FLOOD RISK ASSESSMENT

for

Holiday Lodges

at

Land at Yokefleet Cottage
Anserdam Lane
Sandholme
East Riding of Yorkshire
HU15 2XP

L712/F.R.A.

February 2024

1/FLOOD ZONE

Whilst the Environment Agency mapping indicates that the site lies within flood zone 1, ERYC indicate that the site may be subject to expansion of the flood zone in the future and as such have requested a flood risk assessment be prepared.

This location is in flood zone 1

What flood zone 1 means

Land within flood zone 1 has a low probability of flooding from rivers and the sea.

Most developments that are less than 1 hectare (ha) in flood zone 1 do not need a flood risk assessment (FRA) as part of the planning application. The site you have drawn is 0.59 ha.

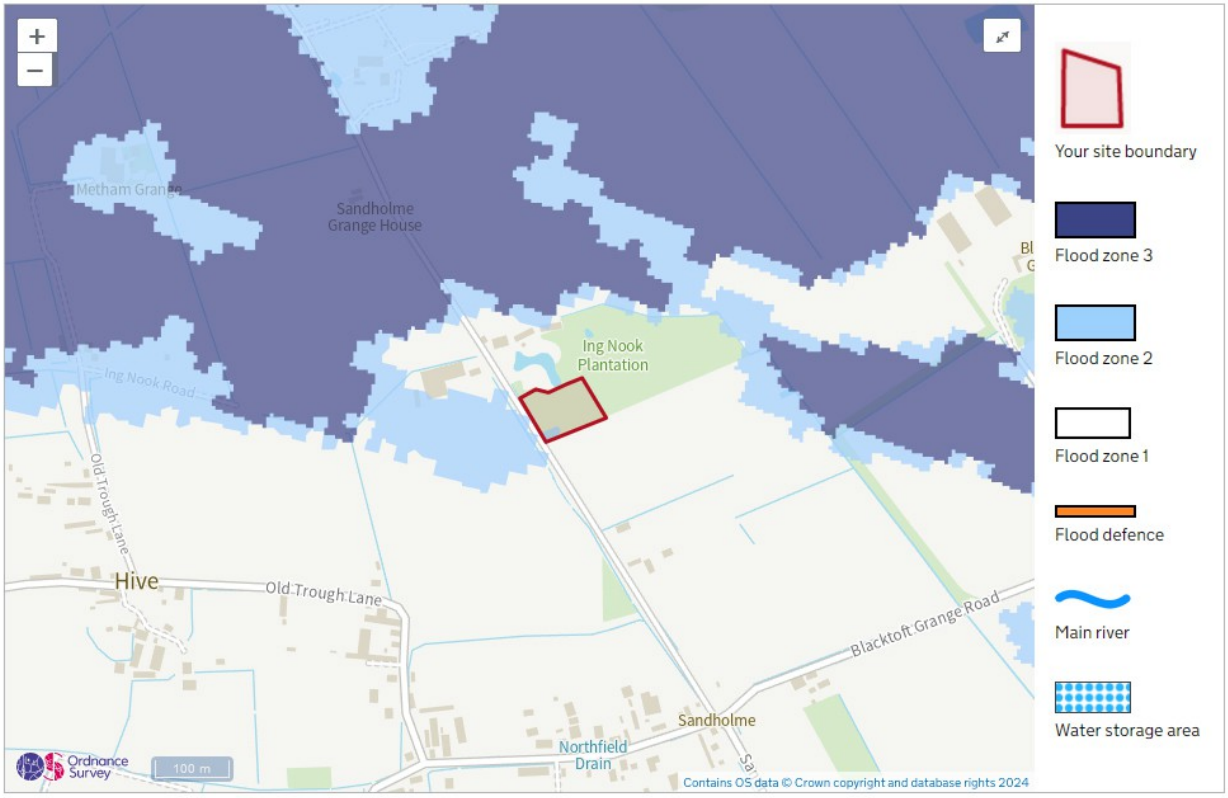
Find out more about flood zones and what they mean .

To find out about other factors that might affect the flood risk of this location, you should also check:

- surface water, groundwater and reservoir flood risk
- East Riding of Yorkshire planning authority's strategic flood risk assessment (SFRA), which includes future flood risk

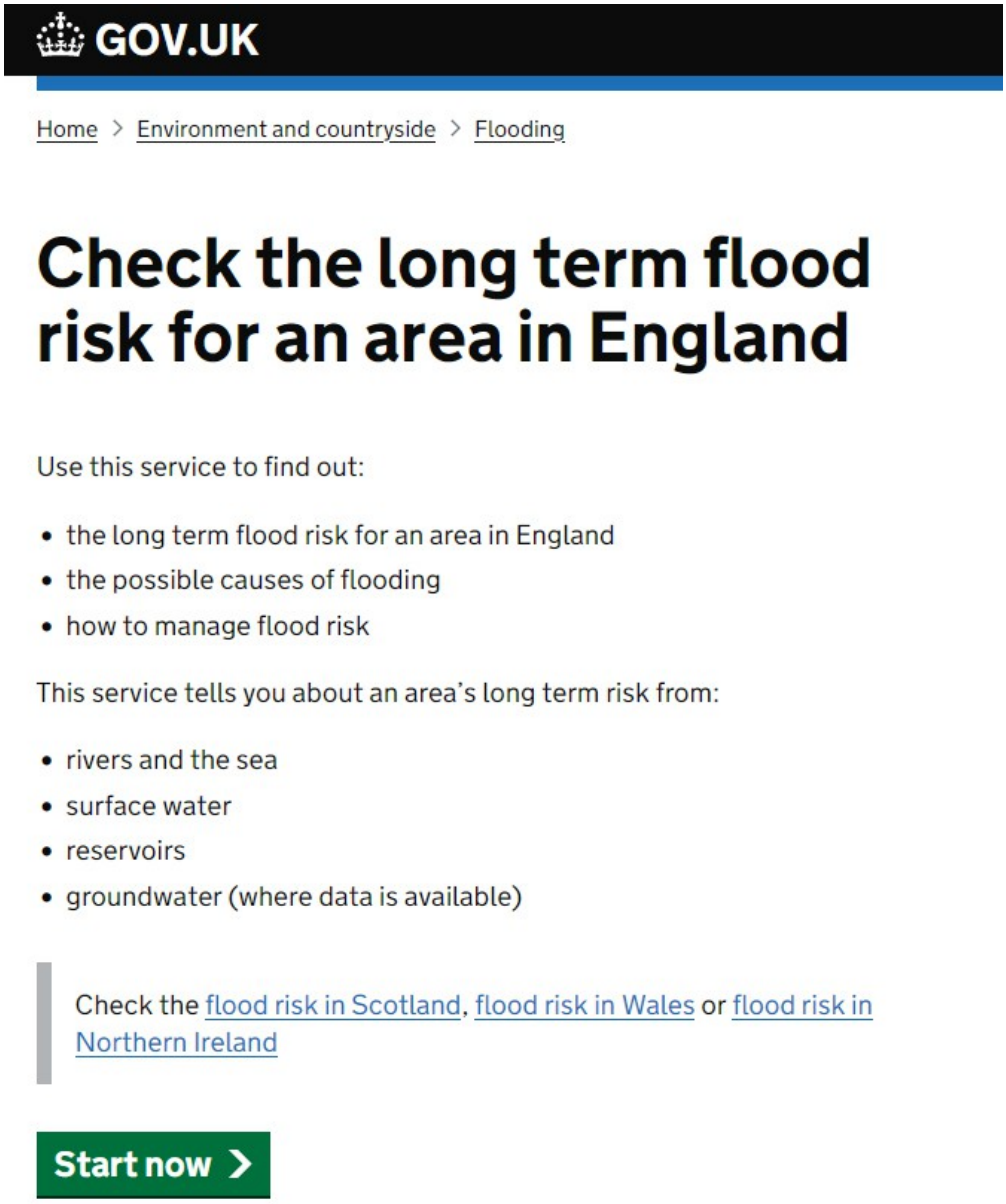
Flood map showing the flood zone your site is in

The map shows the flood risk to your site and the surrounding area.



What the flood map shows

The Environment Agency provides information on long term flood risk.



GOV.UK

Home > Environment and countryside > Flooding

Check the long term flood risk for an area in England

Use this service to find out:

- the long term flood risk for an area in England
- the possible causes of flooding
- how to manage flood risk

This service tells you about an area's long term risk from:

- rivers and the sea
- surface water
- reservoirs
- groundwater (where data is available)

> Check the flood risk in Scotland, flood risk in Wales or flood risk in Northern Ireland

Start now >

The predictions of the flood risk at the application site are shown overleaf including the maps for the flood risk from rivers and seas and surface water.

The area around Yokefleet Cottage, Anserdam Lane, Sandholme, Brough, HU15 2XP has a

- very low risk of surface water flooding
- very low risk of flooding from rivers and the sea

This information is not specific to a property.

Rivers and the sea | Very low risk of flooding

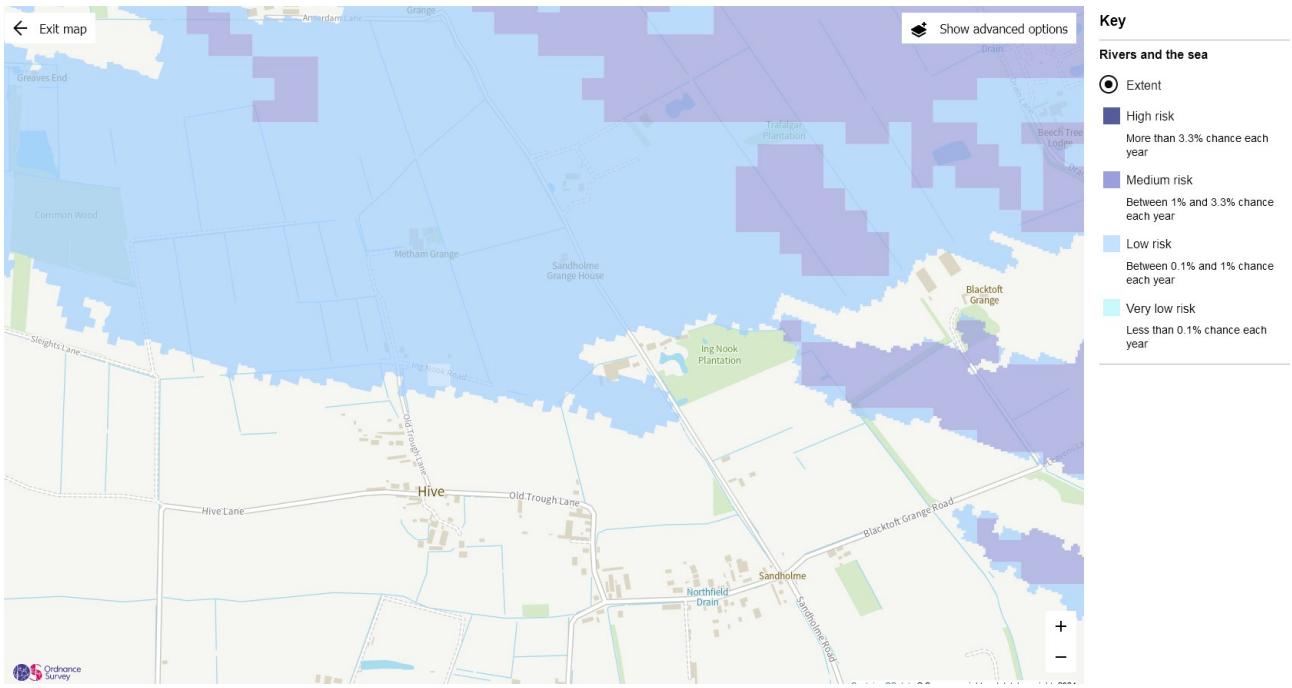
How likely a flood is	Very low risk means that this area has a chance of flooding of less than 0.1% each year.
Manage your flood risk from rivers and the sea	An area can still be at risk of flooding even if it has not flooded in the past. You should check your long term flood risk regularly because the information may change. You can also find out how to prepare for flooding .
What this information covers	This information is not specific to a property. The information takes into account any flood defences. They can help reduce the chance of flooding but cannot completely prevent it because: • they can fail • water could spill over the top if it is deep enough
See rivers and sea flood risk on a map	View a map of flood risk from rivers and the sea for information on where any flood water might spread to (extent).

Surface water | Very low risk of flooding

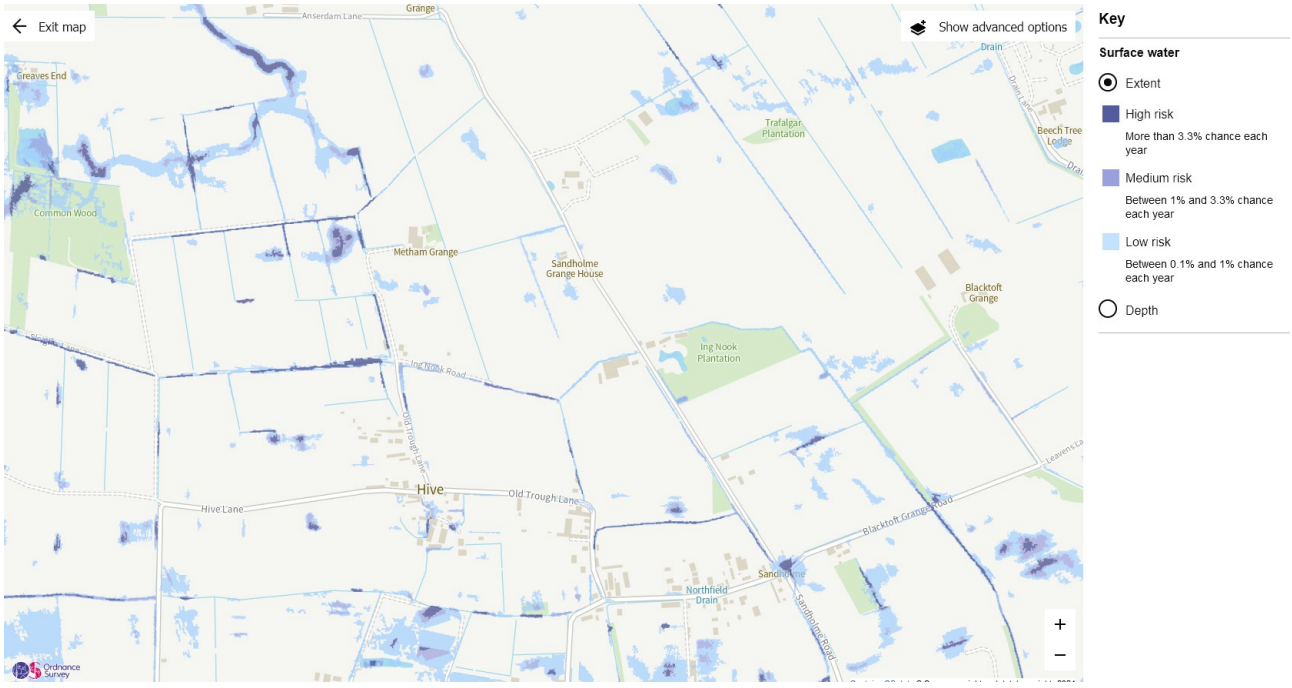
How likely a flood is	Very low risk means that this area has a chance of flooding of less than 0.1% each year. ▶ What makes an area more likely to flood from surface water
Manage your flood risk from surface water	An area can still be at risk of flooding even if it has not flooded in the past. You should check your long term flood risk regularly because the information may change. Find out how to prepare for flooding. Lead local flood authorities (LLFAs) are responsible for managing the flood risk from surface water. They may hold more detailed information. Your LLFA is East Riding of Yorkshire council.
What this information covers	This information tells you the highest chance of flooding on the land 15 metres around a property. It is not specific to a property. ▶ What you can use this information for
See surface water flood risk on a map	View a map of surface water flood risk for information on: • where any flood water might spread to (extent) • how deep any flood water could be (depth) • the speed and direction of any flood water (velocity)

Other flood risks

Reservoirs	There is a risk of flooding from reservoirs in this area. ▶ What a reservoir is and how we check an area's risk Flooding from reservoirs is extremely unlikely. An area is considered at risk if people's lives could be threatened in the event of a dam or reservoir failure. View a map of the risk of flooding from reservoirs ▶ Reservoirs that could affect this area
Groundwater	Flooding from groundwater is unlikely in this area. ▶ What groundwater is and how we check an area's risk



Flood risk map for rivers and the sea



Flood risk map for surface water

2/PROPOSED USE AND FLOOD ZONE COMPATABILITY

This application is for the siting of 6no. pre-fabricated lodges for use as holiday lets. Such uses would be classified by the Environment Agency as "more vulnerable".

FLOOD RISK VULNERABILITY AND FLOOD ZONE COMPATIBILITY					
	Essential Infrastructure	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**	**Water Compatible**
FZ1	Development is appropriate	Development is appropriate	Development is appropriate	Development is appropriate	Development is appropriate
FZ2	Development is appropriate	Exception test required	Development is appropriate	Development is appropriate	Development is appropriate
FZ3a	Exception test required	Development should not be permitted	Exception test required	Development is appropriate	Development is appropriate
FZ3b	Exception test required	Development should not be permitted	Development should not be permitted	Development should not be permitted	Development is appropriate

Because the application site is currently within zone 1 but ERYC predict that it may fall within the future extents of zones 2 and/or 3 it is advisable to consider the development as a balance of the requirements of all three. The proposals at present fall within zone 1 which would deem them appropriate. Should the site fall within a future zone 2 that too would be considered as appropriate. If in the future the site were to become part of flood zone 3 the matrix identifies that such proposals should undertake a sequential and exception test.

3/SEQUENTIAL & EXCEPTION TESTS

The proposed development is for a limited number of holiday lodges forming an expansion of the existing use of the site for tourism, which includes the holiday let of Yokefleet Cottage with access to the surrounding grounds, incorporating its lake and woodland, for the associated leisure use of visitors. The development therefore necessarily cannot be located elsewhere since it forms an expansion of the existing use and operations of the site, utilising its specific locational characteristics, including the on-site management of the visitor activity by the applicants, and as such a sequential approach would not be appropriate nor reasonable for these proposals.

4/SITE SPECIFIC FLOOD RISK ASSESSMENT

The mapping indicates that current areas of flood risk lie to the north of the application site and therefore with the proposals being situated towards the south of the applicants' site they are located furthest away from the most susceptible surrounding areas and therefore it is inferred that they are located within the safest areas of the application site. As such the

proposals would satisfy the considerations of a sequential approach to the application site.

In terms of other sources of flooding, there is no identified risk of surface water flooding at the site. There are also no records of historic flooding at the site.

The area is defined as benefiting from flood defences. These are raised embankment defences along the River Ouse banks, approximately 7.5km south of the application site. The M62 which lies to the south of the application site also forms a physical barrier to the movement of flood waters meaning that the application site is within the safest area in the south-west region of the authority area.

4/LEVELS

The nearest public highway is Anserdam Lane running along the west of the site; the level at the road is 4.000m AOD.

The level of the road is approximately at the same level as the adjoining site level with the ground level across the application site being relatively constant due to the flat topography of the area.

Whilst the site is situated within an area of agricultural use, the application site's lawns and woodland in comparison to the frequently ploughed fields mean that the level of the land on the application site is generally higher than the surrounding fields. If flood waters were able to breach or overtop the defences to the River Ouse it is firstly unlikely that the flood waters would reach the area of the application site and furthermore, in the event that they were able to reach the area it is estimated that the flood waters would be distributed across the lower lying areas of the the surrounding agricultural fields. This provides a level of inherent protection to the site. In addition the abundance of watercourses will have the affect of slowing and redirecting flood waters, dissipating them across the agricultural areas and away from vulnerable uses.

5/SURFACE WATER MANAGEMENT

As the proposals will result in additional impermeable areas it is necessary to consider provisions for surface water drainage.

Firstly it is important to note that the lodges are situated within an area of woodland. As such the surrounding trees will initially divert and secondly absorb a large quantity of surface water. The site is also host to a lake which has excess freeboard capacity capable of taking a large quantity of surface water. The surface water drainage strategy for the lodges is to capture and store roof water to be used as grey water. Any excess will be diverted to soakaways with the permeability of the ground having been assessed as very

good.

Vehicular access will be provided by permeable driveways which will allow surface water to drain naturally into the ground as it would do at present.

The lodges are located well away from the highway and significant distances from any other properties. It is therefore submitted that the development would not alter the flood risk to adjacent properties or the highway in any way.

6/PRECAUTIONS

Although the location of the lodges are currently outside the flood zones, it is recommended to provide the best possible flood resistance and resilience measures to future-proof them from any potential flooding and the potential expansion of the flood zone due to climate change.

The typical requirement for development within flood zone 3 would be to set finished floor levels at 600mm above whichever is the higher of the average site level or adjacent road level, with an additional 300mm flood proofing also to be provided.

It is proposed to set the FFL of the lodges at a minimum of 600mm above the adjoining ground level. It will be noted in the case of lodges 5 and 6 that these are intended to be set at a higher level to enhance the effect of being amongst the surrounding trees and these will have an FFL a minimum of 2.5m above the adjoining ground level; otherwise roughly equivalent to a first floor level.

In addition to appropriate FFLs, a minimum of 300mm of flood proofing will be incorporated to mitigate the potential for the ingress of flood water into the structure. The construction of the lodges will also seek to incorporate a further 300mm of flood resilience and recoverability measures. Any electric services will be positioned a minimum of 600mm above finished floor level and served by drops.

The lodges are single storey and as such all accommodation is located at one level, however, this is typical of such types of holiday accommodation and given the aforementioned measures it is submitted that the proposals provide more than adequate mitigation against potential future flood risk. It is worth noting that the lodges would be a significant investment and as will be appreciated the applicants certainly would not want them to be susceptible to potential flood damage. Whilst the measures proposed are intended to mitigate against any anticipated future flood risk, it should be kept in mind that the pre-fabricated nature of the structures allows for them to be transported. This means that, in the highly unlikely case that the site becomes unsuitable due to future flood risk, there will always be the option of removing the lodges from the site.

The applicants will be informed to sign up to the Environment Agency's flood warning system to be notified in the event of flooding. Under such circumstances the occupants of the lodges will initiate their flood emergency procedures outlined and detailed in their visitor orientation folders and proceed to the place of safety or a nearby area above the estimated flood level. Since the site is currently outside of the flood zone alternative off-site evacuation areas is something that would have to be assessed if or when the flood zones are updated in the future.

7/CONCLUSION

It is submitted that the proposals are a sustainable and proportionate expansion of the existing tourism activities at the site and the proposed measures to prevent and mitigate any future flood risk are considered adequate and would have no adverse effect on adjoining land or properties in terms of increased flood risk.