

Flood Risk Assessment and Drainage Strategy

**Lidl Fallowfield
Fallowfield Retail Park
Birchfields Road, Manchester**

Lidl GB Limited

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Prepared by: George Dermentzoglou // **Mohamed Gheit (2024)**

Engineer // Assistant Engineer

Checked by: Will James

Senior Engineer

Approved by: Barry Roberts // **Steve Carmody (2024)**

Associate Director // Managing Director

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The Proposed Site Layout has been updated. Changes in Appendices A, C and J.

10 South Parade
Leeds
LS1 5QS



T: 0113 887 3323
E: info@scptransport.co.uk
W: www.scptransport.co.uk

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1.0 EXECUTIVE SUMMARY

- 1.1 SCP have been commissioned by Lidl GB Limited to provide a site-specific Flood Risk Assessment and Outline Drainage Strategy to support a **full planning application** for a new retail development located on existing **brownfield** developed land on a site at Fallowfield Retail Park, Birchfields Road, Manchester, M14 6FS.
- 1.2 The proposed development comprises of the demolition of an existing building and the construction of a new Lidl food store with car park refurbishments. A copy of the proposed site plan can be found in **Appendix A**. The catchment area assessment for the existing and proposed site are in **Appendix B and C**.
- 1.3 This report covers flood risk and the proposed outline drainage strategy, aiming to illustrate that the proposed development **does not** increase flood risk to the site and the wider area.
- 1.4 Based on National Planning Policy Framework [NPPF] 2023 the development proposal is wholly suitable in terms of flood risk as it is a **less vulnerable** development. [*Refer to Section 6*].
- 1.5 The site is located in Flood Zone 1. This is shown in the flood mapping plans in **Appendix E**.
- 1.6 The Flood Risk Assessment (FRA) has reviewed all sources of flood risk to both the proposed development and to existing adjacent developments.
- 1.7 The proposed site finished floor level will be set at approximately 46.20m.
- 1.8 The proposed Lidl store building has been located on the east side of the site.
- 1.9 Soakaway tests have been completed to identify if discharge by infiltration is an option and the results show that this method of discharge is not possible. [Refer to **Appendix H**]
- 1.10 Discharge into a watercourse via a new connection has been identified as the chosen option. The proposed strategy is to connect into an existing culverted watercourse [Fallowfield Brook] under Birchfield Road, the existing culvert is a 1500mm brick culvert system.
- 1.11 **Attenuation requirements** have been estimated using the Quick Storage Estimate within the MicroDrainage Software. The attenuation volume has been estimated up to the **1 in 100-year return period**, with **45% for climate change**. Attenuation storage tank proposed to have a volume size of **206m³ - 355m³**.
- 1.12 Discharge to United Utilities public sewer is the identified chosen discharge method for foul water on this site.

-
- 1.13 The proposed surface water flow rate is proposed to be 50% betterment of the existing discharge rate. The existing discharge rate for the site has been calculated at 100 litres per second, therefore the proposed discharge rate for the site is proposed at **50 litres per second**.
- 1.14 Foul Water is proposed to be discharged unrestricted to the existing UU public combined sewer network.
- 1.15 The proposed foul water unrestricted flow rate is **6.12 litres per second** at peak rate.

2.0 INTRODUCTION

Appointment

- 2.1 SCP have been commissioned by Lidl GB Limited to provide a site-specific Flood Risk Assessment and Outline Drainage Strategy to support a full planning application for a new retail development located on existing brownfield developed land on a site at Fallowfield Retail Park, Birchfields Road, Manchester, M14 6FS.

Proposed Development

- 2.2 The planning application proposes the construction of a new Lidl store with car park refurbishments located on a brownfield site which formerly contained food stores, retail stores and associated car parks.
- 2.3 The site will have a new food store with associated car parking and access routes.
- 2.4 The existing development consists of circa **0.7652 ha** with 0.7251 ha being impermeable in the form of parking bays, building and loading areas. 7054m² equates to 100 litres per second.
- 2.5 The proposed development consists of circa 0.7652 ha with 0.7054 ha being impermeable in the form of parking bays, building, and loading areas. 50% betterment equates to 50 litres per second.
- 2.6 A plan showing the proposed catchment areas of the site can be found in **Appendix C**.

Objective of Strategy

- 2.7 The objective of the strategy is to undertake a Flood Risk Assessment in accordance with the National Planning Policy Framework 2023 (NPPF).
- 2.8 The detail and complexity of a Flood Risk Assessment should reflect the level of risk to the site. The NPPF 2023 is the official document that regulates the assessment of flood risks and their appropriate mitigations to the planning process.
- 2.9 The 'Technical Guidance to the National Planning Policy Framework' was superseded in 2014 and this has been replaced with Planning Practice Guidance 2022 which is available on the www.gov.uk webservice. In developing a site, Developers and applicants need to consider flood risk to and from the development site.

2.10 A site-specific flood risk assessment should:

- Consider whether a proposed development is likely to be affected by current or future flooding from all sources of flooding [NPPF 2023] rivers, groundwater, and sewers.
- Establish whether it will increase flood risk elsewhere.
- Identify whether the measures proposed to deal with these effects and risks are appropriate.
- Review the evidence for the local planning authority to apply (if necessary) the Sequential Test, and;
- Assess whether the development will be safe and pass the Exception Test, if applicable.

2.11 The site specific flood risk assessment should also be:

- Proportionate to the risk and appropriate to the scale, nature and location of the site;
- Take the impacts of climate change into account;
- Consider both the potential adverse and beneficial effects of flood risk management infrastructure including raised defences, flow channels, flood storage areas and other artificial features together with the consequences of their failure;
- Consider the vulnerability of those that could occupy and use the site, taking account of the Sequential and Exception Tests and the vulnerability classification including arrangements for safe access/ egress;
- Consider and quantify the different types of flooding (whether from natural and human sources and including joint and cumulative effects) and identify flood risk reduction measures, so that assessments are fit for the purpose of the decisions being made;
- Consider the effects of a range of flooding events including extreme events on people, property, the natural and historic environment and river and coastal processes;
- include the assessment of the remaining (known as 'residual') risks after risk reduction measures have been taken into account and demonstrate that this is acceptable for the particular development or land use;
- Consider how the ability of water to soak into the ground may change with development, along with how the proposed layout of development may affect drainage systems;
- Be supported by appropriate data and information, including historical information on previous events.

2.12 This report therefore assesses flood risk to the site and any impact on flood risk to other land because of the development proposals.

Limitations

- 2.13 This report has been prepared for exclusive use by Lidl GB Limited for the purpose of assisting them in evaluating the potential risk of flooding associated with the site and in making a Full Planning Application.
- 2.14 SCP accepts no liability for any use of this document other than by its client and only for the purposes, stated in the document, for which it was prepared and provided. No person other than the client may copy (in whole or in part) use or rely on the contents of this document, without the prior written permission of SCP. Any advice, opinions or recommendations within this document should be read and relied upon only in the context of the document as a whole.
- 2.15 SCP has endeavoured to assess all information provided to them during this assessment and therefore this report has been compiled from a number of external sources.
- 2.16 The Flood Risk Assessment addresses the flood risk posed to and from the proposed development, the extent of which is shown on the Proposed Site Plan in **Appendix A**.
- 2.17 This report has been undertaken with the assumption that the site will be developed in accordance with the above proposals without significant change. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

3.0 POLICY & GUIDANCE

- 3.1 In carrying out our assessment and preparing this report, regard has been taken of the provisions of the development plan and a range of other material considerations. However, it is the Government's National Planning Policy Framework 2023 which provide the most up to date and specific guidance on the Scope of Flood Risk Assessments.

National Planning Policy Framework

- 3.2 The National Planning Policy Framework (NPPF) was published in England in March 2012, re-issued in July 2018, revised in 2019, re-issued in September 2021 and more recently updated and re-issued in September 2023. As a result, the previous NPPF, all previous Planning Policy Guidance Notes (PPGs) and Planning Policy Statements (PPSs) were superseded. This included PPS25: Development and Flood Risk, along with its supplement on Development and Coastal Change. These were replaced with the Planning Practice Guidance for Flood Risk and Coastal Change, available on the gov.uk website. <https://www.gov.uk/guidance/flood-risk-and-coastal-change>
- 3.3 One of the key aims of the NPPF is to ensure that flood risk is taken into account at all stages of the planning process to avoid inappropriate development in areas at risk of flooding and to direct development away from areas of highest risk.
- 3.4 It advises that where new development is necessary in areas of higher risk, this should be safe, without increasing flood risk elsewhere, and where possible should reduce flood risk overall.
- 3.5 The NPPF's flood risk advice is all set out in Chapter 14 of the Framework document, meeting the challenge of climate change, flooding and coastal change.
- 3.6 This document has been prepared in accordance with the recommendations and the policies contained within the NPPF 2023 and the associated Planning Practice Guidance 2022.

Flood and Water Management Act 2010

- 3.7** The Flood and Water Management Act 2010 received Royal Assent on 8th April 2010. This Act provides duties on the Environment Agency, Local Authorities, Developers and other bodies to manage flood risks. The Act has significant planning and design implications for Developers.
- 3.8** It should be noted that these standards and procedures are being reviewed by the respective regulatory bodies and third parties against the requirements imposed by the Flood and Water Management Act 2010. The advice and recommendations provided may change when associated regulations have been issued in order to implement the full scope of the Act.
- 3.9** The main areas affecting Developers are:
- Lead Local Flood Authority (LLFA) or regional Water Authority to adopt and maintain sustainable urban drainage systems (SUDS). The LLFA may be either a Unitary or County Council.
 - Approval fees and non-performance bonds to be standardised.
 - A National Standard for SUDS design, construction, maintenance and operation to be issued. This guidance will emphasise the preference for surface SUDS features and the need to incorporate green corridors into the masterplan. A DRAFT version of this document was issued for consultation in December 2011. The final version was expected to be issued in 2014 however, DEFRA reported a delay and to date have not advised when the revised issue date is likely to be.
 - Changes to the rights to connect to sewers will restrict automatic connection rights to only Section 104 sewer schemes or approved SUDS schemes constructed to a new national sewer or new SUDS standard respectively.
 - Two options for the SUDS approval process. Either directly to the SUDS Approval Body or as a combined application to the Planning Authority as part of the Planning Application.
- 3.10** For Lidl Fallowfield site, the proposal is for Lidl to privately manage, own and maintain all the drainage features on the site.

CIRIA Guidance

3.11 The CIRIA publication 'C624 Development and Flood Risk – Guidance for the Construction Industry', define three levels of FRA which can be undertaken:

Table 1 – Levels of Flood Risk Assessment

FRA Level	Description/Scope
Level 1	Screening Study to identify whether there are any flooding or surface water management issues related to a development site that may warrant further consideration. This should be based on readily available existing information, including the SFRA, Environment Agency Flood Map and Standing Advice. The Screening Study will ascertain whether a FRA is required.
Level 2	Scoping Study to be undertaken if the Level 1 FRA indicates that the site may lie within an area that is at risk of flooding or that the site may increase flood risk due to increased run-off. This Study should confirm the sources of flooding which may affect the site and should include the following: <ul style="list-style-type: none">• An appraisal of the availability and adequacy of existing information;• A qualitative appraisal of the flood risk posed to the site, and potential impact of the development on flood risk elsewhere;• An appraisal of the scope of possible measures to reduce the flood risk to acceptable levels.• The Scoping Study may identify that sufficient quantitative information is already available to complete a FRA appropriate to the scale and nature of the development.
Level 3	Detailed Study to be undertaken if the Level 2 FRA concludes that further quantitative analysis is required to assess flood risk issues related to the development site. The Study should include: <ul style="list-style-type: none">• Quantitative appraisal of the potential flood risk to the development;• Quantitative appraisal of the potential impact of development site on flood risk elsewhere;• Quantitative demonstration of the effectiveness of any proposed mitigation measures.

3.12 A level 1 flood risk assessment should be sufficient based on the available data.

4.0 EXISTING SITE CHARACTERISTICS

Site Location

- 4.1 The site is located at the south section of Fallowfield Retail Park, Birchfields Road, Manchester, M14 6FS with OS Co-ordinates **386486E, 394038N**.

Table 2 – Site Description

Total Area		0.7652 Hectares
Existing Surfacing		The existing site is surfaced with asphalt car parking area around the existing stores. There is also a small landscaping area with existing trees.
General Topography		The site is overall flat with levels around 45.80-46.30m
Current Use		The current site contains a retail / shopping centre and respective car parks.
Watercourses		No known watercourses in close proximity
Boundaries	North	North Section of Fallowfield Retail Park
	East	Railway line
	South	Moseley Road
	West	Birchfields Road
Access	Vehicular	Access is provided to the site from the west via a traffic signalised junction with Birchfields Road
	Pedestrian	Access is provided to the site from west via Birchfields Road and south via Moseley Road

Existing Public Sewers

- 4.2 There is an existing United Utilities combined water public sewer running through the existing site, along the estate road. These are shown on the United Utilities maps in **Appendix F**.
- 4.3 There is an existing culverted watercourse [Fallowfield Brook], which is 1500mm brick culvert, located under Birchfields Road.
- 4.4 The foul water is connecting into a private foul water manhole north of the site and the surface water is discharging via a surface water and a combined manhole. Both surface and foul water drain into the UU combined water public sewer mentioned above.

Existing Private Drainage

- 4.5 The site has an extensive foul and surface water private network in place. It is expected that part of this network will be removed / decommissioned as part of the proposed development works. These are shown on the Topographical Survey plan in **Appendix G**.
- 4.6 The Proposed Drainage Strategy details the proposals to discharge the proposed development surface water into the existing culverted watercourse [Fallowfield Brook] 1500mm brick culvert via a private surface water manhole.
- 4.7 The proposed development foul water is to discharge into a UU combined sewer via a private foul water manhole. The Drainage Strategy plan is shown in **Appendix J**.

Watercourses and other Waterbodies

- 4.8 Rivers Medlock, Mersey and Tame are located over 3km away of the site therefore the option to discharge into an existing watercourse is not feasible.

Historical Land Use

- 4.9 The site itself has been used as a local shopping centre and as a tramway depot back in 1930s to 1950s.

Historical Flood Records

- 4.10 No historical flood records have been provided.

Consultations

- 4.11 The table below summarises the information obtained through consultation with the various bodies contacted as part of this study.

Table 3 – Information Sources and Flood Record Data

Information Source	Flood Records/Details
Environment Agency	Pre-Application information is in Appendix M Flood Mapping Information is in Appendix E
LLFA	Pre-Application information is in Appendix M
UNITED UTILITIES	Pre-Application information is in Appendix M

Flood Mapping

- 4.12 The Environment Agency Flood Map indicates that the existing site is located in Flood Zone 1 (low probability risk). This information is in **Appendix E**.
- 4.13 There is a very low risk of extent of flooding from surface water, rivers or the sea, according to the Environment Agency online data.
- 4.14 The Environment Agency website locates the site within an area of no risk from reservoir flooding.

British Geological Survey Data

- 4.15 The BGS website indicates that the site has potential for a medium – low groundwater flooding to occur at surface.
- 4.16 The bedrock underlying the site is indicated to be Collyhurst Sandstone Formation – Sandstone with the superficial deposits in the area to be described as Till, Devensian - Diamicton.

Soliscapes and Coal Authority Data

- 4.17 Soliscapes map indicates that the site is in an area of slowly permeable seasonally wet acid loamy and clayey soils with impeded underground drainage.
- 4.18 The Coal Authority website locates the site within a Surface Coal Resource Area.

5.0 EXISTING AND PROPOSED SITE FOOTPRINT

- 5.1** As part of the new development scheme, a review of the existing and proposed footprint areas has been completed, to establish the betterment the proposed site provides on the event of an extreme storm event.
- 5.2** Predominately the existing and proposed levels for the site remain the same or similar and should not impact on the sites potential to temporarily hold flood water from the over spilled river.
- 5.3** The existing site has the following breakdown:

Total site area	0.7652 ha	
Existing impermeable area	0.7251 ha	100 l/s
Existing building to be demolished	0.176 ha	

- 5.4** The proposed site has the following breakdown:

Total site area	0.7652 ha	
Proposed impermeable area	0.7054 ha	50 l/s – 50% betterment
New building – Lidl food store	0.2652 ha	

- 5.5** In summary from assessment of the existing and proposed site footprints, the new building provides similar footprint with the existing which is to be demolished.
- 5.6** The proposed building finish floor level will be around 46.20m. The detailed level design will confirm the exact FFL at a later stage.
- 5.7** Car park levels are proposed to remain as existing with changes only at the north side of the car park where the Burger King store is currently located.

6.0 SOURCES OF FLOOD RISK

- 6.1 Information relating to flood risk at the site has been obtained via the Environment Agency's online flood mapping tool. This information has been provided in **Appendix E**.
- 6.2 Examination of the flood maps show that the site is located within an area classified as Flood Zone 1 and the risk of flooding is low at 0.1% to 1% (1 in 1000 to 1 in 100) chance of flooding.

Table 4 – Sources of Flood Risk

Source	Definition	Likelihood
Fluvial	River Flood	Low
Coastal - Sea	Tidal Surge	Not Applicable
Coastal - Estuarine	Tidal Surge	Not Applicable
Pluvial	Surface Water Flooding	Very Low
Sewer – SWS, FWS, CS, CSO	Sewer Flooding	Low
Groundwater	Emergence from ground	Low
Other Sources	Reservoir	Not Applicable

Fluvial Flood Risk [River Flood]

- 6.3 Information relating to flood risk at the site has been obtained via the Environment Agency's online flood mapping tool. This information has been provided in **Appendix E**.
- 6.4 Examination of the flood maps show that the site is located within an area classified as Flood Zone 1 and the risk of flooding is low and having a less than 1% (1 in 100) chance of flooding.
- 6.5 There is no risk of Fluvial flooding for the site as there are no rivers in close proximity.

Pluvial Flood Risk [Emergence from Ground Surface Flooding]

- 6.6 Pluvial flooding is defined as flooding resulting from rainfall-generated overland flow before runoff enters any watercourse or sewer.
- 6.7 It is usually associated with high intensity rainfall events but can also occur with low intensity rainfall or melting snow where ground is saturated, frozen, developed or otherwise has low permeability resulting in overland flow and ponding in depressions in the topography. Large catchment areas are particularly prone to this type of flooding.
- 6.8 Environment Agency Surface water flood map shows very low probability of pluvial flooding.

- 6.9 The site will be levelled to ensure that water flows away from the food store and directed towards positive drainage systems. Any flood waters from the existing car park will be directed away from the building and intercepted if possible. The proposed building will be designed for flood risk mitigation in terms of its finished floor level and height above the surrounding ground.

Sewer Flood Risk

- 6.10 There are existing private surface, foul and combined water networks running through the site.
- 6.11 The United Utilities maps are shown within **Appendix F**.
- 6.12 There is an existing UU combined public sewer within the estate road, which is serving foul and surface water flows from the buildings and car park of the development.
- 6.13 There is low risk of flooding from sewers.

Groundwater Flood Risk

- 6.14 In general terms groundwater flooding can occur from three main sources, raised water tables, seepage and percolation, and groundwater recovery or rebound.
- 6.15 If groundwater levels are naturally close to the surface, then this can present a flood risk during intense rainfall. Having reviewed groundwater flood maps from Environment Agency and the British Geological Survey it indicates that the site is in an area where there is a medium – low potential for groundwater flooding and flooding from the water table.

Flooding from Other Sources

- 6.16 Non-natural or artificial sources of flooding can include reservoirs, lakes and canals etc.
- 6.17 There is no risk of extent of flooding from reservoirs as identified by the Environment Agency.
- 6.18 No other potential sources of flood risk have been identified immediately affecting the site.

Flood Risk Vulnerability Classification

6.19 The proposed development is for retail use and can be considered to be classified as 'less vulnerable' within *Table 2: Flood Risk Vulnerability Classification* of the NPPF.

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	x	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	x	x	x

Key: ✓ Development is appropriate.
 x Development should not be permitted.

7.0 SUSTAINABLE URBAN DRAINAGE SYSTEMS

7.1 SuDS options have been reviewed for the development site, in-line with standard guidance CIRIA SuDS Manual [C753] and the following is summarised:

Table 5 – SuDS Assessment

SuDS	Existing site	Proposed site	Reason / Comments
Soakaways	No	No	Infiltration tests not viable
Attenuation underground cellular storage Tank	No	Yes	Tank proposed
Pond	No	No	
Flow Control	No	Yes	Flow control proposed
Oil / petrol interceptors	No	Yes	Petrol interceptor proposed
Landscape Relief areas	No	No	
Silt Traps	No	n/a	
Green Roofs	No	n/a	
Water Butts	No	n/a	
Rainwater Harvesting	No	n/a	
Filter Strips	No	n/a	
Filter Trenches	No	Potential	Potential for some new gullies to discharge into filter trenches [gravel and pipes]
Tree Pits	No	Potential	Potential for some new gullies to discharge into tree pits located around the car park area
Swales	No	No	
Permeable Pavement	No	No	
Infiltration Basins	No	No	
Detention Basin	No	No	

7.2 in summary the above table demonstrates the existing site is not SuDS friendly.

7.3 In summary the above table demonstrates the proposed site is SuDS friendly.

8.0 SURFACE WATER MANAGEMENT

Introduction

- 8.1 The National Planning Policy Framework 2023 (NPPF)¹ and accompanying Planning Practice Guidance² indicate surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management.
- 8.2 Consideration should therefore firstly be given to using sustainable urban drainage (SUDS) techniques including soakaways, infiltration trenches, permeable pavements, grassed swales, ponds and wetlands to reduce flood risk by attenuating the rate and quantity of surface water run-off from a site. This approach can also offer other benefits in terms of promoting groundwater recharge, water quality improvement and amenity enhancements. Approved document Part H of the Building Regulations (2010)³ sets out a hierarchy for the disposal of surface water which encourages a SUDS approach, as detailed above.

Climate Change

- 8.3 There are indications that the climate in the UK is changing significantly, and it is widely believed that the nature of climate change will vary greatly by region. Current expert opinion indicates the likelihood that future climate change would produce more frequent short duration and high intensity rainfall events with the addition of more frequent periods of long duration rainfall.
- 8.4 The withdrawn NPPF 2012 Technical Guidance Table 5 states that the recommended national precautionary sensitivity ranges for increase of peak rainfall intensity is 30% until 2115. However, The Environment Agency (EA) issued new advice which updated previous climate change allowances outlined in the NPPF 2012 Technical Guidance. The table on page 18, extracted from the Climate Change Allowances for Peak Rainfall in England shows anticipated changes in annual exceedance rainfall events. For Flood Risk Assessments and Strategic Flood Risk Assessments, The Environment Agency 2022⁴ Guidance recommend both the central and upper end allowances are assessed to understand the range of impact.

¹ Department for Communities and Local Government 2023 – National Planning Policy Framework

² Department for Communities and Local Government 2022 – Planning Practice Guidance

³ HM Government Building Regulations 2010 – Approved Document part H

⁴ Environment Agency 2022 Flooding and Coastal Change – Flood Risk Assessments: Climate Change Allowances

Table 6 – Irwell Management Catchment Peak Rainfall Allowances

3.3% annual exceedance rainfall event		
	Central Allowance	Upper End Allowance
2050s	25%	35%
2070s	30%	40%
1% annual exceedance rainfall event		
	Central Allowance	Upper End Allowance
2050s	25%	40%
2070s	30%	45%

8.5 As recommended by the EA, for flood risk assessments and strategic flood risk assessments assess the upper end allowances. This must be done for both 1% and 3.3% annual exceedance probability events for the 2070s epoch (2061 to 2125). The development must be designed so that for the upper end allowance in the 1% annual exceedance probability event:

- There is no increase in flood risk elsewhere
- The designed development will be safe from surface water flooding

8.6 For this development, a climate change growth factor of **45%** is to be used for the surface water runoff.

Pre-development and Post-development Surface Water Runoff

8.7 The existing runoff of the site has been assessed, and it currently flows unrestricted into the UU combined public sewer at 100 litres per second. The new Lidl food store and car park area is proposed to be 50% betterment with a discharge rate 50 litres per second.

Methods of Surface Water Management

8.8 As set out in Part H of the Building Regulations, there are three methods that have been reviewed for the management and discharge of surface water for the site which are detailed below; these may be applied individually or collectively to form a complete strategy. They should be applied in the order of priority as listed:

- Discharge via infiltration;
- Discharge via watercourse;
- Discharge via public sewerage system.

Discharge via Infiltration

- 8.9 Due to the past brownfield use of this site it is potentially likely that there may be contaminants below, so discharge via infiltration has been identified as not possible.
- 8.10 Additionally, soakaway infiltration tests have been completed, and infiltration has been shown to not be possible.

Discharge to a Watercourse

- 8.11 Discharge into a watercourse via a new connection has been identified as the chosen option. The proposed strategy is to connect into an existing culverted watercourse [Fallowfield Brook] under Birchfield Road, the existing culvert is a 1500mm brick culvert system.

Discharge to a Public Sewer

- 8.12 Discharge into the public sewer has not been considered, for surface water flows.

Discharge Rate

- 8.13 The surface water flow from the new Lidl store and car park area is proposed to be controlled at 50% betterment to the existing discharge rate. Thus 100 l/s = 50 litres per second.

Attenuation Requirements

- 8.14 The proposed Lidl development is to discharge into a watercourse via a new connection into an existing culverted watercourse [Fallowfield Brook].
- 8.15 Attenuation requirements have been estimated using the Quick Storage Estimate within the MicroDrainage Software. The attenuation volume has been estimated up to the 1 in 100-year return period, with the plus 45% for climate change. Refer to **Appendix K**.
- 8.16 The proposed attenuation will be:

Table 7 - Attenuation Storage Tank

Impermeable Area	Q _{100+45%} Volume
0.7054 ha	206m ³ – 355m ³

- 8.17 Based on the above, attenuation storage volume will be included within the drainage strategy for the site to enable a reduced surface water runoff from the site. This storage tank will likely be formed from a storage crate solution (Wavin Aquacell Storage Crates, or similar) located underneath the car park. This solution is shown on the drainage strategy in **Appendix J**.

Outline Surface Water Drainage Strategy

- 8.18 The general principle of the surface water drainage strategy for this site is to collect the runoff from the car park, buildings and impermeable areas, and will be discharged into the existing culverted watercourse [Fallowfield Brook] 1500mm surface water brick culvert, on Birchfields Road.

9.0 WATER QUALITY MANAGEMENT

9.1 Water Quality Management options have been reviewed for the development site, in-line with standard guidance CIRIA SuDS Manual [C753] and the following is summarised:

The following are general notes and identified stages to consider on water quality:

9.2 The most important rainfall event to manage in terms of water quality is frequent rainfall events that are low rainfall with high pollution % [as opposed to when high rainfall with diluted pollution %]

9.3 Sunlight [UV light] brakes down pollution.

9.4 Pollution on the surface is easier to identify and remove / maintain.

9.5 Remove sediment / pollution as early as possible.

9.6 Review the state of the receiving waterbody [groundwater water and ground material]

9.7 Sediment sinks and hydrocarbons / oils float.

General Design Summary for this Site:

9.8 All water will be treated on site through a four-stage process which includes sumps in [1] all gullies, [2] catch pits, [3] full retention class 2 petrol interceptors prior to the [4] geo-cellular storage.

- Gullies provide sediment to sink
- Catchpits enable sediment to sink
- Petrol interceptors remove the hydrocarbons / oils floating
- Geo-cellular tank to dilute any pollution in the water

Pollution Hazard Levels

- 9.9 Table 4.3 and 26.2 from the SUDS manual provides **pollution hazard levels and values** for different elements of a development, and for a standard Lidl store the following has been identified:

Table 8 – Pollution and Hazard Levels

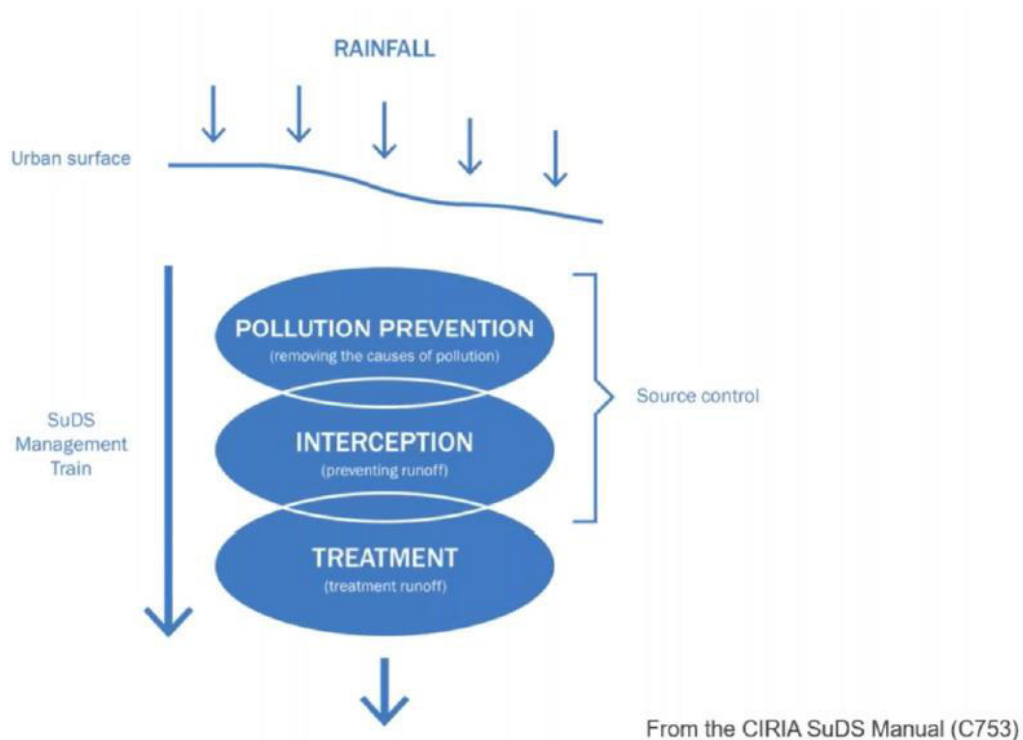
Element	Pollution hazard level
Retail Roof	low
Retail Car Park	Medium

- 9.10 Based on the above water quality assessment which has identified this site pollution hazard levels and values, the following **mitigation measures** and the resulting pollution sufficiency have been assessed:

Table 9 – Pollution Mitigation

Pollution	Mitigation	Pollution sufficiency summary
Roof – low pollution hazard level	Catchpit to capture sediment	sufficient
Car park – medium pollution hazard level	Gullies, catchpits and Petrol interceptor, with geo-cellular soakaway tank.	sufficient

3 Stages of water quality management



9.11 The following items could be implemented on this site, to aid water quality:

On the surface pollution prevention

- 9.12 Manage routing activities – silts and sediments, hydrocarbons and oils, metals, micro plastics, and pesticides
- 9.13 Manage and stop Inappropriate activity – paint chemicals, human sewerage, and solvent / thinners.
- 9.14 Bunds around pollution areas
- 9.15 Street sweeping
- 9.16 Covering areas

Interception – capture the rainfall

Treatment – drainage elements –

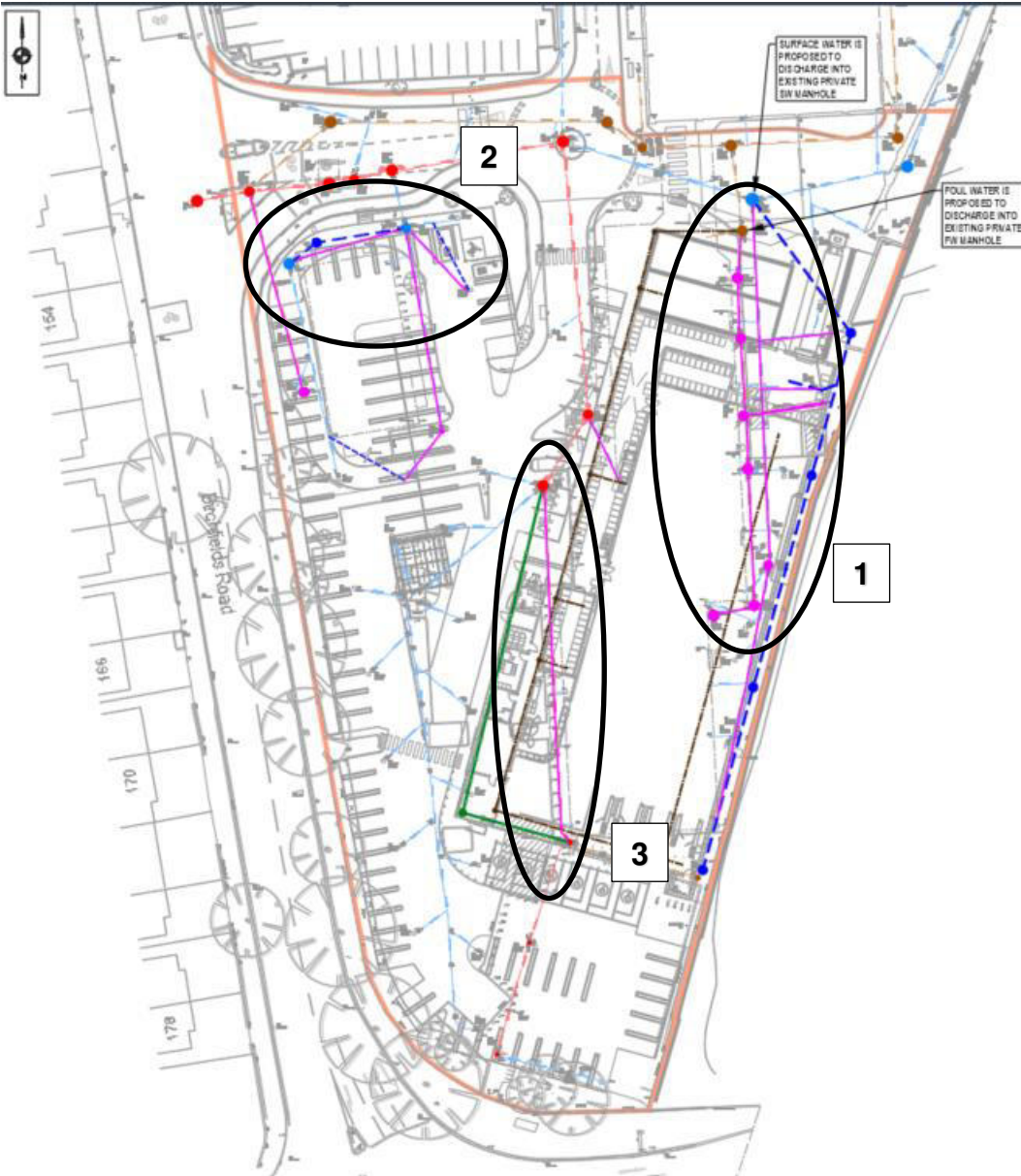
- 9.17 Gullies, catchpits, petrol interceptors

10.0 ABANDONMENT / DIVERSIONARY WORKS

10.1 As part of the Flood Risk Assessment and Drainage Strategy, it has been identified that several **existing private sewers [within the development]** will need to be abandoned, diverted, or removed.

1. The surface and foul water drainage, at the back of the old building, will need to be removed completely to accommodate the construction of the new food store.
2. The surface water drainage around the temporary unit 4 will need to be altered to allow the construction of the unit. Part of it will need to be removed or diverted around the new building with the existing connection into UU combined manhole to be retained. To avoid unnecessary works, an alternative option is to relocate unit 4 to the south and/or reshape its footprint.
3. The combined drainage which serves the unit 9 existing building will need to be diverted to allow the Lidl food store construction. The abandoned part to be removed completely.

10.2 Refer to snippet in the following page and to **Appendix G** for further details.



11.0 FOUL WATER MANAGEMENT

- 11.1 It is proposed to construct a new foul water drainage system to serve the new Lidl food store.
- 11.2 The existing connection into the existing private foul water manhole at the north of the site is to be re-used. This sewer is connected to an existing UU combined public sewer at the estate road.
- 11.3 The foul water system will be designed and constructed in accordance with the current Building Regulations, BS EN:752 drainage and sewer systems outside buildings, the local authority building control specifications and requirements, Codes for Adoption and the Civil Engineering Specification for the Water Industry 7th Edition.

Foul Water Capacity and Point of Connection

- 11.4 The estimated x6 Dry Weather Flow (DWF) generated by the proposed development site has been calculated at a discharge of is **1.02 l/s** under normal conditions, with a peak flow of **6.12 l/s**.
- 11.5 This is based on an assumed number of appliances and should be confirmed at detailed design stage when more information pertaining to the proposed development is available. A Calculation can be found in **Appendix L**.
- 11.6 United Utilities have confirmed the new foul water can discharge without any restriction into the UU sewer. Correspondence from consultation with UU can be found within **Appendix M**.
- 11.7 The new foul water system will discharge into the UU combined water public sewer via a new connection Section 106 agreement with United Utilities.

Gravity Drainage System

- 11.8 Based on available information, it is anticipated that a gravity connection to the UU existing combined public sewer network will be achievable.

12.0 MANAGEMENT MEASURES, OFF SITE IMPACTS AND RESIDUAL RISK

Flood Risk Management Measures

- 12.1** The surface water drainage strategy for the existing site had an unrestricted discharge rate at 100 litres per second and the proposed surface water drainage strategy for the new development is to provide 50% betterment at 50 litres per second.
- 12.2** The new private drainage systems will be designed in accordance with current design guidance within the car park area of the development.
- 12.3** The use of SUDs site control measures is not proposed as the flood risk is considered low as well as the impact to the surrounding sewer networks.
- 12.4** Finished site levels will be engineered to provide positive drainage where required and prevent ponding. The accumulation of standing water will therefore not occur and thus not pose a risk.
- 12.5** Gradients of the hardstanding areas, where possible, will be designed to fall away from buildings such that any overland flow resulting from extreme events would be channelled away from entrances. The nominal gradient across the site is 1 in 50 in accordance with Lidl Standards.

Residual Risks

- 12.6** As with any drainage system, blockages within the surface water system have potential to cause flooding or disruption. It is important that any drainage systems not being offered for adoption to either the Water Company or the Local Authority has an appropriate maintenance regime scheduled which would be advised to prospective property owners where appropriate.
- 12.7** Any overland flows generated by the proposed development must be directed away from any adjacent existing properties surrounding the site and towards the highway network where it can follow natural flow paths.

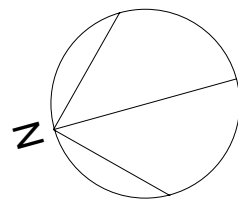
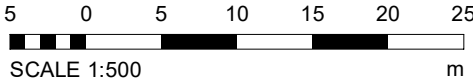
13.0 SUMMARY

- 13.1 SCP have been commissioned by Lidl GB Limited to provide a site-specific Flood Risk Assessment and Outline Drainage Strategy to support a **full planning application** for a new retail development located on existing **brownfield** developed land on a site at Fallowfield Retail Park, Birchfields Road, Manchester, M14 6FS.
- 13.2 The proposed development comprises of the demolition of an existing building and the construction of a new Lidl food store with car park refurbishments. A copy of the proposed site plan can be found in **Appendix A**. The catchment area assessment for the existing and proposed site are in **Appendix B and C**.
- 13.3 This report covers flood risk and the proposed outline drainage strategy, aiming to illustrate that the proposed development **does not** increase flood risk to the site and the wider area.
- 13.4 Based on National Planning Policy Framework [NPPF] 2023 the development proposal is wholly suitable in terms of flood risk as it is a **less vulnerable** development. [*Refer to Section 6*].
- 13.5 The site is located in Flood Zone 1. This is shown in the flood mapping plans in **Appendix E**.
- 13.6 The Flood Risk Assessment (FRA) has reviewed all sources of flood risk to both the proposed development and to existing adjacent developments.
- 13.7 The proposed site finished floor level will be set at approximately 46.20m.
- 13.8 The proposed Lidl store building has been located on the east side of the site.
- 13.9 Soakaway tests have been completed to identify if discharge by infiltration is an option and the results show that this method of discharge is not possible. [Refer to **Appendix H**]
- 13.10 Discharge into a watercourse via a new connection has been identified as the chosen option. The proposed strategy is to connect into an existing culverted watercourse [Fallowfield Brook] under Birchfield Road, the existing culvert is a 1500mm brick culvert system.
- 13.11 **Attenuation requirements** have been estimated using the Quick Storage Estimate within the MicroDrainage Software. The attenuation volume has been estimated up to the **1 in 100-year return period**, with **45% for climate change**. Attenuation storage tank proposed to have a volume size of **206m³ - 355m³**.
- 13.12 Discharge to United Utilities public sewer is the identified chosen discharge method for foul water on this site.

- 13.13 The proposed surface water flow rate is proposed to be 50% betterment of the existing discharge rate. The existing discharge rate for the site has been calculated at 100 litres per second, therefore the proposed discharge rate for the site is proposed at **50 litres per second**.
- 13.14 Foul Water is proposed to be discharged unrestricted to the existing UU public combined sewer network.
- 13.15 The proposed foul water unrestricted flow rate is **6.12 litres per second** at peak rate.

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APPENDIX A



Architects are to be notified of any discrepancies.
Contractors must check all dimensions on site.
This drawing is subject to copyright laws and is for use on this project only.
This drawing is to be used solely for the information as titled only.
For other information refer to the latest revision of any cross referenced drawings.
To be read in conjunction with relevant design standards/protocols

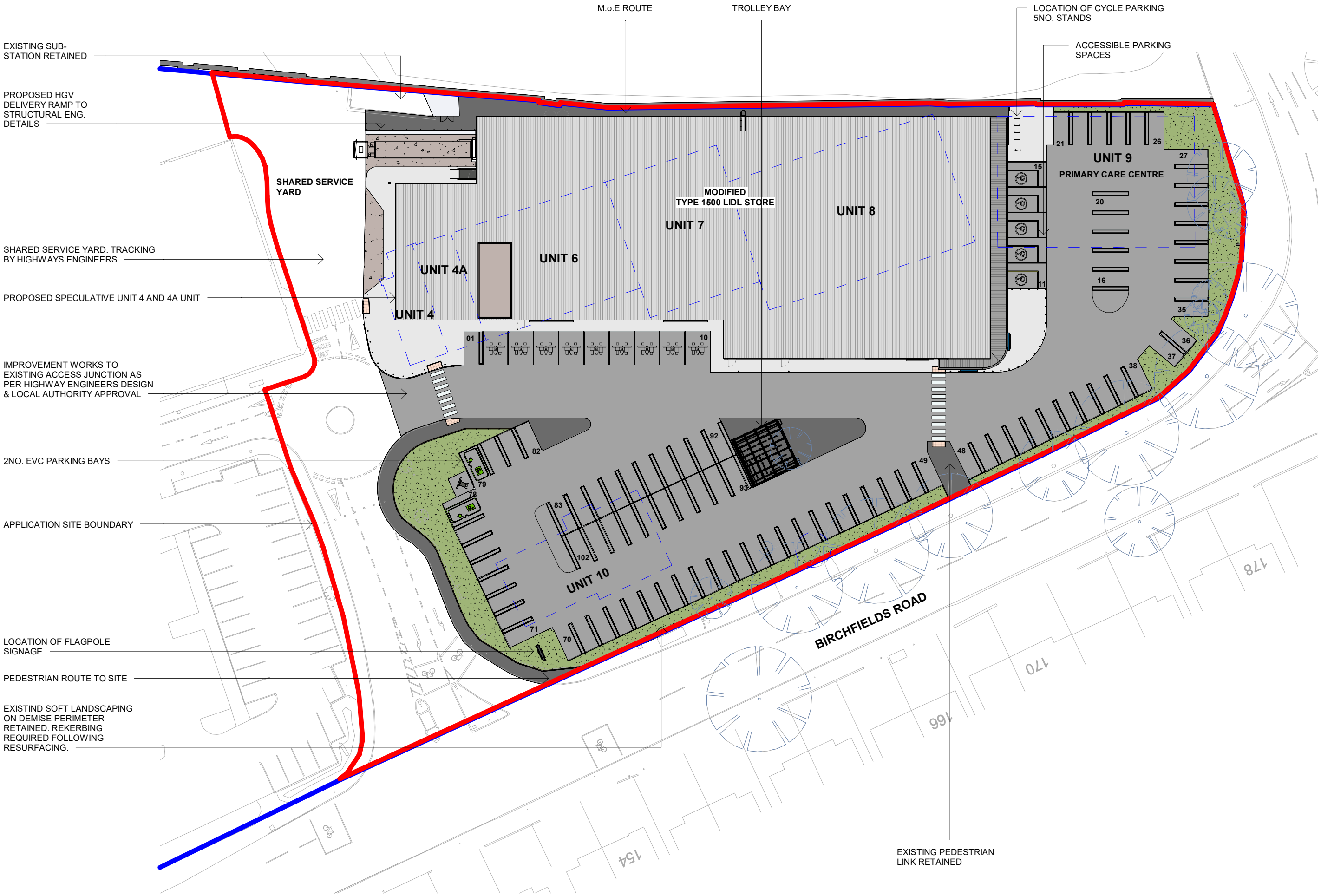
This is a colour drawing. In order to ensure any subsequent reproduction is viewed correctly it should be printed in full colour.

BOUNDARY SCHEDULE - OPTION 7D			
	BOUNDARY	ACRES	SQM
	SITE APPLICATION BOUNDARY	2.23	9033.87

TREES REMOVED SUBJECT TO TREE SPECIALIST REVIEW & LPA APPROVAL. REFER TO LANDSCAPE ARCHITECT PROPOSALS.

EXISTING BUILDINGS AND SITE ELEMENTS TO BE DEMOLISHED / REMOVED.

PARKING SCHEDULE OPT 7D	
	QUANTITY
EVC SPACES	2
LIDL ACCESSIBLE SPACES	5
LIDL PARENT & CHILD SPACES	9
LIDL STANDARD SPACES	86
GRAND TOTAL	102



C6	UPDATED AS PER LATEST LIDL SPEC - PLANNING	27.02.24	SP	JM
C5	PLANNING UPDATE AS PER CLIENTS REQUEST	13.11.23	SP	JM
C4	PLANNING PACK AMENDMENTS	17.10.23	SI	JM
C3	ALTERATIONS TO SCHEME - PLANNING ISSUE	03.10.23	SP	JM
C2	SCHEME UPDATED. ISSUED FOR PLANNING	01.02.22	MN	JM
C1	Planning issue	09.04.21	DM	JM
P5	EVC spaces added	07.04.21	DM	JM
P4	Layout updated to show phase 2, VRF units & flagpole	06.04.21	DM	JM
P3	Unit 4 revised	19.03.21	DM	JM
P2	Layout updated	11.12.20	DM	JM
P1	First issue	09.10.20	DM	JM
Rev	Description	Date	Dm	Ckd

Status

PLANNING

SMR

SMALLEY MARSEY RISPIN

ARCHITECTS

Floor 2 The Exchange Station Parade Harrogate HG1 1TS
01423 707 757 admin@smrarchitects.co.uk

Project

FOLLOWFIELD RETAIL PARK

Client



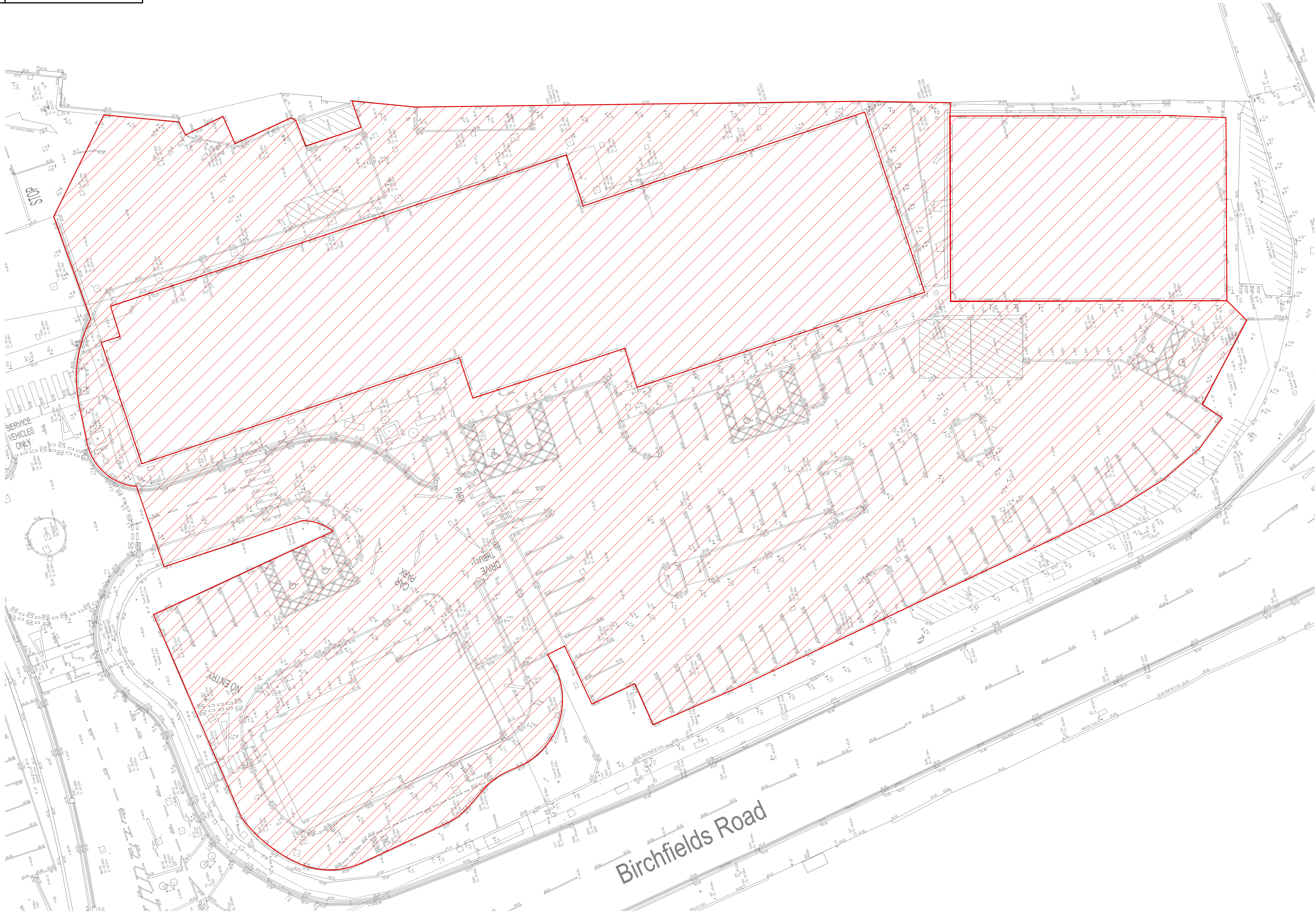
Drawing Title

PROPOSED SITE PLAN

Proj Ref	Origin	Zone	Level	Type	Role	Num	Status	Rev
--- 7397 -	SMR	00	XX	DR	A	2003	A3	C6
SMR Job Ref		Sheet		Scale		Drawn		
7397-00-2003		A2		1 : 500		DM		

S|C|P

APPENDIX B



NOTE
DO NOT SCALE FROM THIS DRAWING, UTILISE ONLY
NUMBERED DIMENSIONS.
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH
ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS.
NOTIFY MP CONSULTING ENGINEERS IMMEDIATELY OF ANY
DISCREPANCIES.
UNLESS NOTED OTHERWISE, THIS DRAWING IS FOR
BUILDING REGULATIONS APPROVAL ONLY.
© MP CONSULTING ENGINEERS.
e: info@mp-consulting.co.uk
w: www.mp-consulting.co.uk



- RESIDUAL DESIGN RISKS:
- GROUND CONDITIONS - REFER SI FOR DETAILS OF STRENGTH, CONTAMINATION AND WATER TABLE FOR ALL EXCAVATION WORKS.
 - REFER TOPO STATS TRACE FOR LOCATION OF ALL EXISTING SERVICES. THE MAIN CONTRACTOR IS RESPONSIBLE FOR LOCATING & CLEARLY MARKING AT THE SURFACE ALL EXISTING SERVICE/DRAINAGE RUNS.
 - CONTRACTOR TO ALLOW FOR TRAFFIC MANAGEMENT IN AGREEMENT WITH LIDL.

Note:
The employer gives no warranty in relation to the accuracy or completeness of any documents or reports included within the tender pack. The contractor is liable for the design of the works

Existing Impermeable Areas:
Car Parking/ Service Yard: 4646m2
Roof: 2605m2
Total: 7251m2

P01	Issued For Tender	21.10.21	JH	RSM
Rev	Description	Date	Dm	Ckd

Status
S2 - INFORMATION

Information Only

mp consulting engineers

CHARTERED
CIVIL AND
STRUCTURAL
ENGINEERS

UNIT 3, MANSE LANE
MERCURY COURT
KNARESBOROUGH
HG5 8LF
T: 01423 861569

Project
Lidl Fallowfield

Client
SMR Architects

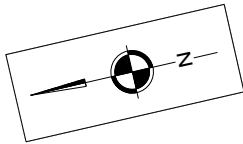
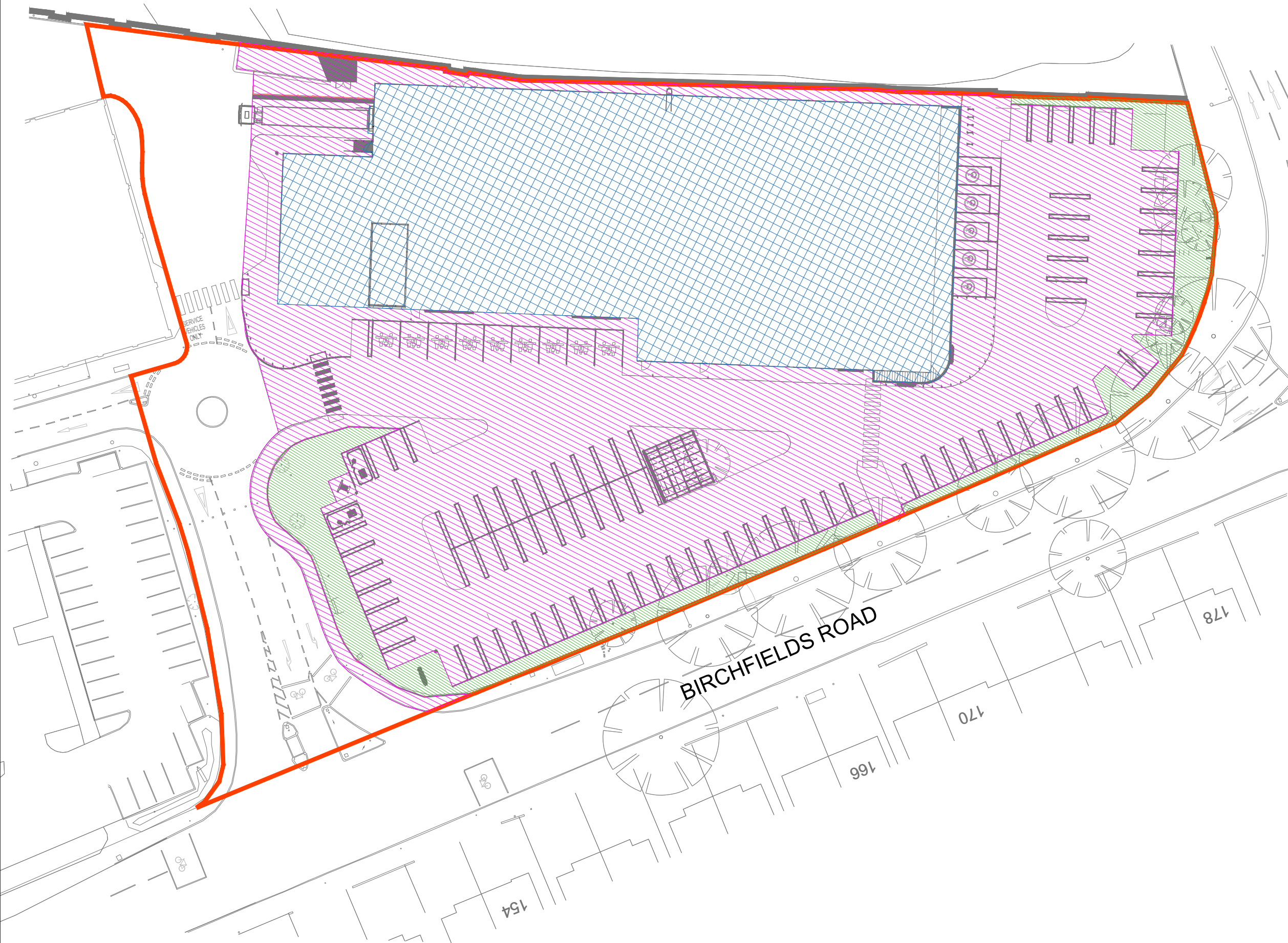
Drawing Title
Existing Drainage Area Plan

MP Sheet Ref	Sheet	Scale	Drawn
4407 - S - 0117	A1	1:200 @ A1	JH

BIM Ref	Origin	Vol	Level	Type	Role	Number	Status	Rev
4407 - MP - 00 - ZZ - DR - S - 0117 - S2 - P01								

S|C|P

APPENDIX C



NOTES

- 1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- 2. ALL LEVELS ARE IN METRES RELATED TO ORDNANCE DATUM NEWLYN (OD) UNLESS NOTED OTHERWISE.
- 3. ALL COORDINATES ARE IN METRES RELATED TO ORDNANCE SURVEY NATIONAL GRID.
- 4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL DRAWINGS AND DOCUMENTATION ASSOCIATED WITH THE PROJECT.
- 5. THIS DRAWING HAS BEEN BASED UPON SURVEY/OS INFORMATION SUPPLIED BY A THIRD PARTY AND SCP SHALL NOT BE LIABLE FOR ANY INACCURACY OR DEFICIENCIES ARISING FROM IT.

KEY

-  BUILDING FOOTPRINT
0.2652 ha or 2,652m²
-  CAR PARK, CARRIAGEWAY & FOOTWAY AREA
0.4402 ha or 4,402m²
-  LANDSCAPING AREA
0.0598 ha or 598m²
- TOTAL HARDSTAND AREA:
0.7054 ha or 7,054m²
- TOTAL CATCHMENT AREA:
0.7652 ha or 7,652m²

REVISIONS

REV	DESCRIPTION	DATE	BY
-	FIRST ISSUE	13.10.23	MG
A	UPDATED TO SUIT NEW LAYOUT	04.03.24	MG



Transportation Planning : Infrastructure Design

Ground Floor, 10 South Parade, Leeds, LS1 5QS, Tel 0113 887 3323
www.scptransport.co.uk, Email info@scptransport.co.uk

Client Name:



Lidl Great Britain Ltd.

Project Title:

LIDL FALLOWFIELD
FRA & DRAINAGE STRATEGY

Drawing Title:

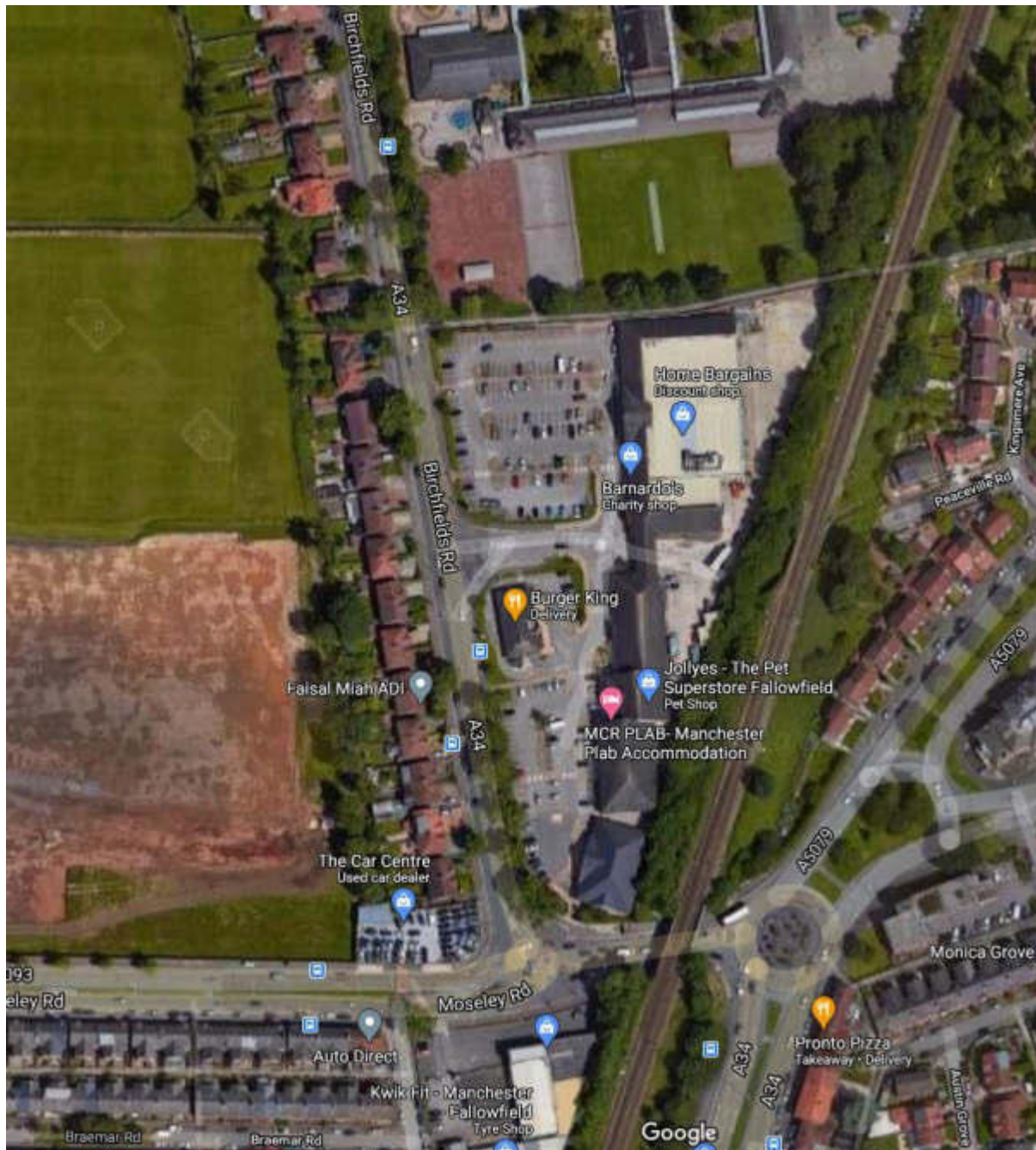
PROPOSED CATCHMENT AREAS

Drawn By:	MG	Date:	13.10.2023
Checked:	WJ	Scale:	1:500 @ A3
Status:	PLANNING	Approved/Unapproved:	-

Drawing No.	200509-0500-001	Rev.	A
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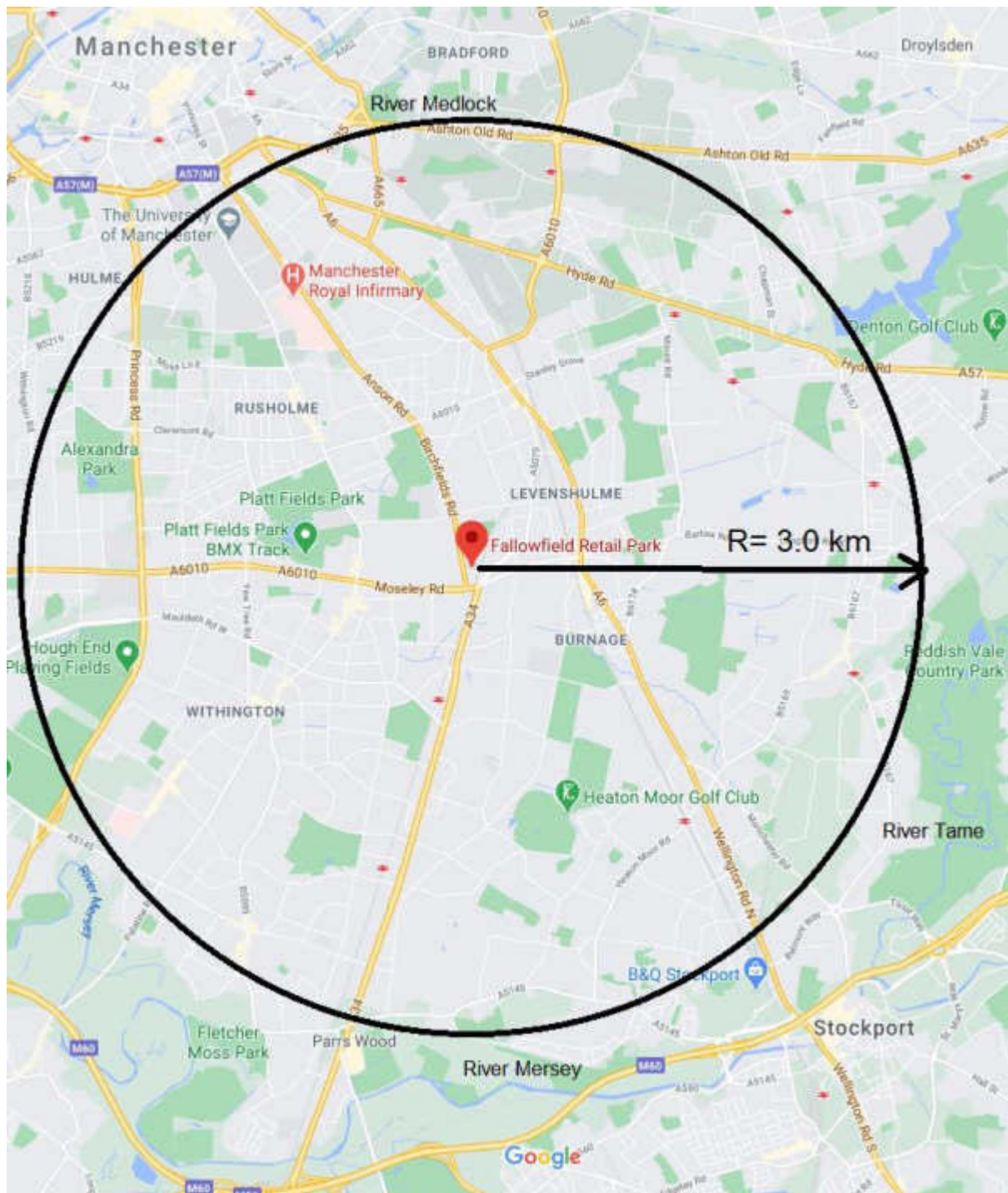
S|C|P

APPENDIX D



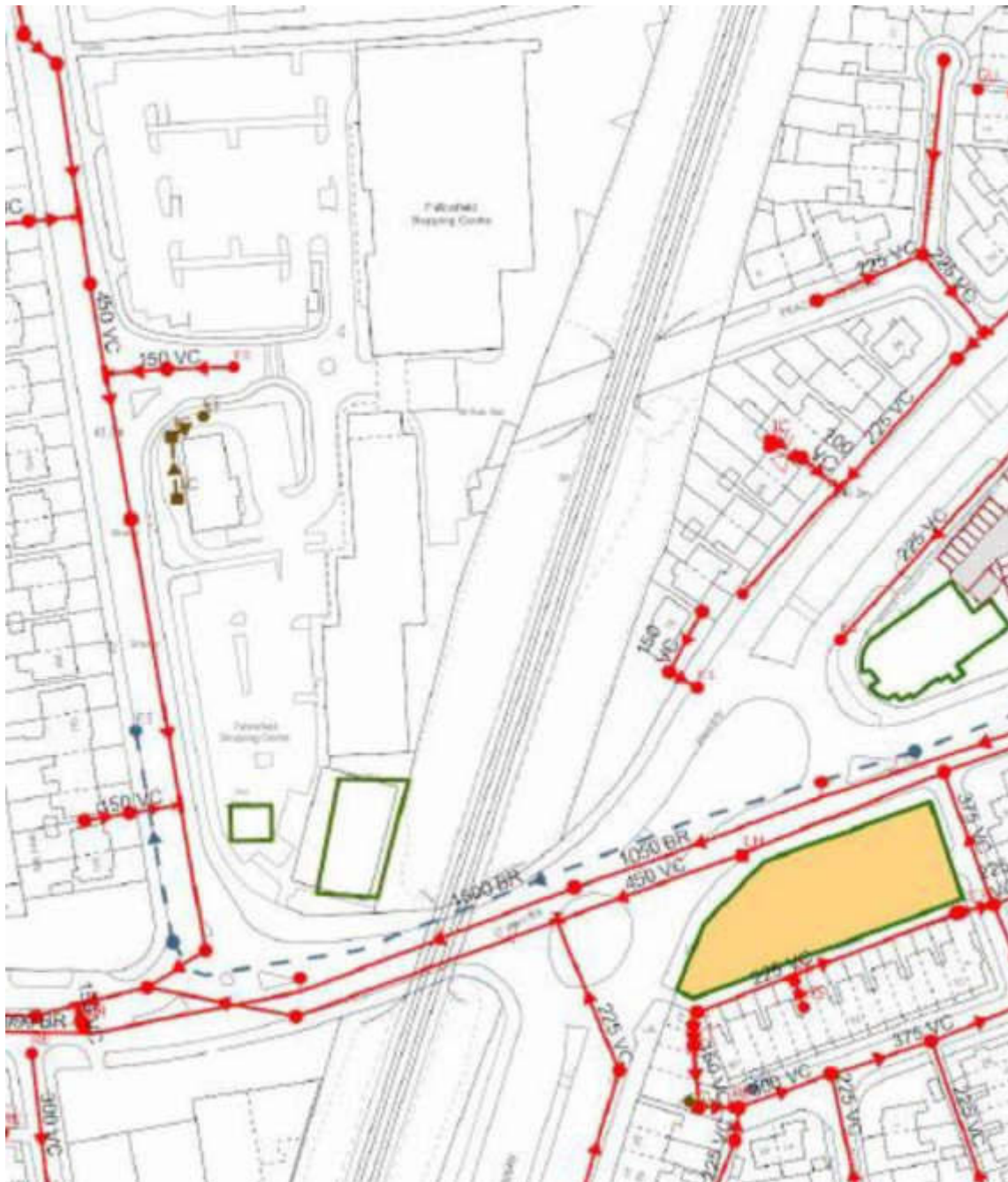
Existing Brownfield Site / Retail Park, within Flood Zone 1

Infiltration method of SW discharge is not viable due to site contamination



Existing Watercourses known around the site

Discharge into a watercourse is not possible as River Medlock, River Mersey and River Tame are located over 3km away of the site



Existing United Utilities wastewater drainage network

Existing site and buildings discharge into UU combined sewer (150 VC) via an existing private sewer and manhole network

S|C|P

APPENDIX E



Fallowfield Retail Park – Local Plan Area Map – Leisure Use

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
386482/394005

Created
16 Oct 2023 16:24

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following:**

- bigger than 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

Flood map for planning

Your reference
<Unspecified>

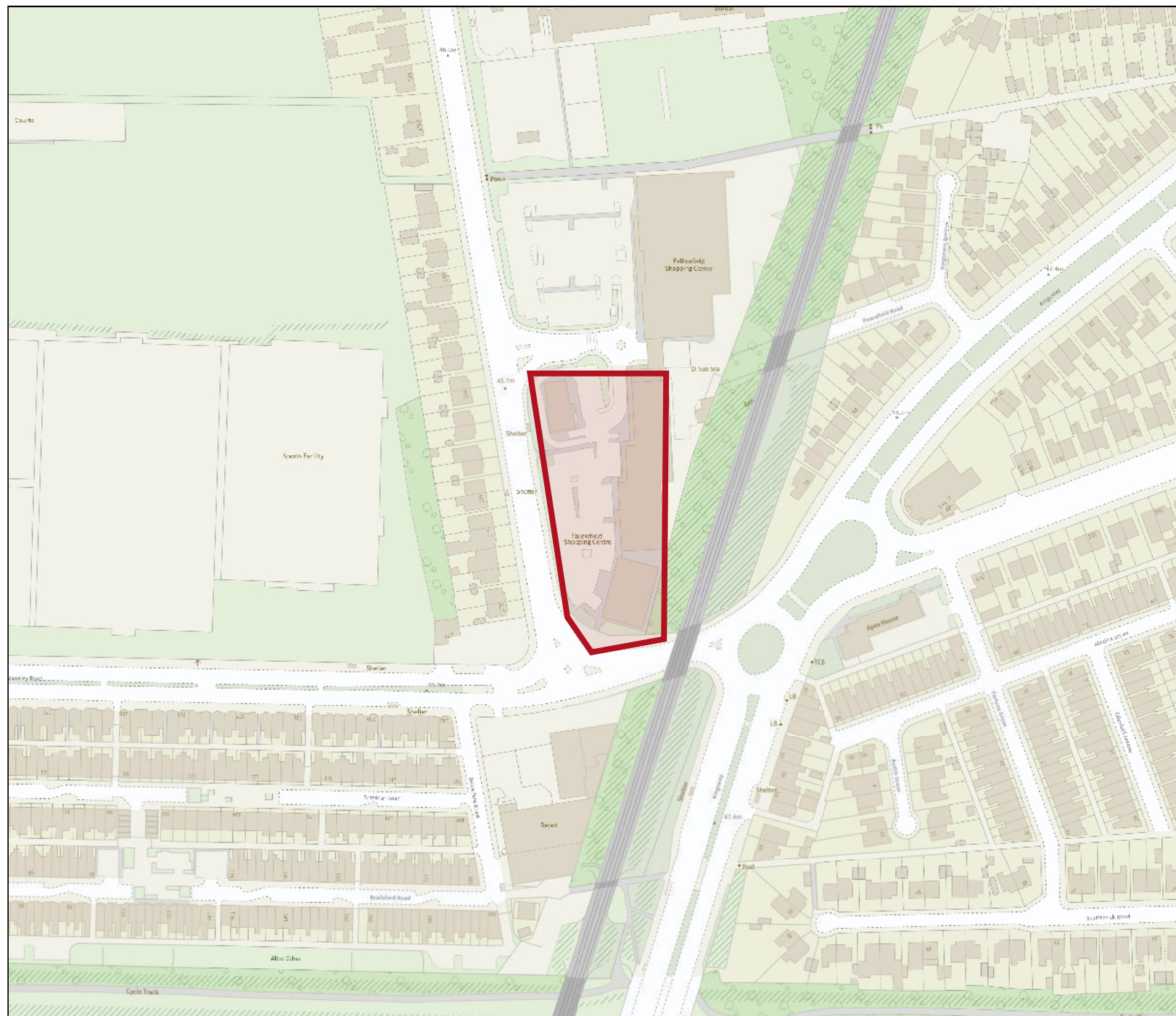
Location (easting/northing)
386482/394005

Scale
1:2500

Created
16 Oct 2023 16:24

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

0 20 40 60m

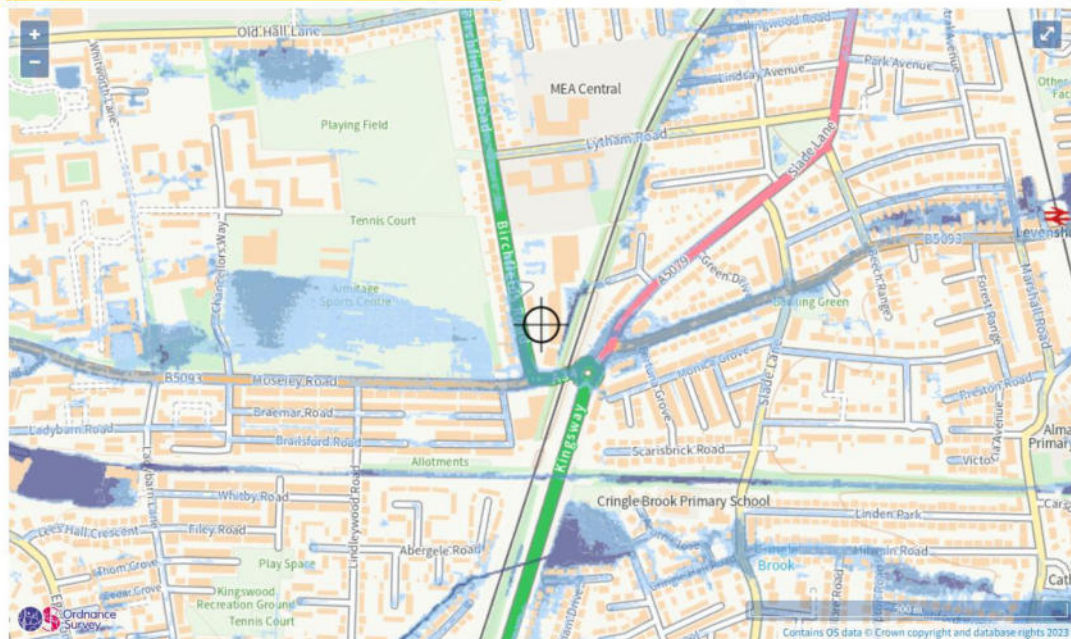


Flood risk

Low risk: depth

Location

Enter a place or postcode



Surface water flood risk: water depth in a low risk scenario

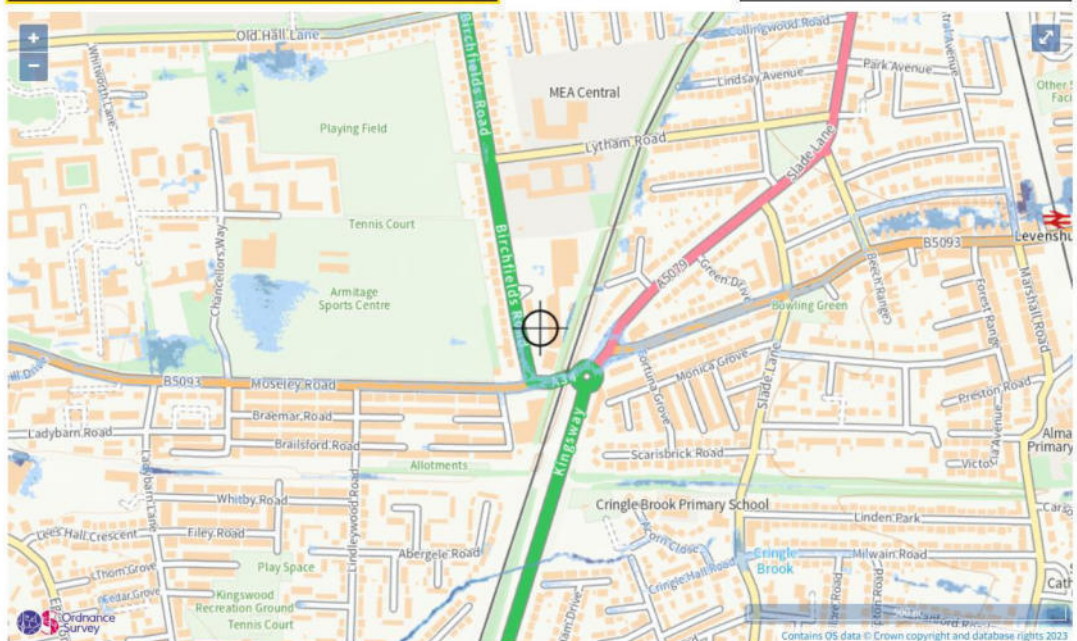
Flood depth (millimetres)

Flood risk

Medium risk: depth

Location

Enter a place or postcode



Surface water flood risk: water depth in a medium risk scenario

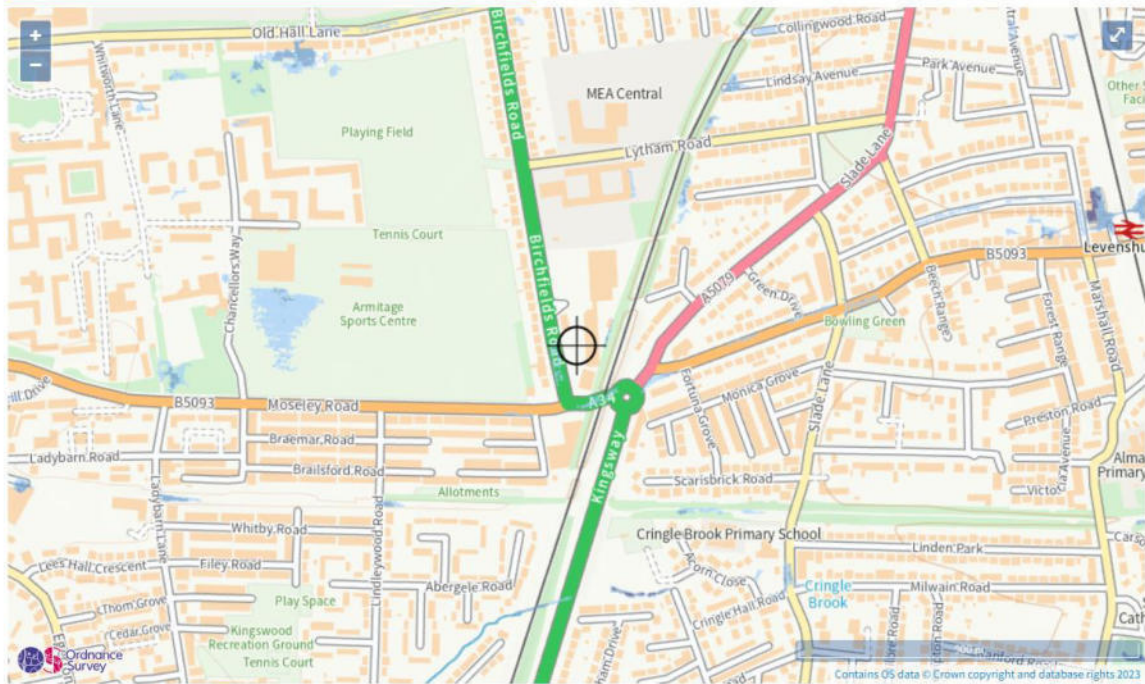
Flood depth (millimetres)

Flood risk

High risk: depth

Location

Enter a place or postcode



Surface water flood risk: water depth in a high risk scenario

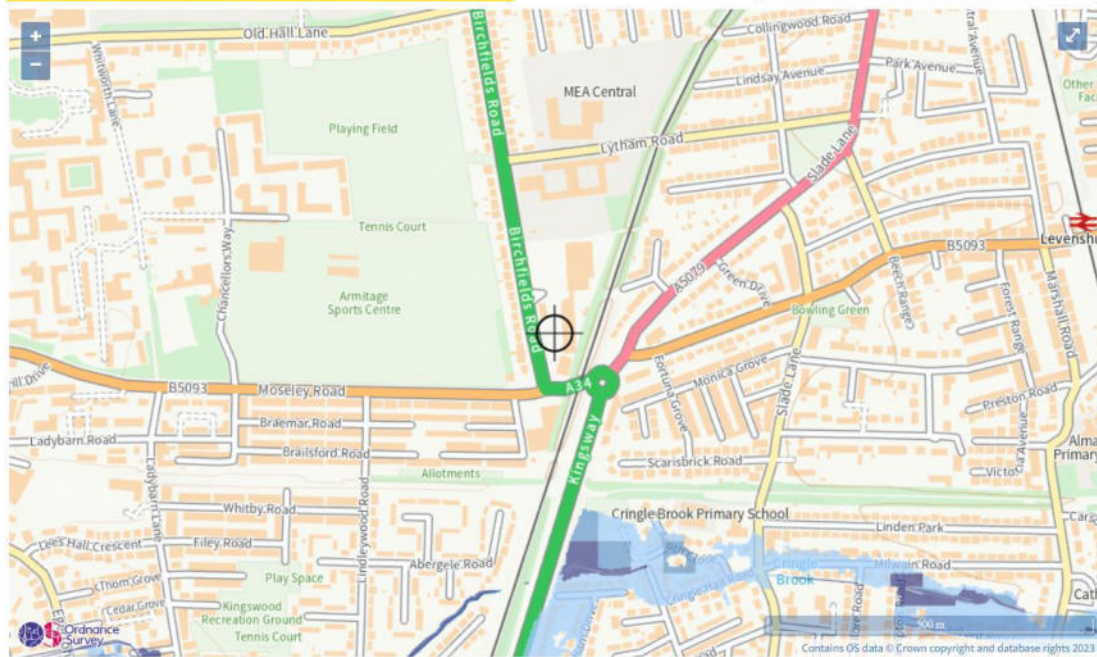
Flood depth (millimetres)

Flood risk

Extent of flooding

Location

Enter a place or postcode



Extent of flooding from rivers or the sea

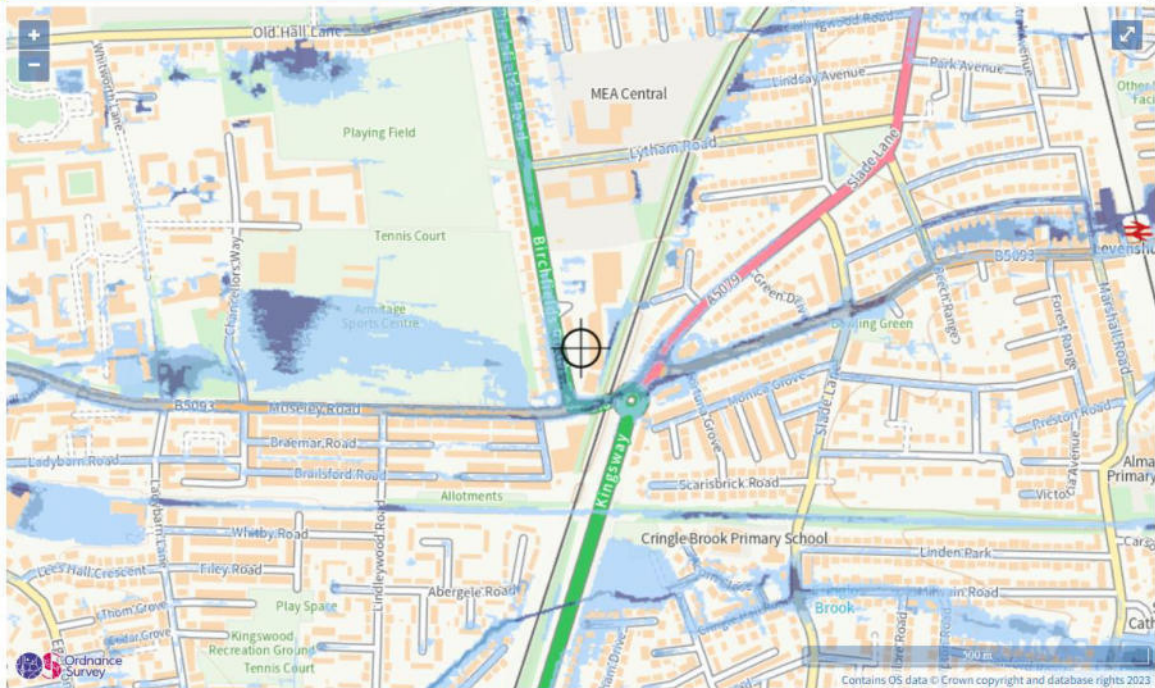
High Medium Low Very Low Location you selected

Flood risk

Extent of flooding

Location

Enter a place or postcode



Extent of flooding from surface water

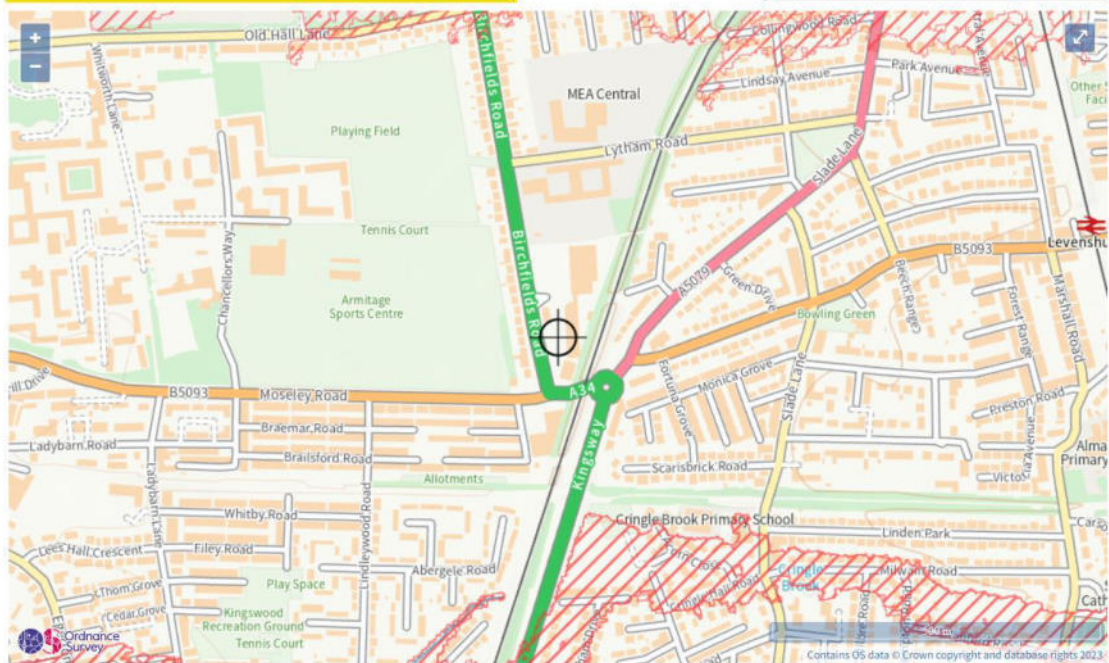
High Medium Low Very low Location you selected

Flood risk

Extent of flooding

Location

Enter a place or postcode



Maximum extent of flooding from reservoirs:

when river levels are normal when there is also flooding from rivers Location you selected

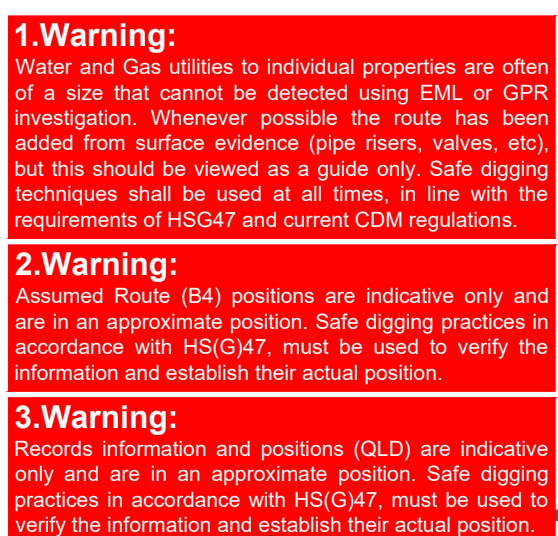
S|C|P

APPENDIX F



S|C|P

APPENDIX G



S|C|P

APPENDIX H

PHASE 2 GROUND INVESTIGATION

Lidl Great Britain Ltd
Fallowfield Retail Park, Manchester

Client: Lidl Great Britain Ltd

Remada Ltd
www.remada.co.uk

806.02.01
February 2021



4.2.2 Infiltration Testing

Falling head permeability test within boreholes provide an indication of the infiltration potential of the soil. The results of infiltration tests in WS3 and WS4 produced values of 1.21×10^{-7} and 4.75×10^{-7} m/s respectively and the results are presented at **Appendix B**.

4.3 Soil Observations

Made Ground was recovered at all locations as a heterogeneous granular material containing a variety of man-made materials including brick, concrete, clinker, glass and metal.

A slight hydrocarbon odour was recorded within the made ground in WS1 below 0.8m bgl; the strata being logged on-site as containing 'slight hydrocarbon and burnt odours'. There were no other visible indicators of contamination including asbestos within the sampled soils.

4.4 Groundwater Observations

No groundwater was encountered during the intrusive investigation.

4.5 Chemical Analysis - Soils

Results of the soil chemical analysis are presented in **Table 4** at the end of the report and full laboratory certificates are presented in **Appendix C**. Results of the chemical analyses are summarised as follows.

The average FOC and pH were 0.02 and 9.6 respectively. Asbestos was not detected in the samples analysed. Detectable concentrations of metals were identified, although these are generally within the range that would typically be expected for made ground.

Concentrations of TPH were detected above method detection limit (MDL) in all five of the samples analysed. The hydrocarbons were generally heavy end hydrocarbons within the range C16 to C35 carbon range. However, hydrocarbons in the C8 to C16 carbon range were also encountered in the samples from WS5A at 0.3 – 0.47m and in WS1 at 0.8 – 0.9m depth. The latter sample recorded the maximum TPH concentration of 20,000mg/kg and also recorded the only BTEX compounds above detection limit.

Concentrations of PAHs were generally low (<100mg/kg). A maximum concentration (excluding bituminous surfacing samples) of 1300 mg/kg was encountered in WS1 at 0.8 – 0.9m bgl.

4.6 Geotechnical Testing

Results of the geotechnical testing are summarised as follows and full laboratory certificates are presented in **Appendix D**.

The PSD tests revealed the following:

- Made ground in WS1 at 0.15 – 0.7m comprised brown silty, sandy gravel with cobbles.
- Made ground in WS2 at 0.18 – 0.8m comprised brown silty, clayey, sandy gravel.
- Made ground in WS3 at 1.0 – 2.0m comprised reddish brown very clayey, very sandy gravel.
- Made ground in WS4 at 1.2 – 1.5m comprised brown silty, clayey, very sandy gravel.
- Made ground in WS5 at 0.3 – 0.7m comprised brown slightly clayey, silty, sandy gravel with cobbles.
- Made ground in WS6 at 1.0 – 2.0m comprised brown gravelly very sandy clay.
- Made ground in WS7 at 0.07 – 0.51m comprised silty, very clayey, very gravelly sand.
- Made ground in WS8 at 0.5 – 1.0m comprised slightly clayey, silty, sandy gravel.



Appendix B

Falling Head Infiltration Test

Date:

09/02/2021

By:

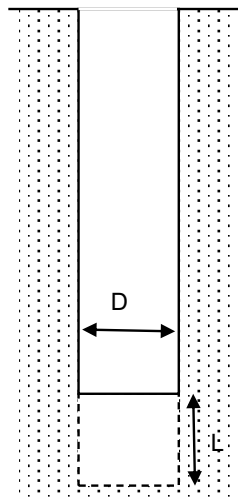
PD

Checked:

GJ

Falling Head Permeability in accordance with BS 5930

Calculation of Intake Factor (F)



Area of base

$$A = 0.0020 \text{ m}^2$$

Diameter

$$D = \begin{array}{l} 50 \text{ mm} \\ 0.05 \text{ m} \end{array}$$

Length

$$L = \begin{array}{l} 2000 \text{ mm} \\ 2 \text{ m} \end{array}$$

$$F = \frac{2 \pi L}{\ln \left[\left(\frac{L}{D} \right) + \sqrt{1 + \left(\frac{L}{D} \right)^2} \right]}$$

$$F = \frac{12.566}{4.382}$$

F =	2.868
------------	--------------

Calculation Sheet 3 of 3	LIDL GREAT BRITAIN LTD		<i>Remada</i>					
	Fallowfield Retail Park, Manchester							
	806.02							
Falling Head Permeability in accordance with BS 5930 Standpipe in WS3 - Test 1			Date:	09/02/2021	By:	PD	Checked:	GJ
At time = 0 mins (t_1) Depth to water = 0.56 Depth to base of borehole = 3 Depth of Water (H_1) = 2.44 At time = 60 min (t_2) Depth to water = 1.71 Depth to base of borehole = 3 Depth of Water (H_2) = 1.29			t_1	0 sec				
$k = \frac{A}{F(t_2 - t_1)} \ln \frac{H_1}{H_2}$			t_2	3600 sec				
$k = \frac{0.0020}{10323.38} \ln \frac{2.44}{1.29}$								
<div style="border: 1px solid black; padding: 2px; display: inline-block;"> k = 1.21E-07 m/s </div>								

Date:

09/02/2021

By:

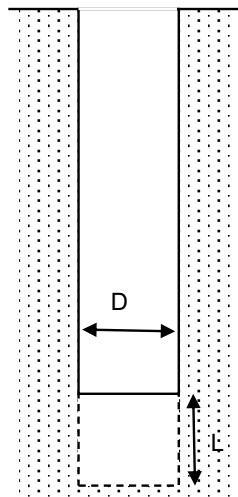
PD

Checked:

GJ

Falling Head Permeability in accordance with BS 5930

Calculation of Intake Factor (F)



Area of base

$$A = 0.0020 \text{ m}^2$$

Diameter

$$D = \begin{array}{l} 50 \text{ mm} \\ 0.05 \text{ m} \end{array}$$

Length

$$L = \begin{array}{l} 1000 \text{ mm} \\ 1 \text{ m} \end{array}$$

$$F = \frac{2 \pi L}{\ln [(L/D) + \sqrt{1 + (L/D)^2}]}$$

$$F = \frac{6.283}{3.690}$$

$$\boxed{F = 1.703}$$

Calculation Sheet 3 of 3	LIDL GREAT BRITAIN LTD		Remada					
	Fallowfield Retail Park, Manchester							
	806.02							
Falling Head Permeability in accordance with BS 5930 Standpipe in WS4 - Test 1			Date:	09/02/2021	By:	PD	Checked:	GJ
At time = 0 mins (t_1) Depth to water = 0 Depth to base of borehole = 1.5 Depth of Water (H_1) = 1.5 At time = 60 min (t_2) Depth to water = 1.16 Depth to base of borehole = 1.5 Depth of Water (H_2) = 0.34			t_1	0 sec				
$k = \frac{A}{F(t_2 - t_1)} \ln \frac{H_1}{H_2}$			t_2	3600 sec				
$k = \frac{0.0020}{6130.76} \ln \frac{1.5}{0.34}$								
<div style="border: 1px solid black; padding: 2px; display: inline-block;"> k = 4.75E-07 m/s </div>								

S|C|P

APPENDIX I



Project Information

Technics Group
Unit 2 Astoria Court
Tom Dando Way
Normanton Industrial Estate
Wakefield
WF6 1TP

Job Number
5475

Surveyed by (Operator)
J MOSS/K WORT

Base Unit
KUMPFDDCPO

Date
15/10/2021

Client Details:

LIDL GB UK

Site Details:

MANCHESTER UNI

Contractor Details:

Technics Group
Unit 2 Astoria Court
Tom Dando Way
Normanton Industrial Estate
Wakefield
WF6 1TP

Office Contact Number: 01302 330105

Purpose of Survey: Culvert Survey

Job Number 5475	Surveyed by (Operator) J MOSS/K WORT	Base Unit KUMPFDDCPO	Date 15/10/2021
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Report Contents

Page 1	Job Overview
Page 2	Contents Page
Page 3	Grade Defect Descriptions
Page 4	Survey Run Sheet(Survey 1 - MH1 to US)
Page 6	Survey Run Sheet(Survey 2 - MH1 to US)
Page 9	Defect Summary
Page 11	Job Summary
Page 12	Lead Sheet

Job Number 5475	Surveyed by (Operator) J MOSS/K WORT	Base Unit KUMPFDDCPO	Date 15/10/2021
<p>1: Occurences without damage. For example, laterals, joints,etc.</p> <p>NO DEFECTS WERE DETECTED.</p>			
<p>2: Constructional deficiencies or occurences with insignificant influence to tightness, hydraulic or static pressure or pipe: Eg. wide joints, badly torched intakes, minor deformation of plastic pipes, minor erosions etc.</p> <p>REHABILITATION CAN BE SCHEDULED LONG-TERM.</p>			
<p>3: Constructional deficiencies diminishing static, hydraulic and tightness: Eg. untorched intakes, cracks, minor drainage obstructions such as calcite build ups, protruding laterals, minor damages to pipe wall, individual root penetrations, corroded pipe walls etc.</p> <p>REHABILITATION IS NECESSARY MEDIUM-TERM WITHIN 3 TO 5 YEARS.</p>			
<p>4: Constructional damages with insufficient static safety, hydraulic or tightness: Eg. axial/radial pipe bursts, pipe deformations, visually noticeable infiltration/exfiltration, cavities, in pipe-wall, severe protruding, laterals severe root penetrations, severe corrosion of pipe wall etc.</p> <p>REHABILITATION PROCEDURE IS URGENT AND HAS TO BE COMPLETED WITHIN 1 TO 2 YEARS. NECESSITY FOR EMERGENCY OPERATIONS HAS TO BE EXAMINED.</p>			
<p>5: Pipe is already or will shortly be impermeable: Eg. collapsed pipe, deeply rooted pipe or other drainage obstructions. Pipe loses water or danger of backwater in basements etc.</p> <p>REHABILITATION IS URGENT AND SHORT-TERM. IN ORDER TO PREVENT FURTHER DAMAGE, NECESSARY TEMPORARY SPOT REPAIR HAS TO BE CONDUCTED ON EMERGENCY LEVEL.</p>			



CCTV Inspection Report

Technics Group
Unit 2 Astoria Court
Tom Dando Way
Normanton Industrial Estate
Wakefield
WF6 1TP

Surveyed by (Operator) J MOSS/K WORT	Job Number 5475	Pipe Length Reference(PLR) US X	Date 15/10/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 0/0	Base Unit KUMPFDDCPO	Section Number 1
Road MANCHESTER UNI Place Location		Division District Location Details		
Purpose Duty Surface water Catchment	Shape/Size 1250mm Material Brick Category		Start Node MH1 End Node US Total length 32.66 metres	
Scale 1:1.68 Direction Upstream				

Start Node Ref:MH1 | I/L : metres | Depth: 2.05 metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference MH1	5612979	Comment / 0
0.00	WL	Water level 10% height/diameter	5612980	Comment / 0
25.72	JN	Junction at 9 o'clock, diameter 225mm	5613036	Comment / 0
28.25	REM	ACCESS TUNNEL	5613070	Comment / 0
32.66	SA	Survey abandoned - Remark: CRAWLER IN DANGER OF TIPPING OVER. WILL TRY WITH LARGE INFLATABLE WHEELS.	5613107	Comment / 0

End Node Ref:US | I/L : metres

Job Number 5475	Surveyed by (Operator) J MOSS/K WORT	Base Unit KUMPFDDCPO	Date 15/10/2021
 <p>Start node type, manhole, reference MH1</p>			
 <p>Water level 10% height/diameter</p>			
<p>From: MH1 / To: US Size: 1250mm</p>  <p>Junction at 9 o'clock, diameter 225mm</p>			
<p>From: MH1 / To: US Size: 1250mm</p>  <p>ACCESS TUNNEL</p>			
<p>From: MH1 / To: US Size: 1250mm</p>  <p>Survey abandoned - Remark: CRAWLER IN DANGER OF TIPPING OVER. WILL TRY WITH LARGE INFLATABLE WHEELS.</p>			

CCTV Inspection Report

Surveyed by (Operator) J MOSS/K WORT	Job Number 5475	Pipe Length Reference(PLR) US X	Date 15/10/2021	Pre Cleaned Not Cleaned
Weather 1 - Dry	Customer Present	Service Grade/Structural Grade 0/0	Base Unit KUMPFDDCPO	Section Number 2
Road MANCHESTER UNI Place Location		Division District Location Details		
Purpose Duty Surface water Catchment	Shape/Size 1250mm Material Brick Category		Start Node MH1 End Node US Total length 94.16 metres	
Scale 1:4.93 Direction Upstream				

Start Node Ref:MH1 | I/L : metres | Depth: 2.05 metres

Position	Code	Description	Photo	Type/Grade
0.00	MH	Start node type, manhole, reference MH1	5613436	Comment / 0
0.00	WL	Water level 10% height/diameter	5613437	Comment / 0
11.85	JN	Junction at 9 o'clock, diameter 225mm	5613447	Comment / 0
13.83	REM	ACCESS TUNNEL	5613448	Comment / 0
40.81	LR	Line of drain/sewer deviates right	5613505	Comment / 0
84.69	JN	Junction at 1 o'clock, diameter 150mm	5613639	Comment / 0
94.16	REM	ACCESS TUNNEL	5613706	Comment / 0

End Node Ref:US | I/L : metres

Job Number 5475	Surveyed by (Operator) J MOSS/K WORT	Base Unit KUMPFDDCPO	Date 15/10/2021
			
Start node type, manhole, reference MH1			
			
Water level 10% height/diameter			
<p>From: MH1 / To: US Size: 1250mm</p> 			
Junction at 9 o'clock, diameter 225mm			
<p>From: MH1 / To: US Size: 1250mm</p> 			
ACCESS TUNNEL			
<p>From: MH1 / To: US Size: 1250mm</p> 			
Line of drain/sewer deviates right			
<p>From: MH1 / To: US Size: 1250mm</p> 			
Junction at 1 o'clock, diameter 150mm			

Job Number 5475	Surveyed by (Operator) J MOSS/K WORT	Base Unit KUMPFDDCPO	Date 15/10/2021
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ACCESS TUNNEL



Structural Defects (SRM 4)

Technics Group
Unit 2 Astoria Court
Tom Dando Way
Normanton Industrial Estate
Wakefield
WF6 1TP

Job Number 5475				Surveyed by (Operator) J MOSS/K WORT		Base Unit KUMPFDDCPO			Date 15/10/2021				
No.	PLR	Dir.	Use	Shape/Size	Date	Mat.	Total Length	Inspection Length	Cat.	Peak Score	Grade	Mean Score	Total Score
1	US X	U	S	1250	15/10/2021	Brick	32.66 metres	32.66		0	1	0	0
2	US X	U	S	1250	15/10/2021	Brick	94.16 metres	94.16		0	1	0	0



Service Defects (SRM 4)

Technics Group
Unit 2 Astoria Court
Tom Dando Way
Normanton Industrial Estate
Wakefield
WF6 1TP

Job Number 5475				Surveyed by (Operator) J MOSS/K WORT		Base Unit KUMPFDDCPO			Date 15/10/2021				
No.	PLR	Dir.	Use	Shape/Size	Date	Mat.	Total Length	Inspection Length	Cat.	Peak Score	Grade	Mean Score	Total Score
1	US X	U	S	1250	15/10/2021	Brick	32.66 metres	32.66		0	1	0	0
2	US X	U	S	1250	15/10/2021	Brick	94.16 metres	94.16		0	1	0	0



Report Summary

Technics Group
Unit 2 Astoria Court
Tom Dando Way
Normanton Industrial Estate
Wakefield
WF6 1TP

Job Number 5475	Surveyed by (Operator) J MOSS/K WORT	Base Unit KUMPFDDCPO	Date 15/10/2021
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Job Information

Total Distance Surveyed: **126.82 metres**
Engineer: **J MOSS/K WORT**
Number of Surveys: **2**
Number of Surveys grade 4 or above: **0**

Section 1 Overview (15/10/2021)

Manholes: **MH1 to US**
Pipe Length: **32.66 metres**
Structural Grade: **0**
Service Grade: **0**
Material: **Brick**
Pipe Size: **1250mm**
Use: **Surface water**

Section 2 Overview (15/10/2021)

Manholes: **MH1 to US**
Pipe Length: **94.16 metres**
Structural Grade: **0**
Service Grade: **0**
Material: **Brick**
Pipe Size: **1250mm**
Use: **Surface water**



Lead Sheet

Technics Group
Unit 2 Astoria Court
Tom Dando Way
Normanton Industrial Estate
Wakefield
WF6 1TP

Job Number 5475	Surveyed by (Operator) J MOSS/K WORT	Base Unit KUMPFDDCPO	Date 15/10/2021
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Lead Information

Engineer: **J MOSS/K WORT**

Client Name: **LIDL GB UK**

Address: **MANCHESTER UNI**

Log Date:

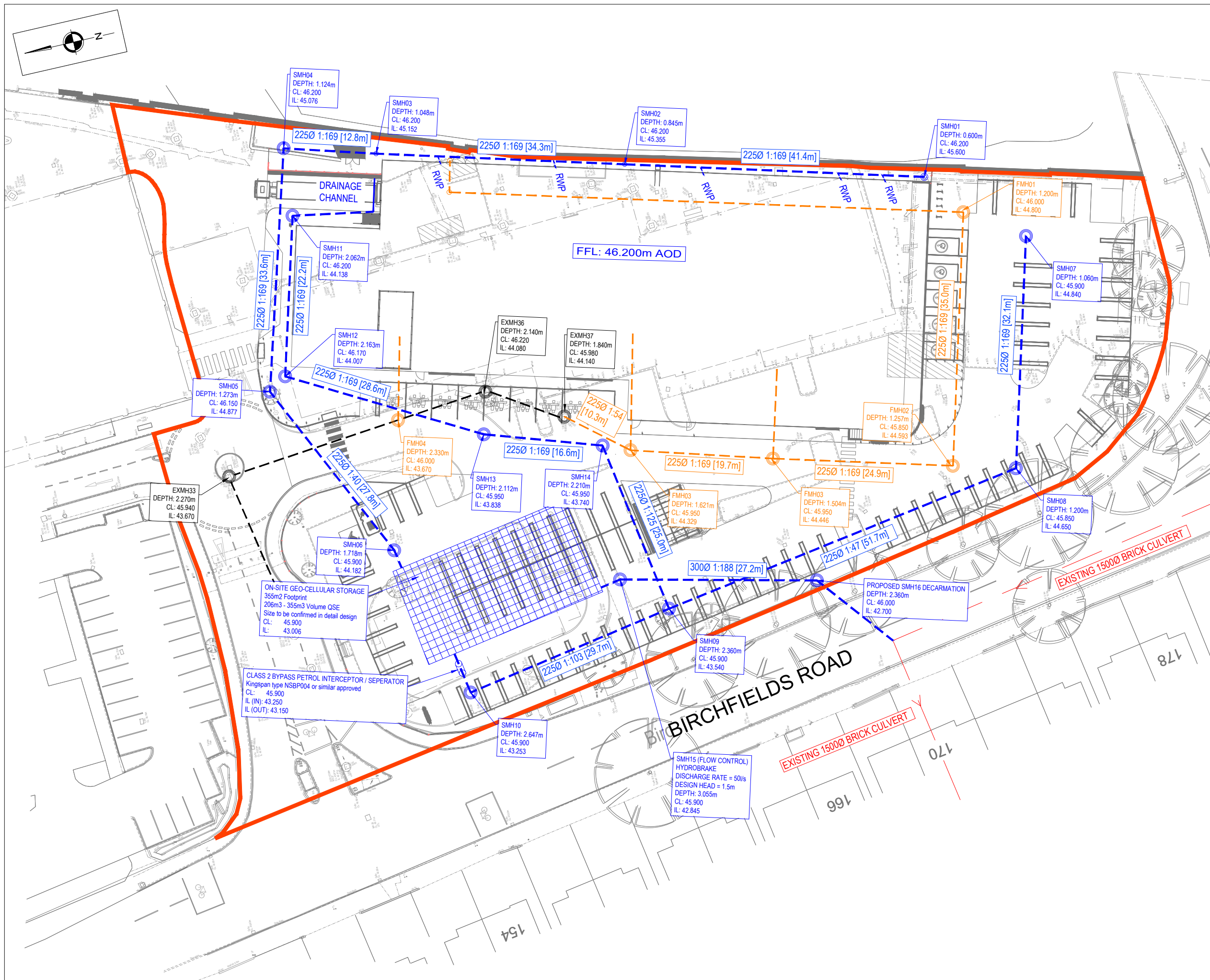
Invoice Number:

Problem:

Other Details

S|C|P

APPENDIX J



NOTES

1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.

2. ALL LEVELS ARE IN METRES RELATED TO ORDNANCE DATUM NEWLYN (OD) UNLESS NOTED OTHERWISE.

3. ALL COORDINATES ARE IN METRES RELATED TO ORDNANCE SURVEY NATIONAL GRID.

4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL DRAWINGS AND DOCUMENTATION ASSOCIATED WITH THE PROJECT.

5. THIS DRAWING HAS BEEN BASED UPON SURVEY/OS INFORMATION SUPPLIED BY A THIRD PARTY AND SCP SHALL NOT BE LIABLE FOR ANY INACCURACY OR DEFICIENCIES ARISING FROM IT.

6. CLIMATE CHANGE VALUE FOR THE SITE TO BE 45%.

7. THE PROPOSED FOUL WATER DISCHARGE FOR THIS SITE HAS BEEN CALCULATED AS 1.02 LITRES PER SECOND x6 DRY WEATHER FLOW 6.12 LITRES PER SECOND.

KEY

PROPOSED PRIVATE FOUL SEWER

PROPOSED PRIVATE SURFACE WATER SEWER

CLASS 2 BY-PASS PETROL / OIL INTERCEPTOR

ATTENUATION STORAGE TANK

REVISIONS

REV	DESCRIPTION	DATE	BY
-	FIRST ISSUE	13.10.23	MG
A	UPDATED TO SUIT NEW LAYOUT	04.03.24	MG

SCP

Transportation Planning : Infrastructure Design

Ground Floor, 10 South Parade, Leeds, LS1 5QS, Tel 0113 887 3323
www.scptransport.co.uk, Email info@scptransport.co.uk

Client Name:

Lidl Great Britain Ltd.

Project Title:

LIDL FALLOWFIELD
FRA & DRAINAGE STRATEGY

Drawing Title:

PROPOSED DRAINAGE
STRATEGY

Drawn By:

MG

Date:

13.10.2023

Checked:

WJ

Scale:

1:500 @ A3

Status:

PLANNING

Approved/Unapproved:

-

Drawing No.

200509-0500-002

Rev.

A

S|C|P

APPENDIX K

Quick Storage Estimate

Micro Drainage

Variables

FSR Rainfall:

Return Period (years):

Region:

Map:

Ratio R:

Cv (Summer):

Cv (Winter):

Impervious Area (ha):

Maximum Allowable Discharge (l/s):

Infiltration Coefficient (m/hr):

Safety Factor:

Climate Change (%):

Analyse OK Cancel Help

Enter Ratio R between 0.050 and 0.500

Quick Storage Estimate

Micro Drainage

Results

Global Variables require approximate storage of between 206 m³ and 355 m³.

These values are estimates only and should not be used for design purposes.

Analyse OK Cancel Help

Enter Ratio R between 0.050 and 0.500

100 Year Event + 45% CC

[206m³ – 355m³ tank]

S|C|P

APPENDIX L

BS EN 752 Part 4 : 1998
Annex C - Calculation of Wastewater Flows by Discharge Units

Client	LIDL GB Ltd	Date	06.01.21
Site	Fallowfield Retail Park, Manchester	Job No	200509
		Sub No	-

Prepared by	GD	Checked by	WJ
--------------------	-----------	-------------------	-----------

$$Q = k_{DU} \sqrt{\sum DU}$$

Frequency Factors (k_{DU})

Toilets and/or Shower open to Public (congested u ▼)	$k_{DU} =$	1.0
--	------------	------------

Discharge Units (DU)

	High	Number	Total (high)
Wash Basin	0.6	9	5.4
Shower	0.6	0	0
Urinal	0.8	2	1.6
Bath	1.3	0	0
Kitchen Sink	1.3	3	3.9
Dishwasher	0.8	2	1.6
Household Washing Machine	0.8	0	0
Commercial Washing Machine	2.5	1	2.5
WC	2.5	9	22.5
Floor Drains	2.0	0	0
	Sum DU =		37.5

Q = 6.12 l/s @ 6DWF
1.02 l/s

Table 6 - Minimum Recommended Gradients

Peak Flow (l/s)	Pipe Size (mm)	Min Gradient (1 in ...)	Max Capacity (l/s)
<1	75	1:40	4.1
	100	1:40	9.2
>1	75	1:80	2.8
	100	1:80*	6.3
	150	1:150 [#]	15.0

* Minimum 1 WC

[#] Minimum 5 WC's

S|C|P

APPENDIX M

George Dermentzoglou

From: Flood Risk Management <floodriskmanagement@manchester.gov.uk>
Sent: 20 January 2021 12:15
To: George Dermentzoglou
Cc: Steven Mccoombe
Subject: RE: Pre-Application Drainage Advice - Lidl, Fallowfield Retail Park, Manchester
Attachments: Manchester City Council - SuDS Requirement for Developers 2019.pdf

Good Afternoon George,

In regards to your proposal, we would ask that you follow both the national and local guidance provided for major developments. You should refer to documents such as the local SFRA for Manchester City, Salford and Trafford, the Local Flood Risk Management Strategy for MCC and MCC SuDS Requirements for Developers (which I have attached).

As we would class this as a brownfield site and a major development we would encourage the use of SuDS on site and in accordance with NPPF we would request that you follow the drainage hierarchy.

Firstly, discharging the site via infiltration should be considered, followed by discharge to watercourse (our records highlight that the Fallowfield Brook is located approximately along Birchfields Road adjacent to the site), then to public SW sewer and finally to public combined water sewer.

In accordance with MCC local policy, as the site is brownfield we would require a minimum of 50% betterment of the sites existing brownfield rates. Based on this, we would not approve of a free discharge to the combined public sewer.

I would also note that all proposed discharge rate calculations should be submitted with any drainage strategy to be reviewed and approved by the LPA.

Kind Regards,

Oliver

Oliver Timmins
Engineer (Flood Risk Management)
Email: oliver.timmins@manchester.gov.uk

Lead Local Flood Authority
Highways
Growth & Development and Neighbourhoods Directorate
Manchester City Council
PO Box 532 Town Hall
Manchester
M60 2LA

Web: <http://www.manchester.gov.uk>

George Dermentzoglou

From: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Sent: 14 January 2021 17:00
To: George Dermentzoglou
Cc: Wastewater Developer Services
Subject: FW: Pre-Application Drainage Advice - Lidl, Fallowfield Retail Park, Manchester - 4200036138

Good Evening George,

We have carried out an assessment of your application which is based on the information provided. This pre-development advice on your drainage strategy will be valid for 12 months. Your drainage strategy will need to be reviewed by other competent authorities as part of the planning process, and we advise that you carry out the necessary site investigations to confirm the viability of your proposals.

If your investigations require access to our public sewer network, we ask that you contact our network engineers with a request for an access certificate via our main contact telephone number 0345 3723223 or refer to the link below:

<https://www.unitedutilities.com/builders-developers/working-near-our-assets/>

Foul Water

Foul flow from this site will be allowed to drain into the public foul sewer system an unrestricted rate.

If you are able to identify an alternative, more suitable point of discharge, we request that you contact us at your earliest convenience so that we can assess suitability.

Surface Water

All surface water flow from the proposed development should drain in-line with the drainage hierarchy, as outlined in Paragraph 80, (Reference ID: 7-080-20150323), of the National Planning Practice Guidance. We also recommend you prioritise the use of multi-functional sustainable drainage systems for the management of surface water in accordance with national planning policy.

Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.

This is outlined as follows, in order of priority:

- 1. into the ground (infiltration);**
- 2. to a surface waterbody;**
- 3. to a surface water sewer or highway drain;**
- 4. to a combined sewer.**

For guidance, The [North West SuDS Pro-Forma](#) provides information on the appropriate evidence required at each stage of the hierarchy, to demonstrate how each level has been discounted.

The Lead Local Flood Authority has responsibility for all surface water drainage concerns and their input to your proposal is critical. You should also consider whether it is necessary to discuss your proposal with the Environment Agency, or Internal Drainage Board (if operating in your area).

The Local Planning Authority are the determining authority for any application for planning permission and the appropriate authority for determining cost viability of a proposed drainage scheme, such assessments are outside of the jurisdiction of United Utilities.

Infiltration

Surface water runoff generated from this development should discharge to the ground via infiltration system where feasible.

A detailed evidence based feasibility assessment must be carried out in line with Chapter 25 of the CIRIA SuDS Manual 2015 to determine whether infiltration is a suitable method of surface water disposal.

Particular attention must be paid to Ground Water Source Protection Zones to ensure that the risk of pollution to these valuable resources is not compromised. Details can be obtained from the government website:

<https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs#find-groundwater-spzs>

If your site is in a Groundwater Source Protection Zone, you should have regard to the Environment Agency's approach to Groundwater Protection. Information on this is available via the link below:

<https://www.gov.uk/government/publications/groundwater-protection-position-statements>

Please note that such a location could have implications for the principle of your development and the need for additional mitigating measures to protect the groundwater environment and public water supply in the detailed design of your site.

Waterbody

If an evidence based assessment has been carried out and confirms that infiltration is not feasible, we recommend that you contact the Lead Local Flood Authority and/or Environment Agency to discuss a point of discharge to the culverted watercourse 12m South of the proposed site and 16m East of the proposed site.

We would encourage you to identify and engage with any third party landowner and riparian owner to agree access and discharge rights to the water body if this is not in your ownership.

Public Sewer

In accordance with the hierarchy of drainage options within the National Planning Practice Guidance, both discharge to ground via infiltration and discharge to a waterbody should be discounted prior to consideration of discharging surface water to the public sewer system. Evidence should be provided to demonstrate how these have been discounted, as outlined in the North West SuDS pro-forma.

Once evidence is provided as outlined above, United Utilities will consider a connection to the 450mm diameter public combined sewer located 8m East of the proposed site at a pass forward flow to be agreed by the Lead Local Flood Authority. United Utilities request that any agreed rate does not exceed 5 l/s.

As a Water Company, we have no obligation to accept highway drainage into our public sewer network. However, should your proposals include runoff from highways, we would request that consideration is given to SuDS components that deliver source control are incorporated within the design of the scheme to reduce the volume and frequency of discharges of these flows to the public sewer.

Levels

For low-lying sites, (where the ground level of the site or the level of a basement is below the ground level at the point where the drainage connects to the public sewer), care should be taken to ensure that the property is not at increased risk of flooding. If these circumstances exist, we recommend that you contact us to discuss further. It could affect

the detailed design of your site and result in the need to incorporate appropriate mitigating measures in your drainage scheme.

Site drainage must be designed in accordance with Building Regulations, National Planning Policy, and local flood authority guidelines, we would recommend that you speak and make suitable agreements with the relevant statutory bodies.

If you intend to put forward your wastewater assets for adoption by United Utilities, the proposed detail design will be subject to a technical appraisal by an Adoption Engineer as we need to be sure that the proposals meets the requirements set out in the Design & Construction Guidance. The proposed design should give consideration to long term operability and give United Utilities a safe and cost effective proposal for the lifetime of the assets. In these cases, we strongly recommend that no construction commences until the detailed drainage design, submitted as part of the Section 104 application, has been assessed and accepted in writing by United Utilities. Any work carried out prior to the technical assessment being approved is done entirely at the developer's own risk and could be subject to change.

Existing Water Assets Crossing the Site

It is the developer responsibility to identify utilities on-site. Where clean water assets are shown on our records, we recommend that you contact our Water Pre-Development Team, via the following email address:

DeveloperServicesWater@uuplc.co.uk. Further information for this service can be found on our website via the link below:

<https://www.unitedutilities.com/builders-developers/larger-developments/pre-development/water-pre-dev/>

Connection Application

Although we may discuss and agree discharge points and rates in principle, please be aware that you will have to apply for a formal sewer connection. This is so that we can assess the method of construction, Health & Safety requirements and to ultimately inspect the connection when it is made. Details of the application process and the form itself can be obtained from our website by following the link below:

<https://www.unitedutilities.com/builders-developers/larger-developments/wastewater/sewer-connections/>

We recommend that the detailed design should confirm the locations of all utilities in the area and ensure that any proposed drainage solution considers routing and clash checks where required.

If we can be of any further assistance please don't hesitate to contact us further.

Kind regards,



Marie Mura

Assistant Developer Engineer
Developer Services & Metering
Customer Services

T: 01925 537745

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George Dermentzoglou

From: Davies, Andy <Andy.Davies1@environment-agency.gov.uk>
Sent: 19 January 2021 13:03
To: George Dermentzoglou
Cc: Willow, Liz
Subject: RE: Ref 210107/MT02 FW: Pre-Application Drainage Advice - Lidl, Fallowfield Retail Park, Manchester
Attachments: 7397-SMR-00-XX-DR-A-2003-S4-P1.pdf; SCP-200509-SK01 - LIDL Fallowfield Existing Catchment Areas.pdf; SCP-200509-SK02 - LIDL Fallowfield Proposed Catchment Areas.pdf; SCP-200509-SK03 - LIDL Fallowfield Proposed Drainage Strategy.pdf; EA Flood Zone Map.pdf

Good afternoon George,

My thanks for your query email.

Flood Risk Query

I have looked over the details you have provided above and cross-checked against our own mapping details. As you have correctly identified the proposed LIDL development is situated in Flood Zone 1 and is not in close proximity to any 'Main River' designated watercourses.

From a planning perspective, for assessing lower flood risk development proposals (i.e. within Flood Zone 1), we have produced a series of standard comments for Local Planning Authorities (LPA) and planning applicants to refer to. These standard comments are known as our Flood Risk Standing Advice (FRSA):-

<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-to-follow-standing-advice>.

These comments replace direct case-by-case consultation with us on lower risk proposal.

From the details you have provided the proposed development would fall within the category for following our FRSA advice. We would not expect to be consulted by the LPA on this aspect of the development proposal and therefore will not a further position statement.

Should you wish to discuss the preparation and agreement of the Flood Risk Assessment (FRA) further prior to formal planning submission, I would advise contacting the Lead Local Flood Authority (LLFA) in the first instance as they will be undertaking the formal planning review. Similarly, the LLFA should be contacted in the first instance in order to discuss the matter of surface water discharge rates.

Drainage Query

Regarding drainage I have briefly looked over the details provided in your email below and within the attached drainage strategy. As identified the current intention is to connect to existing combined sewer for both foul and surface water disposal.

Regarding foul drainage, as alluded to, we would advise confirming with UU that connection to the existing system can be enabled prior to progression. As above, under formal planning consultation we would not be consulted on the matter of discharge rates or expected to provide comment if has been agreed by the LPA that both surface and foul water can be discharged via mains drainage. We would however, be consulted and asked to provide comment of these aspects if the development was proposing to use non-mains foul drainage and/or was proposing to utilise infiltration in an area known or suspected to be contaminated thus posing a risk to controlled waters. Separate to the above, we would be consulted by LPA regardless of drainage proposals if contamination is suspect which may pose a risk to controlled waters (i.e. the underlying Principal Aquifer).

Regarding surface water drainage we would like to take this opportunity to provide the following informatives and would advise consideration prior to scheme progression:

Surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management (SuDS). SuDS manage surface water run-off by simulating natural drainage systems. Whereas traditional drainage approaches pipe water off-site as quickly as possible, SuDS retain water on or near to the site. As well as reducing flood risk, this promotes groundwater recharge, helps absorb diffuse pollutants, and

improves water quality. Ponds, reedbeds and seasonally flooded grasslands can also be particularly attractive features within public open spaces.

SuDS involve a range of techniques including soakaways, infiltration trenches, permeable pavements, grassed swales, green roofs, ponds and wetlands. As such, virtually any development should be able to include a scheme based around these principles. In doing so, they'll provide multiple benefits and will reduce costs and maintenance needs.

Approved Document Part H of the Building Regulations 2010 establishes a hierarchy for surface water disposal, and encourages a SuDS approach. The first option for surface water disposal should be the use of SuDS, which encourage infiltration such as soakaways or infiltration trenches. In all cases, it should be established that these options are feasible, can be adopted and properly maintained and would not lead to any other environmental problems. For example, using soakaways or other infiltration methods on contaminated land carries groundwater pollution risks and may not work in areas with a high water table. Where the intention is to dispose to soakaway, these should be shown to work through an appropriate assessment carried out under Building Research Establishment (BRE) Digest 365.

Further information on SuDS can be found in:

- the CIRIA C697 document SuDS manual
- HR Wallingford SR 666 Use of SuDS in high density developments
- CIRIA C635 Designing for exceedance in urban drainage – good practice
- the Interim Code of Practice for Sustainable Drainage Systems – the Interim Code of Practice provides advice on design, adoption and maintenance issues and a full overview of other technical guidance on SuDS

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Further to the above, should you have any planning related queries, then please do not hesitate to contact me.

Kind regards,

Andy

Andy Davies

Planning Advisor, Sustainable Places Team | Greater Manchester, Merseyside, Cheshire

Environment Agency | Richard Fairclough House, Knutsford Road, Latchford, Warrington WA4 1HT

Email: SPPlanning.RFH@environment-agency.gov.uk

Mobile: 0739 379 8325

