of the site. The lowest floor level of the existing historical barn sits above the lowest part of the landholding and is within Flood Zone 1.

2) Assessment of Flood Risk

The enclosed Environment Agency's Flood Risk Map in Figure 1 below identifies that the vast majority of the site is within Flood Zone 1, an area with a Low Probability of Flooding with a small section of the landholding lying within Flood Zone 2.

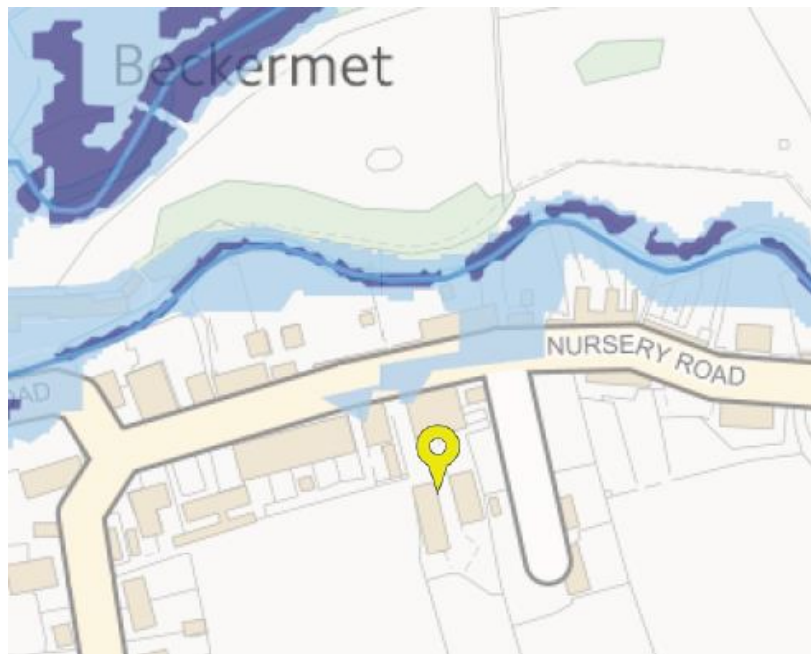


Figure 1 – Environment Agency Flood Risk Map for Planning

Table 1: ‘Flood Zones’ of the National Planning Policy Framework’s (NPPF) Technical Guidance identifies that within Flood Zone 2 areas *“Essential infrastructure and the water-compatible, less vulnerable and more vulnerable uses, as set out in table 2, are appropriate in this zone.”*

The only part of the site that is within Flood Zone 2 is a small section near to the site access that is illustrated within the Indicative Site Layout Plan submitted with the Outline Planning Applications as being within the front ancillary curtilage and parking areas of the proposed new barn conversion. Table 2 of the NPPF Technical Guidance provides an account of flood risk vulnerability classifications. The proposed retention and improvement of the existing access arrangements and the proposed introduction of amenity open space, which is classified as water compatible development, are supported in Flood Zone 2. The existing buildings will be removed to ensure no buildings are located within this location.

There is evidently no likelihood or possibility of habitable space within the Flood Zone 2 (FZ2) ‘medium probability’ area given that the land is currently hardstanding area that fronts Nursery Road. The Applicant has confirmed their agreement that a planning condition should be attached to the Outline Planning Application that prohibits residential accommodation within the FZ2 area as an added safeguard and to ensure that the overall aim of steering new development to Flood Zone 1 is achieved, with all land uses being supported in Flood Zone 1 areas.

The EA Flood Risk Map for Planning serves to illustrate that the water source for the Flood Zone 2 classification is Black Beck which sits approximately 35 metres due north of the northern boundary of the application site. The enclosed topographical survey in **Appendix 1** of this FRA clarifies that Nursery Road and the residents to the north are positioned nearer to and at a lower land level (metres above ordnance datum) than the small portion of land on the site that is within the Flood Zone 2 classification. The Applicant’s farm is the residence immediately north of the application site. The Applicant has resided at the farm for 45 years and has never experienced flooding at their residence on the application site or the neighbouring residence to the west that sits below the lowest finished floor level of the existing barn.

It is evident that the proposed redevelopment of the site for residential is acceptable from a flood risk perspective. Whilst the submission plans clearly identify that there is no intention of

introducing habitable accommodation with the Flood Zone 2 area, if Copeland Council consider it necessary and for the avoidance of doubt, the Applicant is agreeable to a planning condition being attached to the Outline Planning Consent prohibiting residential building within the Flood Zone 2 area.

Proposed Surface Water Drainage Treatment

The Existing Site Plan illustrates that there is a high level of hardstanding on the existing farmstead, with the Indicative Site Plan illustrating that the proposed residential use will result in a reduction in impermeable surfacing that will result in a net reduction in surface water run-off.

Given that this is an Outline Planning application with all matters being reserved aside from the primary access point, it would be misleading to calculate the net improvements in surface water run-off that will ensue from the proposed greening up of the site through the introduction of garden areas etc. given that the detailed designs will be forthcoming at the Reserved Matters stages of the full planning application process. What can be said for certain, however, is that there will be an improvement in drainage/flood risk as a result of the reduction in hard standing areas.

The possible options for surface water discharge from a development site are ranked in order of preference in the CIRIA Report C753: "The SUDS Manual", Version 6 (2019) guidance on sustainable drainage as follows:

- Infiltration – in-situ drainage into the subsurface in areas of sufficient permeability and depth to water-table.
- Discharge to nearby watercourse – conveyance of run-off via drains to an outfall into a local stream or river.
- Discharge to a surface water sewer or highway drain or another drainage system – conveyance of run-off via drains into an existing local network of drains.
- Discharge to a combined sewer – an existing network of drains taking both surface run-off and foul effluent.

The following is noted with regard to each option for surface water drainage:

Infiltration – the soil thickness within the site is not known across the site given the existing hardstanding areas on the northern portion of the site. Infiltration could be considered for the middle and southern portions of the site given the land levels and the availability of land for soakaway within the applicant's ownership.

Watercourse – there is no nearby watercourse that could be used for surface water drainage without crossing Nursery Road and therefore this option is discounted.

Existing surface water sewer/highway drain/other system – There is a surface water drain on Nursery Road directly in front of the site. However, it is not known if this system has sufficient capacity or lateral extension to be considered a viable option for the discharge of the entire volume/rate of run-off from the site (subject to further consideration).

Combined Sewer System – Within the pre-application consultations with Copeland Council the Flood and Development Management Officer clarified as follows within his e-mail of 11th February 2021:

"It is likely that the site will connect into the existing drainage which is the UU combined system, UU should be consulted and a discharge rate agreed, LLFA would like to see SuDs features incorporated as part given the wholesale redevelopment of the site but as noted within the Pre-

App Submission 2020-48a there is likely to be a reduction of hard standing areas as a result of the development but any gains that can be made to reduce the impact on the local drainage system need to be considered.”

As such, this system is considered that the most appropriate method of drainage for the proposed development, subject to the agreement of UU if there is capacity on the local sewer system for the volume/rate generated by the site.

Proposed Foul Water Drainage

The topographical survey identifies that the ground floor level of the traditional stone barn is lower than the remainder of the site to the south but with levels for the remainder of the site falling from north to south. There is evidently sufficient land area to accommodate an on-site treatment plant to serve the new build residences and there is a possibility of inserting a pump for foul effluent from the traditional barn ground floor if this is considered necessary and/or appropriate given the CSS's capacity. There is also the possibility of a dual approach of draining the barn's foul effluent into the CSS and the new build residences into a treatment plan.

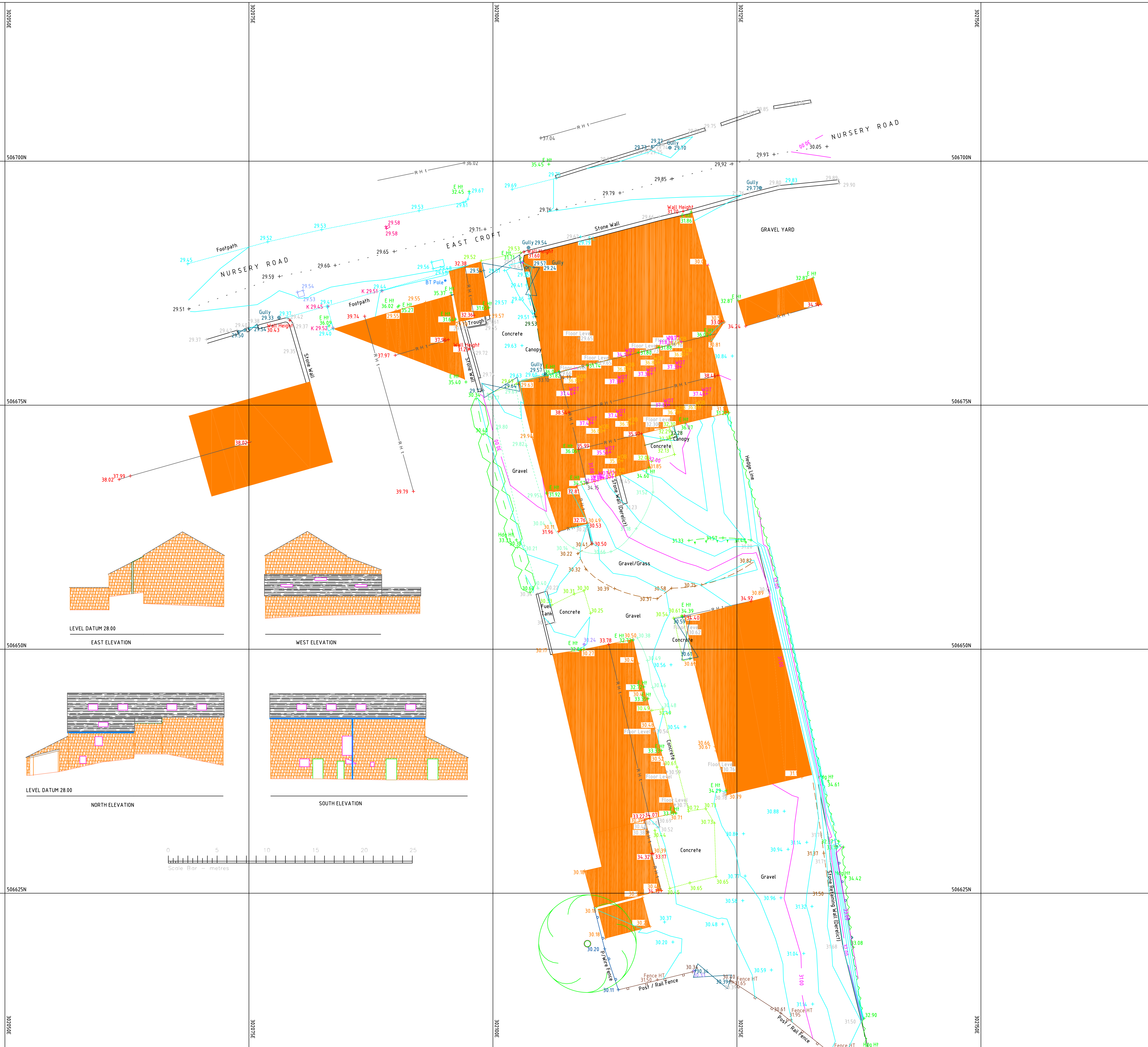
As identified above, the Flood and Development Management Officer identifies that it is likely that the site will connect into the existing drainage which is the United Utilities combined system. It is appropriate to condition the foul drainage given that the detailed designs have not been worked up at this Outline stage. A suitable drainage strategy can be agreed that includes any potential gains that can be made to reduce the impact on the local drainage system.

In conclusion

From our review of the surface water and foul drainage strategy options that exist at the site, the existing CSS is considered to be the most appropriate drainage option at the site, for both surface run-off and foul effluent. In order to minimise the impact of the site on the CSS, the surface water drainage for the site could include a method of retention of surface run-off, with flow control to limit the discharge rate from the site as a whole to that which is generated by the undeveloped site.

Given that this is an Outline Planning Application it is appropriate in this instance to attach standard conditions requiring the submission of both the foul and surface water drainage strategy to be evolved alongside the detailed design at the Reserved Matters Stages of the full planning application process.

Encl: Appendix 1 – Topographical Survey



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