STA ASSOCIATES
TAVISTOCK HOUSE
UXBRIDGE

FLOOD RISK ASSESSMENT

DECEMBER 2016



the journey is the reward

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Project Code:	**A/STATAVISTOCK.10**
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Issue Date:	**December 2016**
Status:	**1st Issue**

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STA Associates

Tavistock House

Uxbridge

Flood Risk Assessment

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1 Introduction

1.1 Mayer Brown Ltd has been commissioned by STA Associates to undertake a Flood Risk Assessment (FRA) in support of a planning application to provide roof level residential accommodation at the site known as Tavistock House, Uxbridge.

1.2 A separate Prior Approval scheme has already been submitted for the conversion of the first and second floors of Tavistock House from B1(a) office use to C3 residential (12 apartments) under Class O of the Town and Country Planning (General Permitted Development) (England) Order.

1.3 According to the Environment Agency's (EA) indicative flood map (Appendix B) the site is located in a low risk flood zone 1, which has a low probability risk of experiencing flooding from fluvial or tidal sources.

1.4 This Flood Risk Assessment considers the impact of the proposed development in addition to the common ways in which flooding can occur. The conditions currently existing in the location of the site are described, together with the methods used to identify and assess potential impacts caused from the development proposals. The mitigation measures proposed have been identified in order to avoid and/or reduce the impacts caused by introducing the development proposals.

1.5 This FRA has been compiled in accordance with "National Planning Policy Framework (NPPF)" published by Communities and Local Government in March 2012 (Ref.1), "Technical Guidance to the National Planning Policy Framework" (Ref. 2) and 'CIRIA C624: Development and Flood Risk Guidance'.

2 Existing Site and Proposed Development

Existing Location and Site Description

2.1 The application site is located at Tavistock House on the northern side of Rockingham Road in Uxbridge. Tavistock House is located to the west of Uxbridge with the River Colne located to the west and Frays River located to the east. Refer Figure 2.1 and Appendix A for the Site Location Plan.



Figure 2.1: Site Location

2.2 The site contains an existing two storey building currently in use as office space (Class B1(a)) and associated car park located underneath Tavistock House at ground floor level, refer to Appendix C for Existing Plans and Elevations.

Proposed Development

2.3 The separate Prior Approval scheme at the site will replace the existing office use on the first and second floors with a total of 12 apartments including two studio apartments, eight 1-bedroom apartments and two 2-bedroom apartments.

2.4 The proposed roof level development of the site will provide the following additional residential components:

- One studio apartment
- Two 1-bedroom apartments
- One 2-bedroom apartment

2.5 The proposals will therefore result in an additional 4 apartments at the site above the 12 apartments proposed as part of the Prior Approval scheme. Refer to Figure 2.2 and Appendix D for the Ground Floor Layout.



Figure 2.2: Proposed Ground Floor Layout

Surface Water Drainage

2.6 The levels and extent of the existing external hard standing areas is being reduced, as such the existing surface water drainage arrangement will remain.

3 Flood Risk and Mitigation Measures

3.1 In theory there are five principal types / sources of flooding that could affect the proposed development, these are described below:

- **Fluvial –** The EA flood map identifies the site is located in a low risk Flood Zone 1, refer to Appendix B for the EA flood maps. The London Borough of Hillingdon Surface Water Management Plan (SWMP) affirms this by indicating a very low flood hazard at the site for both the 1in100yr event + climate change and the 1in200yr event. The SWMP does not identify any historic fluvial flooding events in the vicinity of the site, refer to Appendix F for the SWMP flood maps. The risk of fluvial flooding is therefore considered low, there are no mitigation measures required and it will not be addressed further in this report.
- **Tidal –** There are no tidal influences in the vicinity of the site so flooding from tidal sources is considered a low risk. There are no mitigation measures required to address flooding from tidal sources so it will not be addressed further in this report.
- **Groundwater –** The SWMP identifies that the site (and large areas within the borough) are located above Permeable Superficial deposits, however does not identify any groundwater flooding incidents in the vicinity of the site, refer to Appendix F for the SWMP maps. The risk of groundwater flooding is therefore considered low, there are no mitigation measures required and it will not be addressed further in this report.
- **Surface Water Run-off –** The site is not located within a critical drainage area. The EA and SWMP flood maps identify the site has a low risk of experiencing surface water flooding, refer to Appendices B and F for EA and SWMP flood maps. The SWMP does not identify any surface water flooding incidents in the vicinity of the site. There are therefore no mitigation measures required to address surface water flooding and it will not be addressed further in this report.
- **Sewer Flooding –** The SWMP identifies there have been between 21 and 50 sewer flooding incidents in the UB8 2 post code between 2001 and 2011. Thames Water provided postcode linked data on records of sewer flooding, however more detailed data on the location and cause was not available. The drainage arrangement is remaining as existing, and a car park is located at ground floor level (with residential dwellings on the 1st and 2nd floors), therefore no mitigation measures are required to address sewer flooding and it will not be addressed further in this report.

Flood Mechanism	Source	Flood Risk to the Development	Mitigation Required?
Fluvial	Local Watercourses	Low	No
Tidal	N/A	Low	No
Groundwater	Underlying geology and groundwater levels	Low	No
Surface Water / Overland Flow	Runoff from surrounding elevated land and highway corridors	Low	No
Sewer Flooding	Local Sewers	Low	No

Table 3.1: Flood Risk Summary Table

4 Conclusion

4.1 The application site is located in a low risk flood zone 1, which has a low probability risk of experiencing flooding from fluvial or tidal sources.

4.2 The development is also at a low risk of flooding from the following sources (refer to table 4.1); Groundwater, Surface Water Run-Off and Infrastructure Failure.

Flood Mechanism	Source	Flood Risk to the Development	Mitigation Required?
Fluvial	Local Watercourses	Low	No
Tidal	N/A	Low	No
Groundwater	Underlying geology and groundwater levels	Low	No
Surface Water / Overland Flow	Runoff from surrounding elevated land and highway corridors	Low	No
Sewer Flooding	Local Sewers	Low	No

Table 4.1: Flood Risk Summary Table

4.3 The levels and extent of the existing external hard standing areas is being reduced, as such the existing surface water drainage arrangement will remain.

4.4 The conclusion of this flood risk assessment is that the development is not at risk of flooding and can be safely carried out without increasing the risk of flooding to downstream / surrounding properties.

APPENDIX A: Site Location Plan

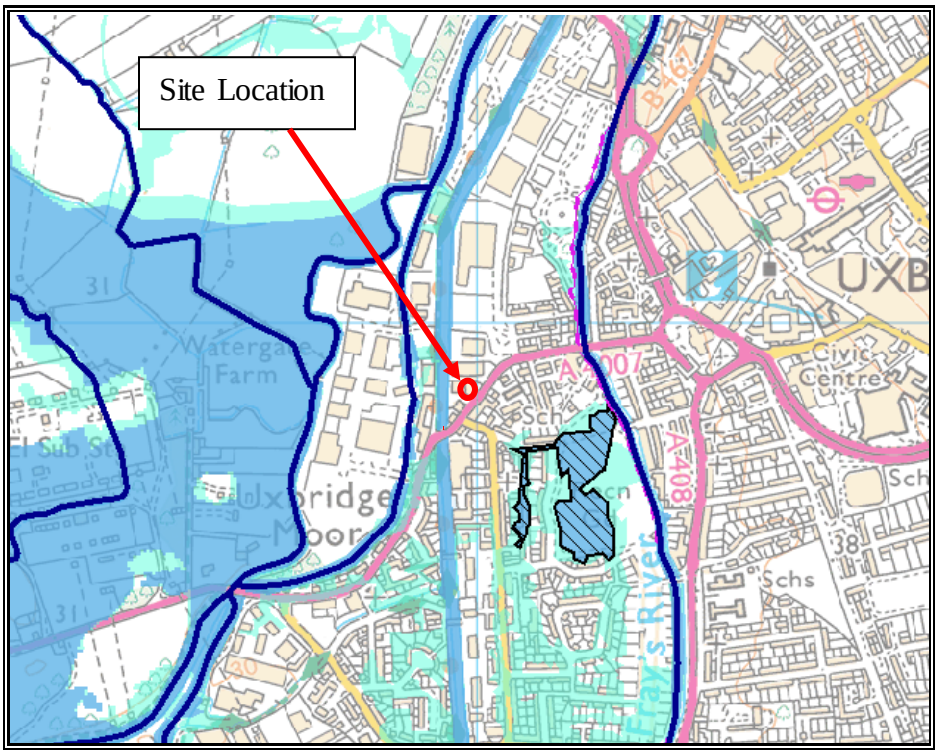


PROJECT:	Tavistock House, 5 Rockingham Road Uxbridge. UB8 2UB
DWG TITLE:	Location Plan
DWG No:	431.016.050
SCALE:	1:1250 @ A4
DATE:	August 2016

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APPENDIX B: EA Indicative Flood Maps

ENVIRONMENT AGENCY FLOOD MAP
(July 2016)
Tavistock House, Uxbridge



London Borough of Hillingdon, Post code: UB8 2XN Co-ords: E504984, N183956

1. Floodplain

A floodplain is the area that would naturally be affected by flooding if a river rises above its banks, or high tides and stormy seas cause flooding in coastal areas.
There are two different kinds of area shown on the Flood Map. They can be described as follows:-

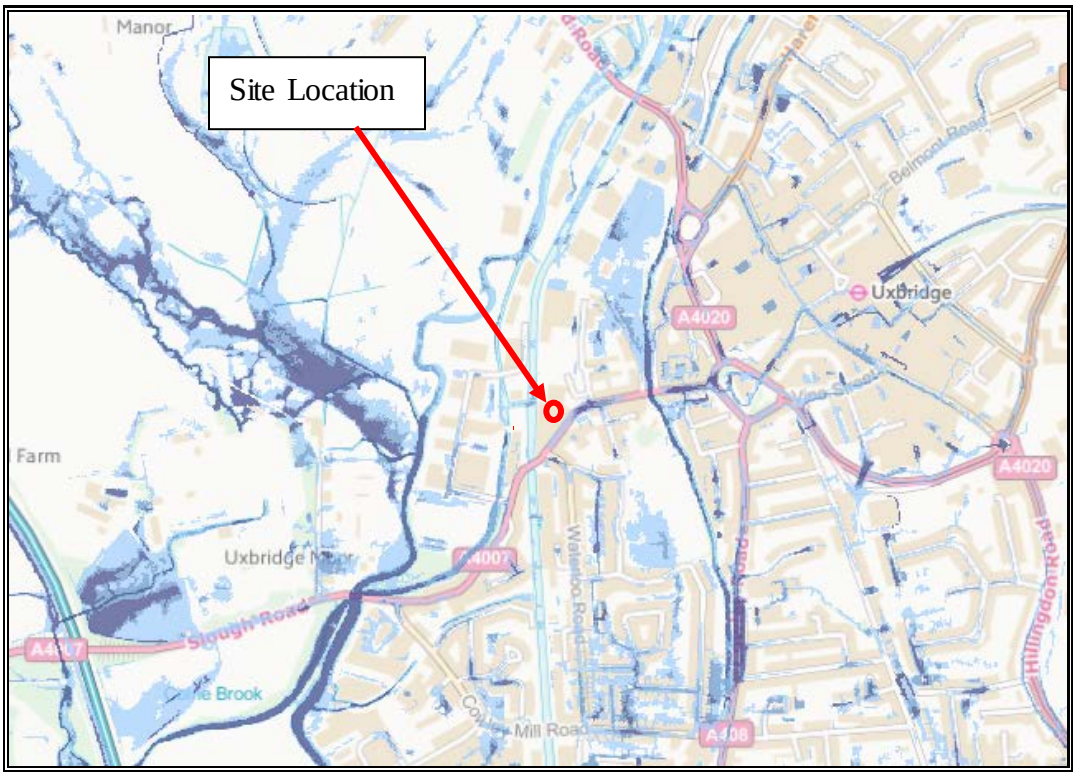
- Dark blue shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This area could be flooded:
- from the sea by a flood that has a 0.5% (1 in 200) or greater chance of happening each year
- or from a river by a flood that has a 1% (1 in 100) or greater chance of happening each year.
- Light blue shows the additional extent of an extreme flood from rivers or the sea. These outlying areas are likely to be affected by a major flood, with up to a 0.1% (1 in 1000) chance of occurring each year.

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements.
For a fuller explanation of flood likelihood, follow the link at the bottom of the page.

2. Flood Defences
The purple line shows all flood defences built in the last five years to protect against river floods with a 1% (1 in 100) chance of happening each year, or floods from the sea with a 0.5% (1 in 200) chance of happening each year, together with some, but not all, older defences and defences which protect against smaller floods. Flood defences that are not yet shown, and the areas that benefit from them, will be gradually added.

Hatched areas benefit from the flood defences shown, in the event of a river flood with a 1% (1 in 100) chance of happening each year, or a flood from the sea with a 0.5% (1 in 200) chance of happening each year. If the defences were not there, these areas would be flooded.

ENVIRONMENT AGENCY SURFACE WATER FLOOD MAP
(July 2016)
Tavistock House, Uxbridge



London Borough of Hillingdon, Post code: UB8 2XN Co-ords: E504984, N183956

Risk of Flooding from Surface Water

Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

The shading on the map shows the risk of flooding from surface water in this particular area.

There are four different kinds of area shown on the Flood Map. They can be described as follows:-

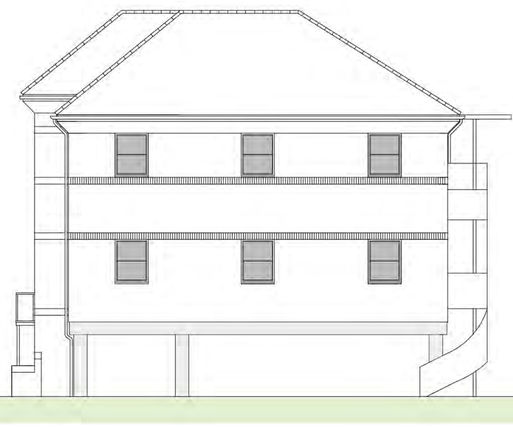
- High Risk Area – Each year this area has a greater than 1in30 (3.3%) chance of flooding from surface water:
- Medium Risk Area – Each year this area has between a 1in100 and a 1in30 (1%-3.3%) chance of experiencing flooding from Surface Water:
- Low Risk Area – Each year this area has a between a 1in1000 and 1in100 (0.1%-1%) chance of experiencing flooding from Surface Water.
- Very Low Risk Area – Each year this area has a less than 1in1000 (0.1%) chance of experiencing flooding from Surface Water.

APPENDIX C: Existing Plans and Elevations

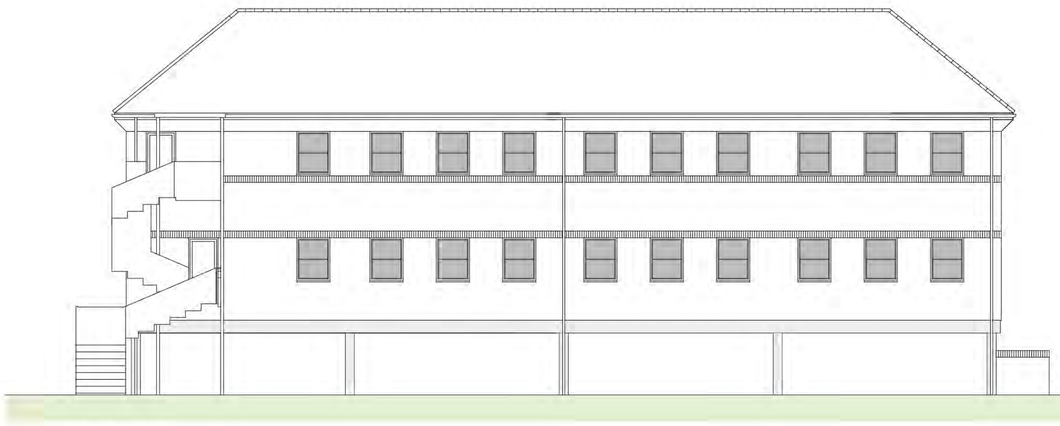
NOTE: The Project Design Proposals shall have no influence upon the External Appearance of the Building



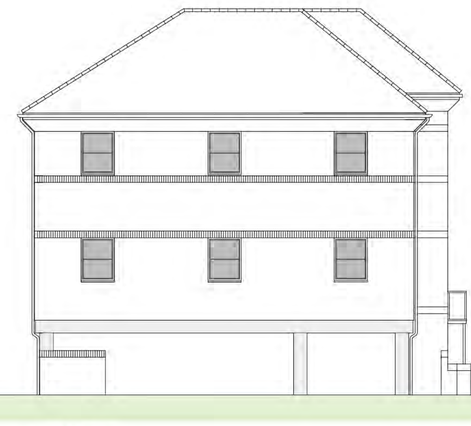
South Elevation (Rockingham Road)



East Elevation



North Elevation



West Elevation

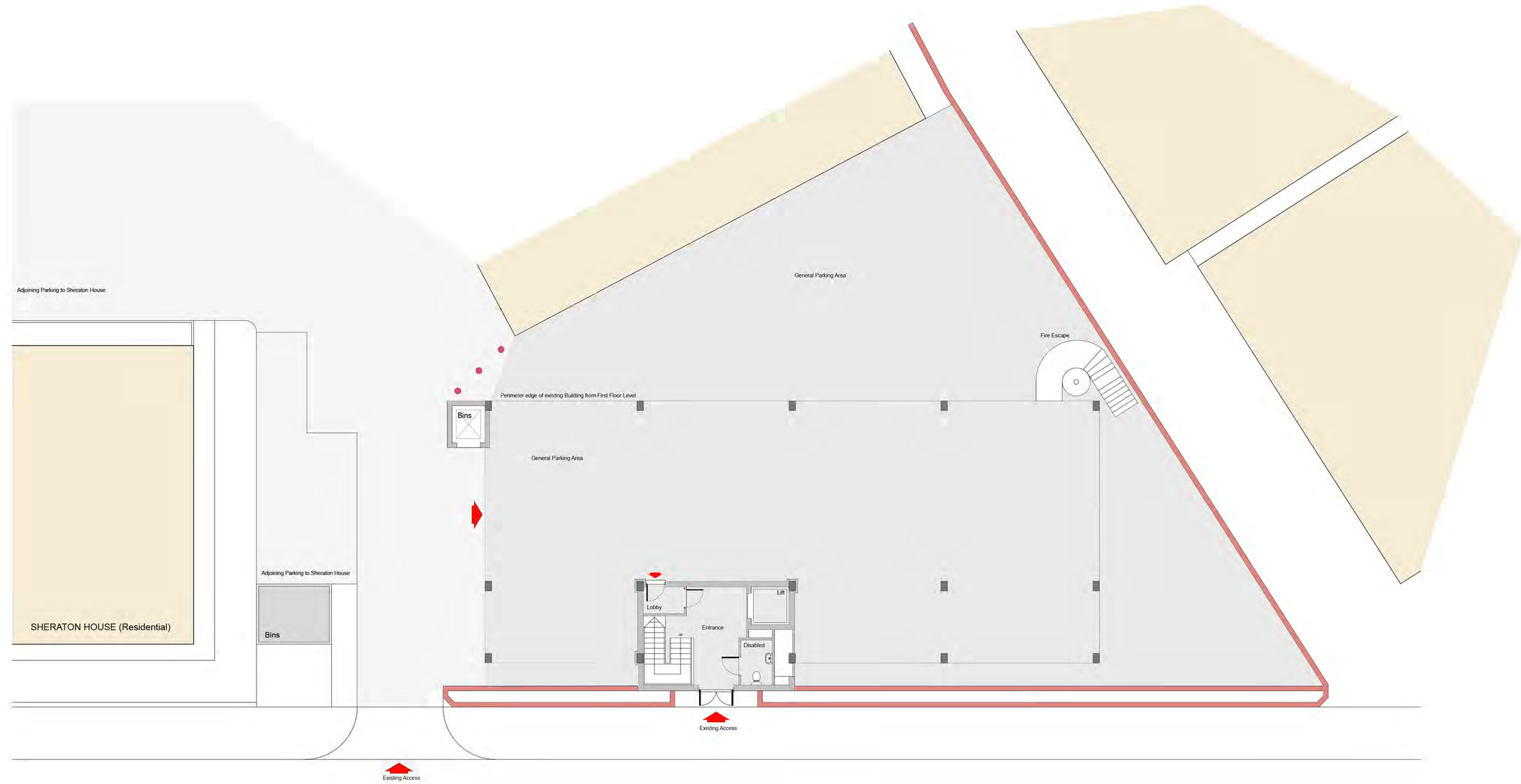
1:100 Scale @ A1 Landscape
0 1 2 3 4 5m

North

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Amendments	Drawing No.	Drawing Title	Project	Client	Date	Scale	Drawn
	431.016.057	Existing Elevations	Tavistock House, 5 Rockingham Road, Uxbridge. UB8 2UB	Mr J Emery	August 2016	1:100 & A1 Landscape	STA



1:100 Scale @ A1 Landscape
0 1 2 3 4 5m

North

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Amendments	Drawing No.	Drawing Title	Project	Client	Date	Scale	Drawn
	431.016.051	Existing Ground Floor & Site Layout	Tavistock House, 5 Rockingham Road, Uxbridge. UB8 2UB	Mr J Emery	August 2016	1:100 & A1 Landscape	STA

APPENDIX D: Proposed Ground Floor Plan