

Flood Risk Assessment
AEG4870_TW11_Richmond

Site Address: 21 Broad Street
Teddington
London
TW11 8QZ

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UK Experts in Flood Modelling, Flood Risk Assessments, and Surface Water Drainage Strategies

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Document Issue Record

Project: Flood Risk Assessment

Prepared for: Acrewoods Ltd

Reference: AEG4870_TW11_Richmond

Site Location: 21 Broad Street, Teddington, London, TW11 8QZ

Issue	Date	Author	Check	Auth.	Comments
1	15/07/2024	Jacob Caddick	CH	NDD	First issue

Please Note:

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Summary

Development Description	Existing	Proposed
Development Type	A residential dwelling	Retention of the commercial space at ground floor level. With the construction of extensions and alterations to the existing building. Including the creation of 2no. 2 bed residential units at first and second floor, and 1no. 1 bed unit at ground floor level.
EA Vulnerability Classification	More Vulnerable	More Vulnerable
Ground Level	Based on 1m LiDAR, the ground elevation of the site varies between approximately 8.40m AOD and 8.60m AOD.	No Change.
Level of Sleeping Accommodation	First Floor and above	Ground Floor and above
Surface Water Drainage	N/A[1]	Discharge via existing systems. Small scale SuDS such as rainwater planters and water butts should be used where possible in external areas to provide betterment.
Site Size	145m²	No change
Risk to Development	**Summary**	**Comment**
EA Flood Zone	Flood Zone 1	
Flood Source	Pluvial	Site is within Richmond Critical Drainage Areas
SFRA Available	Level 1 Strategic Flood Risk Assessment (Richmond Council, 2021)	
Management Measures	**Summary**	**Comment**
Ground floor level above extreme flood levels	N/A[2]	No change.

Safe Access/Egress Route	No	Safe access might not be possible during the modelled 1 in 100 year and 1 in 1000 year pluvial events and in this case safety should be sought at the highest possible level within the building.
Flood Resilient Design	Yes	Due to the site being located in the Richmond CDA, it is recommended mitigation set out in 'Improving the Flood Performance of New Buildings' Flood Resilient Construction (2007) is provided.
Site Drainage Plan	N/A	Proposed to manage runoff via existing drainage on site. Small scale SuDS are recommended where possible in external areas due to the site being located in a Critical Drainage Area.
Flood Warning and Evacuation Plan	N/A[2]	Recommended that occupier monitor Met Office Weather Warnings for extreme weather events.
Offsite Impacts	**Summary**	**Comment**
Displacement of floodwater	Negligible	Site is in Flood Zone 1 and unaffected in modelled 1 in 100 year pluvial event, and thus should not result in increase in flood risk elsewhere through displacement of flood water.
Increase in surface run-off generation	No	Small scale SuDS are recommended where possible in external areas due to the site being located in a CDA.
Impact on hydraulic performance of channels	No	The site does not impact any watercourses.

[1] not required for this assessment

[2] data not available.

1. Introduction

1.1. Aegaea were commissioned by Acrewoods Ltd to undertake a Flood Risk Assessment (FRA) to facilitate a planning application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.

1.2. This FRA is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

1.3. The site of the proposed development is 21 Broad Street, Teddington, London, TW11 8QZ (Figure 1).

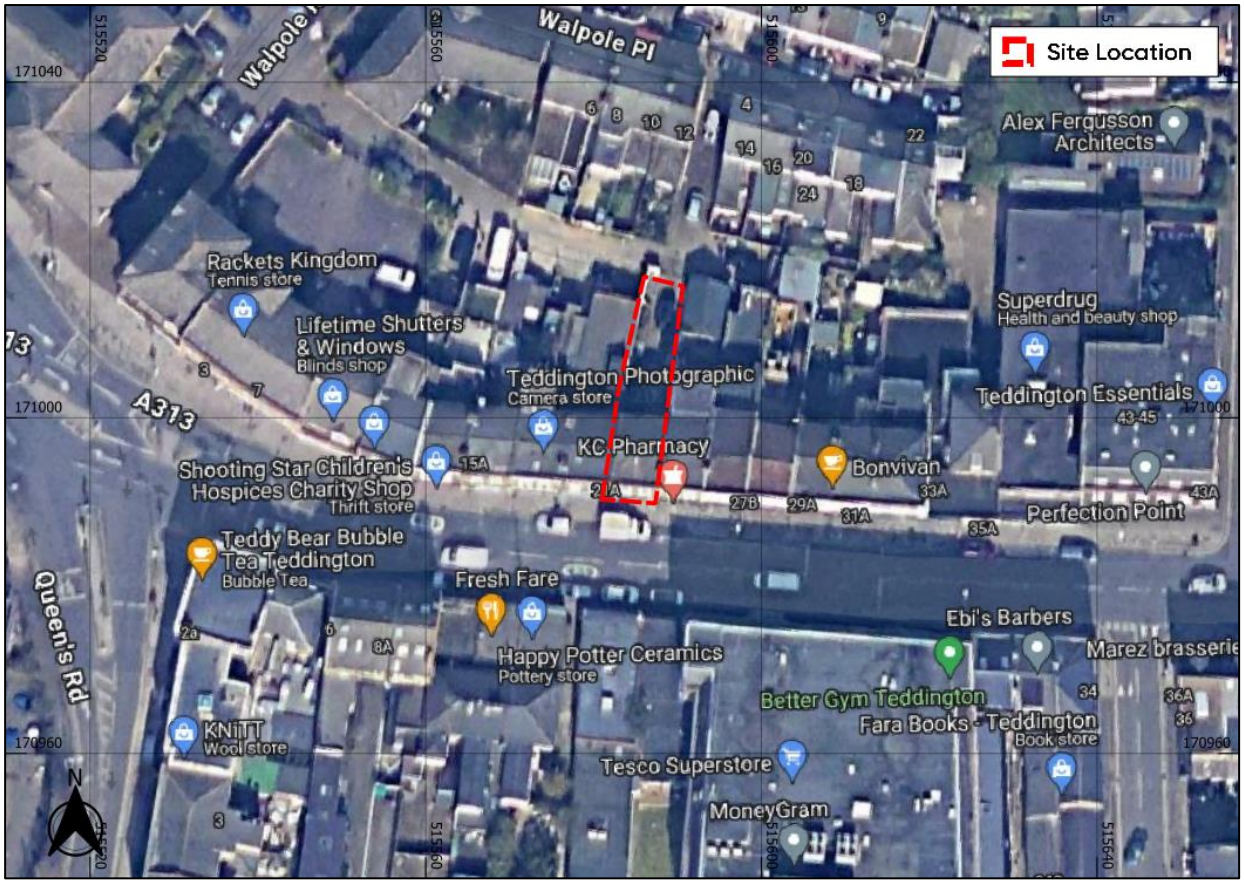


Figure 1: Site Location (Base map Google Hybrid Satellite imagery)

1.4. The existing site is mixed use, with commercial outlet on the ground level and two residential apartments above. It is understood proposed development is for the retention of the

commercial space at ground floor level. With the construction of extensions and alterations to the existing building. Including the creation of 2no. 2 bed residential units at first and second floor, and 1no. 1 bed unit at ground floor level Appendix A for development plans).

1.5. In the absence of a topographical survey, Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to review the topography of the site. The LiDAR data shows the ground elevation of the site varies between approximately 8.40 mAOD (metres Above Ordnance Datum) and 8.60 mAOD (Figure 2).

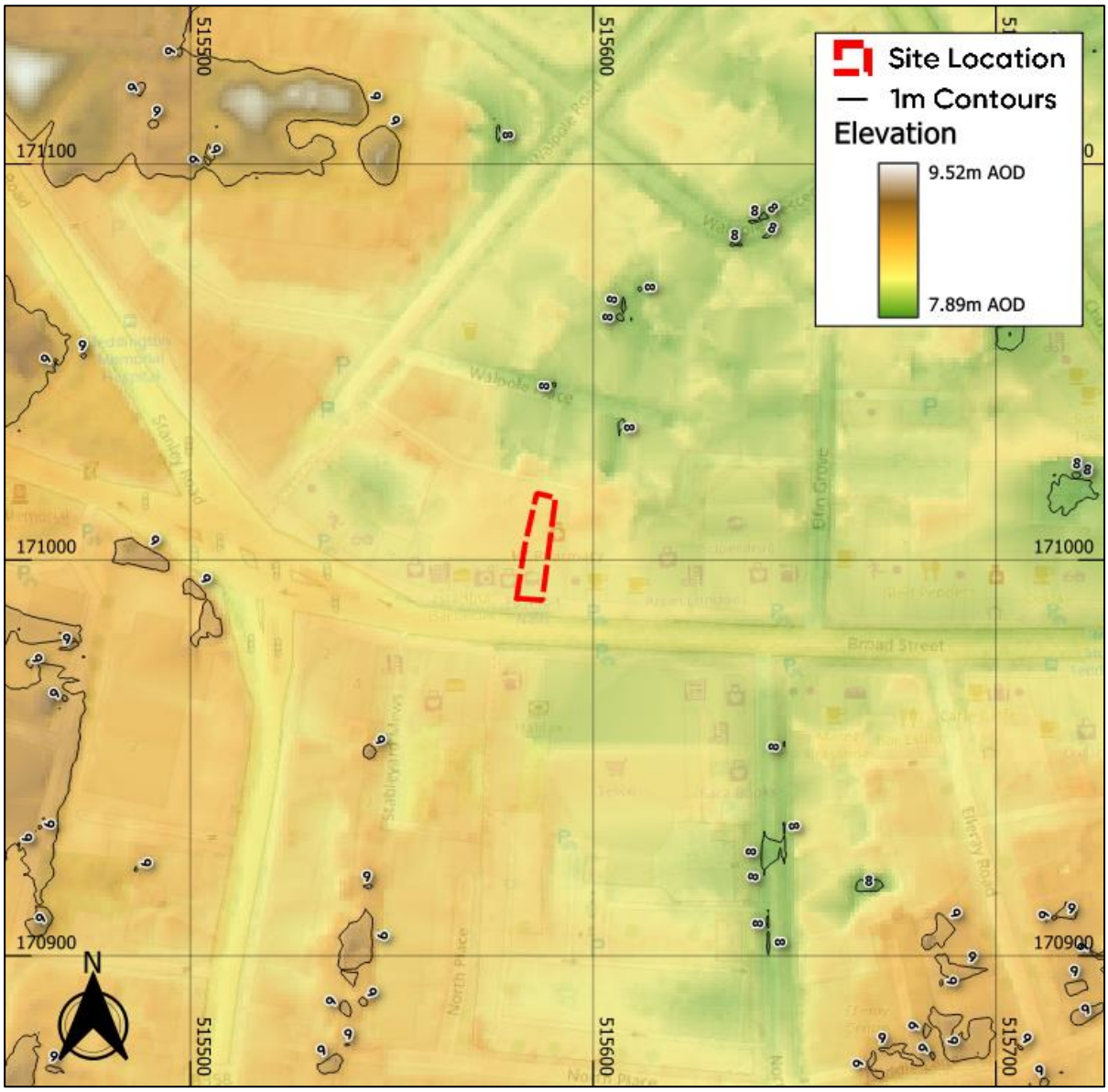


Figure 2: Site Topography (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

1.6. Richmond Council is the Local Planning Authority (LPA) for the site and also the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Kent South London and East Sussex region.

Planning Policy and Guidance

1.7. UK government planning guidance states[1] that an FRA is required for developments which are:

- *in flood zone 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

1.8. The site is shown to be at a risk of surface water flooding based on EA mapping, and located within a Critical Drainage Area, therefore is required in accordance with the NPPF.

1.9. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:

- Fluvial/tidal flood risk
- Surface water flood risk
- Risk of flooding from other sources

[1] **https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment**

2. Planning Policy

2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional, and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

National Planning Policy Framework (NPPF)

2.2. The National Planning Policy Framework[2] (NPPF) (DLUHC, 2023) which includes UK Government policy on development and flood risk states:

> *165. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.*
>
> *173. 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. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:*
>
> *a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
>
> *b) 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;*
>
> *c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*

[2] https://www.gov.uk/guidance/national-planning-policy-framework, **last updated Dec 2023**

d) any residual risk can be safely managed; and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

2.3. Footnote 59 of the NPPF states:

A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

2.4. Flood Zones in England are defined as follows:

Table 1: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

2.5. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.

2.6. An assessment of hydrological impacts should be undertaken, including to surface water runoff and impacts to drainage networks in order to demonstrate how flood risk to others will be managed following development and taking climate change into account.

The London Plan

2.7. The London Plan prepared by the Greater London Authority in 2021 sets out the policies for development in the region.

2.8. Policy SI 12 Flood risk management outlines the requirements for new development within the region. It states:

> *A: Current and expected flood risk from all sources (as defined in paragraph 9.2.12) across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers and infrastructure providers.*
>
> *B: Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should cooperate and jointly address cross-boundary flood risk issues including with authorities outside London.*
>
> *C: Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.*
> *D: Developments Plans and development proposals should contribute to the delivery of the measures set out in Thames Estuary 2100 Plan. The Mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for a new Thames Barrier.*
>
> *E: Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.*
>
> *F: Development proposals adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading. Unless exceptional circumstances are demonstrated for not doing so, development proposals should be set back from flood defences to allow for any foreseeable future maintenance and upgrades in a sustainable and cost-effective way.*

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

2.9. Policy SI 13 Sustainable drainage outlines the requirements for new development within the region. It states:

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

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

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

2. rainwater infiltration to ground at or close to source

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

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

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

6. controlled rainwater discharge to a combined sewer.

C: Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.

D: Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.

Local Plan

2.10. The Local Plan prepared by the Local Planning Authority, Richmond Council, sets out the policies for development in the local area.

2.11. Policy LP 21.1 Flood Risk and Sustainable Drainage outlines the requirements for new development within the area. It states:

> *All developments should avoid, or minimise, contributing to all sources of flooding, including fluvial, tidal, surface water, groundwater and flooding from sewers, taking account of climate change and without increasing flood risk elsewhere. Development will be guided to areas of lower risk by applying the 'Sequential Test' as set out in national policy guidance, and where necessary, the 'Exception Test' will be applied.*
>
> *Unacceptable developments and land uses will be refused in line with national policy and guidance, the Council's Strategic Flood Risk Assessment (SFRA) and as outlined in the table below. In Flood Zones 2 and 3, all proposals on sites of 10 dwellings or more or 1000sqm of non-residential development or more, or on any other proposal where safe access/egress cannot be achieved, a Flood Emergency Plan must be submitted.*
>
> *Where a Flood Risk Assessment is required, on-site attenuation to alleviate fluvial and/or surface water flooding over and above the Environment Agency's floodplain compensation is required where feasible.*

2.12. Policy LP 21.3 Flood Risk and Sustainable Drainage outlines the requirements for new development within the area. It states:

> *The Council will require the use of Sustainable Drainage Systems (SuDS) in all development proposals. Applicants will have to demonstrate that their proposal complies with the following:*
>
> *- A reduction in surface water discharge to greenfield run-off rates wherever feasible.*
>
> *- Where greenfield run-off rates are not feasible, this will need to be demonstrated by the applicant, and in such instances, the minimum requirement is to achieve at least a 50% attenuation of the site's surface water runoff at peak times based on the levels existing prior to the development.*

2.13. Policy LP 21.4 Flood Risk and Sustainable Drainage outlines the requirements for new development within the area. It states:

> *Applicants will have to demonstrate that their proposal complies with the following:*
> *- Retain the effectiveness, stability and integrity of flood defences, river banks and other formal and informal flood defence infrastructure.*
>
> *- Ensure the proposal does not prevent essential maintenance and upgrading to be carried out in the future.*
>
> *- Set back developments from river banks and existing flood defence infrastructure where possible (16 metres for the tidal Thames and 8 metres for other rivers).*
>
> *- Take into account the requirements of the Thames Estuary 2100 Plan and the River Thames Scheme, and demonstrate how the current and future requirements for flood defences have been incorporated into the development.*
>
> *– The removal of formal or informal flood defences is not acceptable unless this is part of an agreed flood risk management strategy by the Environment Agency.*

Sequential and Exception Tests

2.14. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.

2.15. As the site is located within Flood Zone 1, it is already sequentially located with regard to fluvial and tidal flooding.

2.16. Furthermore, analysis in Section 4 indicates that the site is unaffected in the modelled 1 in 100 year pluvial event, and only minor flooding is expected on site in the modelled 1 in 1000 year pluvial event.

2.17. As such, the application of the Sequential Test and Exception Test are not considered appropriate in this instance.

3. Consultation and Review

Documents and Online Mapping

3.1. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.

3.2. The following sources of information have been reviewed for this assessment:

- Flood Map for Planning on the Environment Agency website[3]
- Long Term Flood Risk Information on the Environment Agency website[4]
- National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities, 2023)
- Planning Practice Guidance - Flood Risk and Coastal Change (Department for Levelling Up, Housing and Communities, 2022)
- Geoindex Onshore (British Geological Survey, 2023)[5]
- The London Plan (Greater London Authority, 2021)[6]
- Local Plan (Richmond Council, 2018)[7]
- Preliminary Flood Risk Assessment (Richmond Council, 2011)[8]

[3]https://flood-map-for-planning.service.gov.uk/

[4] https://www.gov.uk/check-long-term-flood-risk

[5] https://www.epsom-ewell.gov.uk/sites/default/files/documents/residents/planning/planning-policy/Core%20Strategy%202007.pdf

[6] https://www.london.gov.uk/programmes-strategies/planning/london-plan/new-london-plan/london-plan-2021

[7] https://www.richmond.gov.uk/services/planning/planning_policy/local_plan/local_plan_review/local_plan_examination#adoption

[8] https://www.richmond.gov.uk/preliminary_flood_risk_assessment

- Level 1 Strategic Flood Risk Assessment (Richmond Council, 2021)[9]
- Richmond Council Local Flood Risk Management Strategy (Richmond Council, 2015)[10]
- Surface Water Management Plan (Richmond Council, 2021)[11]

Preliminary Flood Risk Assessment (PFRA)

3.3. The PFRA, published in 2011, is a high-level appraisal of flood risk across Lead Local Flood Authority Richmond Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.

3.4. The PFRA summarises historical flood incidents in Richmond Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

3.5. The SFRA, published in 2021, provides the evidence base for the Local Planning Authority Richmond Council Local Plan and guidance for consideration when determining planning applications. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.

3.6. The SFRA mapping provided by Richmond Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

3.7. The Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.

[9] **https://www.richmond.gov.uk/media/20529/sfra_level_1_report.pdf**
[10] **https://www.richmond.gov.uk/media/13402/lfrms_strategic_environment_assessment.pdf**
[11] **https://www.richmond.gov.uk/media/23830/surface_water_management_plan.pdf**

3.8. The Richmond Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

4. Sources of Flood Risk

Fluvial

4.1. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.

EA Flood Map for Planning

4.2. The site is located in Flood Zone 1 (Figure 3). Flood Zone 1 denotes a risk of flooding from fluvial and tidal sources less than 1 in 1,000 (0.1%) probability.

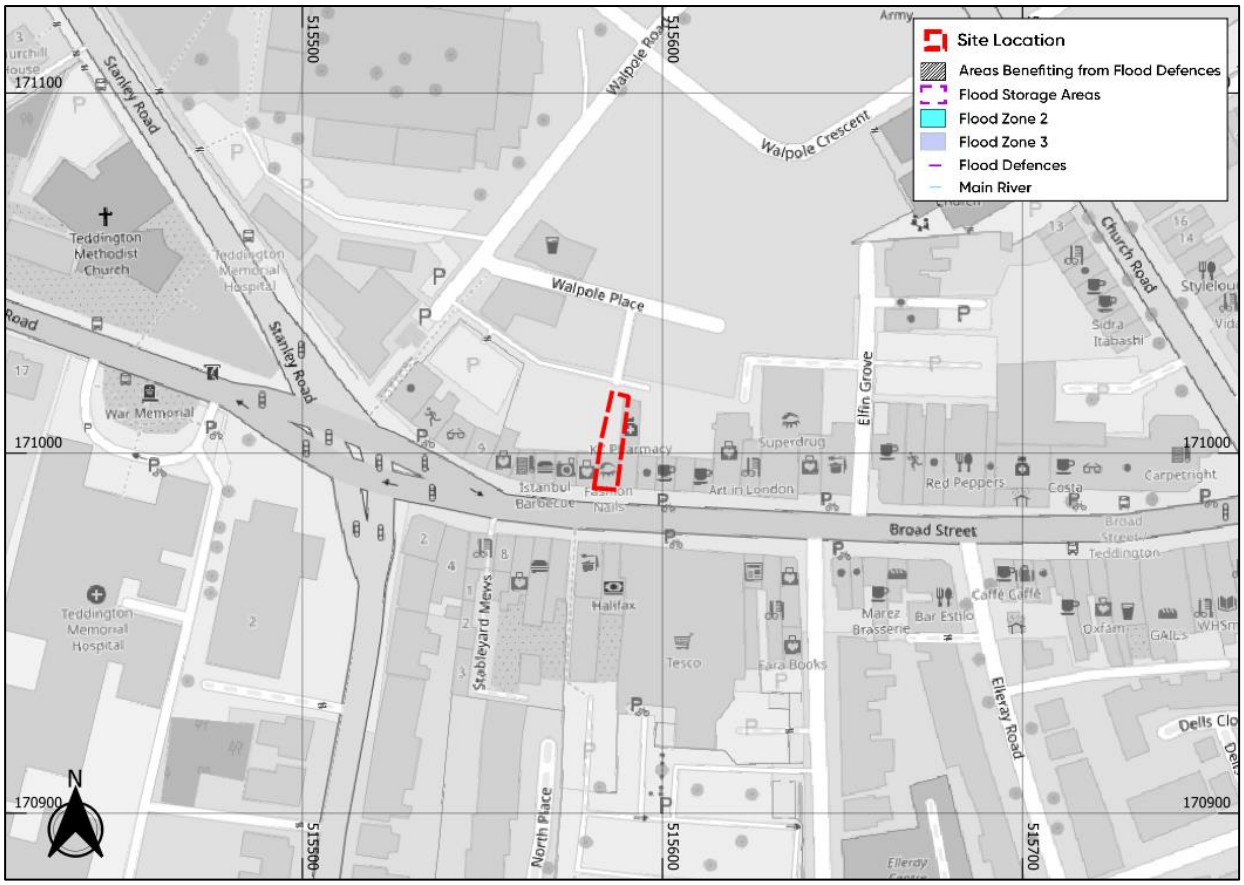


Figure 3: EA Flood Map for Planning (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Main Rivers and Ordinary Watercourses

4.3. The River Thames is located approximately 1km northeast of the site.

4.4. There are no mapped ordinary watercourses in the vicinity of the site.

Historical Fluvial Flooding

4.5. Based on the EA Recorded and Historical Flood Outlines dataset there are no records of historical fluvial flooding on-site (Figure 4).

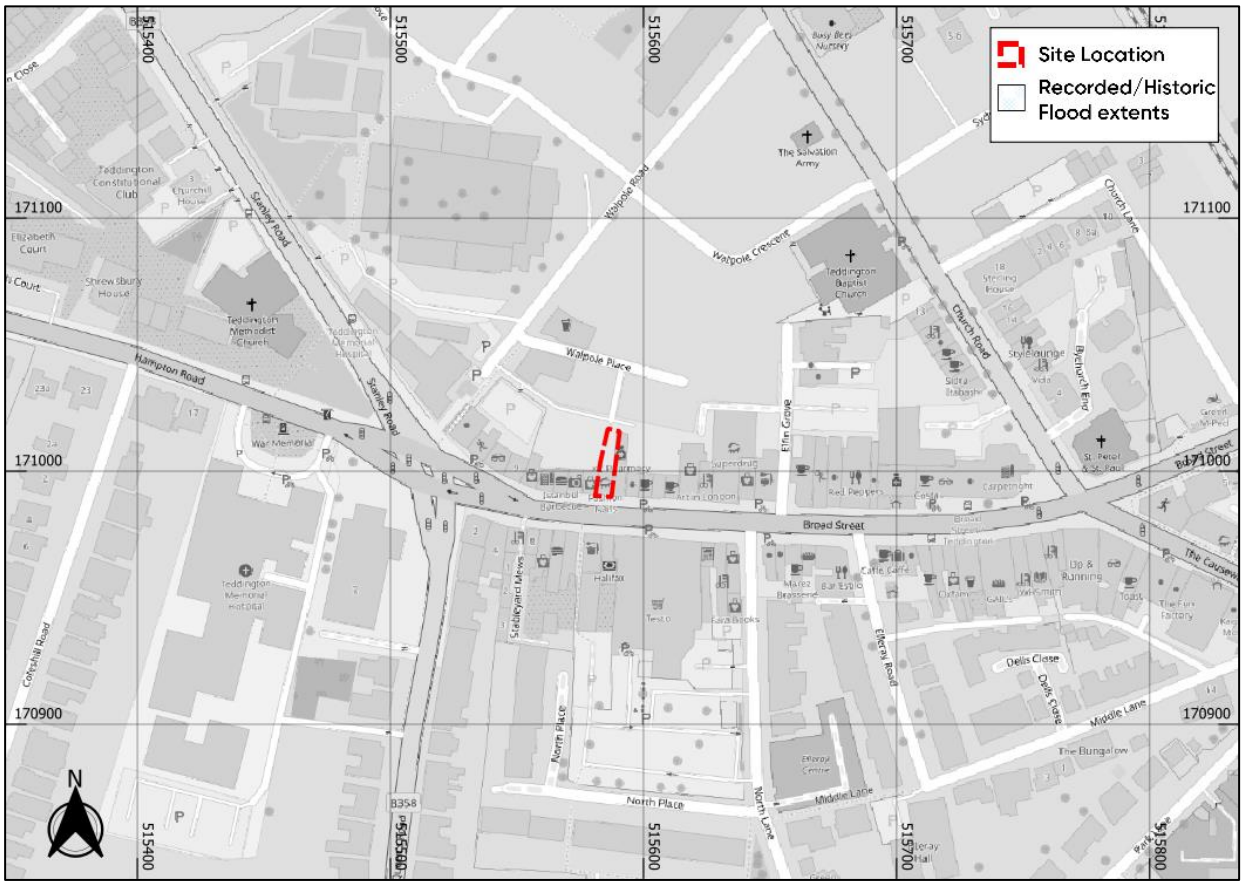


Figure 4: EA Historic Flood Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.6. As such, the risk to the site from fluvial flooding can be considered low.

Tidal

4.7. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through

them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the river bank or river defences when tide levels are high.

4.8. The EA flood map for planning does not highlight the site is at risk of tidal flooding.

4.9. The flood risk to the site from tidal sources is considered to be low.

Canals

4.10. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.

4.11. The nearest CRT maintained canal lies at a distance greater than 1km from the site.

4.12. The risk of canal flooding to the site is considered to be low.

Pluvial

4.13. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

4.14. The SFRA has identified the site as being in the Group8_006 Richmond Critical Drainage Area (CDA) (Figure 5).

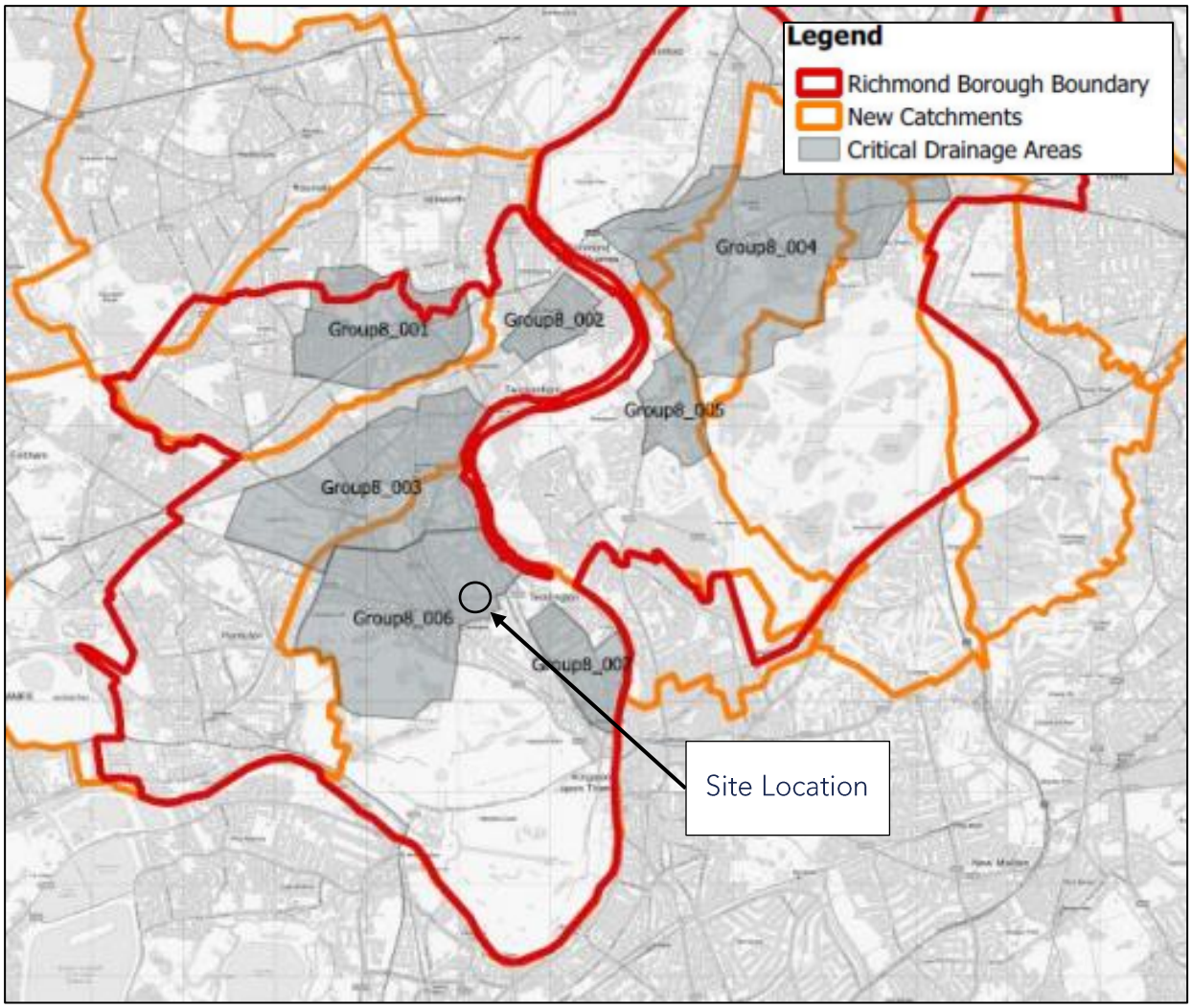


Figure 5: Location of Critical Drainage Areas (Richmond Council, 2021.

4.15. Annual surface water flood risk is labelled by the EA as:

- 'High Risk'; >3.3% AEP (annual probability greater than 1 in 30).
- 'Medium Risk'; 1.1% to 3.3% AEP (annual probability between 1 in 100 and 1 in 30).
- 'Low Risk'; 0.1% to 1% AEP (annual probability between 1 in 1000 and 1 in 100).
- 'Very Low Risk'; <0.1% AEP (annual probability less than 1 in 1000).

4.16. Examination of the EA's Flood Risk from Surface Water mapping for 'High Risk', 'Medium Risk', and 'Low Risk' AEP flood events show the northern area of the site to be impacted in the 'Low' surface water flood event, with the rest of the site unaffected and therefore at a 'Very Low' risk of surface water flooding (Figure 6).

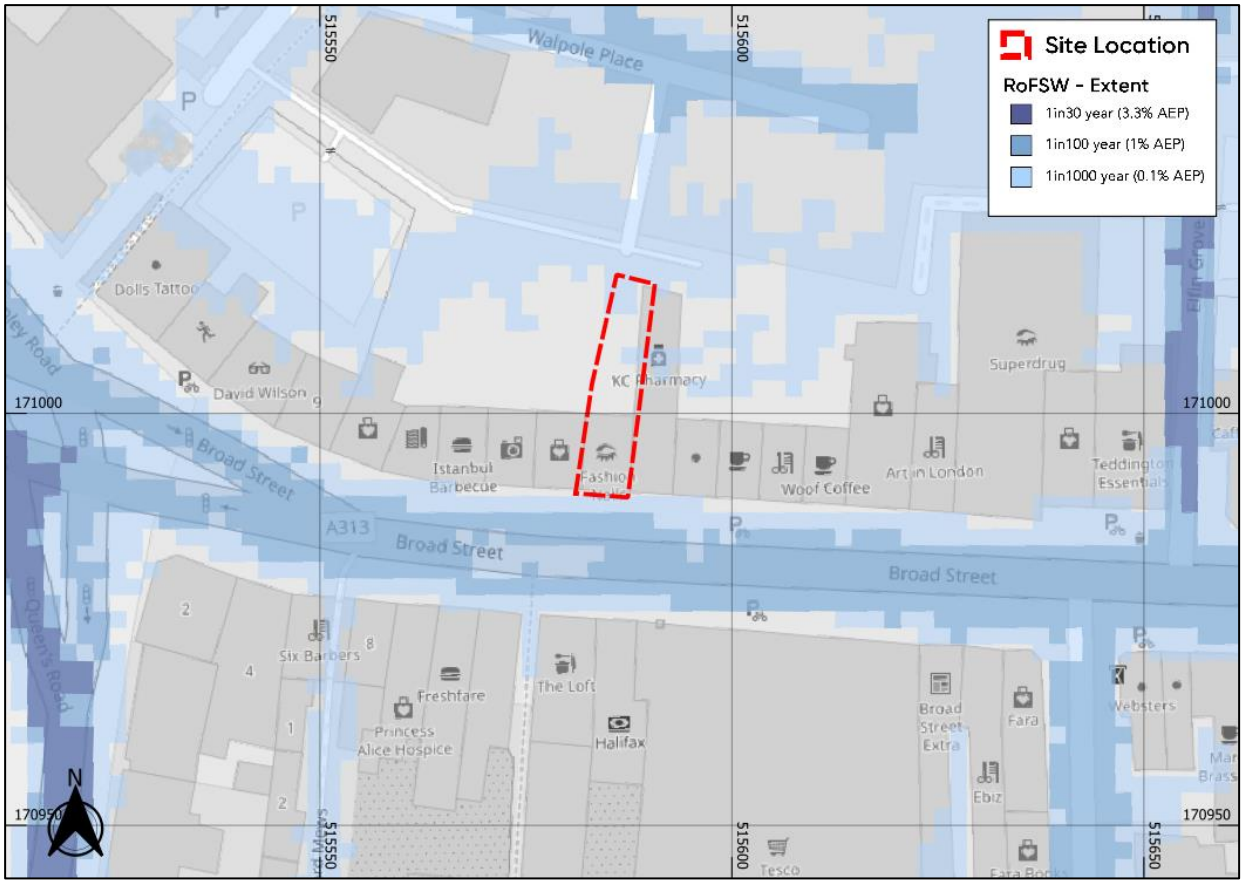


Figure 6: EA Surface Water Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

1 in 30 year event

4.17. Analysis of flood depths during the modelled 'High' risk event (1 in 30 year scenario) shows that Broad Street and the areas surrounding the site are not affected in the modelled High' risk event (Figure 7).

4.18. The EA hazard rating/level mapping shows the site, surrounding areas and Broad Street are unaffected (no hazard rating) (Figure 7). As such safe access/egress is possible during this pluvial event.

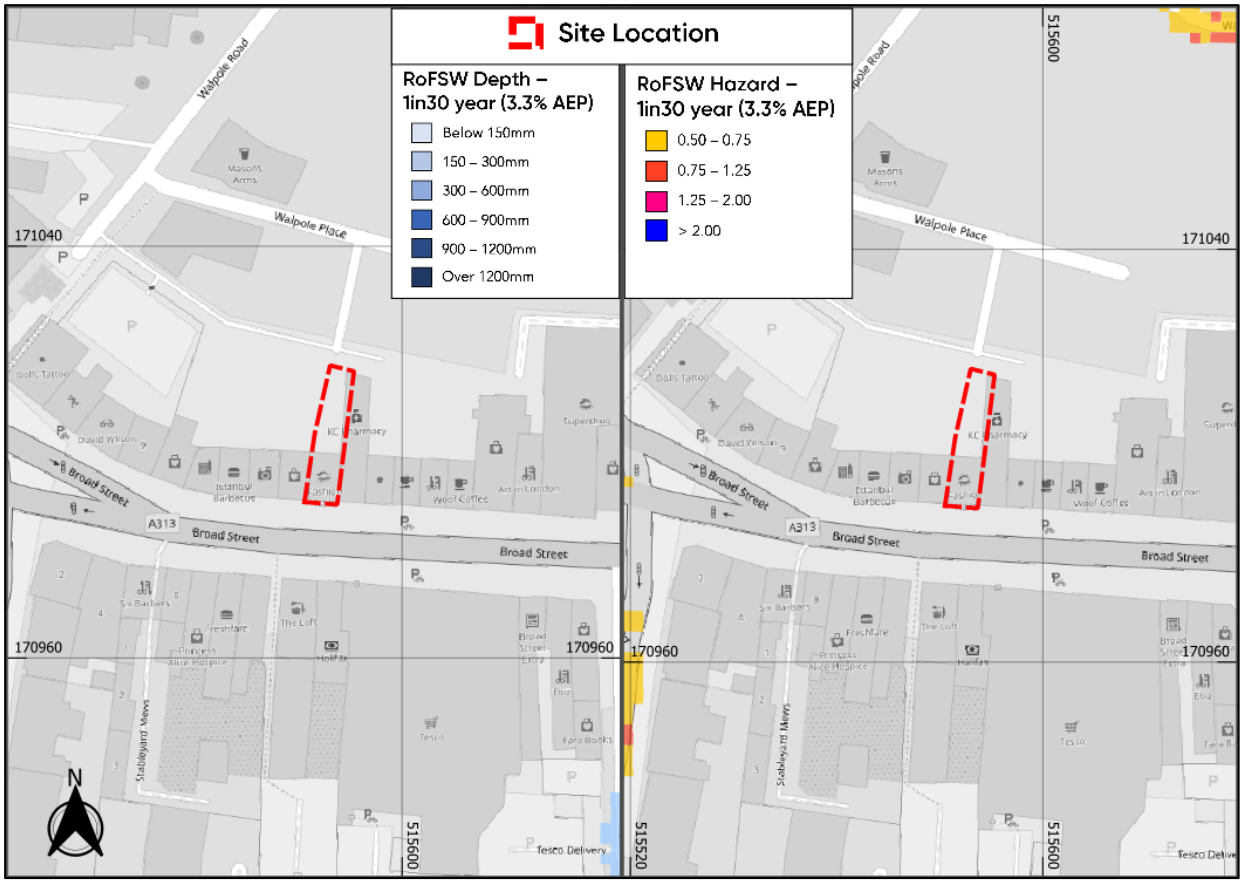


Figure 7: EA Surface Water Flood Risk Mapping 3.3% AEP (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence

1 in 100 year event

4.19. Analysis of flood depths during the modelled 'Medium' risk event (1 in 100 year scenario) shows the site is not affected (Figure 8).

4.20. The access/egress routes will be from either Broad Street south of the site or the access road to the rear/north of the site.

4.21. Broad Street is shown it could experience flood depths between 150mm and 300mm in the modelled 'Medium' risk event. The access road to the north (rear of the site) is not impacted in the modelled 'Medium' risk event (Figure 8).

4.22. The EA hazard rating/level of the flood extent along Broad Street adjacent to the southern boundary of the site is identified by the EA description as 'danger for some (i.e. children)' (0.75-1.25) and 'Low' hazard (<0.75). As such safe access/ egress might not be possible south of the

site for all occupants. The 'Low' hazard area (<0.75) extents west along to Hampton Road for approximately 360m out of the 1 in 100 year extent, where safe refuge could be found (Figure 8).

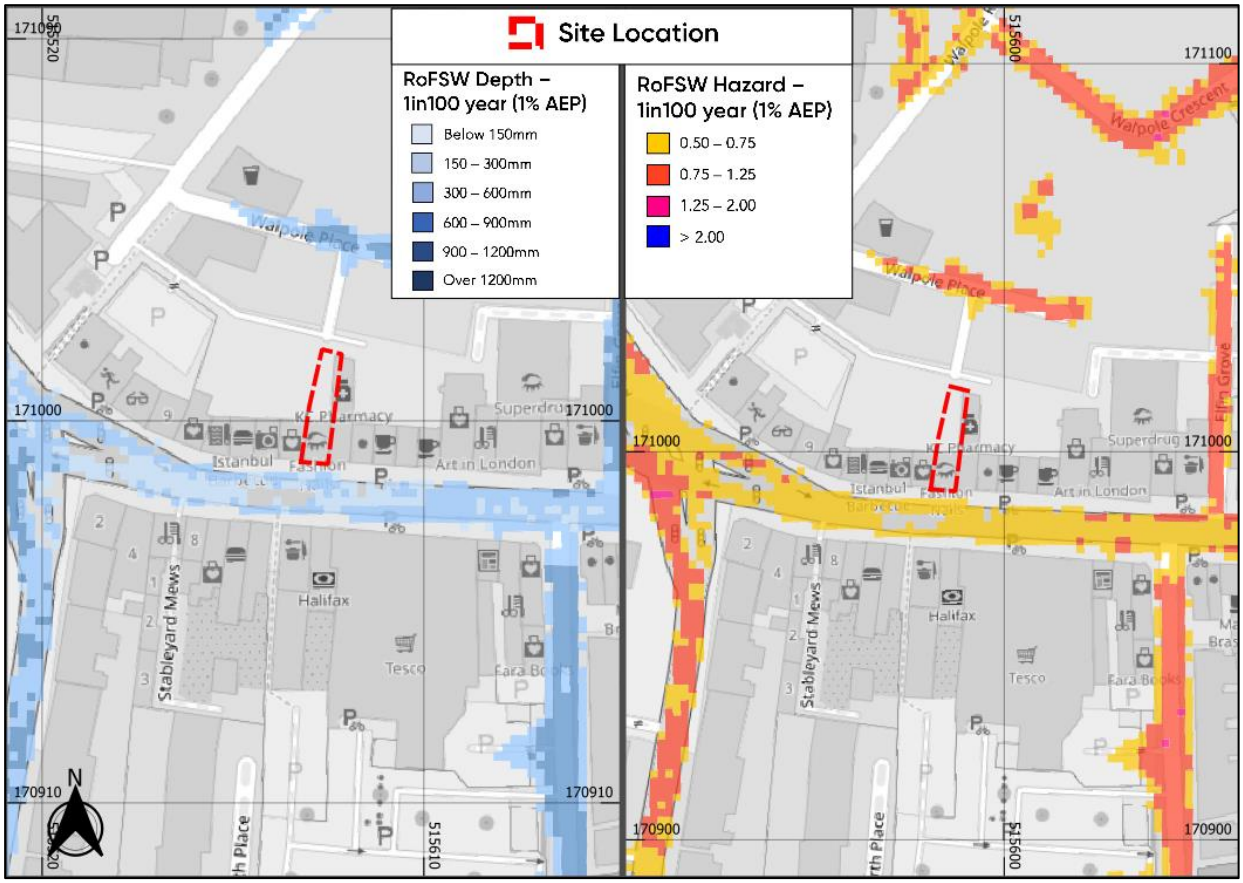


Figure 8: EA Surface Water Flood Risk Mapping 1.0% AEP (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence

1 in 1000 year event

4.23. Analysis of flood depths during the modelled 'Low' risk event (1 in 1000 year scenario) shows the site is impacted in the north, with the remainder of the site shown not to be affected (Figure 9).

4.24. Broad Street south of the site could experience flood depths between 300mm and 600mm. The site and access road to the north is estimated to be impacted with depths up to 300mm (Figure 9).

4.25. The EA hazard rating/level of the flood extent on Broad Street is shown to be described between 'Caution' (Low <0.75) and 'danger for most people' (Significant <2.00). The access road

north of the site is deemed to be at a lower risk, between Caution' (Low) and 'danger for some' (Moderate). As such, safe access and egress may not be possible and safe refuge should be sought within the site.

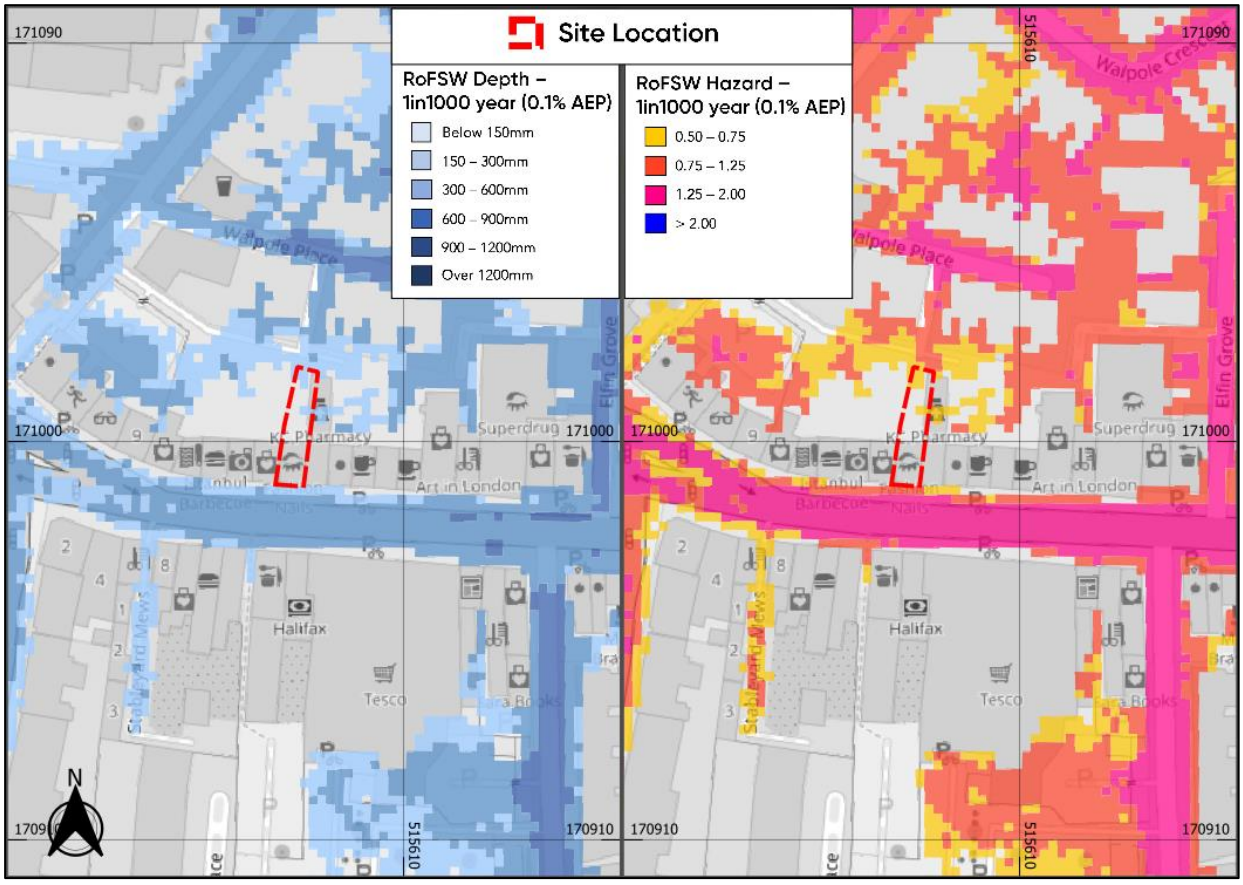


Figure 9: EA Surface Water Flood Risk Mapping 0.1% AEP (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence

4.26. The SFRA provides mapping of historical surface water flood incident records kept by the local authority. No historical surface water incidents have been recorded in the vicinity of the site (Figure 10).

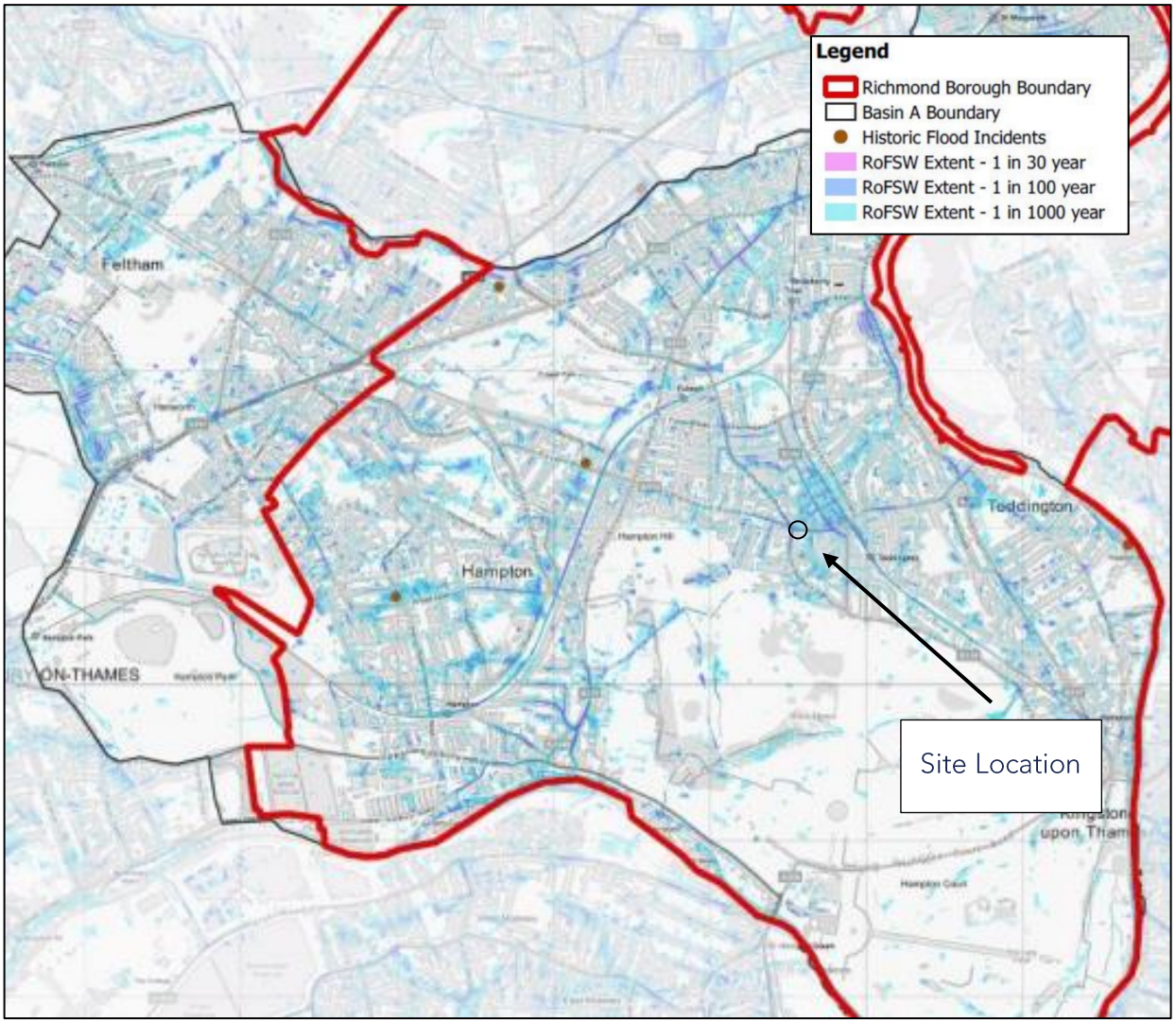


Figure 10: Historic Surface Water Flood Incidents (Richmond Council, 2021).

4.27. It is recommended that small scale SuDS are implement such as rainwater planters and water butts where possible in external areas to provide betterment.

4.28. Based on the above information, the flood risk to the proposed development itself is considered to be low.

Reservoirs

4.29. Large waterbodies or reservoirs that have walls built above the surrounding ground level pose a risk of flooding. Walls could fail due to old age, accident, or because excess flood water has been added to the reservoir. Although a breach is unlikely, the consequences would be significant, leading to rapid inundation of the downstream floodplain.

4.30. According to the EA's Flood Risk from Reservoirs mapping the site is at risk of flooding in the event of a breach at multiple reservoirs (Figure 11). The worst reservoir failure model is a 'wet day' scenario. This scenario predicts how much worse the flooding might be if a river is already experiencing an extreme natural flood.

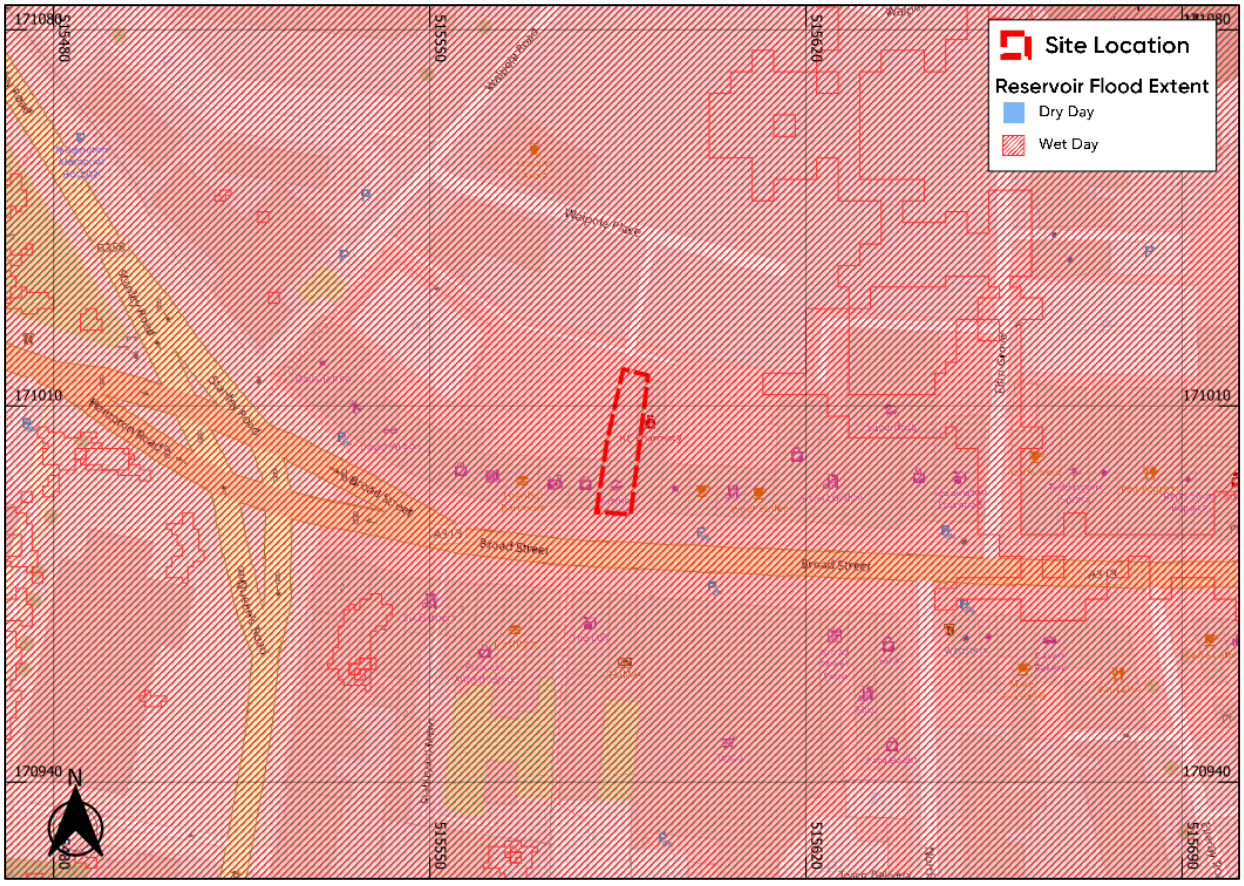


Figure 11: EA Reservoir Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). ©https://www.openstreetmap.org and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.31. All large reservoirs must be inspected and supervised by reservoir panel engineers as detailed by the Reservoirs Act 1975 in England and Wales. The EA are responsible to ensure that reservoirs are regularly inspected and essential safety work carried out.

4.32. As reservoirs are highly managed the maximum flood extent provided in the EA Risk of Flooding from Reservoirs mapping is considered a worst-case scenario. As reservoir flooding is unlikely and the modelled flood depths are based on the worst-case scenario.

4.33. The flood risk to the site from reservoirs is considered to be low.

Groundwater

4.34. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.

4.35. The British Geological Survey's (BGS) mapping shows superficial deposits of Kempton Park Gravel Member comprised of Sand and Gravel underlying the site. The bedrock underlying the site is London Clay comprised of clay and silt.

4.36. A historical BGS borehole (ref: TW11 8QZ) approximately 200m southwest of the site confirm the geology is by up of made up ground to a depth of 6.10m below ground level followed by clay based strata to a depth of 9.0m below ground level. Ground water was struck a 5.15m below ground level and rose to 3.74m below ground level.

4.37. The SFRA presents the EA's Areas Susceptible to Groundwater Flooding mapping (Figure 12). The site is within a 1km cell of which is identified as being at a greater than or equal to 75% susceptible to groundwater flooding.

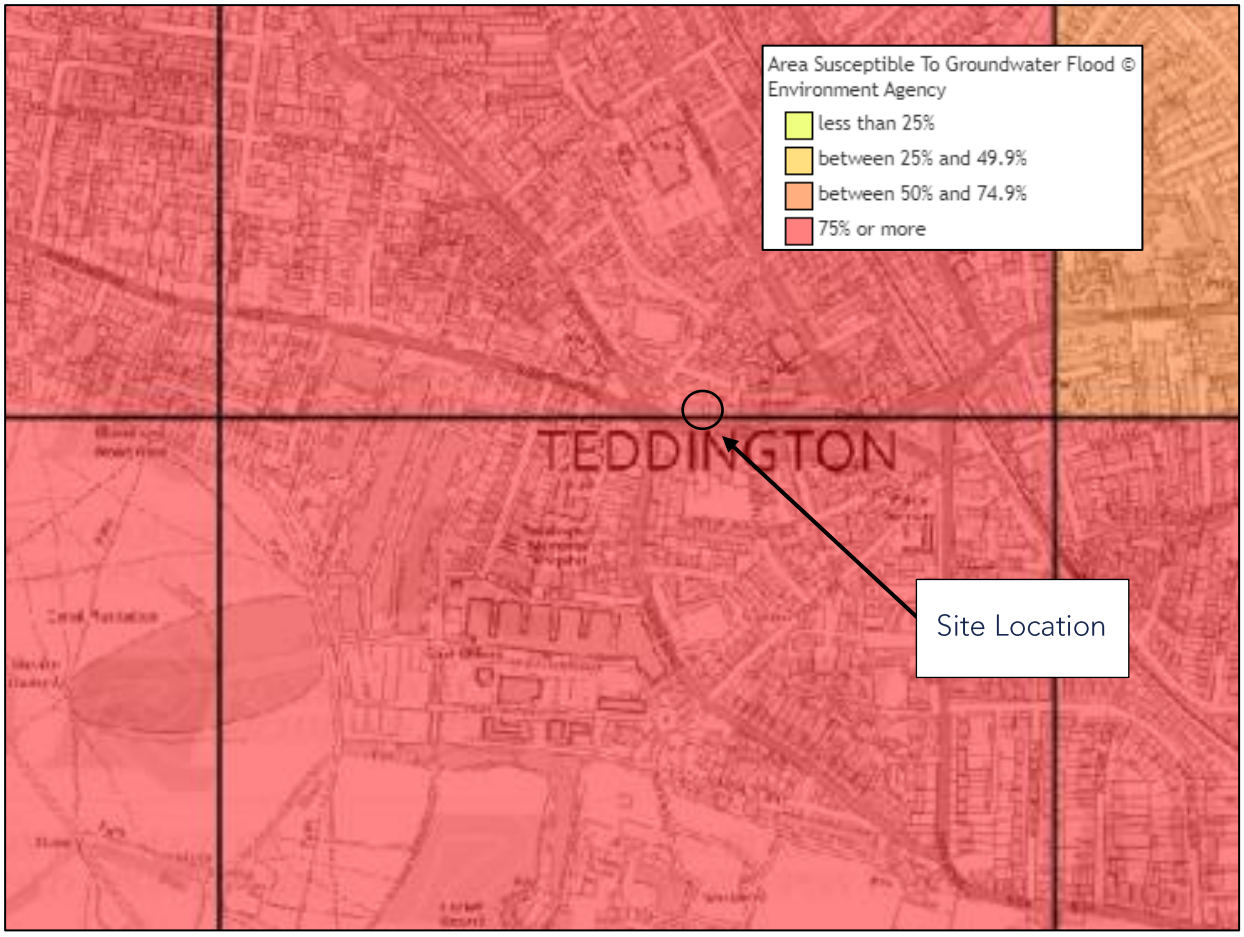


Figure 12: Area Susceptible to Groundwater Flood © Environment Agency (Richmond SFRA).

4.38. Furthermore, the SFRA contains mapping of areas with potential for elevated groundwater levels (Figure 13). The map shows that the site is at 'increased Potential for Elevated Groundwater Permeable Superficial'.

Figure 13: Potential for Elevated Groundwater © Environment Agency (Richmond SFRA) Black circle shows approximate location of the site.

4.39. As the development proposals and existing building do not include any basements the risk from groundwater to the development is considered to be low to moderate.

Sewers

4.40. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.

4.41. The SFRA provides mapping of historical sewer flood incident records kept by the local authority (Figure 14). The site is located within an area with 1-5 incidents recorded incidents.

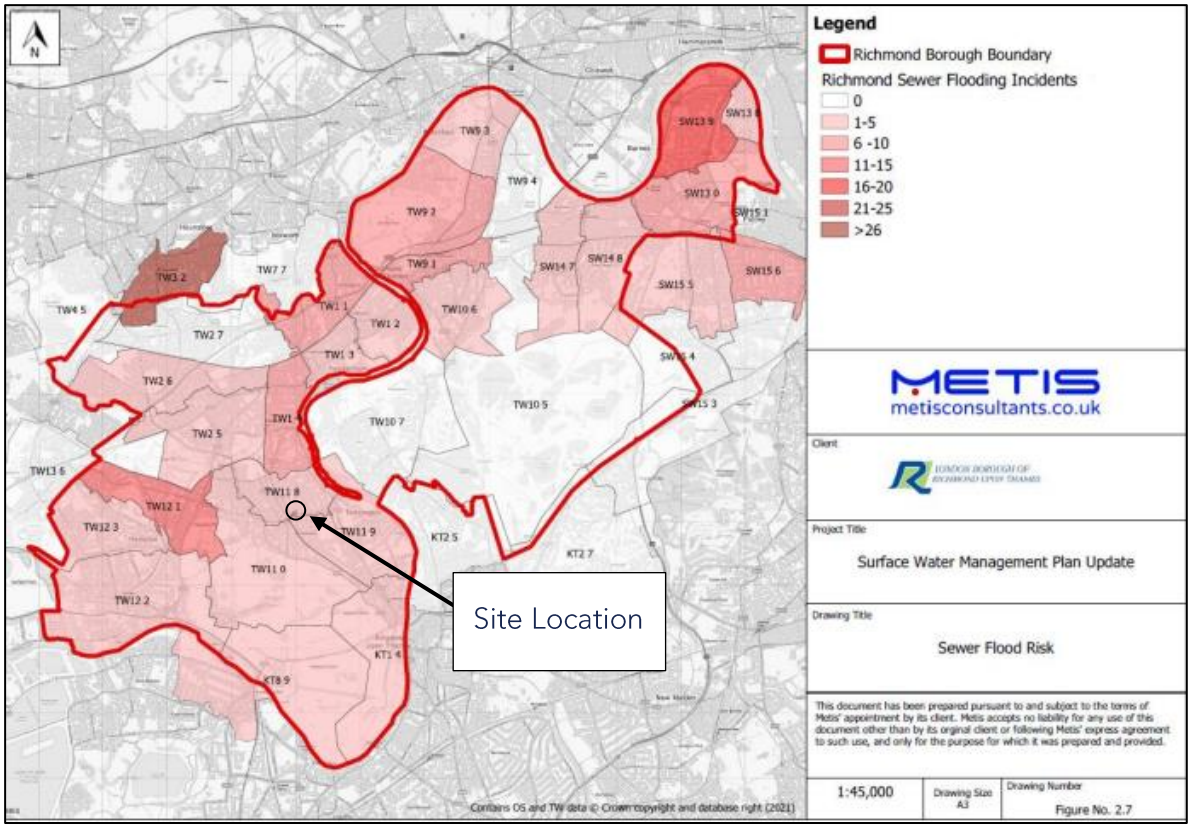


Figure 14: Historic Sewer Flooding Incidents (Richmond Council, 2021).

4.42. The areas within the map are based upon postcode which have a wide area, there is no evidence to suggest that the site has been affected by incidents of sewer flooding.

4.43. The development is therefore considered to be at low risk of flooding from sewers.

5. Flood Risk Mitigation

Pluvial

5.1. The site is considered to be at a low risk of surface water flooding.

5.2. However, due to the site being located in a Richmond CDA, mitigation will be recommended.

5.3. A summary of recommended mitigation measures as part of 'Improving the Flood Performance of New Buildings' Flood Resilient Construction (2007) are detailed below:

- Doors to the rear/north of the development should be ensured that they are flood rated to be able to withstand flood depths up to 600mm, to allow for a 300mm flood depth and a freeboard of 300mm.
- It is recommended that Non-return valves are to be installed where necessary. Valves should also be retrofitted on to any existing sewer connections to prevent back-flow of diluted sewage. Maintenance of these valves is important to ensure their continued effectiveness so should be maintained in line with manufacturers recommendations.
- Damp Poof Membrane (d.p.m) should be included in any design to minimise the passage of water through ground floors. Impermeable polythene membranes should be at least 1200 gauge to minimise ripping. Effective methods of joining membrane section are overlaps of 300mm, and also taping (mastic tape with an overlap of 50mm minimum).
- Special care should be taken to ensure adequate sealing of any PVC window/door sills to the fabric of the dwelling.
- Small scale SuDS are recommended such as rainwater planters and water butts should be used where possible in external areas to provide betterment.

Other sources

5.4. Flood risks from fluvial, tidal, reservoirs, sewers, and canals are considered to be low, therefore additional mitigation is not a requirement.

Increase to Flood Risk Elsewhere

5.5. Site is in Flood Zone 1 and unaffected in modelled 1 in 100 year pluvial event, and thus should not result in increase in flood risk elsewhere through displacement of flood water.

Flood Warnings

5.6. The site is not in an area where the EA provide specific flood alerts and warnings. The occupant of the dwelling should monitor Met Office Weather Warnings to be prepared for extreme weather events

5.7. Met Office is the national meteorological service for the UK; they issue weather warnings up to 5 days in advance, through the National Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. It is also possible to stay up to date with weather warnings through the Met Office app (available on both android and apple), social media (X (formally Twitter) and Facebook) or email alerts.

5.8. During periods of bad weather, residents should monitor local weather reports and sign up for the Met Office UK weather warnings. Procedures should be formalised (if not done so already) in the event of a severe weather warning or flooding.

6. Conclusions

6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at 21 Broad Street, Teddington, London, TW11 8QZ. It has been written to support a planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.

6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

Source of Flooding	Flood Risk Summary
Pluvial	The northern part of the site is shown to be impacted in the 'Low' risk event, with flood depths up to 300mm. The rest of the site including the footprint of the existing and proposed building is shown to be at a 'Very Low' risk of surface water flooding. However, due to the site being located in a Richmond CDA, mitigation will be recommended. See Section 5.
Tidal Fluvial Reservoirs Groundwater Sewers Canals	The site is considered to be at low risk from other sources.

6.3. The FRA supports the planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are implemented in the scheme. The development does not increase flood risk off site or to the wider area.

6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A - Development Proposals

01
A-(10)-009

EXISTING OS MAP

1:100@ A1,1:200 @ A3

0 1 2 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

All dimensions and levels are to be checked on site by the main contractor prior to commencing excavation works. Any discrepancy is to be reported back to the designer for instruction.

ARCHITECTURE:
VORBILD
ARCHITECTURE
www.vorbild.co.uk
info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
BLOCK PLAN

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

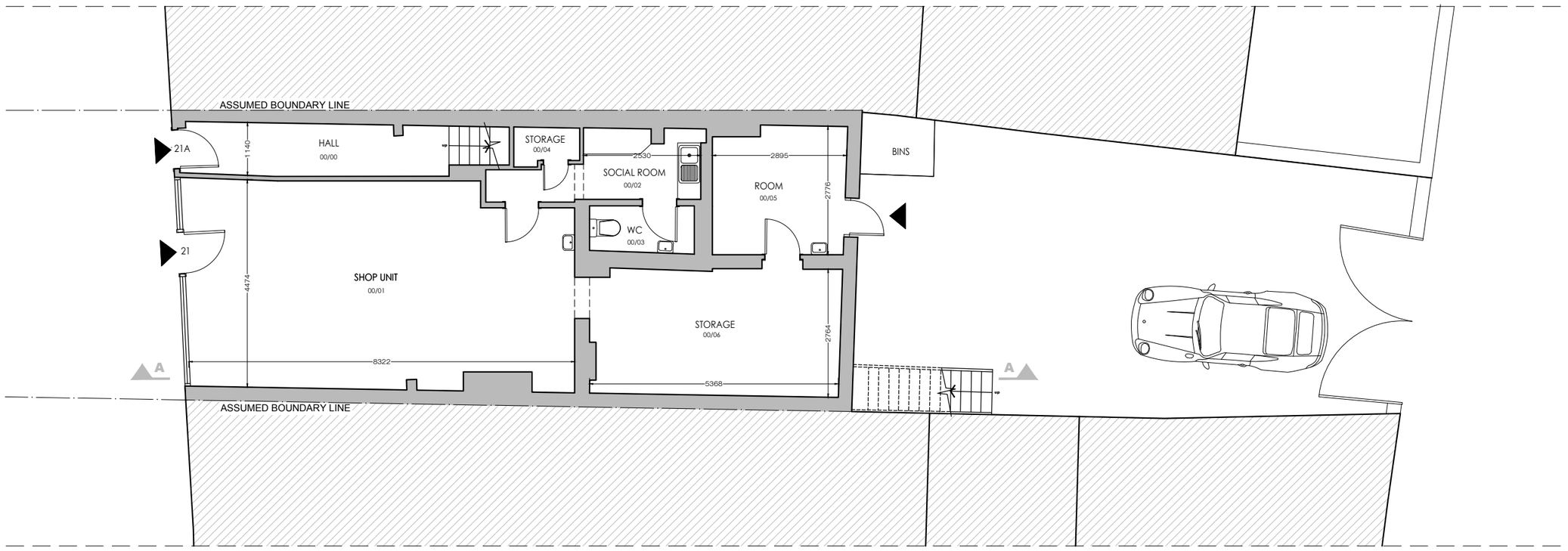
JOB NUMER:
1323

DRAWING No:
A-(10)-009

SCALE:
1:200

DATE:
19.01.2024

Rev. No.:



No	Ground Floor	Area m²
00/00	HALL	6.48
00/01	SHOP UNIT	35.99
00/02	SOCIAL ROOM	5.48
00/03	WC	2.36
00/04	STORAGE	1.12
00/05	ROOM	7.74
00/06	STORAGE	14.78
	SHOP AREA SUM	67.47
	TOTAL AREA SUM	73.95

02
A-(10)-010

EXISTING GROUND FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
GROUND FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

JOB NUMER:
1323

DRAWN BY:
KK

SIGNATURE:

DRAWING No:
A-(10)-010

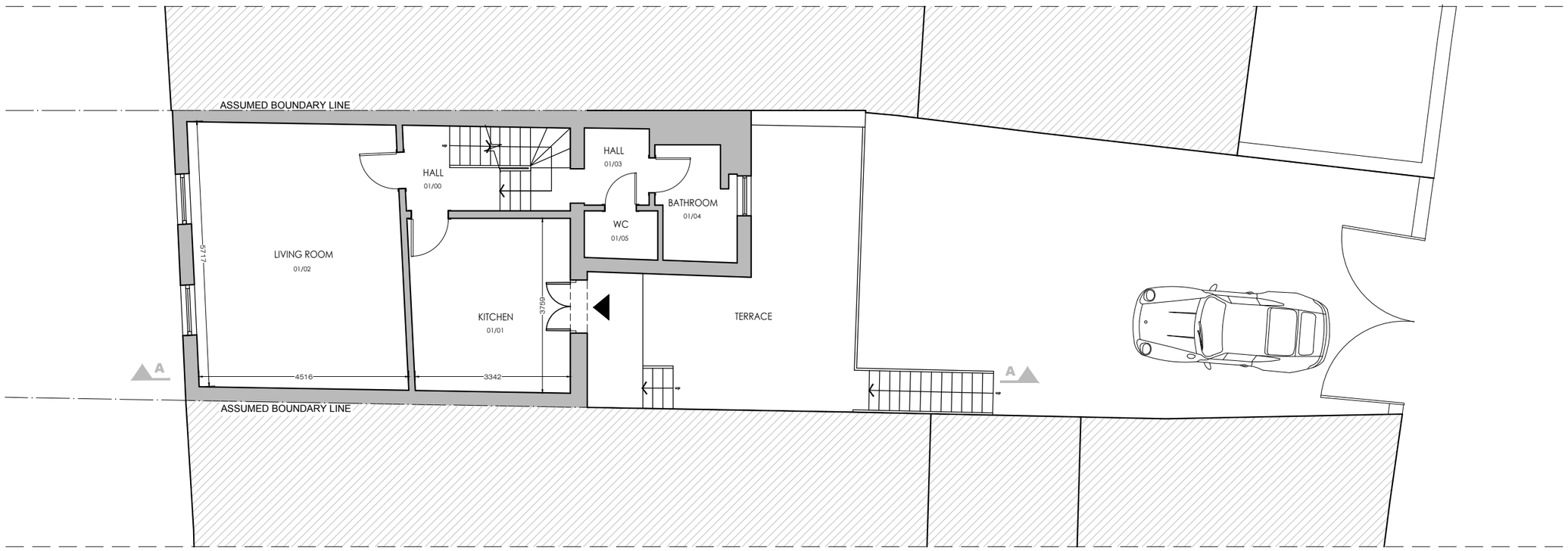
APPROVED:
MS

SIGNATURE:

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



No	First Floor Room	Area m²
01/00	HALL	3.04
01/01	KITCHEN	12.83
01/02	LIVING ROOM	25.74
01/03	HALL	2.31
01/04	BATHROOM	4.05
01/05	WC	1.72
TOTAL AREA SUM		49.69

03
A-(10)-011

EXISTING FIRST FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

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ARCHITECTURE:
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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
FIRST FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

JOB NUMER:
1323

DRAWN BY:
KK

SIGNATURE:

DRAWING No:
A-(10)-011

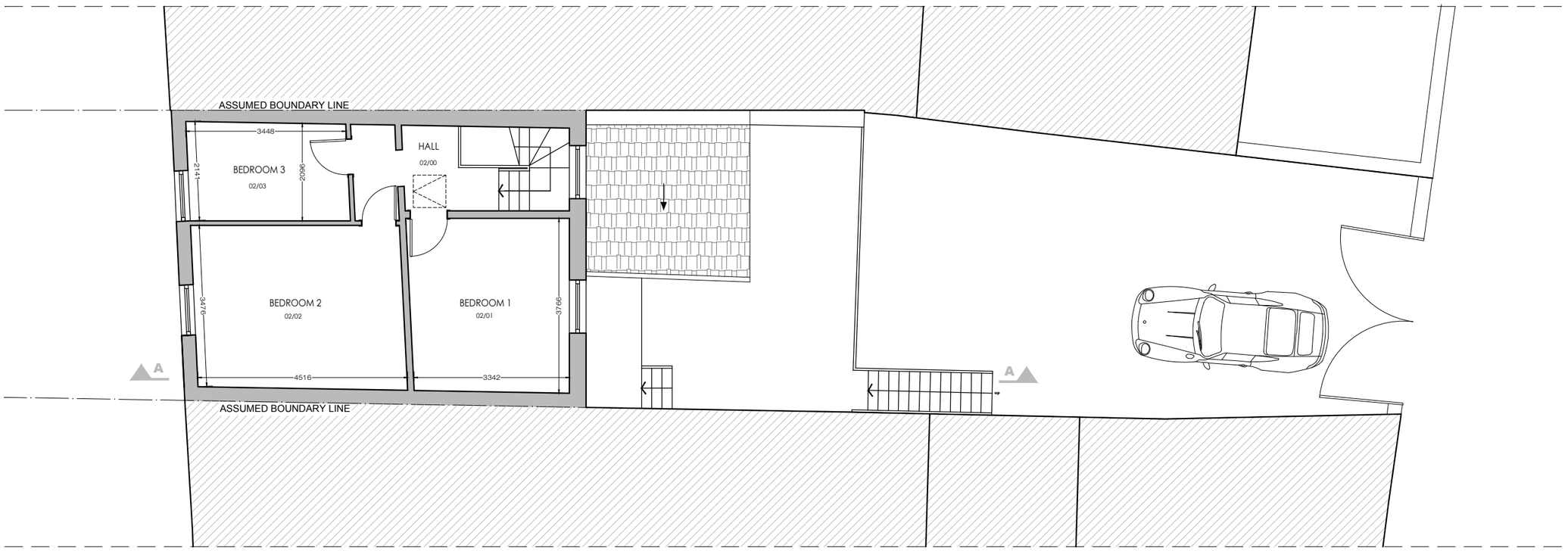
APPROVED:
MS

SIGNATURE:

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



No	Second Floor Room	Area m²
02/00	HALL	5.07
02/01	BEDROOM 1	12.96
02/02	BEDROOM 2	15.89
02/03	BEDROOM 3	7.35
TOTAL AREA SUM		41.27

04
A-(10)-012

EXISTING SECOND FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

All dimensions and levels are to be checked on site by the main contractor prior to commencing excavation works. Any discrepancy is to be reported back to the designer for instruction.

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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
SECOND FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

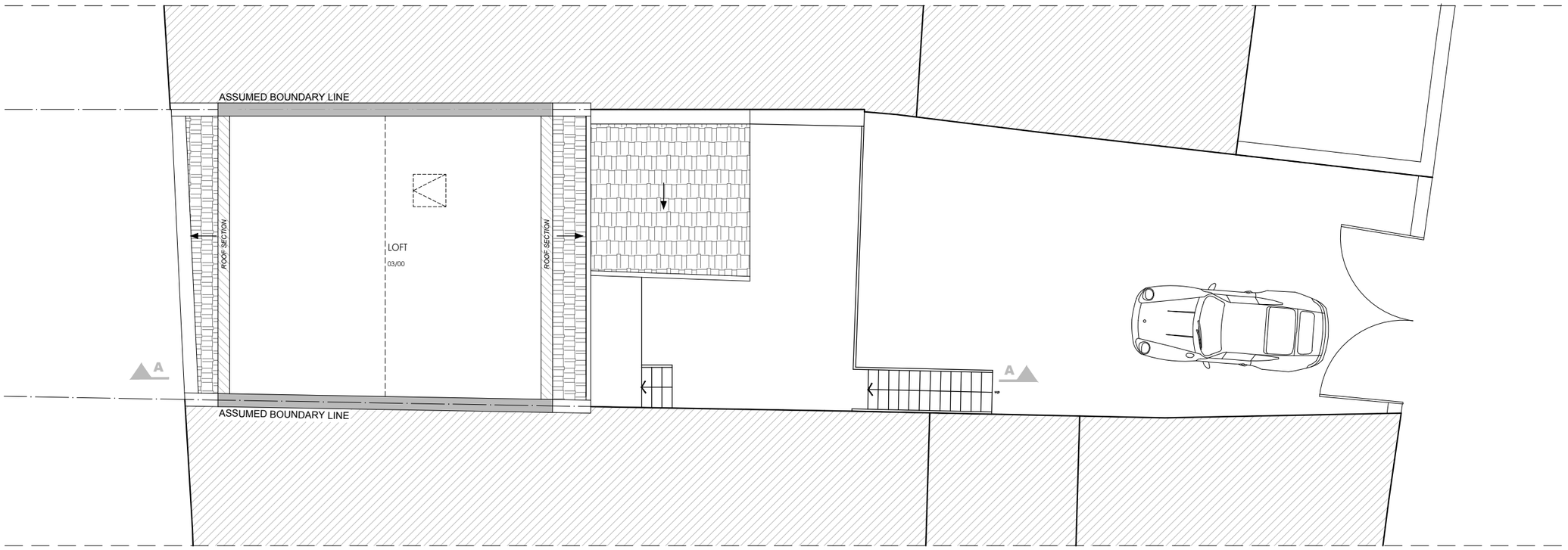
JOB NUMER:
1323

DRAWING No:
A-(10)-012

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



No	Loft Floor Room	Area m²
03/00	LOFT	40.53

05
A-(10)-013

EXISTING LOFT FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
SECOND FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

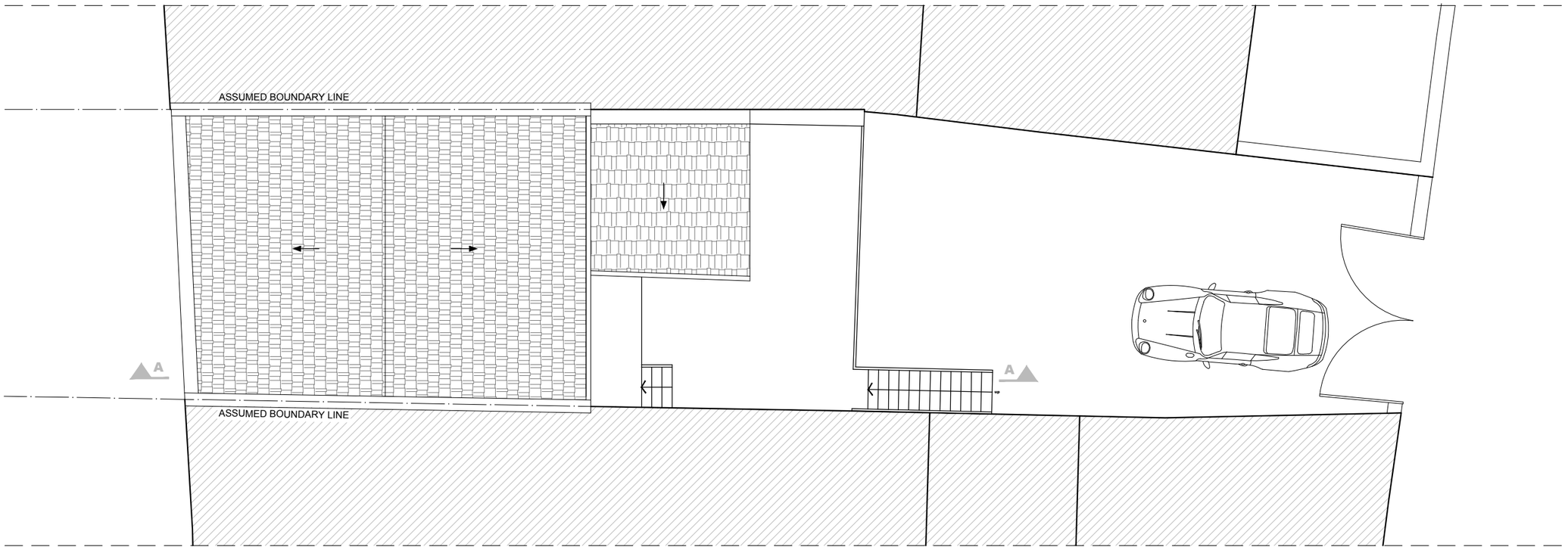
JOB NUMER:
1323

DRAWING No:
A-(10)-013

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



06
A-(10)-014

EXISTING ROOF PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

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ARCHITECTURE:
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info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
ROOF PLAN

DRAWING STATUS:
FOR PLANNING

JOB NUMER:
1323

DRAWN BY:
KK

SIGNATURE:

DRAWING No:
A-(10)-014

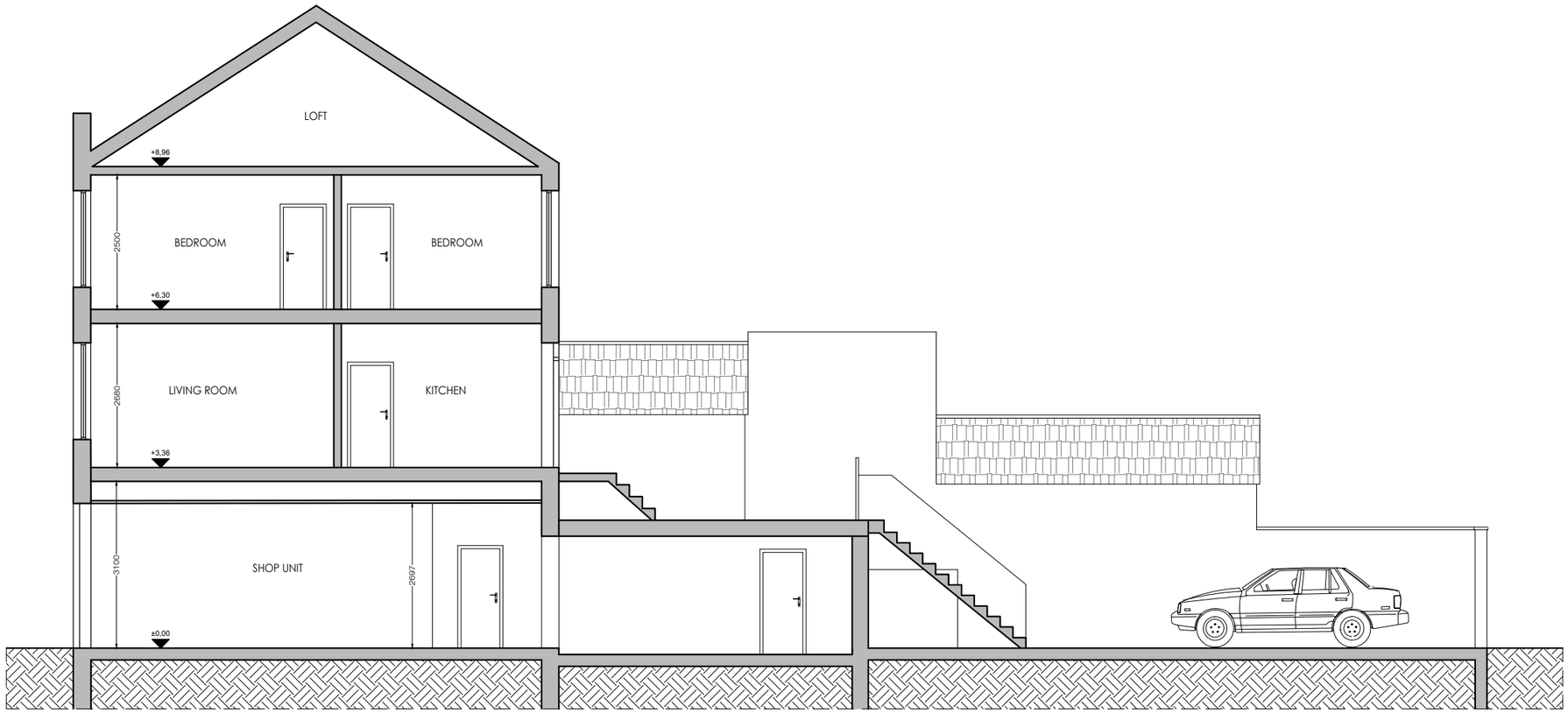
APPROVED:
MS

SIGNATURE:

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



07
A-(11)-010

EXISTING SECTION A-A

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
SECTION A-A

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

JOB NUMER:
1323

DRAWING No:
A-(11)-010

SCALE:
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DATE:
19.01.2024

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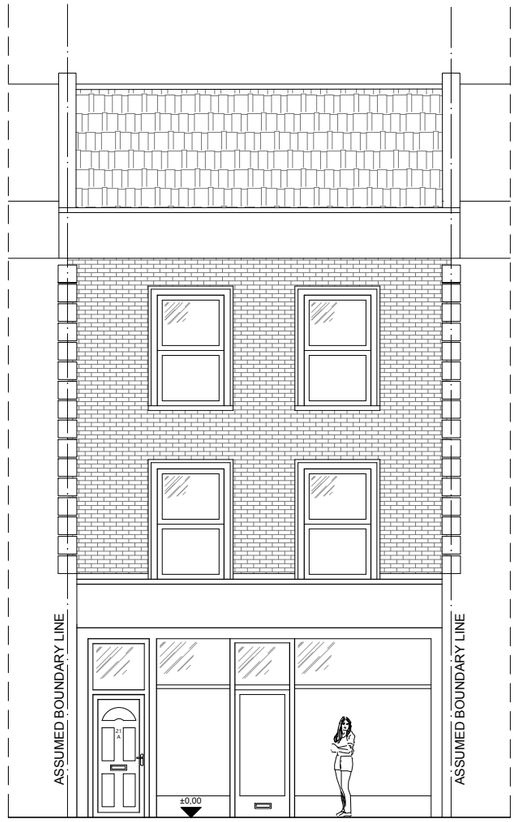

08

A-(12)-010

EXISTING FRONT ELEVATION

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3

SCALE BAR (METRES)

PROJECT NAME:

1323

CLIENT/PROJECT:

21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

All dimensions and levels are to be checked on site by the main contractor prior to commencing excavation works. Any discrepancy is to be reported back to the designer for instruction.

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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:

EXISTING
FRONT ELEVATION

DRAWING STATUS:

FOR PLANNING

JOB NUMER:

1323

DRAWN BY:

KK

SIGNATURE:

DRAWING No:

A-(12)-010

APPROVED:

MS

SIGNATURE:

SCALE:

1:100

DATE:

19.01.2024

Rev. No.:

09
A-(12)-011

EXISTING REAR ELEVATION

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

All dimensions and levels are to be checked on site by the main contractor prior to commencing excavation works. Any discrepancy is to be reported back to the designer for instruction.

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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
EXISTING
REAR ELEVATION

DRAWING STATUS:
FOR PLANNING

JOB NUMER:
1323

DRAWN BY:
KK

SIGNATURE:

DRAWING No:
A-(12)-011

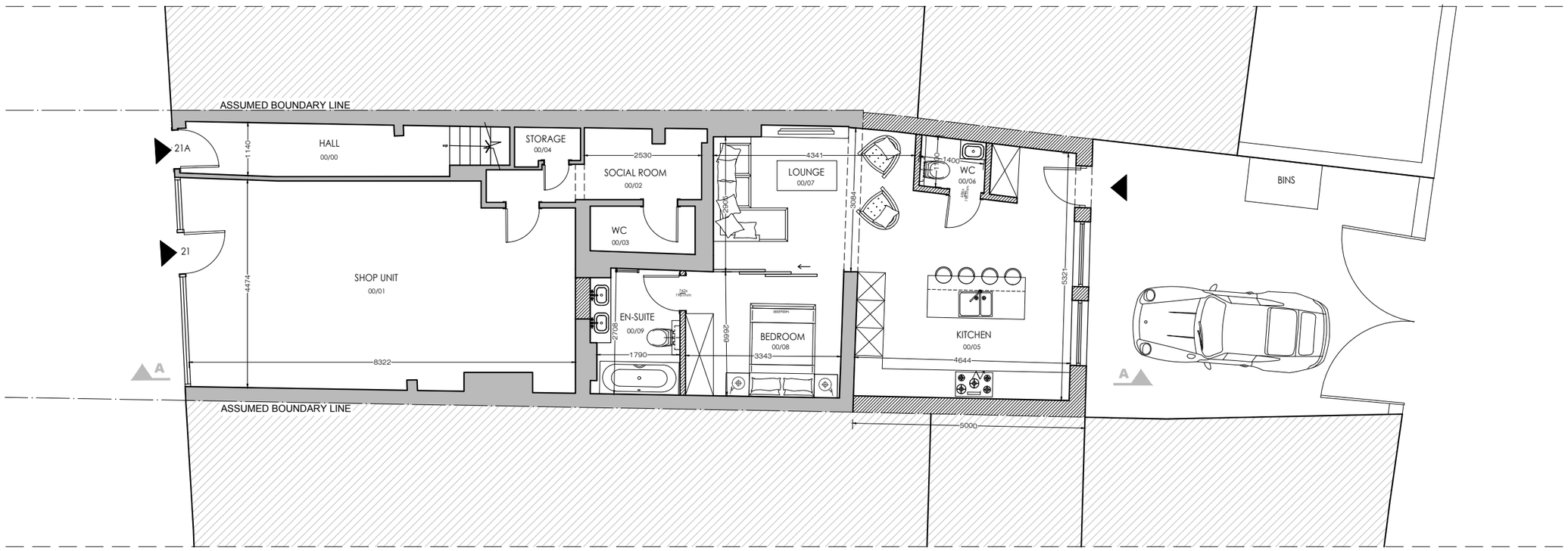
APPROVED:
MS

SIGNATURE:

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



No	Ground Floor	Area m²
00/00	HALL	6.48
00/01	SHOP UNIT	35.99
00/02	SOCIAL ROOM	5.48
00/03	WC	2.36
00/04	STORAGE	1.12
	SHOP AREA SUM	44.95
00/05	KITCHEN	23.62
00/06	WC	1.61
00/07	LOUNGE	9.68
00/08	BEDROOM	9.04
00/09	EN-SUITE	5.10
	APT. 1 AREA SUM	49.05
	TOTAL AREA SUM	100.48

10
A-(13)-010

PROPOSED GROUND FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

All dimensions and levels are to be checked on site by the main contractor prior to commencing excavation works. Any discrepancy is to be reported back to the designer for instruction.

ARCHITECTURE:
VORBILD
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info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
GROUND FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

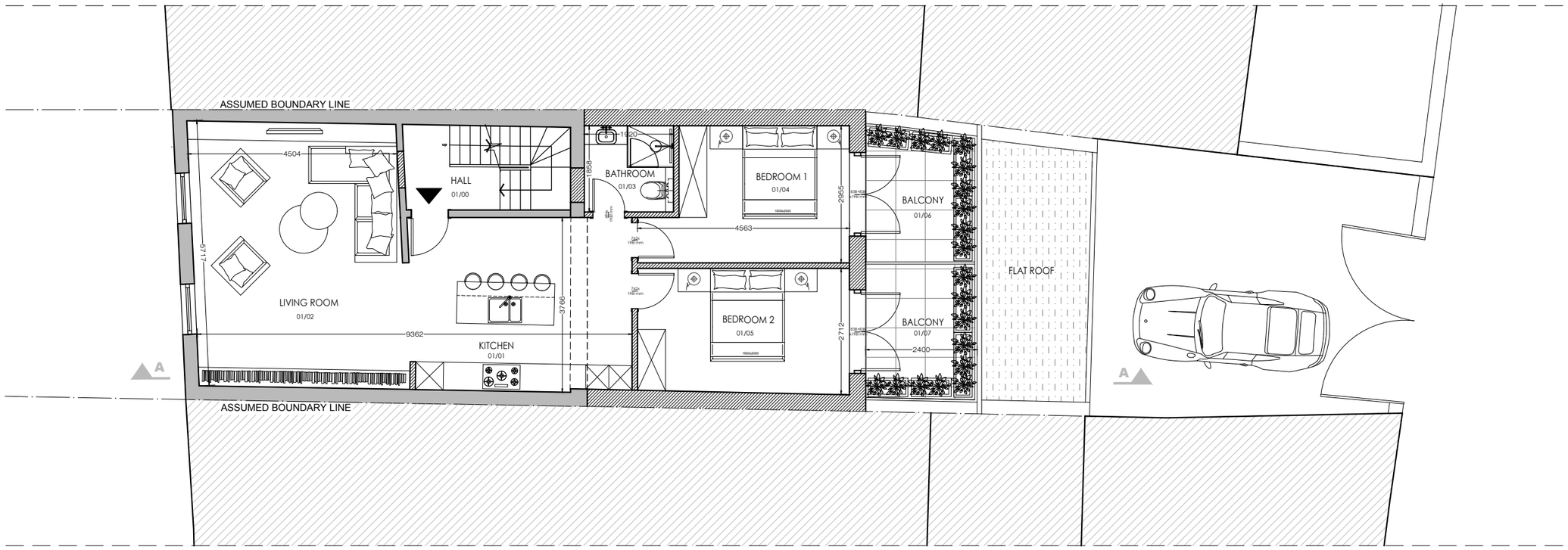
JOB NUMER:
1323

DRAWING No:
A-(13)-010

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



No	First Floor Room	Area m²
01/00	HALL	2.80
01/01	KITCHEN	17.81
01/02	LIVING ROOM	26.09
01/03	BATHROOM	3.65
01/04	BEDROOM 1	11.81
01/05	BEDROOM 2	12.29
APT. 2 AREA SUM		71.65
01/06	BALCONY 1	6.57
01/07	BALCONY 2	6.81
TOTAL AREA SUM		87.83

11
A-(13)-011

PROPOSED FIRST FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

All dimensions and levels are to be checked on site by the main contractor prior to commencing excavation works. Any discrepancy is to be reported back to the designer for instruction.

ARCHITECTURE:
VORBILD
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www.vorbild.co.uk
info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
FIRST FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

JOB NUMER:
1323

DRAWN BY:
KK

SIGNATURE:

DRAWING No:
A-(13)-011

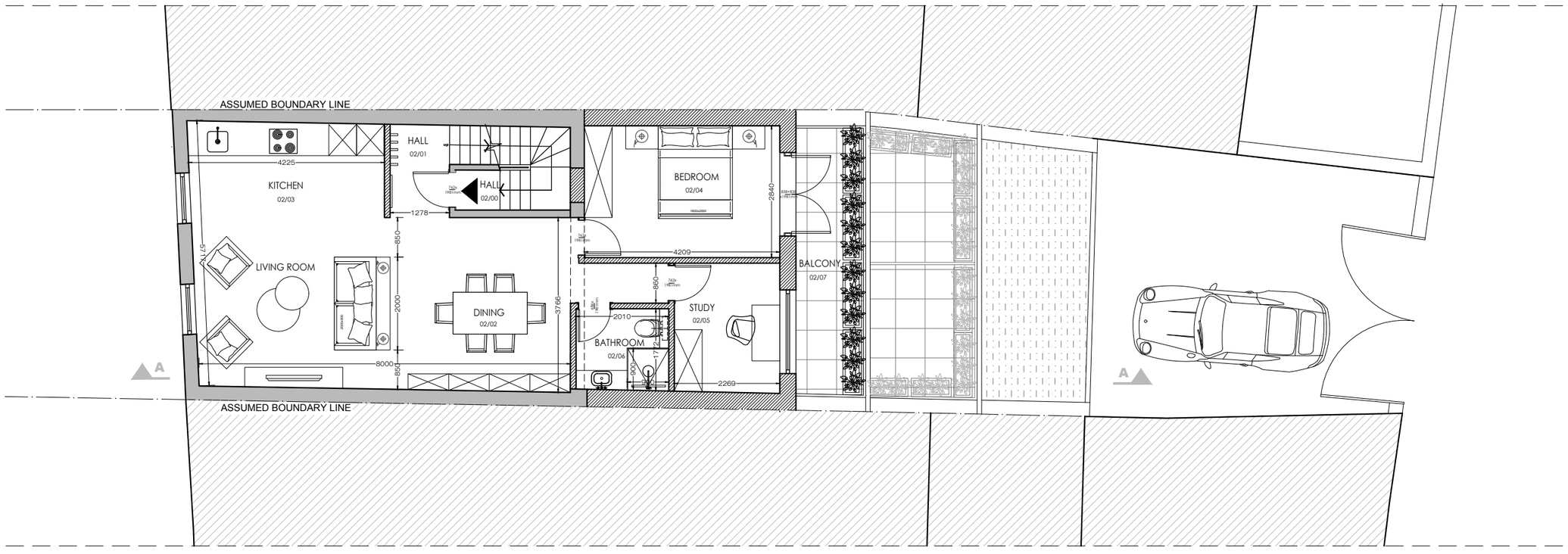
APPROVED:
MS

SIGNATURE:

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



No	Second Floor Room	Area m²
02/00	HALL	0.92
02/01	HALL	2.56
02/02	DINING	16.70
02/03	LIVING ROOM	23.97
02/04	BEDROOM	12.05
02/05	STUDY	6.31
02/06	BATHROOM	3.50
APT, 3 LEV, 1 AREA SUM		65.09
02/06	BALCONY	8.31
TOTAL AREA SUM		74.32

12
A-(13)-012

PROPOSED SECOND FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

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ARCHITECTURE:
VORBILD
ARCHITECTURE
www.vorbild.co.uk
info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
SECOND FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

JOB NUMER:
1323

DRAWN BY:
KK

SIGNATURE:

DRAWING No:
A-(13)-012

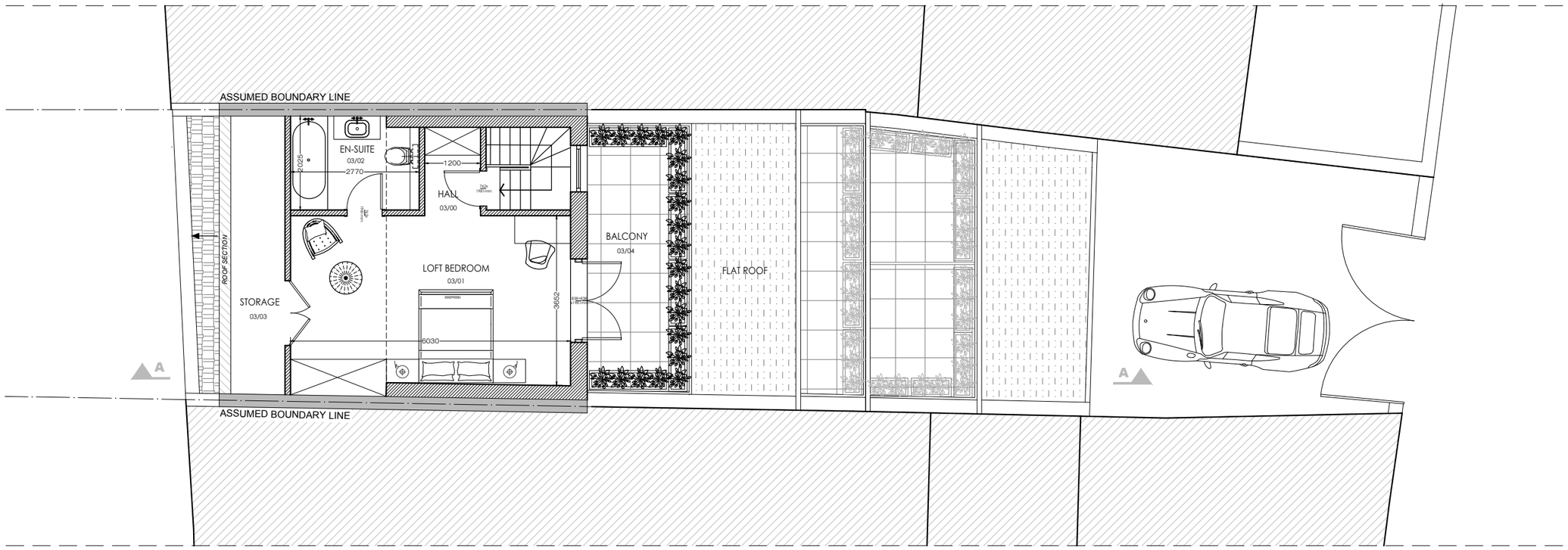
APPROVED:
MS

SIGNATURE:

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



No	Loft Floor Room	Area m²
03/00	HALL	2.28
03/01	LOFT BEDROOM	22.50
03/02	EN-SUITE	5.44
03/03	STORAGE	7.16
APT. 3 LEV. 2 AREA SUM		37.38
03/04	BALCONY	12.58
TOTAL AREA SUM		49.96

13
A-(13)-013

PROPOSED LOFT FLOOR PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

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ARCHITECTURE:
VORBILD
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info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
LOFT FLOOR PLAN

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

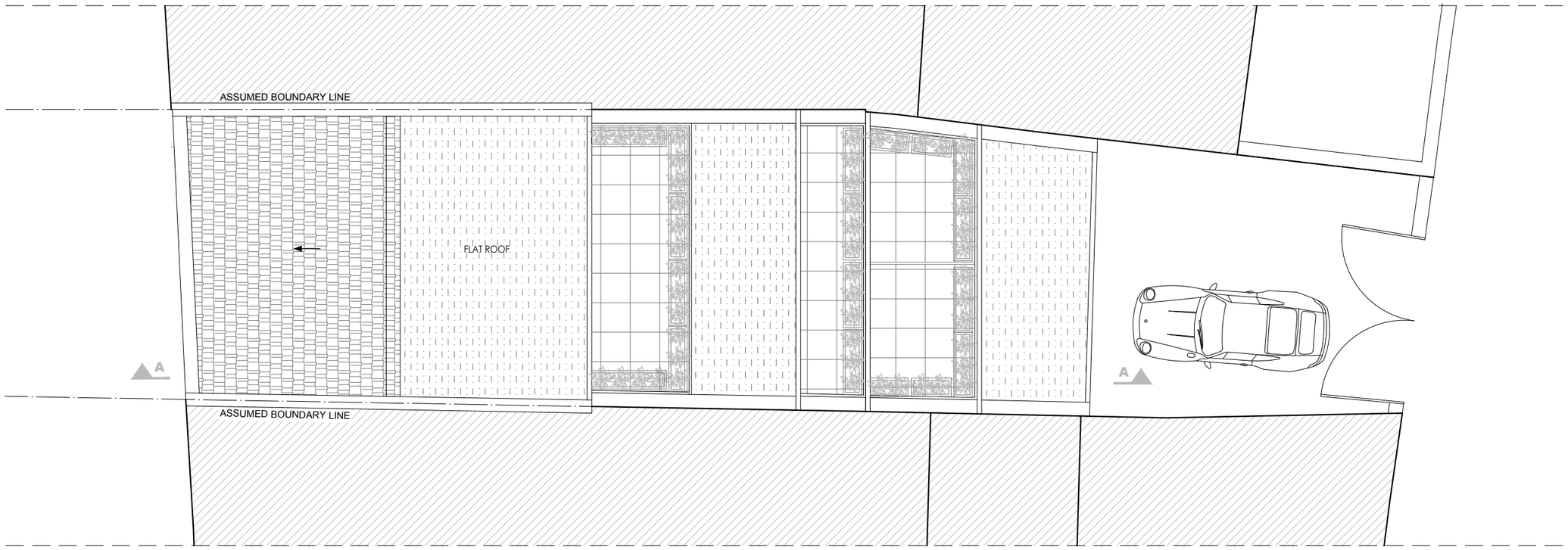
JOB NUMER:
1323

DRAWING No:
A-(13)-013

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



14
A-(13)-014

PROPOSED ROOF PLAN

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

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ARCHITECTURE:
VORBILD
ARCHITECTURE
www.vorbild.co.uk
info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
ROOF PLAN

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

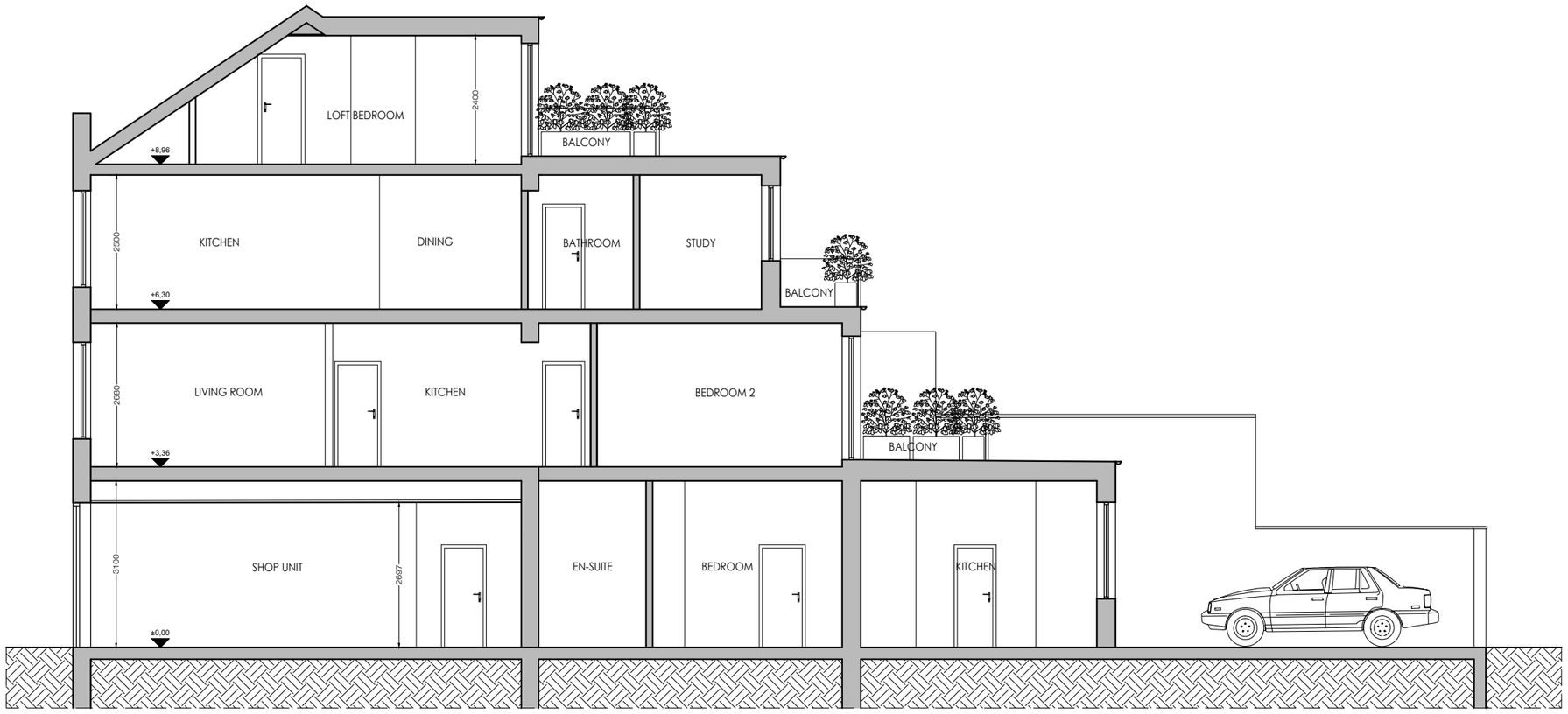
JOB NUMER:
1323

DRAWING No:
A-(13)-014

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



15
A-(14)-010

PROPOSED SECTION A-A

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

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ARCHITECTURE:
VORBILD
ARCHITECTURE
www.vorbild.co.uk info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
SECTION A-A

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

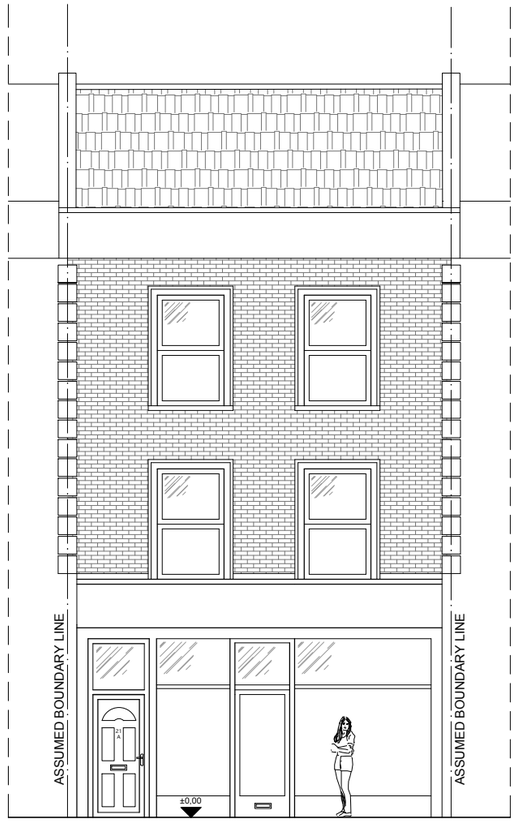
JOB NUMER:
1323

DRAWING No:
A-(14)-010

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



16
A-(15)-010

PROPOSED FRONT ELEVATION

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

All dimensions in millimetres.

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VORBILD
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CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
FRONT ELEVATION

DRAWING STATUS:
FOR PLANNING

JOB NUMER:
1323

DRAWN BY:
KK

SIGNATURE:

DRAWING No:
A-(15)-010

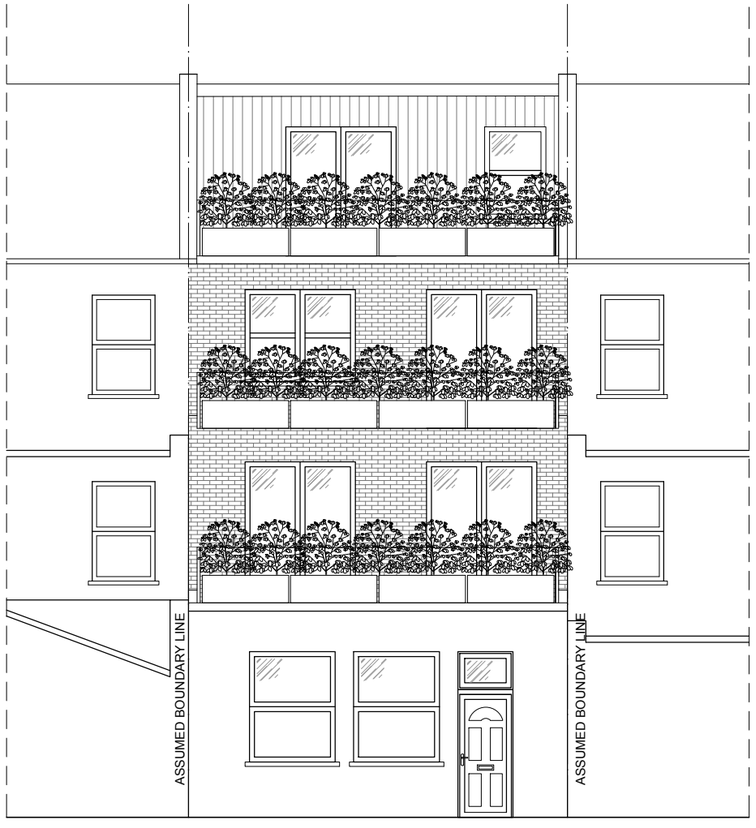
APPROVED:
MS

SIGNATURE:

SCALE:
1:100

DATE:
19.01.2024

Rev. No.:



17
A-(15)-011

PROPOSED REAR ELEVATION

1:50 @ A1,1:100 @ A3

0 0.5 1 1.5 2 2.5 3
SCALE BAR (METRES)

PROJECT NAME:
1323

CLIENT/PROJECT:
21 Broad Street, Teddington
TW11 8QZ

NOTES :

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ARCHITECTURE
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info@vorbild.co.uk

CONSTRUCTION:

INSTALLATIONS:

INSTALLATIONS:

SHEET TITLE:
PROPOSED
REAR ELEVATION

DRAWING STATUS:
FOR PLANNING

DRAWN BY:
KK

SIGNATURE:

APPROVED:
MS

SIGNATURE:

JOB NUMER:
1323

DRAWING No:
A-(15)-011

SCALE:
1:100

DATE:
19.01.2024

Rev. No.: