Enginuity

15 Chalcot Square

Flood Risk Assessment

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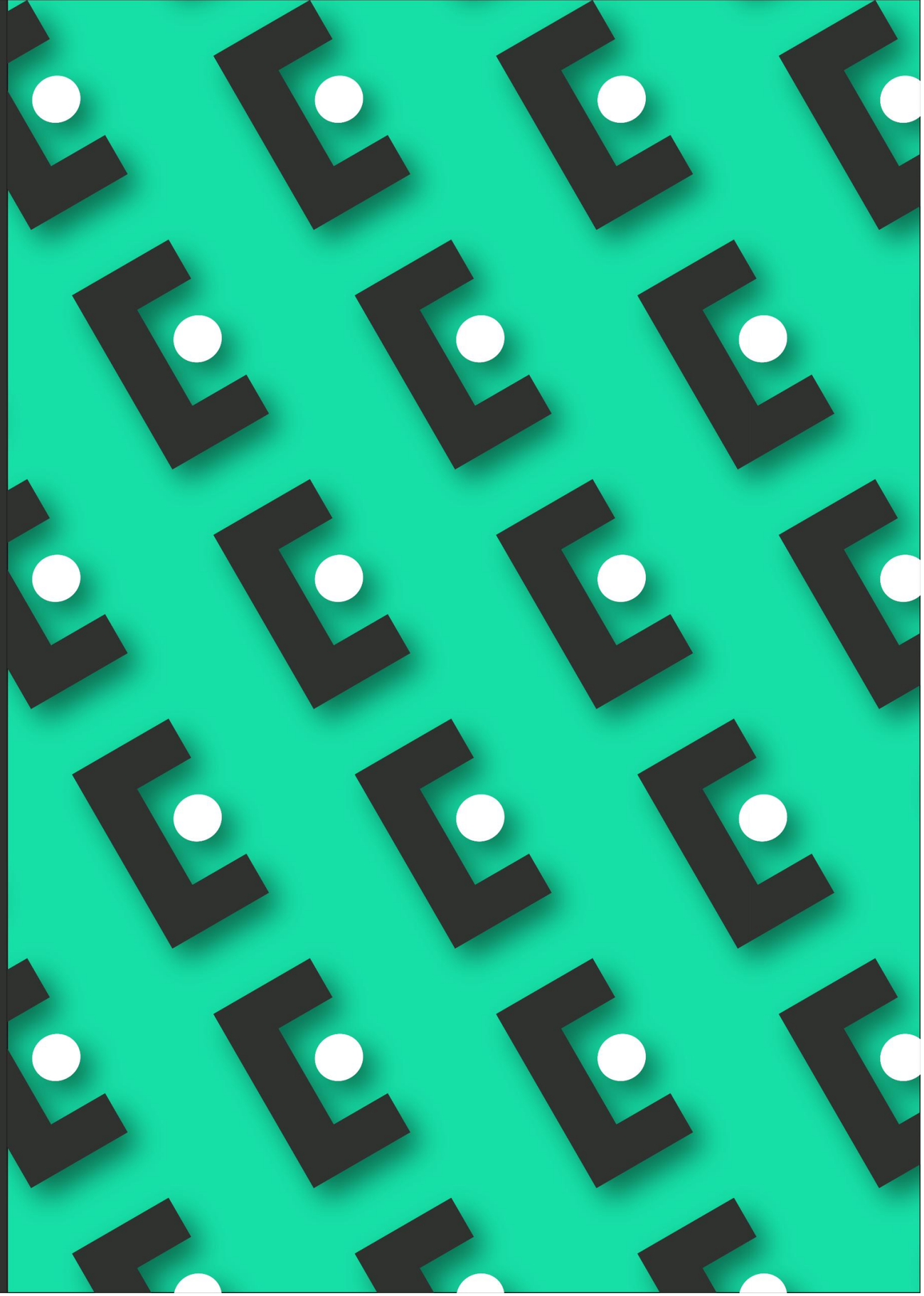

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Executive Summary

This Flood Risk Assessment (FRA) has been prepared in support of a planning application for the proposed refurbishment works at 15 Chalcot Square, located in the London Borough of Camden. The assessment considers the flood risk from all potential sources, in line with the National Planning Policy Framework (NPPF) and relevant local guidance.

The site is situated within Flood Zone 1, indicating a low probability of fluvial and tidal flooding. It does not lie in a groundwater flood risk area, nor does it have a recorded history of surface water or artificial water body flooding. Although the site is identified within Camden's Local Flood Risk Area and the NW1 8 postcode area has seen moderate instances of sewer flooding, no direct flood history is associated with Chalcot Square itself.

The existing combined sewer network in the area poses a potential risk of sewer surcharge, particularly given the property's lower ground floor level. To mitigate this, it is proposed to route all above-ground drainage at high level, while installing a pumped system with duty/standby pumps and non-return valves for basement drainage. These measures are in line with best practice and will effectively manage the risk of sewer-related flooding.

With the proposed mitigation measures in place, the residual flood risk to the development is considered to be **low** from all sources and acceptable in planning terms.

Two

Introduction

This Flood Risk Assessment (FRA) has been prepared to support the planning application for the redevelopment at 15 Chalcot Square, London, NW1 8YA.

This report reviews all potential sources of flooding to the proposed development, evaluates the sensitivity of the Site to flooding and considers any impact to the surrounding area that the proposed development may cause.

This is in line with the requirements of the National Planning Policy Framework (NPPF).

The flood risk mechanisms being considered as part of this FRA are as follows:

- Fluvial and Tidal
- Surface Water
- Groundwater
- Flooding from Artificial Water bodies
- Infrastructure Failure / Sewer Flooding

Three

Site Context

3.1 Site Location

15 Chalcot Square, hereinafter referred to as the "Site" is located in the London Borough of Camden.

Chalcot Square is a predominantly residential area situated to the north of Regent's Park and just south of Primrose Hill.

The site lies approximately 500 metres north of Regent's Canal.

The Site encompasses an area of approximately 340m2 and is centred on OS grid reference 528063 E, 184068 N.

The Lead Local Flood Authority (LLFA), responsible for all flood risk matters that do not relate directly to designated Main Rivers is the London Borough of Camden. The Statutory Sewerage Undertaker for the area is Thames Water.

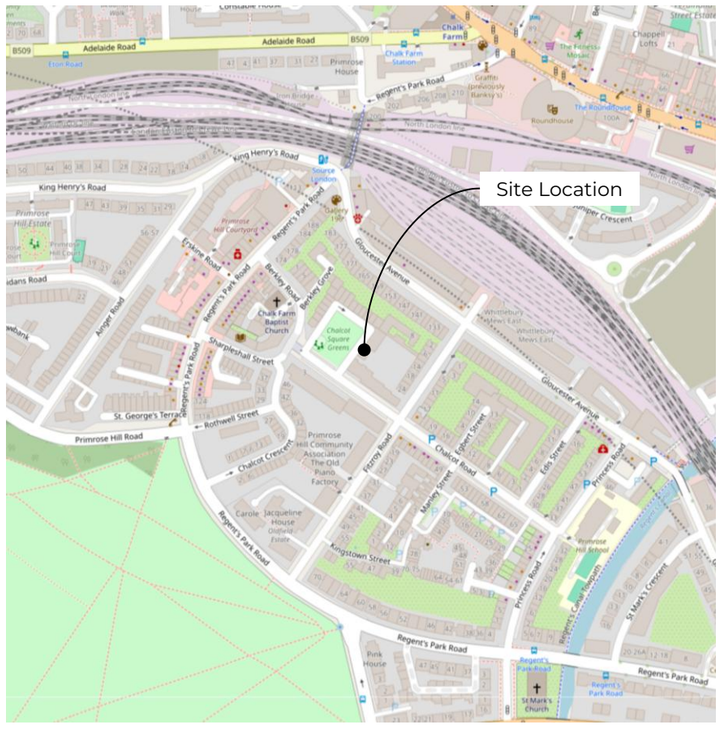

Figure 1: Site Location © Open Street Map

3.2 The Existing Site

The existing Site comprises of a five-storey residential property including lower ground floor level. Pedestrian access to the site is gained from Chalcot Square.

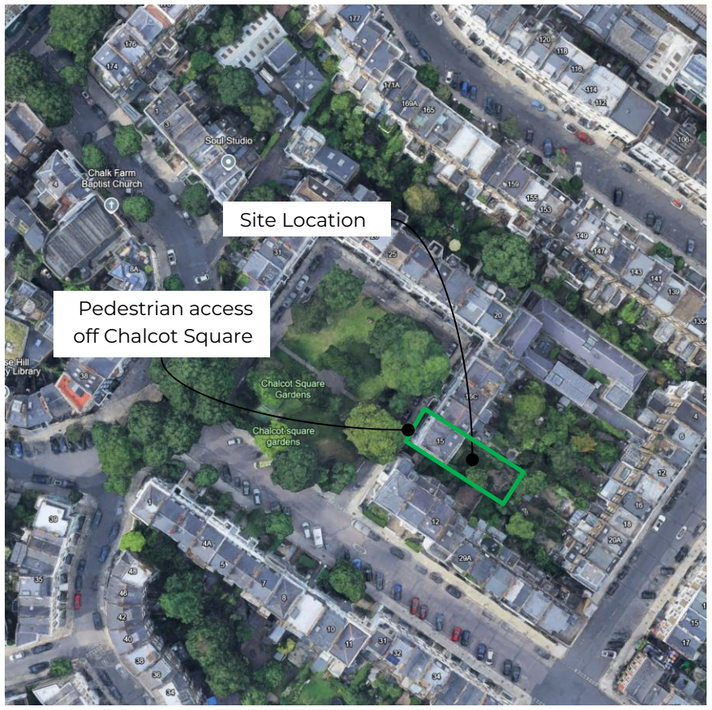

Figure 2: Existing Site Layout © Google Earth

3.3 Existing Topography

A measured building and topographical survey was undertaken by CAD Plan in September 2024.

The survey indicates that access to the ground floor via Chalcot Square is at grade with the square at a level of around 35.360m AOD. However, the rear garden is at-grade with the lower ground floor level at a level of around 32.710m AOD.

3.4 Underlying Geology & Hydrology

Intrusive ground investigation works have not been undertaken. However, publicly available information from the British Geological Society (BGS) indicate the likely geology is as follows:

- London Clay Formation (no superficial deposits)

The closest water body to the Site is the Regents Canal (approximately 500m south and east of the Site). The Site is not located in a Source Protection Zone (SPZ) area as identified on DEFRA's Magic Map.

Four

Existing Drainage

4.1 Public Sewers

Sewer records have been obtained from Thames Water. An extract from these records is shown in **Figure 3.**

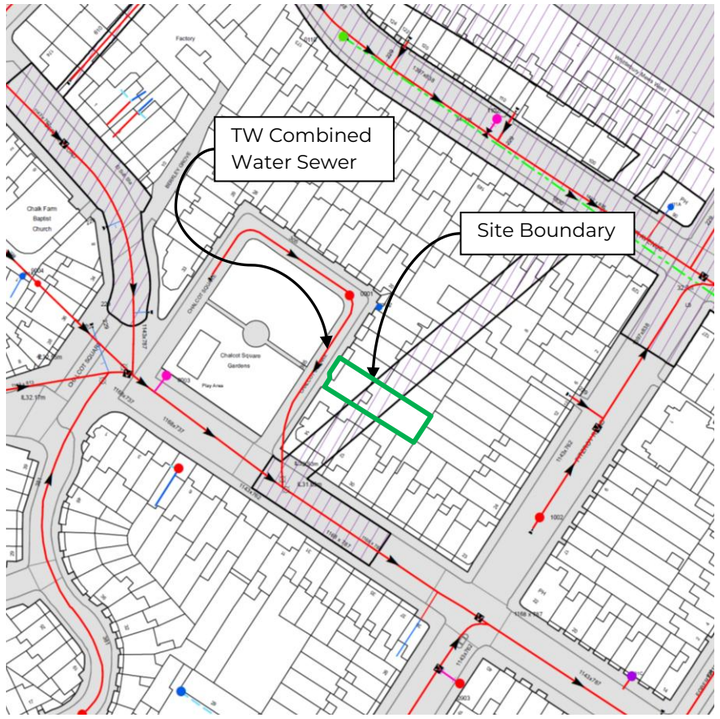

Figure 3: Thames Water Sewer Records Extract

Sewer records indicate that the offsite sewer network is combined and 305mm diameter. The depth of the sewer network in the vicinity of the site is around 2.8m.

Five

The Proposed Development

The proposed development can be described as follows:

- *The replacement of rear terrace, railings, and external staircase; internal alterations, replacement of existing windows and doors throughout front, rear, and side elevations; replacement of existing rooflights to rear roof, acoustic enclosure to rear garden to house ASHP.*

Please refer to the Architects Design and Access Statement (DAS) for further details.

Six

Planning & Flood Risk Policy

6.1 Policy Summary

It is important to assess the flood risk posed to the development of this Site from all sources of flooding, in accordance with National Planning Policy Framework (NPPF) requirements. The flood risk sources being considered as part of this FRA are as follows:

- Fluvial and Tidal
- Surface Water
- Groundwater
- Flooding from Artificial Water bodies
- Infrastructure Failure / Sewer Flooding

The following documents have been reviewed in the preparation of this FRA:

- National Planning Policy Framework (NPPF)
- Planning Practice Guidance (PPG)
- Camden Local Plan (July 2017)
- Camden Planning Guidance: Water and Flooding (March 2019)
- Camden Flood Risk Management Strategy 2022-2027 (Dec 2022)
- Camden Strategic Flood Risk Assessment (SFRA) (Jan 2024)
- Camden Surface Water Management Plan (SWMP) (Nov 2011)
- Camden Planning Guidance: Basements and Lightwells (Sept 2013)
- Draft New Camden Local Plan (April 2025)

Seven

Sources of Potential Flooding

7.1 Critical Drainage Area

According to the London Borough of Camden (LBC) SFRA Critical Drainage and Local Flood Risk Zone Map the site is located just within Camden's "Primrose Hill Local Flood Risk Zone".

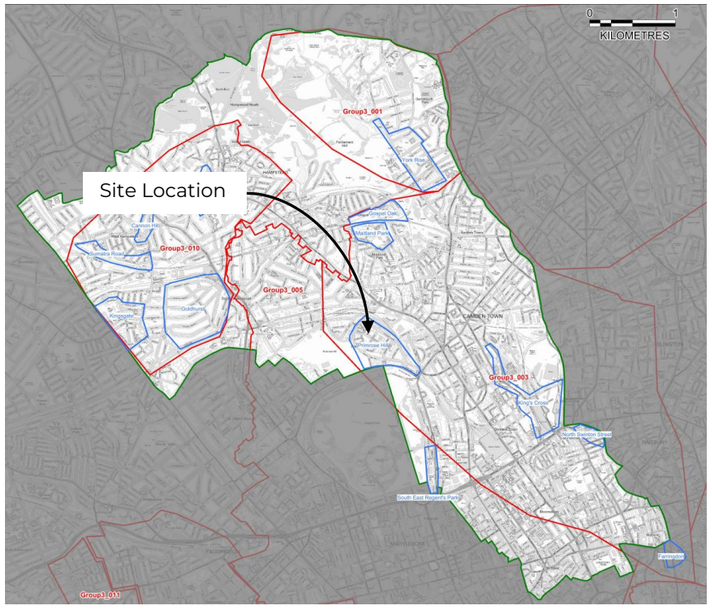

Figure 4: LBC SFRA Mapping – Critical Drainage and Local Flood Risk Zone Map

7.2 Fluvial and Tidal Flooding

GOV.uk flood risk mapping shows the Site is located in Flood Zone 1, an area classified as having less than a 0.1% annual probability of river or sea flooding.

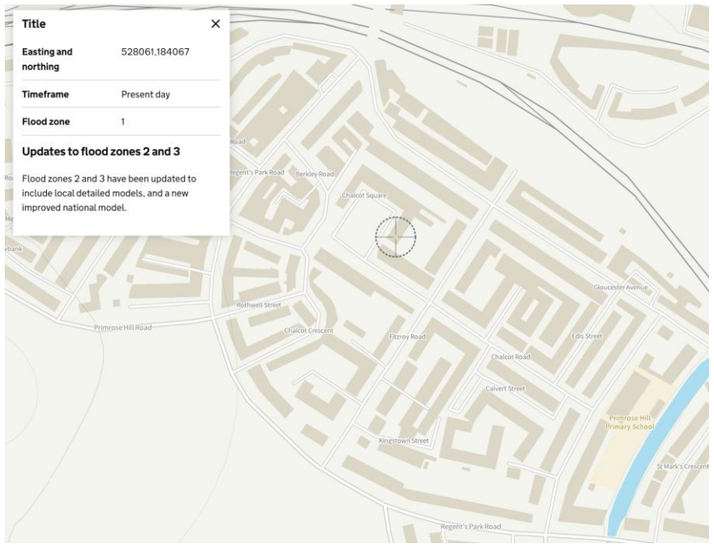

Figure 5: GOV.uk Rivers and Seas Flood Map

After review of the relevant information the Site considered to be at **low risk** of flooding from rivers and seas.

7.3 Historic Flooding

Notable flood events within the LBC have occurred in 1975, 2002 and 2021. The streets which had reported incidents of flooding during these events are presented in Appendix A (Figure 4) of the LBC SFRA.

The floods were largely driven by high volumes of surface water, which was caused by an intense rainfall event. The high volumes of surface water led to surcharge of the drainage infrastructure, which increased the severity of the flood event.

Smaller scale flood events have occurred in the Borough because of groundwater, sewer, and drainage infrastructure failure. Heavy winter rainfall of 2012-2013 resulting in recorded incidents of basement and cellar flooding, due to groundwater flooding.

The streets which had reported incidents of flooding during these events are presented in **Figure 6**.

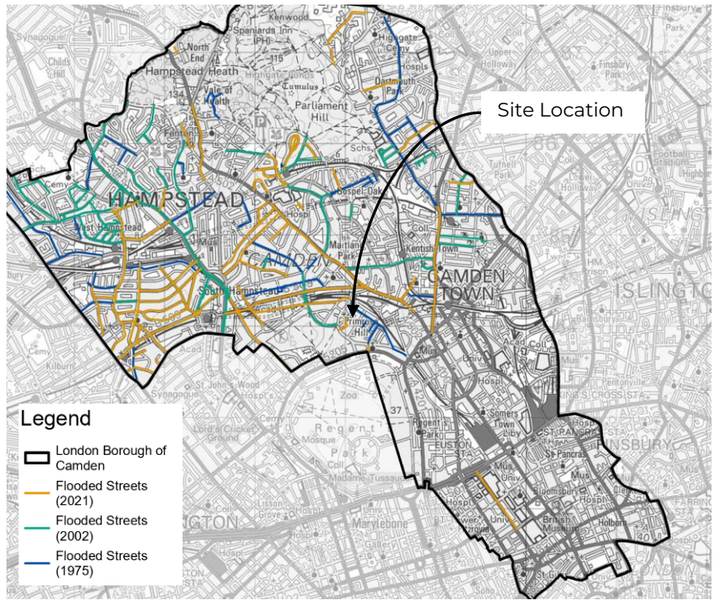

Figure 6: LBC SFRA Mapping – Historic Flooding Incidents

It can be seen from **Figure 6**that Chalcot Square does not have a history of flooding.

After review of the relevant information the Site considered to be at **low risk** of flooding based on historic events.

7.4 Surface Water Flooding

Surface water flooding may occur during intense or prolonged rainfall events where there is insufficient capacity within the existing drainage infrastructure which leads to overland flows.

Figure 7: GOV.uk Surface Water Flood Map

Although the Camden SFRA places the site within a designated Local Flood Risk Area, a review of Environment Agency surface water flood risk mapping shows no modelled surface water flow paths or areas of ponding in the vicinity of the site. Furthermore, the site lies within Flood Zone 1, indicating a low probability of flooding from rivers or the sea, and the local topography falls away from all building thresholds, further reducing the likelihood of surface water accumulation. These factors together demonstrate that the site is at **low risk** of surface water flooding despite its location within a broader Local Flood Risk Area.

7.5 Groundwater Flooding

Groundwater flooding occurs when prolonged, low-intensity rainfall causes underground water levels to rise above the surface.

The future risk from groundwater flooding is less certain than that of surface water flooding. While climate change is expected to raise sea levels, potentially increasing groundwater levels, overall summer rainfall is projected to decline, which could lower groundwater levels in the long term. However, extended periods of wet weather are also expected to become more frequent.

LBC SFRA mapping shows that the Site is not located in an area with elevated risk of groundwater flooding.

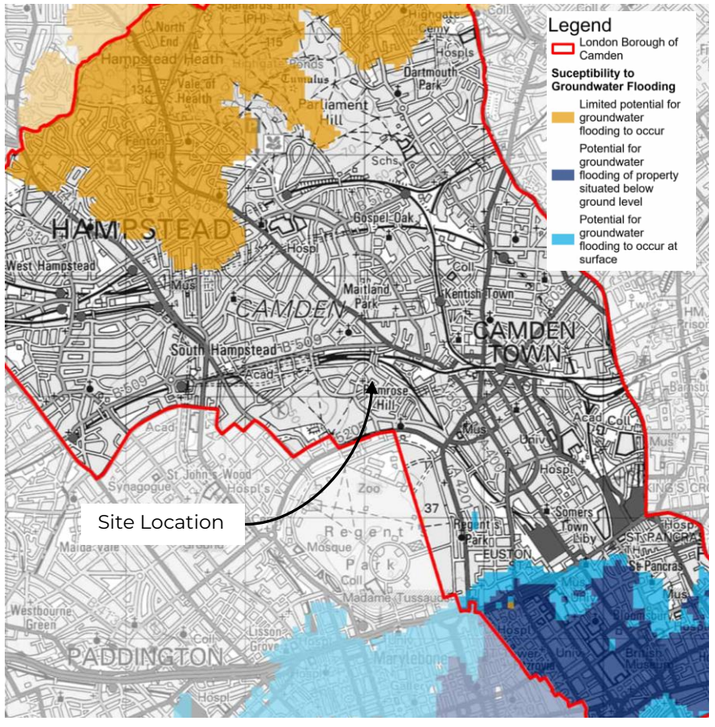

Figure 8: LBC SFRA Mapping - Ground Water Flooding

Additionally, the GOV.UK long-term flood risk assessment indicates that the Site is located in a low-risk area, as shown in **Figure 9** below.

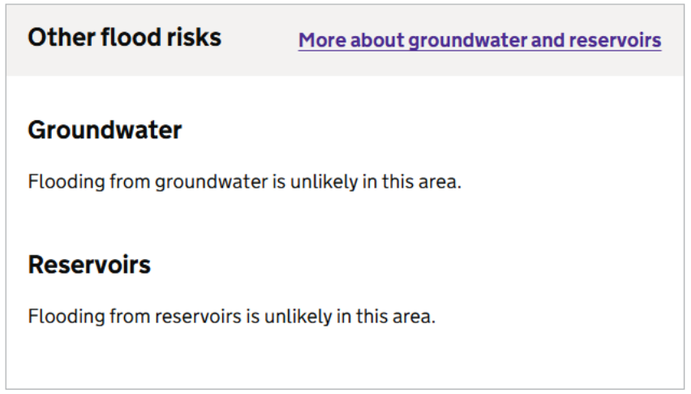

Figure 9: GOV.uk Long Term Flood Risk Tool

After review of the relevant information the Site considered to be at **low risk** of groundwater flooding.

7.6 Flooding from Artificial Water Bodies

GOV.uk long term risk of flooding tool notes that the Site is considered to be at **low risk** of flooding from artificial water bodies.

7.7 Infrastructure Failure

Thames Water are the principal water supply provider for the area.

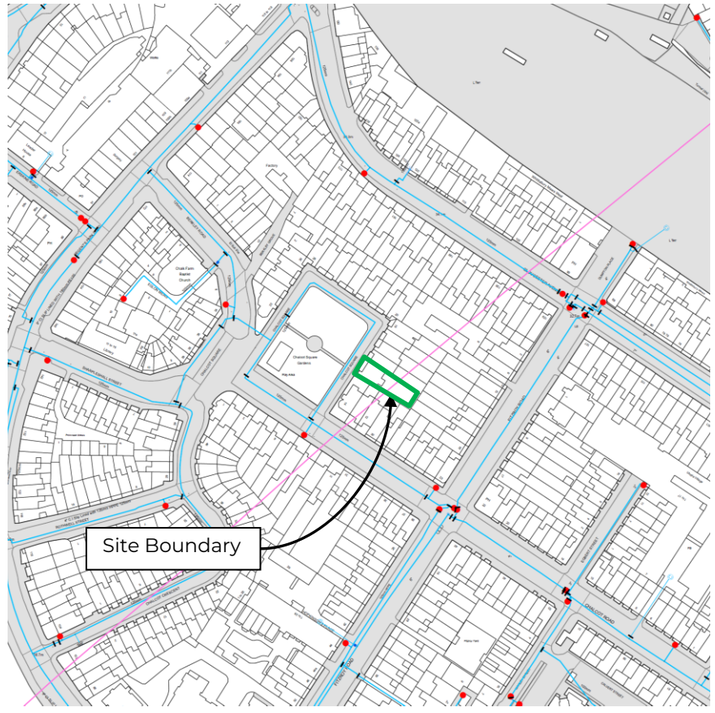

Figure 10:- Thames Water Clean Water Records

Records show a 125mm water main beneath Chalcot Sqaure. The risk of this water main bursting is considered low, as Thames Water are responsible for maintaining their assets.

In the event of a burst main, water is likely to be contained within the carriageway kerbs and directed into the sewer network via highway gullies.

7.8 Sewer Flooding

LBC SFRA mapping shows that there have been 41 – 60 reported sewer flooding incidents between the year 2013 and 2023.

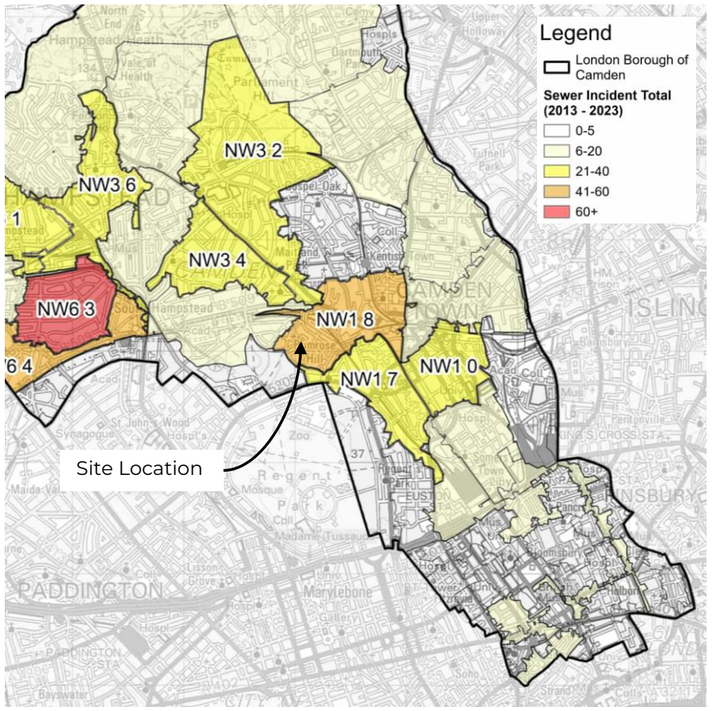

Figure 11: LBC SFRA Sewer Flooding History

As part of the refurbishment, the risk of sewer surcharge-induced flooding will be mitigated by ensuring that all soil and rainwater pipes serving the ground floor and above are routed at high level through the lower ground floor, with final discharge at a height above the expected surcharge level. All drainage from the lower ground floor will be collected via a pumped system. This system will incorporate a dual pump arrangement (duty/standby) with non-return valves fitted on the rising main to prevent backflow during a surcharge event. These measures are in line with best practice and ensure the dwelling remains protected against sewer flooding.

After review of the relevant information and with the proposed mitigation in place, the Site considered to be at **low risk** of infrastructure failure and sewer flooding.

Eight

Conclusion

This Flood Risk Assessment (FRA) has been prepared to support the planning application for the proposed development at 15 Chalcot Square, London NW1 8YA.

The assessment has considered all potential sources of flooding. The risk from all sources, with the exception of sewer flooding, is assessed to be **low.**

The current risk of flooding from sewer surcharge is considered high due to the site's location and basement-level accommodation. However, the proposed drainage strategy — which includes high-level gravity discharge for ground and upper floor drainage, and a pumped system with duty/standby pumps and non-return valves for basement drainage — will provide effective mitigation against sewer surcharge.

With these measures in place, the residual risk from sewer flooding is considered **low**.

Accordingly, the overall flood risk to the development, post-mitigation, is assessed to be **low** and acceptable in planning terms.

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