CALDECOTE FARM

NEWPORT PAGNELL · MILTON KEYNES

APPENDIX 8

ENVIRONMENTAL STATEMENT

FLOOD RISK AND DRAINAGE

APPENDIX 8.1
FLOOD RISK ASSESSMENT

newlands developments

CONSULTANCY | ENVIRONMENT
INFRASTRUCTURE | BUILDINGS

ENVIRONMENT

Newlands Property Developments LLP
Land at Caldecote Farm
Newport Pagnell

FLOOD RISK ASSESSMENT

CONSULTANCY | ENVIRONMENT
INFRASTRUCTURE | BUILDINGS

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EXECUTIVE SUMMARY

This Flood Risk Assessment (FRA) has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. It has been produced on behalf of Newlands Property Developments LLP, in respect of an outline planning application for the Land at Caldecote Farm, Newport Pagnell (approximate grid reference: 242165, 487595).

This report demonstrates that the proposed development is at an acceptable level of flood risk, subject to the recommended flood mitigation strategies being implemented.

The proposed development is located within Flood Zone 1 (land at a Low Probability of river flooding) on the Environment Agency's Flood Map for Planning. The closest Main River is the Tongwell Brook, located approximately 120m to the north of the site. The River Ouzel or Lovat is located approximately 600m to the east of the site.

A comparison between modelled flood levels and the site topography has shown that the site is significantly elevated above the 1 in 1000-year floodplain.

Other sources of flood risk assessed include groundwater which is found to pose a medium risk, and sewers, surface water and reservoirs which are found to pose low risk.

Mitigation measures such as raising floor levels nominally above surrounding ground levels will address residual flood risk from groundwater, sewer and, pluvial sources. External levels should also be arranged to direct overland flows away from building and towards positively drained areas.

A surface water drainage strategy prepared by Stantec demonstrates that the increase in surface water runoff brought about by developing the site can be appropriately managed and that it will not pose a flood risk to the development or increase flood risk in the wider catchment.

In compliance with the requirements of National Planning Policy Framework, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider catchment area as a result of suitable management of surface water runoff discharging from the site.

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1.0 INTRODUCTION

1.1 This Flood Risk Assessment (FRA) has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of Newlands Property Developments LLP in respect of a planning application for a proposed storage and distribution development at Caldecote Farm, Newport Pagnell.

1.2 This FRA is intended to support an outline planning application and as such the level of detail included is commensurate and subject to the nature of the proposals at the outline planning stage.

Table 1.1 - Site Summary

Site Name	Land at Caldecote Farm
Location	Newport Pagnell
NGR (approx.)	242165, 487595
Application Site Area (ha)	Approximately 18.72 ha
Development Type	Storage and Distribution
Flood Zone Classification	Flood Zone 1
NPPF Vulnerability	Less Vulnerable
Environment Agency Office	East Anglia
Lead Local Flood Authority	Milton Keynes Council
Local Planning Authority	Milton Keynes Council

Sources of Data

1.3 The report is based on the following information

(i) Masterplan by Perter Haddon & Partners Architects, ref 04179-1-SK015 P47
(ii) Topographical Survey by Greenhatch Group, reference 26594_T 0
(iii) OS Explorer Series mapping
(iv) Environment Agency consultation and model information
(v) Local Authority Surface Water Flood Risk Maps
(vi) Bedford Group of Drainage Boards IDB Consultation
(vii) Milton Keynes Strategic Flood Risk Assessment
(viii) Web Based Soil Mapping
(ix) Ground Investigation Report undertaken by RSK
(x) Anglian Water Sewer Records
(xi) British Geological Survey Drift & Geology Maps
(xii) Surface Water Drainage Strategy prepared by Stantec ref: 38748_100/011_B

Existing Site

1.4 The 19.3ha development site lies directly to the north east of the M1 motorway and to the southern edge of Newport Pagnell town. The M1 bounds the site on the south western boundary, the H3 Monks Way carriageway to the north west, and Willen Road to the eastern boundary.

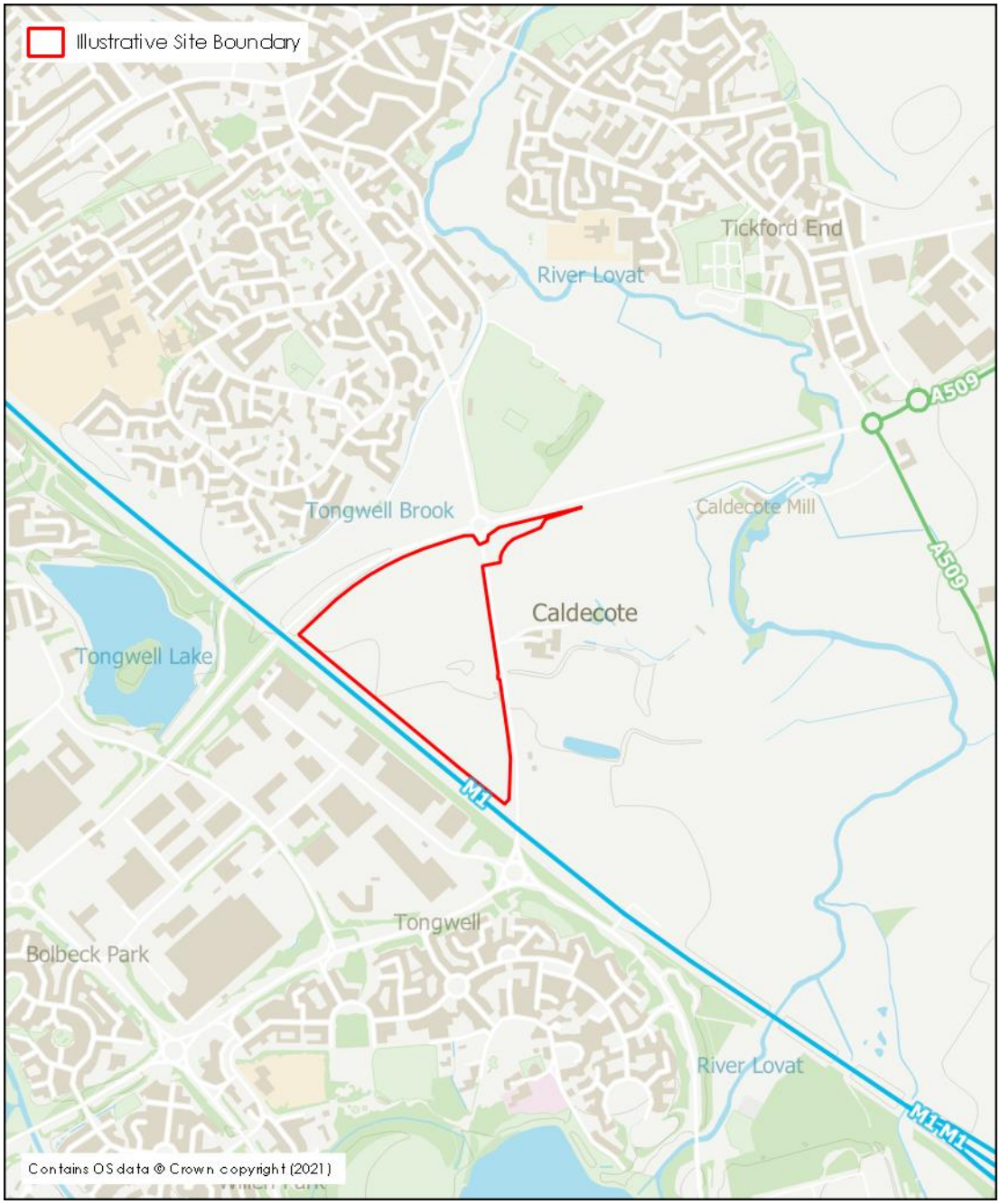

Figure 1.1 - Site Location

1.5 Existing site levels range from approximately 62.22mAOD in the south east, down to 58.06mAOD to the north east of the site. A topographical survey has been included for reference as **Appendix 1**.

1.6 The site is largely greenfield in nature, however it has been observed that a portion of the site to the eastern boundary has been used as a material storage area for a quarry operation.

Proposed Development

1.7 Outline application seeks development of land at Caldecote Farm, comprising the erection of up to 81,297 sqm of storage and distribution (Use Class B8) and ancillary offices (Use Class B1) floorspace, with associated infrastructure, including access, parking, servicing and landscaping. The application is submitted in outline with all matters except the principal access Reserved.

1.8 Primary vehicular access and egress is located off Willen Road to the eastern site boundary.

1.9 An illustrative development plan is included for reference as **Appendix 2**.

2.0 FLOOD RISK PLANNING POLICY

National Planning Policy Framework

2.1 The NPPF[1] sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. Planning Practice Guidance is also available online[2].

2.2 The Planning Practice Guidance sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible, and stresses the importance of preventing increases in flood risk off site to the wider catchment area.

2.3 The Planning Practice Guidance also states that alternative sources of flooding, other than fluvial (river flooding), should also be considered when preparing a Flood Risk Assessment.

2.4 The Planning Practice Guidance also includes a series of tables that define Flood Zones (Table 1), the flood risk vulnerability classification of development land uses (Table 2) and 'compatibility' of development within the defined Flood Zones (Table 3).

2.5 This Flood Risk Assessment is written in accordance with the NPPF and the Planning Practice Guidance.

Flood Map for Planning

2.6 With particular reference to planning and development, the Flood Map for Planning produced by the Environment Agency identifies Flood Zones in accordance with Table 1 of the Planning Practice Guidance.

2.7 Flood Zone 1 (Low Probability) is defined as land having less than a 1 in 1000 annual probability of river or sea flooding (<0.1%).

2.8 Flood Zone 2 (Medium Probability) is defined as land 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%).

2.9 Flood Zone 3a (High Probability) is defined as land having a 1 in 100 or greater annual probability of river flooding (>1%); or land having a 1 in 200 or greater annual probability of flooding from the sea (>0.5%). This is represented by "Flood Zone 3" on the Flood Map for Planning.

2.10 Flood Zone 3b (The Functional Floodplain) is defined as land where water has to flow or be stored in times of flood. This is not identified or separately distinguished from Zone 3a on the Flood Map for Planning.

2.11 The study site is shown to be located entirely within Flood Zone 1, as shown on **Figure 2.1**.

1 National Planning Policy Framework, Ministry of Housing, Communities and Local Government, July , 2021
2 Planning Practice Guidance: https://www.gov.uk/government/collections/planning-practice-guidance

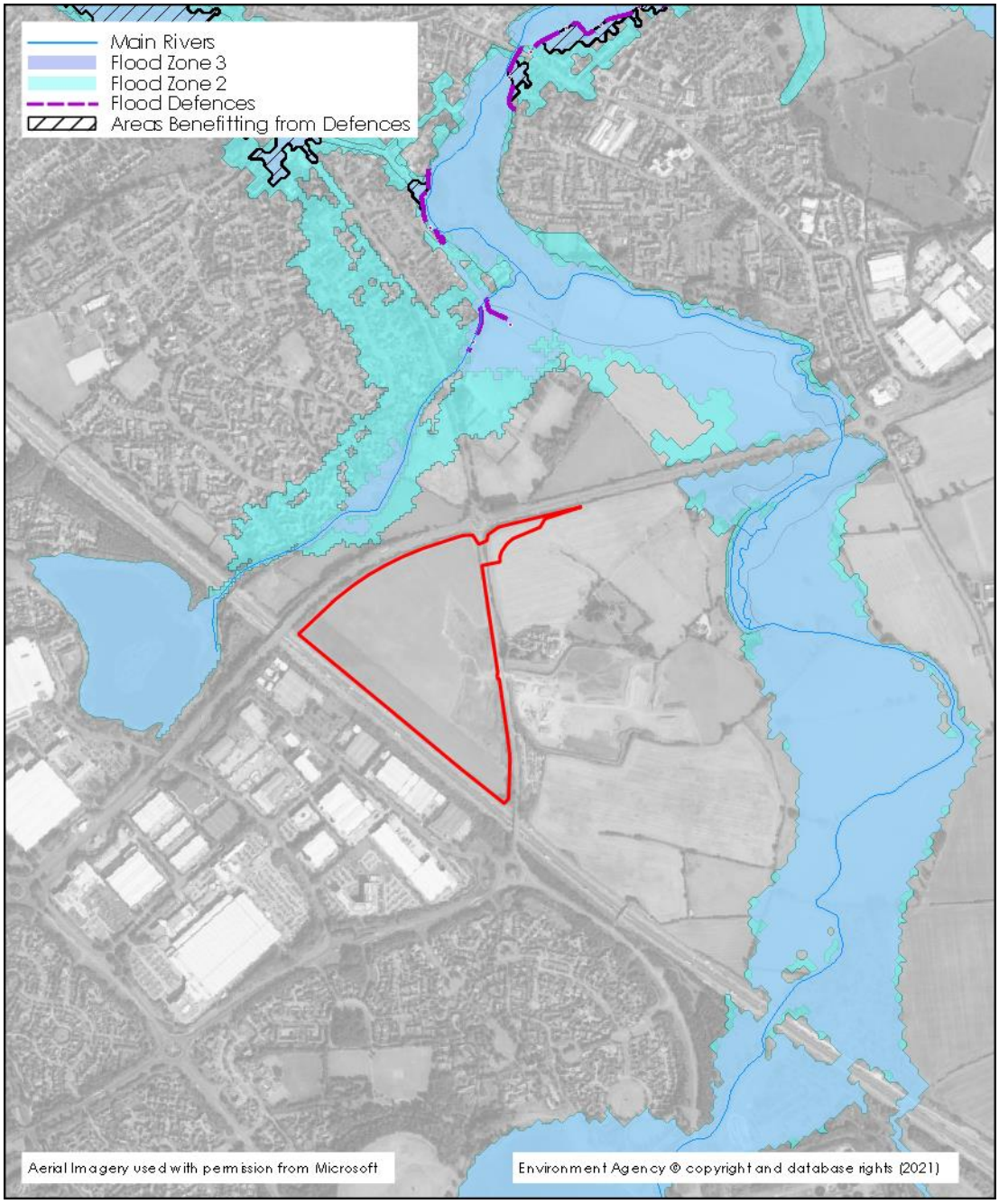

Figure 2.1 - Environment Agency Flood Map for Planning (Rivers and Sea)

The Design Flood

2.12 The Planning Practice Guidance identifies that new developments should be designed to provide adequate flood risk management, mitigation, and resilience against the 'design flood' for their lifetime.

2.13 This is a flood event of a given annual flood probability, which is generally taken as fluvial (river) flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year), or tidal flooding with a 0.5% annual probability (1 in 200 chance each year), against which the suitability of a proposed development is assessed and mitigation measures, if any, are designed.

Climate Change

2.14 Predicted future change in peak river flows caused by climate change are provided by the Environment Agency within their online guidance[3], with a range of projections applied to regionalised 'River Basin Districts'.

2.15 The site falls within the Anglian River Basin District. **Table 2.1** identifies the relevant peak river flow allowances from this river basin district.

Table 2.1: Peak River Flow Allowance for the Anglian River Basin District-Upper Bedford and Ouse Management Catchment

Allowance Category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Upper End	24%	30%	58%
Higher Central	10%	11%	30%
Central	5%	4%	19%

2.16 When determining the appropriate allowance for use in a Flood Risk Assessment the Flood Zone classification, flood risk vulnerability and the anticipated lifespan of the development should be considered. **Table 2.2** provides a matrix summarising the Environment Agency's guidance on determining the appropriate allowances.

Table 2.2: Application of the Appropriate Climate Change Allowance

Flood Zone	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
2 or 3a	Use the higher central allowance	Use the central allowance*	Use the central allowance	Use the central allowance	Use the central allowance
3b	Use the higher central allowance	Development should not be permitted	Development should not be permitted	Development should not be permitted	Use the central allowance
**Highly Vulnerable developments should not be permitted in flood zone 3a.					

2.17 The guidance does not include information on what allowance to apply to Flood Zone 1. However, a review of the distance and topography between the site and the nearest areas of Flood Zone 2 and 3 has been undertaken. The site lies approximately 120m to the south of the watercourse and is raised approximately 3m above the watercourse, therefore even when considering the latest climate change allowances, the site is considered to be unaffected from the fluvial source in the future.

Strategic Flood Risk Assessment

[3] Environment Agency, Flood risk assessments: climate change allowances: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#table-1

2.18 A Strategic Flood Risk Assessment (SFRA) is a study carried out by one or more local planning authorities to assess the risk to an area from flooding from all sources, now and in the future.

2.19 The Milton Keynes Council Level 1 SFRA[4] has been reviewed in the production of this FRA. The SFRA provides information specific to the site location in the form of fluvial, surface water and groundwater flood risk mapping, as well as records of historic flooding. Information from the Level 1 SFRA will be referenced within **Section 3.0** where applicable.

Preliminary Flood Risk Assessment

2.20 A Preliminary Flood Risk Assessment (PFRA) is an assessment of floods that have taken place in the past and floods that could take place in the future. It generally considers flooding from surface water runoff, groundwater and ordinary watercourses, and is prepared by the Lead Local Flood Authorities.

2.21 The Upper River Great Ouse Tri Lead Local Flood Authority PFRA[5] considers flooding from surface water runoff, groundwater, ordinary watercourses and canals. No historic instances of flooding at the site are referenced. Information from the PFRA will be referenced within this report where applicable.

Local Flood Risk Management Strategy

2.22 A Local Flood Risk Management Strategy (LFRMS) is prepared by a Lead Local Flood Authority to help understand and manage flood risk at a local level. The LFRMS aims to ensure that the knowledge of local flood risk issues is communicated effectively so that they can be better managed. The LFRMS also aims to promote sustainable development and environmental protection.

2.23 The Milton Keynes LFRMS[6] has been reviewed and will be referenced within this report where applicable.

[4] Level 1 Strategic Flood Risk Assessment (URS, April 2015 update)
[5] Upper River Great Ouse Tri Lead Local Flood Authority (Bedford Group of Drainage Boards, June 2011)
[6] Milton Keynes Local Flood Risk Management Strategy (AECOM, February 2016)

3.0 POTENTIAL SOURCES OF FLOOD RISK

3.1 Flooding can occur from a variety of sources, or combination of sources, which may be natural or artificial. **Table 3.1** below identifies the potential sources of flood risk to the site in its current condition, and the impacts which the development could have in the wider catchment, prior to mitigation. These are discussed in greater detail in the forthcoming section. The mitigation measures proposed to address flood risk issues and ensure the development is appropriate for its location are discussed within **Section 4.0**.

Table 3.1 - Pre-Mitigation Sources of Flood Risk

Flood Source	Potential Risk				Description
	High	Medium	Low	None	
Fluvial			X		The site is located in Flood Zone 1 and is significantly raised above the EA modelled 1 in 1000-year flood levels.
			X		The local IDB managed ordinary watercourse network is located downstream of the site, on land that falls away from the site.
Canals				X	There are no canals in the vicinity.
Groundwater			X		The site is shown to fall within an area predicted to be at a high susceptibility to groundwater flooding, but it is significantly elevated above the surrounding floodplain.
Reservoirs and waterbodies			X		The site is shown to be partially located within the area at risk of reservoir failure, but the probability of such a failure is very low.
Pluvial runoff			X		The site has small, isolated areas at risk from surface water that are likely to be eradicated during the development.
Sewers			X		The site is well removed from the existing nearby sewer networks.
Effect of Development on Wider Catchment				X	The development will not result in the loss of floodplain or the interruption of flood flow pathways.
		X			The development will increase the area of impermeable surfaces leading to a potential increase in runoff, unless mitigated.

Fluvial Flood Risk

3.2 Flooding from watercourses occurs when flows exceed the capacity of the channel, or where a restrictive structure is encountered, which leads to water overtopping the banks into the floodplain. This process can be exacerbated when debris is mobilised by high flows and accumulates at structures.

Main Rivers

3.3 There are a number of Main Rivers located within the local area. The Tongwell Brook is the nearest, located approximately 120m to the north of the study site, flowing south-west to north-east. The River Ouzel or Lovat is located approximately 600m to the east of the site, which flows towards the north.

3.4 The Environment Agency (EA) was consulted to inform this report, with correspondence and mapping included for reference as **Appendix 3.**

3.5 EA mapping confirms that the site is not afforded any protection by formal flood defences, but that it is well removed from the floodplain due to its elevated nature and by the intervening topography.

3.6 Peak flood data provided by the EA relevant to the site is presented within **Table 3.2**.

Table 3.2- Environment Agency Peak Flood Level Data

Watercourse	EA Model Node	Peak Flood Levels (m AOD)			Minimum Adjacent Ground Level within the Site (m AOD)
		1 in 100-Year	1 in 100-Year+20%	1 in 1000-Year	
Tongwell Brook	EA0522151029	58.36	58.46	58.58	59.44
	EA0522151072	57.26	57.37	57.49	58.40
	EA0522151047	56.47	56.59	56.74	58.06
	EA0522151069	55.80	55.87	55.95	57.86
River Ouzel or Lovat	EA0522141281	56.66	56.71	56.76	58.65
	EA0522141279	56.53	56.56	56.59	57.86

3.7 Additionally, EA Historic Flood mapping confirms that the site has not previously flooded, with the extent of historic flooding confined to the floodplain of the River Ouzel or Lovat.

3.8 Overall, the available data confirms that the site is well removed from any fluvial flood extent of the local Main Rivers. Therefore, flood risk from this source is considered to be low.

Minor Watercourses

3.9 Ordnance Survey mapping shows a number of small ordinary watercourses in close proximity to the site.

3.10 Consultation with the local IDB (Internal Drainage Board), the Bedford Group of Drainage Boards, confirmed that IDB managed watercourses are present within close proximity of the site. Correspondence and mapping provided by the Bedford Group of Drainage Boards in included for reference as **Appendix 4.**

3.11 The closest IDB watercourse to the study site is drain '18a', located to the north of the site, which runs parallel to the Tongwell Brook on the south side of Tongwell Lane. Drain '18b' is located approximately 290m to the east of the site. All named IDB watercourses and any minor land ditches found within the study area are confirmed to be subject to the IDB's statutory control. The IDB correspondence states that no flood risk information exists for the watercourses.

3.12 Given the local topography falls towards the Main Rivers and away from the site, and coupled with IDB control and maintenance responsibilities of these watercourses it is considered that these pose a low flood risk to the site.

Groundwater Flood Risk

3.13 Groundwater flooding occurs when the water table rises above ground elevations. It is most likely to happen in low lying areas underlain by permeable geology. This may be regional scale chalk or sandstone aquifers, or localised deposits of sands and gravels underlain by less permeable strata such as that in a river valley.

3.14 A Geotechnical and Geo-environmental ground investigation report (inclusive of Phase 1 & 2 studies) has been completed for the site. The report was completed in October 2015 by RSK Environment Limited.

3.15 This reports that the site is underlain by Kellaways Formation and Peterborough member bedrock (Mudstone with beds of siltstone and sandstone). This is overlain by superficial deposits of Felmersham Member sands and gravels, Head Deposits of sandy silty clay, and Glaciolacustrine Deposits and sand gravel and clay. Made Ground was also present across the site.

3.16 Groundwater strikes are reported to have been generally encountered at depths of over 2m, but two shallow strikes occurred at 1.6m and 0.9m – these may be associated with localised perched groundwater in the Made Ground. The flow of groundwater was reported to be generally towards the north and the Tongwell Brook.

3.17 The Bedford Borough Council, Central Bedfordshire Council and Milton Keynes Council PFRA has prepared mapping indicating risk from groundwater flooding, included for reference as **Appendix 5.** The mapping divides the borough into 1km squares, and the site is shown to fall in a square in which 75% of the area could be susceptible to groundwater flooding. This is despite no historical groundwater flooding issues being noted within the SFRA or PFRA.

3.18 Although the PFRA mapping identifies the site to be in an area susceptibility to groundwater, the coarse nature of the mapping also includes the Tongwell Brook within the same reference square. Therefore, the PFRA mapping may be identifying the local area to the Tongwell Brook to be at high susceptibly as opposed to the site itself.

3.19 The site is located on an area of high ground between the Tongwell Brook and the River Ouzel or Lovat, and it has already been demonstrated that the site is significantly elevated above the potential fluvial floodplain. Therefore, the risk of large-scale groundwater flooding driven by these watercourse catchments is considered to be low.

3.20 However, there is still the potential for more localised groundwater flooding to occur on the site during very prolonged storm events. Should groundwater levels exceed ground levels, the resultant overland flows would fallow the fall of the topography and flow off the site – deep flooding would not be expected. Therefore, the consequence of such an occurrence would not be significant.

3.21 Therefore, based on the available data there is considered to be an overall medium flood risk from groundwater sources.

Flood Risk from Reservoirs & Large Waterbodies

3.22 Flooding can occur from large waterbodies or reservoirs if they are impounded above the surrounding ground levels or are used to retain water in times of flood. Although unlikely, reservoirs and large waterbodies could overtop or breach leading to rapid inundation of the downstream floodplain.

3.23 To help identify this risk, reservoir failure flood risk mapping has been prepared by the EA, this shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. The map displays a worst case scenario and is only intended as a guide. An extract from the mapping is included as **Figure 3.1**.

3.24 The site is shown to be located partially within the potential failure floodplain of Tongwell Lake, a large waterbody which is located approximately 245m east of the site. Tongwell Lake is shown to be under the ownership and management of Anglian Water. Mapped flood depths are generally below 0.3m in the site, but they are shown to exceed 0.3m on the northern boundary.

3.25 The Milton Keynes Council SFRA states that '*All large reservoirs must be inspected and supervised by reservoir panel engineers. It is assumed that these reservoirs are regularly inspected and essential safety work is carried out. These reservoirs therefore present a managed risk.*'

3.26 Based on the safety legislation in place and that Anglian Water are responsible for the management of maintenance and repair responsibilities, the actual probability of a complete failure is considered to be very low. Therefore, the risk from flooding is considered to be low.

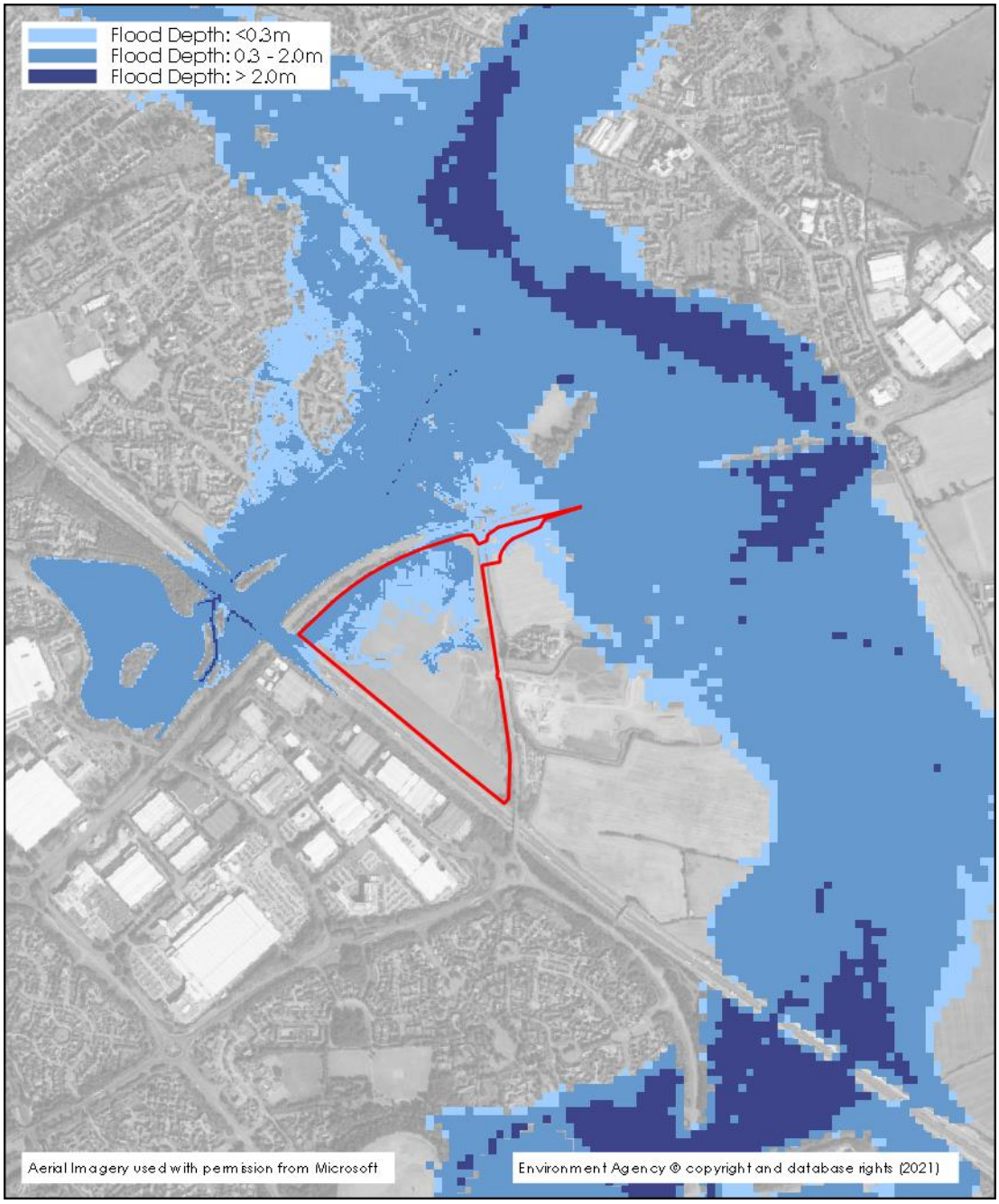

Figure 3.1 - Reservoir Failure Flood Risk Map

Pluvial Flood Risk

3.27 Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

3.28 Risk of flooding from surface water mapping has been collated and published by the EA, this shows the potential flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead. An extract from the mapping is included as **Figure 3.2**.

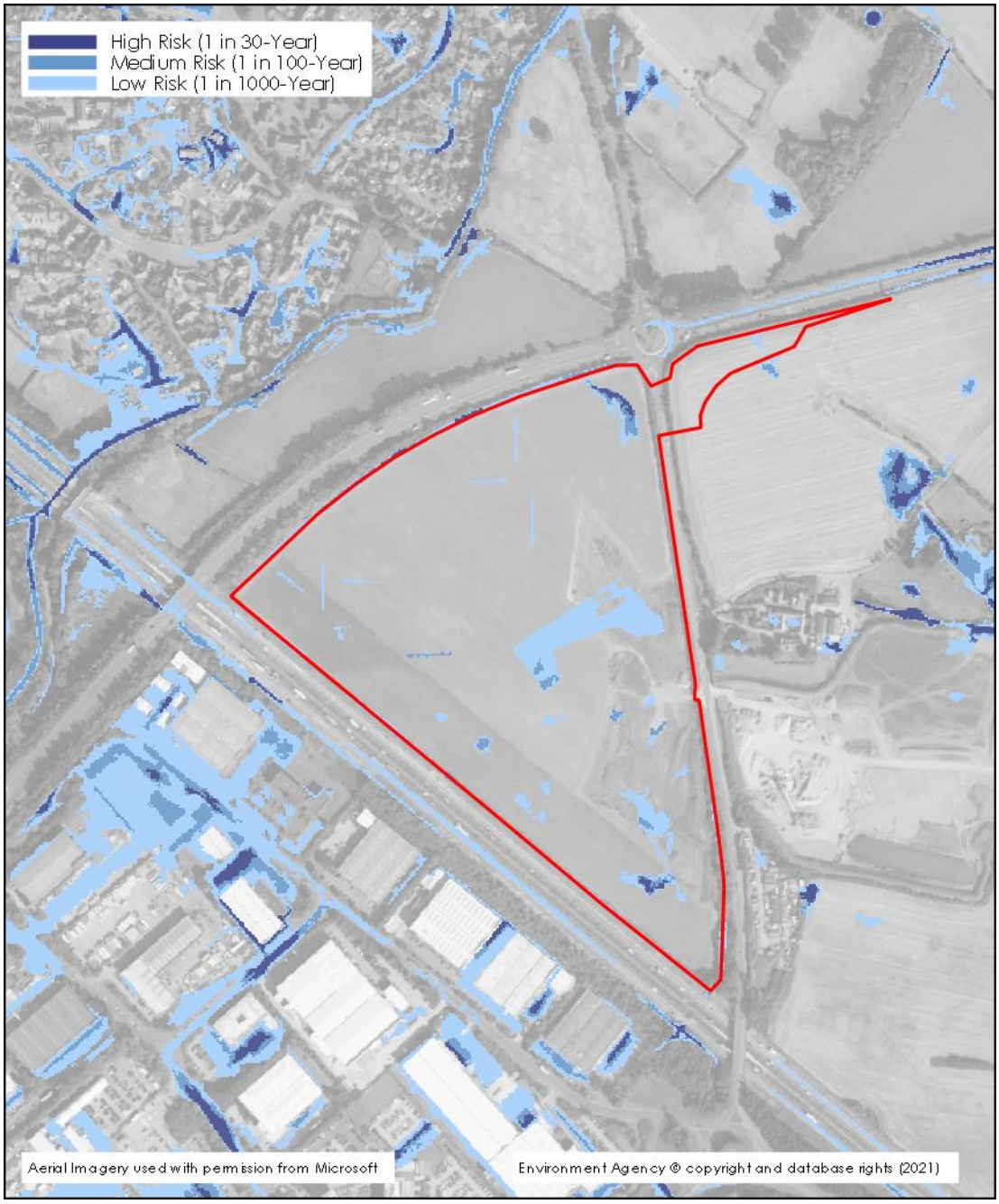

Figure 3.2 - Risk of Flooding from Surface Water Mapping

3.29 The mapping identifies the majority of the site to be at very low risk from pluvial flooding sources. Isolated areas within the site are shown to be at low, medium and high risk.

3.30 The areas at risk are shown to have a maximum predicted flood depth of between 0.15m to 0.3m. The scattered natures of these depressions suggest that there is not surface water flow route through the site or beyond, and therefore just occurs as localised ponding.

3.31 There are no records within the SFRA of the site having previously flooded from a pluvial source.

3.32 As the site is subject to a full development scheme inclusive of full construction depths and implementation of a drainage strategy, it is to be taken that these isolated patches will be eradicated within the finished levels design. Therefore, the overall flood risk is considered to be low.

Flood Risk from Sewers

3.33 Sewer flooding can occur when the capacity of the infrastructure is exceeded by excessive flows, or as a result of a reduction in capacity due to collapse or blockage, or if the downstream system becomes surcharged. This can lead to the sewers flooding onto the surrounding ground via manholes and gullies, which can generate overland flows.

3.34 Due to the undeveloped nature of the site, there is no existing sewerage infrastructure within the site. A sewer network is present in the residential estate to the north of Tongwell Road which serves the local properties; however, this is well removed from the site and unlikely to convey significant flows. Anglian Water sewer records are included for reference as **Appendix 6**.

3.35 Flood risk from sewers is considered to be low, however limited residual risk such as blockage or total failure of the proposed drainage network which will serve the development, would potentially remain.

Effect of Development on Wider Catchment

3.36 As the site is currently classed as greenfield, the development will result in an increase in impermeable area that could increase flood risk elsewhere through an increase in the surface water runoff generated, unless appropriately mitigated.

4.0 FLOOD RISK MITIGATION

4.1 **Section 3.0** has identified the sources of flooding which could potentially pose a risk to the site and the proposed development. This section of the FRA sets out the mitigation measures which are to be incorporated within the proposed development to address and reduce the risk of flooding to within acceptable levels.

Development Levels

4.2 Based on the elevated nature of the site and the identified low flood risks, there is no specific requirement to set a minimum finished floor or threshold levels (inclusive of dock access doors, level access doors or other pedestrian access doors).

4.3 To mitigate any flood risk posed by surface water runoff from the development and overland flows generated by the on-site drainage infrastructure during exceedance events external levels should be profiled to fall away from the buildings and main access routes and towards the nearest drainage points.

4.4 It is also recommended that threshold levels are set above the surrounding external ground levels to provide further mitigation from any potential surface water runoff.

4.5 Groundwater levels should be monitored, and appropriate land drainage or dewatering employed if it is found to pose a risk to the operational or construction phase of the development.

Safe Access and Egress

4.6 Pedestrian and vehicular access and egress outside of the floodplain will available via the proposed primary access point off Willen Road.

Surface Water Drainage

4.7 An outline Surface Water Drainage Strategy has been developed by Stantec (included for reference as **Appendix 7**) to ensure flood risk is not increased elsewhere in accordance with national and specific local drainage planning policy requirements.

4.8 The strategy includes the attenuated discharge of surface water to the local watercourse at an equivalent greenfield rate (4 l/s/ha). This rate has been agreed within the IDB.

4.9 A combination of surface water ponds and underground storage is proposed to provide sufficient storage to accommodate the 1 in 100-year+40% storm event.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 This Flood Risk Assessment (FRA) has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of Newlands Property Developments LLP in respect of a planning application for a proposed storage and distribution development at Caldecote Farm, Newport Pagnell.

5.2 This FRA is intended to support an outline planning application and as such the level of detail included is commensurate and subject to the nature of the proposals at the outline planning stage.

5.3 This report demonstrates that the proposed development is at an acceptable level of flood risk, subject to the recommended flood mitigation strategies being implemented. The identified risks and mitigation measures are summarised within **Table 5.1**:

Table 5.1 - Summary of Flood Risk Assessment

Flood Source	Proposed Mitigation Measure(s)
Pluvial, Groundwater & Sewers	It has been recommended to ensure threshold levels are set at a nominal level above the surrounding external ground levels, in order to provide protection from groundwater, pluvial and sewer flood risks. Finished external ground levels should be profiled so that pluvial flood flow is directed away from the built development and to a drainage feature.
Impact of the Development	The site has been located so as to not displace any floodplain. Drainage from the development will be controlled appropriately as part of the strategy produced by Peter Brett Associates.
This summary should be read in conjunction with BWB's full report. It reflects an assessment of the Site based on information received by BWB at the time of production.	

5.4 In compliance with the requirements of National Planning Policy Framework, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider catchment area as a result of suitable management of surface water runoff discharging from the site.

APPENDIX 1

Topographical Survey

N

Station Information:

Station	Easting (m)	Northing (m)	Level (m)
GH1	487803.644	241760.458	69.249
GH2	487816.199	241913.558	67.653
GH3	487801.831	242076.215	61.840
GH4	487779.749	242207.407	58.941
GH5	487762.541	242308.030	58.625
GH6	487715.184	242574.806	58.218
GH7	487745.164	242617.016	57.959
GH8	487677.052	242599.533	58.259
GH9	487703.961	242639.734	57.944
W1	487671.164	242236.577	62.005

OS Note:

Some services may have been omitted due to parked vehicles. The Ordnance Survey tile is to be used as a guide only.

OS Buildings ***Surveyed Buildings***

This survey has been orientated to the Ordnance Survey (O.S) National Grid OSGB36(15) via Global Navigational Satellite Systems (GNSS) and the O.S. Active Network (OS Net).

A true OSGB36 coordinate has been established near to the site centre via a transformation using the OSTN15GB & OSGM15GB transformation models.

The survey has been correlated to this point and a further one or more OSGB36 (15) points established to create a true O.S. bearing for angle orientation.

No scale factor has been applied to the survey therefore the coordinates shown are arbitrary & not true O.S. Coordinates which have a scale factor applied.

Please refer to Survey Station Table to enable establishment of the on-site grid and datum.

Legend:

Buildings
Wall
Kerb line
Line marking
Drop kerb
Centre line
Overhead Cable
Concrete edge
Tarmac edge
Grass verge
Canopy/Overhang
Verge
Station and Name
100.000 Station Level
Tree / Bush / Sapling
Area of Undergrowth
Woodland
R: Ridge Level
E: Eaves Level
F: Flat Roof Level
Gate

Fence types:
Int Interwoven
IR Iron Railings
WM Wire Mesh
PR Post & Rail
PW Post & Wire
CL Chain Link
WP Wooden Panels
CP Concrete Panels
SP Steel Palisade

IC	Inspection chamber	Bo	Bollard
Pinv	Pipe invert	IB	Illuminated bollard
Gy	Gully	Bin	Rubbish bin
Bg	Back gully	Vp	Vent pipe
Dp	Down pipe	Grl	Ground light
Pipe	Pipe above ground	Lbox	Letter box
MH	Manhole	Ldr	Ladder
WL	Water level	Sty	Stile
Fl	Flood light	IFL	Internal floor level
Lp	Lamp post	THL	Threshold level
Tp	Telegraph post	Sp	Sign post
Ep	Electricity post	TH	Trailhole
Tl	Traffic light	BH	Borehole
Bus	Bus stop	ELC	Electric
Sv	Stop valve	BT	British Telecom
St	Stop tap	CTbox	Control box
Er	Earth rod	TT	Tactile
Wm	Water meter	BP	Brick paved
Gas	Gas valve	CPS	Concrete paving slabs
Av	Air valve	CVR	Cover
ICU	Unidentified inspection	IC	Inspection chamber
Wo	Wash out	R/wall	Retaining wall
Re	Rodding eye	UTL	Unable to lift
BB	Bellsha beacon	TCL	Tree canopy level
CTV	Cable tv	G:	Girth
Mkr	Marker post	MG	Multi girth
Gmkr	Gas marker post	Stmp	Tree Stump
So	Soffit	CL:	Cover level
		IL:	Invert level

Rev	Date	Description	Drawn	Q. Ref.

greenhatch group

- Topographical Surveys
- Site Engineering
- Utility / CCTV Surveys
- Measured Building Surveys
- 3D Laser Scanning
- Revit & BIM Models

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CLIENT
Roxhill Management Ltd

PROJECT
Willen Road, Newport Pagnell

TITLE
Topographical Survey

SCALE	DATE
A0@ 1: 1000	24.03.17
DRAWN	QUALITY REF
WA	GH0608

Level datum	See note
Grid orientation	See note
Job number	26594

Drawing No. 26594_T Rev. 0

Comments
This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

APPENDIX 2

Development Proposals

UNIT 1
Gross Internal Areas

Warehouse	454,900 ft²	42,261 m²
Office (3 floors)	18,000 ft²	1,672 m²
Hub Office (2 floors)	2,000 ft²	186 m²
TOTAL	474,900 ft²	44,119 m²
Gatehouse	366 ft²	34 m²
TOTAL	**475,266 ft²**	**44,153m²**

10.04 ha (24.82 acres)

UNIT 2
Gross Internal Areas

Warehouse	345,000 ft²	32,116 m²
Office (3 floors)	21,000 ft²	1,950 m²
Hub Office (2 floors)	2,000 ft²	186 m²
SUB TOTAL	368,000 ft²	34,252 m²
Gatehouse	366 ft²	34 m²
TOTAL	**368,366 ft²**	**34,286 m²**

8.68 ha (21.45 acres)

0 25m 50m SCALE 1:1250

LOCATION PLAN SCALE 1:10000

LAND AT CALDECOTE FARM NEWPORT PAGNELL

newlands developments

pHp Architects

www.peter-haddon.com

PROPOSED MASTERPLAN

Drawing Status:	PRELIMINARY
CAD Reference:	4179 - SK015
Drawn:	CW
Date:	JUNE 2018
Scale: 1: @ A1	1:1250

Project No:	Drawing No:	Rev:
4179-01	SK015	P47

LEGEND

- Strategic Perimeter Landscape Screening including; hedge and tree planting, grassland and drainage attenuation features
- Build development and non-strategic landscaping
- Planning Application red line
  19.93 hectares / 49.24 acres

The base plan used demonstrates one way in which the site could be delivered, accommodating built form alongside green infrastructure.
It should not be taken as the definitive development scheme, as the application is submitted in Outline.
The detailed layout and design and the Development Plots are Reserved Matters.

LAND AT CALDECOTE FARM NEWPORT PAGNELL

newlands developments

pHp Architects

www.peter-haddon.com

STRATEGIC LANDSCAPING PARAMETERS PLAN

Drawing Status:	PRELIMINARY
CAD Reference:	4179 - SK015
Drawn:	SPH
Date:	JANUARY 2021
Scale: 1: @ A1	1:1250

Project No:	Drawing No:	Rev:
4179-01	SK044	P08

APPENDIX 3

Environment Agency Correspondence & Data

creating a better place

Environment Agency

Mr R Ward
BW Consulting Limited
Robert.Ward@bwbconsulting.com.

Our ref EAn/2017/64288
Date 20 November 2017

Dear Mr Ward

Enquiry regarding Caldecote Farm, Newport Pagnell

Thank you for your enquiry which was received on 20 October 2017.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

The information we hold and a copy of the Flood Risk Assessment (FRA) advisory note is attached to my email. Please read the information on the maps and product 4 data sheet. There are no flood defences at Caldercote Farm, near Newport Pagnell.

Name	Product 4
Description	Detailed Flood Risk Assessment Map centred on land at Caldecote Farm, Newport Pagnell.
Licence	Open Government Licence
Information Warnings	None
Information Warning - OS background mapping	*The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply to this background mapping. You are granted a non-exclusive, royalty free, revocable licence solely to view the Licensed Data for non-commercial purposes for the period during which the Environment Agency makes it available. You are not permitted to copy, sub-license, distribute, sell or otherwise make available the Licensed Data to third parties in any form. Third party rights to enforce the terms of this licence shall be reserved to OS.*
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