

FLOOD RISK ASSESSMENT

HORSHAM DISTRICT COUNCIL PLANNING APPLICATION REF: DC/25/0883

RESPONSE TO HDC DRAINAGE DEPARTMENT “SUMMARY OF COMMENTS & RECOMMENDATIONS” DATED 08/03/2024

1.0. INTRODUCTION

- 1.1. This document addresses the comments and questions set out in the detailed response made by the HDC Drainage department in relation to the Planning Application with the HDC reference DC/23/1325 which is in the same Zone as the application reference above
- 1.2. It should be noted that the “TEMPORY WORKERS DWELLING” is in the same Zone and covered by the same report

2.0. FLOOD ZONE

- 2.1. The applicant was originally advised that the whole of Limekiln Farm was within Flood Zone 3, and therefore liable to be the subject of a detailed Flood Risk Assessment. This advice was based upon a basic HM Government Flood Risk Map which was only capable of designating a higher Flood Zone number to a specific site, but without providing a detailed analysis of different flood risks within a specific area.
- 2.2. HM Government does, however, provide more detailed information based, initially, upon a postcode. In the Limekiln Farm example and using its postcode RH13 6QW, the 40 addresses are noted as having:
 - **very low risk of surface water flooding**
 - **very low risk of flooding from rivers and the sea**
 - See <https://check-long-term-flood-risk.service.gov.uk/risk#>

- 2.3. HM Government’s basic Flood Map indicates that Limekiln Farm is in Flood Zone 3, but using their further mapping information, it states that all but a small area to the south-east of the lower field is, in fact, in Flood Zone 1.

- 2.4. Further advice states:

If your site is in flood zone 1 but will be at increased risk of flooding from rivers or the sea during the development lifetime, you should:

- ***complete a flood risk assessment (FRA)***
- ***apply this guidance as if the site were in flood zone 2***

As Limekiln Farm is 18.5 miles from the coast and English Channel, and the River Adur ceases to be classified as a “main river” about 2 miles south, at West Grinstead, there is no increased

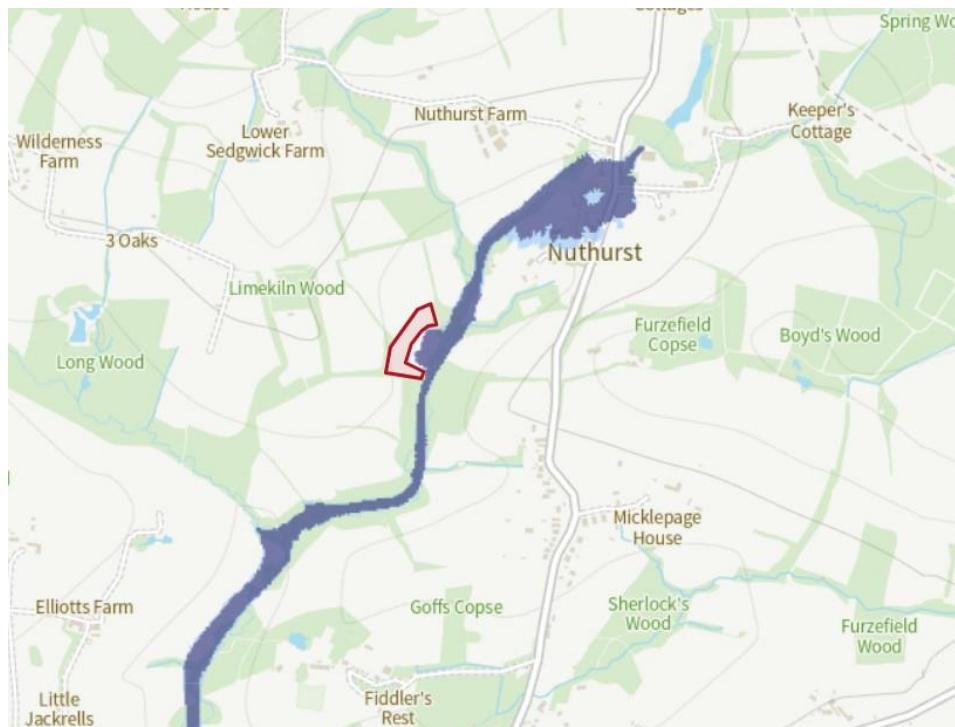
risk of flooding from rivers or the sea. On this basis, and because HM Government has designated the site as “very low risk of surface water flooding”, together with the fact that the development site is only 0.87 ha in area, a full Flood Risk Assessment is unnecessary.

2.5. The applicant has also been advised by the HDC Planning Officer that a Flood Risk Assessment may not be required if the “red line” development area is adjusted on the plan drawings. This has been done on the basis that no development was every planned within the southern-most Flood Zone 3 area. Furthermore, the larger northern field is only being “developed” because it is categorised as a “change of use” – where cattle used to graze there and the land was categorised as “agricultural”, the proposal is for equine use for grazing but with the important distinction that the horses may receive supplementary diet and medication, therefore not “agricultural”. It was on this basis that all hedging, fencing, the access road, and buried mains water supply pipes in the northern field area were the subject of planning approval already given under HDC Ref.

DC/22/ 0276.

2.7. ***It is important to note that this document addresses several of the queries raised by the Drainage Department in a previous application for the same site and zone. This is an effort for us to respond positively to these matters for the Validation Department***

2.8. The plan below is taken from HM Government’s Flood Map page, to illustrate their advised Flood Zone 1 inside the red line development a



3.0. DEVELOPMENT SITE AREA

3.1. According to online Google-based area calculators, the development site at Limekiln Farm amounts to 0.81 hectares.

4.0. PLAN DRAWINGS

4.1. As a result of the information requested by HDC Validation Department, several drawings have been revised.

4.2. The drawings, attached to this document, include:

- **TEMP DWELLING LOCATION PLAN** **Scale 1:2500 @ A2 082-01c**
- **TEMP DWELLING SITE PLAN** **Scale 1:1250 @ A2 082-02a**

4.3. Also, a drawing to indicate the strategy for water supply to the site, drainage of foul and “grey” water, rainwater harvesting and waste disposal etc. This is:

- **TEMP DWELLING DRAINAGE** **Scale 1:200 @ A2 082/04**

SITE DRAINAGE PATTERNS

Blue arrows indicate direction of surface water flow as geological contours fall from north-west down to south-east and the existing stream flowing southwards.

Existing:

Estimated surface water drainage pattern:



. Note that surface water will be reduced by the diversion of rainwater captured from roofs of barn and stable block, the sand school and proposed workers dwelling

See measurements below.

SITE MEASUREMENTS

Total site area prior to proposed development.....0.009 hectares = 90m2

Areas of development:

• Stable block:	182m2
• Barn:	250m2
• Sand school:	1,000m2
• <u>Workers dwelling</u>	<u>90m2</u>
	<u>1,522m2</u>
	<u>1,522 m2</u>
	<u>Net area of surface water</u>
	<u>7,278 m2</u>

FLOOD RISK ASSESSMENT CALCULATIONS

Reports with calculations on surface water and flood risk assessments by CGS Civils Ltd

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Conclusions:

Because development will use rainwater harvesting, the total surface water which will flow into the stream, or be infiltrated into ground, will be approx. 15% lower than current rates. This includes the previous application calculations for the same site

FLOW AND VOLUME RATES

The following figures are taken from the SuDS online tool.; - see following page.

Runoff estimation approach

IH124

Site characteristics

Total site area (ha): 0.91 ha

Methodology

Q_{BAR} estimation method:

Calculate from SPR and SAAR

SPR estimation method:

Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics

	Default	Edited
SAAR (mm):	784	784
Hydrological region:	7	7
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

Q_{BAR} (l/s):	5.02	5.02
1 in 1 year (l/s):	4.26	4.26
1 in 30 years (l/s):	11.54	11.54
1 in 100 year (l/s):	16	16
1 in 200 years (l/s):	18.76	18.76

INFILTRATION

No tests have been carried out on site at this stage, but it is noted that the borehole records show the ground to be a mixture of **sandy yellow clay with sandstone** to a depth of 5 metres. It is hoped that a condition of planning approval will be the infiltration test to establish if the soil can accept an underground soakaway.

An alternative will be to allow filtered and pollution-free rainwater from roofs to enter the adjacent stream, not classified as a “main river”.

WATER MANAGEMENT STRATEGY

The overall water management philosophy at Limekiln Farm is to harvest, filter and re-use as much rainwater as possible from the roofs of stables, sand school and barn by capturing it and storing it in an underground tank of 30,000 litre capacity.

The contents of the tank will be supplemented by borehole water as required, after which it will be filtered through the borehole filtration system detailed elsewhere in the application submission.

The existing Southern Water mains supply did not provide sufficient water to meet water neutrality challenges, so its use will be limited to the dayroom washbasin, shower, w.c. and equine washdown in the stable block. It will drain into a Clearwater Digester so the foul waste can be stored for eventual emptying whilst the grey water will be cleaned before collection in the main storage tank noted above or sent to a soakaway or to the adjacent stream.

THIRD PARTY AGREEMENT

The stream which is located on the south-eastern border of the site is not classified as a “main river” and no permission is required.

MANAGEMENT

When final details have been agreed, a comprehensive management plan will be put in place, and it is hoped that this can be a condition of the approval. It will encompass:

- Rainwater filters from roofs to be checked and cleaned regularly.
- Clearwater unit solids to be emptied as recommended by maker.
- If used, discharge pipe to stream to be checked and, if necessary, cleaned.

SEQUENTIAL TEST AND EXCEPTION TEST

This project is classified as “minor development”

However, HM Government advises the following:

You also don't need to do a sequential test if either of the following apply:

- **your development is a [minor development](#)**
- **your development involves a change of use (eg from commercial to residential) unless your development is a caravan, camping chalet, mobile home or park home site**

You also don't need to do a sequential test for a development [in flood zone 1](#)

Limekiln Farm's and the land edged in red on the application is a change of use from “agricultural” to “agricultural AND equine” (the horses will not be simply grazing but will receive supplementary diets. They will also not be working the land for agricultural, so they will be there for recreational purposes.

On that basis, we do not believe that a sequential test is required.

Ends/