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Flood Risk Assessment

Ashbrook Point, Heald Green

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Version History

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Revision	Date	Notes	Prepared by	Checked by	Approved by
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Executive Summary

The proposed development would be expected to remain dry in all but the most extreme conditions. Providing the recommendations made in this FRA are instigated, flood risk from all sources would be minimised, the consequences of flooding are acceptable and the development would be in accordance with the requirements of the NPPF.

This FRA demonstrates that the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF. The development should not therefore be precluded on the grounds of flood risk.



1. Introduction

1.1 Background

This Flood Risk Assessment (FRA) has been prepared by Tier Consult at the request of NPL Ltd for the proposed development at Ashbrook Point, Heald Green. This FRA has been carried out in accordance with guidance contained in the National Planning Policy Framework (NPPF)¹, associated National Planning Practice Guidance (NPPG)² and the NPPG 'Site-specific flood risk assessment checklist (para 068 Reference ID: 7-068-20140306. This FRA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will be managed so that the development remains safe throughout the lifetime, taking climate change into account.

It is recognised that developments which are designed without regard to flood risk may endanger lives, damage property, cause disruption to the wider community, damage the environment, be difficult to insure and require additional expense on remedial works. The development design should be such that future users will not have difficulty obtaining insurance or mortgage finance, or in selling all or part of the development, as a result of flood risk issues.

1.2 National Planning Policy Framework (NPPF)

One of the key aims of the NPPF is to ensure that flood risk is taken into account at all stages of the planning process; to avoid inappropriate development in areas at risk of flooding and to direct development away from areas of highest risk. It advises that where new development is exceptionally necessary in areas of higher risk, this should be safe, without increasing flood risk elsewhere, and where possible, reduce flood risk overall.

A risk-based approach is adopted at stages of the planning process, applying a source pathway receptor model to planning and flood risk. To demonstrate this, an FRA is required and should include:

- whether a proposed development is likely to be affected by current or future flooding from all sources;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate;
- if necessary, provide the evidence to the Local Planning Authority (LPA) that the Sequential Test can be applied; and
- whether the development will be safe and pass part c) of the Exception Test if this is appropriate.

¹ Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework.

² Department for Communities and Local Government (2014) Planning Practice Guidance - Flood Risk and Coastal Change.



1.3 Report Structure

This FRA has the following report structure:

- Section 2 details the sources of information that have been consulted;
- Section 3 describes the location area and the existing and proposed development;
- Section 4 outlines the flood risk to the existing and proposed development;
- Section 5 details the Sequential and Exception Tests;
- Section 6 details the proposed surface water drainage for the site;
- Section 7 describes the risk management methods used to mitigate all sources of flood risk; and
- Section 8 presents a summary and conclusions.



2. Sources of Information

2.1 Discussion with Regulators

Consultation and discussions with the relevant regulators have been undertaken during this FRA including the Environment Agency, the Local Planning Authority (LPA), the Lead Local Flood Authority (LLFA) and Sewerage Undertakers.

2.2 Environment Agency

The Flood and Water Management Act 2010 gives the Environment Agency a strategic overview role for all forms of flooding and coastal erosion. They also have direct responsibility for the prevention, mitigation and remediation of flood damage for main rivers and coastal areas. The Environment Agency is the statutory consultee with regards to flood risk and planning. Information regarding the current flood risk at the application site, local flood defences and flood risk has been obtained from the Environment Agency.

2.3 Cheshire East Council

Cheshire East Council is the LPA and the LLFA and has responsibilities for 'local flood risk', which includes surface runoff, groundwater and ordinary watercourses. Planning guidance written by Cheshire East Council regarding flood risk was consulted to assess the mitigation policies in place. The Cheshire East Council Strategic Flood Risk Assessment (SFRA) and the Cheshire East Council Preliminary Flood Risk Assessment (PFRA) which cover the site have been reviewed.

2.4 United Utilities

United Utilities is responsible for the disposal of wastewater and supply of clean for this area. Information with regards to sewer and water main flooding contained within the Cheshire East Council SFRA and the Cheshire East Council PFRA have been consulted. All Water Companies have a statutory obligation to maintain a register of properties/areas which are at risk of flooding from the public sewerage system, and this is shown on the DG5 Flood Register.



3. Location & Description

3.1 Site Location

The site is located at Ashbrook Point, Heald Green (see Drawing T/2463/FRA/1).

3.2 Existing Development

The site is currently disused land.

3.3 Proposed Development

The proposed development is for warehousing (see Appendix B).

3.4 Ground Levels

The site is relatively flat with ground levels of 66.00 metres Above Ordnance Datum (mAOD).

3.5 Catchment Hydrology

A small drainage ditch is located on the southern boundary of the site and another small drainage ditch is located on the northern boundary of the site. There are no other watercourses located on, or within the vicinity of the site.

3.6 Ground Conditions

The British Geological Survey (BGS) Map indicates that the site is underlain by Till, Devensian - diamicton. Superficial deposits formed up to 2 million years ago in the Quaternary Period. The bedrock deposits underlying the site consist of the Helsby Sandstone Formation - sandstone, pebbly (gravelly). Sedimentary bedrock formed approximately 242 to 247 million years ago in the Triassic Period.

Information from the National Soil Resources Institute³ details the site area as being situated on slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage.

³ National Soil Resources Institute (NSRI) 2013. The Soils Guide. Available: www.landis.org.uk. Cranfield University, UK. Last accessed 05/08/20201.



4. Flood Risk

4.1 Sources of Flooding

All sources of flooding have been considered, these are; fluvial (river) flooding, tidal (coastal) flooding, groundwater flooding, surface water (pluvial) flooding, sewer flooding and flooding from artificial drainage systems/infrastructure failure.

4.2 Historic Flooding

There are no records of anecdotal information of flooding at the site including within the British Hydrological Society "Chronology of British Hydrological Events⁴". No other historical records of flooding for the site have been recorded. Therefore, it has been assumed that the site has not flooded within the recent past.

4.3 Existing and Planned Flood Defence Measures

It is understood that there are no Environment Agency maintained defences in this area. Further risk management measures will be used to protect the site from flooding these are discussed in Section 7.0.

4.4 Environment Agency Flood Zones

A review of the Environment Agency's flood map indicates that the site is located within Flood Zone 1 and therefore has a 'low probability' of fluvial flooding as shown in see Drawing T/2463/FRA/2. Flood Zone 1 has less than 1 in 1000 annual probability of river/tidal in any year (<0.1%).

The Flood Zones are the current best information on the extent of the extremes of flooding from rivers or the sea that would occur without the presence of flood defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development. The Environment Agency Flood Zones and acceptable development types are explained in Table 4.1. Table 4.1 shows that all development types are generally acceptable in Flood Zone 1.

In the Planning Practice Guidance to the NPPF (Table 1) appropriate uses have been identified for the Flood Zones. Applying the Flood Risk Vulnerability Classification in Table 2 and 3 of the Planning Practice Guidance to the NPPF, the development is classified as 'less vulnerable'. Table 4.2 of this report and Table 3 of the Planning Practice Guidance to the NPPF states that 'less vulnerable' uses are appropriate within Flood Zone 1.



Table 4.1 - Environment Agency Flood Zones and Appropriate Land Use

Flood Zone	Probability	Explanation	Appropriate Land Use
Zone 1	Low	Less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%)	All development types generally acceptable
Zone 2	Medium	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	Most development type are generally acceptable
Zone 3a	High	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	Some development types not acceptable
Zone 3b	'Functional Floodplain'	Land where water has to be flow or be stored in times of flood. SFRAs should identify this zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1% flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes)	Some development types not acceptable

Table 4.2 - Flood Risk Vulnerability and Flood Zone 'Compatibility' as identified in Table 3 of the Planning Practice Guidance to the NPPF

Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception test required	✓	✓
Zone 3a	Exception test required	✓	✗	Exception test required	✓
Zone 3b 'Functional Floodplain'	Exception test required	✓	✗	✗	✗

Key: ✓: Development is appropriate, ✗: Development should not be permitted.

4.5 Climate Change

Projections of future climate change, in the UK, indicate more frequent, short-duration, high intensity rainfall and more frequent periods of long duration rainfall. Guidance included within the NPPF



recommends that the effects of climate change are incorporated into FRA. Recommended precautionary sensitivity ranges for peak rainfall intensities and peak river flows are outlined in the associated Planning Practice Guidance to the NPPF⁴.

Table 4.3 shows peak river flow climate change allowances by river basin district. The flood risk assessments: climate change allowances guidance recommends that for 'more vulnerable' uses in Flood Zone 1 that the central allowances are used. Therefore, the design flood level for the site is the 1 in 100 year (+41%) event.

Table 4.3 - Peak River Flow Allowances by River Basin District (use 1961 to 1990 baseline)

River Basin District	Allowance Category	2020s	2050s	2080s
North West: Upper Mersey	Upper end	+27%	+51%	+85%
	High central	+17%	+31%	+53%
	Central	+13%	+22%	+41%

4.6 Fluvial (river) Flooding

The site is not located within the vicinity of fluvial flooding sources and the risk of fluvial flooding is considered to be not significant.

4.7 Tidal (coastal) Flooding

The site is not located within the vicinity of tidal flooding sources and the risk of tidal flooding is considered to be not significant.

4.8 Groundwater Flooding

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded. Groundwater flooding tends to occur sporadically in both location and time. When groundwater flooding does occur, it tends to mostly affect low-lying areas, below surface infrastructure and buildings (for example, tunnels, basements and car parks) underlain by permeable rocks (aquifers).

The susceptibility of the site to groundwater flooding, based on the underlying geological conditions, is moderate. There are no records of groundwater flooding at or near to the site. It can therefore be concluded that the risk of groundwater flooding is not significant.

4.9 Surface Water (pluvial) Flooding

The soil condition at the site and within the vicinity of the site and the topography of the site suggest that the site is relatively well drained and surface water flooding would not be expected to accumulate

⁴ <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#high-allowances>.



to any significant depths. Surface water flooding tends to occur sporadically in both location and time such surface water would tend to be confined to the streets around the development.

Drawing T/2463/FRA/3 confirms that the majority of the site has a very low risk of surface water flooding with a chance of flooding of less than 1 in 1000 years (0.1%). However, a small proportion of the site has a low risk of surface water flooding with a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%) years. This may result in water depths of less than 300mm and is located on the very northern boundary of the site.

It can therefore be concluded that the risk of surface water flooding is of low significance. The risk from the surface water sources will be managed and mitigated by using a number of flood mitigation measures to manage and reduce the overall flood risk at the site (see Section 7.0).

4.10 Sewer Flooding

Sewer flooding occurs when urban drainage networks become overwhelmed and maximum capacity is reached. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. Sewer flooding tends to occur sporadically in both location and time such flood flows would tend to be confined to the streets around the development.

There are existing public sewers within roads adjacent to the site these will inevitably have a limited capacity so in extreme conditions there would be surcharges, which may in turn cause flooding. Flood flows could also be generated by burst water mains, but these would tend to be of a restricted and much lower volume than weather generated events and so can be discounted for the purposes of this assessment. Given the design parameters normally used for drainage design in recent times and allowing for some deterioration in the performance of the installed systems, which are likely to have been in place for many years, an appropriate flood risk probability from this source could be assumed to have a return period in the order of 1 in 10 to 1 in 30 years.

The provision of adequate level difference between the ground floors and adjacent ground level would reduce the annual probability of damage to property from this source to 1 in 100 years or less. Therefore, sewer flooding poses a low flood risk to the site. It can therefore be concluded that the risk of sewer flooding is of low significance. The risk from the sewer sources will need be managed and mitigated by using a number of flood mitigation measures to manage and reduce the overall flood risk at the site (see Section 7.0).

4.11 Flooding from Artificial Drainage Systems/Infrastructure Failure

There are no other nearby artificial water bodies, water channels and artificial drainage systems that could be considered a flood risk to the site. The Environment Agency Reservoir flood map shows that the site is not at risk of reservoir flooding (see Drawing T/2463/FRA/4). The risk of flooding from reservoir failure is considered to be not significant.



4.12 Effects of the Development on Flood Risk

The site is located within Flood Zone 1, there will be no loss of floodplain storage capacity and the proposed development will have no impact on the movement of water.

4.13 Summary of Site-Specific Flood Risk Assessment

A summary of the sources of flooding and a review of the risk posed by each source at the site is shown in Table 4.3.

Table 4.3 - Risk Posed by Flooding Sources

Sources of Flooding	Potential Flood Risk	Potential Source	Probability/Significance
Fluvial (river) Flooding	No	None Reported	Not significant
Tidal (coastal) Flooding	No	None Reported	Not significant
Groundwater Flooding	No	None Reported	Not significant
Surface Water (pluvial) Flooding	Yes	Low Spots	Low
Sewer Flooding	Yes	Local Sewers	Low
Flooding from Artificial Drainage Systems/Infrastructure Failure	No	None Reported	Not significant

The site is not at risk of flooding from a major source (e.g. fluvial and/or tidal). The site has a 'low probability' of fluvial flooding as the site is located within Flood Zone 1 with less than a 1 in 1000 annual probability of river/tidal flooding in any year (<0.1%). A number of secondary flooding sources have been identified which may pose a low risk to the site. These are:

- Surface Water (pluvial) Flooding
- Sewer Flooding

The risk of flooding from all sources is considered to be low or not significant. The flooding sources will only inundate the site to a relatively low water depth and water velocity, will only last a short period of time, in very extreme cases and will not have an impact on the whole of the proposed development site.

The proposed development is classified as 'less vulnerable', 'less vulnerable' uses are appropriate within Flood Zone 1 after the completion of a satisfactory FRA. The flood risk at the site, will be further managed and mitigated by using a number of risk management techniques, and mitigation strategies to manage and reduce the overall flood risk at the site.

In conclusion, the flood risk to the site can be considered to be limited; the site is situated in Flood Zone 1, with a low annual probability of flooding and from all sources. The site is unlikely to flood except in very extreme conditions.



5. Sequential Approach

5.1 Sequential Test

The risk-based Sequential Test in accordance with the NPPF aims to steer new development to areas at the lowest probability of flooding (i.e. Flood Zone 1). The proposed development site complies with the sequential approach which should be applied at all stages of planning. Therefore, the Sequential Test will not need to be undertaken as part of this planning application.

5.2 Exception Test

Applications located within Flood Zone 1 are not subject to the Exception Test as confirmed within Table 4.2 of this report and Table 3 of the Planning Practice Guidance to the NPPF.



6. Surface Water Management

6.1 Discharge of Surface Water

There are three possible options to discharge the surface water runoff in accordance with requirement H3 of the Building Regulations, this hierarchy is also promoted within the NPPF. Rainwater shall discharge to one of the following, listed in order of priority:

- an adequate soakaway or some other adequate infiltration system; or, where that is not reasonably practicable,
- a watercourse; or where that is not reasonably practicable,
- a sewer.

It is necessary to identify the most appropriate method of controlling and discharging surface water. The design should seek to improve the local runoff profile by using systems that can either attenuate runoff and reduce peak flow rates or positively impact on the existing surface water runoff.

The surface water runoff from the site will be discharged via infiltration and to the public surface water sewers located to the north of the site. There are no watercourses on, or within, the vicinity of the site therefore, it will not be possible to discharge surface water runoff into a watercourse.

6.2 Proposed Surface Water Drainage Strategy

A separate Surface Water Drainage Strategy for the site has been developed. The objective of the Surface Water Drainage Strategy is to ensure that a sustainable drainage solution can be achieved that manages flood risk posed by the surface water runoff from the site.

The surface water runoff from the site will be attenuated for all events up to and including the 1 in 100 year (plus climate change) rainfall event before discharging off the site. The size of this attenuation storage has been calculated such that the proposed development so that no flooding of the system occurs during the 100 year rainfall event including an increase in rainfall intensity that is predicted to occur as a result of climate change. The system has the capacity to contain the 1 in 100 year (plus climate change) event with no flooding of the system.

The remainder of the site that is not formally drained, i.e. landscaped areas, will be permeable (grass). The majority of rainwater falling on these areas will soak into the ground. Surface water runoff would be directed to the drainage system through drainage gullies located around the perimeter of the buildings and through contouring of the hardstanding areas.

These methods will reduce peak flows, the volume of runoff, and slow down flows and will provide a suitable SuDS solution for this site. These preliminary considerations are based on the outline development scheme provided and hence the design purposes. The adoption of a surface water management strategy for the site represents an enhancement from the current conditions as the current surface water runoff from the site is uncontrolled, untreated, unmanaged and unmitigated.

In adopting these principles, it has been demonstrated that a scheme can be developed that does not increase the risk of flooding to adjacent properties and development further downstream.



6.3 Designing for Local Drainage System Failure/Design Exceedance

When considering residual risk, it is necessary to make predictions as to the impacts of a storm event that exceeds the design event, or the impact of a failure of the local drainage system. The Surface Water Drainage Strategy applies a safe and sustainable approach to discharging rainfall runoff from the site and this reduces the risk of flooding however, it is not possible to completely remove the risk. This section of the FRA is therefore associated with the way the residual risk is managed.

The system has the capacity to contain the 1 in 100 year (plus climate change) event with no flooding of the system. As part of the Surface Water Drainage Strategy it must be demonstrated that the flooding of property would not occur in the event of local drainage system failure and/or design exceedance. It is not economically viable or sustainable to build a drainage system that can accommodate the most extreme events. Consequently, the capacity of the drainage system may be exceeded on rare occasions, with excess water flowing above ground⁵.

There will not be an extensive sewerage network on the proposed development site. It is very unlikely that a catastrophic failure would occur. An exceedance or blockage event of the sewers would not affect the proposed buildings because the finished floor level will be raised above surrounding ground levels, ensuring any exceedance flooding would not affect the buildings.

Exceedance flows would be contained within the highways within the site and adjacent to the site and would flow to the lower ground levels where the landscaped areas are located. In particular, the landscaped areas will include preferential flow paths that convey water away from buildings. Surface water runoff would be directed to the drainage system through gullies, drainage channels and through contouring of the hardstanding areas. It is not considered that there is an increased risk to the site or off-sites locations.

Consequently, if this event were to be exceeded there is additional capacity with the system to accommodate this. If this freeboard was to be exceeded the consequences would be similar, if not less than for the local drainage system failure. Drainage gullies, manholes and pipework will provide additional water storage and provide betterment. Consequently, the impact of an exceedance event is not considered to represent any significant flood hazard.

The above manages and mitigates the flood risk from surface water runoff to the proposed properties from surface water runoff generated by the site development and to offsite locations as well the risk from surface water runoff generated offsite.

⁵ CIRIA (2006) Designing for exceedance in urban drainage – good practice.



7. Risk Management

7.1 Introduction

In this flood zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout, form of the development and the use of flood mitigation measures including SuDS techniques. The flooding sources will have to be mitigated on the site by using a number of techniques, and mitigation strategies to manage and reduce the overall flood risk at the site. These will be used to ensure the development will be safe and there is:

- Minimal risk to life;
- Minimal disruption to people living and working in the area;
- Minimal potential damage to property;
- Minimal impact of the proposed development on flood risk generally; and;
- Minimal disruption to natural heritage.

7.2 Minimum Floor Level

There is no minimum finished floor level proposed as a result of flooding. However, it is recommended that generally all buildings are located above the highways by 150mm to enable the full capacity of any secondary flood conveyance to be utilised.

7.3 Flood Resilience and Resistance

The development of the layout should always consider that the site is potentially at risk from an extreme event and as such the implementation of flood resilience and resistance methods should be assessed. Relatively simple measures such as raising utility entry points, using first floor or ceiling down electrical circuits and sloping landscaping away from properties can be easily and economically incorporated into the development of the site.

7.4 Access and Egress

The site and surrounding area is located within Flood Zone 1 therefore a permanently safe and dry access can be maintained.

7.5 Flooding Consequences

The mitigation measures detailed above show that the flood risk can be effectively managed and therefore the consequences of flooding are acceptable. In conclusion, the flood risk to the site can be considered to be limited; the site is situated in Flood Zone 1, with a low annual probability of flooding and from all sources.



8. Summary and Conclusion

8.1 Introduction

This report presents an FRA in accordance with the NPPF for the proposed development at Ashbrook Point, Heald Green. This FRA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will need to be managed so that the development remains safe throughout the lifetime, taking climate change into account.

8.2 Flood Risk

The site is not at risk of flooding from a major source (e.g. fluvial and/or tidal). The site has a 'low probability' of fluvial flooding as the site is located within Flood Zone 1 with less than a 1 in 1000 annual probability of river/tidal flooding in any year (<0.1%). A number of secondary flooding sources have been identified which may pose a low risk to the site. These are:

- Surface Water (pluvial) Flooding
- Sewer Flooding

The risk of flooding from all sources is considered to be low or not significant. The flooding sources will only inundate the site to a relatively low water depth and water velocity, will only last a short period of time, in very extreme cases and will not have an impact on the whole of the proposed development site.

The proposed development is classified as 'less vulnerable', 'less vulnerable' uses are appropriate within Flood Zone 1 after the completion of a satisfactory FRA. The flood risk at the site, will be further managed and mitigated by using a number of risk management techniques, and mitigation strategies to manage and reduce the overall flood risk at the site.

In conclusion, the flood risk to the site can be considered to be limited; the site is situated in Flood Zone 1, with a low annual probability of flooding and from all sources. The site is unlikely to flood except in very extreme conditions.

8.3 Sequential and Exception Tests

The development proposals should be considered by the LPA to satisfy the Sequential and Exception Tests as set out in the NPPF.

8.4 Surface Water Drainage Strategy

A separate Surface Water Drainage Strategy has been developed and ensures that a sustainable drainage solution can be achieved that manages flood risk posed by the surface water runoff from the site. The surface water runoff from the site will be attenuated for all events up to and including the 1 in 100 year (plus climate change) rainfall event before discharging off the site. The size of this attenuation storage has been calculated such that the proposed development so that no flooding of the system occurs during the 100 year rainfall event including an increase in rainfall intensity that is



predicted to occur as a result of climate change. The system has the capacity to contain the 1 in 100 year (plus climate change) event with no flooding of the system.

The remainder of the site that is not formally drained, i.e. landscaped areas, will be permeable (grass). The majority of rainwater falling on these areas will soak into the ground. Surface water runoff would be directed to the drainage system through drainage gullies located around the perimeter of the buildings and through contouring of the hardstanding areas.

These methods will reduce peak flows, the volume of runoff, and slow down flows and will provide a suitable SuDS solution for this site. These preliminary considerations are based on the outline development scheme provided and hence the design purposes. The adoption of a surface water management strategy for the site represents an enhancement from the current conditions as the current surface water runoff from the site is uncontrolled, untreated, unmanaged and unmitigated.

In adopting these principles, it has been demonstrated that a scheme can be developed that does not increase the risk of flooding to adjacent properties and development further downstream.

8.5 Risk Management

The flooding sources will be managed on the site by using a number of mitigation strategies to manage and reduce the overall flood risk at the site and will ensure the development will be safe. Measures used:

Minimum Floor Level - There is no minimum finished floor level proposed as a result of flooding. However, it is recommended that generally all buildings are located above the highways by 150mm to enable the full capacity of any secondary flood conveyance to be utilised.

Flood Resilience and Resistance - The development of the layout should always consider that the site is potentially at risk from an extreme event and as such the implementation of flood resilience and resistance methods should be assessed.

Access and Egress - The site and surrounding area is located within Flood Zone 1 therefore a permanently safe and dry access can be maintained.

8.6 Conclusion

In conclusion, the proposed development, would be expected to remain dry in all but the most extreme conditions. The proposed development will provide betterment compared to the existing situation. Providing the recommendations made in this FRA are instigated, flood risk from all sources would be minimised, the consequences of flooding are acceptable and the development would be in accordance with the requirements of the NPPF.

This FRA demonstrates that the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of the NPPF. The development should not therefore be precluded on the grounds of flood risk.



Appendix A – Drawings



KEY

 Site Boundary



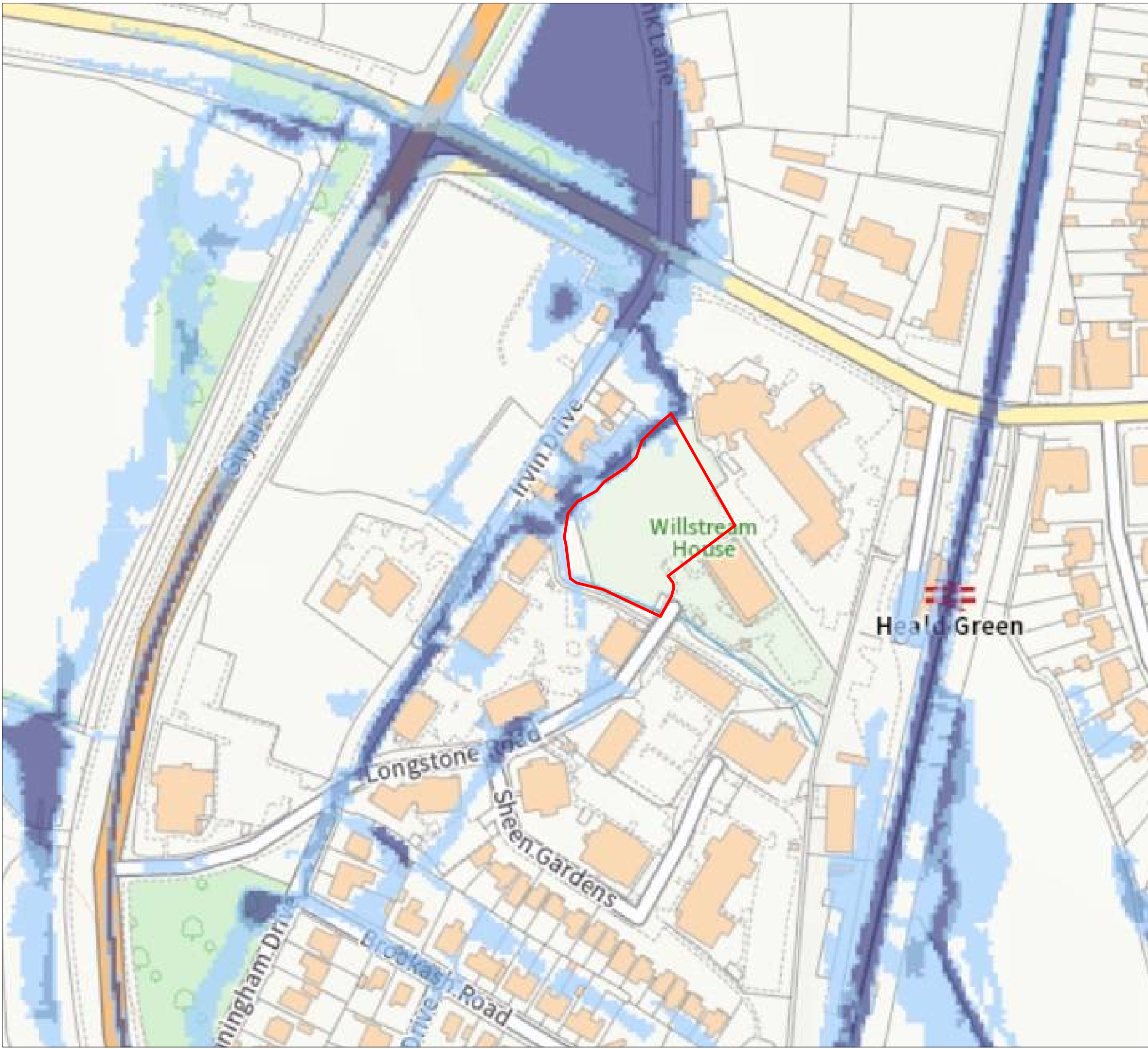
PROJECT	
NPL Ltd	
CLIENT	
Ashbrook Point	
TITLE	
Site Location	
PROJECT REF	
T/2463/FRA	
DRAWING NO	
T/2463/FRA/1	
SCALE	
NTS@A3	
DATE	
August 2021	



- KEY**
-  Site Boundary
 -  Flood Zone 3
 -  Flood Zone 2
 -  Flood Zone 1



PROJECT	
NPL Ltd	
CLIENT	
Ashbrook Point	
TITLE	
Environment Agency Flood Zones	
PROJECT REF	
T/2463/FRA	
DRAWING NO	
T/2463/FRA/2	
SCALE	
NTS@A3	
DATE	
August 2021	



KEY

Site Boundary

Very Low

Low

Medium

High



PROJECT	
NPL Ltd	
CLIENT	
Ashbrook Point	
TITLE	
Environment Agency Surface Water Flood Map	
PROJECT REF	
T/2463/FRA	
DRAWING NO	
T/2463/FRA/3	
SCALE	
NTS@A3	
DATE	
August 2021	



KEY

-  Site Boundary
-  Reservoir Flood Outline



PROJECT	
NPL Ltd	
CLIENT	
Ashbrook Point	
TITLE	
Environment Agency Reservoir Flood Map	
PROJECT REF	
T/2463/FRA	
DRAWING NO	
T/2463/FRA/4	
SCALE	
NTS@A3	
DATE	
August 2021	



Appendix B – Proposed Site Layout

REV	DESCRIPTION	DATE	DRAWN
A	CLIENT COMMENTS	22-06-21	BS
B	UPDATED FLOOR PLANS	29-06-21	BS
C	UPDATED FLOOR PLANS	08-07-21	BS
D	ENLARGED UNIT 4	20-07-21	BS
E	TREE SURVEY ADDED	27-07-21	BS
F	ROOFLIGHTS AND BIN STORE	28-07-21	BS



Accommodation Schedule
Site area - 0.80 acres (0.325 Ha)
All areas GIA

Unit 1
Ground 237 sq.m
Mezzanine 85 sq.m
TOTAL 322 sq.m

Unit 2
Ground 237 sq.m
Mezzanine 85 sq.m
TOTAL 322 sq.m

Unit 3
Ground 237 sq.m
Mezzanine 85 sq.m
TOTAL 322 sq.m

Unit 4
Ground 355 sq.m
Mezzanine 117 sq.m
TOTAL 472 sq.m

TOTAL 1,438 sq.m
Car parking 40 spaces (1/36 sq.m)
Cycle parking in each unit



CHESHIRE	SURREY	SHEFFIELD	MANCHESTER	LIVERPOOL
Market Court 20-24 Church St Altrincham WA14 4DW 0161 929 7622	100 High St Esher Surrey KT10 9QJ 01372 203 335	Electric Works 3 Concourse Way Sheffield S1 2BJ 0114 250 7983	All Work and Social XYZ Building 2 Hardman Boulevard M3 3AQ 0161 929 7622	AvenueHQ 17 Mann Island Liverpool L3 1BP 0151 662 0122

ASHBROOK, HEALD GREEN
QUORUM

PROPOSED SITE PLAN
DWG: 21044 (PL) 020 F
DATE: 18.06.21
SCALE: 1:500 @ A3
DRAWN: BS