



3 VIVEASH CLOSE

SQUIRRELS TRADING ESTATE, HAYES, LONDON, UB3 4RY

SURFACE WATER DRAINAGE ASSESSMENT

FOR

GENERAL FOOD TRADING CO LTD



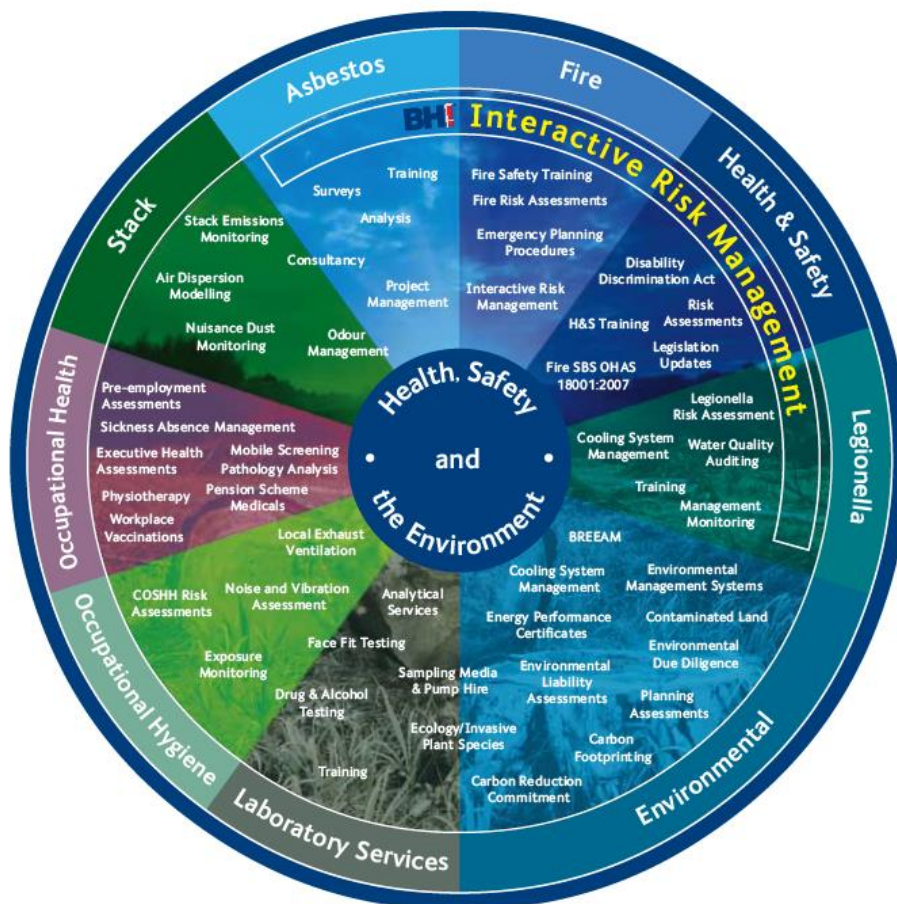
April 2017

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RPS HEALTH, SAFETY & ENVIRONMENT

General Notes

1. The following notes should be read in conjunction with the report:
2. This report contains only that available factual data for the site, which was obtained from the sources, described in the text. These data were related to the site on the basis of the location information made available to RPS by the client.
3. The assessment of the site is based on information supplied by the client. Relevant information was also obtained from other sources.
4. The report reflects both the information provided to RPS in documents made available for review and the results of observations and consultations by RPS staff.
5. Where data have been supplied by the client or other sources, including that from previous site audits or investigations, it has been assumed that the information is correct but no warranty is given to that effect. While reasonable care and skill has been applied in review of this data no responsibility can be accepted by RPS for inaccuracies in the data supplied.
6. This report is prepared and written in the context of the proposals stated in the introduction to this report and its contents should not be used out of context. Furthermore new information, changed practices and changes in legislation may necessitate revised interpretation of the report after its original submission.
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1 INTRODUCTION

- 1.1 RPS was commissioned to undertake a Surface Water Drainage Assessment of *3 Viveash Close, Squirrel Trading Estate, Hayes, London, UB3 4RY* in relation to the proposed redevelopment of the site into a part eight, part thirteen storey building comprising commercial space and residential units.
- 1.2 The aim of this Assessment is to consider the feasibility of a range of Sustainable Drainage Systems (SuDS) techniques for incorporation within the development scheme, to calculate the attenuation volume required to achieve the required reduction in runoff rates and to produce a conceptual SuDS strategy illustrating how the attenuation could be provided. The report has been produced in accordance with the guidance detailed in the National Planning Policy Framework (NPPF) and its associated Planning Practice Guidance (PPG). Reference has also been made to the CIRIA SUDS manual (C753) and the London Borough of Hillingdon Strategic Flood Risk Assessment (SFRA).
- 1.3 The site is not located within an Internal Drainage Board (IDB) District.
- 1.4 This report is not intended to provide formal details of the final drainage design for the development. However, it provides information regarding the capabilities of the conceptual surface water drainage strategy to meet the requirements of the NPPF.
- 1.5 The desk study was undertaken by reference to information provided / published by the following bodies:
- EA
 - British Geological Survey (BGS)
 - Ordnance Survey (OS)
 - Thames Water
- 1.6 A site visit was conducted by RPS as part of the Phase I report on 16th January 2017.

2 PLANNING POLICY CONTEXT

National Planning Policy

- 2.1 In a written statement to Parliament on 18th December 2014, the Secretary of State for Communities and Local Government strengthened existing planning policy on sustainable drainage, making it clear that sustainable drainage systems should be provided in new developments, unless demonstrated to be inappropriate. The statement requires that:

'in considering planning applications, local planning authorities should consult the relevant lead local flood authority on the management of surface water; satisfy themselves that the proposed minimum standards of operation are appropriate and ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance over the lifetime of the development. The sustainable drainage system should be designed to ensure that the maintenance and operation requirements are economically proportionate'.

- 2.2 These changes took effect from 6 April 2015. This policy applies to all developments of 10 homes or more and to major commercial development.
- 2.3 Defra published their 'Non-statutory technical standards for sustainable drainage systems', in support of the above policy changes, in March 2015.

Regional Planning Policy

- 2.4 The development site is within the London Borough of Hillingdon which is covered by The London Plan, as amended March 2015. The London Plan contains various policies pertaining to drainage, the relevant aspects of which are reproduced below.

Policy 5.11 Green roofs and development site environs

- 2.5 This policy promotes the use of green roofs and walls where feasible, to deliver objectives including sustainable urban drainage amongst other wider environmental and sustainability benefits.

Policy 5.13 Sustainable drainage

- 2.6 This policy states 'development should utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so, and should aim to achieve Greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:

- store rainwater for later use;

- *use infiltration techniques, such as porous surfaces in non-clay areas;*
- *attenuate rainwater in ponds or open water features for gradual release;*
- *attenuate rainwater by storing in tanks or sealed water features for gradual release;*
- *discharge rainwater direct to a watercourse;*
- *discharge rainwater to a surface water sewer/drain; and*
- *discharge rainwater to the combined sewer.*

Drainage should be designed and implemented in ways that deliver other policy objectives of the Plan, including water use efficiency and quality, biodiversity, amenity and recreation.'

- 2.7 The London Plan is supported by the Supplementary Planning Guidance: Sustainable Design and Construction, April 2014. In relation to Surface Water Flooding and Sustainable Drainage, the guidance states that developers should design Sustainable Drainage Systems (SuDS) that incorporate attenuation for surface water runoff. The minimum expectation is to achieve 50% attenuation of the undeveloped site's surface water run off at peak times. The Mayor's priority is to achieve greenfield runoff rates. Development on greenfield sites must maintain a greenfield runoff rate. Development on previously developed sites should have a runoff rate no greater than three times the calculated greenfield runoff rate.

Local Planning Policy

- 2.8 The London Borough of Hillingdon Local Plan contains the following Policies relating to flood risk and drainage:

- 2.9 *Policy EM1: Climate Change Adaptation and Mitigation*

[..] The Borough will ensure that climate change adaptation is addressed at every stage of the development process by:

10. Locating and designing development to minimise the probability and impacts of flooding.

11. Requiring major development proposals to consider the whole water cycle impact which includes flood risk management, foul and surface water drainage and water consumption.

[...] 13. Promoting the use of living walls and roofs, alongside sustainable forms of drainage to manage surface water run-off and increase the amount of carbon sinks .

- 2.10 *Policy EM6: Flood Risk Management*

The Council will require new development to be directed away from Flood Zones 2 and 3 in accordance with the principles of the National Planning Policy Framework (NPPF). The

subsequent Hillingdon Local Plan: Part 2 -Site Specific Allocations Local Development Document will be subjected to the Sequential Test in accordance with the NPPF.

Sites will only be allocated within Flood Zones 2 or 3 where there are overriding issues that outweigh flood risk. In these instances, policy criteria will be set requiring future applicants of these sites to demonstrate that flood risk can be suitably mitigated.

The Council will require all development across the borough to use sustainable urban drainage systems (SUDS) unless demonstrated that it is not viable. The Council will encourage SUDS to be linked to water efficiency methods. The Council may require developer contributions to guarantee the long term maintenance and performance of SUDS is to an appropriate standard.

2.11 Policy EM7: Biodiversity and Geological Conservation

'Hillingdon's biodiversity and geological conservation will be preserved and enhanced with particular attention given to:

[...] 6. The provision of green roofs and living walls which contribute to biodiversity and help tackle climate change.

7. The use of sustainable drainage systems that promote ecological connectivity and natural habitats. [...]

2.12 The London Borough of Hillingdon SFRA identifies and maps flood risk from all sources at a borough-wide scale as well as providing guidance on producing site specific FRAs. The SFRA contains the following relevant requirements:

- Sustainable Drainage Systems must be included in new developments where possible as a way to manage surface water.
- The London Plan Policy 4A.14 states that developers should aim to achieve greenfield run off from their site through incorporating rainwater harvesting and sustainable drainage. Boroughs should encourage the retention of soft landscaping in front gardens and other means of reducing, or at least not increasing, the amount of hardstanding associated with existing homes.
- Runoff rates should be restricted to greenfield runoff rates in areas known to have a history of sewer flooding.

3 CONSULTATION

- 3.1 The public sewer network within the vicinity of the site is operated by Thames Water. A pre-development enquiry has been made to Thames Water and the response is currently awaited.
- 3.2 The conceptual surface water attenuation scheme presented in this report (see Section 8) is intended to demonstrate that a feasible surface water attenuation solution can be achieved on the site to meet the requirements of the NPPF. The detailed drainage design for the proposed development will be finalised in consultation with Thames Water at detailed design stage.
- 3.3 The LLFA is the London Borough of Hillingdon. Although Hillingdon Borough Council were unable to comment on the SuDS requirements for the site unless queries were as part of formal pre-application advice, RPS are aware that Hillingdon Borough Council require 'greenfield' rates to be targeted for new development and that a 40% allowance should be applied to drainage calculations to account for the effects of climate change. A lowest practical minimum discharge rate of 2 l/s is considered acceptable to ensure a self-cleansing system.
- 3.4 The site is not located within an IDB District.

4 SITE DESCRIPTION

Site Description

- 4.1 The site is located at National Grid Reference TQ 09840 79305. It is irregular in shape, occupying an area of approximately 0.25 hectares. A site location plan is provided in Figure 1.
- 4.2 The site is currently occupied by industrial units and associated hardstanding areas.
- 4.3 Vehicular access to the site is currently from Viveash Close. Pedestrians can access the industrial units on site through an entrance on the western elevation of the building.
- 4.4 The site is currently occupied by 70% building footprint, 15% hardstanding area and 15% overgrown vegetation.

Topography

- 4.5 A topographic survey carried out in January 2017 indicates that the site slopes gently from around 31.97m AOD in the north to 31.63m AOD in the south. The topographic survey is located in Appendix A.

5 ENVIRONMENTAL SETTING

Designated Areas

- 5.1 There are no designated sensitive areas (e.g. Special Area of Conservation (SAC), Special Protection Area (SPA) or Site of Special Scientific Interest (SSSI)) within close proximity to the site.

Hydrological Setting

- 5.2 Reference to OS Mapping indicates that the nearest surface water feature is the Grand Union Canal which is located 120m to the north of the site.
- 5.3 The nearest main river is the River Crane located 610m to the east of the site.
- 5.4 The EA flood map (available online) indicates that the site is located within Flood Zone 1, whereby the annual probability of flooding from fluvial / tidal sources is classified as less than 1 in 1000. The EA Flood Map is provided in Figure 2.

Hydrogeological Setting

- 5.5 Reference to the BGS online mapping (1:50,000 scale) indicates that the site is underlain by the Lynch Hill Gravel Member, comprising sand and gravel. This is underlain by the London Clay Formation.
- 5.6 A BGS borehole located 90m to the south east of the site encountered groundwater at a depth of 8.59m below ground level (bgl).
- 5.7 The soils are described as 'freely draining slightly acid loamy soils' by the National Soils Research Institute.
- 5.8 According to the EA's online Groundwater Vulnerability Mapping, the Lynch Hill Gravel Member at the surface is classified as a Principal Aquifer. These formations provide a high level of water storage and may support water supply and/or river base flow on a strategic scale. The underlying London Clay Formation is classified as an Unproductive Stratum. These formations have a low permeability and have negligible significance for water supply or river base flow.
- 5.9 Reference to the EA's online groundwater Source Protection Zone maps indicates that the site is not located within a groundwater Source Protection Zone.

6 PROPOSED DEVELOPMENT

- 6.1 The proposed development scheme comprises one building with separate eight storey and thirteen storey residential blocks, connected at ground floor level by a parking area and commercial space. Development plans are shown in Appendix B.
- 6.2 Vehicular access to the ground floor parking within the development will be off Viveash Close to the west. Pedestrian access points to the ground floor commercial units and upper floor residential units will be on the north elevation of the building.
- 6.3 The ground floor of the development will consist of residential and commercial parking, cycle racks and cycle stores, refuse rooms, a water tank room, commercial space, a residential lobby area, W.Cs, an energy centre, stair and elevator cores and hardstanding / landscaped areas surrounding the building. The ground floor will also contain a mezzanine level consisting of commercial space, 'combilift' parking and stair and elevator cores.
- 6.4 The first floor of the building will consist of commercial space within western Block 'A' and residential units and stair and elevator cores within the eastern Block 'B'. The blocks will be connected by green amenity space on the roof of the ground floor. The second floor will consist of residential units and stair and elevator cores within both blocks and green amenity space on the roof of the first floor of Block A. Floors three to seven will consist of residential units and stair and elevator cores in both blocks. Floor eight will consist of residential units and stair and elevator cores in Block A whilst the roof of Block B will consist of a play area and PV / plant areas. Floors eight to twelve of Block A will consist of residential units and stair and elevator cores. The roof of Block A will consist of a play area and PV / plant areas.
- 6.5 Following redevelopment, the site will be occupied approximately 80% by building footprint, 15% by hardstanding and 5% by landscaping.
- 6.6 The proposed residential use at the site is classified as 'more vulnerable' and the proposed commercial use is classified as 'less vulnerable' within the PPG.
- 6.7 At this stage, it is anticipated that surface water runoff will continue pass to the surface water sewer beneath Viveash Close, as at present. The acceptable discharge rate to the existing mains sewer will need to be agreed with Thames Water in consultation with the LLFA.
- 6.8 The potential to provide surface water attenuation, including the use of SuDS, has been considered as part of the preliminary design process (see Section 8 – Surface Water Management).

7 EXISTING DRAINAGE

- 7.1 Reference to Thames Water plans of public sewers (shown in Appendix C) indicates that the site is served by foul and surface water sewers beneath Viveash Close. A manhole connected to the surface water sewer on Viveash Close has a cover level of 31.66m AOD and an invert level of 30.7m AOD.

8 SURFACE WATER MANAGEMENT

Introduction

- 8.1 Under the PPG, sustainable drainage systems should be provided for major developments unless demonstrated to be inappropriate. The non-statutory technical standards for sustainable drainage systems (Defra, March 2015) state that the peak runoff rate from the development for the 1 in 1 year and 1 in 100 year rainfall event should not exceed the equivalent greenfield rate for greenfield developments, or the pre-development rate for previously developed sites. Where reasonably practicable, the runoff volume from the development for the 1 in 100 year, 6 hour rainfall event should be constrained to the greenfield volume for greenfield developments, and the pre-development volume for previously developed sites.
- 8.2 The London Borough of Hillingdon Local Plan requires the use of SuDS in major developments. This is supported by the London Plan which promotes the use of SuDS in all developments, and states that greenfield runoff rates should be targeted.
- 8.3 The QBAR greenfield discharge rate for the site has been calculated as 0.4 litres / second using WinDes Micro-Drainage modelling. On the basis that greenfield runoff rates should be targeted where feasible and also to ensure a self-cleansing system, a target discharge rate of 2l/s is considered appropriate.
- 8.4 Surface water calculations have been undertaken using Windes Micro-drainage modelling to establish the attenuation requirement in order to achieve 'greenfield' runoff rates. The proposed impermeable area is 2,340m². In order to attenuate runoff from the site during a 1 in 100 year plus 40% climate change event, whilst meeting the required runoff rate of 2 l/s, it has been calculated that 140.5m³ of attenuation would be required. The micro-drainage calculations used to calculate this requirement are provided in Appendix D.

Consideration of Sustainable Drainage Systems

- 8.5 The potential for the use of SuDS has been considered at this stage in accordance with the SuDS Hierarchy:

		<i>Suitability for use at the Site</i>	<i>Proposed?</i>	<i>Comments</i>
SuDS Hierarchy	<i>Swales, Detention Basins and Ponds</i>	Given the limited size of the site, large scale attenuation features such as swales, detention basins and ponds are not considered appropriate.	N	Large scale attenuation features have not been considered further.
	<i>Soakaways</i>	BGS mapping indicates that the site is underlain by the Lynch Hill Gravel Member, which is likely to be of a high permeability. Based on the reported geology, soakaways could provide a feasible method for the disposal of surface water runoff from the site.	N	Building Regulations advise that soakaways should not be used within 5m of buildings and Network Rail specify that soakaways should not be used within 20m of a railway boundary. Given that the site will be occupied mostly by built footprint, it is not feasible to include soakaways as a method of attenuation.
	<i>Rainwater Harvesting</i>	Given the large number of residential units within the development there is potential for harvested rainwater to be utilised.	Y	The attenuation benefits provided through the use of rainwater harvesting would only be realised when the tanks were not full. Limited rainwater harvesting will be included in the proposed development, to be used in the concierge / commercial toilets. The benefits of this will be quantified at detailed design stage.
	<i>Permeable/Porous Paving</i>	There are limited external areas which are not covered by canopy in which permeable paving may be suitable. Additionally, infiltrating permeable paving would not be suitable within close proximity of the building or railway land.	N	Permeable paving is not proposed.

	<i>Suitability for use at the Site</i>	<i>Proposed?</i>	<i>Comments</i>
Green Roofs	The amenity roof areas could provide opportunity for the inclusion of green roofs.	Y	Brown roofs are proposed in the PV / plant roof areas at Levels 8 and 13. Further details will be available following confirmation of the PV areas and therefore these will be accounted for in detailed drainage design. It is also proposed to include additional areas of garden and planters at first and second floor levels, these could provide attenuation benefits through storage and evapotranspiration.
Modular Underground Attenuation Tanks	There is potential for an underground attenuation tank to be included. The use of the ground floor as a car park will allow for easy access to carry out maintenance.	Y	An underground attenuation tank has been proposed to provide the required attenuation for the development.

Table 1 - Suitability of SuDS

Conceptual Surface Water Attenuation Scheme

- 8.6 On the basis of the WinDes calculations above, a total attenuation volume of 140.5m³ will be required to achieve the required reduction in run-off.
- 8.7 It is proposed to provide this attenuation within an underground attenuation tank. The proposed tank will have the potential to provide 141.44m³ of attenuation given an area of 272m² and proposed depth of 0.52m. Discharge from the tank will be restricted by a Hydrobrake to a rate of 2 l/s. It is acknowledged that additional attenuation may be provided by the rainwater harvesting tank and the brown roofs, these will be quantified at detailed design stage. A conceptual drainage plan showing the potential areas for the inclusion of SuDS has been included in Appendix E.
- 8.8 Whilst it is proposed to include rainwater harvesting, given that the proposed development will consist mainly of built footprint, the potential for a significant reduction in runoff volumes is limited, for example through the use of soakaways or other infiltration techniques.
- 8.9 Following the Drainage Hierarchy, the potential for storage and infiltration of runoff has been considered. Storage within open features and infiltration methods are not feasible given the site constraints. However, storage will be provided within the attenuation tank for gradual release.

Additional attenuation will be provided through rainwater harvesting and in brown roofs. The methods will ensure that runoff is managed as close to the source as possible. Runoff will be discharged to the nearby surface water sewer to the west of the site beneath Viveash Close (as at present) which is also in accordance with the Hierarchy. The necessary consents will be obtained from Thames Water with whom the final discharge rate would be agreed.

- 8.10 Consideration will be given at detailed design stage to any pollution prevention measures, if required, to ensure that there is no adverse impact of the development on the receiving watercourse (following discharge to the nearby surface water sewer). It is noted that the majority of the site will be occupied by built footprint, so runoff will either be from the roof or the external areas where no car parking is proposed (i.e. limited potential for pollution).

Summary

- 8.11 Overall, a reduction in runoff rates to the lowest practical minimum rate has been achieved through the use of an underground attenuation tank. Additional attenuation and ecological benefits will be provided through the incorporation of brown roofs and rainwater harvesting. As a result of the proposed measures, there will be a significant reduction in flood risk within the area.

Event Exceedence

- 8.12 WinDes modelling has shown that the proposed tank will provide storage up to and including the 1 in 100 year plus climate change event, with no surcharging of the system expected.
- 8.13 In an event exceeding this magnitude, detailed drainage design will identify mitigation measures to ensure that the resulting above-ground flooding will be confined to temporary shallow flooding on-site and will not affect the buildings on site or significantly increase flood risk to off-site locations.
- 8.14 Event exceedence planning will be undertaken as part of the final design process. Suitable mitigation measures will be incorporated into the development to ensure water is retained on-site should surcharging of on-site drains occur during extreme rainfall events.

Maintenance of Sustainable Drainage Systems

- 8.15 The detailed design of the surface water attenuation scheme will take account of the construction, operation and maintenance requirements of surface and subsurface components. Access will be allowed for future maintenance of SuDS elements. A Maintenance Plan has been produced and is included within Appendix F.

9 SUMMARY AND CONCLUSIONS

- 9.1 The aim of the Surface Water Drainage Assessment is to consider the feasibility of a range of SuDS techniques for incorporation within the development scheme, to calculate the attenuation volume required to achieve the required reduction in runoff rates and to produce a conceptual SuDS strategy illustrating how the attenuation could be provided. The report has been produced in accordance with the guidance in the NPPF. Reference has also been made to the CIRIA SUDS manual (C753) and the SFRA.
- 9.2 Whilst the proposed scheme will result in a decrease in green areas at the site, in order to meet the requirements of the Non-Statutory Technical Standards (i.e. a reduction to greenfield runoff rates), a range of SuDS techniques has been considered for incorporation into the scheme. Drainage calculations have established the attenuation requirement in order to retain runoff generated by the 1 in 100 year plus climate event on site, whilst reducing runoff rates to a 'greenfield' rate of 2 l/s. This report has demonstrated that this requirement can be met by the installation of an underground storage tank. A further reduction in runoff rates (and volumes) will be provided by the inclusion of brown roofs and rainwater harvesting.
- 9.3 Overall, it has been demonstrated that the proposed surface water strategy would achieve a positive reduction in flood risk, meeting London Plan and local policy requirements.

FIGURES

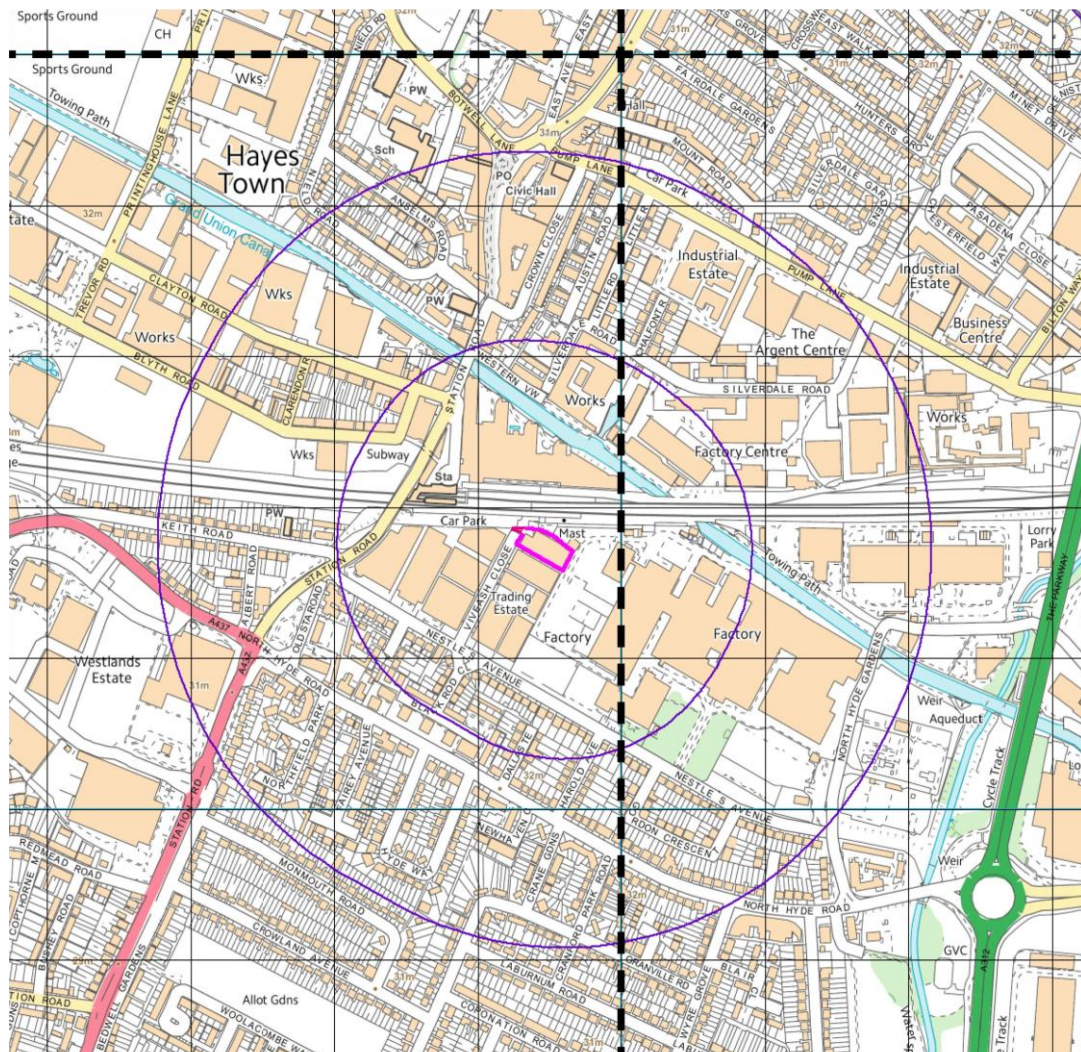


Figure 1: Site Location Plan

Map Date: Current

Scale: Not to scale

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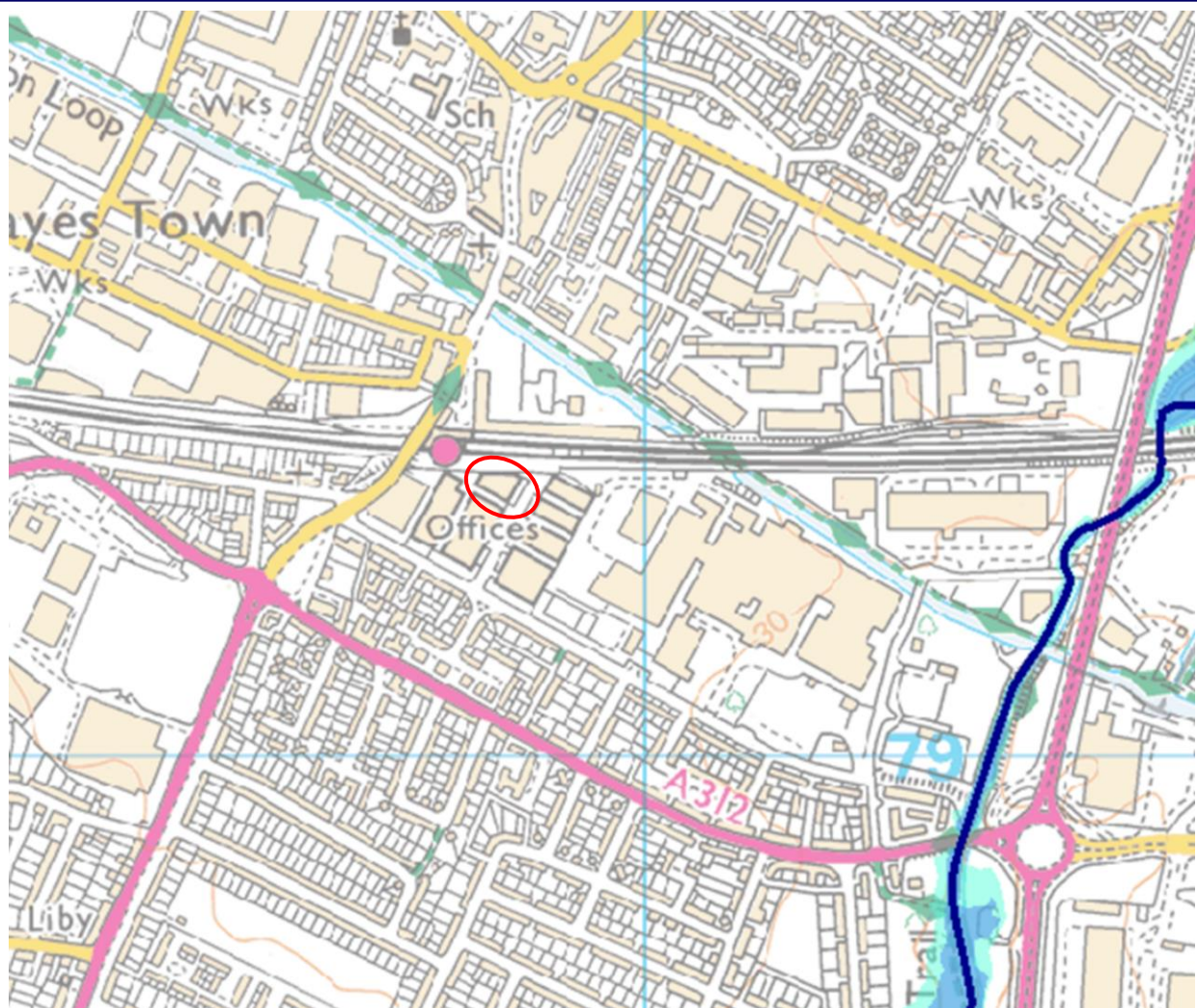


Figure 2: Environment Agency Flood Map

Map Date: Current

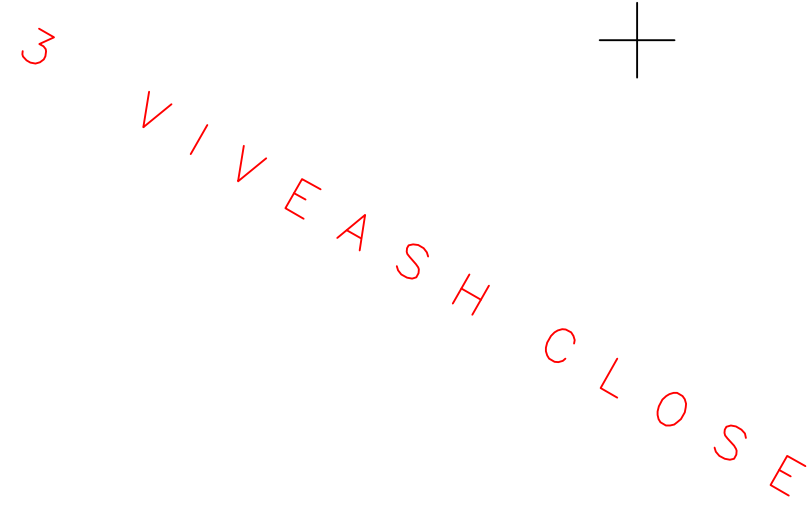
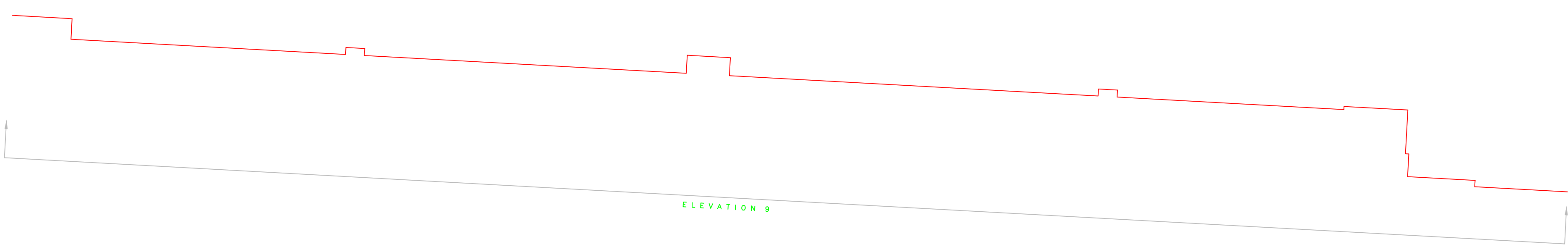
Scale: Not to scale

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APPENDIX A

Topographic Survey



179450.000 N

172402.000 N

B Floor to Bean Height in cms
C Floor to Ceiling Height in cms
Cr. Floor to Crown Height in cms
D Floor to Door Head Height in cms
FC Floor to False Ceiling Height in cms
FF False Floor Level
H Floor to Head Height in cms
S Floor to Sill Height in cms
Spr. Floor to Springer Height in cms

NOTES



TOPOGRAPHICAL SURVEY
UNDERGROUND SERVICE TRACE
GPR SURVEY

NO	DATE	REVISION		
DRAWING NO		L 7882/1 3D	REV	
SCALE		1 : 200 @ A0		
SEE ALSO DWG NOS		L 7882/2 - 5		
SHEET		1 of 2		
REF NO		L 7882		

178302,000 N

DATUM **NOTES**

GRID ORIGIN IS BASED UPON SURVEY STATION 2, FIXED TO THE
ORIGINANCE SURVEY NATIONAL, GRID BY LEICA SMARTNET GPS NETWORK.
A SCALE FACTOR OF 1 APPLIES TO THIS DRAWING.

IN MEASURED DISTANCES ON THE GROUND WITHOUT GPS
WILL BE THE SAME AS THOSE MEASURED ON THIS DRAWING.

LEVELS ARE RELATED TO :-

ORIGINANCE SURVEY GPS ACTIVE NETWORK AND TRANSFORMED
USING THE DATUM IS & OCTRINIS MODEL.

DATUM LEVEL IS LOCATED AT :-

SURVEY STATION 2
HILT SURVEY NAIL IN FOOTPATH OF NESTLE'S AVENUE,
(AS SHOWN ON THE DRAWING)

VALUE GIVEN AS 31.38m (NEWLYN DATUM)

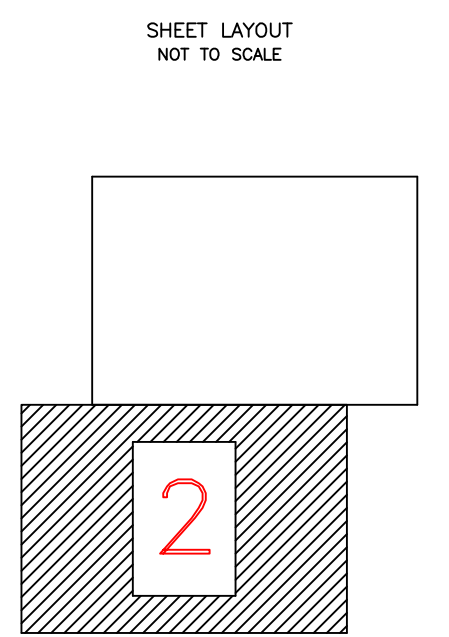
NG REF 509764.336 E 179210.997 N

SURVEY CONTROL STATIONS SHOWN 

[illegible]

B Floor to Beam Height in cms
C Floor to Ceiling Height in cms
Cr. Floor to Crown Height in cms
D Floor to Door Head Height in cms
FC Floor to False Ceiling Height in cms
FF False Floor Level
H Floor to Head Height in cms
S Floor to Sill Height in cms
Spr. Floor to Springer Height in cms

- * Drainage pipe sizes (where shown) have been gauged from the surface for safety reasons and should be regarded as approximate only.
- * Tree species (where shown) should be treated with caution and expert identification is advised.
- * Although this is a digital survey the accuracy and amount of detail shown is only commensurate with the graphical scale of mapping as specified. Care should be exercised when using larger scales.
- * Visible features in the vicinity of the boundaries as shown above, may not represent the extent of legally conveyed ownership.
- * What effort has been made to achieve accuracy on this plan, ORCA/CML, clearly states. Dimensions and street levels should be checked prior to design and construction.
- * Kerb levels have been taken in the bottom of the channel.
- * Areas of dense undergrowth have been marked. These areas will be shown in outline only and marked as 'dense undergrowth' on the plan.



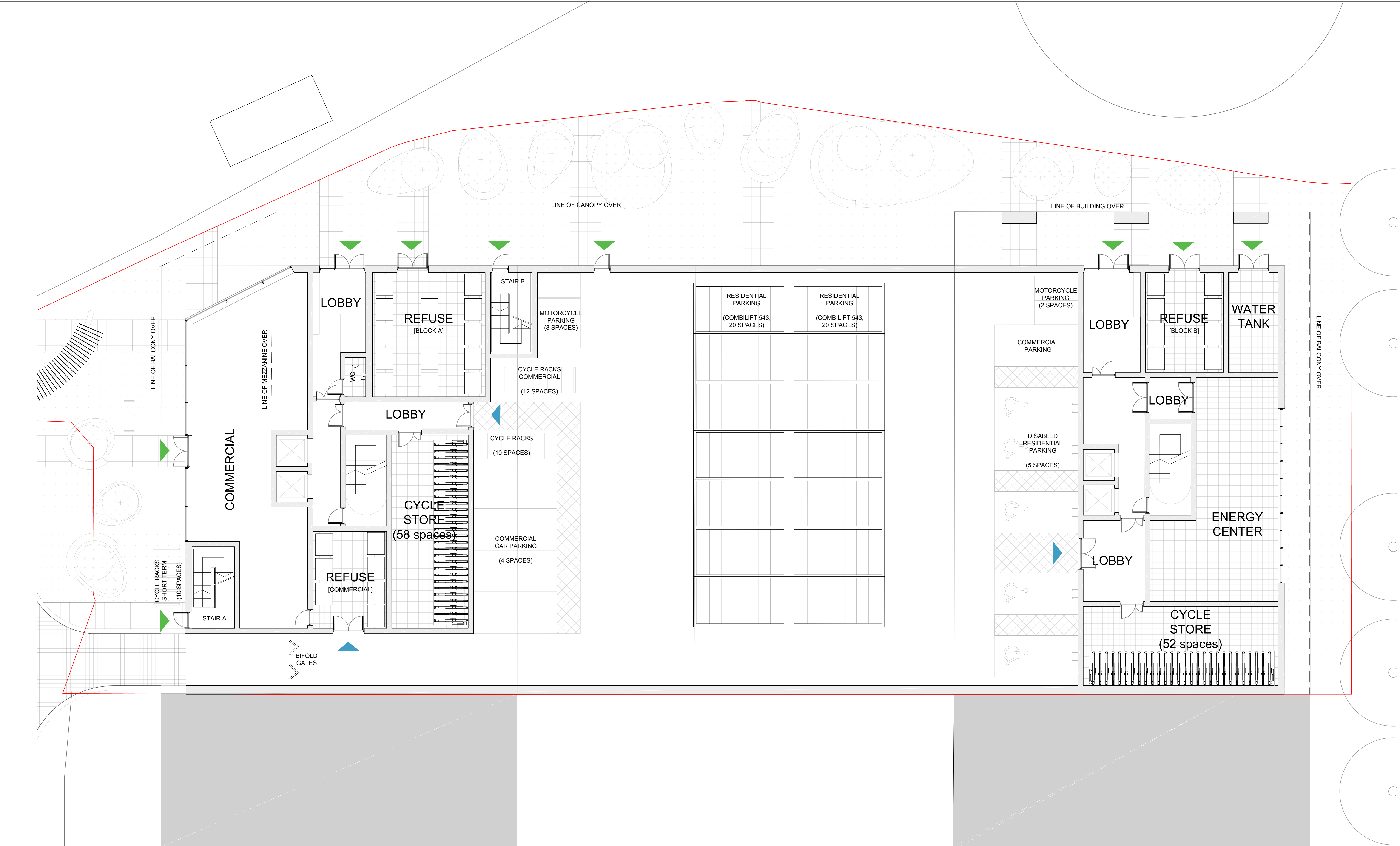
3 VIVEASH CLOSE
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TOPOGRAPHICAL SURVEY
UNDERGROUND SERVICE TRACE
GPR SURVEY

SURVEYED FOR		GENERAL FOOD TRADING CO. LTD 3 WIGASH CLOSE WATTS MOULDEY LEEDS		SURVEYOR		A.E./K.B./S.L.	
				DATE		JAN 2017	
NO.	DATE	REVISION					
DRAWING NO				L 7882/2 3D		REV	
SCALE				1 : 200 @ A0			
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SHEET				2 of 2			
REF NO				L 7882			

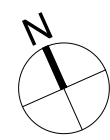
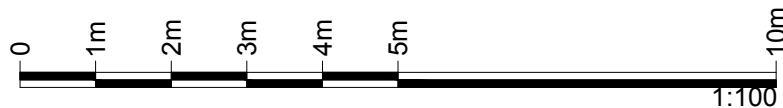
APPENDIX B

Development Plans



notes
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drawing notes

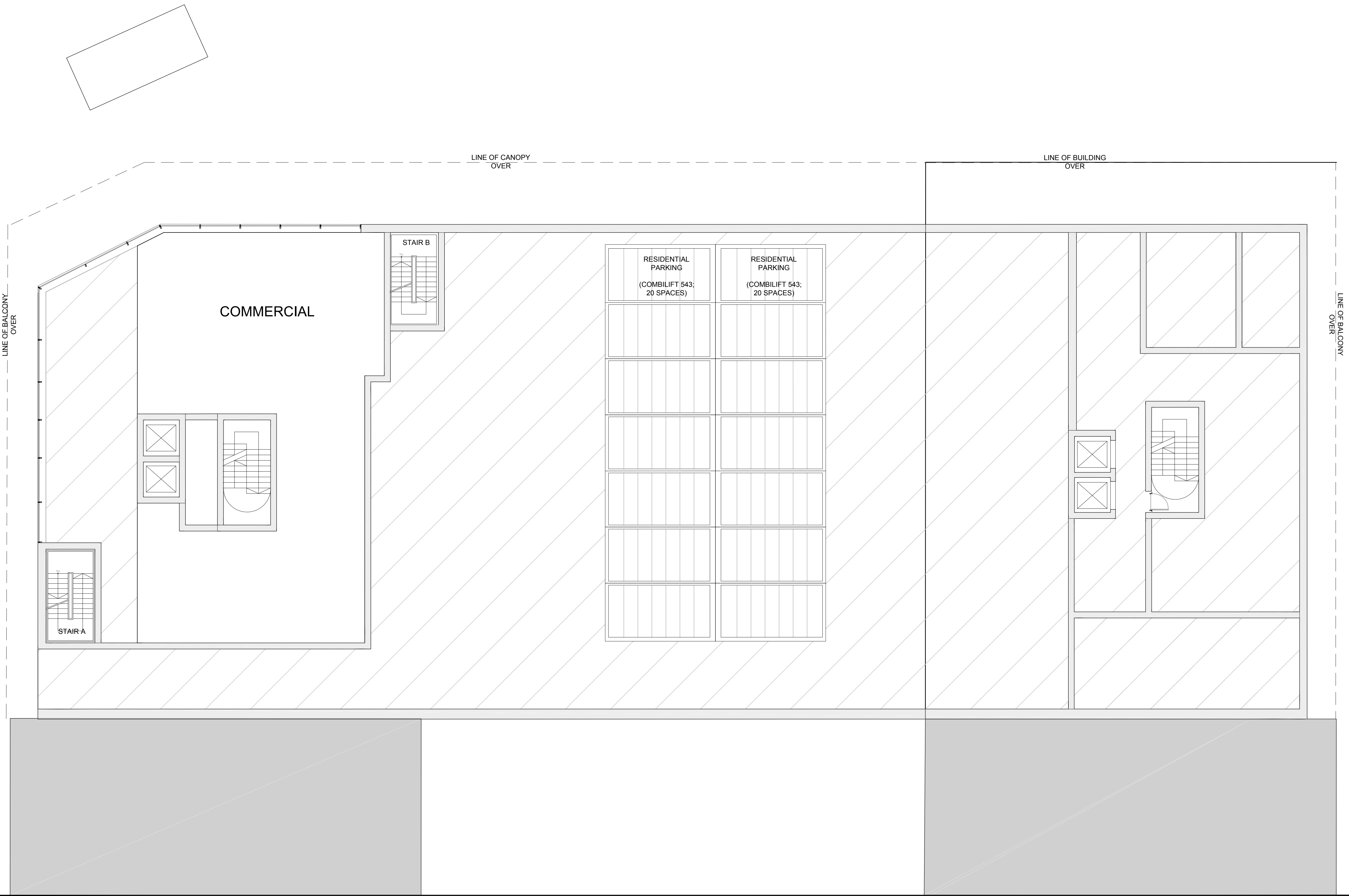


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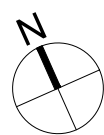
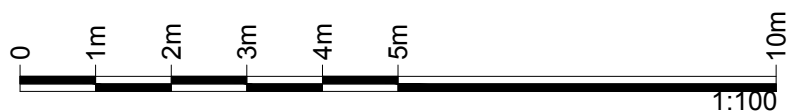
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drawing title
Proposed Ground Floor Plan
PLANNING
scale 1:100@A1
drawn by SC
checked by FBM
date ©NY1
project status revision
DRAWING NUMBER **897** | **P** | **1010**



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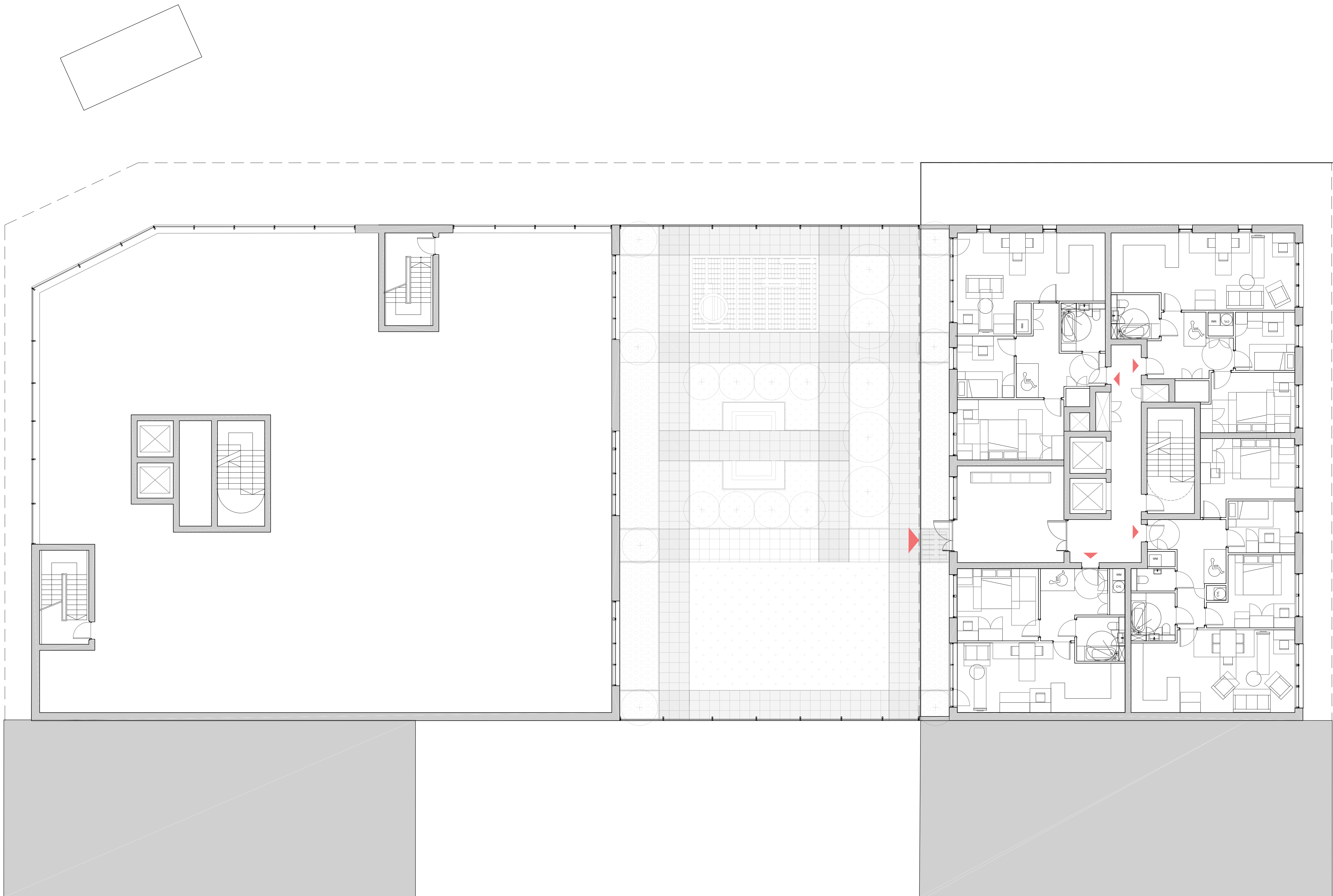
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drawing title
Proposed Ground Floor Mezzanine Plan

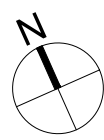
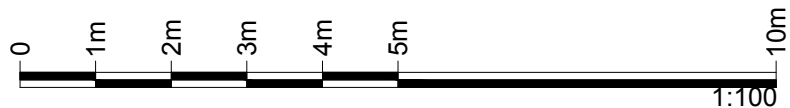
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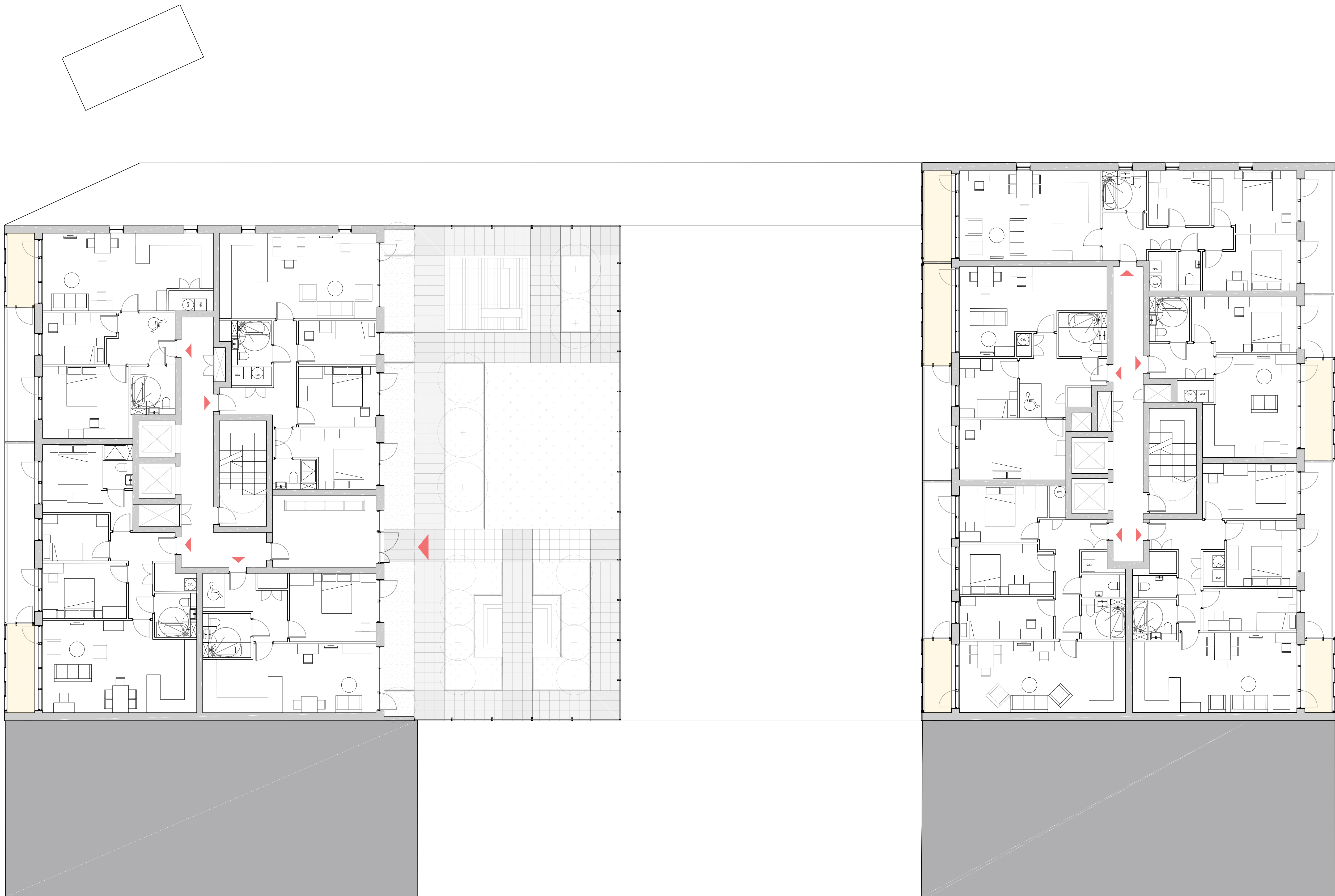
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drawing title
Proposed First Floor Plan

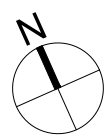
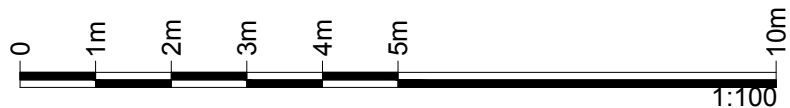
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drawing title
Proposed Second Floor Plan

PLANNING

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