

FloodSmart Plus



Flood Risk Assessment

Site Address

UYS Warehouse
Oxford Road
Horspath
Oxfordshire
OX4 2BW

Date

2024-03-06

Report Status

FINAL

Grid Reference

456818, 204301

Site Area

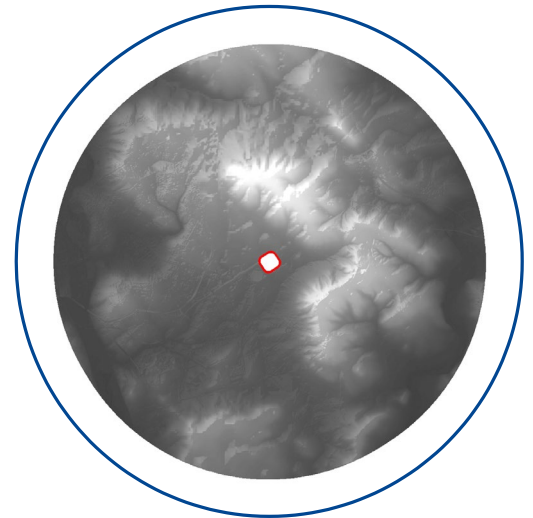
2.62 ha

Report Prepared for

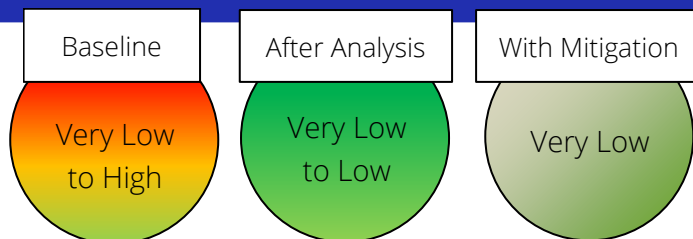
Colliers Building Consultancy Limited
The Harlequin Building
Fleet Street
London
SE1 0HR

Report Reference

81603R1



Summary of risk and mitigation



This flood risk assessment has been produced to support planning application (ref: 24/00367/DEM). The Site is located within Flood Zone 1, with a Low probability of flooding from rivers and the sea. Pluvial (surface water) risks after mitigation are Very Low and risk of groundwater flooding is Negligible. The risk of flooding from artificial sources (sewers, canal, reservoirs) is Low.

The baseline and after analysis flood risk ratings are based on present-day scenario modelled flood data and an assessment of ground levels.

The risks could be managed through maintenance of on-site drainage systems as existing buildings are set to be demolished and the only significant changes to the Site are the raising of ground levels to the existing slab.

*No formal mitigation features such as flood barriers have proposed, assumed cost of maintenance and improvement of existing drainage network.

Report Author

Nathan Montgomery
Consultant

Report Checker and Reviewer

Mike Piotrowski
Principal Hydrologist

GeoSmart Information Ltd
Suite 9-11, 1st Floor, Old Bank
Buildings,
Bellstone, Shrewsbury, SY1 1HU
+44(0)1743 298 100
info@geosmartinfo.co.uk
www.geosmartinfo.co.uk

1. Executive summary



A review has been undertaken of national environmental data sets to assess the flood risk to the Site from all sources of flooding in accordance with the National Planning Policy Framework (NPPF) (2023) and National Planning Practice Guidance (NPPG) (Published in 2014 and updated in August 2022). A site-specific flood risk assessment, to assess the flood risk to and from the development Site, is provided within this concise interpretative report written by an experienced GeoSmart consultant. Baseline flood risk and residual risks that remain after the flood risk management and mitigation measures are implemented are summarised in the table below.

Site analysis

Source of Flood Risk	Baseline*	Final **
River (fluvial) flooding	Very Low	N/A
Sea (coastal/tidal) flooding	Very Low	N/A
Surface water (pluvial) flooding	Very Low to High	Very Low
Groundwater flooding	Negligible	N/A
Other flood risk factors present	No	N/A
Is any other further work recommended?	Yes	Yes (see below)

*BASELINE risks have been calculated for the whole Site, using national risk maps, including the benefit of EA flood defences. **FINAL RISK RATING Includes a detailed analyses of flooding risks over the lifetime of the proposed development, including allowances for climate change AND assumes recommended mitigation measures are implemented. N/A indicates where mitigation is not required.

Summary of existing and proposed development

The Site is currently used within a commercial capacity as a commercial warehouse with associated access and parking. Although no firm plans have been agreed, development proposals comprise the demolition of the existing commercial warehouse building and the levelling of ground to the retained slab on Site, with the addition of palisade fencing to divide the Site into 3 areas, shown as Areas A, B and C in the plans. This FRA has been produced to support planning application 24/00367/DEM”.

Summary of flood risks

River (fluvial) and Sea (Estuarine/Coastal) flooding

- The Site is located 440 m to the north of Littlemore Brook. According to the Environment Agency's (EA) Flood Map for Planning Purposes, the Site is located within a fluvial and tidal Flood Zone 1 (Low Probability);
- According to the EA's Risk of Flooding from Rivers and Sea (RoFRS) map, which considers the type, condition and crest height of flood defences, the Site has a Very Low risk of flooding from Rivers and the Sea.
- Modelled flood data obtained from the Littlemore Brook Modelling Report (Halcrow, 2011) has been analysed in line with the most up to date guidance on climate change, to confirm a maximum flood level at the Site in both the present-day and future climate change scenarios, as follows.

Present day scenario

- In a 1 in 100-year fluvial flooding event flood levels would be approximately 70.61mAOD, significantly below existing ground levels of 75.11 and 78.96mAOD and there will be no flooding at the Site.

Climate change scenario

- In a 1 in 100 year plus 26% climate change allowance event the flood level at the Site would be 70.69 mAOD and there would be no flooding on the Site as ground levels are significantly above the flood level.

Surface water (pluvial) flooding

- According to the EA's Risk of Flooding from Surface Water (pluvial) flood mapping, the Site has a Very Low to High risk of pluvial flooding.
 - The areas shown at risk of pluvial flooding occur in isolated areas of low topography associated with the loading dock ramps, which are set approximately 1.2-1.3m lower than adjacent ground levels.
- Baseline mapping indicates a Very Low to High risk, however a review of the flood model data and local topography and proposed plans indicates the risk is likely to be **Very Low to Low** as the areas affected by pluvial flooding will be areas of hardstanding / access roads.

Groundwater flooding

- Groundwater Flood Risk screening data indicates there is a Negligible potential risk of groundwater flooding at the surface in the vicinity of the Site during a 1 in 100-year event.
- Baseline mapping indicates a Negligible risk, and a review of the borehole data indicates the risk is likely to remain as Negligible.

Artificial sources of flooding

The risk of flooding from artificial (man-made) sources such as reservoirs, sewers and canals has been assessed:

- The EA's Risk of Flooding from Reservoir map confirms the Site is not at risk of reservoir flooding. The potential for a breach of a reservoir to occur and flooding affecting the Site is low.
- Ordnance Survey (OS) data confirms there are no canals near to the Site.
- Thames Water (Appendix C, 2024) confirms no recorded instances of sewer flooding at or within the vicinity of the Site (Appendix C)

The risk of flooding from artificial sources is considered to be Low.

The risk to the development has been assessed over its expected 75-year lifetime, including appropriate allowances for the impacts of climate change which could increase the flood risk to the Site. Risks identified include increased potential for surface water / river flooding and appropriate mitigation measures are proposed.

Recommendations

Recommendations for flood mitigation are provided below, based upon the proposed development and the flood risk identified at the Site.

- The ongoing management and maintenance of existing and any proposed drainage networks, under the riparian ownership of the developer, should be undertaken in perpetuity with the development.
- A Sustainable Drainage Strategy (SuDS) should be developed for the Site, for effective management of surface water runoff over the lifetime of the proposed development.

GeoSmart recommend the mitigation measures discussed within this report are considered as part of the proposed development where possible and evidence of this is provided to the Local Planning Authority as part of the planning application.

2. Introduction



Background and purpose

A site-specific flood risk assessment has been undertaken, to assess the flood risk to and from the development Site. This assessment has been undertaken by firstly compiling information concerning the Site and the surrounding area. The information gathered was then used to construct a 'conceptual site model', including an understanding of the appropriateness of the development as defined in the NPPF (2023) and the source(s) of any flood risk present, guided by the NPPG (Published in 2014 and updated in August 2022). Finally, a preliminary assessment of the steps that can be taken to manage flood risk to the development was undertaken.

This report has been prepared with reference to the NPPF (2023) and NPPG (2022).

"The National Planning Policy Framework set out the Government's planning policies for England and how these are expected to be applied" (NPPF, 2023).

The NPPF (2023) and NPPG (2022) promote a sequential, risk based approach to the location of development. This also applies to locating a development within a Site which has a variable risk of flooding.

"The approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding" (Paragraph: 023. NPPG, 2022).

The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of flood hazards which may be present at the Site.

Report scope

In accordance with the requirements set out within NPPG 2022 (Paragraph: 021 Reference ID: 7-021-20220825), a thorough review of publicly and commercially available flood risk data and EA supplied data indicating potential sources of flood risk to the Site from rivers and coastal sources, surface run-off (pluvial), groundwater and reservoirs, including historical flood information and modelled flood extent. Appropriate measures are recommended to manage and mitigate the flood risk to the property.

Information obtained from the EA and a review of the Oxford City Council Strategic Flood Risk Assessment (SFRA) (WHS, 2017) is used to ascertain local flooding issues and, where appropriate, identify information to support a Sequential and/or Exception test required as part of the NPPF (2023).

The existing and future flood risk to and from the Site from all flood sources is assessed in line with current best practice using the best available data. The risk to the development has been assessed over its expected lifetime, including appropriate allowances for the impacts of climate change. Residual risks that remain after the flood risk management and mitigation

measures are implemented, are considered with an explanation of how these risks can be managed to keep the users of the development safe over its lifetime.

An indication of whether the Site will potentially increase flood risk elsewhere is provided, including where the proposed development increases the building footprint at the Site. A drainage strategy to control runoff can be commissioned separately if identified as a requirement within this report.

Report limitations

It is noted that the findings presented in this report are based on a desk study of information supplied by third parties. Whilst we assume that all information is representative of past and present conditions, we can offer no guarantee as to its validity and a proportionate programme of site investigations would be required to fully verify these findings.

The basemap used is the OS Street View 1:10,000 scale, however the Site boundary has been drawn using BlueSky aerial imagery to ensure the correct extent and proportion of the Site is analysed.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

Datasets

The following table shows the sources of information that have been consulted as part of this report:

Table 1. Datasets consulted to obtain confirmation of sources of flooding and risk

Source of flooding	Datasets consulted				
	Commercial Flood Maps	Local Policy & Guidance Documents*	Environment Agency (Appendix B)	Utility provider (Appendix C)	OS Data
Historical	X	X	X		
River (fluvial) / Sea (tidal/coastal)	X	X	X		

Source of flooding	Datasets consulted				
	Commercial Flood Maps	Local Policy & Guidance Documents*	Environment Agency (Appendix B)	Utility provider (Appendix C)	OS Data
Surface water (pluvial)	X	X	X		
Groundwater	X	X			
Sewer		X		X	
Culvert/bridges		X			X
Reservoir		X	X		

*Local guidance and policy, referenced in Section 6, has been consulted to determine local flood conditions and requirements for flood mitigation measures.

Local policy and guidance

For this report, several documents have been consulted for local policy and guidance and relevant information is outlined below:

Oxford City Local Plan (2020)

New development will be directed towards areas of low flood risk (Flood Zone 1). In considering proposals elsewhere, the sequential and exception tests will be applied. Planning applications for development within Flood Zone 2, 3, on sites larger than 1 ha in Flood Zone 1 and, in areas identified as Critical Drainage Areas, must be accompanied by a Site-Specific Flood Risk Assessment (FRA) to align with National Policy. The FRA must be undertaken in accordance with up-to-date flood data, national and local guidance on flooding and consider flooding from all sources. The suitability of developments proposed will be assessed according to the sequential approach and exceptions test as set out in Planning Practice Guidance. Planning permission will only be granted where the FRA demonstrates that: e) the proposed development will not increase flood risk on site or off site; and f) safe access and egress in the event of a flood can be provided; and g) details of the necessary mitigation measures to be implemented have been provided. Minor householder extensions may be permitted in Flood Zone 3b, as they have a lower risk of increasing flooding. Proposals for this type of development will be assessed on a case-by-case basis, taking into account the effect on flood risk on and off site.

Sustainable drainage systems (SuDS) may include water conservation (e.g. rainwater collection, grey water recycling, low water use WC's and appliances) as well as surface water drainage (e.g. soakaways, porous hard surfaces, swales, streams and balancing ponds; minimal use of pipes and culverts). SuDS are designed to mimic the natural drainage arrangements of a site, and are used to manage surface water flows, providing an important tool in minimising flood risk. The design of SuDS should be considered at the earliest possible stages of the planning process so that they can be incorporated into the design, and the best management practices can be used. Wherever possible, multiple benefits from SuDS should be sought, such as the provision of open space, wildlife improvements and water conservation. If SuDS cannot be provided on site, consideration should be given to contributing to off-site measures.

The City Council deals with proposals requiring SuDS on minor developments (up to 9 dwellings, non-residential floor area less than 1000m², or sites under 1 hectare in size). Oxfordshire County Council as Lead Local Flood Authority respond on all applications for all Major Developments (10 or more dwellings, non-residential floor area of 1000m² or more, or sites over 1 hectare in size).

Policy RE3: Flood Risk Management

Planning permission will not be granted for development in Flood zone 3b except where it is for water-compatible uses or essential infrastructure; or where it is on previously developed land and it will represent an improvement for the existing situation in terms of flood risk. All of the following criteria must be met:

- a) it will not lead to a net increase in the built footprint of the existing building and where possible lead to a decrease; and
 - b) it will not lead to a reduction in flood storage (through the use of flood compensation measures) and where possible increase flood storage; and
 - c) it will not lead to an increased risk of flooding elsewhere; and
 - d) it will not put any future occupants of the development at risk.
- 15 Flood management in the city is primarily managed by the Oxford Area Flood Partnership (OAFP) which includes the Environment Agency, Network Rail, Oxford City Council, Oxfordshire County Council, Vale of White Horse District Council and Thames Water PLC.

The functional floodplain is defined as 'Flood Zone 3b', and corresponds to the 5% (1 in 20 year) chance of flooding on the EA flood model. Adopted Document 65 New development will be directed towards areas of low flood risk (Flood Zone 1). In considering proposals elsewhere, the sequential and exception tests will be applied. Planning applications for development within Flood Zone 2, 3, on sites larger than 1 ha in Flood Zone 1 and, in areas identified as Critical Drainage Areas, must be accompanied by a Site Specific Flood Risk Assessment (FRA) to align with National Policy. The FRA must be undertaken in accordance with up to date flood data, national and local guidance on flooding and consider flooding from all sources. The suitability of developments proposed will be assessed according to the sequential approach and exceptions test as set out in Planning Practice Guidance.

Planning permission will only be granted where the FRA demonstrates that: e) the proposed development will not increase flood risk on site or off site; and

f) safe access and egress in the event of a flood can be provided; and

g) details of the necessary mitigation measures to be implemented have been provided. Minor householder extensions may be permitted in Flood Zone 3b, as they have a lower risk of increasing flooding. Proposals for this type of development will be assessed on a case by case basis, taking into account the effect on flood risk on and off site.

Policy RE4: Sustainable and Foul drainage, surface and groundwater flow

All development proposals will be required to manage surface water through Sustainable Drainage Systems (SuDS) or techniques to limit run-off and reduce the existing rate of run-off on previously developed sites. Surface water runoff should be managed as close to its source as possible, in line with the following drainage hierarchy.

Oxford City Strategic Flood Risk Assessment (WHS, 2017):

The sewerage undertaker for Oxford is Thames Water. No new information regarding historical data was available since publication of the previous Level 1 SFRA. Therefore, this SFRA retains the assumption that the surface water flood risk from the surface water sewer network within the city, as reported by Thames Water, is low. Thames Water have confirmed that they are working to reduce the risk of sewer flooding in Oxford as part of a £9 million project to undertake 5 catchment studies to investigate sewer flooding, sewer capacity and loss of service. The Oxford drainage system comprises, almost exclusively, separate foul water and surface water sewers. Despite this, Thames Water have observed storm responses within the foul network suggesting that the network is not completely separate. In addition to this it is widely known that Oxford suffers from fluvial flooding and ground water flooding both of which can have an impact on sewerage system through infiltration and direct ingress. Thames Water are working closely with the EA and the councils to understand and quantify the benefits of schemes that may impact on their network, such as the Marston FAS and Oxford FAS.

A Critical Drainage Area (CDA) is an area that has critical drainage problems, and which has been notified to the Local Planning Authority as such by the Environment Agency in line with the National Planning Policy Framework (NPPF). In these locations there is a need for surface water to be managed to a higher standard than normal to ensure any new development will contribute to a reduction in flooding risks in line with NPPF. These higher standards are determined by the Environment Agency. OCC and the EA have confirmed that there are no designated CDAs within the OCC administrative boundary.

Guidance

Strategic Flood Risk Assessments are carried out by local authorities, in consultation with the Environment Agency, to assess the flood risk to the area from all sources both now and in the future due to climate change. They are used to inform planning decisions to ensure inappropriate development is avoided (NPPF, 2023).



Site information

The Site is located in Horspath in a setting of commercial and agricultural land use at National Grid Reference SP 56818 04301.

Figure 1. Aerial imagery of the Site (Bluesky, 2024)

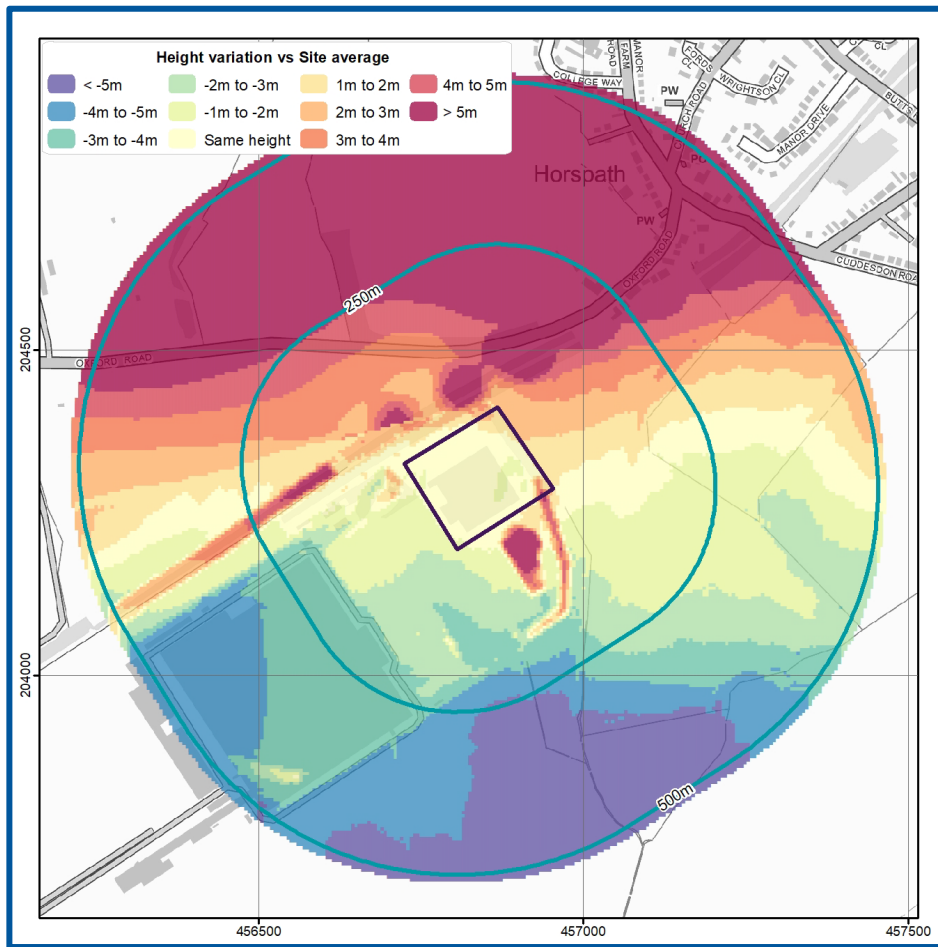


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The Figure below indicates ground levels within 500m of the Site fall in a southerly direction. The general ground levels on the Site are between 75.11 and 78.96m AOD with the Site falling gradually in a southerly direction. This is based on EA elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of ± 0.15 m (Appendix D).

A topographic survey has also been undertaken at the Site (Cryer & Coe Architects, 2024) which identified spot heights of the existing Site including low points associated with lorry dock loading areas.

Figure 2. Site Location and Relative Elevations (GeoSmart, 2024)



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Development

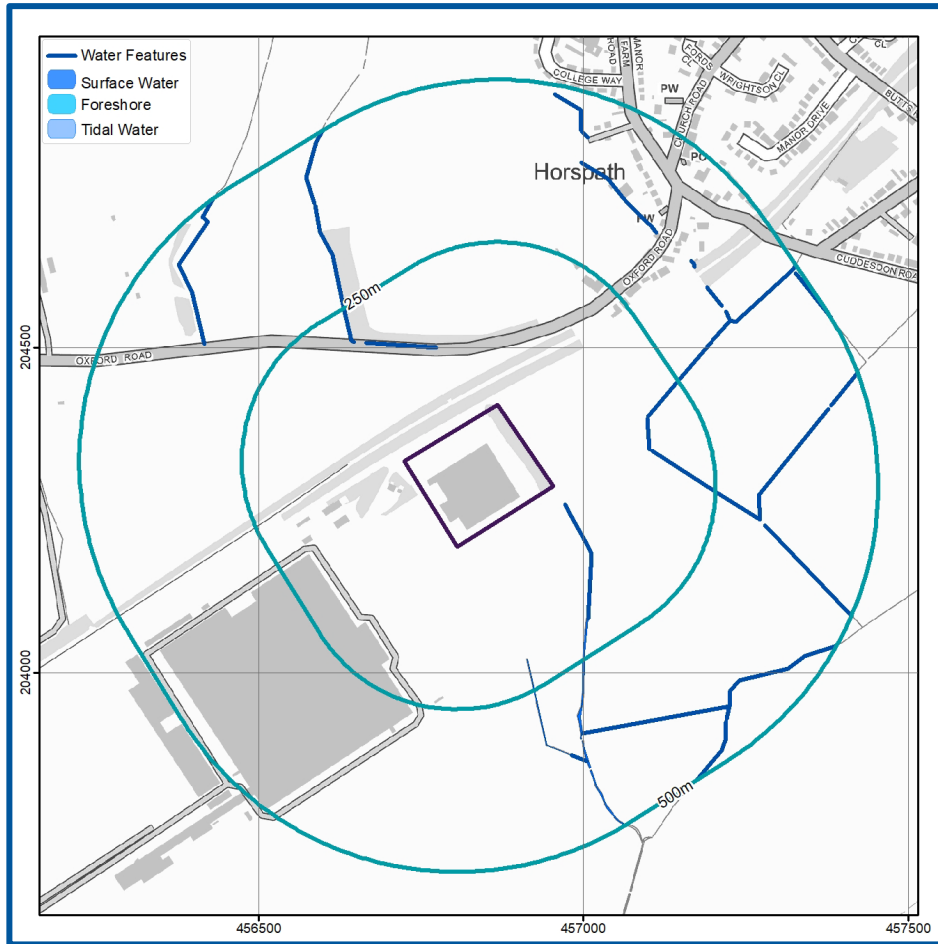
The Site is currently used within a commercial capacity as a commercial warehouse with associated access and parking. Although no firm plans have been agreed, development proposals comprise the demolition of the existing commercial warehouse building and the levelling of ground to the retained slab on Site, with the addition of palisade fencing to divide the Site into 3 areas, shown as Areas A, B and C in the plans. This FRA has been produced to support planning application 24/00367/DEM”.

The effect of the overall development will not result in an increase in number of occupants and/or users of the Site and will not result in the change of use, nature or times of occupation. According to Annex 3 of the NPPG (2022), the vulnerability classification of the existing development is Less Vulnerable and proposed development is Less Vulnerable. The estimated lifespan of the development is 75 years.

Hydrological features

According to Ordnance Survey (OS) mapping included in the following figure, there are numerous surface water features within 500 m of the Site.

Figure 3. Surface water features (EA, 2024)



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There are a number of drainage ditches within the vicinity of the Site with the closest located approximately 30m south of the Site associated with the nearby Northfield / Hollow Brook located approximately 440m southeast of the Site.

Proximity to relevant infrastructure

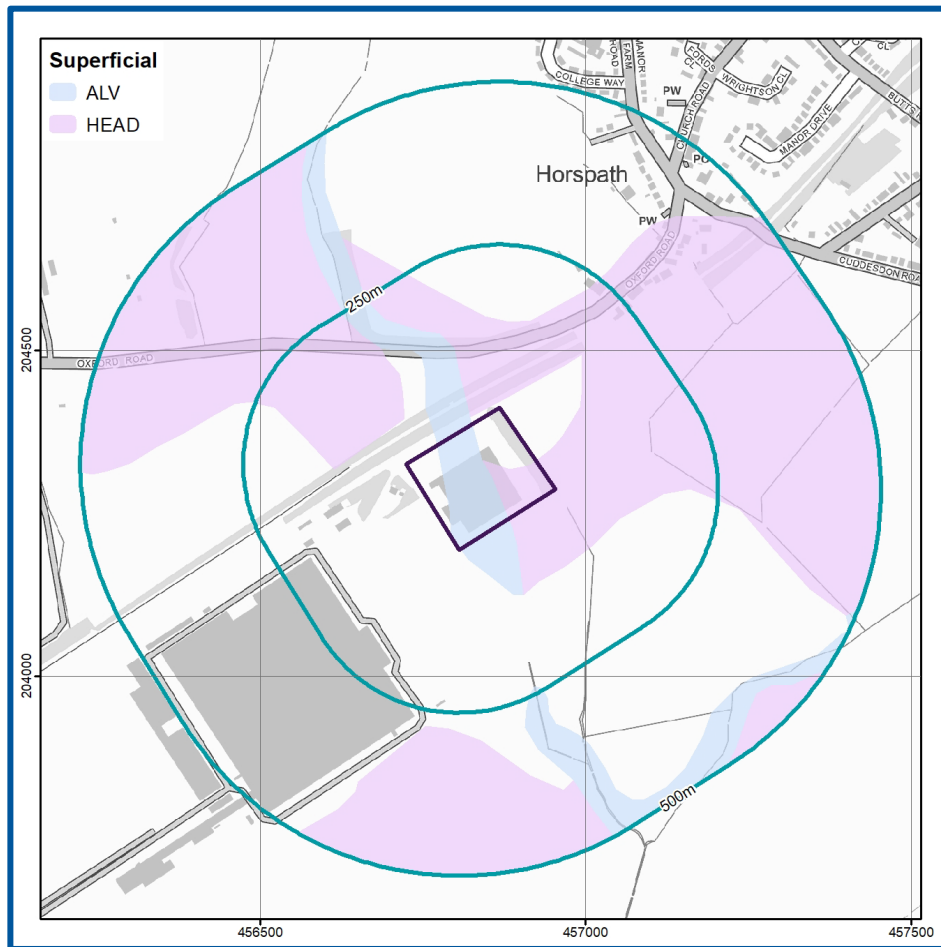
No relevant infrastructure has been identified within 250m of the Site.

Hydrogeological features

British Geological Survey (BGS) mapping indicates the underlying superficial geology (Figure below) consists of Alluvium (ALV) which covers approximately 45% of the Site (BGS, 2024) and is classified as a Secondary (A) Aquifer (EA, 2024). Approximately 25% of the Site is covered

by Head (HEAD) confined to the southeastern boundary of the Site. The remaining 30% is covered by no superficial deposits.

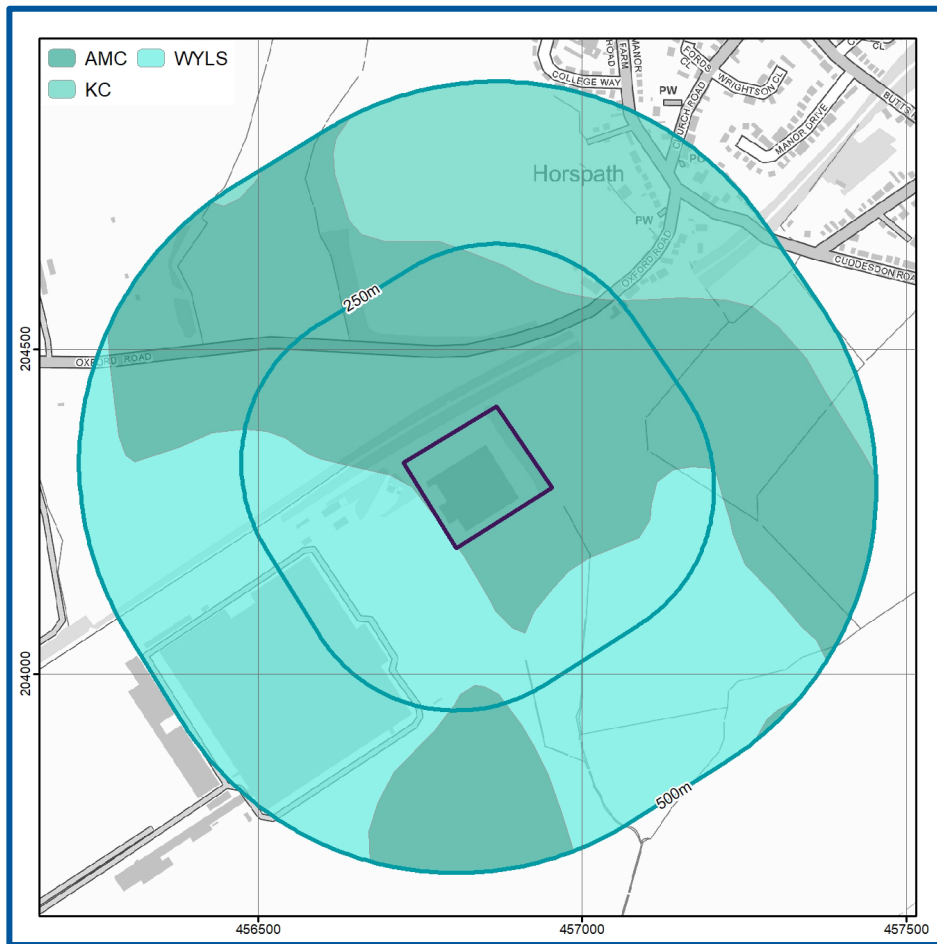
Figure 4. Superficial Geology (BGS, 2024)



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Contains British Geological Survey materials © NERC 2024

BGS mapping indicates the underlying bedrock geology (Figure below) consists of the Ampthill Clay Formation (LC) (BGS, 2024) and is classified as an Unproductive Strata (EA, 2024). The Wheatly Limestone Formation (WYLS) is mapped immediately adjacent of the western boundary of the Site.

Figure 5. Bedrock Geology (BGS, 2024)



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Geological conditions

A review of the BGS borehole database (BGS, 2024) indicates there are a number of relevant boreholes within the vicinity of the Site. A borehole within the Site boundary (ref: SP50SE296) confirmed the underlying geology to consist of made ground / gravel to a depth of 0.25m below ground level (bgl) overlying very stiff fissured clay to a depth of 1.85 mbgl, overlying dense silty clayey sand to a depth of 2.40 mbgl, overlying mudstone/limestone to a depth of 2.70 mbgl, where the borehole is completed.

Groundwater

Groundwater was not encountered at borehole SP50SE296 on the 22nd October 1990 during its 2.70m depth.

4. Flood risk to the development



Historical flood events

According to the EA's Historical Flood Map (Figure below) and Appendix 7 of the SFRA (2017), there has been no flooding events affecting the Site

The purpose of historical flood data is to provide information on where and why flooding may have occurred in the past. The absence of any recorded events does not mean flooding has never occurred on-Site or that flooding will never occur at the Site.

Figure 6. EA historic flood map (EA, 2024)



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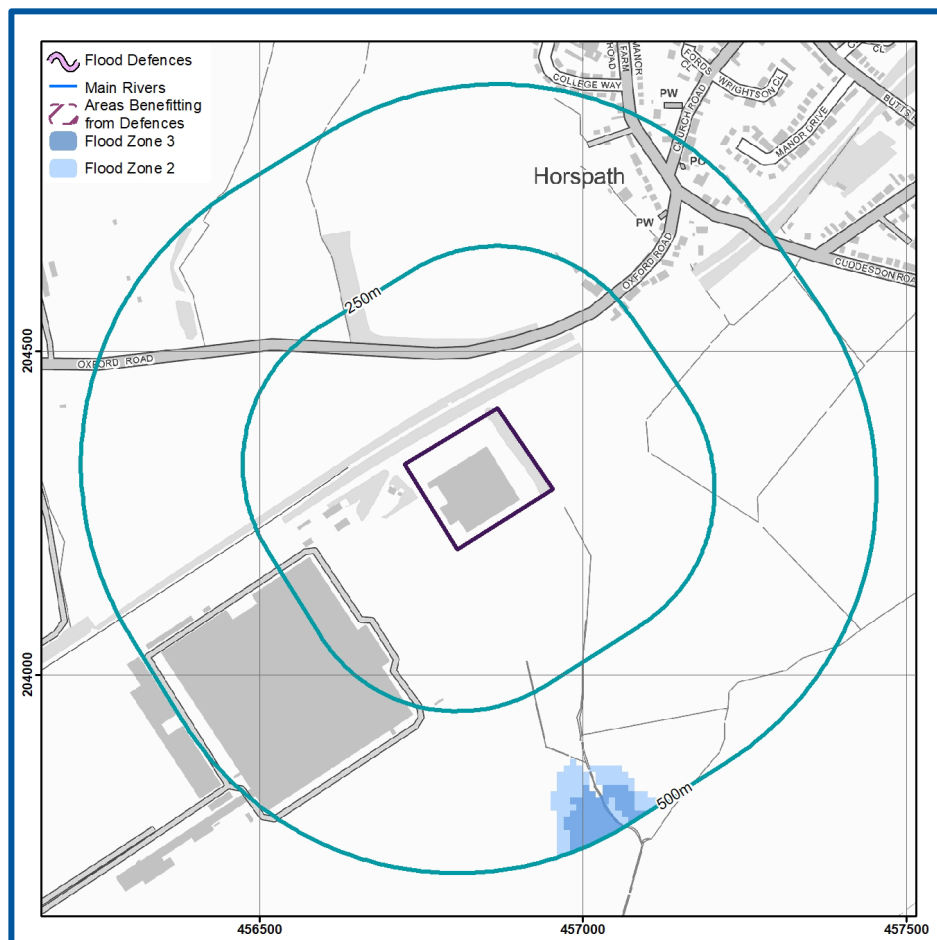
Rivers (fluvial) / Sea (coastal) / Estuarine (tidal) flooding

The predominant risk at the Site is from flooding from rivers, termed as fluvial flooding. The Site is located in an inland location and the risk of flooding from coastal and tidal processes are therefore considered to be Negligible.

River (fluvial) flooding occurs during times of heavy rainfall or snow melt when watercourses' capacity can be exceeded, over topping the banks and flood defences.

According to the EA's Flood Map for Planning Purposes (Figure below), the Site is located within fluvial Flood Zone 1 and is therefore classified as having a Low probability of fluvial flooding from the Northfield Brook.

Figure 7. EA Flood Map for Planning Purposes (EA, 2024)



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As defined in the NPPF (2023):

Ignoring the presence of any defences, land located in a Flood Zone 1 is considered to have a Low probability of flooding, with less than a 1 in 1000 annual probability of fluvial or coastal flooding in any one year.

Development of all uses of land is appropriate in this zone (see glossary for terminology).

Flood defences

Sites that are located close to flood defences are likely to be zones where rapid inundation will occur in the event of the flood defences being overtopped or breached. A Site located close to flood defences (within 250 m) may require a more detailed FRA subject to local topography.

Existing flood defences

The Site does not benefit from flood defences, the only protection afforded to the Site is through the capacity of the watercourse. ¹

- The Site is not located in an area benefiting from flood defences.
- There are no formal flood defences within 250 m of the Site.
- There are no proposed flood defences within 250 m of the Site.

Model data (Fluvial)

As the Site is located within the EA's fluvial floodplain, modelled flood elevation data was obtained from the EA and has been used to assess flood risk and to provide recommendations for mitigation for the proposed development, where applicable. Defended modelled data from the Littlemore River Modelling Study (Halcrow Group, 2010) has been

¹ The EA maps Areas which Benefit from the presence of Defences (ABD) in a 1 in 100 (1%) chance of flooding each year from rivers; or 1 in 200 (0.5 %) chance of flooding each year from the sea. If the defences were not there, these areas would flood in a 1 in 100 (1%)/ 1 in 200 (0.5 %) or larger flooding incident. The EA do not show all areas that benefit from all flood defences, some defences are designed to protect against a smaller flood with a higher chance of occurring in any year, for example a flood defence which protects against a 1 in 30 chance of flooding in any year. Such a defence may be overtopped in a flood with a 1 in 100 (1%)/ 1 in 200 (0.5%) chance of occurring in any year, but the defence may still reduce the affected area or delay (rather than prevent) a flood, giving people more time to act and therefore reduce the consequences of flooding.

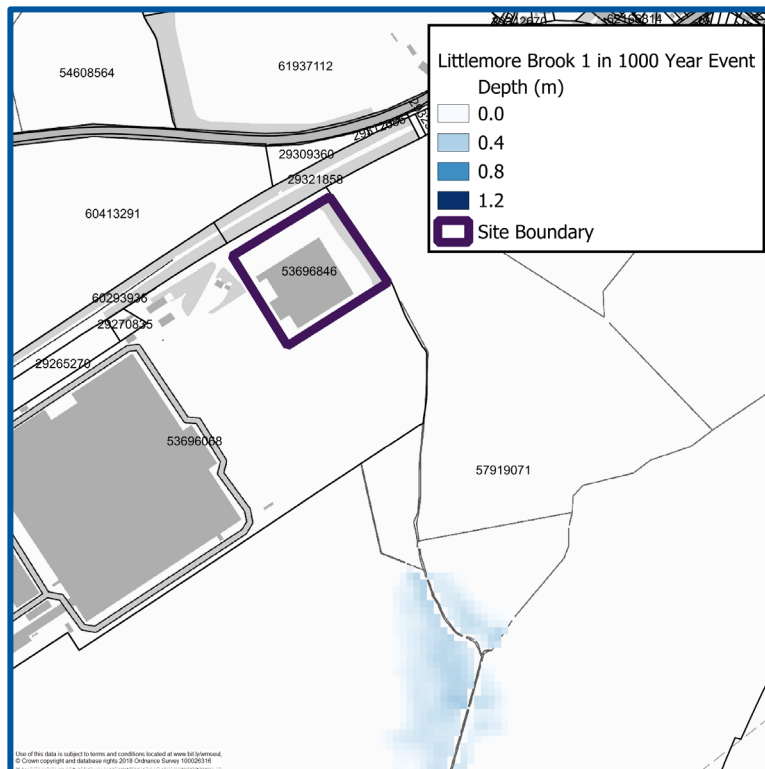
extracted from the 2D floodplain data provided at the Site.² The data is provided in the table below and is included within Appendix B.

Table 2. EA present day modelled flood data

Ground levels on-Site (mAOD)	Modelled Flood Levels (mAOD)		
	1 in 20 year	1 in 100 year	1 in 1000 year
75.11 and 78.96	70.42	70.61	70.79
Flood depths (m)	No flooding	No flooding	No flooding

The following figure confirms the flood extent associated with overtopping of the flood defences in the present-day flooding scenarios.

Figure 8. Modelled present day flooding scenarios



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² The accuracy of the modelled flood levels are not known. These are dependent on the accuracy of input datasets such as LiDAR data, used to model the impacts of flooding within the 2D domain. Confirmation of the accuracy of the modelled flood data can be obtained separately from the Environment Agency.

Climate change factors

The EA's *Flood risk assessments: climate change allowances* guidance (Published 19 February 2016 and updated May, 2022) has been used to inform a suitable increase in peak river flows for the proposed development. The updated guidance confirms 'Less Vulnerable' developments are required to undertake a Basic assessment approach.

As the Site is located within the Gloucestershire and the Vale Management Catchment, within the Thames and the proposed development is classed as Less Vulnerable, where the proposed lifespan is approximately 75 years, the Central (26%) allowance has been used to determine a suitable climate change factor to apply to river data.

Modelled in-channel flow data has not been provided. As such, a stage growth graph has been produced (Appendix B) using the EA's modelled flood level data. The climate change allowances have been derived as a proportion of the 100 year peak flow to the 1 in 1000 year event, using the Flood Studies Report (FSR) (1975) growth curves.

In the Thames region, the 1 in 1000 year event flow is approximately 65% greater than the 1 in 100 year flow, therefore the following flood levels apply.

Table 3. Flood levels plus climate change allowances

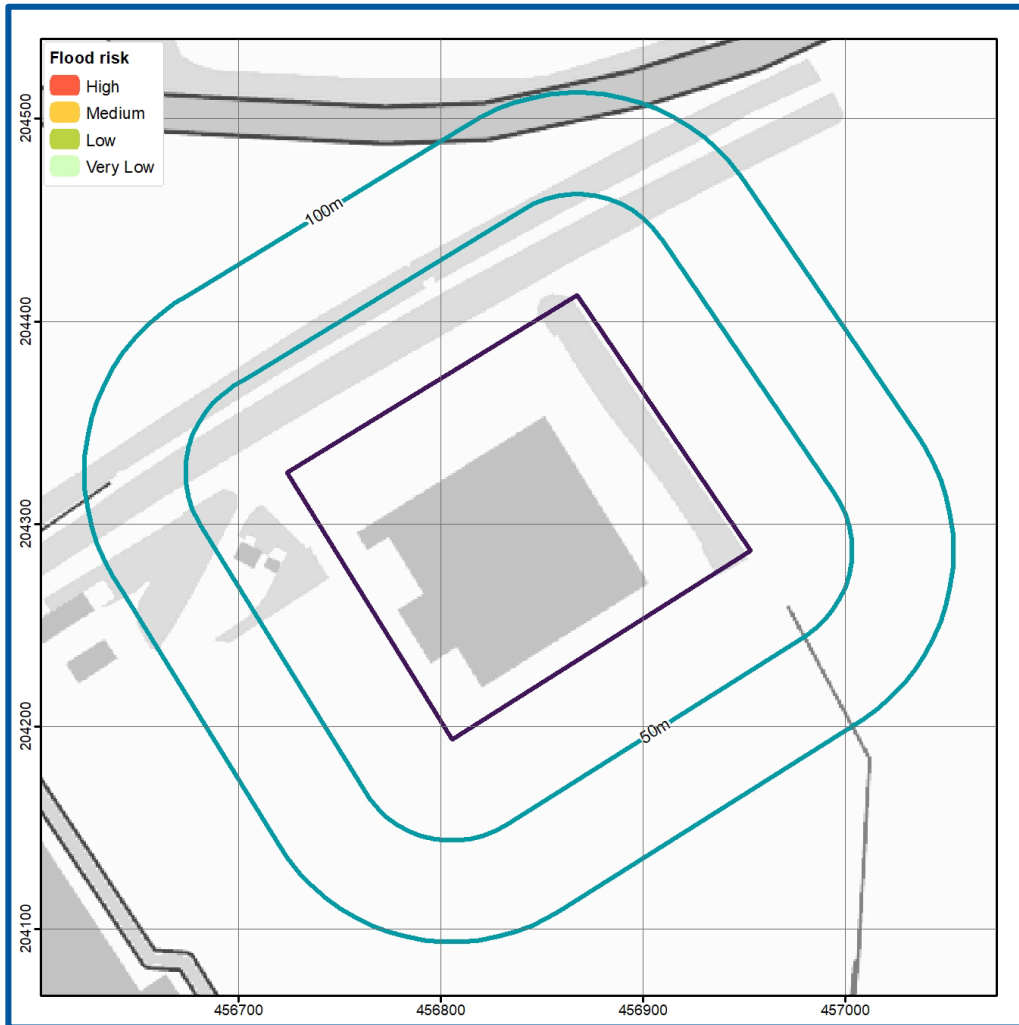
Ground levels on-Site (mAOD)	Modelled Flood Levels (mAOD)
	1 in 100 year plus 26% 2080 central allowance for climate change flood level (mAOD)
75.11 and 78.96	70.69
Flood depths (m)	No flooding

Flood risk including the benefit of defences

The type and condition of existing flood defences influence the 'actual' risk of fluvial flooding to the Site, albeit the long-term residual risk of flooding (ignoring the defences) should be considered when proposing new development.

According to the EA's Risk of Flooding from from Rivers and Sea (RoFRS) map (Figure below), which considers the type, condition and crest height of flood defences, the Site has a Very Low risk of flooding from the nearby watercourse, Littlemore Brook.

Figure 9. Risk of Flooding from Rivers and Sea map (EA, 2024)



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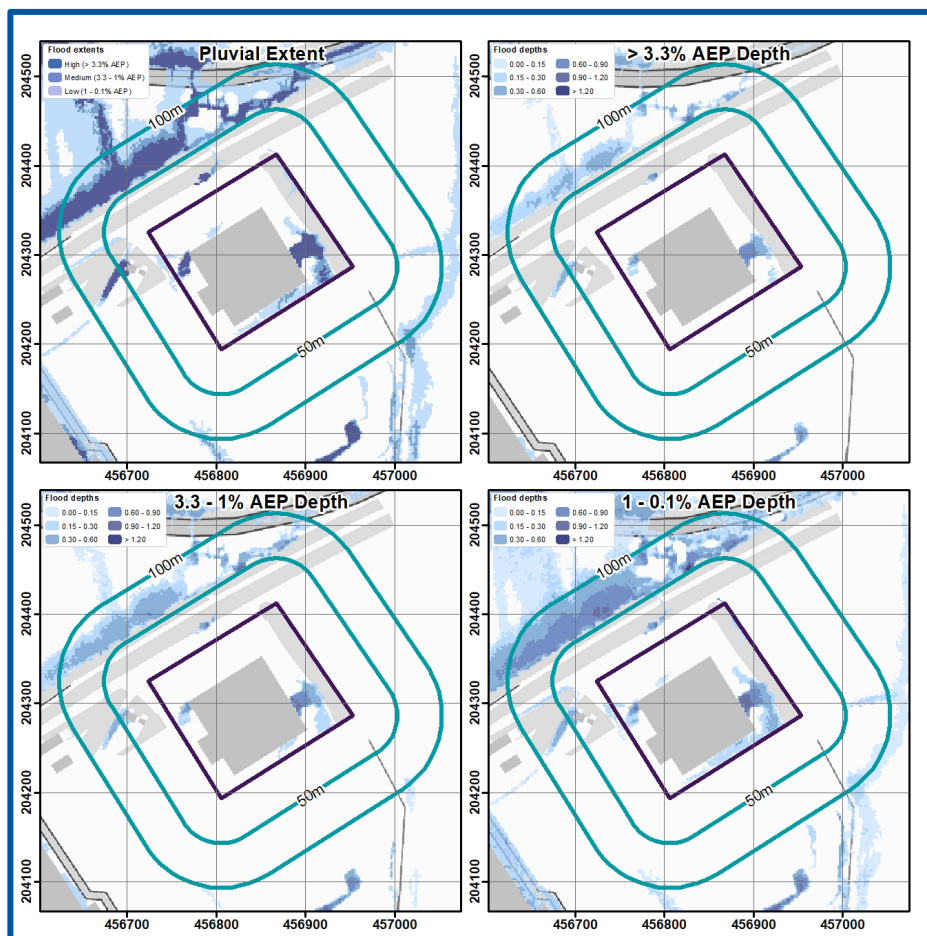
Surface water (pluvial) flooding

Surface water flooding occurs when intense rainfall exceeds the infiltration capacity of the ground and overwhelms the drainage systems. It can occur in most locations even at higher elevations and at significant distances from river and coastal floodplains.

Appendix 4A of the SFRA does not indicate reported incidents of historical surface water flooding within 100 m of the Site and confirms the Site is not located within a Critical Drainage Area (CDA)³ (WHS, 2017).

- According to the EA's Risk of Flooding from Surface Water (pluvial) flood mapping (Figure below), the Site is at a variable risk of pluvial flooding ranging from Very Low to High.

Figure 10. EA surface water flood extent and depth map (EA, 2024)



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³ A Critical Drainage Area (CDA) is an area that has critical drainage problems and which has been notified to the local planning authority as such by the Environment Agency in line with the National Planning Policy Framework (NPPF, 2023). CDA's are specific to Flood Zone 1, defined as areas where runoff can and may have historically contributed to flooding downstream, although they are not necessarily areas where flooding problems may occur. Where a Site is located in Flood Zone 1 and within a CDA, a Flood Risk Assessment (FRA) is required and the Council may also request Sustainable Drainage Scheme (SuDS) features to be included within the proposed development.

Guidance

According to EA's surface water flood risk map the Site is at:

- Very Low risk - chance of flooding of less than 1 in 1000 (0.1%).
- Low risk - chance of flooding of between a 1 in 1000 & 1 in 100 (0.1% and 1%).
- Medium risk - chance of flooding of between a 1 in 100 and 1 in 30 (1% and 3.3%).
- High risk - chance of flooding of greater than 1 in 30 (3.3%).

The Figure above confirms the extent and depth of flooding in multiple modelled flood scenarios. Flooding depths of up to 0.9 m would impact the area proposed for development in the 3.3 - 1% AEP (Medium) risk event.

The deepest flooding is confined to an area of lowered ground on the Site presumably used for vehicular access to the warehouse. The topographic survey data suggests that levels in this area are 75.21mAOD, significantly lower than general ground levels in the vicinity of the Site of 76.48mAOD and hence the surface water flooding is exacerbated on the EA's mapping. As part of the development proposals, the area of lowered ground will be raised to 76.50mAOD and the risk of flooding in this area will be reduced.

In this instance, the risk has been reduced from Very Low/High to **Very Low/Low**.

Guidance

According to EA's surface water flood risk map the following advisory guidance applies to the Site:

Flood Depth

- 0.15 to 0.3 m - Flooding would: typically exceed kerb height, likely exceed the level of a damp-proof course, cause property flooding in some areas
- 0.3 to 0.9 m - Flooding is likely to exceed average property threshold levels and cause internal flooding. Resilience measures are typically effective up to a water depth of 0.6 m above floor level.
- >0.9 m Very likely to exceed the maximum flood depth where property-level flood resilience measures are still effective.

Climate change factors

Paragraph 002 of the National Planning Practice Guidance (August 2022) requires consideration of the 1% AP (1 in 100 year) event, including an appropriate allowance for climate change.

As the Site is located within the Gloucestershire and the Vale Management Catchment and the proposed development is classed as Less Vulnerable, where the proposed lifespan is approximately 75 years, the Upper End (40%) allowance is required to determine a suitable climate change factor to apply to rainfall data.

The 0.1% AP (1 in 1000 year) surface water flooding event has been used as a proxy in this instance for the 1% AP (1 in 100 year) plus climate change event.

Surface water flooding flow routes

Analysis of OS mapping, ground elevation data and the EA's pluvial flow route mapping in the 1 in 1000-year (Low probability) event confirms the Site is not located on a potential overland flow route.

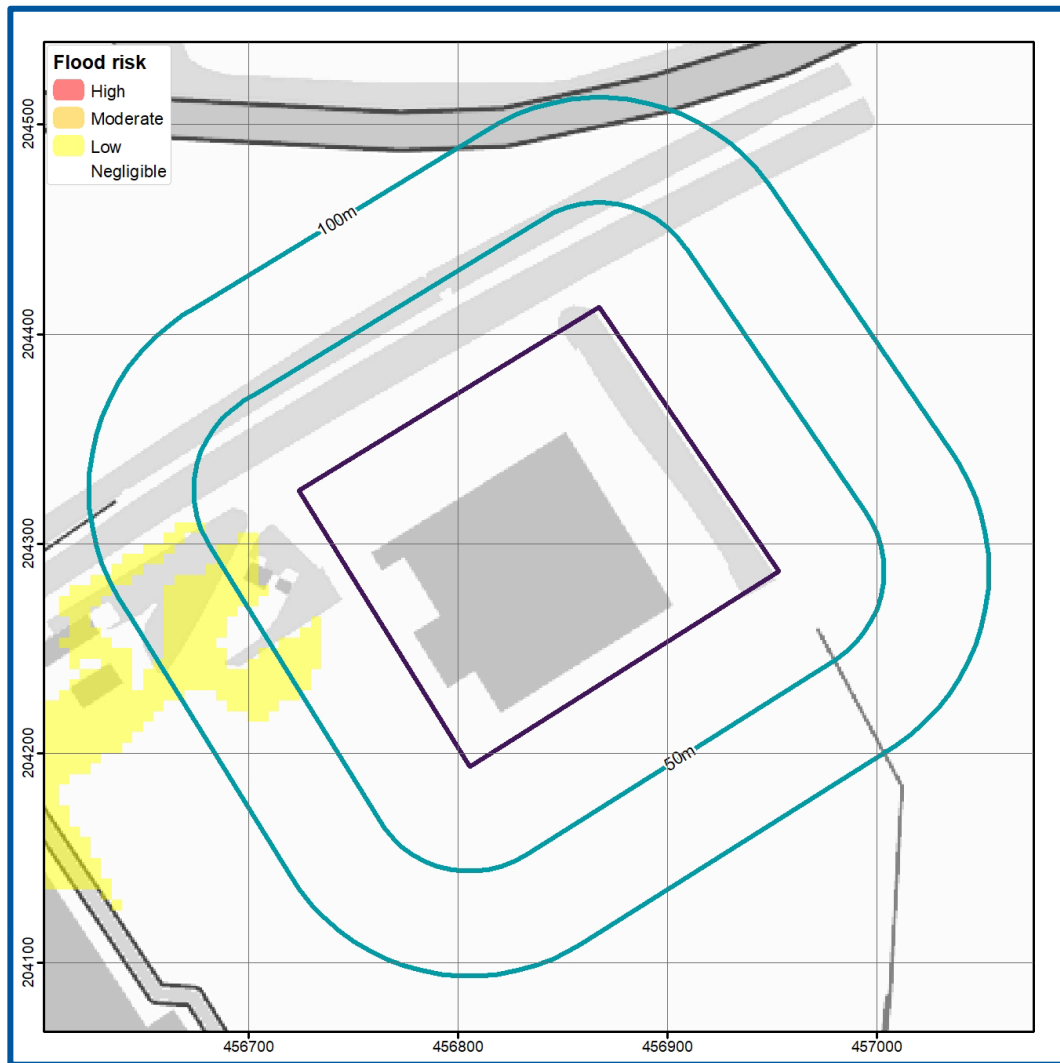
Local drainage features and boundary walls/fences, not accounted for in the EA model, have been identified which may intercept and mitigate surface water flooding.

Groundwater flooding

Groundwater flooding occurs when sub-surface water emerges from the ground at the surface or into Made Ground and structures. This may be as a result of persistent rainfall that recharges aquifers until they are full; or may be as a result of high river levels, or tides, driving water through near-surface deposits. Flooding may last a long time compared to surface water flooding, from weeks to months. Hence the amount of damage that is caused to property may be substantially higher.

Groundwater Flood Risk screening data (Figure below) indicates there is a Negligible risk of groundwater flooding at surface in the vicinity from low permeability bedrock deposits during a 1 in 100-year event.

Figure 11. GeoSmart GW5 Groundwater Flood Risk Map (GeoSmart, 2024)



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Mapped classes within the screening map combine likelihood, possible severity and the uncertainty associated with predicting the subsurface system. The map is a national scale screening tool to prompt site-specific assessment where the impact of groundwater flooding would have significant adverse consequences. Mapping limitations and a number of local factors may reduce groundwater flood risk to land and property even where it lies within mapped groundwater flood risk zones, which do not mean that groundwater floods will occur across the whole of the risk area.

A site-specific assessment has been undertaken to refine the groundwater risk screening information on the basis of site-specific datasets (see Section 3) including BGS borehole data, and the EA's fluvial and tidal floodplain data (where available) to develop a conceptual groundwater model. The risk rating is refined further using the vulnerability of receptors including occupants and the existing and proposed Site layout, including the presence of basements and buried infrastructure. The presence of any nearby or on-Site surface water features such as drainage ditches, which could intercept groundwater have also been considered.

It is understood there are no existing basements and a basement is not proposed as part of the development. The risks are higher for basements, buried infrastructure and soakaway systems which may be affected by high groundwater levels.

According to a review of the hydrogeology (Section 3), the Site is underlain by low permeability superficial deposits above low permeability bedrock. There is therefore unlikely to be a significant aquifer beneath the Site and there is unlikely to be a mechanism for groundwater flooding at the Site, however a perched water table **may** exist between the higher permeability HEAD/Alluvium and the lower permeability bedrock.

According to a review of the hydrogeology (Section 3), the nearby boreholes (ref: SP50SE296) did not encounter groundwater during their 2.70m depth.

The hydrogeological characteristics suggest there is unlikely to be a shallow groundwater table beneath the Site.

The baseline groundwater flood risk rating is Negligible, and on the basis of the site-specific assessment the groundwater flood risk is considered to be Negligible.

Guidance

Negligible Risk - There will be a remote possibility that incidence of groundwater flooding could lead to damage to property or harm to other sensitive receptors at, or near, this location.

Climate change predictions suggest an increase in the frequency and intensity of extremes in groundwater levels. Rainfall recharge patterns will vary regionally resulting in changes to average groundwater levels. A rise in peak river levels will lead to a response of increased groundwater levels in adjacent aquifers subject to the predicted climate change increases in peak river level for the local catchment. Sea level rises of between 0.4m and 1m are predicted by 2100, leading to a rise in average groundwater levels in the adjacent coastal aquifer systems, and potential increases in water levels in the associated drainage systems. The 'backing up' of groundwater levels from both coast and tidal estuary locations may extend a significant distance inland and affect infrastructure previously constructed above average groundwater levels.

The impact of climate change on groundwater levels beneath the Site is linked to the predicted risk in both peak river levels and sea levels and also the variation in rainfall recharge which is uncertain.

Flooding from artificial sources

Artificial sources of flood risk include waterbodies or watercourses that have been amended by means of human intervention rather than natural processes. Examples include reservoirs (and associated water supply infrastructure), docks, sewers and canals. The flooding mechanism associated with flood risk from artificial sources is primarily related to breach or failure of structures (reservoir, lake, sewer, canal, flood storage areas, etc.)

Sewer flooding

Records held by Thames Water indicate that there have been no incidences of flooding related to the surcharging of public sewers at the Site (Thames Water, 2024; Appendix C).

Guidance

Properties classified as “at risk” are those that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system either once or twice in the ten year reference period. Records held by the sewage utility company provide information relating to reported incidents, the absence of any records does not mean that the Site is not at risk of flooding.

Canal failure

According to Ordnance Survey (OS) mapping, there are no canals within 500 m of the Site.

Water supply infrastructure

Water supply infrastructure is comprised of a piped network to distribute water to private houses or industrial, commercial or institution establishments and other usage points. In urban areas, this represents a particular risk of flooding due to the large amount of water supply infrastructure, its condition and the density of buildings. The risks of flooding to properties from burst water mains cannot be readily assessed.

If more information regarding the condition and history of the water supply infrastructure within the vicinity of the Site is required, then it is advisable to contact the local water supplier Thames Water.

Culverts and bridges

The blockage of watercourses or structures by debris (that is, any material moved by a flowing stream including vegetation, sediment and man-made materials or refuse) reduces flow capacity and raises water levels, potentially increasing the risk of flooding. High water levels can cause saturation, seepage and percolation leading to failure of earth embankments or other structures. Debris accumulations can change flow patterns, leading to scour, sedimentation or structural failure.

Culverts and bridges have not been identified within 50 m of the Site.

Reservoir flooding

According to the EA's Risk of Flooding from Reservoir mapping the Site is not at risk of flooding from reservoirs (Figure below) (EA, 2024).

Figure 12. EA Risk of Reservoir Flooding (EA, 2024)



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Guidance

The risk of reservoir flooding is related to the failure of a large reservoir (holding over 25,000 m³ of water) and is based on the worst-case scenario. Reservoir flooding is extremely unlikely to occur (EA, 2024).

5. Flood risk from the development



Floodplain storage

Where flood storage from any source of flooding is to be lost as a result of development, on-site level-for-level compensatory storage, accounting for the predicted impacts of climate change over the lifetime of the development, should be provided. Where it is not possible to provide compensatory storage on site, it may be acceptable to provide it off-site if it is hydraulically and hydrologically linked.

The loss of floodplain storage is less likely to be a concern in areas benefitting from appropriate flood risk management infrastructure or where the source of flood risk is solely tidal.

The development is located within a fluvial Flood Zone 1 and does not involve an increase in building footprint. Therefore, there would be no displacement of flood water and compensatory flood storage is not required.

Drainage and run-off

Based on the topography and the lack of significant overland flow routes on the Site, interference or interaction with overland flow paths and inflows from off-Site is considered unlikely.

The development proposals are for a change of use and an estimation of surface water runoff is not considered to be required.

Any changes to the existing drainage system will be undertaken in accordance with best practice and care will be taken to ensure the new development does not overload/block any existing drainage or flow pathways to/from the Site.

A SuDS strategy should be prepared for the Site, to manage surface water runoff from the proposed development.

6. Suitability of the proposed development



The information below outlines the suitability of proposed development in relation to national and local planning policy.

National policy and guidance

The aims of the national planning policies are achieved through application of the Sequential Test and in some cases the Exception Test.

Guidance

Sequential test: The aim of this test is to steer new development towards areas with the lowest risk of flooding (NPPF, 2023). Reasonably available sites located in Flood Zone 1 should be considered before those in Flood Zone 2 and only when there are no reasonably available sites in Flood Zones 1 and 2 should development in Flood Zone 3 be considered.

Exception test: In some cases, this may need to be applied once the Sequential Test has been considered. For the exception test to be passed it must be demonstrated that the development would provide wider sustainability benefits to the community that outweigh flood risk and a site-specific FRA must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Suitability of the proposed development, and whether the Sequential and Exception Tests are required, is based on the Flood Zone the Site is located within and the flood risk vulnerability classification of the existing and proposed development. Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

This report has been produced to assess all development types, prior to any development. The vulnerability classification and Flood Zones are compared within the table overleaf (Table 2 of the NPPG (2022)).

As the Site is located within Flood Zone 1, all types of development listed within the Table overleaf are acceptable according to National Policy.

Table 4. Flood risk vulnerability and flood zone ‘incompatibility (taken from NPPG, 2022)

Flood risk vulnerability classification		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood Zone	Zone 1 – low probability	✓	✓	✓	✓	✓
	Zone 2 – medium probability	✓	✓	Exception test required	✓	✓
	Zone 3a – high probability	Exception test required	✓	X	Exception test required	✓
	Zone 3b – functional flood plain	Exception test required	✓	X	X	X

7. Resilience and mitigation



Based on the flood risk identified at the Site, the national and local policies and guidance and proposed development, the mitigation measures outlined within this section of the report are likely to help protect the development from flooding.

Sea (coastal/tidal) flood mitigation measures

As the Site is not identified as being at risk from flooding from tidal sources, mitigation measures are not required.

Rivers (fluvial) flood mitigation measures

As the Site is not identified as being at risk of flooding from fluvial sources, mitigation measures are not required.

Surface water (pluvial) flood mitigation measures

Where it is not possible to raise the minimum finished floor levels to the recommended elevation, these should be raised as high as possible. It may be appropriate to adopt a water exclusion strategy for flood depths up to 600mm in line with the EA's Standing Advice. A water exclusion strategy, using avoidance and resistance measures, is appropriate where floods are expected to last for short durations (but a structural engineer should be consulted). Potential water exclusion strategies include:

- Non-return flap valves on sewer outfalls.
- Sustainable Drainage Systems (SuDS) to store/intercept flood water.
- Boundary walls/fencing.

A Sustainable Drainage Strategy (SuDS) should be developed for the Site, for effective management of surface water runoff from the development.

If these mitigation measures are implemented this would reduce the flood risk to the development from Very Low/Low to Very Low.

Groundwater flood mitigation measures

As the Site is not identified as being at risk of groundwater flooding, mitigation measures are not required.

Reservoir flood mitigation measures

The Site is not a risk of flooding from reservoirs; therefore, mitigation measures are not required.

Other flood risk mitigation measures

As the Site is not identified as at risk from other sources, mitigation measures are not required.

Residual flood risk mitigation measures

The risk to the Site has been assessed from all sources of flooding and appropriate mitigation and management measures proposed to keep the users of the development safe over its lifetime. There is however a residual risk of flooding associated with the potential for failure of mitigation measures if regular maintenance and upkeep isn't undertaken. If mitigation measures are not implemented or maintained, the risk to the development will remain as the baseline risk.

Further flood mitigation information

More information on flood resistance, resilience and water entry can be found here: http://www.planningportal.gov.uk/uploads/br/flood_performance.pdf

www.knowyourfloodrisk.co.uk

Flood warnings

The EA operates a flood warning service in all areas at risk of flooding; this is available on their website: <https://www.gov.uk/check-flood-risk>. Figure 13 (below) identifies the Site is not in an EA Flood Alerts / Warning Area.

The EA aims to issue Flood Warnings 2 hours in advance of a flood event. Flood Warnings can provide adequate time to enable protection of property and evacuation from a Site, reducing risk to life and property.

Figure 13. EA Flood Warning Coverage for the local area (EA, 2024).



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Other relevant information

A Business Continuity Plan (BCP) is recommended to reduce risks to people, property and profit.

Registration to the Environment Agency's flood warning scheme can be done by following this link: <https://www.gov.uk/sign-up-for-flood-warnings>.

It is recommended that main communication lines required for contacting the emergency services, electricity sockets/meters, water supply and first aid stations and supplies are not compromised by flood waters. Where possible these should all be raised above the extreme flood level.

8. Conclusions and recommendations



Table 5. Risk ratings following Site analysis

Source of Flood Risk	Baseline ¹	After analysis ²	After Mitigation ³
River (fluvial) flooding	Very Low		N/A
Sea (coastal/tidal) flooding	Very Low		N/A
Surface water (pluvial) flooding	Very Low to High	Very Low to Low	Very Low
Groundwater flooding	Negligible		N/A
Other flood risk factors present	No	No	No
Is any other further work recommended?	Yes	Yes	Yes (see below)

1 BASELINE risks assigned for the whole Site, using national risk maps, including the benefit of EA flood defences.

2 AFTER ANALYSIS modification of risk assessment based on detailed site specific analysis including some or all of the following: flood model data, high resolution mapping, building location, access routes, topographic and CCTV surveys. Reasons for the change in classification are provided in the text.

3 AFTER MITIGATION risks include risks to proposed development / asset and occupants if mitigation measures recommended in this report are implemented, including the impacts of climate change.

*N/A indicates where mitigation is not required.

The table below provides a summary of where the responses to key questions are discussed in this report. Providing the recommended mitigation measures are put in place it is likely that flood risk to this Site will be reduced to an acceptable level.

Less vulnerable developments in a Flood Zone 1 are acceptable according to the NPPF and providing the recommended mitigation measures are put in place (see previous sections) it is likely that flood risk to this Site will be reduced to an acceptable level.

Table 6. Summary of responses to key questions in the report

Key sources of flood risks identified	Pluvial (surface water) (see Section 4).
Are standard mitigation measures likely to provide protection from flooding to/from the Site?	Yes (see Section 7).
Is any further work recommended?	Yes (See exec summary and section 7)

9. Further information



The following table includes a list of additional products by GeoSmart:

Additional GeoSmart Products			
✓	<p>Additional assessment:</p> <p>SuDSmart Report</p>		<p>The SuDSmart Report range assesses which drainage options are available for a Site. They build on technical detail starting from simple infiltration screening and work up to more complex SuDS Assessments detailing alternative options and designs.</p> <p>Please contact info@geosmartinfo.co.uk for further information.</p>
✓	<p>Additional assessment:</p> <p>EnviroSmart Report</p>		<p>Provides a robust desk-based assessment of potential contaminated land issues, taking into account the regulatory perspective.</p> <p>Our EnviroSmart reports are designed to be the most cost effective solution for planning conditions. Each report is individually prepared by a highly experienced consultant conversant with Local Authority requirements.</p> <p>Ideal for pre-planning or for addressing planning conditions for small developments. Can also be used for land transactions.</p> <p>Please contact info@geosmartinfo.co.uk for further information.</p>



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Glossary

General terms

BGS	British Geological Survey
EA	Environment Agency
GeoSmart groundwater flood risk model	GeoSmart's national groundwater flood risk model takes advantage of all the available data and provides a preliminary indication of groundwater flood risk on a 50m grid covering England and Wales. The model indicates the risk of the water table coming within 1 m of the ground surface for an indicative 1 in 100 year return period scenario.
Dry-Island	An area considered at low risk of flooding (e.g. In a Flood Zone 1) that is entirely surrounded by areas at higher risk of flooding (e.g. Flood Zone 2 and 3)
Flood resilience	Flood resilience or wet-proofing accepts that water will enter the building, but through careful design will minimise damage and allow the re-occupancy of the building quickly. Mitigation measures that reduce the damage to a property caused by flooding can include water entry strategies, raising electrical sockets off the floor, hard flooring.
Flood resistance	Flood resistance, or dry-proofing, stops water entering a building. Mitigation measures that prevent or reduce the likelihood of water entering a property can include raising flood levels or installation of sandbags.
Flood Zone 1	This zone has less than a 0.1% annual probability of river flooding
Flood Zone 2	This zone has between 0.1 and 1% annual probability of river flooding and between 0.1% and 0.5 % annual probability sea flooding
Flood Zone 3	This zone has more than a 1% annual probability of river flooding and 0.5% annual probability of sea flooding
Functional Flood Plain	An area of land where water has to flow or be stored in times of flood.
Hydrologic model	A computer model that simulates surface run-off or fluvial flow. The typical accuracy of hydrologic models such as this is $\pm 0.25\text{m}$ for estimating flood levels at particular locations.
OS	Ordnance Survey
Residual Flood Risk	The flood risk remaining after taking mitigating actions.
SFRA	Strategic Flood Risk Assessment. This is a brief flood risk assessment provided by the local council

SuDS A Sustainable drainage system (SuDS) is designed to replicate, as closely as possible, the natural drainage from the Site (before development) to ensure that the flood risk downstream of the Site does not increase as a result of the land being developed. SuDS also significantly improve the quality of water leaving the Site and can also improve the amenity and biodiversity that a Site has to offer. There are a range of SuDS options available to provide effective surface water management that intercept and store excess run-off. Sites over 1 Ha will usually require a sustainable drainage assessment if planning permission is required. The current proposal is that from April 2014 for more than a single dwelling the drainage system will require approval from the SuDS Approval Board (SABs).

Aquifer Types

Principal aquifer These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

Secondary A aquifer Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Secondary B aquifer Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.

Secondary undifferentiated Has been assigned in cases where it has not been possible to attribute either category A or B to a rock type due to the variable characteristics of the rock type.

Unproductive Strata These are rock layers or drift deposits with low permeability that has negligible significance for water supply or river base flow.

NPPF (2023) terms

Exception test Applied once the sequential test has been passed. For the exception test to be passed it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk and a site-specific FRA must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Sequential test Aims to steer new development to areas with the lowest probability of flooding.

Essential infrastructure Essential infrastructure includes essential transport infrastructure, essential utility infrastructure and wind turbines.

Water compatible	Water compatible land uses include flood control infrastructure, water-based recreation and lifeguard/coastal stations.
Less vulnerable	Less vulnerable land uses include police/ambulance/fire stations which are not required to be operational during flooding and buildings used for shops/financial/professional/other services.
More vulnerable	More vulnerable land uses include hospitals, residential institutions, buildings used for dwelling houses/student halls/drinking establishments/hotels and sites used for holiday or short-let caravans and camping.
Highly vulnerable	Highly vulnerable land uses include police/ambulance/fire stations which are required to be operational during flooding, basement dwellings and caravans/mobile homes/park homes intended for permanent residential use.

Data Sources

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Bedrock & Superficial Geology	Contains British Geological Survey materials © NERC 2024 Ordnance Survey data © Crown copyright and database right 2024
Flood Risk (Flood Zone/RoFRS/Historic Flooding/Pluvial/Surface Water Features/Reservoir/ Flood Alert & Warning)	Environment Agency copyright and database rights 2024 Ordnance Survey data © Crown copyright and database right 2024
Flood Risk (Groundwater)	GeoSmart, BGS & OS GW5 (v2.4) Map (GeoSmart, 2024) Contains British Geological Survey materials © NERC 2024 Ordnance Survey data © Crown copyright and database right 2024
Location Plan	Contains Ordnance Survey data © Crown copyright and database right 2024
Topographic Data	OS LiDAR/EA Contains Ordnance Survey data © Crown copyright and database right 2024 Environment Agency copyright and database rights 2024

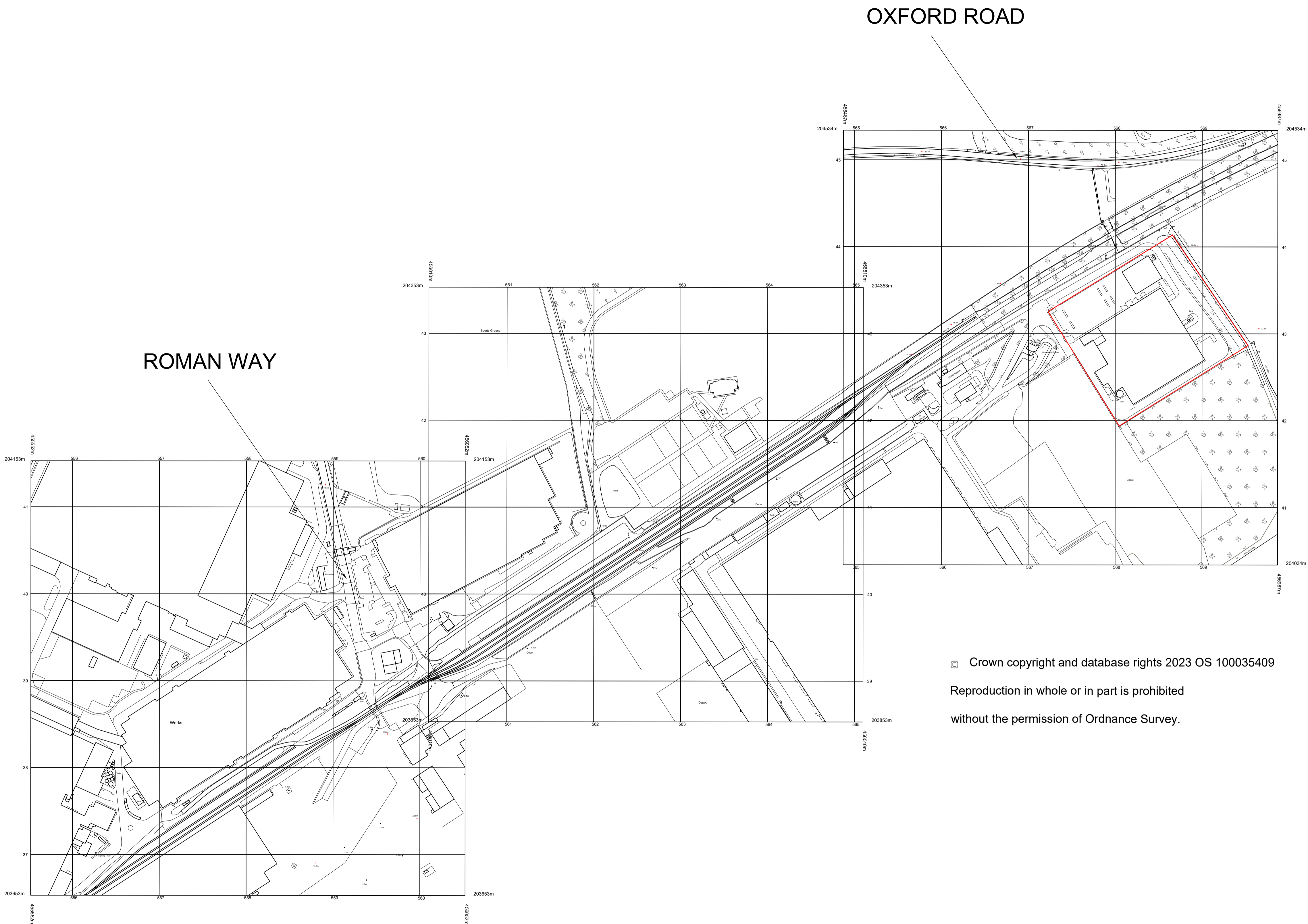
11. Appendices



Appendix A



Site plans



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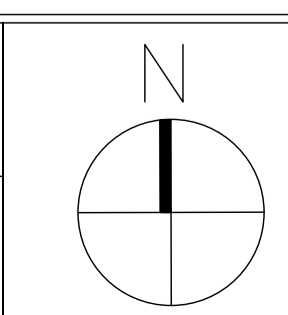
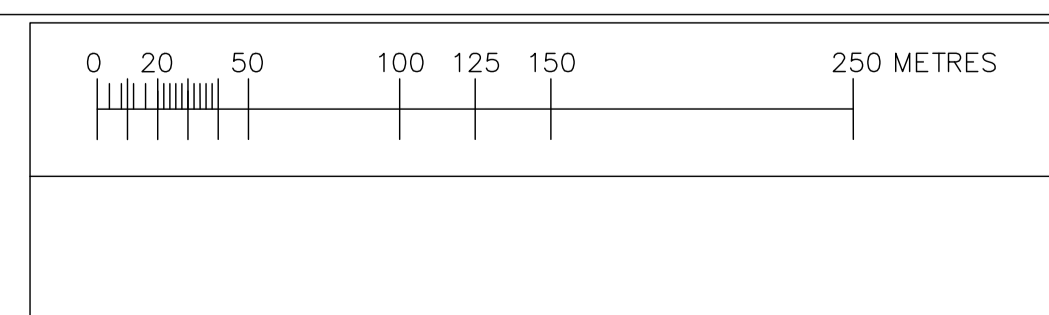
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DATE	16.02.24	SCALE	1:2500 @ A1

PLANNING	
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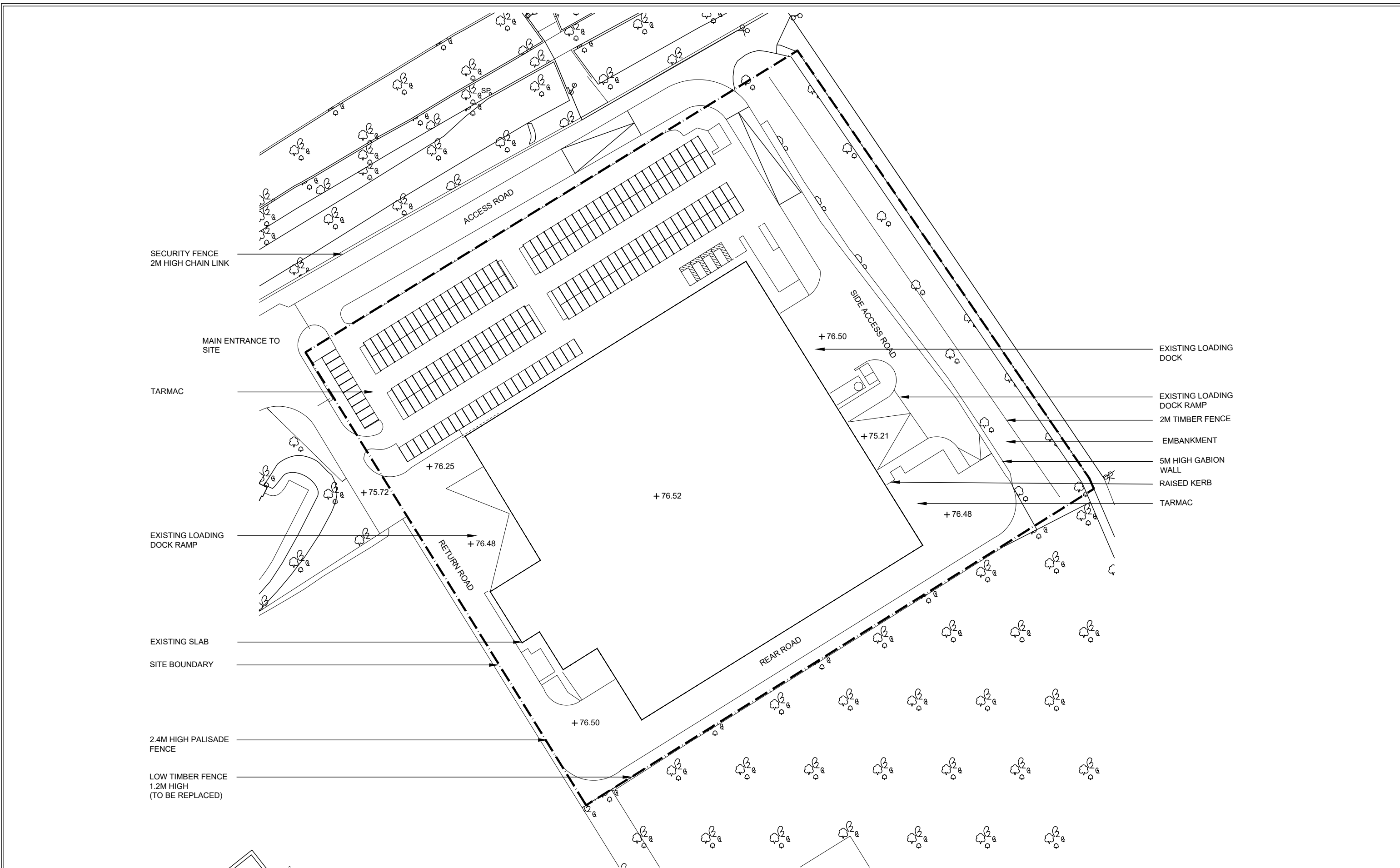
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Cryer & Coe architects

10 - 12 Gloucester Rd,
 Third Floor,
 Bristol,
 BS7 8AE

Tel: 01173 634033
 hello@cryerandcoe.co.uk
 www.cryerandcoe.co.uk



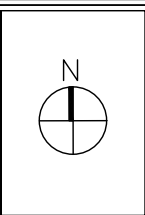
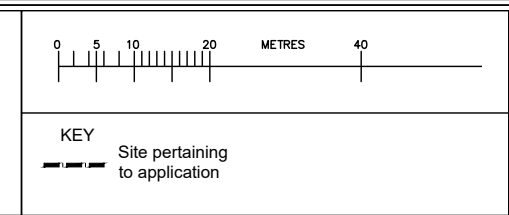
SITE PLAN - EXISTING SCALE 1:1000

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DRAWING	Site Plan Existing	DRAWING NO.	3001
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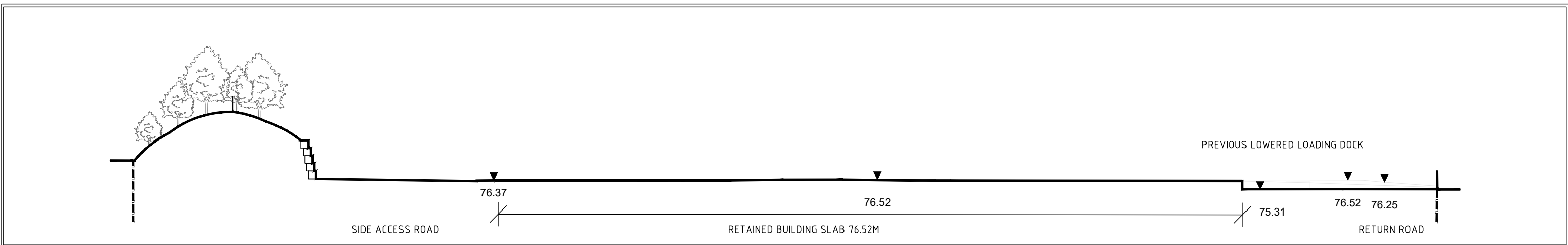


10 - 12 Gloucester Rd,
Third Floor,
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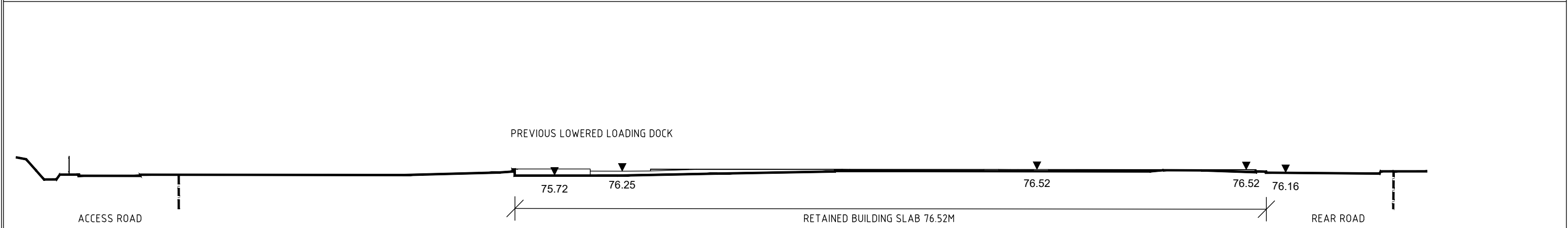
Tel: 01173 634033
hello@cryerandcoe.co.uk
www.cryerandcoe.co.uk

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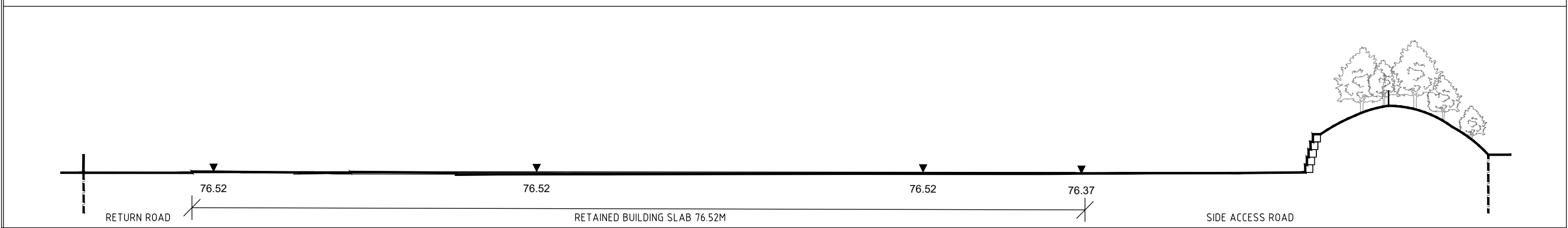
DRAFT FOR DISCUSSION
28.02.24



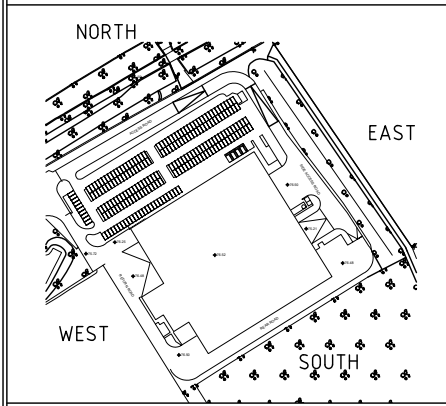
NORTH ELEVATION - EXISTING SCALE 1:500



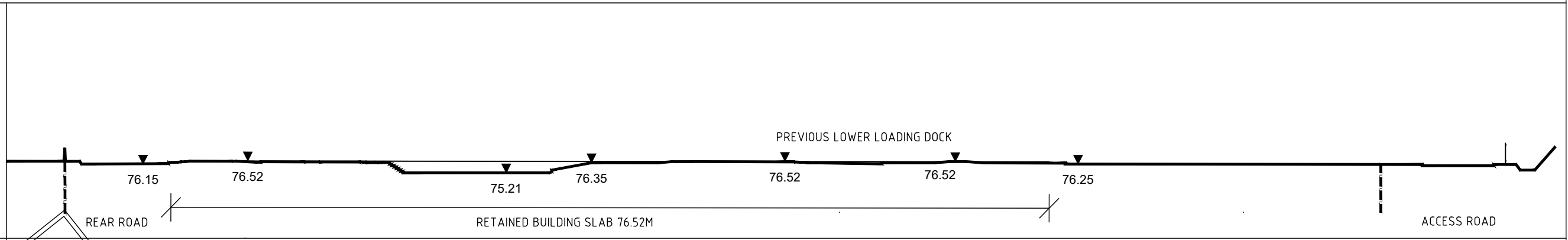
WEST ELEVATION - EXISTING SCALE 1:500



SOUTH ELEVATION - EXISTING SCALE 1:500



KEY PLAN - EXISTING SCALE 1:5000



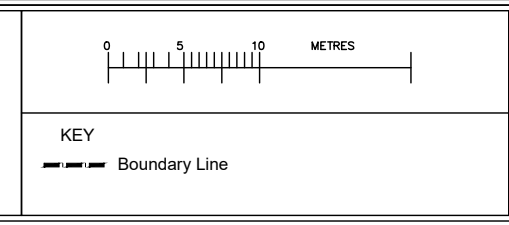
EAST ELEVATION - EXISTING SCALE 1:500

PROJECT	UYS Oxford Garsington Rd OX4 2BW	CLIENT	CHARTERHOUSE
DRAWING	Elevations Existing	DRAWING NO.	3001
DATE	23.02.24	SCALE	As Noted @ A3
		DRAWN	EJB
		CHECKED	DC

PLANNING

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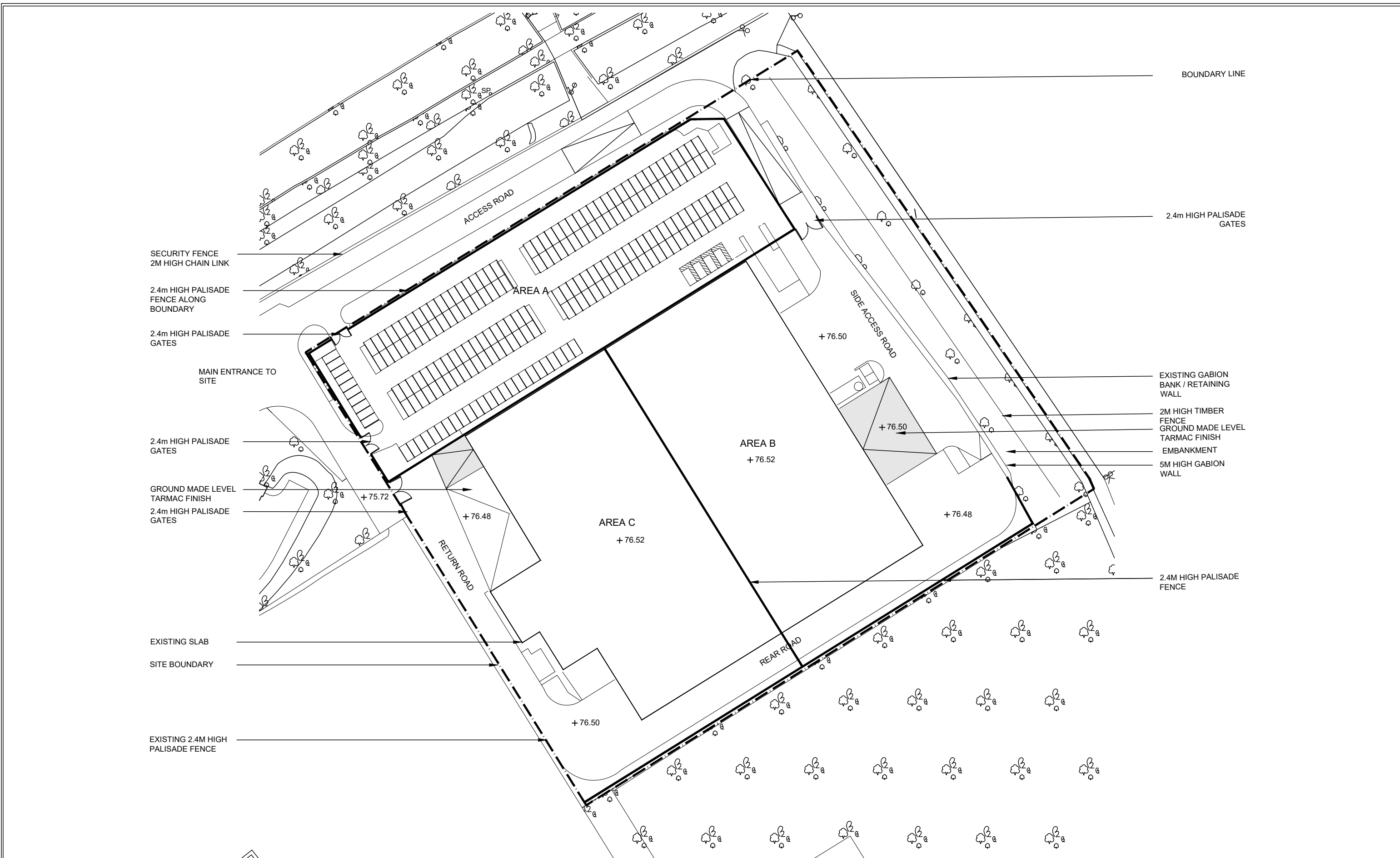
REVISIONS			
Rev.	Author	Date	Description
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10 - 12 Gloucester Rd,
Third Floor,
Bristol,
BS7 8AE

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hello@cryerandcoe.co.uk
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SITE PLAN - PROPOSED SCALE 1:1000

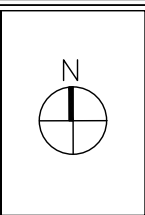
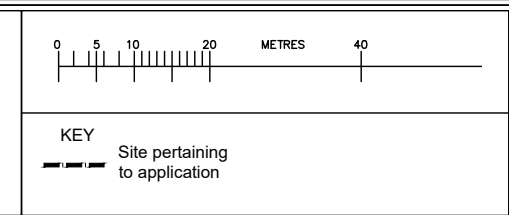
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DRAWING	Site Plan Proposed
DATE	23.02.24

CLIENT	CHARTERHOUSE
DRAWING NO.	3001
SCALE	1:1000 @ A3
DRAWN	EJB
CHECKED	DC

PLANNING

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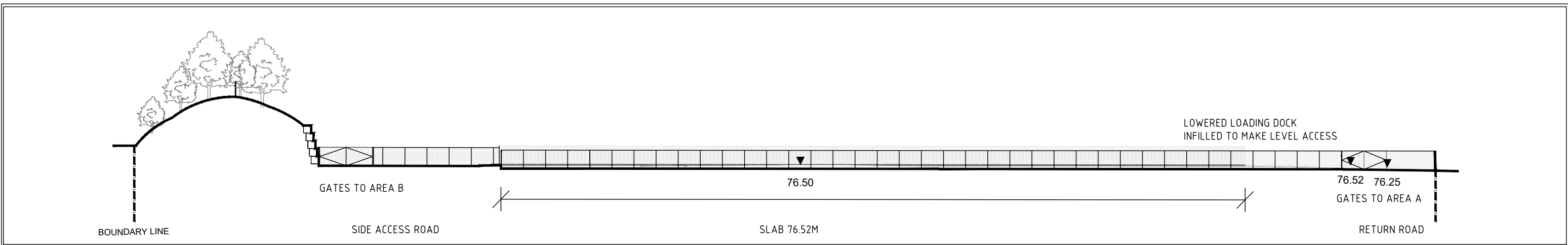


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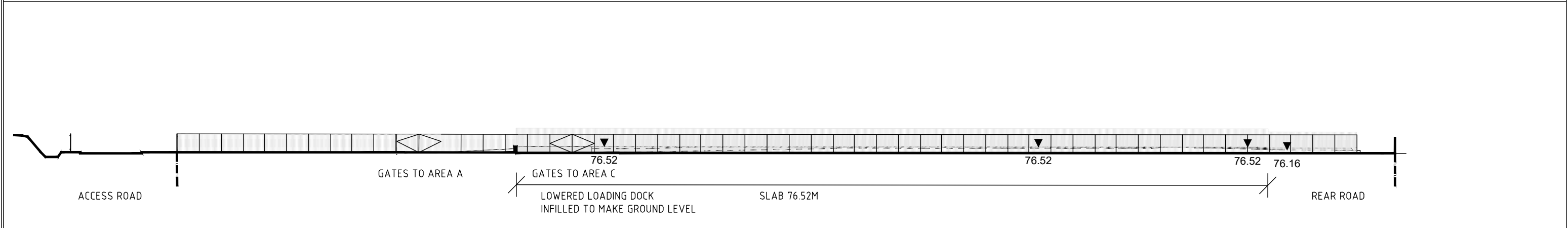
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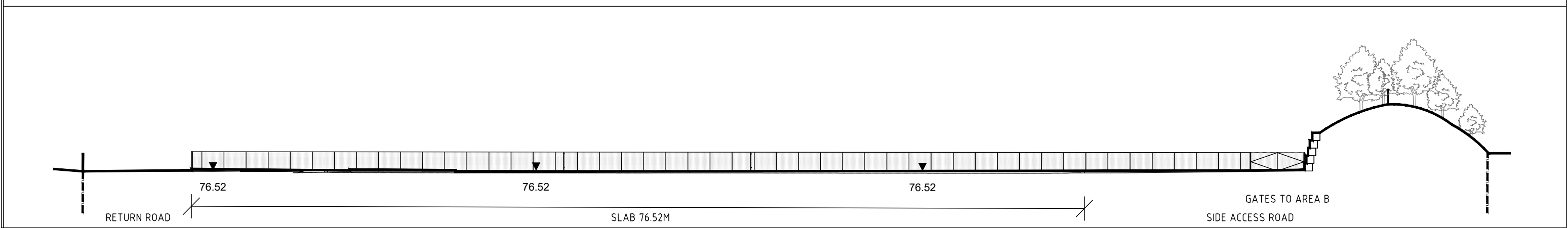
DRAFT FOR DISCUSSION 28.02.24



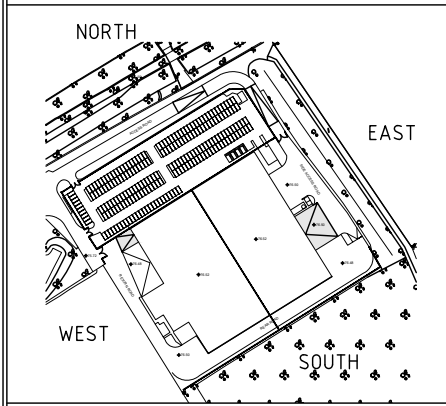
NORTH ELEVATION - PROPOSED SCALE 1:500



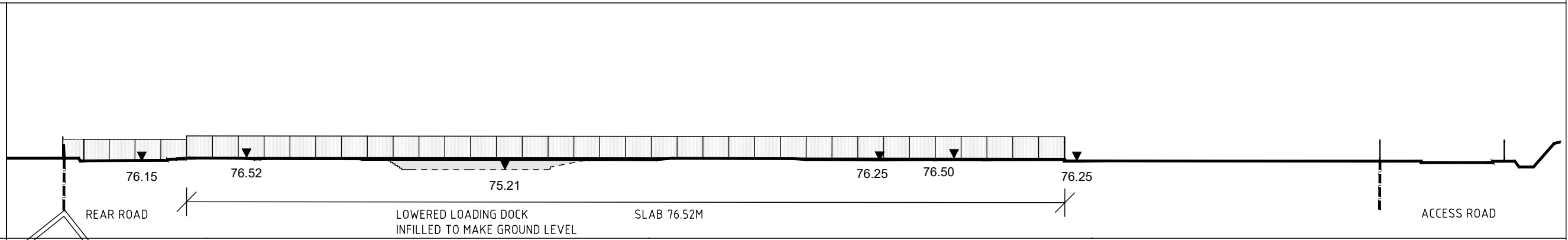
WEST ELEVATION - PROPOSED SCALE 1:500



SOUTH ELEVATION - PROPOSED SCALE 1:500



KEY PLAN - PROPOSED SCALE 1:5000



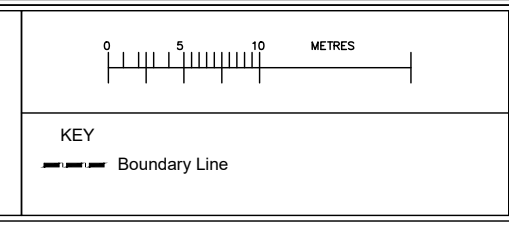
EAST ELEVATION - PROPOSED SCALE 1:500

PROJECT	UYS Oxford Garsington Rd OX4 2BW	CLIENT	CHARTERHOUSE
DRAWING	Elevations Proposed	DRAWING NO.	3001
DATE	23.02.24	SCALE	As Noted @ A3
		DRAWN	EJB
		CHECKED	DC

PLANNING

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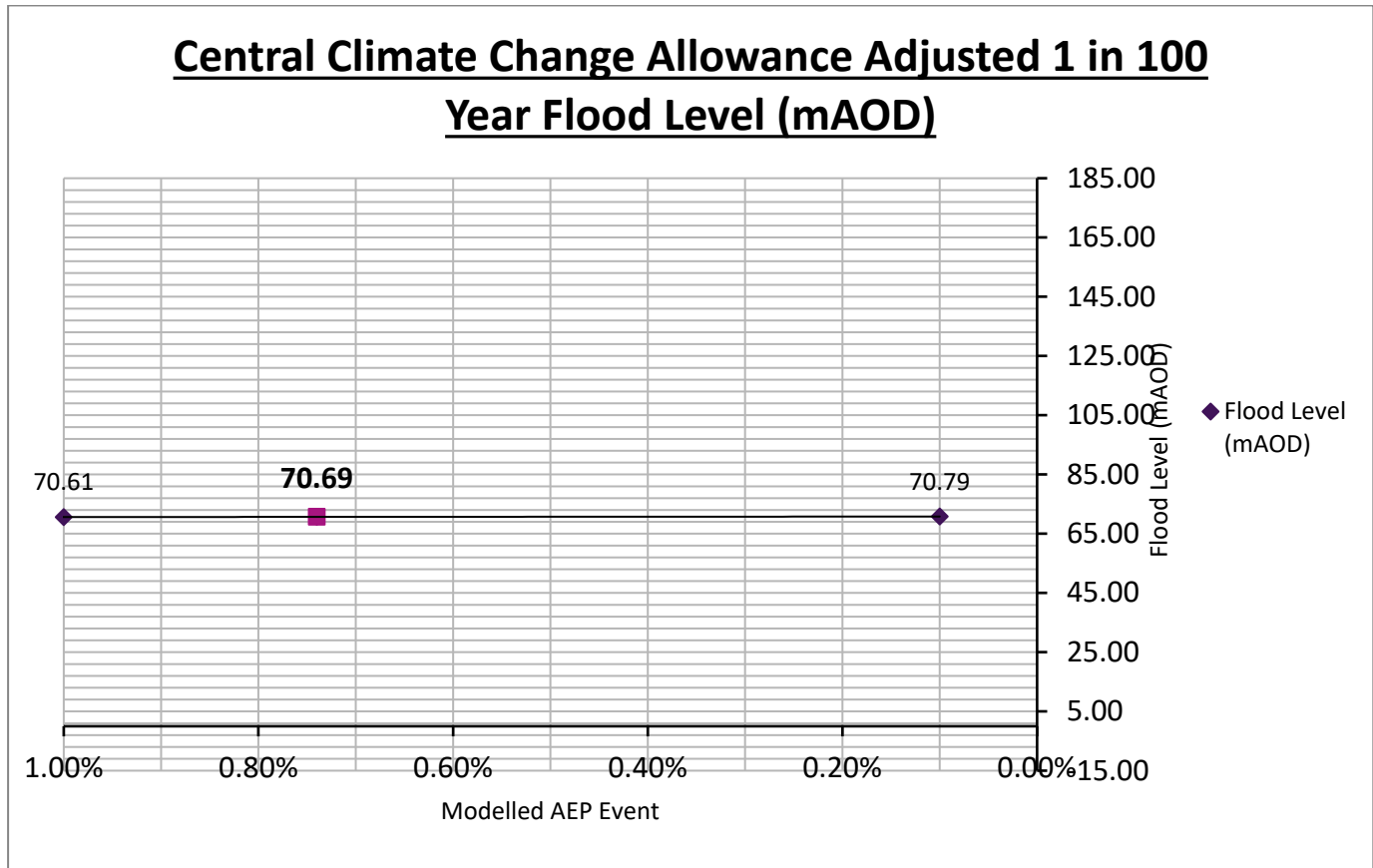
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Environment Agency data





Thames Water sewer flooding history

Sewer Flooding

History Enquiry



Property Searches

GeoSmart Information Ltd

Bellstone

Search address supplied U Y S Ltd
Garsington Road
Cowley
Oxford
OX4 2BW

Your reference 81603

Our reference SFH/SFH Standard/2024_4951074

Received date 22 February 2024

Search date 22 February 2024



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540



Search address supplied: U Y S Ltd,Garsington Road,Cowley,Oxford,OX4
2BW

This search is recommended to check for any sewer flooding in a specific address or area

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments



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searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0800 009 4540

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW



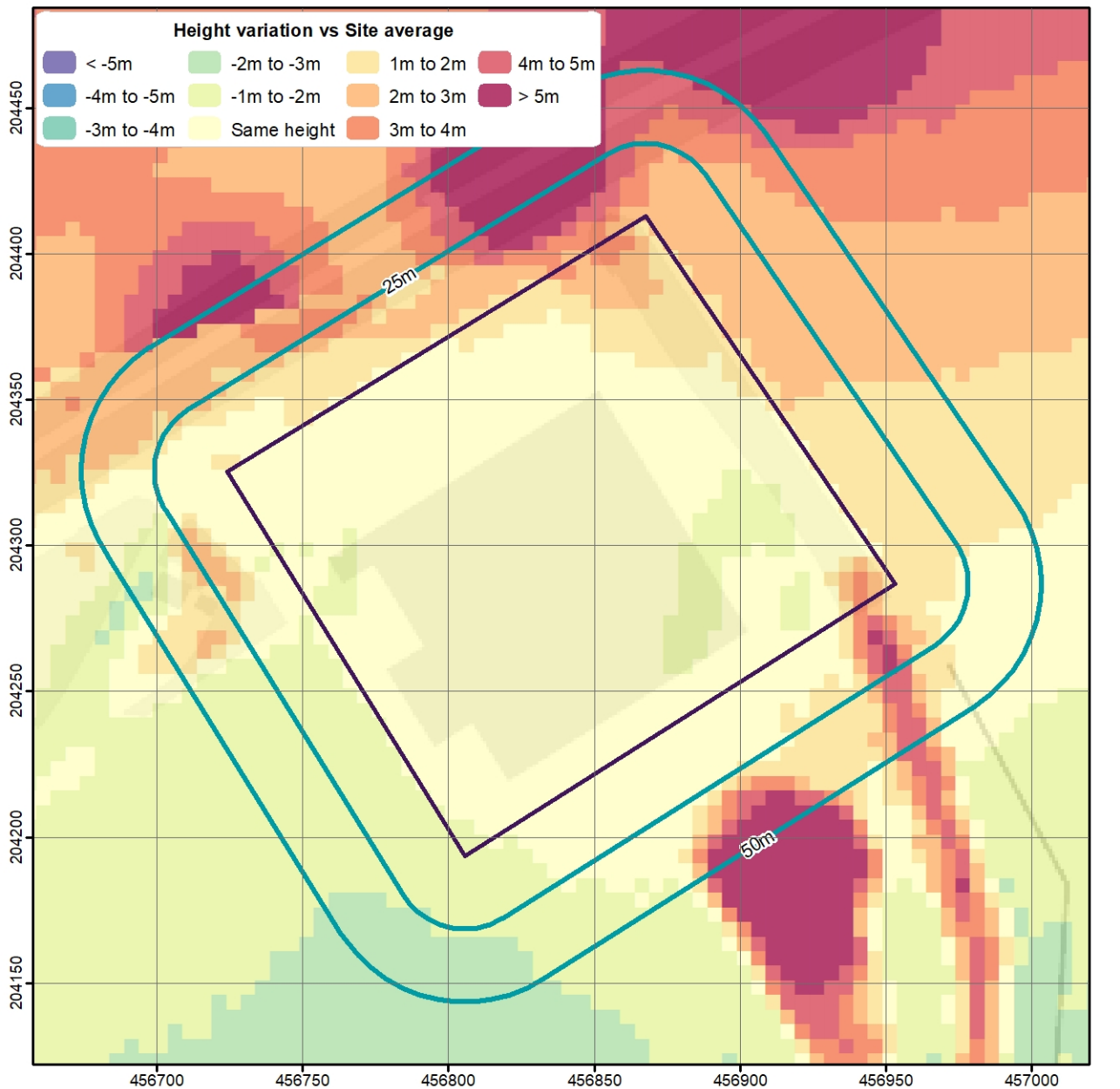
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www.thameswater-propertysearches.co.uk



0800 009 4540



Environment Agency LiDAR ground elevation data



Disclaimer

This report has been prepared by GeoSmart in its professional capacity as soil, groundwater, flood risk and drainage specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client and is provided by GeoSmart solely for the internal use of its client.

The advice and opinions in this report should be read and relied on only in the context of the report as a whole, taking account of the terms of reference agreed with the client. The findings are based on the information made available to GeoSmart at the date of the report (and will have been assumed to be correct) and on current UK standards, codes, technology and practices as at that time. They do not purport to include any manner of legal advice or opinion. New information or changes in conditions and regulatory requirements may occur in future, which will change the conclusions presented here.

This report is confidential to the client. The client may submit the report to regulatory bodies, where appropriate. Should the client wish to release this report to any other third party for that party's reliance, GeoSmart may, by prior written agreement, agree to such release, provided that it is acknowledged that GeoSmart accepts no responsibility of any nature to any third party to whom this report or any part thereof is made known. GeoSmart accepts no responsibility for any loss or damage incurred as a result, and the third party does not acquire any rights whatsoever, contractual or otherwise, against GeoSmart except as expressly agreed with GeoSmart in writing.

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Tel: 01743 298 100

Email: info@geosmartinfo.co.uk

GeoSmart Information Limited is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom.
- sets out minimum standards which firms compiling and selling search reports have to meet.
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals.
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.
- By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports.
- act with integrity and carry out work with due skill, care and diligence.
- at all times maintain adequate and appropriate insurance to protect consumers.
- conduct business in an honest, fair and professional manner.
- handle complaints speedily and fairly.
- ensure that products and services comply with industry registration rules and standards and relevant laws.
- monitor their compliance with the Code.

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs contact details:

The Property Ombudsman scheme

Milford House

43-55 Milford Street

Salisbury

Wiltshire SP1 2BP

Tel: 01722 333306

Fax: 01722 332296

Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk. Please ask your search provider if you would like a copy of the search code

Complaints procedure

GeoSmart Information Limited is registered with the Property Codes Compliance Board as a subscriber to the Search Code. A key commitment under the Code is that firms will handle any complaints both speedily and fairly. If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision. Complaints should be sent to:

Martin Lucass

Commercial Director

GeoSmart Information Limited

Suite 9-11, 1st Floor,

Old Bank Buildings,

Bellstone, Shrewsbury, SY1 1HU

Tel: 01743 298 100

martinlucass@geosmartinfo.co.uk

12. Terms and conditions, CDM regulations and data limitations



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CDM regulations can be found on our website:

<http://geosmartinfo.co.uk/knowledge-hub/cdm-2015/>

Data use and limitations can be found on our website:

<http://geosmartinfo.co.uk/data-limitations/>