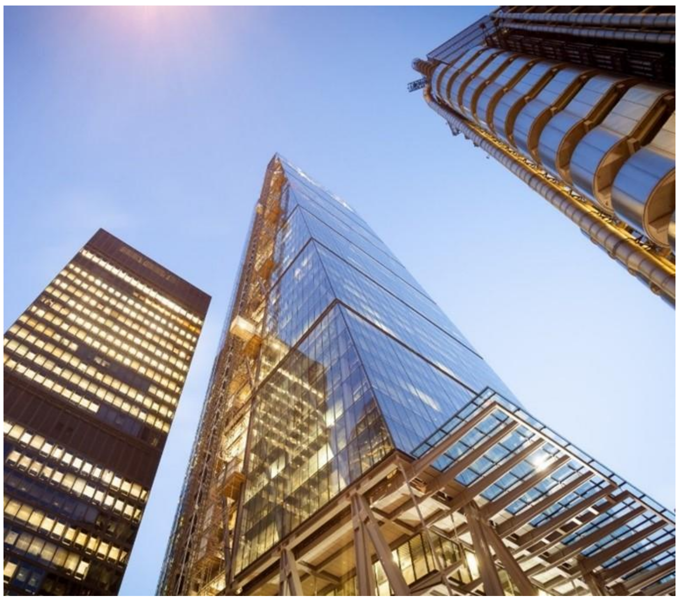
FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY

OCTOBER 2024

JAMESTOWN ROAD



Flood Risk Assessment and Drainage Strategy

33-35 Jamestown Road, London, NW1 7DJ

4C - Jamestown Road Ltd

London Borough of Camden

September 3, 2024

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1 Introduction

This Flood Risk Assessment has been prepared by HDR on behalf of 4C - Jamestown Road Ltd in support of an application for full planning permission for:-

Demolition of existing buildings and structures to facilitating the creation of a new building comprising basement, ground plus seven storey building for a mix of Purpose Built Student Accommodation (Sui Generis), flexible commercial (Class E) and Residential (Class C3) uses with ancillary plant, courtyards, access, hard and soft landscaping, cycle parking, highway works and all other works associated with the development.

It should be read alongside the full suite of reports that have been prepared and submitted, particularly the Design and Access Statement, prepared Morris + Company and the Planning Statement, prepared by DP9..

The purpose of the FRA is to establish the risk associated with the proposed development and to propose appropriate mitigation, if required, to ensure the flood risk is at an acceptable level. The FRA must demonstrate that the development will be safe for its lifetime (in this case assumed to be 100 years) taking account of the vulnerability of its users, without increasing flood risk elsewhere.

This document has been produced to evaluate the flood risk from tidal, fluvial, surface water, groundwater, sewer and artificial sources in line with the National Planning Policy Framework (NPPF) and its corresponding Planning Practice Guidance (PPG). It includes a drainage management plan which shows how surface water is appropriately managed on-site, with the aim that there is no increased risk of flooding on-site or elsewhere as a result of the development.

This assessment has been carried out in consultation with the relevant authorities, and with reference to data, documents and guidance as set out by the Environment Agency (EA), CIRIA, the Lead Local Flood Authority (LLFA) (London Borough of Camden) and the Water Authority (Thames Water).

2 Site Description and Proposal

2.1 Existing Site

The site is located 33-35 Jamestown Road London NW1 7DB and 211 Arlington Road London NW1 7HD and has a total area of 0.27ha. The site can be accessed on the east side from Arlington Road.

The existing site is located on 33-35 Jamestown Road, it also fronts Arlington Road to the east. The site wraps around the existing corner building on 31 Jamestown Road, a late 19th century public house which does not belong the site. The buildings were last used by Camden's Cleansing Services team as a mix of offices and waste depot.

To the south the site has an intricate geometry facing neighbouring buildings and rear gardens of surrounding plots.

The existing buildings are a variety 1-2 storey masonry buildings with basement – all are currently vacant other than for use as car parking. There is also outdoor car parking space provision in use within.

The Site Location Plan can be seen in Appendix A.

Figure 1. Site Location Plan with Indicative Site Boundary Shown in Red

2.1.1 Existing Site Drainage

Public sewer records have been acquired from Thames Water. These records (which are included in Appendix B) show there is a 1245x711mm combined sewer within Jamestown Road and a 1194x686mm combined sewer within Arlington Road. There are no existing public surface water sewers surrounding the site.

It is assumed that the existing site is discharging into the existing Thames Water combined sewer within Jamestown Road and/or Arlington Road. The Ground Investigation report by Soiltechnics no. STW6565-R01-Rev A has identified eight manholes/inspection chambers grouped together in the eastern-central portion of the site, four in a group just to the south of the eastern basement ramp and another four arranged roughly in a south-west to north-east trending line closer to the centre of the site. A number of these manhole covers were lifted and confirmed to comprise an oil interceptor system.

A CCTV survey is required to ascertain the location, condition and levels of the existing manholes and the connection point into the Thames Water sewer.

2.1.2 Topography

The Ground Investigation report carried out by Soiltechnics no. STW6565-R01-Rev A, describes the topography of the surrounding area as relatively flat which falls very gently the east and south-east, towards the River Thames. On the site itself, across the hardstanding car parking area, the levels drop gently from west to east, from up to 30m AOD at the western end of the site to around 28.3m AOD at the eastern end.

2.2 Proposed Development

The proposed redevelopment comprises the demolition of existing buildings and structures to facilitate the creation of a new building comprising basement, ground plus six storey building for a mix of Purpose Built Student Accommodation (Sui Generis), flexible commercial (Class E) and ground plus five Residential (Class C3) uses with ancillary plant, courtyards, access, hard and soft landscaping, cycle parking, highway works and all other works associated with the development.

The proposed site plan is included in Appendix C.

3 Environmental Setting

3.1 Source Protection Zone

The Environment Agency (E.A.) has designated Groundwater Source Protection Zones (SPZs) for 2000 groundwater supply sources. The SPZs are designed to control activities close to water supplies intended for human consumption. These water sources include wells, boreholes and springs, all of which are used for public drinking. Contamination of these zones from any activity might cause pollution in the area and pose a risk to the public who consume tap water. The closer the activity is to the water source, the greater the risk.

According to the Environment Agency’s groundwater designation maps, the site is located outside any Source Protection Zones.

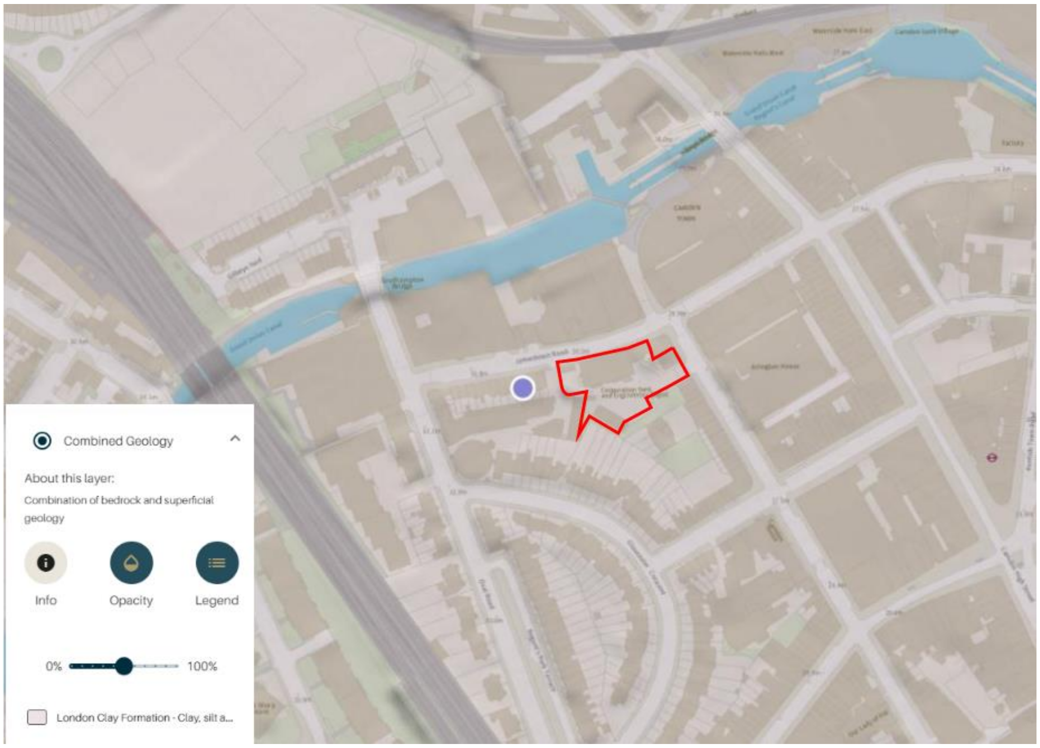
3.2 Geology and Hydrogeology

The British Geological Survey (BGS) map indicates that the site is underlain by the London Clay Formation which is likely to be around 50m thickness and generally comprises clay with occasional silt and sand partings.

The Ground Investigation report carried out by Soiltechnics no. STW6565-R01-Rev A indicates that published borehole records in the surrounding area encountered London Clay to approximately 45m bgl with the Reading Beds and Thanet Formation encountered to approximately 65m depth. The chalk deposits were present beneath and proven to over 90m bgl.

The nearest surface water feature is the Regents Canal, which is located approximately 62m north-west of the site. There are no other watercourses in the immediate vicinity of the site.

Figure 2. Proposed Site Location on British Geological Survey Geology Viewer



4 Sources of Flood Risk

In accordance with NPPF and advice from the Environment Agency, a prediction of the flood sources and levels is required along with the effects of climate change from the present for the design life of the development.

The flood risk elements that need to be considered for any site are defined in BS 8533 as the “Forms of Flooding” and are listed as:

- flooding from the Sea (tidal flood risk)
- flooding from Rivers (fluvial flood risk)
- flooding from the Land
- flooding from Groundwater
- flooding from Sewers (sewer and drain exceedance, pumping station failure etc)
- flooding from Reservoirs, Canals and other Artificial Structures.

Paragraph 165 from the NPPF December 2023 sets out the criteria for development and flood risk by stating that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. The key definitions are:

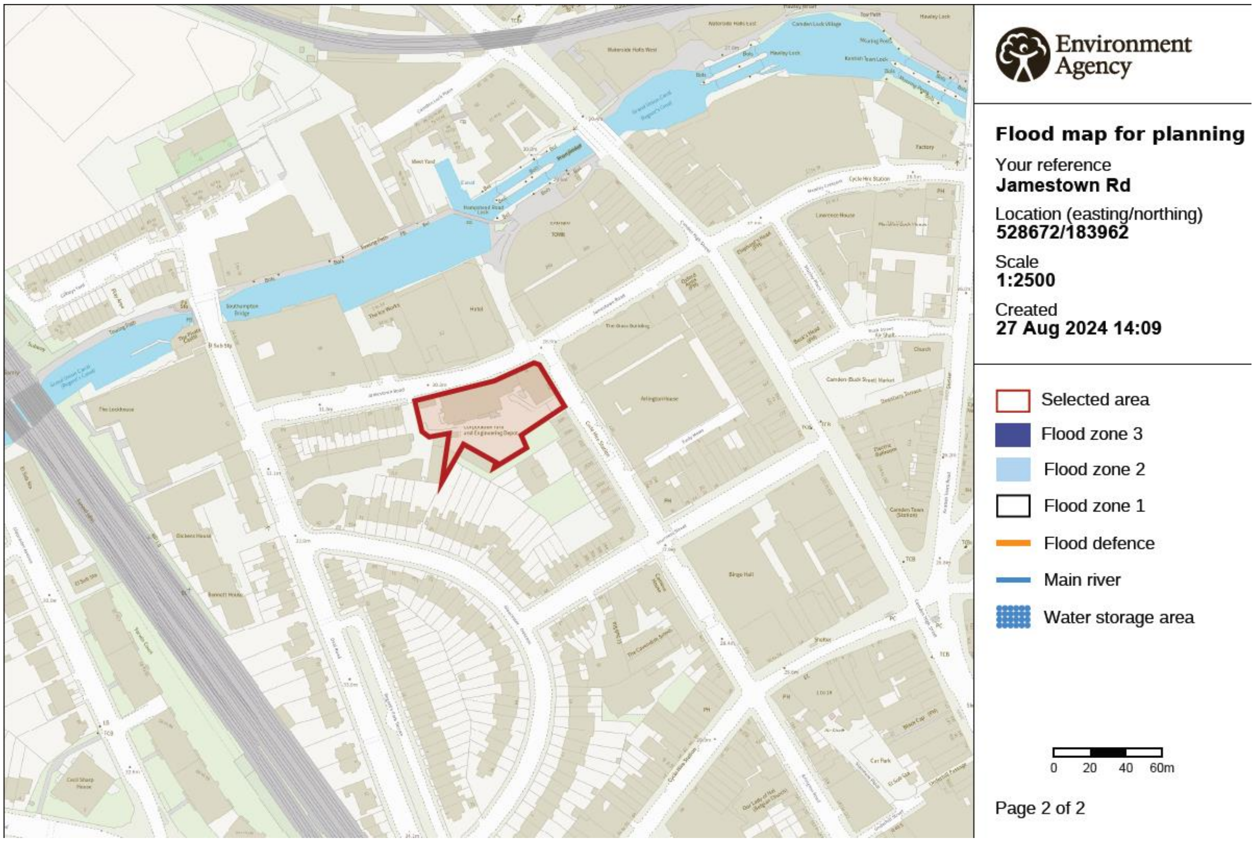
- “Areas at risk of flooding” means land within Flood Zones 2 and 3; or land within Flood Zone 1 which has critical drainage problems, and which has been notified to the local planning authority by the Environment Agency.
- “Flood risk” means risk from all sources of flooding - including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers, and drainage systems, and from other artificial sources.

4.1 Tidal and Fluvial Flooding

The Environment Agency’s indicative flood map below shows that the site lies within Flood Zone 1 having a low probability of flooding. This means that in any year, the land has a less than 0.1% chance of flooding from rivers or the sea.

This Environment Agency’s map can be seen in Appendix D.

Figure 3. Site Location on Environment Agency's Flood Map

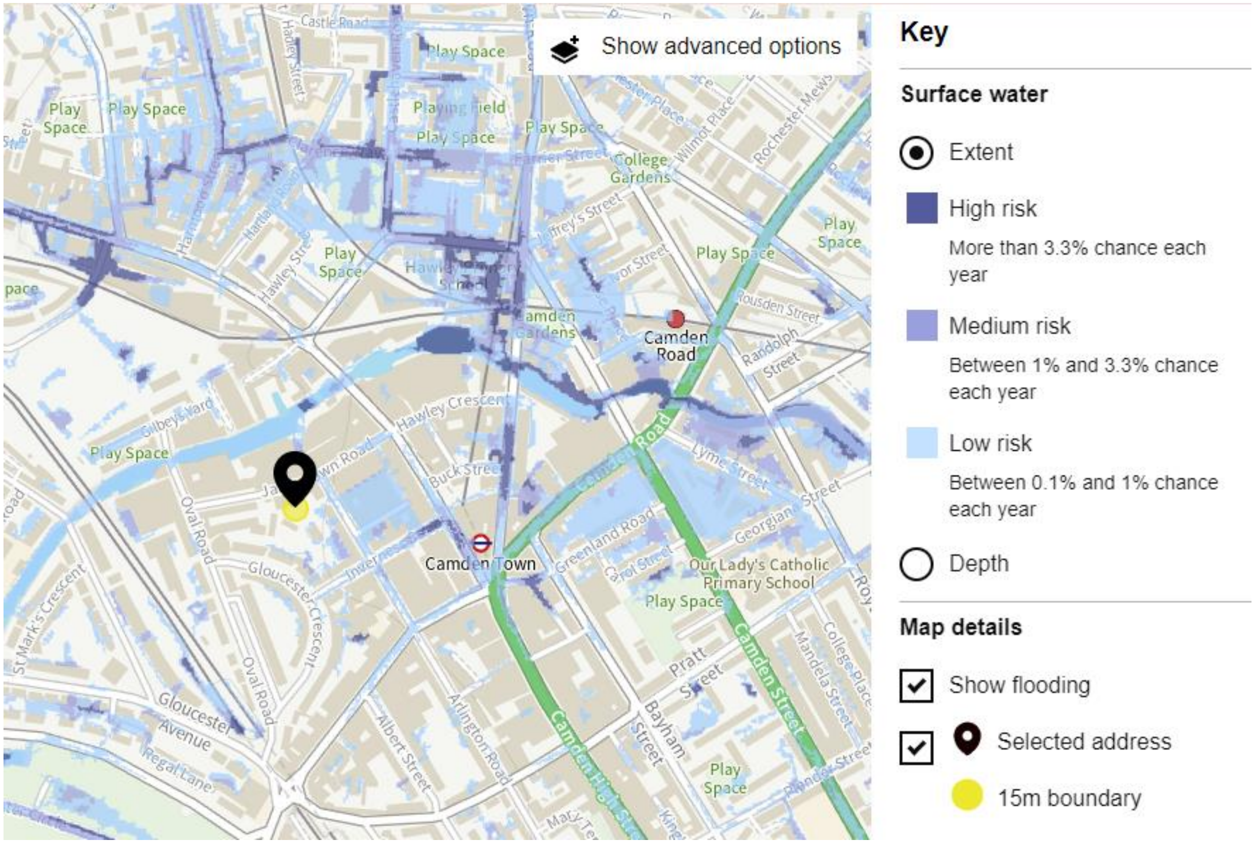


4.2 Surface Water Flooding

Surface water flooding occurs when rainfall is unable to infiltrate into the ground and/or engineered drainage networks and accumulates on the surface. Groundwater flooding occurs where groundwater levels rise above ground surface levels. Local geology has a major influence on where this type of flooding takes place; it is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). Groundwater levels may rise following prolonged rainfall or if tidally influenced.

According to the EA map shown in Figure 4 below, the site is at a low risk from flooding from pluvial sources.

Figure 4. Environment Agency Surface Water Flood Map



4.3 Flooding from Groundwater

Groundwater flooding tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas, the water table is usually at shallower depths anyway, but during very wet periods, with all the additional groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

In June 2024, Soiltechnics Ltd have carried out a Site Investigation no. STW6565-R01-Rev A, comprising 1no. trial pit, 3no. windowless samples and 3no. boreholes to a maximum depth of 6m below ground level. The groundwater was encountered in BH02 at a depth of 0.8m bgl. This is in close proximity to the location of the proposed attenuation tank. Further investigation will be required to demonstrate if any anti floatation measures are required.

4.4 Artificial Sources of Flooding

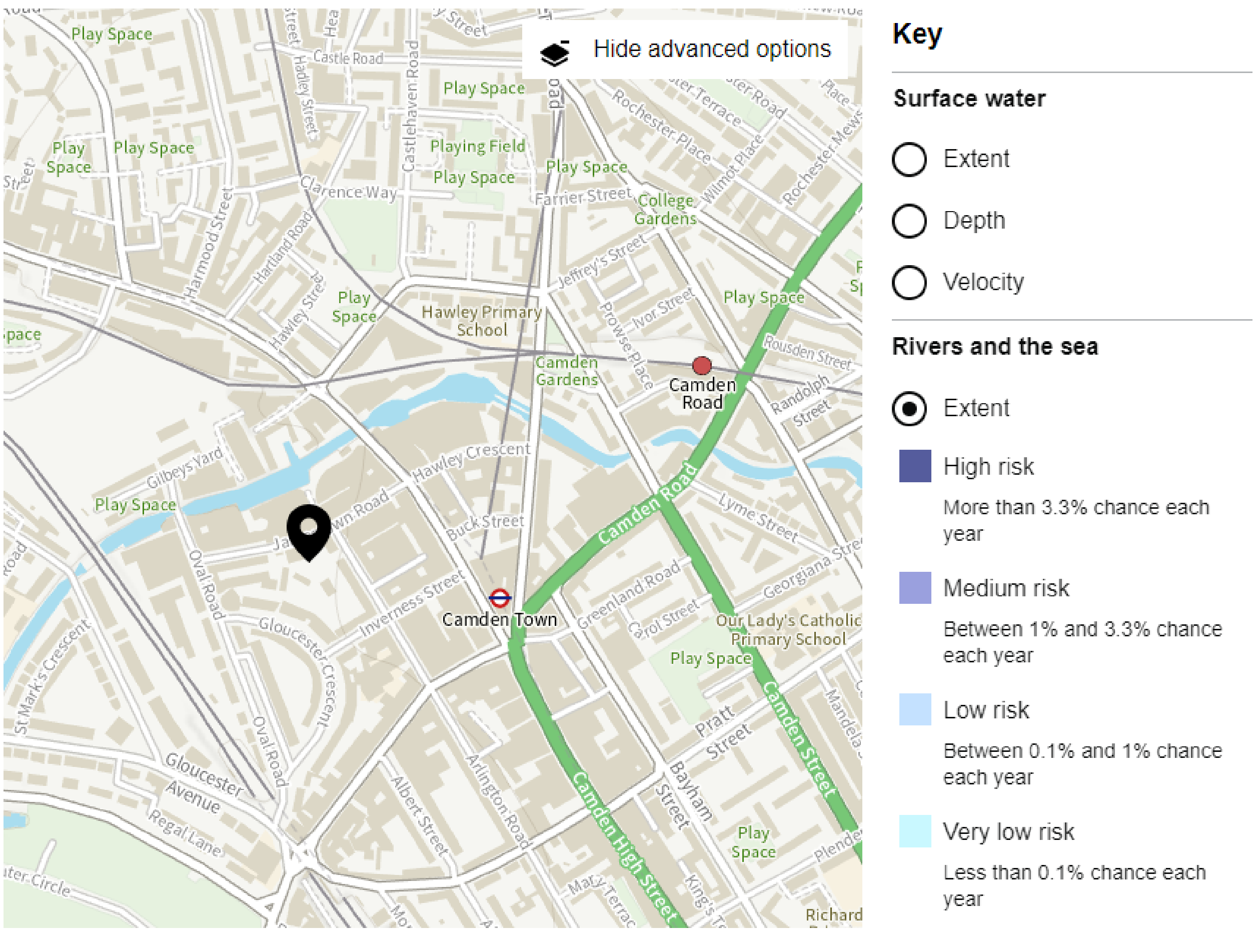
Artificial flood sources include raised channels such as canals or storage features such as ponds or reservoirs.

There are no other artificial sources adjacent to the site.

4.5 Flooding from Rivers and Sea

The EA Flood Risk from Rivers and Sea mapping in Figure 5 below indicates that the site is at a very low risk from flooding in the unlikely event of a failure of a major reservoir.

Figure 5. Environment Agency Rivers and Sea Flood Map



4.6 Flood Risk Resulting from the Development

The proposed development will use the latest best practice guidance to ensure that flood risk is not increased as a result of the development. Flood risk is anticipated to be reduced on this site, as the proposals will include measures to deal with water quantity and improve water quality thereby ensuring no flooding up to the 1:30 year event and no flood risk off site for the 1:100 year + climate change event.

By using SuDS components that will improve and control the surface water run-off, the flood risk is considered to be a betterment on the existing condition.

4.7 Flood risk summary

The flood risk from fluvial & tidal flooding, surface water flooding, sewer flooding and groundwater are all assessed to be low.

5 Planning Policy and Evidence

This report has been developed in accordance with the planning policies and guidance described in this section.

5.1 National Planning Policy Framework (December 2023)

In determining an approach for the assessment of flood risk for the development proposal there is a need to review the policy context. Government guidance requires that consideration be given to flood risk in the planning process. The National Planning Policy Framework (NPPF) was last updated in December 2023 and outlines the national policy position on development and FRA.

The Framework states that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. Where development is necessary in flood risk areas, it can be permitted provided it is made safe without increasing flood risk elsewhere.

The essence of NPPF is that:

- Local Plans should be supported by Strategic FRA and develop policies to manage flood risk from all sources, taking advice from the Environment Agency and other relevant flood risk management bodies, such as lead local flood authorities and internal drainage boards.
- Polices in development plans should outline the consideration, which will be given to flooding issues, recognising the uncertainties that are inherent in the prediction of flooding and that flood risk is expected to increase as a result of climate change.
- Planning authorities should apply the precautionary principle to the issue of flood risk, using a risk-based search sequence to avoid such risk where possible and managing it elsewhere.
- The vulnerability of a proposed land use should be considered when assessing flood risk.
- Opportunities offered by new developments should be used to reduce the causes and impacts of flooding.
- Planning authorities should recognise the importance of functional floodplains, where water flows or is held at times of flood, and avoid inappropriate development on undeveloped and undefended floodplains; and
- The concept of Flood Risk Reduction, particularly in circumstances where development has been sanctioned on the basis of the “Exception Test”.

5.2 Flood and Water Management Act 2010

Combined with the Flood Risk Regulations 2009 (‘the Regulations’), (which enact the EU Floods Directive in the England and Wales) the Flood and Water Management Act 2010 (‘the Act’) places significantly greater responsibility on Local Authorities to manage and lead on local flooding issues.

The Act and the Regulations together raise the requirements and targets Local Authorities need to meet, including:

- Playing an active role leading Flood Risk Management.
- Development of Local Flood Risk Management Strategies (LFRMS).
- Implementing requirements of Flood and Water Management legislation.
- Development and implementation of drainage and flooding management strategies.
- Responsibility for first approval, then adopting, management and maintenance of Sustainable Drainage System (SuDS) where they service more than one property.

The Flood and Water Management Act also clarifies three key areas that influence development:

1. **Sustainable Drainage Systems (SuDS) -** the Act makes provision for a national standard to be prepared on SuDS, and developers will be required to obtain local authority approval for SuDS in accordance with the standards, likely with conditions. Supporting this, the Act requires local authorities to adopt and maintain SuDS, removing any ongoing responsibility for developers to maintain SuDS if they are designed and constructed robustly.
2. **Flood risk management structures** - the Act enables the EA and local authorities to designate structures such as flood defences or embankments owned by third parties for protection if they affect flooding or coastal erosion. A developer or landowner will not be able to alter, remove or replace a designated structure or feature without first obtaining consent from the relevant authority.
3. **Permitted flooding of third-party land** - The EA and local authorities have the power to carry out work which may cause flooding to third party land where the works are deemed to be in the interest of nature conservation, the preservation of cultural heritage or people’s enjoyment of the environment or of cultural heritage.

5.3 Planning Practice Guidance

The National Planning Policy Framework sets strict tests to protect people and property from flooding which all local planning authorities are expected to follow. The main steps to be followed are designed to ensure that if there are better sites in terms of flood risk, or a proposed development cannot be made safe, it should not be permitted.

The Planning Practice Guidance for Flood Risk and Coastal Change (PPG) document provides guidance on how the local planning authorities should:

- Assess flood risk.
- Avoid flood risk; and
- Manage and Mitigate flood risk and coastal change.

There is also information on the requirements to consult the Environment Agency, on the role of lead local flood authorities and on flood risk in relation to minor developments.

5.4 London Plan 2021

The London Plan is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. In 2021 the new London Plan was released (also known as a Replacement Plan). This new London Plan is the third London Plan. London Plan policies SI 12 and SI 13 (described below) require development to help reduce flood risk, including applying principles of sustainable urban drainage and not increasing hard-standing areas, in order to reduce run-off from sites.

Policy SI 12 Flood risk management states:

A - Current and expected flood risk from all sources across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers.

B - Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should cooperate and jointly address cross-boundary flood risk issues including with authorities outside London.

C - Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.

D - Developments Plans and development proposals should contribute to the delivery of the measures set out in Thames Estuary 2100 Plan. The Mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for a new Thames Barrier.

E - Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.

F - Development proposals adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading. Unless exceptional circumstances are demonstrated for not doing so, development proposals should be set back from flood defences to allow for any foreseeable future maintenance and upgrades in a sustainable and cost-effective way.

G - Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.

Policy SI 13 Sustainable drainage states:

A - Lead Local Flood Authorities should identify – through their Local Flood Risk Management Strategies and Surface Water Management Plans – areas where there are particular surface water management issues and aim to reduce these risks. Increases in surface water run-off outside these areas also need to be identified and addressed.

B - Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:

1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)

2) rainwater infiltration to ground at or close to source

3) rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)

4) rainwater discharge direct to a watercourse (unless not appropriate)

5) controlled rainwater discharge to a surface water sewer or drain

6) controlled rainwater discharge to a combined sewer

5.5 The Mayor’s Water Strategy (2011)

The Mayor’s Water Strategy details ways in which present water resources could be used more effectively, to tackle problems such as water supply, wastewater generation and flood risk across London. ‘Actions’ of relevance to water resource and flood risk issues are:

- *Action 5 aims to make properties more water efficient. The strategy aims to raise awareness of efficient commercial (non-domestic) water use and encourages commercial users to set internal targets and best practice benchmarks for water use reduction. Thames Water estimates that, overall, commercial demand will grow by 8% over the next 25 years. The policy recognises that a significant proportion of commercial water use is from the services sector (for example 16% from hotels, bars and restaurants) and it therefore holds significant potential to save water. A number of water saving technologies are outlined, such as the replacement of urinals with waterless varieties; and*
- *Action 18, which encourages the use of green roofs, rainwater harvesting, grey water recycling and sustainable drainage to relieve pressure on drainage systems, thereby reducing flood risk and water demand.*

5.6 The London Borough of Camden Surface Water Management Plan 2013

The objectives of the SWMP are to:

- *Develop a robust understanding of surface water flood risk in and around the London Borough of Camden, taking into account the challenges of climate change, population and demographic change and increasing urbanisation in London;*
- *Identify, define and prioritise Critical Drainage Areas, including further definition of existing local flood risk zones and mapping new areas of potential flood risk;*
- *Make holistic and multifunctional recommendations for surface water management which improve emergency and land use planning, and enable better flood risk and drainage infrastructure investments;*
- *Establish and consolidate partnerships between key drainage stakeholders to facilitate a collaborative culture of data, skills, resource and learning sharing and exchange, and closer coordination to utilise cross boundary working opportunities;*
- *Undertake engagement with stakeholders to raise awareness of surface water flooding, identify flood risks and assets, and agree mitigation measures and actions;*
- *Deliver outputs to enable a real change on the ground rather than just reports and models, whereby partners and stakeholders take ownership of their flood risk and commit to delivery and maintenance of the recommended measures and actions*.

5.7 Strategic Flood Risk Assessment 2014

4.2.1 The LBC Surface Water Management Plan (SWMP) identified a number of Critical Drainage Areas (CDAs) within LBC (Appendix B: Figure 6), which are defined in the SWMP as:

"A discrete geographic area (usually a hydrological catchment) where multiple and interlinked sources of flood risk (surface water, groundwater, sewer, main river and/or tidal) cause flooding in one or more Local Flood Risk Zones during severe weather thereby affecting people, property or local infrastructure."

Flood Risk Management

2. *For proposed developments located within a CDA, LBC should consider setting as a requirement a minimum reduction in surface water runoff rates post-development of 50%. The intention of such a requirement would be to reduce surface water runoff and also reduce the strain on the combined sewer network.*

5.8 Camden Local Plan 2017

Policy CC3 Water and flooding

The Council will seek to ensure that development does not increase flood risk and reduces the risk of flooding where possible.

We will require development to:

a. incorporate water efficiency measures;

b. avoid harm to the water environment and improve water quality;

c. consider the impact of development in areas at risk of flooding

(including drainage);

d. incorporate flood resilient measures in areas prone to flooding;

e. utilises Sustainable Drainage Systems (SuDS) in line with the drainage

hierarchy to achieve a greenfield run-off rate where feasible; and

f. not locate vulnerable development in flood-prone areas.

Where an assessment of flood risk is required, developments should consider surface water flooding in detail and groundwater flooding where applicable.

5.9 Camden Planning Guidance – Water and Flooding March 2019

The Council has prepared this Camden Planning Guidance (CPG) on Water and flooding to support the policies in the Camden Local Plan 2017. This guidance is consistent with the Local Plan and forms a Supplementary Planning Document (SPD) which is an additional “material consideration” in planning decisions.

This document should be read in conjunction with and within the context of the relevant policies in Camden’s Local Plan, other development / local plan documents and other Camden Planning Guidance documents.

KEY MESSAGES

- All developments must not increase the risk of flooding.
- Developments are required to utilise Sustainable Drainage Systems (using the drainage hierarchy) to achieve greenfield run off rates, where feasible.

Developments must not increase the risk of flooding, and are required to put in place mitigation measures where there is known to be a risk of flooding (Local Plan policies CC2 and CC3).

Major developments will be required to constrain runoff volumes for a 1 in 100 year, 6 hour rainfall event, where feasible. All sites in Camden of one hectare or more require a Flood Risk Assessment in line with the National Planning Policy Framework

5.10 Climate Change

The Flood risk assessments: Climate Change Allowances Guidance published in May 2022 indicates that climate change is currently expected to result in increased rainfall and rising sea levels. Tables 1 and 2 extracted from the Government’s website below show anticipated changes in extreme rainfall intensity in small and urban catchments.

Table 1. 1 in 30-year annual exceedance rainfall event

Epoch		
	Central allowance	Upper end allowance
2050s	20%	35%
2070s	20%	35%

Table 2. 1 in 100-year annual exceedance rainfall event

Epoch		
	Central allowance	Upper end allowance
2050s	20%	40%
2070s	25%	40%

The average lifetime of a residential building is 100 years. Therefore, the surface water drainage will be designed by using 2070s Epoch with an **upper end allowance** of 40% increase in rainfall intensity.

6 Planning Context

6.1 Application of Planning Policy

NPPF includes measures specifically dealing with development planning and flood risk using a sequential characterisation of risk based on planning zones and the Environment Agency Flood Map. The main study requirement is to identify the flood zones and vulnerability classification relevant to the proposed development, based on an assessment of current and future conditions.

Within NPPF Technical Guidance on flood risk each flood zone has a list of appropriate land uses dependent on vulnerability to flooding.

6.2 Land Use Vulnerability

From the NPPF Technical Guidance, a “Less Vulnerable” land use could be appropriate to Flood Zone 1 (with a 1% or higher chance from rivers or 0.5% from the sea).

In applying the sequential test, reference is made to the following table (reproduced from Table 3 contained within NPPF).

Table 3. Flood Risk Vulnerability and Flood Zone ‘Compatibility’

Flood Risk Vulnerability Classification		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Zone 1	Appropriate	Appropriate	Appropriate	Appropriate	Appropriate
	Zone 2	Appropriate	Appropriate	Exception Test Required	Appropriate	Appropriate
	Zone 3a	Exception Test Required	Appropriate	Should not be Permitted	Exception Test Required	Appropriate
	Zone 3b Functional Floodplain	Exception Test Required	Appropriate	Should not be Permitted	Should not be Permitted	Should not be Permitted

In the context of the proposed development, the proposed use of ‘Residential’ can be classed as ‘Less Vulnerable’ and therefore appropriate in Flood Zone 1.

7 Drainage Management Plan

7.1 Sustainable Drainage

7.1.1 Current Surface Water Runoff

It is assumed that the existing site is discharging into the existing Thames Water combined sewer within Jamestown Road and/or Arlington Road.

A CCTV survey is required to ascertain the location, condition and levels of the existing manholes and the connection point into the Thames Water sewer.

7.1.2 Sustainable Drainage Options

The proposed redevelopment comprises the demolition of existing buildings and structures to facilitate the creation of a new building comprising basement, ground plus six storey building for a mix of Purpose Built Student Accommodation (Sui Generis), flexible commercial (Class E) and ground plus five Residential (Class C3) uses with ancillary plant, courtyards, access, hard and soft landscaping, cycle parking, highway works and all other works associated with the development.

Current guidance promotes sustainable water management through the use of SuDS, as shown in point 7.1.3 below.

The proposed development is looking to incorporate SUDS features such as green roofs and cellular storage.

7.1.3 Sustainable Drainage Options

Current guidance promotes sustainable water management through the use of SUDS. A range of SUDS options are described in CIRIA “Infiltration drainage – Manual of good practice” C156 1996:

- Green roofs
- Water butts
- Porous and pervious paving
- Rainwater harvesting
- Filter strips
- Swales
- Infiltration basins
- Detention basins
- Retention ponds
- Wetland

A hierarchy of techniques is identified (Institute of Hydrology (1994) Flood estimation for small catchments. Report no 124), which comprises the following in order:

a. Prevention – the use of good site design and housekeeping measures on individual sites to prevent runoff and pollution (e.g. minimise areas of hard standing).

b. Source Control – control of runoff at or very near its source (such as the use of rainwater harvesting).

c. Site Control – management of water from several sub-catchments (including routing water from roofs and car parks to one/several large soakaways for the whole site).

d. Regional Control – management of runoff from several sites, typically in a detention pond or wetland.

It is generally accepted that the implementation of SuDS as opposed to conventional drainage systems, provides several benefits by:

- reducing the volumes and frequency of water flowing directly to watercourses or sewers from developed sites;
- reducing peak flows to watercourses or sewers and potentially reducing the risk of flooding downstream;
- improving water quality over conventional surface water sewers by removing pollutants from diffuse pollutant sources;
- reducing potable water demand through rainwater harvesting;
- improving amenity through the provision of public open spaces and wildlife habitat; and
- replicating natural drainage patterns, including the recharge of groundwater so that base flows are maintained.

7.1.4 Appropriate Measures at the Site

Surface Water

The proposed development is on an existing brownfield site and covering an area of 0.27 ha. By using the HR Wallingford method, the Greenfield run-off rate for the site is 1.18 l/s. It is considered that a more practical rate to minimise blockages and maintenance issues would be 2.0 l/s.

The proposal is to discharge the surface water run-off at the Greenfield rate of 2.0 l/s via two attenuation tanks with an approximate storage of 92m^3 and green roof area of 595m^2. The total storage is to be confirmed at the next stage design.

It is assumed that the existing flow is not restricted. Therefore, in accordance with the London Borough of Camden guidance mentioned above, the proposal already achieves a betterment by restricting the surface water flow rate to 2.0 l/s.

The proposed green roofs provide treatment stages at source whilst also slowing flows entering the proposed network.

The tanks have been designed for the 1 in 30 years event without flooding and for the 1 in 100 years + climate change any resulting flooding is contained and managed within the site and directed away from properties and escape routes.

Therefore, the proposed drainage strategy is to:

- discharge the surface water run-off at a Greenfield rate of 2.0 l/s as per London Borough of Camden requirements;
- use a green roof as SuDS components;
- the surface water drainage design will follow the principles listed in the Approved Document Part H of the Building Regulations and the Design and Construction Guidance document;
- the design will be tested against 40% increase in rainfall intensity;
- improving the water quality through treatment stages, and improving water quantity through flow restriction and attenuation

The rainfall events up to and including 1 in 30 years return period will be managed without any flooding. Therefore, for the 1 in 100-year plus 40% increase of rainfall intensity for climate change, any resulting flooding is contained and managed within the site and directed away from properties and escape routes.

A Pre-Development Enquiry has been sent to Thames Water to confirm sewer capacity. A response is yet to be received.

Foul Water

It is proposed to drain the foul water via gravity into a private combined sewer located within the site. The foul flow rate of 10.3 l/s is to be confirmed by the MEP designer at a later stage.

The proposed drainage layout can be seen in Appendix E.

7.2 Water Quality

In accordance with the Ciria C753 SUDS Manual, the water quality treatment has been assessed using the simple index approach criteria. The development consists of residential roof area and public realm and the pollution hazard indices for this land use are in Table 4 below.

Table 4. Pollution hazard indices, SuDS Manual Table 26.2

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Other roofs (commercial/industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05

By using sustainable drainage features (green roofs) they are anticipated to provide the hazard mitigation required for roof generated run-off. Green roofs also provide habitats for birds and can reduce air pollution emissions by lowering the need for air conditioning. Therefore, the pollution is not increased by the proposed development.

8 Maintenance and Management Plan

8.1 Assessment of SuDS suitability

The purpose of this section of the document is to outline the proposed maintenance schedule for the drainage system and all SuDS features for the proposed development.

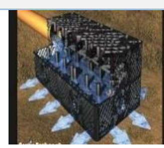
The maintenance of SuDS features is vital for ensuring that they work efficiently. Maintenance activities can be broadly defined as:

- Regular maintenance – basic tasks carried out regularly.
- Occasional maintenance – tasks that are required periodically but on a much less frequent basis.
- Remedial maintenance – tasks required when a fault needs rectifying and often includes unforeseen events.

The maintenance schedule set out here complies with the CIRIA 753 SuDS Manual, which is defined as providing current best practice in the industry. The information does not replace manufacturer’s requirements and these should be followed for each product in addition to the information in this document.

This can be seen in table 6 below.

Table 5. Assessment of Suitability of SuDS at the Site as the drainage hierarchy

SUDS Group	Technique	Image	Description	Advantages	Disadvantages	Suitable for Use at Site
Retention	Balancing Pond		Provides both storm water attenuation and treatment. Run-off from each rain event is detained and treated in the pool. The retention time promotes pollutant removal through sedimentation.	Good removal of pollutants, can be used where groundwater is vulnerable, good community acceptability, high ecological, and amenity benefits.	No reduction in run-off volume, land take may limit use in high density sites.	✗ Not suitable for the type of development
	Sub-surface Storage		Oversized pipes, tank systems and modular geocellular systems that can be used to create a below ground storage structure.	Modular and flexible, dual usage (infiltration/storage, high void ratios), can be installed beneath trafficked and soft landscaped areas.	No water quality treatment.	✓ Sub-surface storage is recommended.
Wetland	Shallow wetland Extended detention wetland Pond wetland Pocket wetland Submerged gravel wetland Wetland channel		Wetlands provide storm water attenuation and treatment. They comprise shallow ponds and marshy areas, covered in aquatic vegetation. Wetlands detail flows for an extended period to allow sediments to settle and to remove contaminants. They can provide significant ecological benefits.	Good pollutant removal and if lined can be used where groundwater is vulnerable. Good community acceptability, ecological and amenity benefits.	Land take is high, requires base flow, little reduction in run-off volume, not suitable for steep sites.	✗ Not suitable for the type of development
Infiltration	Infiltration trench Infiltration basin Soakaway		Surface water run-off can be discharged directly to ground for infiltration by soakaways, basins, or trenches. A prerequisite is that both groundwater and ground conditions are appropriate to	Reduces the volume of run-off, effective at pollutant removal, contributes to groundwater recharge, simple and cost-effective, easy	Requires appropriate pre-treatment, basins require a large flat area, offset from foundations.	✗ Infiltration is not feasible due to the presence of London Clay

SUDS Group	Technique	Image	Description	Advantages	Disadvantages	Suitable for Use at Site
			receive the quality and quantity of water generated.	performance observation.		
	Porous paving		Block or porous paving allows run-off to infiltrate through to sub-base layer. Water can then be infiltrated into ground or conveyed into storage or drainage systems.	Reduces the volume of run-off and if designed for infiltration contributes towards groundwater recharge. East to install and retrofit. Simple to manage. If lined can be used where groundwater is sensitive.	Not suitable for heavily trafficked areas or adoptable roads. Requires regular sweeping to prevent clogging with dirt.	✘ Not suitable for the type of development
	Permeable paving					
Filtration	Surface sand filter		Structures designed to treat surface water run-off through filtration using a sand bed filter medium. The filters can be designed with or without infiltration. Temporary storage of run-off is achieved through ponding above the filter layer. They are used where particularly high pollutant removal is required.	Flexibility of design, efficient in removing pollutants, suitable for retrofits and in tightly constrained urban locations.	Not for high sediment content, detention times can support algae growth, minimum hydraulic head of 1.2m required, possible odour problems, high capital and maintenance cost.	There is no requirement for high pollution reduction at this site
	Sub-surface sand filter					
	Perimeter sand filter					
	Bioretention/filter swale		Vegetated strips of land designed to accept run-off as overland sheet flow between a hard-surfaced area and a receiving system.	Landscaping features, effective in removing pollutants, flexible layout to fit into landscape, suited for highly impervious areas, good retrofit,	Requires landscaping and management, large land required, not suitable for steep sites; no significant attenuation or reduction of flows.	✘ No requirement for high pollution reduction; large land areas not available

SUDS Group	Technique	Image	Description	Advantages	Disadvantages	Suitable for Use at Site
				capability, effective pre-treatment option.		
	Filter trench/drain		Shallow excavations filled with rubble or stone that create temporary subsurface storage for filtration of storm water run-off. Receive lateral inflow from an adjacent impermeable surface.	Hydraulic benefits achieved with filter trenches, trenches can be incorporated into site landscaping and fit well beside roads and car parks.	High clogging potential without effective pre-treatment, limited to small catchments, high cost of replacing filter material.	✘ Not suitable for the type of development
Detention	Detention basin		Surface storage basins that provide flow control through attenuation. Normally dry and in certain situations the land may also function as a recreational facility	Cater for a wide range of rainfall events, can be used where groundwater is vulnerable, potential for dual land use, easy to maintain.	Land take, little reduction in run-off volume, detention depths constrained by levels.	✘ Landscaping space not available
	Enhanced dry swale Enhanced wet swale		Swales are linear vegetated drainage features in which surface water can be stored or conveyed. They can be designed to allow infiltration, where appropriate.	Incorporate into landscaping, good removal of pollutants, reduces run-off rates and volumes, low cost.	Not suitable for steep areas, significant land take, not suitable in areas with roadside parking.	✘ Landscaping space not available
Conveyance	Conveyance swales Rills		Formal linear drainage features in which surface water can be stored or conveyed. They can be incorporated with water features such as ponds or waterfalls where appropriate.	Negate the need for underground pipework. Can provide some attenuation. Possible reduction in run-off volume via plant uptake and infiltration.	Potential trip/wheel hazard, disabled access issues.	✘ Landscaping space not available

SUDS Group	Technique	Image	Description	Advantages	Disadvantages	Suitable for Use at Site
Source control	Green/brown roof		Multi-layered system that covers the roof of a building with vegetation cover/landscaping over a drainage layer. Designed to intercept and retain precipitation, reducing the volume of run-off and attenuating peak flows.	Mimics greenfield state of building footprint for high density developments, good removal of pollutants, ecological benefits, insulates buildings, sound absorption.	Additional weight, not appropriate for steep roofs, maintenance of roof vegetation.	✓ The proposal includes 175m^2 of green roof.

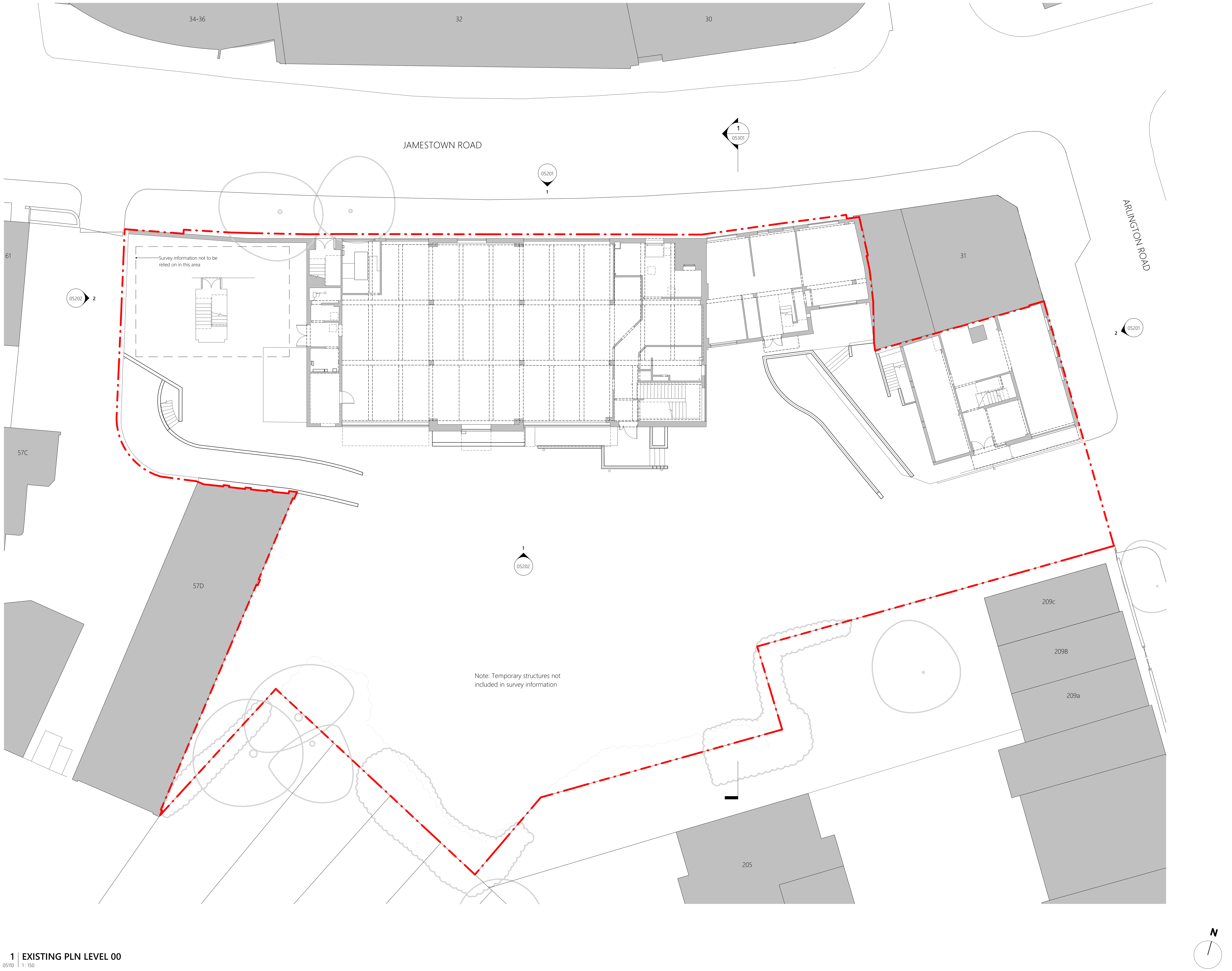
9 Conclusion

The existing flood risk to the development area from all sources has been assessed from a review of all available data. Future climate change has also been considered. Using the proposed development plan, the extent of the flood risk has been determined for the site as well as the effect that the development might have on flood risk elsewhere.

The assessment can be summarised as follows:

- The proposed development is on a ‘Brownfield site’ within the Flood Zone 1;
- The proposal is to discharge the surface water run-off at a rate of 2.0 l/s via sustainable features, for example two attenuation tanks located in the courtyards, with an approximate storage of 92m^3 and 595m^2 of green roof. The total storage is to be confirmed at the next stage design.
- The proposed development will not increase the risk of pollution, due to the proposed treatment stages.
- The surface water from the courtyard will be collected by gullies and / or channel drains.
- Green roofs serve several purposes for a building, such as absorbing rainwater, providing insulation, creating a habitat for wildlife, increasing biodiversity, helping to lower urban air temperatures and mitigate the heat island effect.
- The rainfall events in up to and including 1 in 30 years return period will be managed without any flooding. Therefore, for the 1 in 100-year plus 40% increase of rainfall intensity for climate change, any resulting flooding is contained and managed within the site and directed away from properties and escape routes.
- It is proposed to drain the foul water via gravity into a private combined sewer located within the site boundary.
- The foul flow rate of 10.3 l/s is to be confirmed by the MEP designer at a later stage.
- The proposed development work will not increase the risk of flooding to the site or surrounding areas in accordance with the provisions of relevant national and local planning policies.
- A Pre-Development Enquiry has been sent to Thames Water to confirm sewer capacity. The response confirming capacity is located in Appendix G.

Appendix A. Site Location Plan



1 | EXISTING PLN LEVEL 00
05110 | 1 : 150

NOTES:

SUPPLEMENTARY INFORMATION:
These drawings reflect the current position of the scheme development at RIBA Stage 2. They should be read in conjunction with the following information prepared by Morris+Company (MCO):
33-35 Jamestown Road Design and Access Statement
23054-MCO-XX-XX-DS-A-02017

These drawings should also be read in conjunction with the following information, prepared by other consultants:
- Structures Reports and Information (HDR Inc.)
- MEP Reports and Information (Wallace Whittle)
- Fire Report (Jensen Hughes)
- Acoustic Report (RBA Acoustics)
- Waste and Transport Report (Iceni)
- Energy Report (Wallace Whittle)
- Enviromental and Sustainabilty Consultant (Wallace Whittle)
- Landscape Drawings and Specification (New Practice and Context Office)

EXTENTS AND BOUNDARIES:

These drawings combine survey and site information produced by others and as such should be verified for accuracy.

Existing site information, context, surrounding infrastructure, neighbouring building extents and plots are derived from 2D Surveys, produced by:

'Maltby Land Surveys Ltd'
Survey Date: 13.02.2024
Survey Reference: 22249-100-RevA

revision	date	description
P01	--/--/2024	Planning Submission

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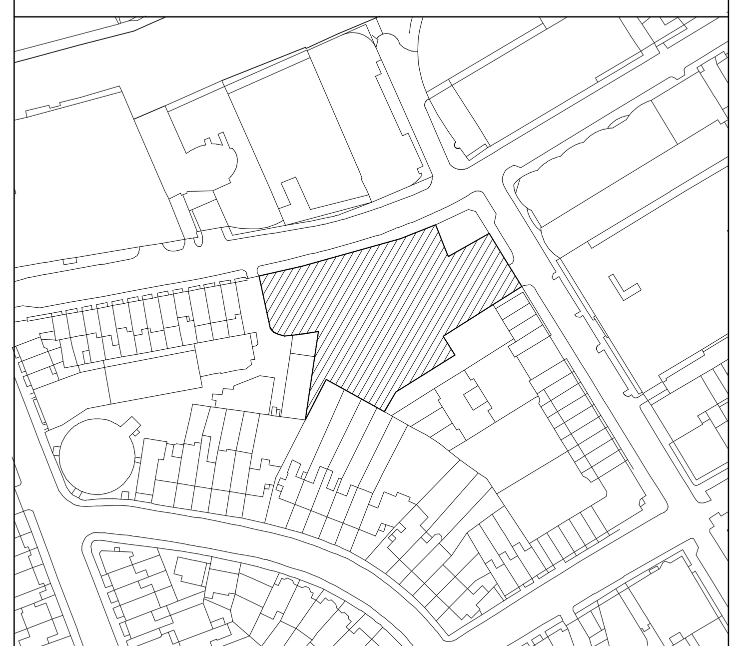

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- Do not scale from this drawing
- All dimensions to be checked on site by the Contractor
- And such dimensions to be their responsibility
- Report all drawing errors and omissions to the Architect
- All dimensions in millimeters unless noted otherwise
- If in doubt ask Contract Administrator

DRAFT

job title: 33-35 JAMESTOWN ROAD

drawing title / location: EXISTING PLAN LEVEL 00

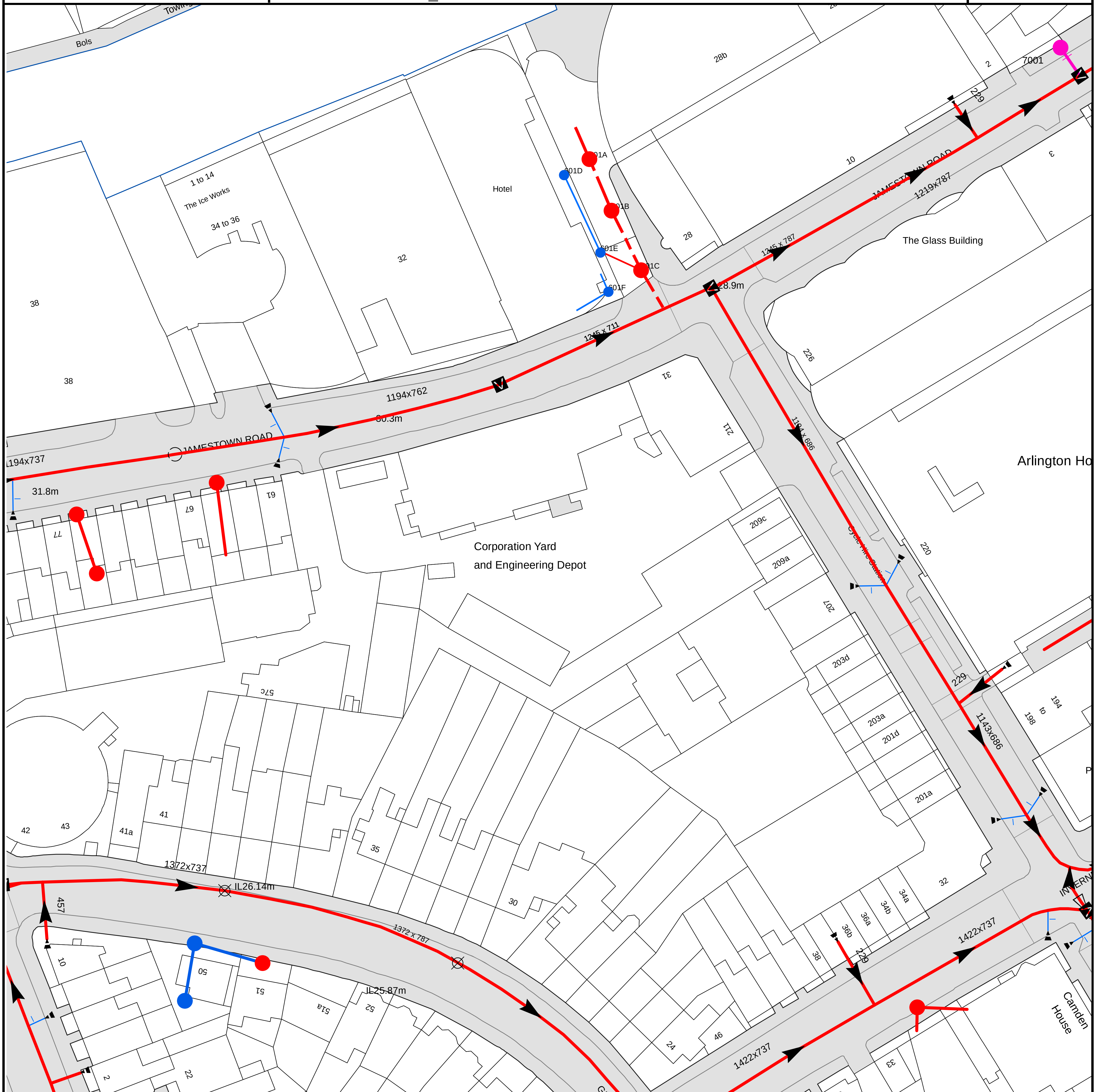
status: S2 - FOR INFORMATION / REFERENCE

scale: 1 : 150 @ A1

project	originator	funct.	spatial	form	disc.	number
23054	MCO	XX	00	DR	A	05110

Appendix B. Thames Water sewer records

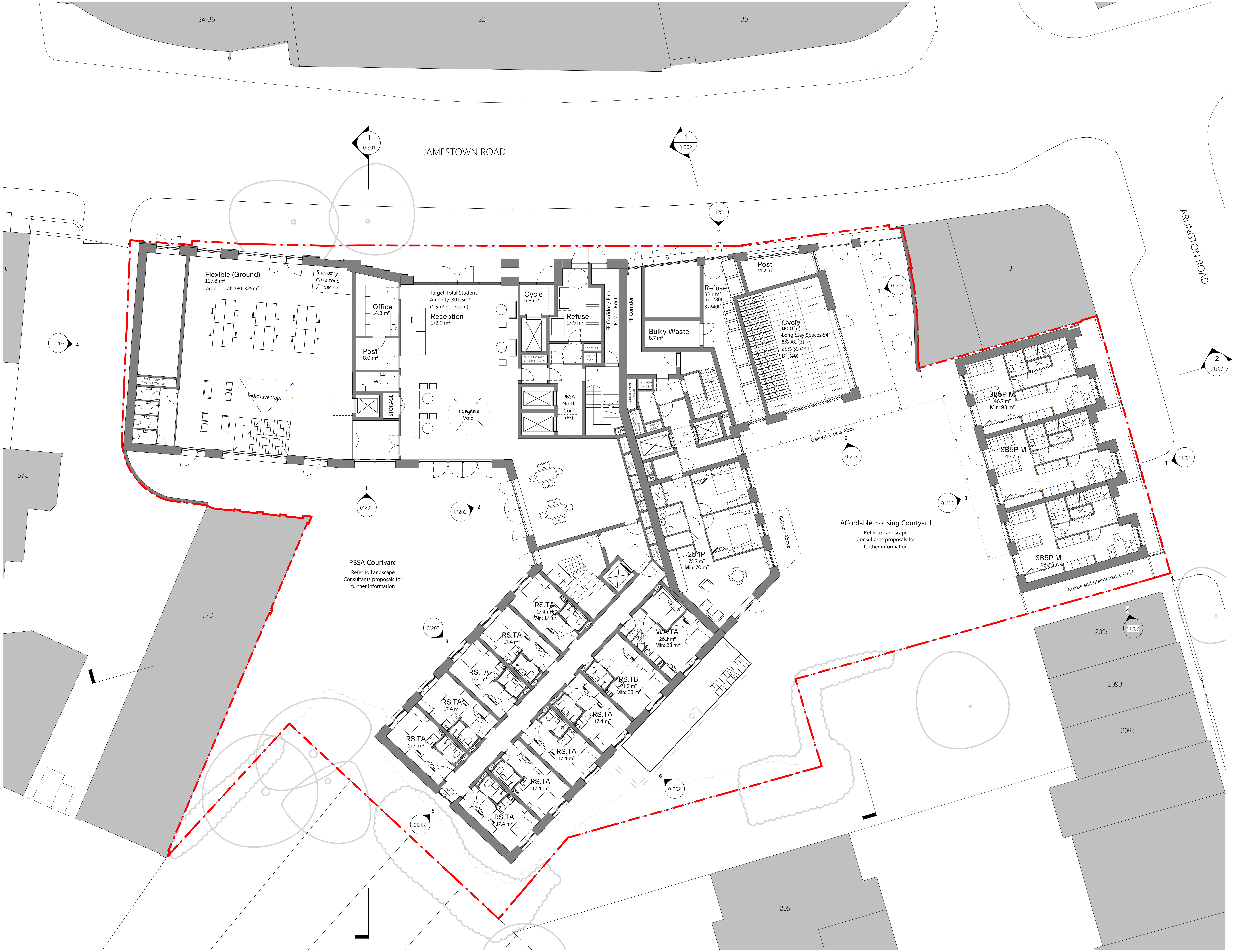
Asset Location Search Sewer Map - ALS/ALS/24/2024_4951770



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 528673,183959

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Appendix C. Proposed Development



2 | PROPOSED PLN LEVEL 00

06110 | 1 : 150

N

NOTES:

SUPPLEMENTARY INFORMATION:
These drawings reflect the current position of the scheme development at RIBA Stage 2. They should be read in conjunction with the following information prepared by Morris+Company (MCO):
33-35 Jamestown Road Design and Access Statement
23054-MCO-XX-XX-DS-A-02017

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'Maltby Land Surveys Ltd'
Survey Date: 13.02.2024
Survey Reference: 22249-100-RevA

Room Key

PBSA
01 - Typical Studio
02 - Premium Studio
03 - WCA Studio
04 - Accessible WC
05 - Private Study
06 - Lounge / Games
07 - Cinema
08 - Laundry
09 - Gym
10 - Private Dining / Kitchen
11 - Reception
12 - Post
13 - Management Office
14 - Storage
15 - LV Room
16 - Comms
17 - Cleaners Cupboard
18 - Commercial Sprinkler
19 - Cold Water Storage
20 - Generator
21 - Life Safety Switchroom
22 - Substation
23 - Cycle Store
24 - Refuse

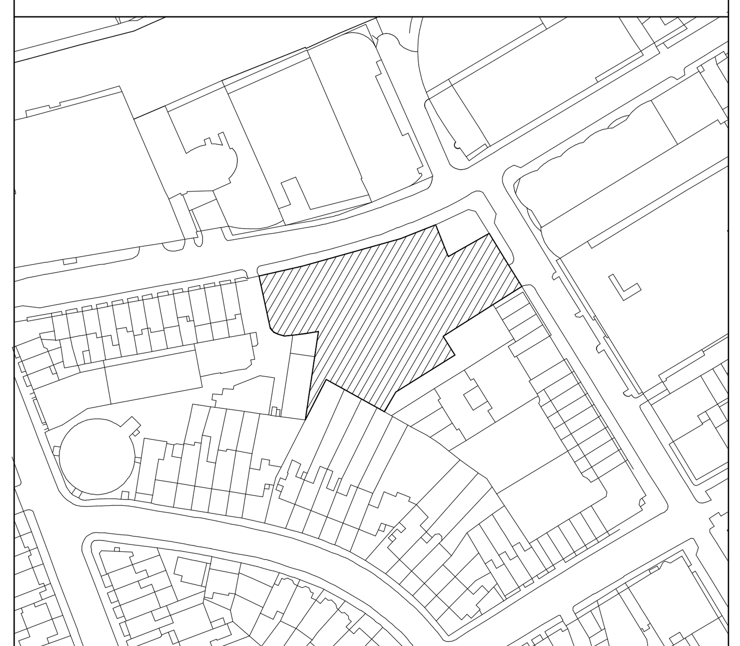
C3
30 - 2B3P Unit
31 - 2B4P Unit
32 - 2B3P WCA Unit
33 - 3B4P Unit
34 - 3B5P Unit
35 - 3B5P Maisonette
36 - Post
37 - LV Room
38 - Comms
39 - Domestic Sprinkler
40 - Cycle Store
41 - Refuse
42 - Bulky Waste

Flexible Workspace
50 - Flexible Workspace
51 - Accessible WC/Shower
52 - Bathrooms

NOTES
All workspace furniture layouts are indicative only
All unit layouts are indicative only
Cycle store layouts are indicative only

revision	date	description
P01	--/--/2024	Planning Submission

0 1500 3000 7500 15000 mm



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- And such dimensions to be their responsibility
- Report all drawing errors and omissions to the Architect
- All dimensions in millimeters unless noted otherwise
- If in doubt ask Contract Administrator

job title
33-35 JAMESTOWN ROAD

DRAFT

drawing title / location
PROPOSED PLAN LEVEL 00

status	S3 - FOR REVIEW AND COMMENT
scale	1 : 150 @ A1

project	originator	funct.	spatial	form	disc.	number
23054	MCO	XX	00	DR	A	06110

Appendix D. Environment Agency Maps

Environment Agency

Flood map for planning

Your reference	Location (easting/northing)	Created
Jamestown Rd	**528672/183962**	**27 Aug 2024 14:09**

Your selected location is in flood zone 1, an area with a low probability of flooding.

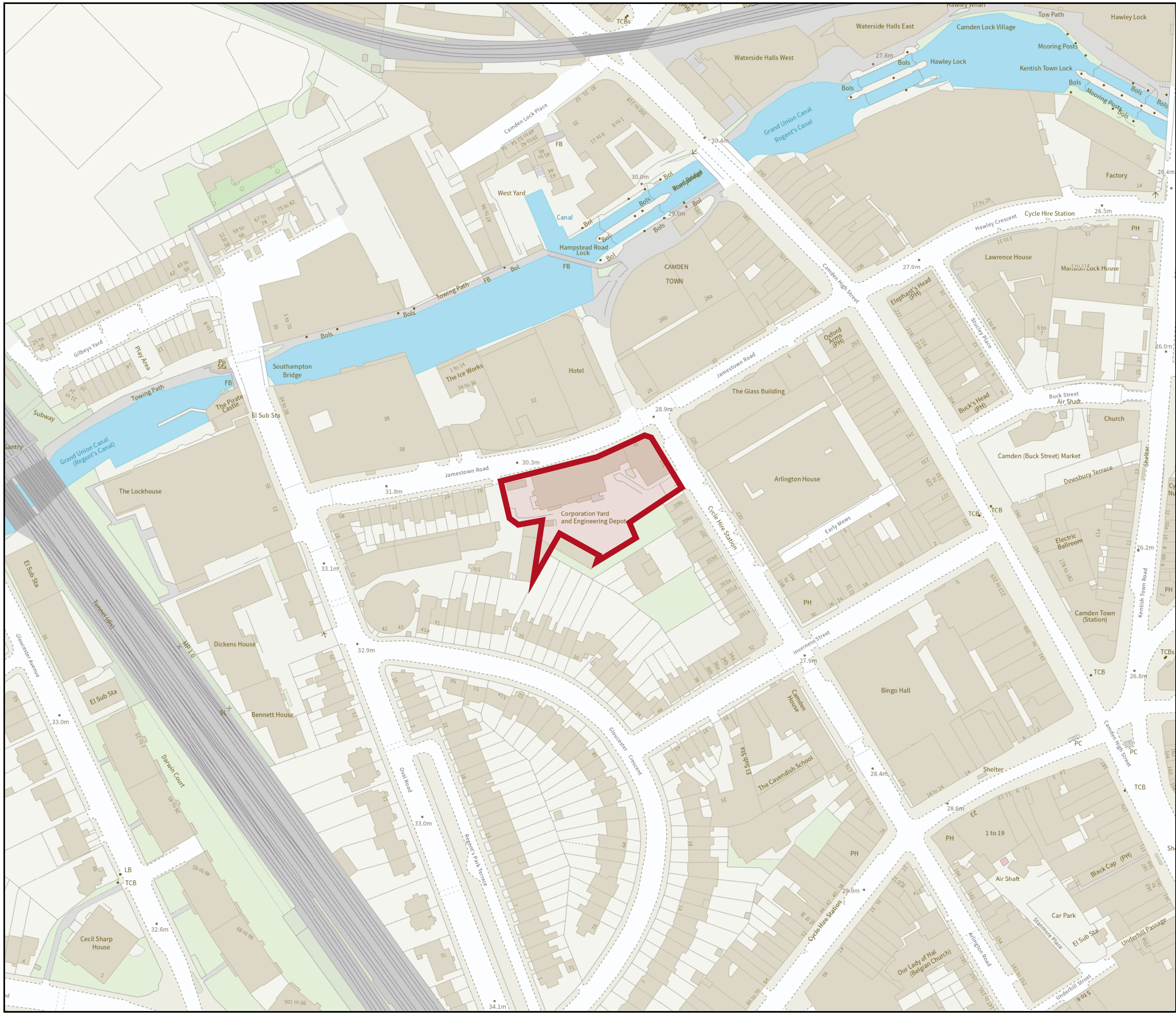
You will need to do a flood risk assessment if your site is **any of the following:**

- bigger that 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Flood map for planning

Your reference
Jamestown Rd

Location (easting/northing)
528672/183962

Scale
1:2500

Created
27 Aug 2024 14:09

- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60m

Appendix E. Proposed Drainage Strategy

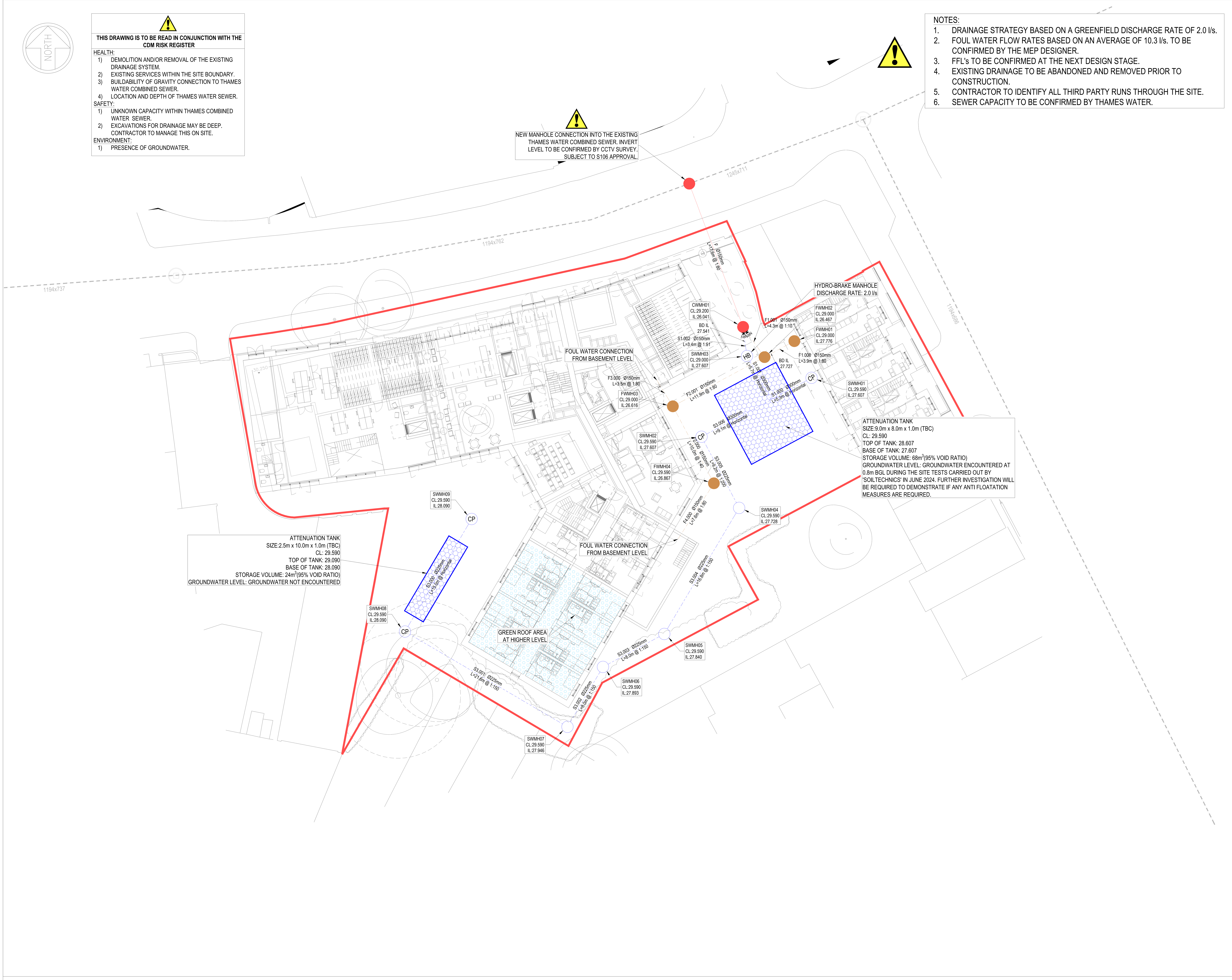
THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE CDM RISK REGISTER

HEALTH:
1) DEMOLITION AND/OR REMOVAL OF THE EXISTING DRAINAGE SYSTEM.
2) EXISTING SERVICES WITHIN THE SITE BOUNDARY.
3) BUILDABILITY OF GRAVITY CONNECTION TO THAMES WATER COMBINED SEWER.
4) LOCATION AND DEPTH OF THAMES WATER SEWER.

SAFETY:
1) UNKNOWN CAPACITY WITHIN THAMES COMBINED WATER SEWER.
2) EXCAVATIONS FOR DRAINAGE MAY BE DEEP. CONTRACTOR TO MANAGE THIS ON SITE.

ENVIRONMENT:
1) PRESENCE OF GROUNDWATER.

NOTES:
1. DRAINAGE STRATEGY BASED ON A GREENFIELD DISCHARGE RATE OF 2.0 l/s.
2. FOUL WATER FLOW RATES BASED ON AN AVERAGE OF 10.3 l/s. TO BE CONFIRMED BY THE MEP DESIGNER.
3. FFL's TO BE CONFIRMED AT THE NEXT DESIGN STAGE.
4. EXISTING DRAINAGE TO BE ABANDONED AND REMOVED PRIOR TO CONSTRUCTION.
5. CONTRACTOR TO IDENTIFY ALL THIRD PARTY RUNS THROUGH THE SITE.
6. SEWER CAPACITY TO BE CONFIRMED BY THAMES WATER.



NOTES:
1. THIS DRAWING IS NOT TO BE SCALED. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. THIS DRAWING IS BASED ON:
   - SITE PLAN BY 'MORRIS+COMPANY', DWG. 23054-MCO-XX-00-DR-A-01110-P07.
3. DO NOT SCALE FROM THIS DRAWING, WORK TO DIMENSIONS OR CO-ORDINATES PROVIDED.
4. THE CONTRACTOR IS ADVISED TO CHECK THE ACCURACY OF DRAWING INFORMATION TO ACTUAL ON-SITE CONDITIONS. I.E. THE LOCATION, LEVELS, SIZES, CONDITION OF EXISTING SEWERS TO BE RE-USED AND/OR CONNECTED INTO.
5. THE CONTRACTOR SHOULD INSTALL FINAL DRAINAGE CONNECTION PRIOR TO INSTALLING ANY UPSTREAM DRAINAGE TO AVOID POTENTIAL LEVEL ISSUES.
6. REPORT CONFLICTS TO ENGINEER IMMEDIATELY.
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING RETAINED SERVICES AND MAKING CONTACT WITH OWNERS OF APPARATUS TO OBTAIN NECESSARY CONSENT FOR EXCAVATION, PROTECTION AND/OR DIVERTING.
8. BURIED OBSTRUCTIONS ENCOUNTERED DURING EXCAVATION THAT CONFLICT WITH PROPOSED WORKS SHOULD BE BROKEN OUT AND REMOVED. RESIDUAL VOIDS TO BE BACKFILLED AND COMPACTED AS PER SPECIFICATION.
9. SURFACE WATER NETWORK ANALYSIS IS BASED ON FSR METHOD, SIZING OF THE DRAINAGE COMPONENTS FOR 1 IN 30 YEARS WITHOUT FLOODING AND ANALYSIS FOR 1 IN 100 YRS +40% CLIMATE CHANGE.
11. SETTING OUT OF DOWNPOINT LOCATIONS TO BE CONFIRMED BY THE M&E DESIGNER.

KEY:

	SITE BOUNDARY
	EXISTING THAMES WATER COMBINED WATER SEWER
SWMH	PROPOSED FOUL WATER MANHOLE (PCC)
SWMH CP	PROPOSED CATCHPIT MANHOLE (PCC)
HB	PROPOSED HYDR-BRAKE MANHOLE (PCC)
	PROPOSED SURFACE WATER PIPE
	PROPOSED ATTENUATION TANK
	PROPOSED GREEN ROOF
FWMH	PROPOSED FOUL WATER MANHOLE
CWMH	PRIVATE COMBINED WATER MANHOLE
	PROPOSED FOUL WATER PIPE
	PROPOSED COMBINED WATER PIPE
NRV	PROPOSED NON-RETURN VALVE

P01	PRELIMINARY ISSUE	03.09.24
Rev	Description	Date

Drawing Status: PRELIMINARY — Suitability: S2

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e: info@hdrinc.com
w: www.hdrinc.com

Client: REGAL LONDON

Architect: MORRIS+COMPANY

Project: 33-35 JAMESTOWN ROAD LONDON

Title: DRAINAGE STRATEGY GROUND FLOOR LEVEL

HDR Project Number: 10391371

Cad File Name: JTR-HDR-XX-XX-DR-C-102300

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
BS	SM	JUNE'24	1:200

Drawing Number: JTR-HDR-XX-XX-DR-C-102300 — Revision: P01

Appendix F. Drainage Proforma

Camden — GREATERLONDONAUTHORITY — LoDEG

1. Project & Site Details		
Project / Site Name (including sub-catchment / stage / phase where appropriate)	33-35 Jamestown Road	
Address & post code	NW1 7DJ	
OS Grid ref. (Easting, Northing)	E 528673	
	N 183974	
LPA reference (if applicable)		
Brief description of proposed work	New building comprising basement, ground plus six storey building for a mix of Purpose Built Student Accommodation, with ancillary plant, courtyards, access, hard and soft landscaping, cycle parking	
Total site Area	2800	m^2
Total existing impervious area	2800	m^2
Total proposed impervious area	1850	m^2
Is the site in a surface water flood risk catchment (ref. local Surface Water Management Plan)?		
Existing drainage connection type and location	assumed combined water connection into Thames Water sewer. Location unknown	
Designer Name	Bogdan Serban	
Designer Position	Civil Engineer	
Designer Company	HDR	

2. Proposed Discharge Arrangements

2a. Infiltration Feasibility

Superficial geology classification	unknown	
Bedrock geology classification	London Clay Formation	
Site infiltration rate	0	m/s
Depth to groundwater level	0.8	m below ground level
Is infiltration feasible?	No	

2b. Drainage Hierarchy

	Feasible (Y/N)	*Proposed (Y/N)*
1 store rainwater for later use	Y	N
2 use infiltration techniques, such as porous surfaces in non-clay areas	N	N
3 attenuate rainwater in ponds or open water features for gradual release	N	N
4 attenuate rainwater by storing in tanks or sealed water features for gradual release	Y	Y
5 discharge rainwater direct to a watercourse	N	N
6 discharge rainwater to a surface water sewer/drain	N	N
7 discharge rainwater to the combined sewer.	Y	Y

2c. Proposed Discharge Details

Proposed discharge location	Thames Water combined sewer
Has the owner/regulator of the discharge location been consulted?	not yet

3. Drainage Strategy				
3a. Discharge Rates & Required Storage				
	Greenfield (GF) runoff rate (l/s)	*Existing discharge rate (l/s)*	*Required storage for GF rate (m^3)*	*Proposed discharge rate (l/s)*
Qbar	1.18			
1 in 1	1.01			
1 in 30	2.72			
1 in 100	3.78			
1 in 100 + CC				
Climate change allowance used		40%		
3b. Principal Method of Flow Control				
3c. Proposed SuDS Measures				
		Catchment area (m^2)	*Plan area (m^2)*	*Storage vol. (m^3)*
Rainwater harvesting		0		0
Infiltration systems		0		0
Green roofs		595	0	0
Blue roofs		0	0	0
Filter strips		0	0	0
Filter drains		0	0	0
Bioretention / tree pits		0	0	0
Pervious pavements		0	0	0
Swales		0	0	0
Basins/ponds		0	0	0
Attenuation tanks		1675		57
Total		**2270**	**0**	**57**

4. Supporting Information	
4a. Discharge & Drainage Strategy	*Page/section of drainage report*
Infiltration feasibility (2a) – geotechnical factual and interpretive reports, including infiltration results	page 7
Drainage hierarchy (2b)	Appendix E
Proposed discharge details (2c) – utility plans, correspondence / approval from owner/regulator of discharge location	Appendix E
Discharge rates & storage (3a) – detailed hydrologic and hydraulic calculations	page 23
Proposed SuDS measures & specifications (3b)	page 23
4b. Other Supporting Details	*Page/section of drainage report*
Detailed Development Layout	Appendix C
Detailed drainage design drawings, including exceedance flow routes	
Detailed landscaping plans	
Maintenance strategy	page 25
Demonstration of how the proposed SuDS measures improve:	
a) water quality of the runoff?	page 24
b) biodiversity?	page 24
c) amenity?	

Appendix G. Thames Water Correspondence

Mr Bogdan Serban
HDR
7th Floor
240 Blackfriars Road
LONDON
Southwark
SE1 8NW

Wastewater pre-planning
Our ref DS6123027

25 July 2024

Pre-planning enquiry: Confirmation of sufficient capacity

Site: 33-35 Jamestown Road, Camden Town, LONDON, NW1 7DJ

Dear Mr Serban,

Thank you for Pre-planning application for the construction of **1754sqm commercial premises**.

We have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

If your proposals progress in line with the details you've provided, we're pleased to confirm that there will be sufficient sewerage capacity in the adjacent combined sewer network to serve your development.

Combined discharge

Units	Discharge	Sewer
1754sqm commercial premises	Combined discharge of foul and surface water. Surface water flows at 2.0 litres/sec from a site of 0.28 Ha	1194mm combined sewer in Jamestown Road

When developing a site, policy 5.13 of the London Plan and Policy 3.4 of the Supplementary Planning Guidance (Sustainable Design And Construction) states that every attempt should be made to use flow attenuation and SuDS/Storage to reduce the surface water discharge from the site as much as possible.

In accordance with the Building Act 2000 Clause H3.3, positive connection of surface water to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable.

Before we can consider your surface water needs, you'll need written approval from the LLFA (Lead Local Flood Authority) that you have followed the sequential approach to the disposal of surface water and considered all practical means.

The disposal hierarchy being:

1. rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
2. rainwater infiltration to ground at or close to source
3. rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
4. rainwater discharge direct to a watercourse (unless not appropriate)
5. controlled rainwater discharge to a surface water sewer or drain
6. controlled rainwater discharge to a combined sewer.

Where connection to the public sewerage network is still required to manage surface water flows, we will accept these flows at a discharge rate in line with CIRIA's best practice guide on SuDS or that stated within the sites planning approval.

More detailed surface water hierarchies can be found within Local Planning Policies.

If the above surface water hierarchy has been followed and if the flows are restricted to a total of **2.0 litres/sec** for all storm events up to and including 1:100yr+40%CC, then Thames Water would not have any objections to the proposal.

Diversion

From our records we don't anticipate that any wastewater assets need to be diverted to accommodate your proposals.

Please see our FAQ's leaflet for additional information.

What happens next?

If not already done so, please submit your **S106 Connection Application**, giving us at least 21 days' notice of the date you wish to make your new connection(s).

If you've any further questions, please do not hesitate to contact me.

Yours sincerely,

Colins Akemche
Clean & Waste Pre-Planning Engineer
Adoption Team - Service Delivery