Flood Risk Assessment

IN SUPPORT OF A PLANNING APPLICATION AT HOLDEN CLOUGH NURSERY
FOR A GARDEN OFFICE/ STUDIO

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1.0 Introduction

This report is produced to support the application for the positioning of a pre-fabricated office/studio at Holden Clough Nursery, Holden, Bolton-by-Bowland, Clitheroe, BB7 4PF

Location, site and elevation plans are attached.

The site lies within the indicative flood risk area as detailed on the Environment Agency Flood Zone 3a. Appendix A shows the extent of flooding from rivers and seas and surface water risk.

The main flood risk is associated with flooding from rivers and seas.

A flood risk assessment is required in relation to the development of the site and is a requirement of the Environment Agency for the following reasons:

The National Guidance defines F3a as follows (Table 1):

Zone 2 Medium Probability
Definition
Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding: or land having between a 1in 200 and 1 in 1,000 annual probability of sea flooding.

Zone 3a High Probability
Definition
This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

Appropriate uses
The water-compatible and less vulnerable uses of land in Table D.2 are appropriate in this zone.
The highly vulnerable uses in Table D.2 should not be permitted in this zone.
The more vulnerable and essential infrastructure uses in Table D.2 should only be permitted in this zone if the Exception Test (see para. D.9) is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.

FRA requirements
All development proposals in this zone should be accompanied by a FRA.

Table 2 of the Flood Risk and Coastal Change Guidance provides the following uses within the Less Vulnerable classification.

- Buildings used for shops; financial, **professional and other services**; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure**.**

As such the proposed development is regarded as **appropriate.**

The requirements of the FRA are dictated by the zone in which the site lies as well as the use proposed. Table 3 of the guidance shows that a Less Vulnerable development in Flood Zone 3a is **not** subject to the Exeption Test.

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✔	✔	✔	✔	✔
	Zone 2	✔	✔	Exception Test required	✔	✔
	Zone 3a	Exception Test required	✔	✗	Exception Test required	✔
	Zone 3b 'Functional Flood plain'	Exception Test required	✔	✗	✗	✗

1.1 Site Details

The site is an established plant nursery. The proposed office/studio will be constructed on a timber sub-frame with timber piles anchoring the unit to the ground. The structure will be positioned within an area currently used for growing plants in containers and beds. Holden Beck forms the eastern boundary of the site. A residential dwelling (The Croft) lies to the south of the proposed works.

A topographical survey has been undertaken to establish ground levels. The survey data is shown on the proposed site plan.

Ground level across the site is 104.95m AOD. The surrounding land falls towards Holden Beck with the lowest point at 104.38 AOD. AOD levels are shown on an accompanying PDF Plan which is prepared as part of another application and submitted here simply to show AOD levels. Drawing number 20-02 Proposed Site Plan. AOD levels are also shown on the attached Studio Elevation Plans.

Proposed Development & Use
The proposed development involves the construction of the office studio on an elevated timber deck. Access will be via timber steps. The unit will be used as a design office for the nursery designer to discuss and develop customer projects. The unit will also be a demonstration unit for the range of units manufactured by Croft Complete Homes Ltd (The applicant).

1.2 Flood Risk
The development falls within the Flood Risk Zone 3.

A Product 4 information request has been submitted to the Environment Agency. The following response was received:

Please see the attached and response below for: Holden Clough Nursery, Holden, Bolton-by-Bowland, Clitheroe, Lancs, BB7 4PF :

- We do not have any detailed modelling for this area, so are unable to provide modelled information.
- The Flood Zones in this location are based upon the original 2004 Jflow Data. This is available through Data.gov.uk as "Modelled fluvial flood depth data created 2004". This data is not suitable for identifying whether an individual property will flood, for detailed decision making or for use in site specific Flood Risk or Strategic Flood Risk Assessments. Where this data is used for anything other than broad catchment or Shoreline Management Plan scale further evidence, verification and studies should be undertaken.
- The Environment Agency does not hold any records of historic flooding in this area. **Please be aware, however, that this does not necessarily mean that flooding has not occurred in the past.**

- For all queries relating to flooding from surface water, ordinary watercourses and groundwater flooding, please contact the Lead Local Flood Authority Lancashire County Council in this instance.
  Surface Water Maps can be viewed online at https://flood-warning-information.service.gov.uk/long-term-flood-risk/map

Surface water maps are attached as Appendix 1 and show:

Extent of flooding – Medium risk

Low Risk depth – 300 – 900mm

High Risk depth - < 300mm

Low Risk velocity - > 0.25m/s

Groundwater: The Environment Agency's Groundwater Vulnerability Zone Map indicates no risk.

Reservoirs: No risk. There are no reservoirs in the area that form a risk.

Drainage
Roof water from the proposed unit will be collected for re-use within the nursery in line with the guidance shown below.

Surface water drainage systems
The government guidance to local authorities includes a hierarchy of connection, which can be summarised as follows:
a) surface water runoff is collected for use;
b) discharge into the ground via infiltration;
c) discharge to a watercourse or other surface water body;
d) discharge to a surface water sewer, highway drain or other drainage system, discharging to a watercourse or other surface water body;
e) discharge to a combined sewer.

2.0 Flood Records

The Environment Agency holds no records of flooding for the site. The nursery owner has lived and worked on the nursery all his life and has never witnessed flooding in this area. Local residents have not witnessed flooding of the site.

3.0 Climate Change Impact

For Sea Level Climate Change the following guidance is provided for the North West:

Area of England	1990 to 2025	2026 to 2055	2056 to 2085	2086 to 2115	Cumulative rise 1990 to 2115 / metres (m)
East, east midlands, London, south east	4 (140 mm)	8.5 (255 mm)	12 (360 mm)	15 (450 mm)	1.21 m
South West	3.5 (122.5 mm)	8 (240 mm)	11.5 (345 mm)	14.5 (435 mm)	1.14 m
North west, north east	2.5 (87.5 mm)	7 (210 mm)	10 (300 mm)	13 (390 mm)	0.99 m

As the design life is 20 years, for the North West the cumulative rise is predicted at 300mm.

Topographical data shows that the existing ground level is 104.95m AOD. The proposed floor level for the studio is 105.55m AOD, 600mm above the present ground level. No data is available for the predicted flood level from Holden Beck. However there is no history of the site ever flooding and the finished floor level is 600mm above the current ground level.

On this basis the development is designed to exceed the predicted climate change increase.

4.0 Sequential Test

National Planning Policy Framework (NPPF) requires applications within Flood Zone 3 are subject to the sequential test.

The aim of the sequential test is to steer new development to areas with the lowest risk of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding.

The NPPG states that when applying the sequential test a pragmatic approach to the availability of alternatives sites should be taken. It gives an example of a planning application for an extension to an existing business premises and suggests that it **might** be **impractical to** suggest that there are more suitable alternative locations for that development elsewhere.

It is, however, important at the outset to correctly interpret and apply the sequential test, taking into account case law and relevant appeal decisions. For example, as highlighted in the Dundee (March 2012) case, the Supreme Court ruled that “suitable” means “suitable for the development proposed by the applicant” and the Secretary of State in the Rushden appeal decision (June 2014), has confirmed that the sequential test needs to be considered in the context of the specific development proposed by the applicant, and not simply a “class of goods” approach or some attempt at disaggregation that might otherwise seek to accommodate elements of the proposed development on another, sequentially preferable site. Whether, therefore, a site is considered suitable for the requirements of a proposal, clearly needs to be considered in light of the specific application. The two decisions referred to above, both assist in demonstrating how the sequential test should be lawfully and properly applied.

Whilst we acknowledge the requirement for some flexibility in applying the sequential test, as referred to in the National Planning Guidance, this needs to be applied sensibly in the context of scale and format, as it is clearly not the purpose of national or local planning policy to require a developer to seriously compromise their proposal by requiring them to disaggregate it into its constituent parts. Indeed, the Secretary of State in the Rushden decision expressly acknowledges that the NPPF does not require an applicant to disaggregate in any way a specific development proposal. In reality, therefore, whilst there may be some limited scope to relocate the proposed development, it would be wholly unreasonable to expect the applicant to amend a proposal to the extent that it no longer meets their business requirement and becomes unviable.

Alternative sites

The proposed works are an extension to existing business activities. Relocation to an alternative site is impractical as defined by NPPG.

Alternative sites within the nursery

The office/studio is positioned within the perennial growing beds where clients can view the flowers which are included in the design of their garden/project. Alternative sites within the nursery are not compatible with the use and would displace important growing areas.

5.0 Mitigation and impact on surrounding properties

As shown in Section 3 the floor level is well in excess of the climate change increase. The ground level across the nursery rises to the west and there is adequate room for staff and visitors to move to higher ground within a few metres if necessary.

The design of the buildings will include resilience measures including all electrical fittings will be raised to 600mm above floor level. Non porus insulated plaster is used within the building construction.

As with all roof water at the nursery this is collected for use in the nursery and the irrigation of plants.

The proposed development will have no impact on surrounding properties as there is no additional drainage to Holden Beck.

6.0 Conclusion

The proposed development is classed as “less vulnerable”. Finished floor levels are 600mm above existing and within the expected climate change increases for the 20 year life of the unit. There has been no history of flooding at the site.

Mitigation measures ensure that no electrical equipment and fittings are vulnerable to inundation. Staff and visitor safety is not compromised. Evacuation to higher ground is within a few metres to the west of the studio/office.