Liberty Bell Beefeater
Mercury Gardens
Romford
RM1 3EN

P26-1098
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Flood Risk Assessment Report

simpson | tws

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1 Introduction

1.1 Background

1.1.1 This report has been prepared by Simpson TWS, on behalf of Whitbread PLC, to accompany a planning application seeking full planning permission for the conversion of the existing restaurant 'Liberty Bell' to form 10 new Premier Inn bedrooms with associated works.

1.2 Objectives

1.2.1 This report looks to assess the flood risk associated with the development proposals, following guidance set out within the following national & local planning policy documents:

- The National Planning Policy Framework (NPPF) & associated Planning Practice Guidance (PPG).
- BS 8533:2017: Assessing and Managing Flood Risk in Development - Code of Practice.
- The London Plan 2021.
- Havering Local Plan 2016–2031, adopted November 2021.
- London Borough of Havering Level 1 Strategic Flood Risk Assessment (SFRA), November 2016.
- London Borough of Havering Local Flood Risk Management Strategy.
- London Borough of Havering Surface Water Management Plan.

2 Site Location & Characteristics

2.1 Site Location

2.1.1. The site is the Liberty Bell Beefeater and adjoining Premier Inn Romford Central, located on Mercury Gardens, Romford. *Figure 2.1.1*, below shows the site location outlined in red.

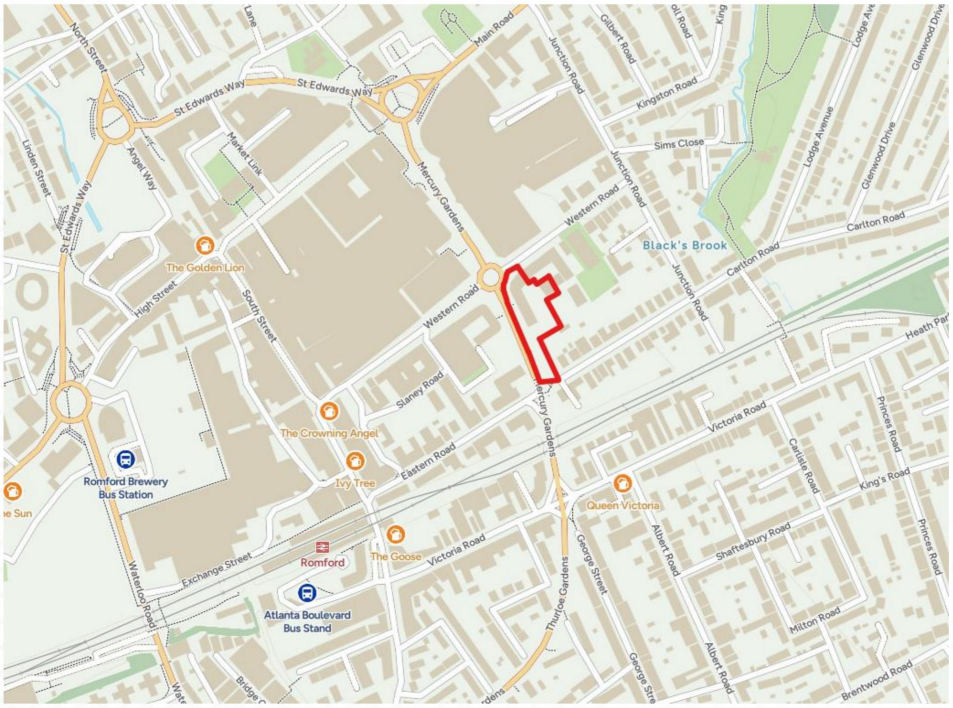


Figure 2.1.1: Site Location

2.1.2. The site is centred on Ordnance Survey grid reference TQ 51604 88836 with co-ordinates X: 551604, Y: 188836. The nearby postcode is RM1 3EN.

2.2 Site Description

2.2.1. The site comprises the Liberty Bell restaurant, Premier Inn hotel, annexe, and areas of car parking and landscaping.

2.2.2. Pedestrian and vehicular access is gained from Mercury Gardens to the southwest.

2.3 Topography

2.3.1. Levels on the topographical survey show the site to generally fall in a southeasterly direction with levels ranging from circa 19.00mAOD in the northwest corner of the site to a level of circa 16.60mAOD in the southeastern corner of the main car park. The overflow car park to the south has a separate low point of 16.50mAOD along the western edge.

2.3.2. The measured building survey indicates that the restaurant has a ground floor level of between 19.00mAOD to 19.08mAOD. The restaurant ground floor is at a higher level in comparison to the surrounding footpath and car park levels.

2.3.3. There is a retaining wall between the overflow car park to the south and the footpath along Mercury Gardens. This retains up to 1.1m in height, with the car park situated at lower level. The wall itself extends at least 1.0m above the footpath levels on the high side, so is at least 2.1m in height on the car park side.

2.3.4. The topographical survey & measured building survey showing existing site levels is included in *Appendix A.*

2.4 Existing Ground Conditions

2.4.1. A Site Investigation (ref. CRM.413.012.R.001.A) was prepared by Enzygo in March 2013 to support a proposed two storey hotel annex & extension on site. The investigation was undertaken in the area of the annex rather than beneath the existing restaurant but provides useful information on the site's general geology and groundwater conditions.

2.4.2. The investigation encountered between approximately 0.9m and 1.2m of Made Ground, comprising sandy clay with flint gravel and occasional fragments of brick, ash, slag and plastic. This was underlain by variable Head Deposits, generally comprising firm sandy gravelly clay, locally becoming clayey sand and gravel. The granular Head Deposits were recorded as loose to medium dense. London Clay was encountered in one exploratory hole at a depth of approximately 6.8m below ground level.

2.4.3. Groundwater was encountered during the investigation at depths of between approximately 2.92m and 4.10m below ground level. Subsequent monitoring recorded groundwater at approximately 3.4m below ground level. The report considered this groundwater likely to be perched within the variable Head Deposits.

2.4.4. Preliminary infiltration testing within the mixed Head Deposits recorded an infiltration rate of approximately 8 × 10^{-6}m/s. The report concluded that this reflected the more granular material encountered at depth and that significantly lower rates would likely be obtained within the shallow clay soils. Conventional shallow soakaways were therefore considered unlikely to be feasible.

2.4.5. A copy of the Site Investigation is included in *Appendix B*.

2.5 Hydrology and Hydrogeology

2.5.1. *Figure 2.5.1* below shows a map of source protection zones taken from DEFRA's online Magic Map. These zones show the risk of contamination from any activities that might cause pollution in the area. The map shows the site to be located outside a designated Source Protection Zone, with the nearest designation comprising Zone I & Zone II, Inner & Outer Protection Zones to the west.

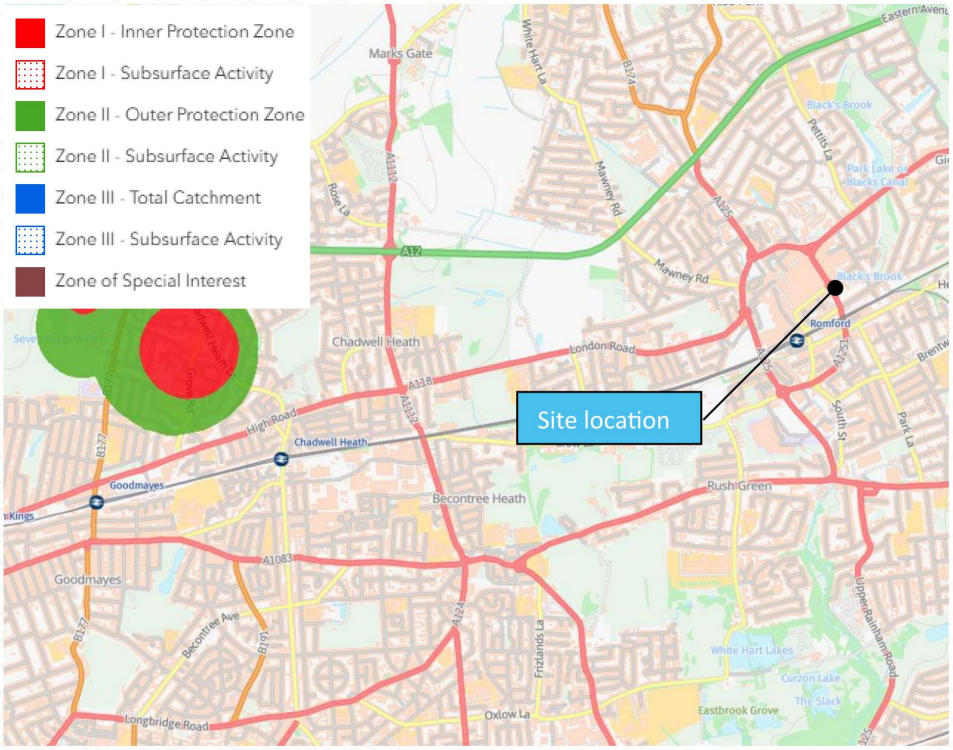


Figure 2.5.1: Source Protection Zone Map (https://magic.defra.gov.uk)

2.5.2. Aquifers are divided into three categories; Principal Aquifers; Secondary Aquifers and Unproductive Strata. The categories are defined by the EA as;

- Principal Aquifers "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 Aquifers include a wide range of drift and bedrock types and are sub divided into three types:
  - Secondary A aquifers are 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 aquifers are 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. These are generally the water-bearing parts of the former non-aquifers.
  - Secondary Undifferentiated was assigned "where it has not been possible to attribute either category A or B to a rock type.
  - Unproductive Strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

2.5.3. *Figure 2.5.2* and *Figure 2.5.3* below show superficial drift and bedrock aquifer designation maps taken from DEFRA's online Magic Map. The mapping indicates that the superficial deposits beneath the site are classified as a Secondary (undifferentiated) Aquifer, while the underlying bedrock is classified as Unproductive Strata.

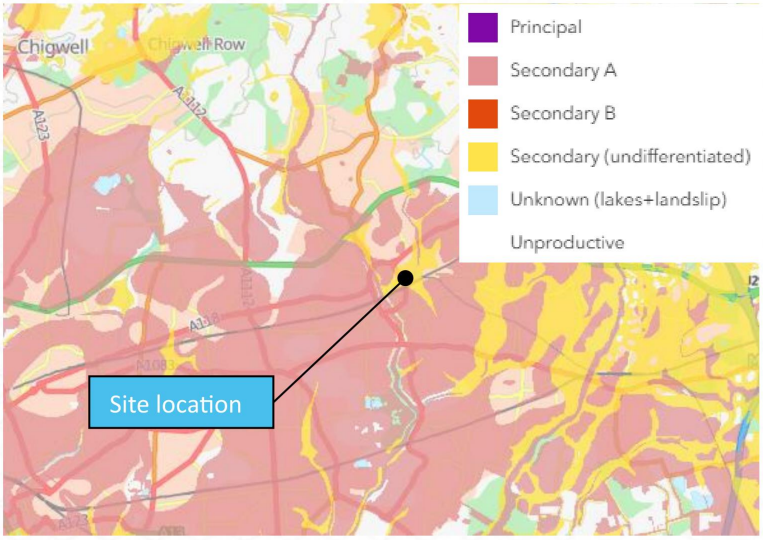


Figure 2.5.2: Aquifer Superficial Drift Designation Map (https://magic.defra.gov.uk)

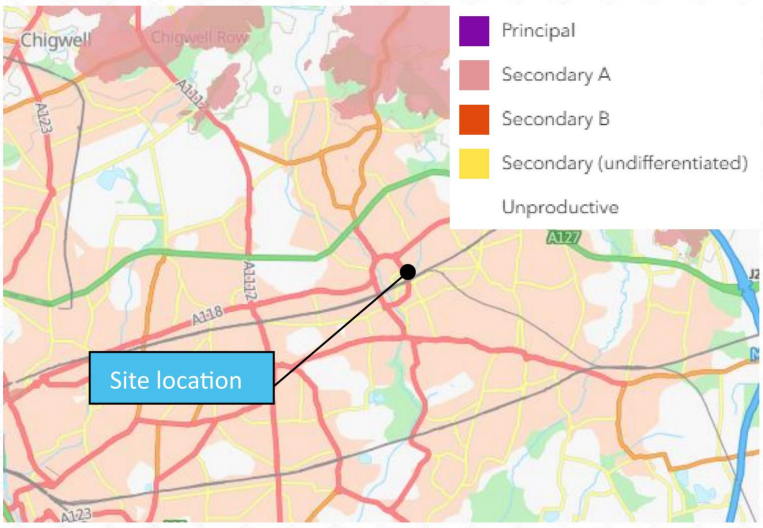


Figure 2.5.3: Aquifer Bedrock Designation Map (https://magic.defra.gov.uk)

2.5.4. The OS Open Rivers Map, shown in *Figure 2.5.4* below, indicates the waterways which are nearby the site. The nearest watercourse is Black's Brook passing through the south of the site, where it is culverted beneath the overflow car park to the south of the hotel & restaurant. The River Rom is also located to the west.

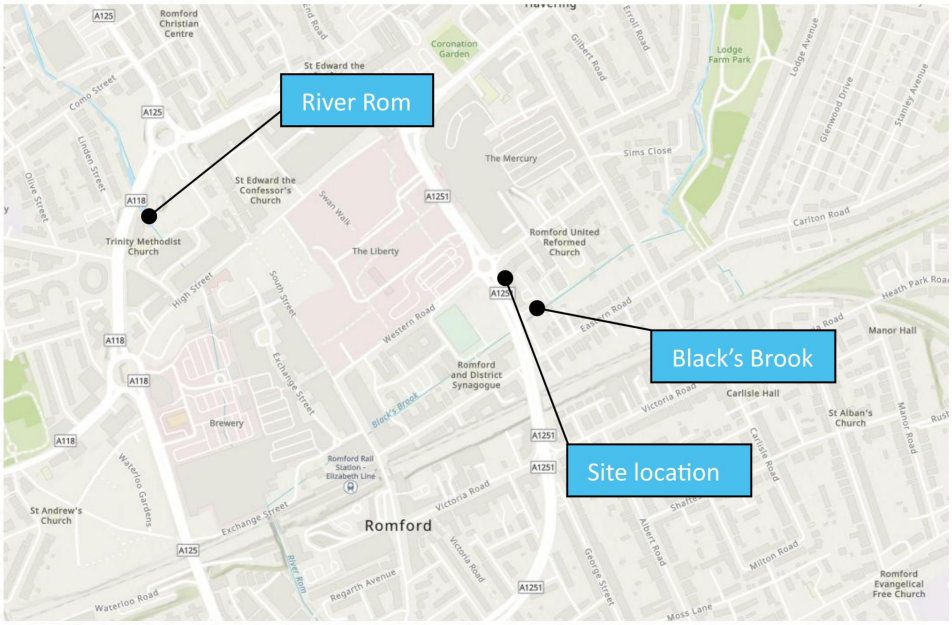


Figure 2.5.4: OS Open Rivers Map (https://www.arcgis.com)

2.5.5. An extract from the Environment Agency peak river flow climate change allowances map is shown in *Figure 2.5.5* below, which identifies the site to be in the Roding, Beam and Ingrebourne Management Catchment. These allowances will be considered when assessing future fluvial flood risk.

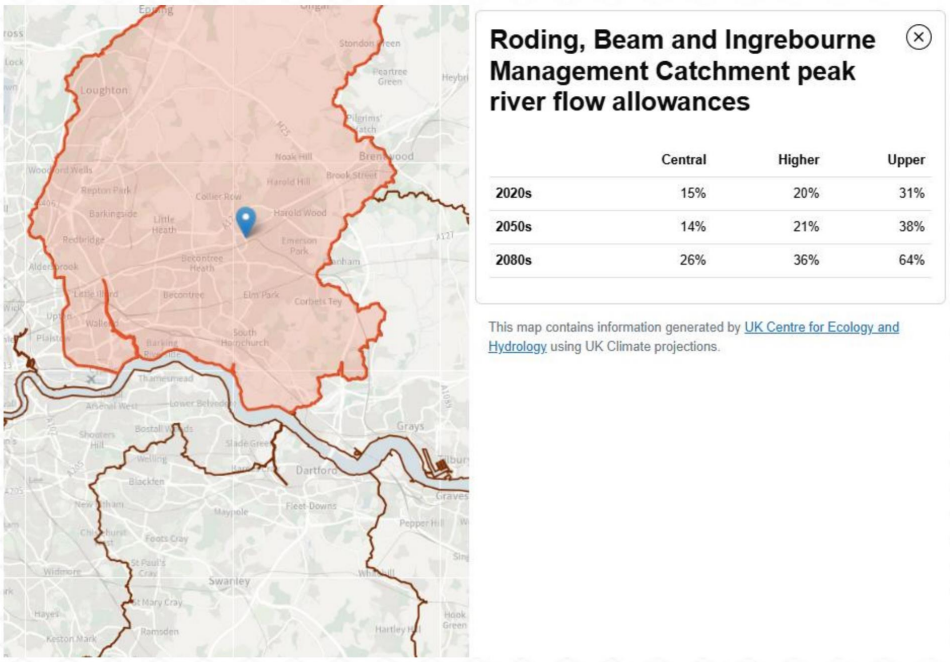
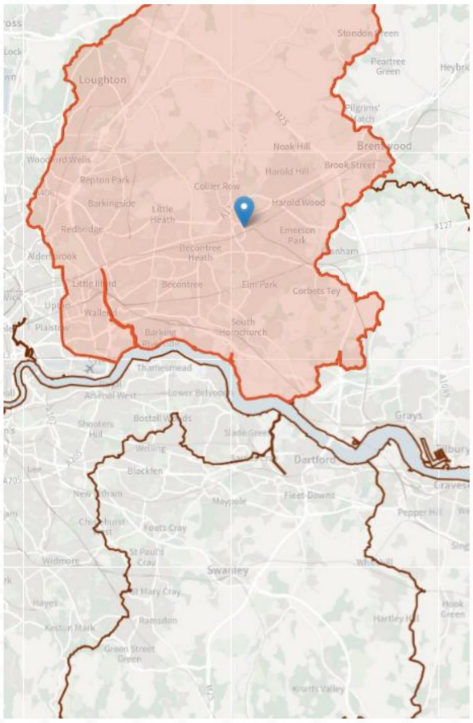


Figure 2.5.5: Peak River Flow Climate Change Allowances Map (https://environment.data.gov.uk/hydrology/climate-change-allowances)

2.5.6. The corresponding peak rainfall climate change allowances for the Roding, Beam and Ingrebourne Management Catchment are shown in *Figure 2.5.6* below. These allowances will be considered when assessing future surface water flood risk.



Roding, Beam and Ingrebourne Management Catchment peak rainfall allowances

3.3% annual exceedance rainfall event

Epoch

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

1% annual exceedance rainfall event

Epoch

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

*Use '2050s' for development with a lifetime up 2060 and use the 2070s epoch for development with a lifetime between 2061 and 2125.

This map contains information generated by Met Office Hadley Centre (2019): UKCP Local Projections on a 5km grid over the UK for 1980-2080. Centre for Environmental Data Analysis, 2022

Figure 2.5.6: Peak Rainfall Climate Change Allowances Map (https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall)

2.5.7. The extract from the FEH Web Service Map shown in *Figure 2.5.7* below identifies the site to form part of a 5.41 km² drainage catchment assumed to be associated with Black's Brook passing through the south of the site.

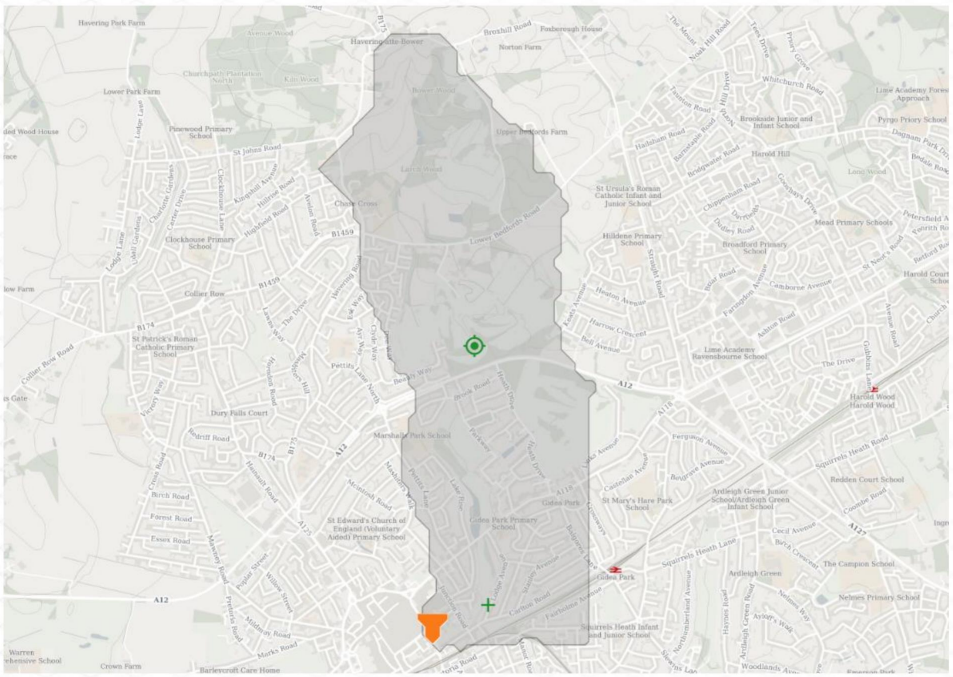


Figure 2.5.7: FEH Web Service Map (https://fehweb.ceh.ac.uk/Map)

2.6 Existing Drainage Arrangements

2.6.1. The topographical survey identifies separate private foul and surface water drainage networks serving the existing Premier Inn hotel, annexe, restaurant and associated car parking areas. The visible drainage arrangements are consistent with the As-Built drawings prepared for the 2015 hotel annexe and extension. These layouts provide further information on the below ground attenuation, flow control and pump features that cannot be determined from the topographical survey.

2.6.2. Thames Water sewer records identify a 375mm diameter surface water sewer to the west of the site within the footway of Mercury Gardens, flowing in a southeasterly direction and connecting to Black's Brook at the culverted section which passes through the south of the site. Surface water runoff from the site discharges to this sewer just upstream of the Black's Brook outfall. Runoff from the car parks and access roads is collected by trapped road gullies and channel drains.

2.6.3. A Thames Water foul sewer is located within Western Road to the north of the site. Foul water from the site discharges to this sewer via two separate outfalls, one via gravity which serves the northern part of the restaurant and part of the hotel, with the remainder of the site discharging via a rising main connection originating from a private pump station within the south of the site's car park.

2.6.4. The As-Built drawings for the 2015 hotel annexe and extension show a below ground geocellular attenuation tank beneath the southern part of the main Premier Inn car park. Runoff from this storage is conveyed to the downstream network and Black's Brook outfall, with its discharge restricted by a Hydro-Brake flow control set to a maximum rate of 3.0l/s. The remainder of the existing surface water network combines at the same outfall. All runoff passes through bypass petrol interceptors before discharging to Black's Brook.

2.6.5. The topographical survey showing the existing drainage arrangements is included in *Appendix A*. The As-Built drawing for the 2015 hotel extension, 11241:101E, is included in *Appendix C*.

2.6.6. An extract from the Thames Water sewer records is shown in *Figure 2.6.1* below.

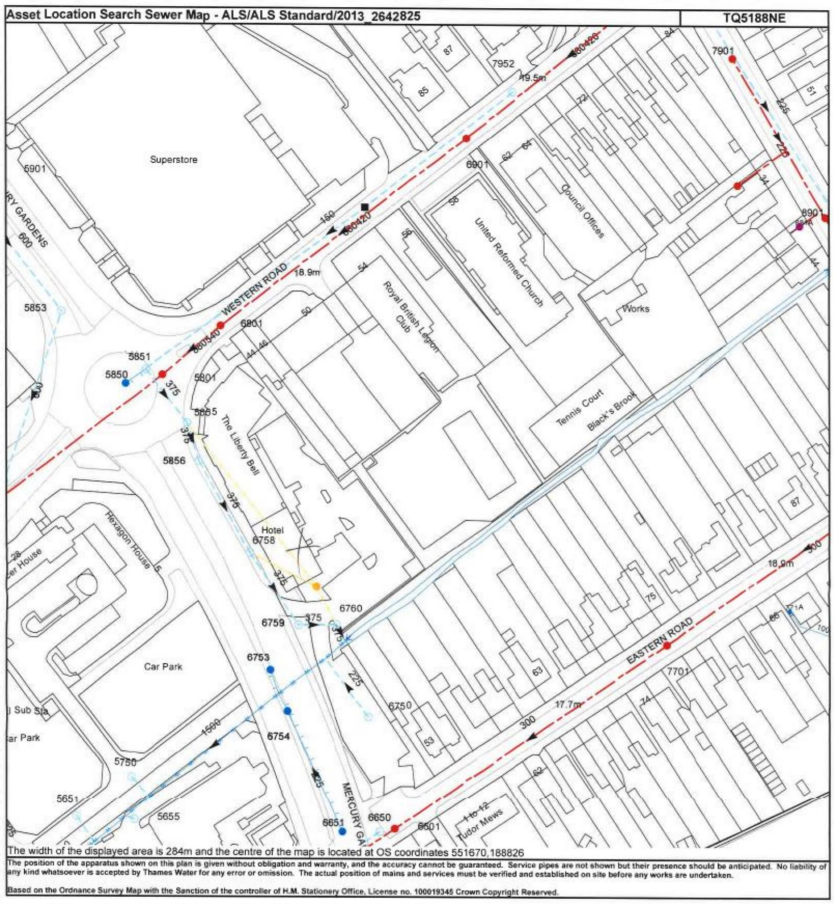


Figure 2.6.1: Thames Water Sewer Records

3 Proposed Scheme

3.1 Development Details

3.1.1. The development proposals form a full planning application comprising the conversion of the existing restaurant 'Liberty Bell' to form 10 new Premier Inn bedrooms with associated works.

3.2 Development Layout

3.2.1. A plan showing the proposed development layout is included within *Appendix D*.

4 Flood Risk Planning Policy & Guidance

4.1 National Planning Policy Framework (NPPF) & Planning Practice Guidance (PPG)

4.1.1. At a national level, the NPPF and the Planning Practice Guidance (PPG) to the NPPF seek to ensure flood risk is considered at all stages of the planning process, to avoid inappropriate development in areas at risk of flooding and to direct development towards areas at lowest flood risk. The NPPF retains a risk-based approach to the planning process and uses the Flood Zones as the basis for applying the sequential test, as well as flood risk vulnerability classifications, which define the type of development that is considered appropriate within each zone. It advises local planning authorities to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed.

4.1.2. The NPPF establishes the Flood Zones as the starting point for assessment with the overarching aim to steer new development to areas with the lowest probability of flooding. Flood Zone maps are available on the GOV.UK website and the definitions of the Flood Zones extracted from the NPPF are described below:

- Flood Zone 1 - Low probability. This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).
- Flood Zone 2 - Medium probability. This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% - 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% - 0.1%) in any year.
- Flood Zone 3a - High probability. This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
- Flood Zone 3b - The functional floodplain. This zone comprises land where water must flow or be stored in times of flood. Typically, land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood.

4.1.3. In areas at risk of river flooding, the NPPF advises that preference be given to new development in Flood Zone 1. If there are no reasonably available sites in Flood Zone 1 the flood vulnerability of the development can be considered in locating development in Flood Zone 2 and then Flood Zone 3. Within each flood zone new development should be directed to sites at the lowest probability of flooding from all sources.

4.1.4. The NPPF advises that when determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood risk assessment with development only to be allowed in areas at risk of flooding where, in the light of the assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- within the site, the most vulnerable development is in areas of lowest flood risk, unless there are overriding reasons to prefer a different location.
- the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment.
- it incorporates Sustainable Drainage Systems (SuDS), unless there is clear evidence that this would be inappropriate.
- any residual risk can be safely managed; and
- safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

4.2 The London Plan 2021

4.2.1. The London Plan was adopted in March 2021 and forms the spatial development strategy for Greater London. Policies SI 12 – Flood Risk Management and SI 13 – Sustainable Drainage are of particular relevance to the proposed development.

4.2.2. Policy SI 12 requires current and expected flood risk from all sources to be managed in a sustainable and cost-effective manner. Development proposals should minimise and mitigate flood risk, address any residual risk and take account of the relevant Strategic Flood Risk Assessment, Local Flood Risk Management Strategy and the anticipated effects of climate change.

4.2.3. Policy SI 13 requires surface water runoff to be managed as close to its source as possible, with preference given to green drainage measures over conventional below-ground infrastructure. Proposals should seek to achieve greenfield runoff rates where reasonably practicable and follow the drainage hierarchy of reuse, infiltration, green attenuation, discharge to a watercourse and, only where these options are not practicable, discharge to a surface water or combined sewer.

4.2.4. The proposed development comprises the internal conversion of the existing restaurant building to hotel bedrooms. It would not alter the building footprint, external ground levels, impermeable area or existing surface water drainage arrangements. Consequently, the proposal would not increase the rate or volume of surface water runoff from the site.

4.2.5. Although the proposal changes the vulnerability classification of the building to "more vulnerable", the assessment in the following sections demonstrates how flood risk from all relevant sources, including the residual risk associated with Black's Brook, would be managed. The existing attenuation tank, flow-control device, petrol interceptors and downstream outfall would be retained and maintained.

4.3 Havering Local Plan 2016–2031

4.3.1. The Havering Local Plan 2016–2031 was adopted in November 2021. Policy 32 – Flood Management is relevant to the proposed development.

4.3.2. Policy 32 seeks to direct development away from areas at the greatest risk of flooding and requires the Sequential Test and, where applicable, the Exception Test to be applied. Where development is proposed within or close to an area at risk of flooding, an appropriate site specific FRA should demonstrate that the development would remain safe throughout its lifetime, including an allowance for climate change, and would not increase flood risk elsewhere.

4.3.3. The policy also requires surface water to be managed appropriately, normally through the use of sustainable drainage systems, and requires consideration to be given to existing watercourses, culverts, flood flow routes and drainage infrastructure.

4.3.4. The proposal would introduce a more vulnerable hotel use within the existing restaurant building. However, there would be no extension of the building, alteration to external levels or creation of additional impermeable area. The relationship between the building, the culverted Black's Brook and the current mapped flood extents is assessed in *Section 5*.

4.3.5. The existing surface water drainage network would remain unchanged. The development would therefore maintain the existing runoff rate, runoff volume and point of discharge and would not increase surface water flood risk elsewhere.

4.4 London Borough of Havering Level 1 Strategic Flood Risk Assessment (SFRA)

4.4.1. The London Borough of Havering Level 1 Strategic Flood Risk Assessment, dated November 2016, provides a borough wide assessment of flooding from fluvial, tidal, surface water, sewer, groundwater and artificial sources. It also considers climate change, flood defences, flood warning, emergency planning and the application of the Sequential and Exception Tests.

4.4.2. The SFRA identifies the River Rom and Black's Brook as important sources of fluvial flood risk within the River Beam catchment. Black's Brook flows through Romford and is identified as a relatively flashy watercourse which can respond rapidly to rainfall, potentially limiting the time available for flood warning.

4.4.3. At the application site, Black's Brook is culverted beneath the southern part of the site, below the overflow car park. The restaurant building is positioned farther north and at a higher elevation than the southern car parking area.

4.4.4. The SFRA recommends that site specific FRAs consider current and future flood risk from all relevant sources, climate change effects, safe access and egress, flood resilient design and any residual risk remaining after mitigation. Development should also avoid increasing flood risk elsewhere.

4.4.5. As the SFRA was prepared in 2016, this FRA supplements it using current Environment Agency mapping and the more recent Local Flood Risk Management Strategy and Surface Water Management Plan. The source specific assessment is presented in *Section 5*.

4.5 London Borough of Havering Local Flood Risk Management Strategy

4.5.1. The London Borough of Havering is the Lead Local Flood Authority and is responsible for managing local flood risk from surface water, groundwater and ordinary watercourses. The borough's current Local Flood Risk Management Strategy was prepared in April 2025 and adopted in March 2026.

4.5.2. The Strategy seeks to improve awareness and preparedness, encourage collaborative flood risk management, maintain flood risk assets, deliver proportionate risk reduction measures and ensure that flood risk is appropriately considered through the planning and development process.

4.5.3. Surface water is identified as the most frequently observed source of flooding within the borough. Fifteen Critical Drainage Areas are identified, of which the River Rom and Beam River Critical Drainage Area has the highest priority based on the number of properties potentially at risk.

4.5.4. The proposal would not introduce additional impermeable area or alter the existing surface water drainage network. Retention and continued maintenance of the existing drainage and attenuation infrastructure would therefore be consistent with the objectives of the Strategy. The potential flood risks affecting the site are considered further in *Section 5*.

4.6 London Borough of Havering Surface Water Management Plan

4.6.1. The London Borough of Havering Surface Water Management Plan was adopted alongside the Local Flood Risk Management Strategy in March 2026. It provides a detailed assessment of surface water flood risk and its interaction with ordinary watercourses, sewers and other drainage infrastructure.

4.6.2. The Surface Water Management Plan identifies communities and Critical Drainage Areas at risk during a range of rainfall events and provides the evidence base for prioritising flood risk management measures. The River Rom and Beam River Critical Drainage Area is identified as the highest priority Critical Drainage Area within the borough.

4.6.3. The Surface Water Management Plan promotes measures including source control, infiltration and evaporation where practicable, green infrastructure, temporary storage and conveyance of surface water, reductions in runoff and the inspection and maintenance of drainage assets.

4.6.4. The proposal would not increase the impermeable area or surface water runoff generated by the site. The existing gullies, drainage channels, attenuation storage, flow control and downstream connection would be retained. Additional surface water drainage infrastructure is therefore not considered necessary as part of the proposed internal conversion, subject to the existing system being appropriately inspected and maintained.

5 Sources of Flooding

5.1 Historic Flooding

5.1.1. The London Borough of Havering Level 1 Strategic Flood Risk Assessment contains records of historic flooding from fluvial, tidal, surface water and sewer sources. These records are summarised within the SFRA and shown on Figure 102.

5.1.2. Historic events relevant to the wider Romford area include fluvial flooding within the Beam and Ingrebourne catchments in August 1888, flooding affecting mainly Romford in November 1974 and flooding of the River Rom following an intense thunderstorm in August 1987. Sewer flooding was also recorded within Romford and Hornchurch during June and July 2007.

5.1.3. More recently, the SFRA records combined surface water and fluvial flooding during June 2016. This event affected the River Rom and numerous other locations across Havering.

5.1.4. Figure 102 of the SFRA provides a summary of historic fluvial flood extents, known Environment Agency flooding locations, flooding recorded through the Drain London project and reports received by the London Borough of Havering during June 2016. An extract of this mapping is shown in *Figure 5.1.1* below.

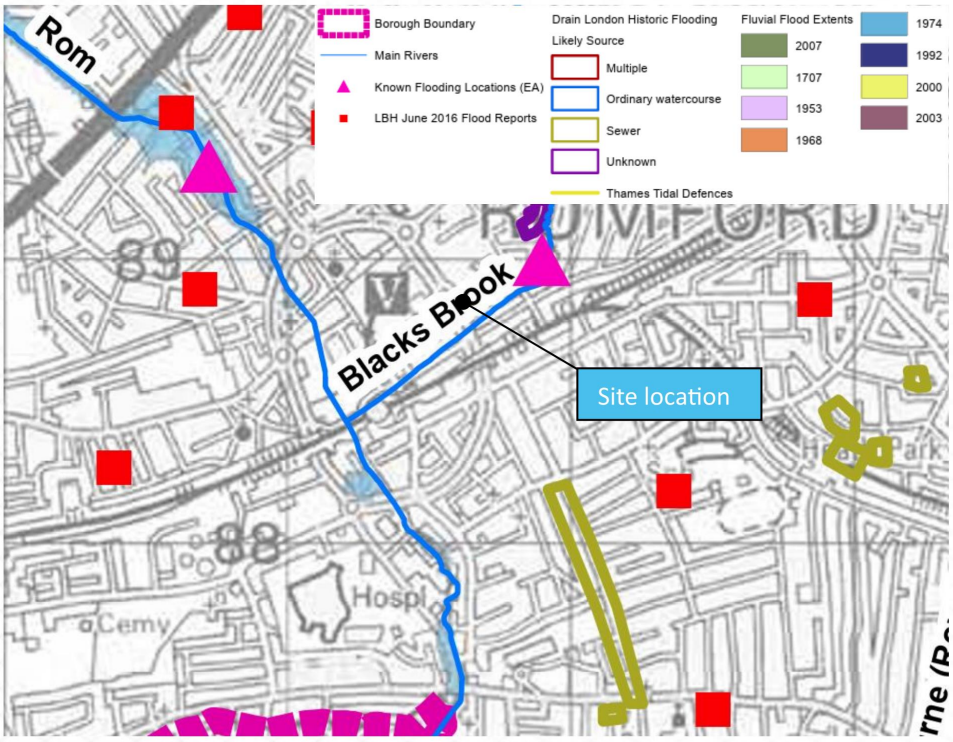


Figure 5.1.1: Extract from the London Borough of Havering SFRA Historical Flood Extents

5.1.5. The mapping identifies a known Environment Agency flooding location beside Black's Brook, to the northeast of the site. A separate Drain London historic flooding record is shown immediately north of this location, with the likely source of flooding classified as unknown.

5.1.6. Neither of these records overlaps the site. The SFRA does not provide details of the date, flood depth, mechanism or properties affected by these particular records. They nevertheless demonstrate that flooding has previously occurred within the wider Black's Brook catchment.

5.1.7. The mapping also shows reports received by the London Borough of Havering during the June 2016 event at several locations across the wider Romford area. However, no report is shown at the site.

5.1.8. The available information has not identified any known flooding affecting the existing hotel or restaurant buildings. However, the absence of a recorded incident does not confirm that flooding cannot occur in the future. Flood risk from each potential source is therefore considered separately within the following sections.

5.2 Fluvial Flooding

5.2.1. Black's Brook is the principal source of fluvial flood risk affecting the site. The watercourse is culverted beneath the southern car parking areas before continuing towards the River Rom to the west.

5.2.2. The Environment Agency Flood Map for Planning is the initial dataset used to identify the location and extent of fluvial flooding. *Figure 5.2.1* below shows the Flood Map for Planning including climate change.

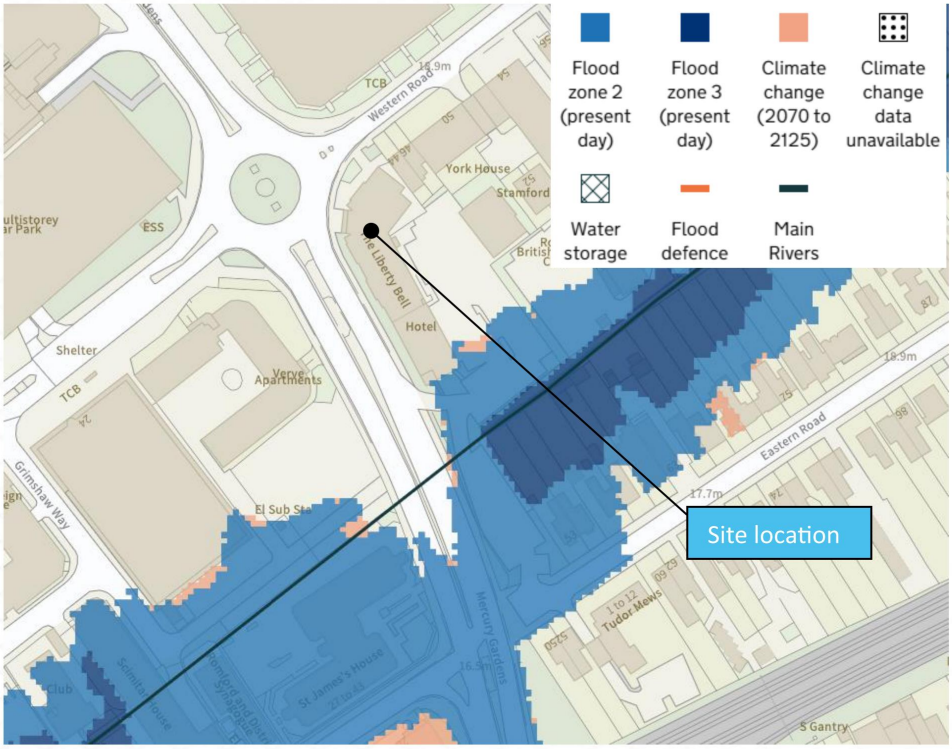


Figure 5.2.1: Flood Map for Planning including Climate Change

5.2.3. The mapping shows that the application site extends across Flood Zones 1, 2 and 3. Flood Zone 3 is concentrated along the Black's Brook corridor and affects parts of the southern car parking areas. Flood Zone 2 extends farther across the southern part of the site.

5.2.4. The existing restaurant building is located entirely within Flood Zone 1. The proposed conversion is confined to this building and does not extend into the parts of the site within Flood Zones 2 or 3.

5.2.5. The Environment Agency detailed flood risk mapping provides a more detailed indication of the areas that may be affected by flooding from rivers. *Figure 5.2.2* shows the detailed mapping including the anticipated effects of climate change.

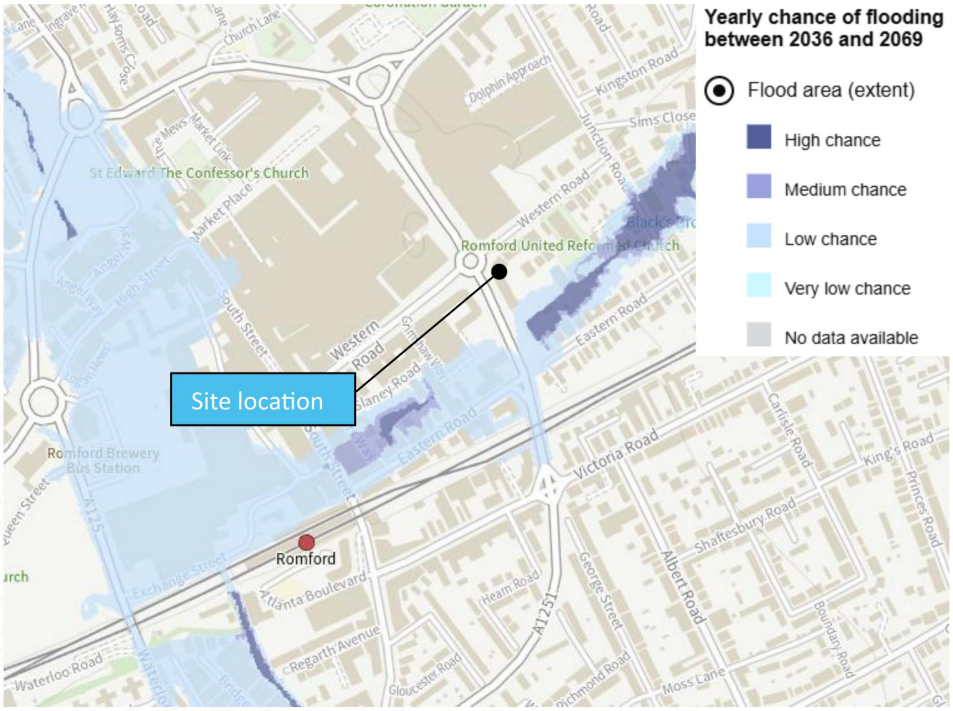


Figure 5.2.2: Flood Risk from Rivers and Sea Map including Climate Change

5.2.6. The detailed mapping identifies areas of high, medium and low flood risk along Black's Brook and across the lower southern parts of the site. The highest risk is concentrated along the immediate watercourse corridor, with the lower probability extent spreading farther across the surrounding car parking areas.

5.2.7. The detailed climate change mapping concurs with the planning maps and does not identify a flood extent affecting the restaurant building.

5.2.8. Figure 103 of the Havering Level 1 Strategic Flood Risk Assessment shows Flood Zones 3a and 3b within the borough. An extract covering the site and surrounding Black's Brook corridor is shown in *Figure 5.2.3* below.

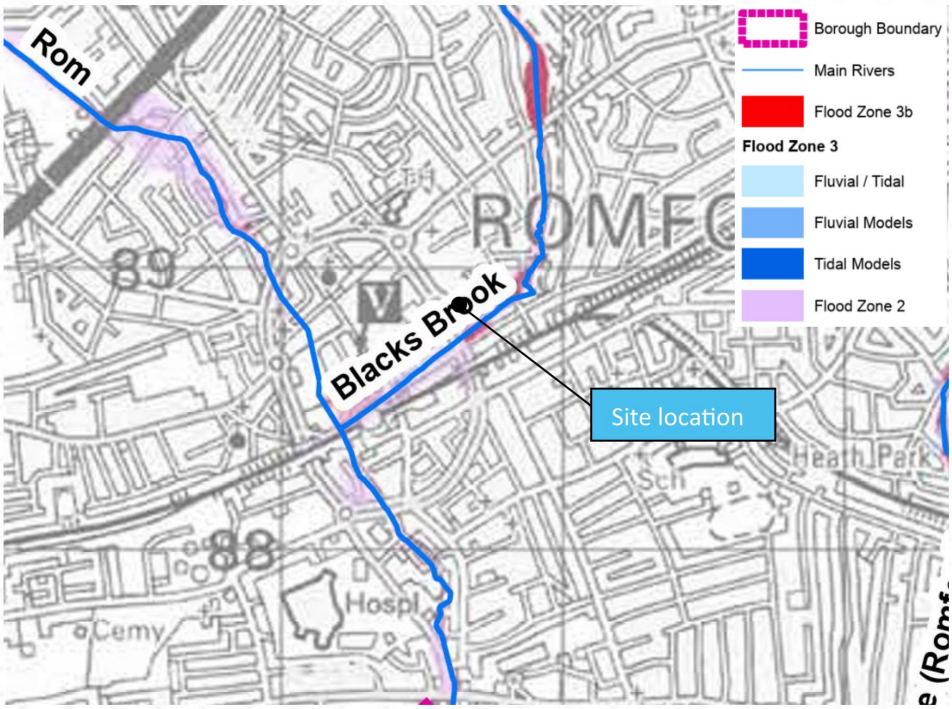


Figure 5.2.3: SFRA Flood Zone 3 Map

5.2.9. The SFRA mapping also identifies Flood Zone 3 along Black's Brook, including areas of functional floodplain associated with the immediate watercourse corridor. This corresponds with the Flood Zone 3 extent shown by the Environment Agency mapping.

5.2.10. The SFRA figures are presented at a borough wide scale and the Black's Brook annotation is positioned directly across the site. This obscures some of the mapped detail and makes the precise relationship between the flood zones, site and restaurant difficult to determine from the SFRA figures alone.

5.2.11. The current Environment Agency maps are more recent, are available at a greater level of detail and provide a clearer representation of flood risk at the site. They have therefore been used as the primary mapping for this assessment.

5.2.12. The potential effect of climate change is shown on Figure 105c of the SFRA. This represents the 1% annual probability event with a 25% increase in peak river flow and is shown in *Figure 5.2.4* below.

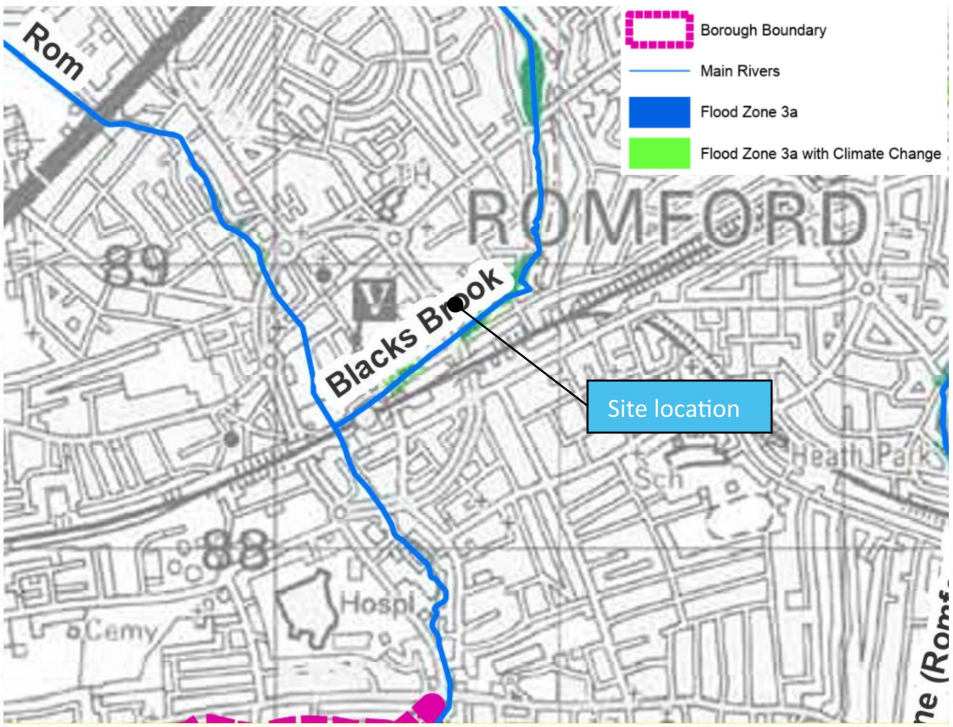


Figure 5.2.4: SFRA Fluvial 25% Climate Change Map

5.2.13. The site is located within the Roding, Beam and Ingrebourne Management Catchment. The current central peak river flow allowance for the 2080s is 26%. The 25% allowance shown on SFRA Figure 105c is therefore a close approximation of the current central allowance.

5.2.14. Following a request for detailed model information, the Environment Agency supplied outputs from the Black's Brook Update Study (JBA, 2015) under reference EIR2026/35299, including climate change simulations completed in 2017. The Environment Agency advised that the model is considered to be in good condition and that, where applicable, finished floor levels should be set no lower than the defended 1% annual probability flood level, including the appropriate climate change allowance, plus 600mm.

5.2.15. The supplied model includes defended 1% annual probability simulations with increases of 25%, 35% and 70% in peak river flow. The 25% simulation provides the closest available approximation to the current central allowance of 26%, while the 35% simulation has also been considered as a conservative sensitivity check. The nearest relevant 1D model nodes to the application site reference point are nodes 1.008d and 1.008u, approximately 90m to the southeast. These provide modelled peak levels of approximately 16.90mAOD to 16.91mAOD for the 1% plus 25% event and 17.13mAOD to 17.14mAOD for the 1% plus 35% event.

5.2.16. The model was developed for catchment wide flood risk mapping and was not produced specifically for the application site. The modelled levels have therefore been used as a representative check against the current Environment Agency mapping, topographical survey and finished floor levels, rather than being treated as a site specific flood level within the restaurant building. The two dimensional results are consistent with flooding remaining within the lower Black's Brook corridor and southern parts of the site, away from the restaurant.

5.2.17. The restaurant finished floor level of between 19.00mAOD and 19.08mAOD is at least approximately 1.49m above the representative 1% plus 25% climate change level after application of the Environment Agency's 600mm freeboard. Using the more conservative 35% sensitivity event, the corresponding minimum margin remains approximately 1.26m. The existing finished floor level therefore comfortably satisfies the Environment Agency's recommended criterion and no raising of floor levels or additional flood resistance measures is considered necessary.

5.2.18. A residual risk remains because Black's Brook is culverted beneath the southern part of the site and Mercury Gardens. The model study confirms that significant blockage of the Mercury Gardens culvert could locally increase water levels and enlarge the predicted flood extent. The proposals would not alter or obstruct the culvert and would retain access for inspection and maintenance by the responsible parties.

5.2.19. The existing surface water network discharges to the culverted Black's Brook immediately downstream of the site connection. Elevated water levels within the brook could temporarily restrict the surface water outfall or cause the downstream drainage network to surcharge. This interaction is considered further as part of the surface water and sewer flood risk assessments.

5.2.20. The proposed hotel bedrooms are classified as more vulnerable development. A development lifetime of 75 years has been adopted, giving an assessment horizon of approximately 2101. The Environment Agency mapping including climate change and SFRA Figure 105c have therefore been considered when assessing the future risk to the building.

5.2.21. The proposals are confined to the internal conversion of the existing restaurant. There would be no change to the building footprint, existing finished floor level, external ground levels or extent of impermeable surfacing. The development would not displace floodwater, reduce floodplain storage or increase fluvial flood risk elsewhere.

5.2.22. Although parts of the wider site are within Flood Zones 2 and 3, the restaurant building and proposed bedrooms are within Flood Zone 1 and remain outside the mapped climate change flood extents. Taking account of the current mapping, existing levels and nature of the proposals, the risk of fluvial flooding affecting the proposed development is considered to be low.

5.3 Surface Water Flooding

5.3.1. Surface water flooding can occur when rainfall is unable to infiltrate into the ground or enter the drainage system. Runoff may then flow across the ground and collect within localised low points and depressions.

5.3.2. The Environment Agency detailed surface water flood mapping identifies areas with a high, medium and low annual probability of flooding. *Figure 5.3.1* shows the mapped surface water flood risk under present day conditions.

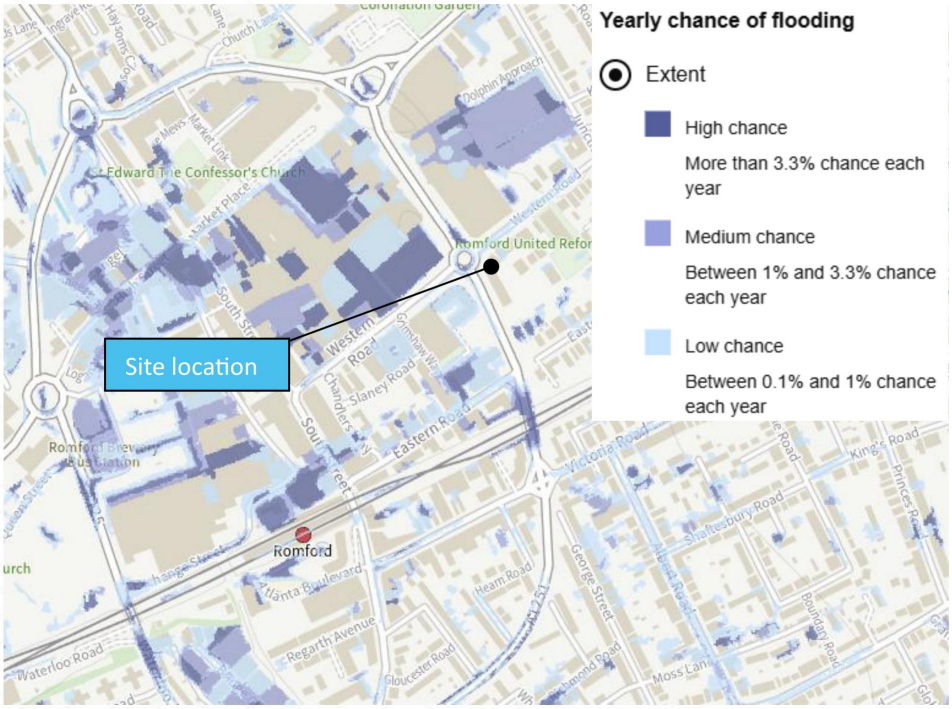


Figure 5.3.1: Flood Risk from Surface Water Map

5.3.3. The mapping identifies numerous areas of surface water flood risk across the wider Romford area. These are generally concentrated within roads, car parks, other areas of hardstanding and local topographic depressions.

5.3.4. The restaurant building is outside the mapped surface water flood extents. Any mapped surface water flooding within the wider site is confined to localised external areas, including parts of the lower southern car parking areas and the vicinity of Black's Brook.

5.3.5. *Figure 5.3.2* shows the Environment Agency surface water flood mapping including the anticipated effects of climate change.

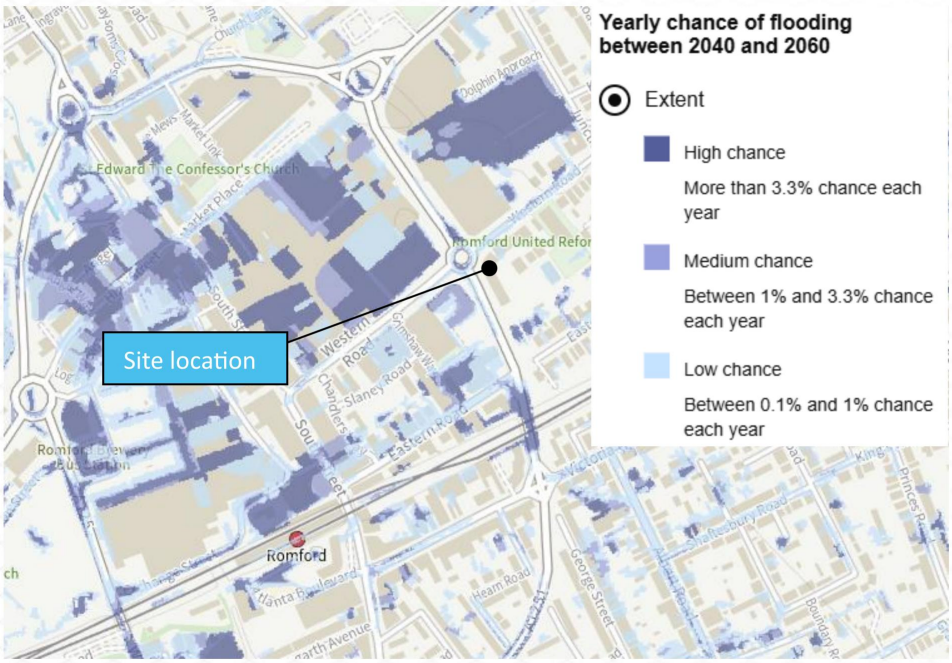


Figure 5.3.2: Flood Risk from Surface Water including Climate Change Map

5.3.6. The climate change mapping shows an increase in the extent of surface water flooding across parts of the wider Romford area.

5.3.7. Climate change does not result in a mapped surface water flood extent affecting the restaurant building. The proposed bedrooms therefore remain outside the identified areas of surface water flood risk under both the present day and future scenarios.

5.3.8. The surface water mapping contained within the SFRA is shown on Figure 109. This identifies the predicted extents of surface water flooding during the 3.3%, 1% and 0.1% annual probability events. It also identifies the Havering Critical Drainage Areas. An extract is shown in *Figure 5.3.3*.

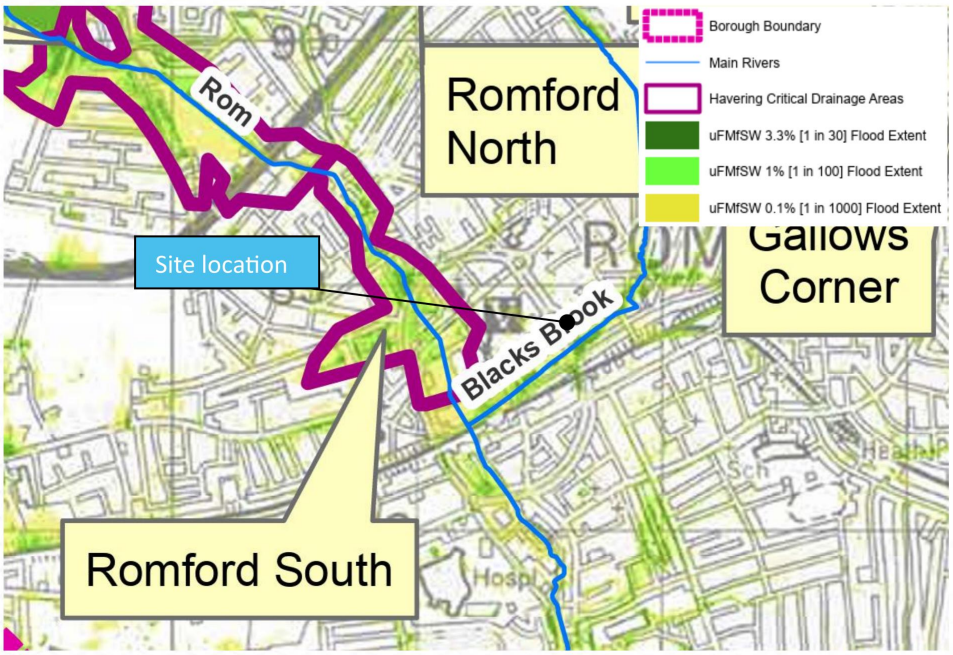


Figure 5.3.3: SFRA Surface Water Flood Risk Map

5.3.9. The SFRA identifies the Romford South Critical Drainage Area within the vicinity of the site. It also shows predicted surface water flooding along parts of the Black's Brook corridor and within the surrounding urban area.

5.3.10. The SFRA mapping is presented at a borough wide scale. The Black's Brook annotation and Critical Drainage Area labels obscure much of the detail around the application site. It is therefore difficult to determine the precise relationship between the restaurant and the mapped surface water extents from the SFRA figure alone.

5.3.11. The current Environment Agency mapping is available at a greater level of detail and provides a clearer representation of the surface water flood risk affecting the site. It has therefore been used as the primary mapping for this assessment. The Environment Agency mapping confirms that the restaurant remains outside the predicted surface water flood extents.

5.3.12. The strategic mapping does not explicitly represent the private surface water drainage network or the detailed changes in level across the site. The mapping has therefore been considered alongside the topographical survey and the existing drainage arrangements described in *Section 2.6*.

5.3.13. The topographical survey shows that the restaurant is located on the higher northern part of the site, with a finished floor level between 19.00mAOD and 19.08mAOD. The external areas fall towards the southeast, reaching approximately 16.60mAOD within the main car park and approximately 16.50mAOD within the southern overflow car park.

5.3.14. These changes in level are consistent with the mapped surface water risk being concentrated within the lower external areas rather than at the restaurant building. The existing restaurant finished floor level is also raised above the immediately surrounding footways and car parking areas.

5.3.15. Runoff from the existing car parks and access roads is collected by trapped road gullies and channel drains. The drainage system includes a below ground geocellular attenuation tank beneath the southern part of the main car park, with discharge restricted to 3.0l/s by a Hydro Brake flow control.

5.3.16. The existing drainage system also incorporates bypass petrol interceptors before discharging to the Thames Water surface water sewer within Mercury Gardens. This sewer subsequently discharges to the culverted Black's Brook.

5.3.17. The existing drainage system is not represented within the Environment Agency or SFRA surface water mapping. The gullies, channel drains, attenuation storage and flow control will reduce the likelihood of surface water remaining within the car parking areas during more frequent rainfall events.

5.3.18. The proposed development is confined to the internal conversion of the existing restaurant. It would not alter the building footprint, external ground levels, impermeable area or existing surface water drainage arrangements. The development would therefore not increase the rate or volume of surface water runoff or increase surface water flood risk elsewhere.

5.3.19. Based on the available mapping, site levels and existing drainage arrangements, the risk of surface water flooding affecting the restaurant and proposed bedrooms is considered to be low.

5.3.20. A residual risk remains within the lower car parking areas during exceptional rainfall or following blockage, surcharge or failure of the existing drainage system. This risk will be managed through continued inspection and maintenance of the gullies, channel drains, attenuation storage, flow control, petrol interceptors and downstream outfall. No additional surface water flood risk management measures are considered necessary in connection with the proposed conversion.

5.4 Groundwater Flooding

5.4.1. Groundwater flooding occurs where the groundwater table rises above ground level or enters buildings and below ground structures. It is generally associated with prolonged rainfall and is influenced by the permeability of the underlying soils and geology.

5.4.2. The Environment Agency long term flood risk service confirms that the site is located outside a groundwater flood alert area, as shown in *Figure 5.4.1*.

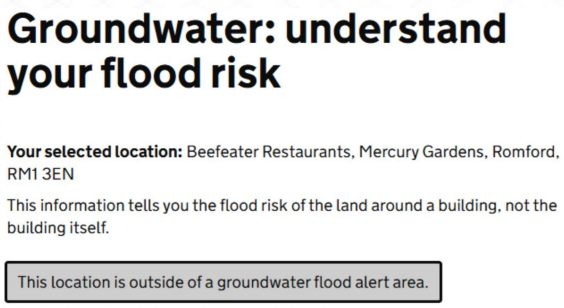


Figure 5.4.1: Environment Agency Groundwater Flood Risk Information

5.4.3. The Environment Agency information relates to the land surrounding the building and does not directly assess the risk of groundwater entering the building itself. The absence of a groundwater flood alert area also does not confirm that groundwater could not emerge under exceptional conditions.

5.4.4. The SFRA includes groundwater susceptibility mapping on Figure 111. This mapping is based on the British Geological Survey Groundwater Flood Susceptibility Map and shows the proportion of each one kilometre grid square where geological and hydrogeological conditions indicate that groundwater might emerge. An extract from SFRA Figure 111 is shown in *Figure 5.4.2*.



Figure 5.4.2: SFRA Groundwater Flood Risk Map

5.4.5. The SFRA places the site within a grid square where at least 75% of the area is identified as having geological and hydrogeological conditions in which groundwater might emerge. The indicated groundwater flooding type is associated principally with the superficial deposits.

5.4.6. This classification does not mean that 75% of the application site will flood or that groundwater flooding has a 75% annual probability. The mapping is a strategic susceptibility dataset and does not identify the precise locations where groundwater may emerge, flow or collect.

5.4.7. The SFRA also identifies two reported groundwater flooding incidents within the wider area. One incident, dated September 2007, is shown to the southwest of the site, while a second incident, dated September 2002, is shown to the southeast. Neither incident is identified within the application site or as affecting the existing hotel or restaurant buildings.

5.4.8. The Site Investigation desk study classified the site as having a high susceptibility to groundwater flooding due to the presence of interbedded sands and clays within the Head Deposits. However, no springs were identified from the historic mapping and the underlying London Clay has generally low permeability.

5.4.9. Groundwater was encountered during the investigation at depths between approximately 2.92m and 4.10m below ground level. The groundwater was interpreted as being perched within the superficial deposits. Subsequent monitoring within exploratory hole WS4 recorded groundwater at approximately 3.4m below ground level.

5.4.10. These observations confirm that groundwater is present beneath the site but do not indicate groundwater at or close to the existing restaurant finished floor level. The available information has not identified any previous groundwater flooding affecting the restaurant or existing hotel buildings.

5.4.11. The proposed development is confined to the internal conversion of the existing restaurant. It would not include basement accommodation, lowering of the existing finished floor level or significant new construction below ground. The proposals would therefore not create an additional pathway through which groundwater could affect the building or its occupants.

5.4.12. Although the SFRA and Site Investigation identify geological susceptibility to groundwater emergence, this is not supported by evidence of groundwater flooding at the application site. The site is also outside an Environment Agency groundwater flood alert area and groundwater was encountered at depths greater than approximately 2.9m below ground level.

5.4.13. Taking account of the available mapping, recorded groundwater levels, existing building form and nature of the proposals, the risk of groundwater flooding affecting the proposed bedrooms is considered to be low. No additional groundwater flood risk management measures are considered necessary in connection with the proposed conversion.

5.5 Sewer Flooding

5.5.1. Sewer flooding can occur where rainfall or foul flows exceed the hydraulic capacity of a sewer network. Flooding may also arise from blockages, collapses, pumping station failure or elevated water levels preventing a drainage system from discharging normally.

5.5.2. The SFRA considers historic sewer flooding using information supplied by Thames Water. The information includes properties that have experienced sewer flooding due to hydraulic overload or are considered to be at risk of flooding.

5.5.3. Due to confidentiality requirements, the SFRA presents the Thames Water information by postcode area rather than identifying individual properties. Figure 110 of the SFRA is shown in *Figure 5.5.1*.

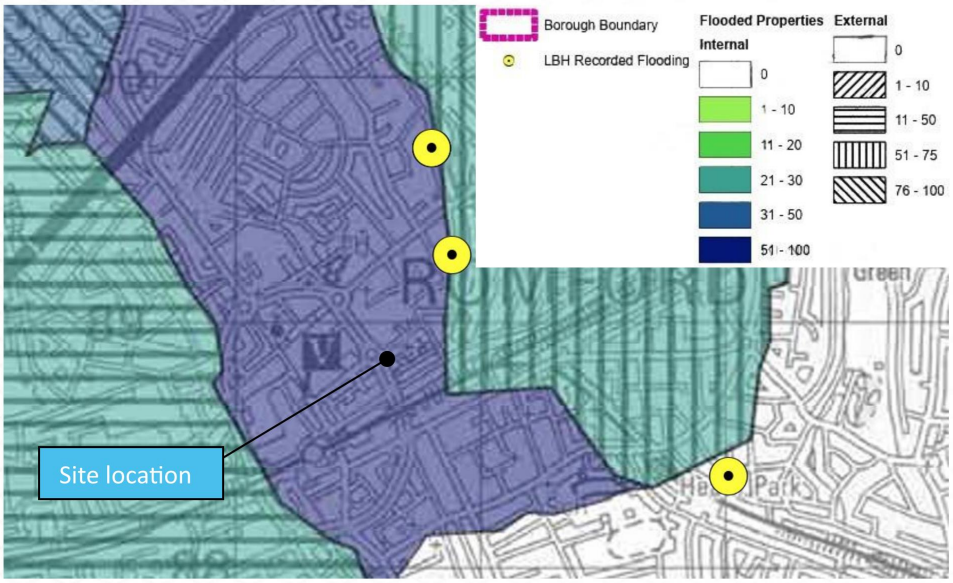


Figure 5.5.1: SFRA Sewer Flooding Map

5.5.4. The mapping in *Figure 5.5.1* shows the site to be within an area containing between 31 and 50 internal sewer flooding reports. The same area is shown without external flooding hatching, indicating zero external sewer flooding reports within the mapped area.

5.5.5. The accompanying SFRA table provides separate figures for the wider RM1 postcode area. It records 25 properties affected by internal sewer flooding and 65 properties affected by external sewer flooding, giving a total of 90 recorded properties.

5.5.6. The mapped classification and the figures presented for the wider RM1 postcode area are not directly comparable at the application site. They demonstrate that sewer flooding has occurred within the wider area but do not establish that flooding has occurred at the site.

5.5.7. Figure 110 also shows several flooding locations recorded separately by the London Borough of Havering. The nearest recorded location is situated to the northeast of the restaurant. No recorded flooding location is shown within the site.

5.5.8. Foul water from the site is conveyed to the Thames Water foul sewer within Western Road through the existing private pumping station and rising main. The pumping station is located within the southern car parking area and will remain in operation as part of the proposed development.

5.5.9. The proposed development would replace the existing restaurant with 10 hotel bedrooms. The resulting foul water discharge is not expected to represent a material increase compared with the existing restaurant use. The existing connection to the Thames Water foul sewer would be retained, subject to any local alterations required to serve the converted building.

5.5.10. Thames Water have been consulted regarding the available capacity within the existing foul sewer network to accommodate flows from the proposed development. Their response is awaited at this time and will be appended to this report when received.

5.5.11. The proposed foul water strategy will be developed in accordance with the findings of the Thames Water capacity assessment.

5.5.12. Subject to confirmation of capacity, and based on the available records, existing drainage arrangements and nature of the proposed development, the risk of sewer flooding affecting the restaurant and proposed bedrooms is considered to be low.

5.5.13. A residual risk will remain from blockage, surcharge or failure of the gravity drainage network or pumping station. This risk will be managed through continued inspection and maintenance of the private drainage network, pumping station, rising main and downstream connection. No additional sewer flood risk management measures are considered necessary in connection with the proposed conversion.

5.6 Flooding from Artificial Sources

5.6.1. Flooding from artificial sources may arise from the failure or overtopping of infrastructure such as reservoirs, canals, water supply aqueducts, pumping stations or other retained water bodies. Such events are generally of very low probability but may have significant consequences where large volumes of water are released.

5.6.2. The Environment Agency provides reservoir flood mapping for large reservoirs that are capable of holding more than 25,000 cubic meters of water. The mapping shows the potential extent of flooding under a realistic worst-case failure scenario and includes separate “dry-day” and “wet-day” scenarios. A dry-day scenario assumes that reservoir failure occurs when surrounding rivers are at normal levels, whereas a wet-day scenario assumes failure during an existing river flood.

5.6.3. *Figure 5.6.1* below shows the Environment Agency reservoir flood risk mapping for the site and surrounding area.

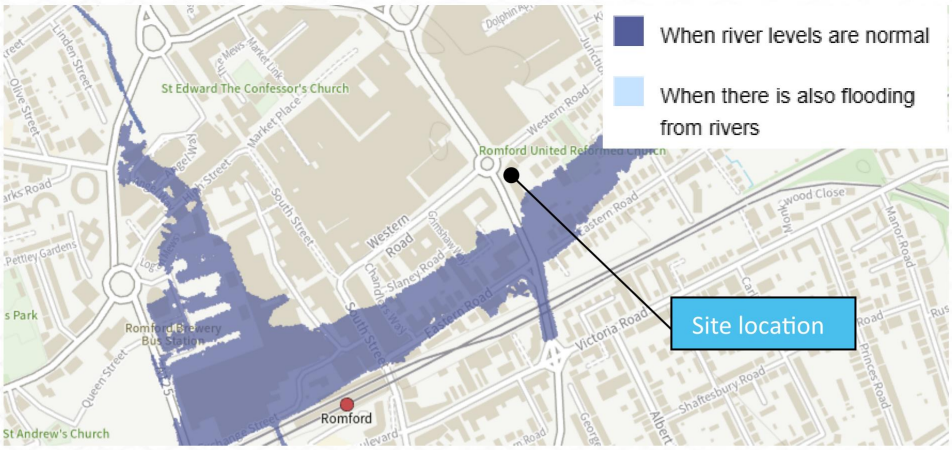


Figure 5.6.1: Environment Agency Reservoir Flood Risk Map

5.6.4. The mapped reservoir flood extent follows the course of Black’s Brook through Romford. In the vicinity of the site, the reservoir flood extent broadly corresponds with the Flood Zone 2 extent described in *Section 5.2*.

5.6.5. The existing restaurant and proposed bedrooms are located outside the mapped reservoir flood extent. The mapping indicates that reservoir flood water could affect lower parts of the wider site associated with the Black’s Brook corridor and southern car parking areas, but it would not be expected to reach the restaurant building.

5.6.6. The SFRA considers the potential failure of a covered water supply reservoir situated to the west of Harold Hill. The reservoir is located at the head of Black’s Brook.

5.6.7. The SFRA states that, in the event of a failure, flood water would follow the surrounding topography towards the A12 before continuing along Black’s Brook towards Romford town centre and the River Rom. The anticipated flow route is also indicated by the surface water mapping.

5.6.8. The reservoir flood mapping represents the potential consequences of a reservoir failure and should not be interpreted as the annual probability of flooding. Reservoirs are subject to statutory inspection and maintenance requirements. The SFRA therefore considers the likelihood of structural failure to be minimal.

5.6.9. The proposed development would convert the existing restaurant into 10 hotel bedrooms. It would not alter the building footprint, finished floor levels, surrounding ground levels or the route of Black's Brook.

5.6.10. The restaurant is located on the higher northern part of the site, with a finished floor level of approximately 19.00mAOD. The lower southern car parking areas provide separation between the proposed bedrooms and the mapped reservoir flood route.

5.6.11. A residual risk would remain to the lower parts of the wider site in the extremely unlikely event of a reservoir failure. This could temporarily affect parts of the car park or site access but would not be expected to result in flooding of the proposed bedrooms.

5.6.12. Based on the Environment Agency mapping, the information presented within the SFRA and the relative elevation of the restaurant, the risk of reservoir flooding affecting the proposed bedrooms is considered to be very low. No additional reservoir flood risk mitigation measures are considered necessary for the proposed conversion.

6 Managing the Risk of Flooding

6.1 The National Planning Policy Framework (NPPF)

6.1.1. The NPPF Planning Practice Guidance for Flood risk and Coastal Change advises that the objectives of a site specific flood risk assessment are to establish whether:

- a proposed development is likely to be affected by current or future flooding from any source.
- it will increase flood risk elsewhere.
- the measures proposed to deal with these effects and risks are appropriate.
- the evidence for the local planning authority to apply (if necessary) the Sequential Test.
- the development will be safe and pass the Exception Test, if applicable.

6.1.2. *Section 5* identifies Black's Brook as the principal source of flood risk affecting the site. Parts of the lower southern car parking areas are within Flood Zones 2 and 3. However, the existing restaurant and proposed bedrooms are located within Flood Zone 1 and remain outside the mapped fluvial flood extents, including the anticipated effects of climate change. The building is also outside the mapped surface water and reservoir flood extents. Groundwater and sewer flooding represent residual risks, but the risk of these sources affecting the proposed bedrooms is considered to be low. *Table 6.1.1* provides a summary of the assessed flood risks and the measures proposed to manage them.

Table 6.1.1: Summary of Sources of Flooding and Recommended Management Measures

Source	Probability	Management Measures
Fluvial Flooding	Low	▪ Retain the existing restaurant floor level of between 19.00mAOD and 19.08mAOD, which exceeds the 1% annual probability plus climate change model level and the Environment Agency's recommended 600mm freeboard. ▪ Retain the surrounding ground levels. ▪ Do not obstruct the route of the culverted Black's Brook and retain access for inspection and maintenance.
Surface Water Flooding	Low	▪ The existing building footprint, external levels and impermeable areas would remain materially unchanged. ▪ Existing gullies, channel drains, petrol interceptor, piped drainage, attenuation storage, Hydro-Brakes and connections to the Thames Water sewer will be retained and regularly inspected and maintained.
Groundwater Flooding	Low	▪ Not applicable. The conversion does not include basement accommodation, lowering of the existing floor level or significant below ground construction.
Sewer Flooding	Low	▪ The existing drainage connections would be retained, subject to local alterations to the private foul drainage network required to serve the converted building. ▪ The proposed foul water strategy will be developed in accordance with the findings of Thames Water's assessment.
Reservoir Flooding	Low	▪ No mitigation is considered proportionate because the restaurant and proposed bedrooms are outside the mapped reservoir flood extent.
Canal Flooding	Low	▪ No mitigation is considered proportionate because no canal flood source has been identified that could affect the site.
Watermain Flooding	Low	▪ Not applicable.

6.1.3. The proposed hotel bedrooms are classified as more vulnerable development. The existing restaurant building is located within Flood Zone 1, where more vulnerable development is considered appropriate. The proposal comprises a change of use within an existing building and is therefore exempt from the Sequential Test. As the proposed building is within Flood Zone 1, the Exception Test is not required. Although parts of the wider site are within Flood Zones 2 and 3, no development is proposed within these areas.

6.1.4. The proposal would not materially alter the existing building footprint, finished floor level, external ground levels or extent of impermeable surfacing. It would therefore not displace flood water, reduce the available floodplain storage or increase the rate or volume of surface water runoff. The development would not increase flood risk elsewhere.

6.1.5. The current Environment Agency mapping and the supplied Black's Brook model outputs confirm that the restaurant and proposed bedrooms remain outside the predicted fluvial flood extents, including the anticipated effects of climate change. A review of the nearest relevant model nodes confirms that the existing finished floor level of between 19.00mAOD and 19.08mAOD exceeds the representative 1% annual probability plus climate change flood level and the Environment Agency's recommended 600mm freeboard, including when the 35% climate change simulation is considered as a conservative sensitivity check. Raising the existing floor level, introducing additional flood resistance measures or providing compensatory floodplain storage is therefore not considered necessary.

6.1.6. A residual fluvial risk remains because Black's Brook is culverted beneath the southern part of the site and Mercury Gardens. The model study confirms that significant culvert blockage could locally increase water levels and enlarge the predicted flood extent. The proposed works will not alter or obstruct the culvert and will retain access for inspection and maintenance by the responsible parties.

6.1.7. The Environment Agency surface water mapping confirms that the restaurant remains outside the predicted flood extents under both present day and future climate change conditions. Localised surface water flooding is identified within lower external areas, away from the proposed bedrooms. The existing gullies, channel drains, attenuation storage, Hydro Brake flow control, petrol interceptors and downstream connection will be retained and regularly inspected and maintained. The risk of surface water flooding affecting the proposed building is therefore considered to be low.

6.1.8. Although the SFRA identifies strategic susceptibility to groundwater emergence, the Environment Agency confirms that the site is outside a groundwater flood alert area. The Site Investigation encountered groundwater at depths greater than approximately 2.9m below ground level and no groundwater flooding has been identified as affecting the existing restaurant. The conversion will not introduce basement accommodation, lower the existing finished floor level or require significant new construction below ground. The risk of groundwater flooding affecting the proposed bedrooms is therefore considered to be low and no additional mitigation measures are required.

6.1.9. The SFRA identifies historic sewer flooding within the wider RM1 postcode area but does not identify an incident within the site. There is no known record of sewer flooding affecting the existing restaurant or hotel buildings. The conversion is not expected to materially increase in foul water discharge compared with the existing use.

6.1.10. Thames Water have been consulted regarding the available capacity within the existing foul sewer network to accommodate flows from the proposed development. Their response is awaited at this time and will be appended to this report when received. The proposed foul water strategy will be developed in accordance with the findings of their assessment.

6.1.11. Subject to confirmation of capacity and continued maintenance of the private gravity drainage network, foul pumping station, rising main and downstream connection, the risk of sewer flooding affecting the proposed bedrooms is considered to be low.

6.1.12. The Environment Agency reservoir flood mapping indicates that potential inundation would broadly follow Black's Brook and the southern parts of the site. The restaurant and proposed bedrooms are outside the mapped reservoir flood extent. The SFRA considers the likelihood of reservoir failure to be minimal due to the statutory inspection and maintenance requirements applying to reservoirs. The risk of reservoir flooding affecting the proposed bedrooms is therefore considered to be low and no additional mitigation measures are required.

6.1.13. The proposed conversion will remain safe throughout its lifetime, taking account of the anticipated effects of climate change, without increasing flood risk elsewhere. The existing finished floor level, building location, drainage arrangements and proposed management measures provide an appropriate response to the identified risks. The development therefore accords with the flood risk requirements of the National Planning Policy Framework, associated Planning Practice Guidance and relevant local planning policy.

7 Development Drainage Strategy

7.1 Surface Water Drainage Strategy

7.1.1. As the proposed development solely comprises an internal conversion of the existing restaurant building, there is no change to the impermeable area on site. Given this, the surface water management strategy for the site remains the same as existing with no alterations deemed necessary to accommodate the development proposals.

7.2 Foul Water Drainage Strategy

7.2.1. As reported in *Section 2.6* of this report, foul water generated by the existing restaurant discharges to the Thames Water public foul sewer within Western Road to the north of the site via two separate outfalls, one via gravity which serves the northern part of the restaurant, with the remainder of the restaurant discharging via a rising main connection originating from a private pump station within the south of the site's car park.

7.2.2. As the proposed development comprises the internal conversion of the existing restaurant to form new hotel bedrooms, proposed SVP's from new bedrooms are to be connected to existing SVP's where possible. Where this is not possible proposed SVP's are to be routed to new external chambers which connect to existing private foul water drainage. The existing connection into the Thames Water foul sewer will be maintained. A Foul Water Drainage Strategy, based on the topographical survey, can be found within *Appendix E*.

7.2.3. Following the proposed conversion, it is possible that there will be increased foul flows when compared to the existing situation. Therefore, a pre-development sewer capacity enquiry has been submitted to Thames Water. Their response is awaited at this time but will be appended to this report when received. The proposed foul water strategy will be developed in accordance with the findings of their assessment.

8 Summary & Conclusions

8.1 Site Characteristics & Development

8.1.1. The site comprises the Liberty Bell Beefeater restaurant, the adjoining Premier Inn Romford Central hotel, annexe, associated car parking and landscaping.

8.1.2. The development proposals form a full planning application comprising the internal conversion of the existing Liberty Bell restaurant to form 10 new Premier Inn bedrooms with associated works. The building footprint, finished floor level, external ground levels and extent of impermeable surfacing will remain materially unchanged.

8.2 Flood Risk

8.2.1. The site extends across Flood Zones 1, 2 and 3 due to the route of Black's Brook through the southern car parking areas. However, the existing restaurant and proposed bedrooms are located entirely within Flood Zone 1 and remain outside the mapped fluvial flood extents, including the anticipated effects of climate change. Hotel accommodation is classified as "more vulnerable" development and is appropriate within Flood Zone 1. The proposal comprises a change of use and is exempt from the Sequential Test under Policy F5 of the August 2026 NPPF. The Exception Test is not required.

8.2.2. The Environment Agency mapping also confirms that the restaurant and proposed bedrooms are outside the mapped surface water and reservoir flood extents. Localised flooding is identified within the lower southern car parking areas and along the Black's Brook corridor, away from the proposed bedrooms. The restaurant is positioned on the higher northern part of the site, with a finished floor level of 19.00mAOD to 19.08mAOD, compared with levels of approximately 16.50mAOD to 16.60mAOD within the lower southern car parking areas. Review of the supplied Black's Brook model outputs also confirms that the existing restaurant finished floor level exceeds the representative 1% annual probability plus climate change flood level and the Environment Agency's recommended 600mm freeboard. This remains the case when the modelled 35% climate change event is considered as a conservative sensitivity check.

8.2.3. The SFRA identifies strategic susceptibility to groundwater emergence and historic sewer flooding within the wider RM1 postcode area. However, no recorded groundwater or sewer flooding has been identified within the site or as affecting the existing hotel or restaurant buildings. The Site Investigation encountered groundwater at depths greater than approximately 2.9m below ground level, and the conversion will not introduce basement accommodation or lower the existing finished floor level. The risks of groundwater and sewer flooding affecting the proposed bedrooms are therefore considered to be low, subject to confirmation of foul sewer capacity.

8.2.4. A residual risk remains from blockage or restricted capacity of the culverted Black's Brook, elevated water levels restricting the surface water outfall, and blockage, surcharge or failure of the private drainage systems. The Black's Brook model study confirms that significant blockage of the Mercury Gardens culvert could locally increase water levels and enlarge the predicted flood extent. The proposed works will not alter or obstruct the culvert, and access for inspection and maintenance will be retained. Continued inspection and maintenance of the culvert and private drainage infrastructure will manage these residual risks.

8.3 Surface Water Disposal & Management

8.3.1. The existing surface water drainage strategy for the site will remain the same as existing due to the development proposals comprising an internal conversion only, with no proposed change to the impermeable external areas.

8.4 Foul Water Disposal & Management

8.4.1. New SVPs will connect to existing SVP's where practicable. Where this is not possible, the proposed SVP's will be routed to new external chambers connecting to the existing private foul drainage network. The existing discharge to the Thames Water public foul sewer will be retained, as shown in *Appendix E*.

8.4.2. A pre-development sewer capacity enquiry has been submitted to Thames Water because foul flows may increase compared with the existing restaurant use. Their response is awaited and will be appended to this report when received. The foul water strategy will be finalised in accordance with the findings of their assessment.

8.5 Drainage Operation & Maintenance

8.5.1. The existing private drainage systems will continue to be regularly maintained by Whitbread's appointed maintenance contractor, in accordance with the Operation and Maintenance Manual practices which are currently exercised at the development.

8.6 Conclusion

8.6.1. In terms of flood risk and drainage strategy, it is concluded that the development can be safely occupied and operated, with no increased level of flood risk for the site or neighbouring areas as a result of the proposed development. On this basis, the scheme is considered to accord with national and local planning policy relating to flood risk and drainage strategy.

Appendices:

Appendix A	Topographical Survey
Appendix B	Site Investigation
Appendix C	As-Built Drawing
Appendix D	Proposed Development Layout
Appendix E	Foul Water Drainage Strategy

Appendix A

Topographical Survey



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LONDON
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FS33571

PSL REF 10541

CLIENT
SIMPSON TWS
WHITBREAD GROUP PLC
HOUGHTON HALL BUSINESS PARK
PORZ AVENUE
DUNSTABLE
LU5 5XE

JOB TITLE
LONDON ROMFORD (LIBERTY BELL)
MERCURY GARDENS
ROMFORD
RM1 3EN

DRAWING TITLE
SITE SURVEY

SURVEYOR: DS	DRAWN: VP	CHECKED: MS	APPROVED: OH

SCALE	SHEET No:
1/200	SHEET 1 OF 2

DATE:	SHEET SIZE:	DRAWING No:
AUG 26	A0	10541_SITE_2D_R0

DATUM & COORDINATES SYSTEM

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Vertical datum - levels are related to GPS Orthometric height, converted to MSL (Newlyn) by OSGM15 transformation parameters.

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SCALE FACTOR: 0.99988
CENTRE POINT: 551619.187, 188788.638

Every effort is made to identify and survey all relevant, visible features. However, it should be borne in mind, some features may have been obscured by vegetation, debris, parked vehicles etc. As such, some items may have been omitted.

Survey Station Information

STN	Easting	Northing	Level	Type
M1	551653.175	188699.546	17.062	Nail
M2	551635.678	188738.681	17.725	Nail
M3	551668.659	188703.020	17.192	Nail
M4	551612.724	188785.287	18.250	Nail
M5	551590.754	188828.388	18.645	Nail
M6	551590.290	188855.506	18.718	Nail
M7	551634.381	188752.028	16.967	Nail
M8	551651.967	188785.025	17.320	Nail
M9	551626.047	188831.072	18.875	Nail
M10	551616.844	188843.145	18.834	Nail

REVISIONS

No:	REVISION NOTE	DATE	SURVEYED	DRAWN	CHECKED	APPROVED

LEGEND

- Building Line
- Overhead Building
- Drainage Channel
- Kerb (Bottom)
- Kerb (Top)
- Drop Kerb
- Embankment
- Vegetation Line
- Concrete Line
- Slaba Line
- Tarmac Line
- Tactile Paving
- Setts Line
- Wall Line
- Fenceline-with hpe:
  - CHF-CHAIN LINK FENCE
  - CLF-CHAIN LINK FENCE
  - CBF-CLOSED BOARDED FENCE
  - CPF-CONCRETE PANEL FENCE
  - IRF-IRON RAILING FENCE
  - OBF-OPEN BOARDED FENCE
  - PRF-POST & RAIL FENCE
  - PWF-POST & WIRE FENCE

- Survey Station
- + 10.00 Level Position
- + TH_ 15.00 Threshold Level
- + EVL 95.45 Eaves Level
- + RGL 96.45 Ridge Level
- + RFL 95.45 Roof Level
- CTV Service Cover
- BUS CL 12.34
- Building
- Building Canopy
- Sapling
- Bush
- Tree (NB: Trunk Diameter(s) Surveyed At and Height(M) Measurements
- Vegetated Area
- Bank Fall
- Gate
- Registration Mark

Note: Linetypes are visible on 2D drawings only

ABBREVIATIONS

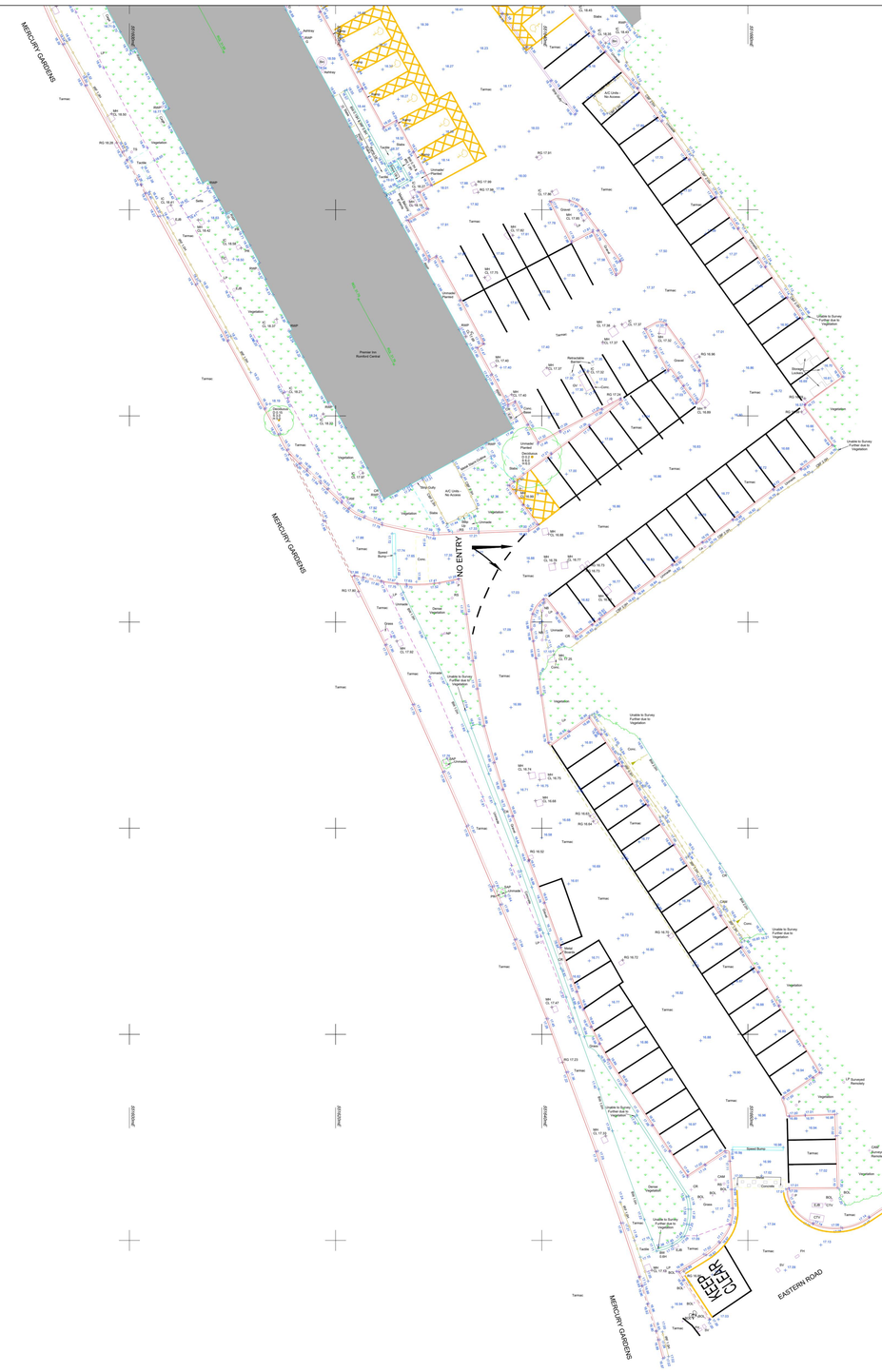
A/C	AIR CONDITIONING UNIT	IRF	IRON RAILING FENCE
BB	BELISHA BEACON	MH	MANHOLE
BBL	BELL BOLLARD	MKR	MARKER
BL	BASEMENT LIGHTS	NB	NOTICE BOARD
BOL	BOLLARD	NP	NUMBER PLATE
BOL	BOLLARD	OBF	OPEN BOARD FENCE
BS	BUS STOP POST	OH	OVERHEAD
BSH	BUS STOP SHELTER	P	POST
BW	BRICK WALL	PB	POST BOX
BWF	BARBED WIRE FENCE	PM	PARKING METER
C	CENTRE	PR	PIPE RISER
CBF	CLOSED BOARDED FENCE	PRF	POST & RAIL FENCE
CBR	CRASH BARRIER	PWF	POST & WIRE FENCE
CE	CLEANING EYE	RG	ROAD GULLY
CL	COVER LEVEL	RG	ROAD GULLY
CLF	CHAIN LINK FENCE	RGL	RIDGE LEVEL
CLF	CHAIN LINK FENCE	RS	ROAD SIGN
CONC	CONCRETE	RSI	ROAD SIGN ILLUMINATED
CPF	CONCRETE PANEL FENCE	RWP	RAIN WATER PIPE
CR	CABLE RISER	RWP	RAIN WATER PIPE
CTV	CABLE TELEVISION	SAP	SAPLING
CW	CONCRETE WALL	SC	SCREW STOCK
DP	DOWN PIPE	SL	SUMP LEVEL
DPC	DAMP PROOF COURSE	SV	SLUICE VALVE
EJC	ELECTRICITY IC	SVP	SOIL VENT PIPE
EP	ELECTRICITY JUNCTION BOX	SW	STONE WALL
EP	ELECTRICITY POLE	TB	TELEPHONE CALL BOX
ER	EARTHING ROD	TH	THRESHOLD LEVEL
EVL	EAVES LEVEL	TIC	TELECOMMUNICATIONS IC
FFL	FINISHED FLOOR LEVEL	TP	TELEPHONE POLE
FJB	FIBRE JUNCTION	TJB	TELEPHONE JUNCTION BOX
FLS	FLOOD LIGHT	TRL	TRAFFIC LIGHT
G	GULLY	TSCU	TS CONTROL UNIT
GRP	GRP PIPE	TSIC	TRAFFIC SIGNAL IC
GV	GAS VALVE	UTL	UNABLE TO LIFT
H	HEIGHT	UTS	UNABLE TO SURVEY
IBOL	ILLUMINATED BOLLARD	VC	VENT CAP
IC	INSPECTION COVER	VM	WATER LEVEL
IL	INVERT LEVEL	WM	WATER METER
LP	LAMP POST	WO	WASHOUT
		WT	WALL TOP LEVEL

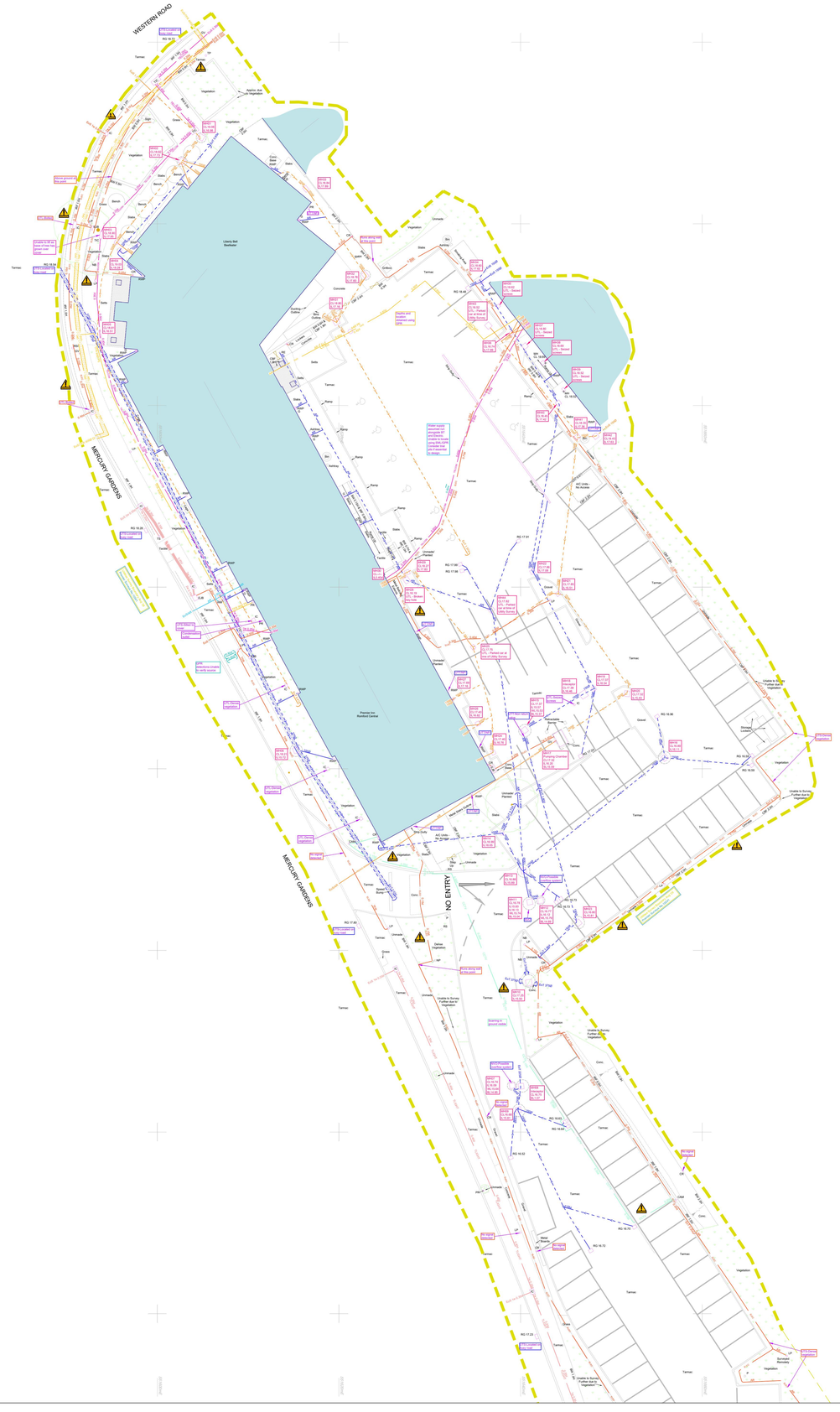
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20 METRES
0

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MERCURY GARDENS
MERCURY GARDENS
MERCURY GARDENS
NO ENTRY
EASTERN ROAD
Premier Inn Romford Central
Unable to Survey Further due to Vegetation
Unable to Survey Further due to Vegetation
Unable to Survey Further due to Vegetation



0 20 METRES

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PSL REF 10541

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WHITBREAD GROUP PLC
HOUGHTON HALL BUSINESS PARK
PORZ AVENUE
DUNSTABLE
LU5 5XE

JOB TITLE
LONDON ROMFORD (LIBERTY BELL)
MERCURY GARDENS
ROMFORD
RM1 3EN

DRAWING TITLE
UNDERGROUND UTILITY SURVEY

SURVEYOR: CP	DRAWN: CP	CHECKED: VD	APPROVED: AF

SCALE	SHEET No:
1/200	SHEET 1 OF 2

DATE	SHEET SIZE	DRAWING No:
AUG 26	A0	10541_UNDERGROUND_R0

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CENTRE POINT: 551619.187, 188788.638

REVISIONS

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A range of detection methods are used to obtain the underground information produced in this drawing. Variations in the ground conditions can affect the quality of the data and therefore an absolute affirmation cannot be guaranteed.

The identification of any located service should not be treated as infallible. The originating source may not have been traced.

The location and/or identification of a service will not necessarily indicate whether it is live or dead or identify whether it is a single or multiple service where one or more services may be situated above, below or in close proximity of the indicated line. Where possible, this will be annotated as 'multiple'.

All depths of metallic features are to centre of the service, depths on drainage runs are to the pipe invert at the manhole and should be treated as an approximate indication.

Underground drainage has been proven for position using traceable sonde methods, unless otherwise stated. No allowance has been made for sub surface entry into manholes or other chambers or voids below ground level, therefore any details relating to depths, sizes etc, are taken from above ground and as such will be approximate only.

Features not traceable by electromagnetic or sonde techniques, such as polyethylene water/gas pipes have been located using Ground Probing Radar (GPR). Successful GPR detection is based on a number of factors, clear access, ground/geophysical conditions and size/type of physical target. All GPR work, unless verified (QL-A) is interpretive. Trial holes should be carried out to confirm service identification, position and particularly depths, where these are critical, in accordance with HSG47 - "Avoiding Danger from Underground Services".

Premier Surveys use skilled professional surveyors and modern, calibrated location equipment. However, the completeness of any underground utility survey should not be 100% guaranteed. We cannot be held liable for inaccuracies beyond those that could be reasonably expected of a professionally skilled company. Any information taken from these drawings, pipe sizes/positions etc cannot be 100% guaranteed.

These results are not infallible and trial holes should be carried out to confirm service identification, position and particularly depths, where these are critical, in accordance with HSG47 - "Avoiding Danger from Underground Services".

This drawing must be read in conjunction with all available statutory undertakers record information. Record information is often incomplete and should be used for reference only and combined with detailed survey works/verification.

LEGEND

- Cable Television
- Closed Circuit Television
- Communications
- Earthing Strap
- Empty Duct
- Extents of Chamber
- Gas Main
- Heating Pipe
- Pipe (use unknown)
- Power Carrying Feature
- Road Traffic Sensor
- Sewer Combined Water
- Sewer Combined Water 3000 and above
- Sewer Foul Water
- Sewer Foul Water 3000 and above
- Sewer Grey Water
- Sewer Grey Water 3000 and above
- Sewer Rising Main
- Sewer Rising Main 3000 and above
- Sewer Surface Water
- Sewer Surface Water 3000 and above
- Survey Boundary
- Telecom
- Telecom (Fibre Optic Cable)
- Traffic Light
- Unidentified EML
- Unidentified GPR
- Water Main

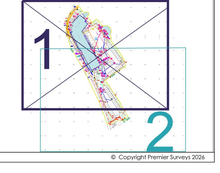
- EoSc - End of Trench Scar
- EoT - End of Trace
- EoS - End of Survey
- 1:200 - Depth To Service (Applicable To All Types)
- TRS - Taken From Records
- Inaccessible Areas. Obstruction(s)
- Inaccessible Areas Due To Vegetation
- UG Text - UG Text remark, Text box layer includes relevant service
- Manhole Text
- Presence of Shallow Services (<0.25m)

UNDERGROUND ABBREVIATIONS

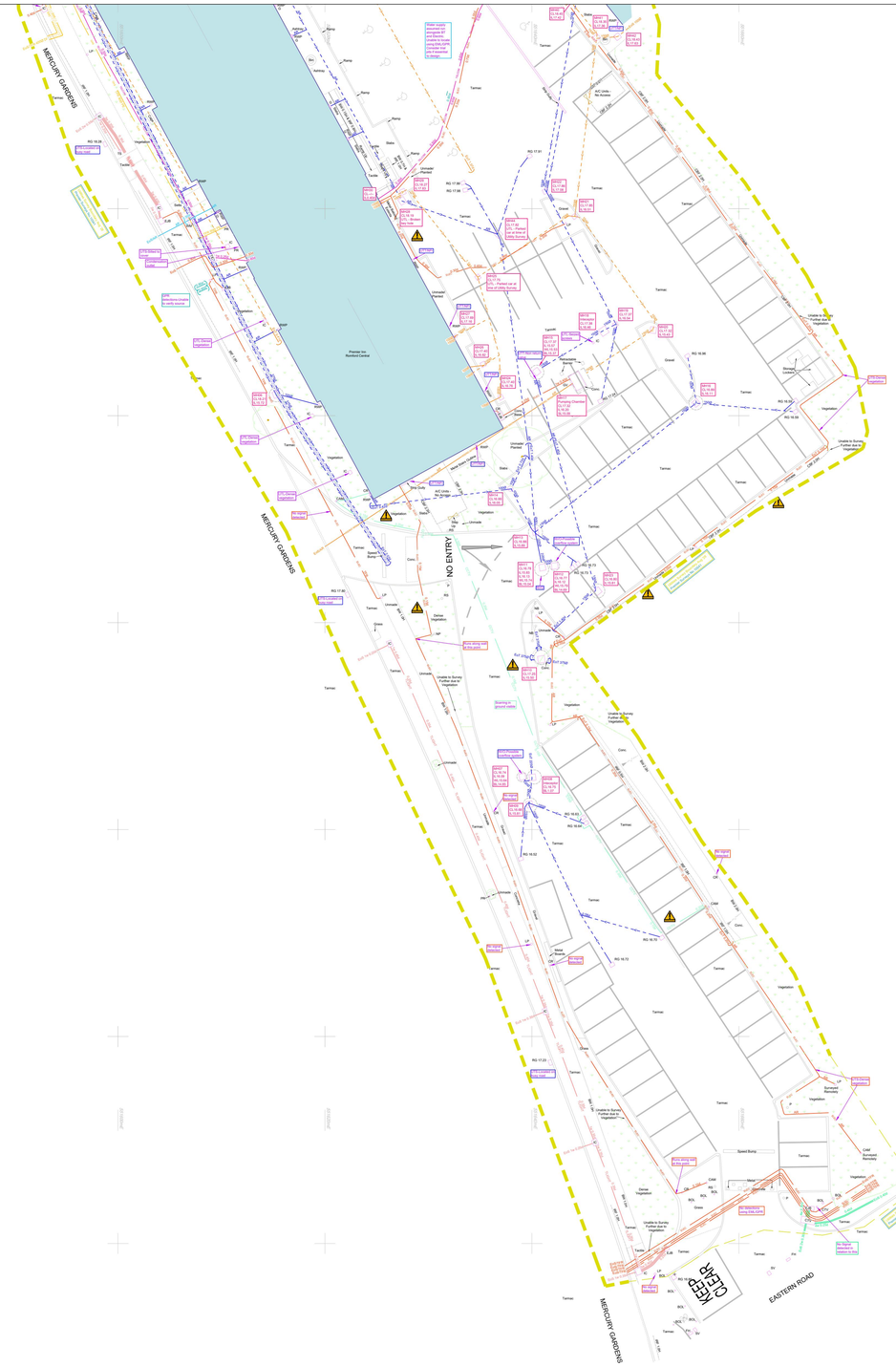
AC	ASBESTOS CEMENT	MDPE	MEDIUM DENSITY POLYETHYLENE
AR	ASSUMED ROUTE	MH	MANHOLE
BC	BACK CAST	MP	MARKER POST
BD	BACK DROP	NFI	NO FURTHER INFORMATION
BH	BORE HOLE	NRV	NON RETURN VALVE
BK	BRICK WORK	NT	NOT TRACED
BR	BRICK	NVO	NO VISIBLE OUTLET
BTIC	BRITISH TELECOM INSPECTION CHAMBER	OH	OVERHEAD
CAM	CAMERA SURVEY MANHOLE	PE	POLYETHYLENE
CATV	CABLE TV	PIB	PIPE IN BORE
CCTV	CLOSED CIRCUIT TELEVISION	PRV	PRESSURE REDUCING VALVE
CI	CAST IRON	PTE	PIT ENDED
CL	CABLE LINKED	PVC	POLYVINYL CHLORIDE
CM	CABLE MARKER	RE	RODDING EYE
CONC	CONCRETE	RG	ROAD GULLY
COV	COVERED	RWG	RAIN WATER
CU	COPPER	RWP	RAIN WATER PIPE
CR	CABLE RISER	SA	SOAKAWAY
D	DIAMETER / DIAMETER (SEWER)	SC	SCRAPED CAST
DE	DEPTH	SF	SIDE ENTRY
DB	DEPTH BURIED	SI	SIDE INVERT
DI	DUCTILE IRON	SL	SILT LEVEL
EHV	EXTRA HIGH VOLTAGE PIT	SP	SUMP PIT
EHV	EXTRA HIGH VOLTAGE	ST	STEEL
EJB	ELECTRIC JOINT BOX	SV	STOP VALVE
EOC	END OF CHAMBER (SERVICE CONTINUES)	SW	STORM WATER
EOSW	END OF TRENCH SCAR	SW	STORM WATER (SEWER)
EOT	END OF TRACE	TCB	TELEPHONE CALL BOX
ES	ELECTRIC SUBSTATION	TD	TELEPHONE DUCT
ER	EARTHING ROD	TPR	TAKEN FROM RECORDS
FH	FIRE HYDRANT	TR	TELEPHONE RISER
FH	FIRE HYDRANT	TP	TELEPHONE POLE
FO	FIBRE OPTIC	UC	UNDERGROUND CABLE
FO	FIBRE OPTIC	UGT	UNDERGROUND STORAGE TANK
FP	FEEDER PILLAR	UTF	UNABLE TO FIND
GI	GALVANISED IRON (SEWER)	UTG	UNABLE TO GAIN ACCESS
GI	GALVANISED IRON	UTL	UNABLE TO LIFT
GY	GULLY	UTR	UNABLE TO ROD
GW	GULLY WATER	UTS	UNABLE TO SURVEY
GPR	GROUND PENETRATING RADAR	UTT	UNABLE TO TRACE
HP	HAND POLE	VC	VITRIFIED CLAY
HV	HIGH VOLTAGE	VP	VENT PIPE
IC	INSPECTION CHAMBER	WL	WATER LEVEL
IL	INVERT LEVEL	WM	WATER METER
KV	KILO VOLTS	WO	WASH OUT
LC	LAMP COLUMN		
LH	LAMP HOLE		
LP	LAMP POST		
LPG	LIQUID PETROLEUM GAS		
LV	LOW VOLTAGE		

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MERCURY GARDENS
NO ENTRY
EASTERN ROAD
CLEMENTS GREEN
Premier Inn Romford Central
Water supply mounted on elongate 57 Manhole Cover unable to locate using EM Cat, possibly part of a historical service.
Unable to Survey Further due to Vegetation
Unable to Survey Further due to Hoarding
Unable to Survey Further due to Parked Cars
Unable to Survey Further due to Traffic
Unable to Survey Further due to Pedestrians
Unable to Survey Further due to Fencing
Unable to Survey Further due to Planters
Unable to Survey Further due to Bollards
Unable to Survey Further due to Signage
Unable to Survey Further due to Temporary Barrier
Unable to Survey Further due to Temporary Traffic Lights
Unable to Survey Further due to Temporary Cones
Unable to Survey Further due to Temporary Signage
Unable to Survey Further due to Temporary Fencing
Unable to Survey Further due to Temporary Hoarding
Unable to Survey Further due to Temporary Planters
Unable to Survey Further due to Temporary Bollards



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PORZ AVENUE
DUNSTABLE
BEDFORDSHIRE
LU5 5XE

JOB TITLE
LONDON ROMFORD
LIBERTY BELL
MERCURY GARDENS
ROMFORD
RM1 3EN

DRAWING TITLE
GROUND FLOOR

SURVEYOR: MS	DRAWN: OH	CHECKED: VP	APPROVED: VP

SCALE	SHEET No:
1/50	SHEET 1 OF 2

DATE:	SHEET SIZE:	DRAWING No:
AUG 26	A0	10541_GROUND_R0

DATUM & COORDINATES SYSTEM

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CENTRE POINT: 501819.187, 188788.638

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REVISIONS

No.	REVISION NOTE	DATE	SURVEYED	DRAWN	CHECKED	APPROVED

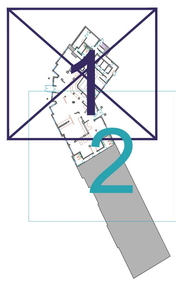
LEGEND

+ 10.00	Floor Level		Window
+ 10.00	Beam Level Bottom		Sliding Door
+ 10.00	Beam Level Top		Hinged Door
+ 10.00	Ceiling Level		
+ 10.00	False Ceiling Level		Sky Light
+ EVL 10.00	Eaves Level		Registration Mark
+ RGL 10.00	Ridge Level		
+ RFL 10.00	Roof Level	3.00	Ceiling Height
	Wall Line	IC	Inspection Cover
	Stepp/ Staircase		
	Ceiling Line		Lift Symbol
	False Ceiling Line		
	Fixture Extents		
	Fence Line		
	Gate		

ABBREVIATIONS

A/C	AIR CONDITIONING UNIT	IL	INVERT LEVEL
ACL	ARCHED CEILING	LP	LAMP POST
AD	ARCHED DOOR	IRF	IRON RAILING FENCE
AF	ARCHED FRAME	MH	MANHOLE
AW	ARCHED WINDOW	MKR	MARKER
B	BEAM HEIGHT	NB	NOTICE BOARD
BL	BASEMENT LIGHTS	OBF	OPEN BOARD FENCE
BOL	BOLLARD	OH	OVERHEAD
BSU	BOTTOM SLOPES UP	P	PIPE
BW	BRICK WALL	PRF	POST & RAIL FENCE
BWF	BARBED WIRE FENCE	PWF	POST & WIRE FENCE
CBF	CLOSED BOARDED FENCE	RAD	RADIATOR
CCU	CEILING CURVES UP	RGL	RIDGE LEVEL
CD	CEILING DROP	RSD	ROLLED STEEL JOIST DOWN
CLH	CELLAR HATCH	RSJ	ROLLED STEEL JOIST
CLF	CHAIN LINK FENCE	RW	RETAINING WALL
CONC	CONCRETE	RWP	RAIN WATER PIPE
CPF	CONCRETE PANEL FENCE	SC	STOP COCK
CPT	CONCRETE POST	SD	SOIL DROP/VENT
CTV	CABLE TELEVISION	SKL	SKY LIGHT
CW	CONCRETE WALL	SL	SUMP LEVEL
DS	DOWN SPOUT	SSU	SHOP SLOPES UP
DH	DOOR HILL HEIGHT	SV	SCALE VALVE
EB	ELECTRICAL BOX	SVP	SOIL VENT PIPE
EIC	ELECTRICITY IC	SW	STONE WALL
EJB	ELECTRICITY JUNCTION BOX	THL	THRESHOLD LEVEL
EP	ELECTRICITY POLE	TIC	TELECOMMUNICATIONS IC
ER	EARTHING ROD	TWH	TRANSOM WINDOW HEIGHT
EVL	EAVES LEVEL	UTL	UNABLE TO LIFT
F	FALSE	V	VENT
FH	FIRE HYDRANT	VP	VENT PIPE
FGL	FINISHED GROUND	WAD	WINDOW ABOVE DOOR
FL	FLOOR LEVEL	WAH	WINDOW ARCH HEIGHT
G	GULLY	WH	WINDOW HEAD HEIGHT
GDR	GUARD RAIL	WM	WATER METER
GV	GAS VALVE	WS	WINDOW SILL HEIGHT
IC	INSPECTION	WSH	WINDOW SPRING HEIGHT
IC	INSPECTION COVER	WSSD	WINDOW SILL SLOPES DOWN

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(London) 0207 231 3404
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PSL REF 10541

CLIENT

WHITBREAD COURT
HOUGHTON HALL BUSINESS PARK
PORZ AVENUE
DUNSTABLE
BEDFORDSHIRE
LU5 5XE

JOB TITLE

LONDON ROMFORD
LIBERTY BELL
MERCURY GARDENS
ROMFORD
RM1 3EN

DRAWING TITLE

GROUND FLOOR

SURVEYOR: MS	DRAWN: OH	CHECKED: VP	APPROVED: VP

SCALE		SHEET No:
1/50		SHEET 2 OF 2
DATE:	SHEET SIZE:	DRAWING No:
AUG 26	A0	10541_GROUND_R0

DATUM & COORDINATES SYSTEM

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REVISIONS

No.	REVISION NOTE	DATE	SURVEYED	DRAWN	CHECKED	APPROVED

LEGEND

+ 10.00	Floor Level		Window
+ 10.00	Beam Level Bottom		Sliding Door
+ 10.00	Beam Level Top		Hinged Door
+ 10.00	Ceiling Level		
+ 10.00	False Ceiling Level		Sky Light
+ EVL 10.00	Eaves Level		
+ RGL10.00	Ridge Level		Registration Mark
+ RFL 10.00	Roof Level		
	Wall Line	2.50	Ceiling Height
	Steps/ Staircase	IC	Inspection Cover
	Ceiling Line		
	False Ceiling Line		Lift Symbol
	Fixture Extents		
	Fence Line		
	Gate		

ABBREVIATIONS

A/C	AIR CONDITIONING UNIT	IL	INVERT LEVEL
ACC	ACCESS DOOR	IP	INSPECTION POST
AD	ARCHED DOOR	MF	IRON RAILING FENCE
AH	ARCH HEIGHT	MH	MANHOLE
AW	ARCHED WINDOW	MKR	MARKER
B	BEAM HEIGHT	NB	NOTICE BOARD
BL	BOLLARD LIGHTS	OF	OPEN BOARDED FENCE
BOL	BOLLARD	OH	OVERHEAD
BSU	BEAM SLOPES UP	P	POST
BW	BRICK WALL	PRF	POST & RAIL FENCE
BWF	BARBED WIRE FENCE	PWF	POST & WIRE FENCE
CBF	CLOSE BOARDED FENCE	RE	RAILWAY LINE
CDU	CEILING CURVES UP	RGL	RIDGE LEVEL
CL	COVER LEVEL	RSD	ROOF SLOPES DOWN
CLH	CELLAR HATCH	RSJ	ROLLED STEEL JOIST
CLF	CHAIN LINK FENCE	RW	RETAINING WALL
CON	CONCRETE	SF	SECURITY FENCE
CPF	CONCRETE PANEL FENCE	SC	STOP COCK
CSU	CEILING SLOPES UP	SH	SPRING HEIGHT
CTV	CONCRETE VIADUCT	SKL	SKELETAL
CW	CONCRETE WALL	SL	SOFFIT LEVEL
D	DOOR HEIGHT	SSU	SKY LIGHT SLOPES UP
DS	DOOR SILL HEIGHT	SV	SLUICE VALVE
EB	ELECTRICAL BOX	SVP	SOIL VENT PIPE
EC	ELECTRIC CABLE	TF	TIMBER FENCE
EJB	ELECTRICITY JUNCTION BOX	TH	THRESHOLD LEVEL
EP	ELECTRICITY POLE	TIC	TELECOMMUNICATIONS IC
ER	EARTHING ROD	TWH	TRANSOM WINDOW HEIGHT
EVL	EAVES LEVEL	UTL	UNABLE TO LIFT
F	FENCE	V	VALVE
FH	FIRE HYDRANT	vp	VENT PIPE
FIG	FEEDS INTO GROUND	WAD	WINDOW ABOVE DOOR
FL	FLOOR LEVEL	WAH	WINDOW ARCH HEIGHT
G	GULLY	WH	WINDOW HEAD HEIGHT
GCR	GLAZED CRAL	WL	WALL LEVEL
GV	GAS VALVE	WS	WINDOW SILL HEIGHT
H	HEIGHT	WSD	WALL SLOPES DOWN
IC	INSPECTION COVER	WSH	WINDOW SPRING HEIGHT
		WSSD	WINDOW SILL SLOPES DOWN

Sheet Layout (Not to scale)



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