

ALDI STORE - SUSSEX HOUSE, PERRYMOUNT ROAD, HAYWARDS HEATH

DRAINAGE STRATEGY

CLIENT
ALDI STORES LTD



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Revision	Date	Notes	Author	Checked	Approved
P01	14.11.24	Draft issue	CAP	AST	RAG
P02	26.11.24	Planning issue	CAP	AST	RAG

1. INTRODUCTION

This drainage strategy has been prepared to support a planning application for the proposed retail development comprising a new food store of the Sussex House site on Perrymount Road, Haywards Heath, as requested by ALDI Stores Ltd. This drainage strategy has been prepared in line with the relevant legislation and guidance, as detailed below.

The Flood and Water Management Act received royal assent in April 2010. Schedule 3 of the Act proposed to establish a Sustainable Drainage System (SuDS) Approving Body (SAB), however this was not enacted in England, instead with the National Planning Policy Framework being amended to require (where appropriate) the delivery of SuDS for major developments.

Statutory Instrument 2006 No. 2375: *The Town and Country Planning (General Development Procedure) (Amendment) (No. 2) (England) Order 2006*, which came into force on 1st October 2006, made the Environment Agency (EA) a statutory consultee for planning applications where drainage and flood risk are key issues.

The Government laid a statutory instrument making the Lead Local Flood Authority (LLFA) a statutory consultee, and overseer of drainage matters for major planning applications, by adding the consultation requirement to Schedule 4 of the Development Management Procedure Order. This came into effect from 15 April 2015.

As such, both the Local Planning Authority (LPA) and LLFA in consultation are required to approve drainage schemes at planning stage, either during determination or by condition. In England, this is generally undertaken in line with published non-statutory standards (National Standards for Sustainable Drainage) as published by Defra, however individual LPAs and LLFAs are free to implement their own standards and requirements.

The LLFA for the proposed site is West Sussex County Council (WSCC). WSCC set out their requirements in their document West Sussex LLFA Policy for the Management of Surface Water dated November 2018.

The objective of this report is to develop and assess drainage solutions for the proposed development, such that these meet the requirements of WSCC guidance and the NPPF. This report has been developed using current best practice, the aforementioned local standards and guidance, the Non-Statutory Technical Standards for Sustainable Drainage: Practice Guidance, CIRIA C753 The SuDS Manual and site-specific requirements.

2. DEVELOPMENT SITE

2.1. Site Location

The site is located at the northern end of Perrymount Road (B2028) in Haywards Heath, West Sussex. The nearest postcode to the site is RH16 1DN or grid reference TQ 33233, 24600. The site is known as Sussex House, an existing building with associated car parking and includes Commercial House, and 54-56 Perrymount Road. A location plan is included in Appendix A.

2.2. Development Proposals

As shown on the proposed site plan included in Appendix B, an ALDI retail food store is proposed. The development comprises a single building, housing the retail area, warehouse, staff welfare facilities, with external areas to provide a service ramp, customer parking and landscaping. The existing vehicular entrance to the site will be maintained.

2.3. Existing Site Features

The total application site area is approximately 7,977m², or 0.798ha. The site is primarily occupied by Sussex House and its car park which wraps around the sides and rear of the building. In addition, two further retail / commercial units are located along the site frontage with Perrymount Road. All three existing buildings will be demolished to facilitate the proposals. Sussex House and its car park are generally raised above Perrymount Road such that existing ground levels at Perrymount Road are in the region of 54.00mAOD whilst the finished floor level of Sussex House is 56.74mAOD. The parking to the rear of Sussex House generally then falls back down to the north-eastern corner of the site where ground levels are at a minimum of 53.58mAOD. A topographic survey of the site was carried out by Berry Geomatics Ltd in September 2024 and is included in

Appendix C.

The closest watercourse is the Scrase Stream which is an EA main river and located approximately 450 metres to the north and north-east of the site. The Scrase Stream flows in an easterly direction, joining the River Ouse to the east of Haywards Heath.

3. FLOOD RISK

3.1. Flood Risk Features and Suitability for Development

Although West Sussex has a significant length of coastline, Haywards Heath lies a significant distance inland and significant elevation above the coast, and is therefore not at risk of tidal flooding. The site may be at elevated risk of flooding from a number of other sources, which are discussed below.

3.2. Fluvial and Tidal Flooding

According to the Environment Agency's (EA) Flood Map for Planning, the site is wholly located within flood zone 1, the lowest risk area in terms of fluvial and tidal flooding. As such, and as the site area is less than 1ha, a full flood risk assessment (FRA) is not required. An extract from the Flood Map for Planning is included in Appendix D.

3.3. Surface Water Flooding

Surface water flooding can occur when rainfall intensities overwhelm the normal drainage processes of an area, causing water to flow or pond on the surface. Surface water flood risk mapping is provided by EA long term flood risk service, with mapping being generated from direct rainfall modelling. According to this, the site is classified as very low risk, describing areas with a chance of flooding in each year of less than 0.1%.

Perrymount Road is shown to be classified as a medium and low risk whilst a potential overland flow route is indicated passing alongside the site's south-eastern boundary through The Heath play area. External ground levels within the car park will be designed to route any pooling water away from the building but to remain on site. An extract from the EA's flood mapping is included in appendix D.

3.4. Groundwater

Groundwater flooding can occur when sub-surface water tables rise above the surface levels of an area, causing groundwater to emerge at the surface. Generally, groundwater flooding affects low-lying areas with relatively permeable geology, capable of storing sufficient quantities of groundwater while also allowing water to move through it at a reasonable rate.

Geological mapping indicates the site is underlain by the Upper Tunbridge Wells Sand member comprising interbedded sandstone and siltstone. These are relatively impermeable and unproductive strata with regards to groundwater storage and transportation. As such the risk of groundwater flooding is considered to be low.

3.5. Canals, Reservoirs and Water Retaining Infrastructure

It is important to consider flood risk to the development from water retaining infrastructure, such as reservoirs and canals, as in the event of a breach of these structures, large volumes of water could be released within a short period of time, which can prove extremely hazardous in areas through which this water would flow.

The EA provide mapping for reservoir flood risk, showing the nearest reservoir being the Ardingly Reservoir approximately 4 kilometres to the north of Haywards Heath. The EA mapping shows that the site is located beyond the maximum extent of flooding for any such breach event in nearby reservoirs. Additionally, no canals are located within the vicinity of the site.

3.6. Sewer Flooding

Flooding can be caused by the surcharging of the sewerage system, either due to excess rainwater in storm events, or due to blockages. In these cases, excess flows typically escape from the system at manholes, before flowing overland.

No evidence has been found of recorded sewer flooding within the vicinity. Foul and storm drainage networks are present across and around the site which are discussed in further detail in section 5.1. However, much of

the existing drainage will be removed to facilitate the development. The remaining drainage is predominantly located within the roads around the development or sufficiently remote from the proposed building to not pose a flood risk. As such the site is not considered to be at risk from sewer flooding.

3.7. Flood risk mitigation

Since the proposed development is considered to be at low risk of flooding from all of the above sources, no specific flood risk mitigation measures are proposed. Generally, the floor level of the proposed building should be set no lower than existing ground levels.

4. CLIMATE CHANGE

4.1. Climate Change Allowances and Guidance

In order to produce a sustainable drainage system throughout the lifespan of the development, it is important to make allowances for climate change. Climate change is expected to influence peak tidal sea levels, maximum wave heights, peak river flows and rainfall intensity. Guidelines on how to make allowance for these are published by the Environment Agency and Defra. Of these, the most relevant to the design of the proposed drainage systems is rainfall intensity, while the others are more relevant to flood risk.

4.2. Increase in Flood Risk Due to Climate Change

Since the site is sufficiently remote from the coastline to not be at risk from tidal flooding, increases in sea levels and wave heights are not considered to increase the flood risk to the proposed development over its lifespan.

Peak river flows are expected to increase with time, which is likely to relatively raise fluvial flood levels for a flood event with given probability. Since the site is wholly located in flood zone 1, the lowest risk area, and is a significant distance from the nearest area classified as flood zone 3, it is not considered likely that increases in peak river flow will be sufficient to significantly change the fluvial flood risk to the proposed development.

4.3. Peak Rainfall Intensity Allowances

In the absence of a design life for commercial buildings being specified in either the NPPF, the design life is expected to be 50 years in accordance with BS EN 1990. Utilising this as a design life, with the development becoming operational in 2025, then it will be necessary to consider the increases in peak rainfall intensity to 2074, indicated by the 2070-2115 epoch in the latest guidance (reproduced below).

Adur and Ouse Management Catchment peak rainfall allowances		
3.3% annual exceedance rainfall event		
Epoch	Central allowance	Upper end allowance
2050s	20%	35%
2070s	20%	40%
1% annual exceedance rainfall event		
Epoch	Central allowance	Upper end allowance
2050s	20%	45%
2070s	25%	45%
*Use '2050s' for development with a lifetime up to 2060 and use the 2070s epoch for development with a lifetime between 2061 and 2125.		

Figure 1: - Extract from the Environment Agency's online climate change allowances data

Therefore, the design of the drainage system will be checked with a 20% increase in peak rainfall intensity on the 1 in 30-year storm event and a 25% increase in peak rainfall intensity on the 1 in 100-year storm event as an allowance for climate change to assess the potential range of impact.

5. MANAGING SURFACE WATER

5.1. Existing Surface Water Drainage

The existing car park to the west (front) of Sussex House is positively drained by a series of drainage channels and gullies conveying surface water to an underground surface water drainage system. This system generally falls in a westerly direction to an unattenuated connection to the public storm water sewer within Perrymount Road. Storm water collected from the roofs of Sussex House and the two further retail units is also connected into this system.

The parking areas to the sides and rear of Sussex House are also positively drained by channels and gullies but these areas discharge to three manhole soakaways located near the site's northern, north-eastern and south-eastern boundaries. The existing drainage system is shown on the topographic survey in appendix C.

The Southern Water sewer asset map is included in appendix E and confirms that the existing public surface water sewer within Perrymount Road is 300mm in diameter and falls in a northerly direction.

5.2. Existing Foul Water Drainage

In addition, the existing buildings are served by two foul connections to the existing public foul sewer within Perrymount Road. The Southern Water asset map confirms that the foul sewer is 225mm in diameter and falls in a northerly direction.

5.3. Proposed Discharge Point

As part of the proposed development, the surface water drainage arrangement has been reviewed. This review, based on the SuDS management train, assessed the different surface water management techniques that can avoid, reduce or delay the surface water discharge from site. The techniques considered include discharge of surface water to: ground via soakaways and infiltration features, watercourses and public sewers, in that order of preference.

(a) Soakaways and Infiltration Features

As mentioned in section 5.1, part of the existing site discharges to manhole soakaways suggesting that infiltration features could provide a viable option for the disposal of storm water. Infiltration testing was undertaken at the site by Enzygo in October 2023 as part of a previous development proposal for residential use. The infiltration report is included in appendix E. Infiltration testing was undertaken in each of the three manhole soakaways discussed in section 5.1 of this report. The results of the testing is summarised in Table 1 below.

Reference	Infiltration rate (m/s)	Depth of test (mbgl)	Relative level (mAOD)
MH06 (south-east)	4.79×10^{-5}	4	51.608
MH07 (north-east)	4.76×10^{-5}	4	50.365
MH08 (north)	5.56×10^{-5}	4	52.302

Table 1: - Summary of infiltration testing undertaken by Enzygo in 2023.

The infiltration rates recorded therefore suggest that disposal of surface water to the ground is a viable method.

5.4. Surface Water Drainage Strategy

The proposed development will be positively drained through drainage channels and gullies for the external areas and rainwater downpipes for the food store roof. The surface water will be conveyed in an underground network to the north-west corner of the site to discharge to the underlying strata. The proposed drainage layout is included in appendix E.

Since there is insufficient space within the proposed site boundary for any significant above ground features (e.g. infiltration basins), attenuation storage is proposed to be provided by a below ground geocellular soakaway. In addition, permeable paving construction is proposed for the majority of the parking bays to the south of the store.

Each infiltration rate recorded was on the first fill of the manhole and as such further infiltration testing will be undertaken at the proposed location and invert level of the geocellular soakaway. The infiltration testing undertaken to date was also at significant depth therefore shallow infiltration testing will also be undertaken to confirm that the permeable paving will also soakaway adequately. Should shallow infiltration potential be found to be poorer or not exist, a fin drain collection will be installed and a connection to the storm drainage made to discharge the water generated by the bays to the geocellular soakaway. Drainage serving the roof and car parking areas has been separated such that the car parking areas can pass through a class 1 bypass interceptor.

The proposed drainage system has been modelled in Infodrainage software with the resultant calculations shown in appendix E. The Infodrainage calculations show that a tank providing approximately 120m³ of storage volume is required to prevent flooding during the 1 in 100 year storm event (including 25% climate change allowance).

For extreme events beyond the 1 in 100+CC event, or in the event of drainage system failure, the levels of the site are such that flood flows will initially collect within the lorry ramp and beyond this, the external levels are designed to direct and water away from the proposed building.

5.5. Design and Construction of the Surface Water Drainage System

The drainage system shall be designed and specified to ensure structural integrity is maintained under anticipated loading conditions over the design life of the development.

6. FOUL DRAINAGE

Foul demand from the development will be generated from the welfare area in the store. As mentioned in 5.2, two existing foul connections are present from site. It is proposed to utilise the more northerly existing connection as shown on the drainage layout in appendix E. A gravity connection from the building to the existing connection point can be achieved. A CCTV of the drainage has confirmed that the existing foul drain connects to the public main within Perrymount Road as shown on the drainage layout. In terms of foul load, the development proposals are likely to be a reduction when compared with the existing site.

7. OPERATIONS AND MAINTENANCE

7.1. Surface & Foul Water Networks

The proposed surface and foul water drainage networks within the development site will remain private under the ownership and responsibility of ALDI Stores Ltd.

Maintenance of the private networks within the site will be undertaken by ALDI Stores Ltd. The finalised maintenance schedule will be dependent on the precise details of the network and treatment stages; however, a typical strategy is included in Appendix F.

8. SUMMARY AND CONCLUSIONS

8.1. Summary

The site is designated wholly as flood zone 1, and is considered to be at low risk of flooding from all sources.

Climate change is not expected to significantly worsen flood risk to the proposed development. A 25% increase in rainfall intensity has been allowed for in the design of the surface water drainage system.

Soakaways are considered to be suitable for the disposal of surface water runoff from the site. As such it is proposed to discharge surface water to the underlying strata via a geocellular storage tank beneath the car park. This tank has been sized to prevent flooding for all rainfall events up to and including those with a 1 in 30-year return period including a 20% increase in rainfall intensity as an allowance for climate change. Surface water ponding may occur beyond this event but will be retained on site up to and including the 1 in 100-year

event, with a 25% allowance for climate change.

Foul demand from the proposed development will be discharged to the existing Southern Water sewerage network, utilising an existing connection to the main in Perrymount Road.

All on-site drainage will remain private and under the operations and maintenance responsibility of ALDI Stores Ltd.

8.2. Conclusions

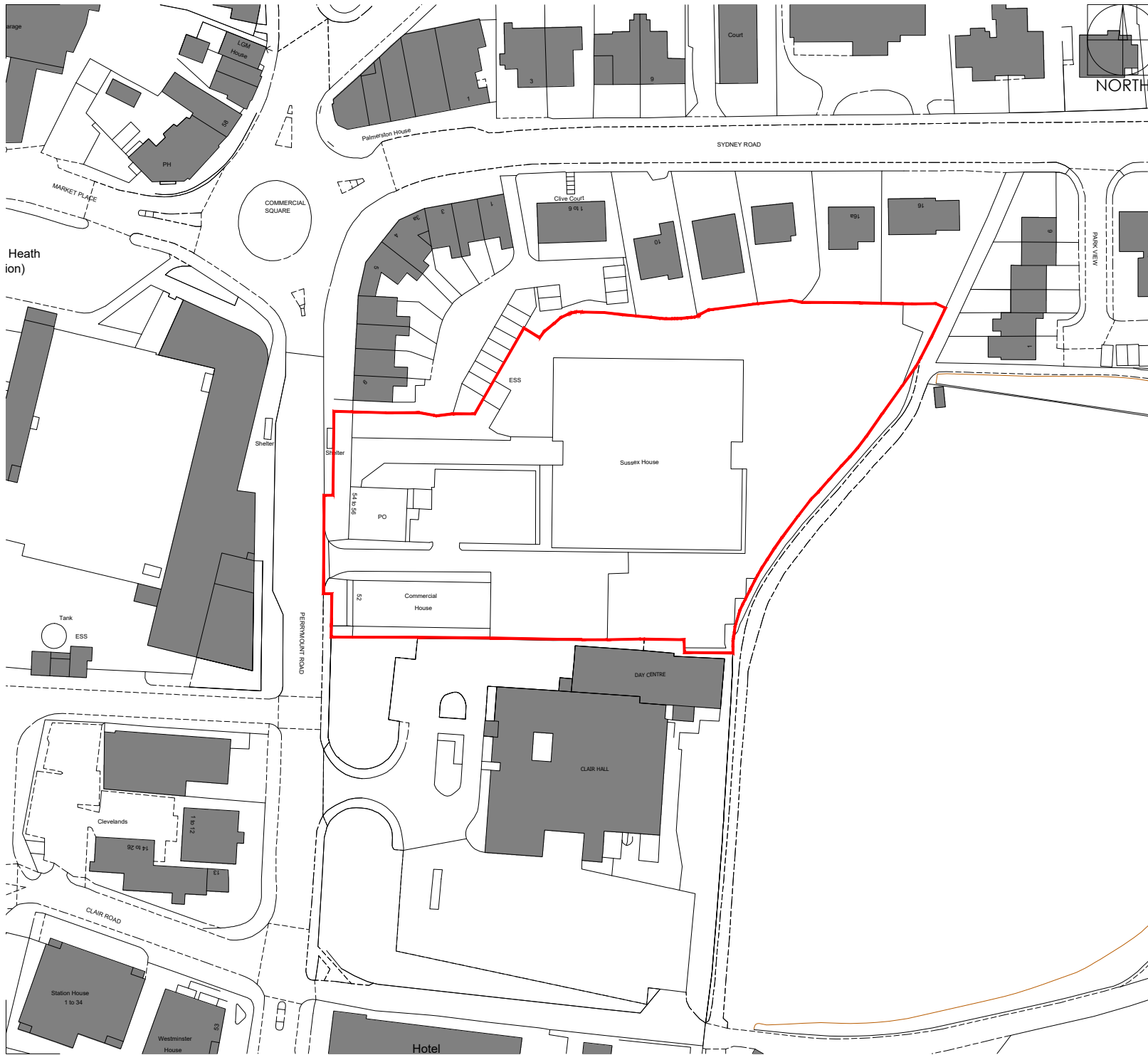
This report concludes that the foul and surface water drainage strategy for the development as proposed is appropriate and it meets the requirements of the NPPF.

Report prepared by Craddys



Claire Pitchers

APPENDIX A LOCATION PLAN



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0 12.5 25 37.5 50 62.5m

SCALE 1:1250

Rev	Date	Description	Drawn	Chk'd

KEY:

Application Site Area (red line):
1.98acres; 0.802Ha



Architecture
Masterplanning
Interior Design

www.harrispartnership.com

Wakefield Manchester Milton Keynes Reading London Harrogate

Client

Aldi Stores Ltd



Project Title				
Proposed Redevelopment				
Sussex House Perrymount Road Haywards Heath, RH16 1DN				
Drawing Title				
Location Plan				
Drawn	Checked	Scale @A4	BIM Status	Date
HWG	ERJ	1:1250	NA	11/24
Drawing Status			Rev.	THP Project No
Planning			-	19971
Project No.	Originator	Volume	Level	Type Role Number
19971	THPK	00	XX	DR A 0100

APPENDIX B

PROPOSED SITE PLAN

APPENDIX C

TOPOGRAPHIC SURVEY



ABBREVIATIONS		
Ave	Average	LB Letter Box
AV	Ar Valve	LE Letter Bin
BB	Berlin Beacon	LP Lamp Post
Bol	Bollard	MH Manhole
BL	Bollard Light	ML Marker
Box	BT/Elec	NP Name Plate
BS	Bus Stop	OH Overhead (EKO/Ties)
BT	Telecom IC	OSM Ordnance Survey BM
CATV	Cable Television IC	PARA Parapet
CCTV	Closest CCTV Camera	PAV Pavement
CL	Cover Level	PM Parking Meter
Conc	Concrete	RE Rodding Eye
DC	Drainage Channel	RL Ridge Level
DH	Ditch	RS Road Sign
DI	Displaced	RSJ Rolled Steel Joint
DK	Drop Kerb	SA Sockaway
DN	Drain	SD Sot Drain
EL	Elav's Level	Sen Traffic Sensors
EP	Electricity Pole	SP Sign Post
ER	Earthing Rod	ST Water Stop Tap
FB	Footbridge	SV Water Stop Valve
FEsc	Fire Escape	SY Sway
FL	Floor Level	Tac Tackling Paving
FR	Frontlight	TCS Telephone Call Box
FS	Flagstaff	TS Traffic Signal
FH	Fire Hydrant	TP Telephone Pole
Gab	Gabion	Veg Vegetation
GM	Gas Meter	VP Vent Pipe
GV	Gas Valve	WL Water Level
GY	Gully	WM Water Meter
HR	Hand Rail	WO Wash Out
IC	Inspection Cover	WP Wooden Peg
IL	Invert Level	
KO	Kerb Outlet	
Drainage		
FW	Foul Water	SW Surface Water
Com	Combined Storm/Foul	BD Back Drop
225mm	Pipe Diameter	UTL Unable To Lift
Fences / Walls		
CR	Crash Barrier	HR Hand Rail
BWF	Barbed Wire	PRF Post and Rail
CBF	Close Boarded	PWP Post and Wire
CLF	Chain Link	PF Panel Fence
IR	Iron Railings	SR Steel Railings
TR	Traffic	SPT Steel Postplate
BW	Block Wall	BLK Block Wall
RW	Retaining Wall	Ren Rendered Wall
SW	Stone Wall	Height of Wall/Fence (1.8m)

Services	
Electric	Traffic Signals
Gas	Water
CCTV	Foul Water Sewer
Telecom	Surface Water Sewer
BT	Combined Sewer
Unknown	End of tract
Ohmed Cable	Not located (from records)

Utility Notes

To assist in the production of this drawing Berry Geomatics Ltd have used record drawings that were made available by utility providers. Any information taken from these records and the completeness of the records cannot be guaranteed.

Utilities are located using non-invasive techniques, the success of which can be adversely affected by local ground, weather and site conditions.

Electromagnetic and GPR detection is not infallible and it is possible that some services can remain undetected. Records are dependent on a number of factors such as soil type, ground water levels and surface conditions. Caution should therefore be taken and trial excavations must be undertaken to confirm position, identification and in particular depth of the utility prior to any construction work.

Where there are multiple cables, an average depth has been obtained and trial excavations are recommended to confirm the number and depth of cables.

Fibre optic cables can be difficult to detect and access to chambers is often requested by utility providers. Where possible cable routes will be added from records.

Electromagnetic results can be distorted when working in close proximity to overhead power lines or electric substations and similar structures. It is not guaranteed that redundant services will always be detected.

Gas and water pipes to industrial properties are often plastic and of a size that cannot be located by electromagnetic or GPR detection. Where possible, records have been added from surface evidence such as valves and marked as assumed routes. This should however only be used as a guide.

Drainage information has been obtained without entry to manholes or inspection chambers. Details shown have been obtained from the surface and as such cannot be guaranteed. Blockages, slings, sewer collapse or excessive depth will affect the ability to detect services.

If record drawings are available, when a utility is shown but not detected on site, it will be added to the drawing and marked as N/L (not located, from records). The accuracy of these records cannot be guaranteed.

Utility information shown on the drawing has been obtained from non-invasive survey techniques. It always remains a possibility that there are additional utilities within the survey area that we have not been able to detect. Care should therefore be taken and this drawing should be used in conjunction with all available utility records.

Notes	
Heights in metres	
Survey related to Ordnance Survey grid datum (OSGB36)	

Do not scale this drawing. All critical dimensions and services should be field verified prior to building operations or construction.

Rev.	Date	Amendments

Client	Craddys Eden Office Park 63 Macrae Road Ham Green Pill Bristol BS20 0DD		
Title	Perrymount Road, Haywards Heath Sheet 1 of 2		
Drawing Number	54/24		
Drawn	DMB	Checked	SB
Date	30/09/24	Scale	1:200(A0)

SURVEY DATUMS			
Name	Eastings	Northing	Height
STW1	53259.655	124511.230	55.215
STW2	53259.661	124517.488	54.842
STW3	53257.748	124506.529	52.299
STW4	53258.022	124507.272	55.288
STW5	53257.572	124507.686	55.575
STW6	53259.259	124502.225	54.497
STW7	53258.125	124506.852	55.252
STW8	53257.253	124506.742	55.252
STW9	53259.055	124504.056	55.482
STW10	53259.588	124517.585	55.482

APPENDIX D FLOOD MAPPING

Flood map for planning

Your reference
13599

Location (easting/northing)
533240/124592

Created
18 Oct 2024 19:17

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)

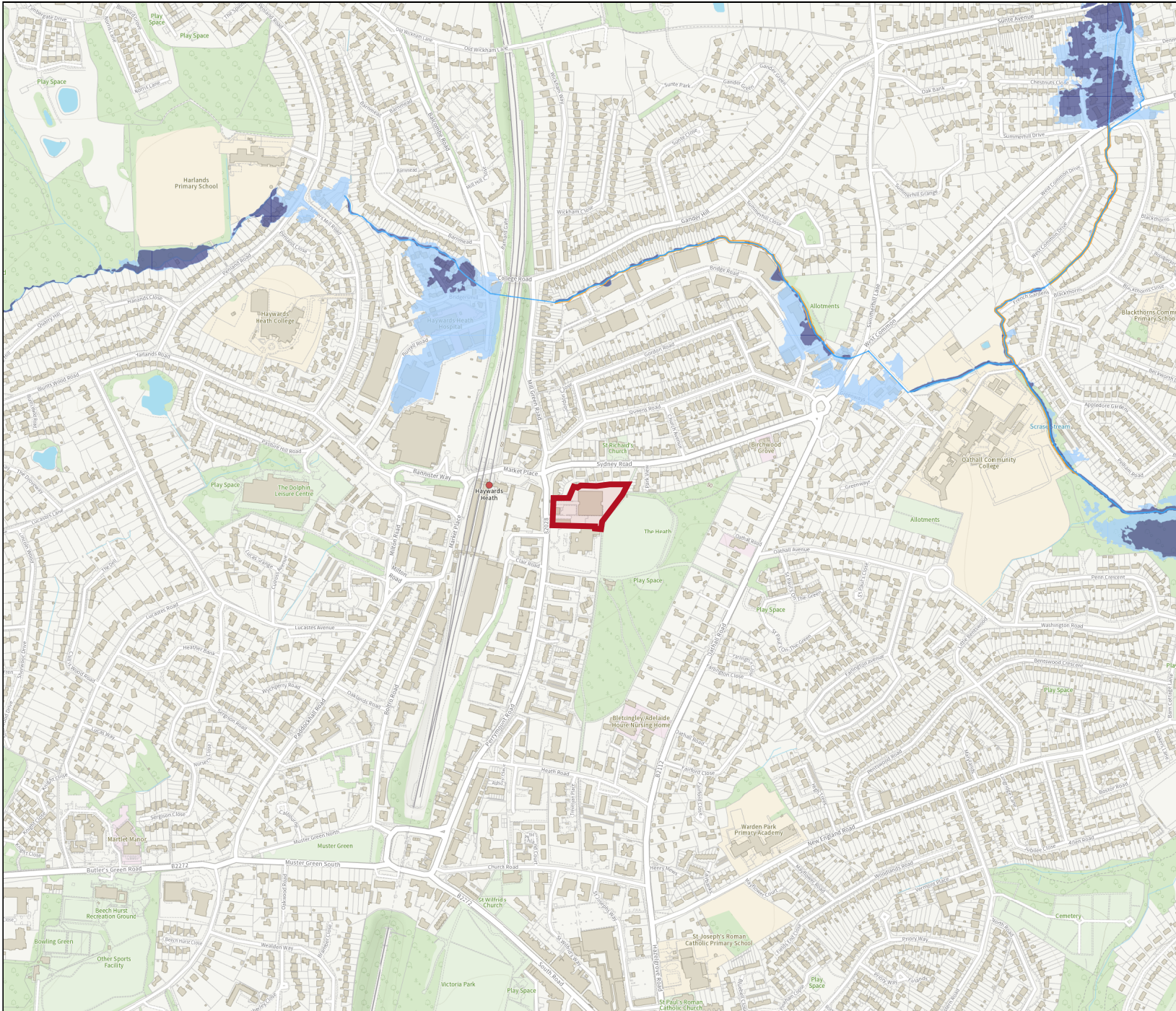
Notes

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 2024 OS AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
13599

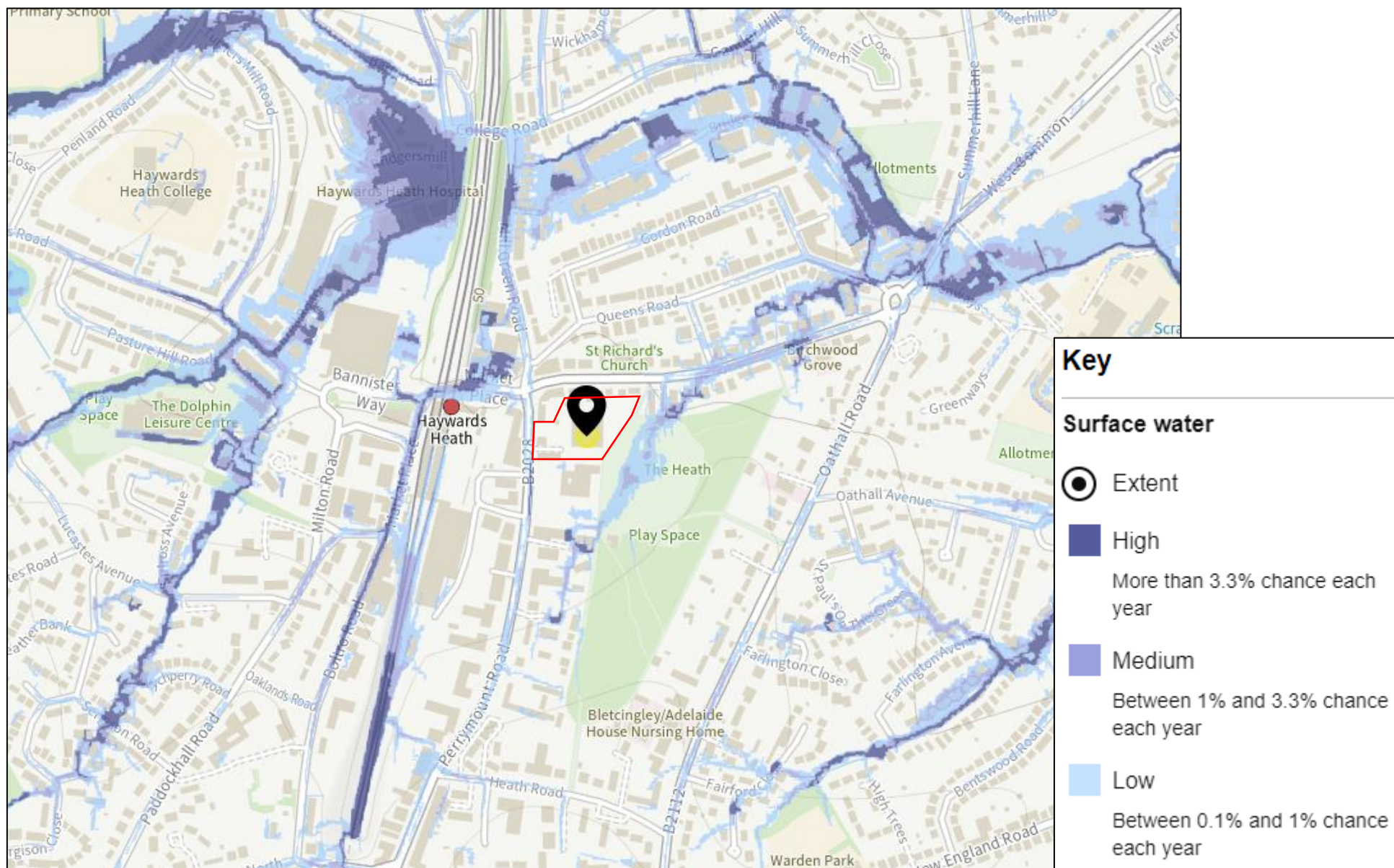
Location (easting/northing)
533240/124592

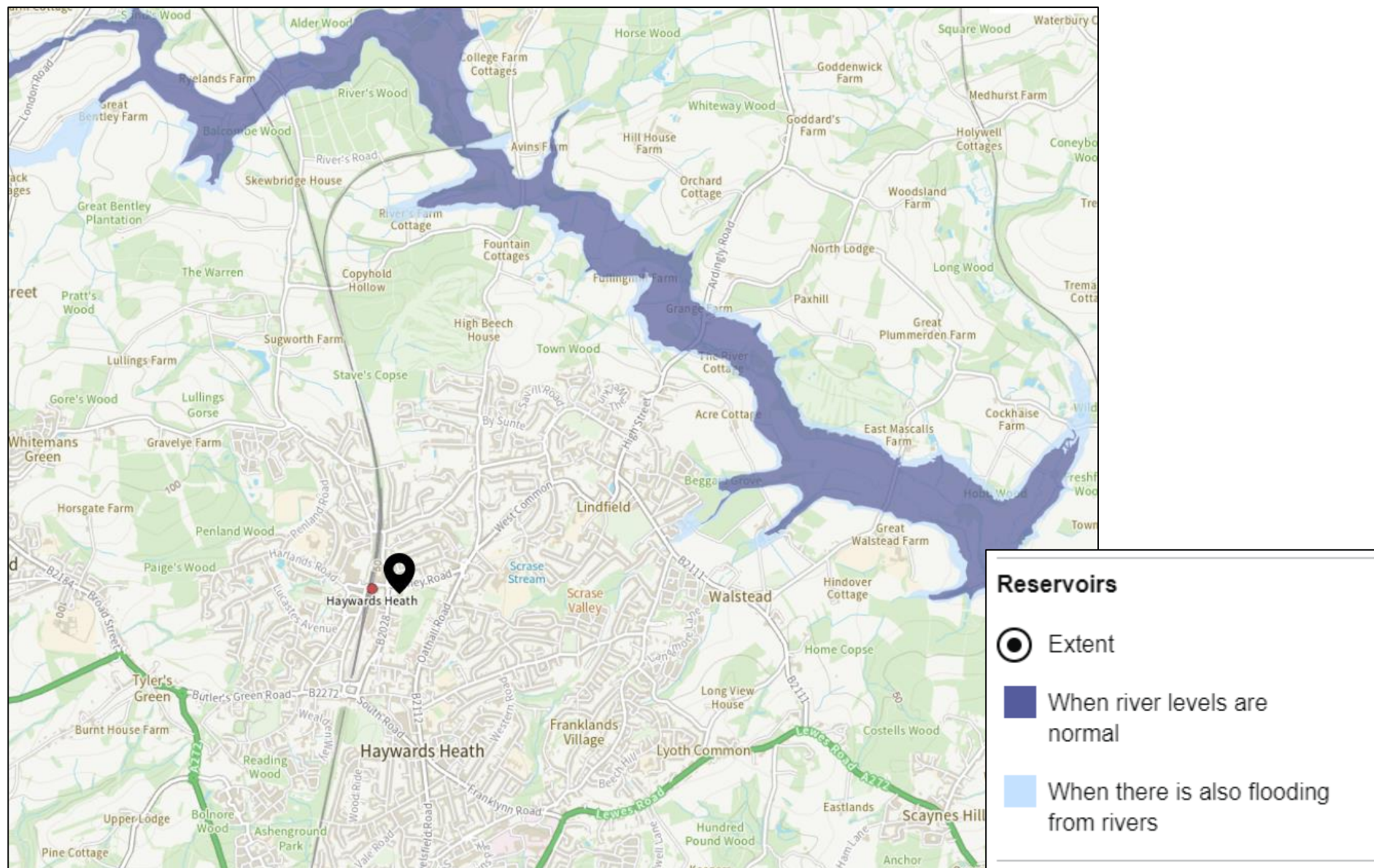
Scale
1:10000

Created
18 Oct 2024 19:17

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







[< Back to select an address](#)

GROUND FLOOR, SUSSEX HOUSE, PERRYMOUNT ROAD, HAYWARDS HEATH, WEST SUSSEX, RH16 1DN

Rivers and sea risk **Very low risk**

Very low risk means that this area has a chance of flooding of less than 0.1% each year.

Surface water risk

Very low risk

Very low risk means that this area has a chance of flooding of less than 0.1% each year.

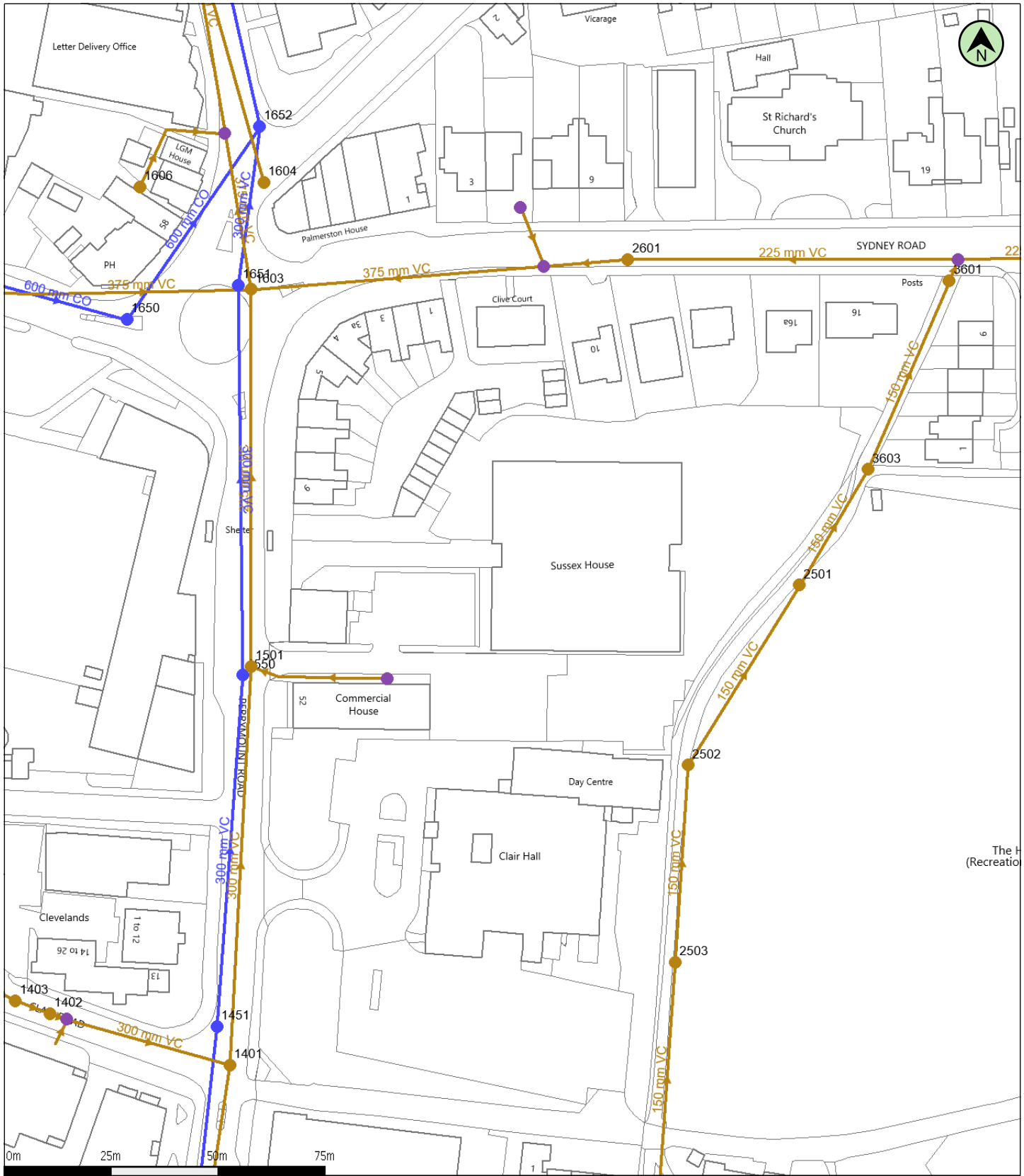
Lead local flood authorities (LLFA) manage the risk from surface water flooding and may hold more detailed information. Your LLFA is **West Sussex**.

Reservoir risk	Flooding from reservoirs is unlikely in this area
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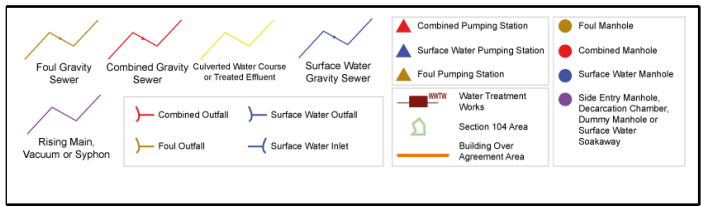
Groundwater risk	Flooding from groundwater is unlikely in this area
-------------------------	--

APPENDIX E

DRAINAGE INFORMATION



(c) Crown copyright and database rights 2024 Ordnance Survey 100031673 Scale: 1:1250 Date: 25/04/24 Wastewater Plan A4
Data updated: 12/04/24 Map Centre: 533223,124591 Our Ref: 1453839 - 38 Powered by digdat



payments.utilitysolutions@atkinsglobal.co

222736



The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2024 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

[illegible]

Our Ref: CRM.1974.005.GE.L.001

Date 03rd October 2023
Email: gareth.hart@enzygo.com

Kevin Tilford
Weetwood
Suite C22 Joseph's Well
Hanover Walk
Leeds
LS3 1AB.

By Email: Kevin.Tilford@weetwood.net

Dear Kevin

RE: Sussex House, Perrymount Road, Haywards Heath, RH16 1DN

A site investigation was undertaken at the above-named site on 22nd September and 3rd October 2023, comprising Jetting of existing soakaway chambers prior to testing and BRE soakaway testing of existing soakaway drainage chambers.

Proposed Development

It is understood that the proposed development will comprise a residential and mixed use block with associated hardstanding and soft landscaping.

Site Investigation

A site investigation was undertaken on Monday 21st and Tuesday 22nd November 2022, comprising one BRE Soakaway Test location and testing of three existing soakaway chambers.

The location of the existing chambers is presented on Drawing ref DT7957/SWDrainage/001 and a location for the BRE test has been specified.

Soakaway tests were undertaken within three number existing soakaway chambers (MH06, MH07 and MH08).

Prior to soakaway testing, the soakaway chambers were cleared of debris and jetted to allow for testing to be undertaken on the natural base of the chamber.

The chambers comprised a manhole cover flush with ground level, set in a concrete slab. Below the manholes, the chambers comprise large diameter concrete rings, with inlet pipes at a shallow invert depth and open natural soil bases.

A HGV water road tanker was used as the water supply, utilising a large diameter outlet to allow for water to accumulate within the chambers. Given the significant dimensions of the chambers, a full bowser was used for the testing.

Soakaway tests were undertaken within the existing chambers, assuming impermeable chamber sides with an open base and therefore assuming a wetted area across the base of the chamber only. Where water is present within the chamber, a head of water is applied and the results are calculated using the drop in level of the applied head. One cycle of testing was undertaken within each soakaway chamber and the results are provided as indicative infiltration rates.

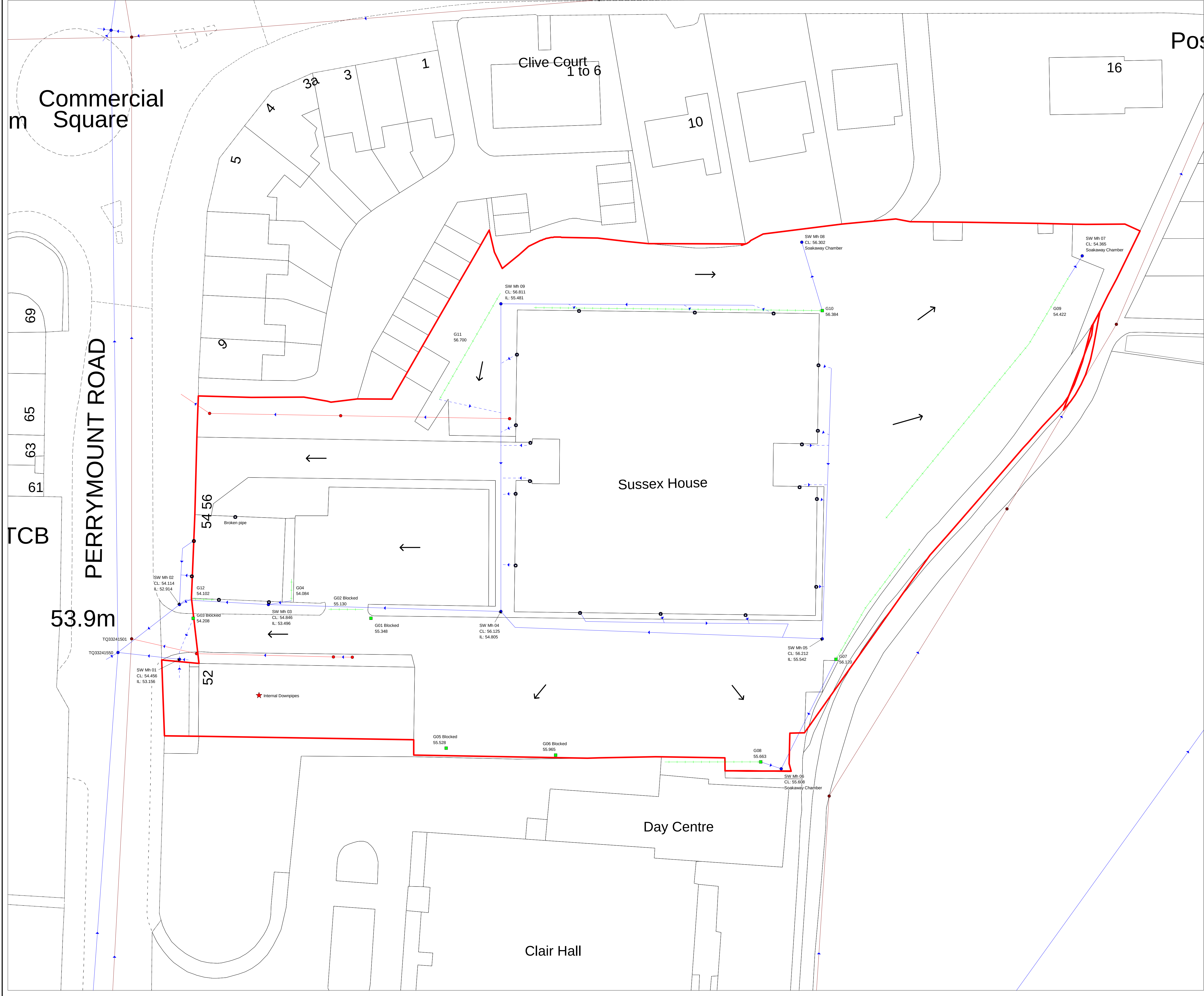
The soakaway results are summarised in Table 1 below. Soakaway results sheets and exploratory hole logs are included in the appendices.

Exploratory Hole	Depth (m bgl)	Test No.	Soil Infiltration rate (m/s)	Infiltration rate (m/s)
MH06	4.0	1	-4.79E-05	n/a
MH07	4.0	1	-4.76E-05	n/a
MH08	4.0	1	5.56E-05	n/a

We hope we have correctly interpreted your requirements.

Yours sincerely,
For and on behalf of Enzygo

Gareth Hart
Senior Engineer
Enzygo Geoenvironmental Ltd



Survey Legend

- SW Drainage Survey Area
- Surface Water Manhole
- Foul / Combined Manhole
- Surface Water Sewer
- Surface Water Sewer (Assumed Route)
- Foul / Combined Sewer
- Rainwater Downpipe
- Gully
- Strip Gully
- Gradient

Dene-Tech Services Ltd
Unit 10 Lymington Barn
Lymington Bottom Road
Medstead Alton
Hants
GU34 5EW (01420) 562569

Client

Kevin Tilford
Weetwood
Suite C22 Joseph's Well
Hanover Walk
Leeds LS3 1AB

Project title

DT7957
Perrymount Road
Haywards Heath RH16 1DN

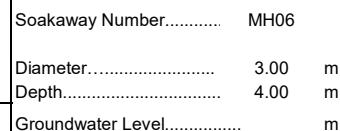
Drawing title

Sussex House & 52-56 Perrymount Road
Haywards Heath
SW Drainage System Survey Layout

Scale: 1:250	Drawn	Checked	Authorised	A1
	SM: Dene-Tech	RN: Dene-Tech	AP: Dene-Tech	
	Date: Feb 2023	Date: Feb 2023	Date: Feb 2023	

Drawing Number

DT7957/SWDrainage/001

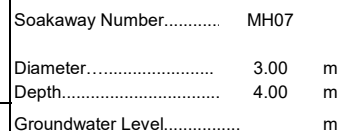


Remarks -		TEST 1		TEST 2		TEST 3	
		Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
Manhole Chamber was jetted to clear debris from base prior to testing.							
		0.0	3.35				
		5.0	3.43				
		10.0	3.45				
		15.0	3.50				
		20.0	3.52				
		30.0	3.55				
		60.0	3.60				
		90.0	3.75				
		120.0	3.80				
	180.0	3.90					
Effective Storage Depth	m		0.65				
75% Effective Storage Depth	m		0.49				
(i.e. depth below GL)	m		3.83				
25% Effective Storage Depth	m		0.16				
(i.e. depth below GL)	m		3.51				
Effective Storage Depth 75%-25%	m		0.33				
Time to fall to 75% effective depth	mins		130.00				
Time to fall to 25% effective depth	mins		17.00				
V (75%-25%)	m3		2.30				
a	m2		7.07				
t (75%-25%)	mins		-113.00				
SOIL INFILTRATION RATE	m/s		-4.79E-05				

The graph displays the depth to water in meters over time in minutes for three different test scenarios. The y-axis represents depth to water, with 0.00 at the top and 4.00 at the bottom. The x-axis represents time in minutes, ranging from 0.00 to 180.00. The legend indicates three series: TEST 1 (solid black line with square markers), Test 1 - 75% (dashed red line), and Test 1 - 25% (dashed yellow line).

Time (mins)	TEST 1 (m)	Test 1 - 75% (m)	Test 1 - 25% (m)
0.00	3.35	3.85	3.50
10.00	3.40	3.85	3.50
20.00	3.45	3.85	3.50
30.00	3.55	3.85	3.50
60.00	3.65	3.85	3.50
90.00	3.75	3.85	3.50
120.00	3.85	3.85	3.50
180.00	3.90	3.85	3.50

Compiled By:	Date:	Checked By:	Date:
G. Hart	05.10.23	M. Ward	05.10.23
			



Remarks -		TEST 1		TEST 2		TEST 3	
		Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)	Time(min)	Depth to Water (m)
Manhole Chamber was jetted to clear debris from base prior to testing.							
		0.0	3.60				
		5.0	3.65				
		10.0	3.65				
		15.0	3.65				
		20.0	3.68				
		30.0	3.70				
		60.0	3.75				
		90.0	3.80				
		120.0	3.92				
	180.0	3.94					
Effective Storage Depth	m		0.40				
75% Effective Storage Depth	m		0.30				
(i.e. depth below GL)	m		3.90				
25% Effective Storage Depth	m		0.10				
(i.e. depth below GL)	m		3.70				
Effective Storage Depth 75%-25%	m		0.20				
Time to fall to 75% effective depth	mins		100.00				
Time to fall to 25% effective depth	mins		30.00				
V (75%-25%)	m3		1.41				
a	m2		7.07				
t (75%-25%)	mins		-70.00				
SOIL INFILTRATION RATE	m/s		-4.76E-05				

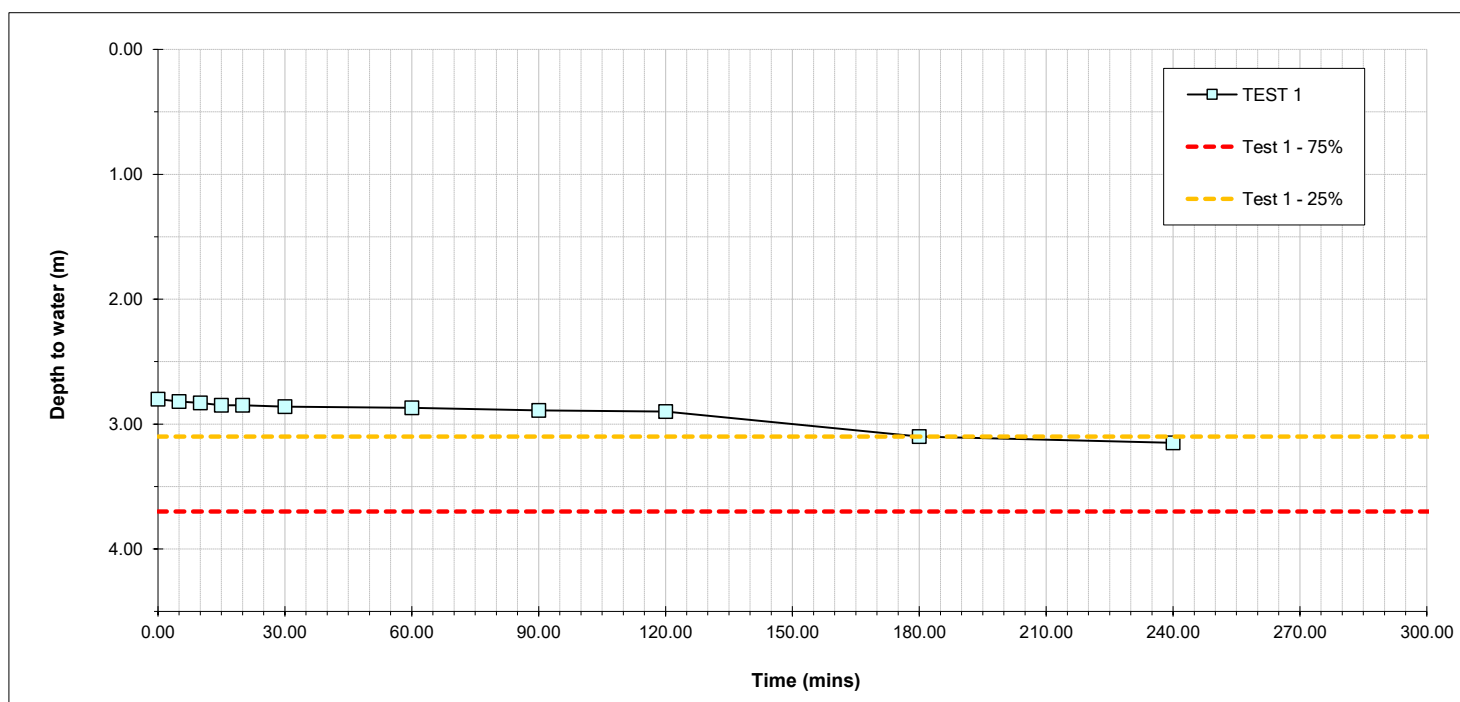
The graph displays the depth to water in meters over time in minutes for three different test conditions. The y-axis represents depth, with 0.00 at the top and 4.00 at the bottom. The x-axis represents time from 0.00 to 180.00 minutes. TEST 1 is shown as a solid black line with square markers. Test 1 - 75% is a dashed red line, and Test 1 - 25% is a dashed yellow line. TEST 1 starts at approximately 3.65m and decreases to 4.00m by 120 minutes. Test 1 - 75% is a constant horizontal line at 3.90m. Test 1 - 25% is a constant horizontal line at 3.75m.

Time (mins)	TEST 1 (m)	Test 1 - 75% (m)	Test 1 - 25% (m)
0.00	3.65	3.90	3.75
5.00	3.65	3.90	3.75
10.00	3.65	3.90	3.75
15.00	3.65	3.90	3.75
20.00	3.70	3.90	3.75
30.00	3.75	3.90	3.75
60.00	3.80	3.90	3.75
90.00	3.85	3.90	3.75
120.00	4.00	3.90	3.75
180.00	4.00	3.90	3.75

Compiled By:	Date:	Checked By:	Date:
G. Hart	05.10.23	M. Ward	05.10.23
			

		Site..... Sussex House, Perrymount Road Job Number..... CRM.1974.005 Date of Test..... 02.10.23	Soakaway Number..... MH08 Diameter..... 3.00 m Depth..... 4.00 m Groundwater Level..... m
		INDICATIVE SOIL INFILTRATION RATE TEST Existing Soakaway Chamber	
Remarks -	TEST 1		TEST 2
	Time(min)	Depth to Water (m)	Time(min) Depth to Water (m)
Manhole Chamber was jetted to clear debris from base prior to testing.	0.0	2.80	
	5.0	2.82	
	10.0	2.83	
	15.0	2.85	
	20.0	2.85	
	30.0	2.86	
	60.0	2.87	
	90.0	2.89	
	120.0	2.90	
	180.0	3.10	
	240.0	3.15	
Effective Storage Depth m 1.20 75% Effective Storage Depth m 0.90 (i.e. depth below GL) m 3.70 25% Effective Storage Depth m 0.30 (i.e. depth below GL) m 3.10 Effective Storage Depth 75%-25% m 0.60 Time to fall to 75% effective depth mins Time to fall to 25% effective depth mins 180.00 V (75%-25%) m3 4.24 a m2 7.07 t (75%-25%) mins 180.00			
SOIL INFILTRATION RATE m/s		5.56E-05	

DESIGN SOIL INFILTRATION RATE, f	5.56E-05	m/s
---	-----------------	-----



Compiled By:	Date:	Checked By:	Date:
G. Hart	05.10.23	M. Ward	05.10.23
			

REV	DATE	DESCRIPTION	DRW	CHK
P01	07.06.24	FIRST ISSUE	JPH	AST
P02	14.11.24	DRAFT PLANNING ISSUE	CAP	AST
P03	21.11.24	PLANNING ISSUE	CAP	AST

KEY	
	Existing storm sewer / drain
	Existing foul sewer / drain
	Existing drainage to be removed (subject to CCTV)(not all shown)
	Proposed private storm drain
	Proposed private storm channel
	Proposed private road gully
	Proposed private storm rodding eye
	Proposed private foul rodding eye
	Proposed private foul drain
	Proposed private storm access chamber/ silt trap (ST)
	Proposed private foul access chamber
	Proposed geocellular soakaway
	Proposed permeable paving (with infiltration)
	Proposed land drainage discharging to manhole soakaway

C D M : SIGNIFICANT HAZARDS	
THE FOLLOWING HEALTH AND SAFETY HAZARDS ARE IDENTIFIED BY THE DESIGNER AS ABNORMAL IN PURSUANCE OF THE CURRENT CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS.	
RISKS DURING CONSTRUCTION:	
- DEEP EXCAVATIONS - Adequate shoring of deep excavations to be provided. - EXISTING SERVICES - Refer to utility and subcan drawings prior to excavation. - WORKS WITHIN HIGHWAY - Adequate signage and protection to be used when working within highway.	
OPERATION / MAINTENANCE RISKS:	
No abnormal risks have been identified relating to this design element.	
RISKS DURING DEMOLITION/DECOMMISSIONING/DISMANTLING/ALTERATIONS:	
No abnormal risks have been identified relating to this design element.	
IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY COMPETENT & ADEQUATELY RESOURCED CONTRACTOR(S) TO SAFE SYSTEMS OF WORK.	
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Client	ALDI - Aldi Stores Ltd.
Project Title	ALDI STORE
Project Address	PERRYMOUNT ROAD HAYWARDS HEATH

Drawing Title	PROPOSED DRAINAGE LAYOUT
Job No.	13599
Originator	CDY
Zone	XX
Level	XX
Type	DR
Role	C
System Classification	Ss_15_10_00
Drawing No.	0050
Suitability	S2
Revision	P03
Drawn	CAP
Checked	AST
Date	07.06.24
Scale	1:200
Size	A1

Approved	Craddys John	RAG	13599
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Consulting Civil and Structural Engineers	
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GENERAL NOTES

DRAWINGS AND SPECIFICATIONS: This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists drawings together with the specification.

SITE LAYOUT: The background layout shown in this drawing is based on THP's drawing 19971-THPK-00-XX-DR-A-0120. Reference must be made to the Architect's drawings for current information.

DRAINAGE NOTES

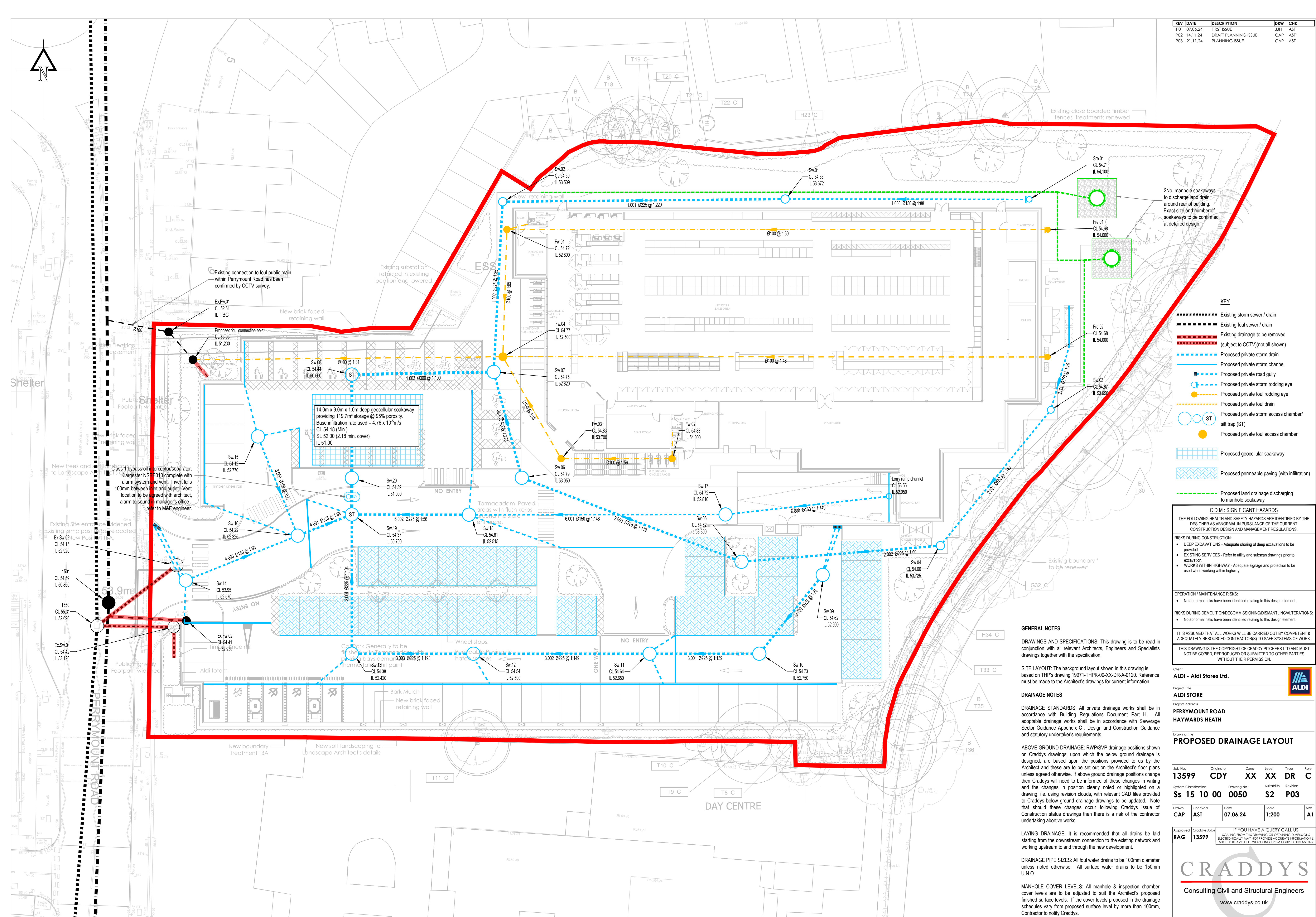
DRAINAGE STANDARDS: All private drainage works shall be in accordance with Building Regulations Document Part H. All adoptable drainage works shall be in accordance with Sewerage Sector Guidance Appendix C : Design and Construction Guidance and statutory undertaker's requirements.

ABOVE GROUND DRAINAGE: RWP/SVP drainage positions shown on Craddys drawings, upon which the below ground drainage is designed, are based upon the positions provided to us by the Architect and these are to be set out on the Architect's floor plans unless agreed otherwise. If above ground drainage positions change then Craddys will need to be informed of these changes in writing and the changes in position clearly noted or highlighted on a drawing, i.e. using revision clouds, with relevant CAD files provided to Craddys below ground drainage drawings to be updated. Note that should these changes occur following Craddys issue of Construction status drawings then there is a risk of the contractor undertaking abortive works.

LAYING DRAINAGE: It is recommended that all drains be laid starting from the downstream connection to the existing network and working upstream to and through the new development.

DRAINAGE PIPE SIZES: All foul water drains to be 100mm diameter unless noted otherwise. All surface water drains to be 150mm U.N.O.

MANHOLE COVER LEVELS: All manhole & inspection chamber cover levels are to be adjusted to suit the Architect's proposed finished surface levels. If the cover levels proposed in the drainage schedules vary from proposed surface level by more than 100mm, Contractor to notify Craddys.



ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024		
	Designed by: CAP	Checked by: AST	Approved By: RAG
Report Details: Type: Junctions Storm Phase: Proposed storm	63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN		



Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
Sw.01	Inlet	1.000	(None)	No Restriction
	Inlet (1)	Catchment Area (1)	(None)	No Restriction
Sw.07	Inlet	1.002	(None)	No Restriction
	Inlet (1)	2.004	(None)	No Restriction
Sw.06	Inlet	2.003	(None)	No Restriction
	Inlet (1)	Catchment Area (5)	(None)	No Restriction
Sw.10	Inlet	3.000	(None)	No Restriction
Sw.17	Inlet	6.000	(None)	No Restriction
Sw.03	Inlet	2.000	(None)	No Restriction
Sre.01	Inlet	Catchment Area	(None)	No Restriction
Sw.02	Inlet	1.001	(None)	No Restriction
	Inlet (1)	Catchment Area (2)	(None)	No Restriction
Sw.11	Inlet	3.001	(None)	No Restriction
	Inlet (1)	Catchment Area (16)	(None)	No Restriction
Sw.05	Inlet	2.002	(None)	No Restriction
	Inlet (1)	Catchment Area (19)	(None)	No Restriction
Sw.18	Inlet	6.001	(None)	No Restriction
	Inlet (1)	Catchment Area (9)	(None)	No Restriction
	Inlet (3)	Catchment Area (8)	(None)	No Restriction
Sw.09	Inlet	Catchment Area (7)	(None)	No Restriction
Sw.12	Inlet	3.002	(None)	No Restriction
	Inlet (2)	Catchment Area (15)	(None)	No Restriction
Sw.08	Inlet	1.003	(None)	No Restriction
Sw.20	Inlet	3.005	(None)	No Restriction
Sw.13	Inlet	3.003	(None)	No Restriction
	Inlet (2)	Catchment Area (14)	(None)	No Restriction
Sw.19	Inlet	6.002	(None)	No Restriction
	Inlet (1)	3.004	(None)	No Restriction
	Inlet (2)	4.001	(None)	No Restriction
	Inlet (3)	Catchment Area (17)	(None)	No Restriction
Sw.04	Inlet	2.001	(None)	No Restriction
	Inlet (1)	Catchment Area (4)	(None)	No Restriction
Sw.16	Inlet	4.000	(None)	No Restriction
	Inlet (1)	5.000	(None)	No Restriction
	Inlet (2)	Catchment Area (11)	(None)	No Restriction
Sw.15	Inlet	Catchment Area (10)	(None)	No Restriction
	Inlet (2)	Catchment Area (12)	(None)	No Restriction
Lorry ramp channel	Inlet	Catchment Area (6)	(None)	No Restriction
Sw.14	Inlet	Catchment Area (13)	(None)	No Restriction
	Inlet (1)	Catchment Area (18)	(None)	No Restriction
Plant compound channel	Inlet	Catchment Area (3)	(None)	No Restriction

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024		
	Designed by: CAP	Checked by: AST	Approved By: RAG
Report Details: Type: Junctions Storm Phase: Proposed storm	63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN		



Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
Sw.01	Outlet	1.001	Free Discharge
Sw.07	Outlet	1.003	Free Discharge
Sw.06	Outlet	2.004	Free Discharge
Sw.10	Outlet	3.001	Free Discharge
Sw.17	Outlet	6.001	Free Discharge
Sw.03	Outlet	2.001	Free Discharge
Sre.01	Outlet	1.000	Free Discharge
Sw.02	Outlet	1.002	Free Discharge
Sw.11	Outlet	3.002	Free Discharge
Sw.05	Outlet	2.003	Free Discharge
Sw.18	Outlet	6.002	Free Discharge
Sw.09	Outlet	3.000	Free Discharge
Sw.12	Outlet	3.003	Free Discharge
Sw.08	Outlet	Soakaway2	Free Discharge
Sw.20	Outlet	Soakaway1	Free Discharge
Sw.13	Outlet	3.004	Free Discharge
Sw.19	Outlet	3.005	Free Discharge
Sw.04	Outlet	2.002	Free Discharge
Sw.16	Outlet	4.001	Free Discharge
Sw.15	Outlet	5.000	Free Discharge
Lorry ramp channel	Outlet	6.000	Free Discharge
Sw.14	Outlet	4.000	Free Discharge
Plant compound channel	Outlet	2.000	Free Discharge

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024		
	Designed by: CAP	Checked by: AST	Approved By: RAG
Report Details: Type: Stormwater Controls Storm Phase: Proposed storm	63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN		



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	52.000
Depth (m)	1.000
Base Level (m)	51.000
Number of Crates Long	14
Number of Crates Wide	9
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	1
Crate Height (m)	0.5
Total Volume (m³)	119.700

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Soakaway1
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Soakaway2
Bypass Destination	(None)
Capacity Type	No Restriction

Advanced

Base Infiltration Rate (m/hr)	0.171
Safety Factor	2.0

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024		
	Designed by: CAP	Checked by: AST	Approved By: RAG
Report Details: Type: Connections Storm Phase: Proposed storm	63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN		



Name	From	To	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)
2.001	Sw.03	Sw.04	22.199	Pipe	98.660		0.6	150
2.002	Sw.04	Sw.05	25.305	Pipe	59.541		0.6	225
1.000	Sre.01	Sw.01	30.948	Pipe	72.308		0.6	150
1.001	Sw.01	Sw.02	35.822	Pipe	219.122		0.6	225
1.002	Sw.02	Sw.07	21.615	Pipe	31.394		0.6	225
1.003	Sw.07	Sw.08	18.000	Pipe	9.890		0.6	300
6.000	Lorry ramp channel	Sw.17	20.823	Pipe	148.733		0.6	150
6.001	Sw.17	Sw.18	32.536	Pipe	110.293		0.6	150
6.002	Sw.18	Sw.19	14.844	Pipe	56.016		0.6	225
3.005	Sw.19	Sw.20	4.620	Pipe	23.102		0.6	300
3.000	Sw.09	Sw.10	12.815	Pipe	85.434		0.6	225
3.004	Sw.13	Sw.19	17.653	Pipe	103.840		0.6	225
3.001	Sw.10	Sw.11	13.906	Pipe	139.065		0.6	225
4.000	Sw.14	Sw.16	15.287	Pipe	89.926		0.6	150
2.004	Sw.06	Sw.07	13.879	Pipe	89.542		0.6	225
2.003	Sw.05	Sw.06	29.822	Pipe	119.287		0.6	225
4.001	Sw.16	Sw.19	7.373	Pipe	98.302		0.6	225
5.000	Sw.15	Sw.16	13.546	Pipe	30.441		0.6	150
3.002	Sw.11	Sw.12	22.346	Pipe	148.970		0.6	225
3.003	Sw.12	Sw.13	15.414	Pipe	192.679		0.6	225
2.000	Plant compound channel	Sw.03	8.367	Pipe	49.215		0.6	150
Soakaway1	Sw.20	Cellular Storage	3.576	Pipe	0.000		0.6	300
Soakaway2	Sw.08	Cellular Storage	4.441	Pipe	0.000		0.6	300

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH		Date: 20/11/2024			
		Designed by: CAP	Checked by: AST		Approved By: RAG
Report Details: Type: Connections Storm Phase: Proposed storm		63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN			

Name	Upstream Cover Level (m)	Upstream Invert Level (m)	Downstrea m Cover Level (m)	Downstrea m Invert Level (m)	Part Family	Lock	Culvert Type	Culvert Entrance
2.001	54.708	53.950	54.660	53.725	PVC Pipe SI	None	(None)	(None)
2.002	54.660	53.725	54.628	53.300	PVC Pipe SI	None	(None)	(None)
1.000	54.800	54.100	55.045	53.672	PVC Pipe SI	None	(None)	(None)
1.001	55.045	53.672	55.464	53.509	PVC Pipe SI	None	(None)	(None)
1.002	55.464	53.509	54.730	52.820	PVC Pipe SI	None	(None)	(None)
1.003	54.730	52.820	54.545	51.000	PVC Pipe SI	None	(None)	(None)
6.000	53.550	52.950	54.726	52.810	PVC Pipe SI	None	(None)	(None)
6.001	54.726	52.810	54.615	52.515	PVC Pipe SI	None	(None)	(None)
6.002	54.615	52.515	54.369	52.250	PVC Pipe SI	None	(None)	(None)
3.005	54.369	51.200	54.383	51.000	PVC Pipe SI	None	(None)	(None)
3.000	54.589	52.900	54.729	52.750	PVC Pipe SI	None	(None)	(None)
3.004	54.371	52.420	54.369	52.250	PVC Pipe SI	None	(None)	(None)
3.001	54.729	52.750	54.641	52.650	PVC Pipe SI	None	(None)	(None)
4.000	53.950	52.570	54.257	52.400	PVC Pipe SI	None	(None)	(None)
2.004	54.730	53.050	54.730	52.895	PVC Pipe SI	None	(None)	(None)
2.003	54.628	53.300	54.730	53.050	PVC Pipe SI	None	(None)	(None)
4.001	54.257	52.325	54.369	52.250	PVC Pipe SI	None	(None)	(None)
5.000	54.119	52.770	54.257	52.325	PVC Pipe SI	None	(None)	(None)
3.002	54.641	52.650	54.511	52.500	PVC Pipe SI	None	(None)	(None)
3.003	54.511	52.500	54.371	52.420	PVC Pipe SI	None	(None)	(None)
2.000	54.758	54.120	54.708	53.950	PVC Pipe SI	None	(None)	(None)
Soakaway1	54.383	51.000	54.395	51.000		None	(None)	(None)
Soakaway2	54.545	51.000	54.407	51.000		None	(None)	(None)

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024			
	Designed by: CAP	Checked by: AST	Approved By: RAG	
Report Details: Type: Inflow Summary Storm Phase: Proposed storm	63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (m²)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (m²)
Catchment Area	Sre.01		Time of Concentration	158.471	100	0	100	158.471
Catchment Area (1)	Sw.01		Time of Concentration	432.379	100	0	100	432.379
Catchment Area (2)	Sw.02		Time of Concentration	205.724	100	0	100	205.724
Catchment Area (3)	Plant compound channel		Time of Concentration	291.008	100	0	100	291.008
Catchment Area (4)	Sw.04		Time of Concentration	523.016	100	0	100	523.016
Catchment Area (5)	Sw.06		Time of Concentration	672.019	100	0	100	672.019
Catchment Area (6)	Lorry ramp channel		Time of Concentration	136.732	100	0	100	136.732
Catchment Area (7)	Sw.09		Time of Concentration	237.309	100	0	100	237.309
Catchment Area (8)	Sw.18		Time of Concentration	245.527	100	0	100	245.527
Catchment Area (9)	Sw.18		Time of Concentration	61.369	100	0	100	61.369
Catchment Area (10)	Sw.15		Time of Concentration	176.100	100	0	100	176.100
Catchment Area (11)	Sw.16		Time of Concentration	327.393	100	0	100	327.393
Catchment Area (12)	Sw.15		Time of Concentration	116.250	100	0	100	116.250
Catchment Area (13)	Sw.14		Time of Concentration	155.509	100	0	100	155.509
Catchment Area (14)	Sw.13		Time of Concentration	464.242	100	0	100	464.242
Catchment Area (15)	Sw.12		Time of Concentration	232.758	100	0	100	232.758
Catchment Area (16)	Sw.11		Time of Concentration	318.811	100	0	100	318.811
Catchment Area (17)	Sw.19		Time of Concentration	393.238	100	0	100	393.238
Catchment Area (18)	Sw.14		Time of Concentration	195.103	100	0	100	195.103
Catchment Area (19)	Sw.05		Time of Concentration	89.267	100	0	100	89.267
TOTAL		0.0		5432.228				5432.228

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024		
	Designed by: CAP	Checked by: AST	Approved By: RAG
Report Details: Type: Network Design Criteria Storm Phase: Proposed storm	63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN		



Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (hrs)	0.083
Max. Travel Time (hrs)	0.50

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Pipe Size Library

Default

Add. Increment (mm)	75
Max. Diameter (mm)	0

Diameter (mm)	Min. Slope (1:X)	Max. Slope (1:X)
100	0.00	0.00
150	0.00	0.00

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Manhole Options

Apply Offset ☐

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024		
	Designed by: CAP	Checked by: AST	Approved By: RAG
Report Details: Type: Rainfall Analysis Criteria	63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN		



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Shortest
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH	Date: 20/11/2024			
	Designed by:	Checked by:	Approved By:	
Report Details: Type: Junctions Summary Storm Phase: Proposed storm	CAP	AST	RAG	
63 MACRAE ROAD: EDEN OFFICE PARK HAM GREEN				



FSR: 100 years: Increase Rainfall (%): +25: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Sw.01	FSR: 100 years: +25 %: 0.25 hrs: Summer	55.04 5	53.67 2	53.829	0.157	29.3	0.044	0.000	27.7	12.816	OK
Sw.07	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.73 0	52.82 0	52.927	0.107	100.9	0.121	0.000	100.4	51.306	OK
Sw.06	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.73 0	53.05 0	53.385	0.335	66.7	0.379	0.000	64.2	34.149	Surcharged
Sw.10	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.72 9	52.75 0	52.827	0.077	11.6	0.087	0.000	11.1	5.143	OK
Sw.17	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.72 6	52.81 0	52.873	0.063	6.6	0.071	0.000	6.1	2.953	OK
Sw.03	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.70 8	53.95 0	54.054	0.104	14.3	0.016	0.000	13.8	6.304	OK
Sre.01	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.80 0	54.10 0	54.162	0.062	7.9	0.004	0.000	7.7	3.438	OK
Sw.02	FSR: 100 years: +25 %: 0.25 hrs: Summer	55.46 4	53.50 9	53.612	0.103	38.0	0.029	0.000	36.7	17.275	OK
Sw.11	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.64 1	52.65 0	52.780	0.130	27.1	0.147	0.000	26.0	12.056	OK
Sw.05	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.62 8	53.30 0	53.528	0.228	45.1	0.258	0.000	33.2	19.584	Surcharged
Sw.18	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.61 5	52.51 5	52.604	0.089	21.4	0.101	0.000	20.4	9.608	OK
Sw.09	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.58 9	52.90 0	52.973	0.073	11.8	0.083	0.000	11.6	5.150	OK
Sw.12	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.51 1	52.50 0	52.721	0.221	37.7	0.250	0.000	31.4	17.098	OK
Sw.08	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.54 5	51.00 0	51.909	0.909	100.4	1.029	0.000	95.6	49.192	Surcharged
Sw.20	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.38 3	51.00 0	51.909	0.909	133.6	1.029	0.000	130.6	64.200	Surcharged
Sw.13	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.37 1	52.42 0	52.656	0.236	54.6	0.267	0.000	51.8	27.153	Surcharged
Sw.19	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.36 9	51.20 0	51.909	0.709	137.8	0.802	0.000	133.6	65.380	Surcharged
Sw.04	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.66 0	53.72 5	53.853	0.128	40.0	0.036	0.000	40.6	17.634	OK
Sw.16	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.25 7	52.32 5	52.516	0.191	47.6	0.216	0.000	45.9	21.046	OK
Sw.15	FSR: 100 years: +25 %: 0.25 hrs: Summer	54.11 9	52.77 0	52.840	0.070	14.6	0.079	0.000	14.4	6.342	OK

ALDI FOOD STORE: PERRYMOUNT ROAD HAYWARDS HEATH				Date: 20/11/2024								
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Lorry ramp channel	FSR: 100 years: +25 %: 0.25 hrs: Summer	53.55 0	52.95 0	53.025	0.075	6.8	0.005	0.000	6.6	2.966	OK	
Sw.14	FSR: 100 years: +25 %: 0.25 hrs: Summer	53.95 0	52.57 0	52.693	0.123	17.5	0.139	0.000	16.8	7.604	OK	
Plant compound channel	FSR: 100 years: +25 %: 0.25 hrs: Summer		54.12 0	54.210	0.090	14.5			14.3	6.308	OK	

APPENDIX F

SAMPLE OPERATIONS AND MAINTENANCE SCHEDULE

ALDI STORE – PERRYMOUNT ROAD, HAYWARDS HEATH

SAMPLE OPERATION AND MAINTENANCE OF BELOW GROUND DRAINAGE SYSTEM

The following is a list of the drainage items which will require periodic maintenance, and sets out how often they should be maintained to achieve their maximum design life. A brief description of how the maintenance should be carried out is provided. All maintenance should be carried out by suitably trained individuals using the correct equipment. These recommendations apply to the private drainage items within the development site (maintenance and operation of adoptable drainage is the liability of the adopting authority).

The proposed stormwater and foulwater drainage systems are to remain private and the responsibility of Aldi Stores Ltd. The responsible person shall be the store manager, contactable via 0800 042 0800.

Gullies & Drainage Channels

Inspection and removal of debris from silt trap once a year (preferably in the winter after leaf fall in the autumn).

Drainage pipes, manholes & silt traps

Inspect manholes & silt traps for build-up of silt and general debris (once a year, preferably in the winter after leaf fall in the autumn). If silt/debris is building up then clean chamber with jetting lorry / gully sucker & inspect pipe – same may be required. If the pipes to be jetted are plastic then a high flow, low pressure setting should be used so that the pipes are not damaged. (NOTE: Manhole covers can be heavy and suitable lifting equipment / procedures should be used. Personnel should not enter manholes to carry out maintenance).

Permeable / pervious pavement

To maintain the permeability and operation of the permeable paving, all areas should be swept at least once a year using a mechanical road sweeper if practical. It is recommended that this be undertaken in the spring after autumnal leaf fall. In addition to this routine maintenance, it may be necessary to re-dress the surface with 2-6.3mm clean grit/stone. This will replace the grit removed during the cleaning process and reduce the ease with which fine particles can enter and potentially clog up the system.

In no circumstances should raw materials containing fine particles (eg. top soil) be delivered nor stored directly on the permeable paved area as this will impede the permeability of the system and reduce its design life.

If an area of permeable paving is defective or irreversibly contaminated, the area of paving should be lifted and the filtration membrane and laying course should be replaced (as per manufacturer's recommendations). The existing permeable paving blocks can then be re-laid.

O&M Requirements for pervious pavements (Based on table 20.15 of the CIRIA C753)		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year after autumn leaf fall or reduced frequency as required, based on site-specific observations of clogging or manufacturers recommendations.
Occasional maintenance	Removal of weeds or management using glyphosphate applied directly into the weeds by an applicator rather than spraying.	As required
Remedial actions	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required

Underground attenuation storage soakaway

This system is designed to be maintenance free. Silt traps on the up-stream end of the system should be inspected and maintained as above. If excessive silt is encountered then the pipes through the system should be cleaned using a jetting lorry. Access turrets are provided to the corners of the system through which the base of the tank can be reached.

Oil interceptor / separator

Every 6 months, experienced personnel should visually inspect the integrity of the interceptor and all visible mechanical parts, assess the depth of accumulated oil and silt, service electrical equipment such as alarms

and assess the condition of any coalescing device and replace if necessary. Keep detailed records of all inspections and servicing. When level of oil is such that emptying is required, employ a registered waste removal company to empty the separator. This will generally be when oil levels reach a maximum of 90% of the storage volume. Every 5 years, empty interceptor and undertake general inspection to test integrity and performance. Re-fill with clean water.

Unusual / unresolved problems

If the drainage system is still holding water following cleaning with high pressure water jetting, or the jetting of the system removes excessive amounts of debris this may indicate greater issues within the system, a CCTV survey is likely to be required and further advice should be sought from a drainage engineer.