R J Fillingham
Associates Ltd
Flood Risk & Drainage Consultants

FRESHCOOK, HOLBEACH ST MARKS

FLOOD RISK ASSESSMENT

BAKKAVOR GROUP

September 2017

FRESHCOOK, HOLBEACH ST MARKS

Ref. – 17-047 FRA

Document Status – Final

Produced by:		Date:
	Richard Fillingham	Sep 2017
Checked by:		Date:
		Sep 2017

Amendment Record

Issue / Rev.	Date	Status	Checked by	Initials

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1 INTRODUCTION

1.1.1 This Flood Risk Assessment (FRA) has been prepared by R J Fillingham Associates Ltd. on behalf of the Bakkavor Group in support of the proposed extension of their Freshcook building at Sluice Road, Holbeach St Marks, Lincolnshire.

1.1.2 This FRA has been prepared in accordance with the National Planning Policy Framework (NPPF) and the Planning Practice Guidance (PPG), and in consultation with the Environment Agency and South Holland District Council.

2 PLANNING POLICY

2.1 National

2.1.1 The NPPF and PPG provide national planning guidance on the management of flood risk in respect to new development.

2.1.2 Paragraph 100 of the NPPF document states *'Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.'*

2.1.3 For the purposes of applying the NPPF, PPG states *'flood risk is a combination of the probability and the potential consequences of flooding from all sources – including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources'.*

2.1.4 For the purposes of applying the NPPF, PPG states *'areas at risk from all sources of flooding are included. For fluvial (river) and sea flooding, this is principally land within Flood Zones 2 and 3. It can also include an area within Flood Zone 1 which the Environment Agency has notified the local planning authority as having critical drainage problems'.*

2.1.5 PPG states that the key objectives of a site specific FRA are to establish.

- *whether a proposed development is likely to be affected by current or future flooding from any source;*
- *whether it will increase flood risk elsewhere;*
- *whether the measures proposed to deal with these effects and risks are appropriate;*
- *the evidence for the local planning authority to apply (if necessary) the Sequential Test, and;*
- *whether the development will be safe and pass the Exception Test, if applicable.*

2.2 Local

2.2.1 South Holland District Council's Strategic Flood Risk Assessment (SFRA) was originally published in December 2002 and updated in January 2010. This document has, however, recently been superseded by South East Lincolnshire SFRA, dated March 2017. This FRA has been prepared within reference to this document.

3 EXISTING SITE

3.1 General

3.1.1 The application site forms part of the wider existing Bakkavor factory site located directly off Sluice Road, approx. 2km to the west of Holbeach St Marks and approx. 8km to the north of Holbeach, Lincolnshire.

3.1.2 The application site boundary is shown edged red on the location plan included within Appendix A and currently comprises temporary refrigerated storage units and an unpaved external area.

3.1.3 The wider site is bound to the south by the Sluice Road with workshop/farm buildings beyond, to the west by the Holbeach River with arable farmland beyond and to the north and east by arable farmland.

3.2 Levels

3.2.1 A full topographical survey of the existing site has not been made available. Whilst it is therefore not possible to accurately confirm the finished ground floor level of the existing main building in relation to OS, the existing site layout plan indicates an external level of 3.590m in the vicinity of the application site.

3.3 Drainage

3.3.1 We understand that there are no public sewers within the vicinity of the site. Extracts of the public sewer records have therefore not been sought from Anglian Water.

3.3.2 The existing on site foul and surface water drainage systems that serve the existing development are identified on the existing wider site layout drawing included within Appendix C.

3.3.3 The drawing confirms that the existing foul drainage from the whole site discharges to a significant purpose built on site treatment plant.

3.3.4 The drawing also confirms that surface water run-off from the existing Freshcook building to be extended discharges to the Holbeach River, via a large on-site balancing pond.

4 POTENTIAL SOURCES OF FLOODING

4.1 Fluvial/Tidal Flooding

4.1.1 The nearest potential source of fluvial/tidal flooding to the site is represented by the Holbeach River that runs adjacent to the western boundary of the wider site. The Holbeach River is a tributary of the River Welland located approx. 2km to the north west of the site. The Holbeach River is a main drain, falling under the jurisdiction of the South Holland Internal Drainage Board (IDB). The River Welland is classified as Main River.

4.1.2 An extract of the Environment Agency's on line flood mapping is shown in Figure 1 below. The dark blue areas represent Flood Zone 3, 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. The light blue areas represent Flood Zone 2, land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year. All remaining areas are classified as Flood Zone 1, land assessed as having a less than 1 in 1000 annual probability of river or sea flooding (<0.1%) in any year.

4.1.3 The site location has been added to the flood mapping extract, below, confirming that it lies at the periphery of Flood Zone 3, in the absence of any defences.

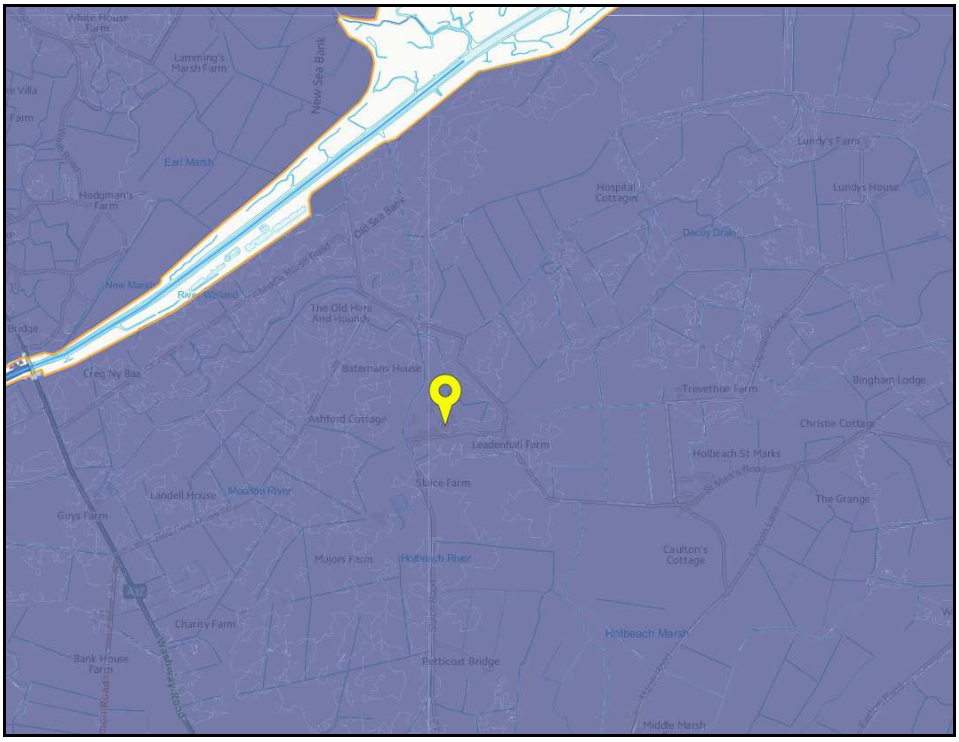


Figure 1 – Environment Agency Floodplain Mapping Extract

4.1.4 The Environment Agency has confirmed that the site and surrounding area is afforded a significant degree of protection by tidal flood defences, consisting of earth embankments. The defences are noted to be in 'good' condition providing protection against a tidal flood event with an annual probability of between 1 in 100 (1%) and 1 in 150 (0.67%). The defences are inspected by the Environment Agency at regular intervals. Actual fluvial/tidal risk is therefore restricted to a breach or overtopping of the defences and can be considered to be residual in nature.

4.1.5 The SFRA contains mapping that indicates the actual flooding extents for the area with the benefit of the flood defences for the present day and 2115 scenarios. A copy of the mapping is included within Appendix D for reference. In summary, the mapping indicates that the application site and majority of the wider site remains dry within the present day event. The application site and a large part of the wider site would, however, potentially be inundated in the future 2115 event.

4.1.6 We are not aware of any evidence to suggest that the site or surrounding area has being subject to flooding from this source in recent memory.

4.2 Groundwater

4.2.1 Groundwater flooding is highly variable and dependant on local conditions.

4.2.2 The SFRA includes no records of groundwater flooding within the district and we are not aware of any evidence to suggest that the site is susceptible to groundwater flooding.

4.3 Overland/Surface Water Flows

4.3.1 We are not aware of any records or anecdotal evidence to suggest that the site is susceptible to surface water flooding.

4.3.2 The Environment Agency on line surface water flood mapping, however, indicates that some areas of the wider site are susceptible to surface water flooding, in particular the car park to the rear. The site location is indicated on an extract of the mapping in Figure 2 below.



Figure 2 – Environment Agency Surface Water Flood Mapping Extract

4.3.3 The area of the application site is not indicated as being at being at risk of flooding from this source.

4.4 Existing Sewers

4.4.1 The site is remote from the public sewer network and is therefore not at risk of flooding from this source.

4.4.2 We are not aware of any flooding problems associated with the existing on site drainage systems.

4.5 Reservoirs, Canals and Other Artificial Sources

4.5.1 We understand that there are sluices present on the Holbeach River, downstream of the site. The original SFRA states that the sizes of sluices within the district are commensurate with the respective waterways/drains and therefore the potential for their blockage is considered to be low.

4.5.2 There are no other artificial sources identified within the vicinity of the site.

5 PROPOSED DEVELOPMENT

5.1 General

5.1.1 It is proposed to provide a chilled store extension to the existing Freshcook building. The proposed extension will have an overall footprint of approx. 450m2 and will replace existing temporary chilled storage units.

5.1.2 The proposed layout drawings, prepared by Arctica, are included within Appendix E.

5.2 Levels

5.2.1 The finished floor level of the proposed extension will be set to match the existing adjoining main building.

5.3 Foul Drainage

5.3.1 It is proposed to discharge the foul drainage from the new extension to the existing foul drainage network that currently serves the building and wider site.

5.3.2 The foul discharge associated with the proposed extension will be minimal and similar to that associated with the existing temporary chilled units that it will replace.

5.4 Surface Water Drainage

5.4.1 It is estimated that the proposed extension will result in a small net gain in impermeable area, approx. 200m2, when compared to the existing scenario.

5.4.2 It is proposed to discharge the surface water run-off from the new extension to the existing adjoining main building rainwater pipes, which connect to the existing on site attenuated surface water drainage network.

5.4.3 The increase in run-off is relatively very low and not expected to compromise the capacity or operation of the existing on site surface water drainage network.

6 VULNERABILITY & COMPATIBILITY

6.1 General

6.1.1 In accordance with Table 2: Flood Risk Vulnerability Classification, contained within the PPG, the proposed extension is classified as 'less vulnerable' development. This therefore represents no increase in vulnerability from the existing 'less vulnerable' uses.

6.2 Sequential Test

6.2.1 Paragraph 101 of the NPPF states *'The aim of the Sequential Test is to steer new development to areas with the lowest probability 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 probability of flooding. The SFRA will provide the basis for applying this test. A sequential approach should be used in areas known to be at risk from any form of flooding.'*

6.2.2 In accordance with paragraph 104 of the NPPF, applications for changes of use and minor development should not be subject to the Sequential Test but must still meet the requirements for site specific FRAs.

6.2.3 The proposed extension is considered to represent 'minor development' and therefore compliant with paragraph 104.

6.3 Exception Test

6.3.1 In accordance with paragraph 104 of the NPPF, applications for changes of use should not be subject to the Exception Test.

7 ASSESSMENT OF FLOOD IMPACT

7.1 Fluvial/Tidal Flooding

7.1.1 The proposed extension will be located within Flood Zone 3 and therefore must be assessed as having a 1 in 100 or greater annual probability of fluvial flooding (>1%) or a 1 in 200 or greater annual probability of tidal flooding (>0.5%), in the absence of any flood defences.

7.1.2 The site and surrounding area is, however, afforded significant protection from flood defences against a tidal flood event with an annual probability of between 1 in 100 (1%) and 1 in 150 (0.67%). Actual fluvial/tidal flood risk will therefore be limited to the eventuality of the defences being breached or overtopped and can be considered to be residual in nature.

7.1.3 The SFRA considers a breach of the flood defences on a district wide scale for the current and future (2115) 100 year fluvial and 200 year tidal events. The breach mapping contained within the SFRA confirms that the proposed extension (application site) will remain dry in the current 100 year fluvial/200 year tidal event but could potentially be inundated with floodwater in the future 100 year fluvial/200 year tidal event to a maximum depth of 2.0m.

7.1.4 We are not aware of any evidence to suggest that the site has been subject to fluvial/tidal flooding in recent memory.

7.2 Groundwater

7.2.1 We are not aware of any records or anecdotal evidence to suggest that the site has been subject to groundwater flooding. Furthermore, there are no recorded incidents of groundwater flooding within the vicinity.

7.2.2 The risk of groundwater flooding to the proposed extension is therefore considered to be low.

7.3 Overland/Surface Water Flows

7.3.1 Whilst the Environment Agency on line surface water flood mapping indicates that part of the wider site is susceptible to surface water flooding, we are not aware of any records or anecdotal evidence to suggest that the wider site or application site has been subject to such flooding.

7.3.2 The risk of surface water flooding to the proposed extension is therefore considered to be low.

7.4 Existing Sewers

7.4.1 The site is remote from the public sewer network we are not aware of any records or anecdotal evidence to suggest that the site has been subject to flooding resulting from deficiencies with the existing private drainage networks.

7.4.2 The risk of flooding to the proposed extension from this source is therefore considered to be low.

7.5 Proposed Drainage

7.5.1 With no net increase in foul discharge expected in the post development scenario, no increase in the risk of flooding to the site or other areas via this source is anticipated.

7.5.2 Whilst the proposed extension will result in a small increase in impermeable area, the increase will be relatively small and unlikely to compromise the capacity and operation of the existing attenuated on site surface water drainage system. No discernible increase in the risk of flooding to the site or other areas via this source is anticipated.

7.6 Reservoirs, Canals & Other Artificial Sources

7.6.1 With no artificial sources of flooding identified within the vicinity, the associated risk of flooding to the site and proposed extension is therefore considered to be low.

8 CONCLUSIONS & RECOMMENDATIONS

8.1 General

8.1.1 Whilst the proposed extension will be located within Flood Zone 3, the site is afforded significant protection from local flood defences. The actual risk of fluvial/tidal flooding to the local area will therefore be restricted to a breach or overtopping of the defences so can therefore be considered to be low and residual in nature.

8.1.2 A large part of the wider site, including the proposed extension will lie within the maximum extents of the future (2115) 1 in 100 year fluvial and 1 in 200 year breach event, potentially being inundated with flood water.

8.1.3 Based on the information available, including that contained within the SFRA, the risk of flooding to the proposed extension from all other sources is considered to be low.

8.2 Mitigation Measures

8.2.1 The proposed extension and wider site lie within a flood warning area. It is therefore recommended that the owners of the wider site sign up to the Floodline Warnings Direct free service offered by the Environment Agency via their website or by calling Floodline on 0345 988 1188, assuming that they haven't already done so. The Agency aim to provide a minimum 2 hour warning which should be sufficient to safely evacuate the premises.

8.2.2 The proposed extension will fall under any existing emergency/evacuation plan associated with the wider site. No new measures are considered necessary as a result of the proposed extension alone.

8.2.3 Given the residual nature of fluvial/tidal flood risk and the relatively minor increase in built footprint in the post development scenario, no floodwater storage mitigation measures are proposed.

8.3 Residual Flood Risk

8.3.1 The implementation of the recommended mitigation measures should ensure that the residual flood risk to the proposed extension and its occupants is kept to an absolute minimum and can be safely managed.

8.3.2 There will be no increase in residual flood risk to the local area in the post development scenario.

APPENDICES

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

APPENDIX E