Flood Risk Assessment

St Mary's Church Hall & 1-1a New Road
Shoreham-by-Sea, BN43 5ZQ

Client

W Group

Ref: 14008
Date: October 2025

Consulting Engineers

GTA Civils & Transport Ltd
Maple House
192 – 198 London Road
Burgess Hill
West Sussex, RH15 9RD
Tel: 01444 871444

Index

Schedule of Appendices

Issue	Issue date	Compiled	Checked
Preliminary Issue	16 October 2025	JP	FV / MR
First Issue	21 October 2025	JP	FV / MR

1 Introduction

1.1 This FRA report has been prepared for the Client in relation to the proposed development at St Mary's Church Hall & 1-1a New Road, Shoreham-by-Sea, BN43 5ZQ. No responsibility is accepted to any third party for all or part of this study in connection with this or any other development.

1.2 GTA Civils & Transport Limited was appointed by W Group to prepare a Flood Risk Assessment (FRA) report as required by the Environment Agency and Adur & Worthing Council in order to achieve Planning Permission.

1.3 This report will take the form of a formal Flood Risk Assessment in accordance with the 2025 National Planning Policy Framework (NPPF) and the current Planning Practice Guidance (PPG).

2 Existing Site and Current Flood Conditions

2.1 The application site lies in the centre of Shoreham-by-Sea, in the area administered by Adur & Worthing Council (AWC). It comprises a 2-storey Community Centre. Site location maps and an aerial view are shown in Appendix A.

2.2 Hydrology: The nearest Main River to the site is the River Adur, which is approximately 120m to the south at its closest. This flows broadly east - southeast into the English Channel.

2.3 Topography: Topography: a topographic survey is contained in Appendix C. The site is flat and level, overall with external levels ranging between 7.05m AOD and 6.69m AOD. The ground floor's lowest measured level is 6.80m AOD.

2.4 Geology: according to the BGS's online map, the site's solid geology is Newhaven Chalk Formation. Overlaying drift deposits are recorded as Head (clay, silt, sand and gravel).

2.5 Public sewers: Southern Water's sewer records are shown in Appendix C. This area is served by both foul and combined public sewerage. A 300mm diameter foul sewer flows west under New Road to the south and a 300mm dia combined sewer flows southwards under East Street.

2.6 A CCTV survey has been conducted. All drainage is routed west to the combined sewer in East Road – refer to Appendix C. The excerpts from this survey include a link to the full online, interactive report. (Note that the outfall manhole was seized up – unable to be lifted. The survey shall be finished during the next stage and the connection with the public sewer confirmed.

2.7 Tidal flooding: the Environment Agency's (EA) Rivers and Seas flood map in Appendix B shows the site lying in Flood Zone 1 (FZ1 – Low Risk). Sites located in FZ1 have an Annual Exceedance Probability (AEP) of less than 1 in 1000 years (<0.1%) of flooding.

2.8 The climate change mapping available online does not show data for this area. The EA have confirmed that the site lies in FZ1 in their response to a Product 4 request – refer to the email and associated flood maps provided by the EA in Appendix B.

2.9 Fluvial flooding: there are no fluvially influenced rivers / watercourses in this vicinity.

2.10 Surface water flooding: this *can* occur when excess rainwater does not infiltrate into the ground, or is not intercepted by urban drainage systems, and instead flows across the surface. The EA's online Surface Water Depth Flood Map for the 2040-2060 epoch, in Appendix B, shows the site is, largely speaking, unaffected by flooding from this source. Although there is a small pattern that affects a small area to the north elevation, this is contained in a localised 'dish'. Any such flood volume would be routed via the drainage networks in this and the neighbouring sites – to the nearby combined sewer.

2.11 Climate Change: the EA provides guidance on the level of climate change to apply for developments. This is on a catchment basis – this site falling within the Adur and Ouse Management Catchment. The correct level of CC that would apply here is 37% - but only relevant if any part of this were in FZ2/3.

2.12 Artificial sources: flooding from reservoirs, canals and docks. The EA's Reservoirs Flood Map in Appendix B shows the site is not liable to flood from a nearby reservoir failing. There are no docks or canals nearby.

2.13 Groundwater Flooding: Groundwater flooding can occur when groundwater rises up from the underlying aquifer to flood subsurface infrastructure or to emerge at the ground surface. The SFRA does not indicate any localised flooding from this source. This is a change of use application, in effect, and so there is no increase in any such risk as a result of this proposal.

2.14 Historical Flooding: the EA's historical flood map in Appendix B shows this site has not been affected by flooding in the past.

2.15 In conclusion, the flood risk profile of this site is **Low**.

3 Proposed Development and SuDS & Foul Drainage Strategy

3.1 The proposed scheme is to convert part of this 2-storey community centre (and build an upwards extension to form 2 additional storeys) to create 7 dwelling units (5 houses and 2 flats); the remaining space shall be kept as a community centre. The proposed scheme drawings are shown in Appendix D. The building's footprint shall be reduced with enlarged space for gardens created by dismantling some built form at the rear. Because of the generous floor to ceiling heights, an additional storey can/shall be created.

3.2 The roof shall be replaced from flat B onwards. The garden spaces will be surfaced throughout with permeable surfaces (eg grass, gravel and the like.)

3.3 As concluded in section 2.15 above, the site's flood risk profile is Low. No mitigation is needed or proposed.

3.4 The Sequential and Exception Tests are not needed for sites in FZ1, Low Risk.

3.5 The SuDS hierarchy has been applied: there is very limited external space and none within the site's demise that is greater than 5m from foundations. There is no watercourse nearby. This leaves only the nearby public combined sewer in East Road.

3.6 The surface water from the roof and external area to the north of the building will be routed to the existing outfall close to the NW corner. This is known to run to the combined sewer (refer to section 2.6 and the CCTV Survey in Appendix C.) None of the drainage upstream of the outfall will be used as it is in too poor condition.

3.7 A drainage strategy layout is shown in Appendix E.

3.8 Flow drainage calculations for both existing and proposed scenarios (the 100 years plus 45% CC' storm event) are shown in Appendix E. FEH22 hydrological data and Cv values of 1.0 have been used. The proposed runoff rate and volume shall be reduced compared to existing, due to the reduced contributing area once the gardens are made permeable.

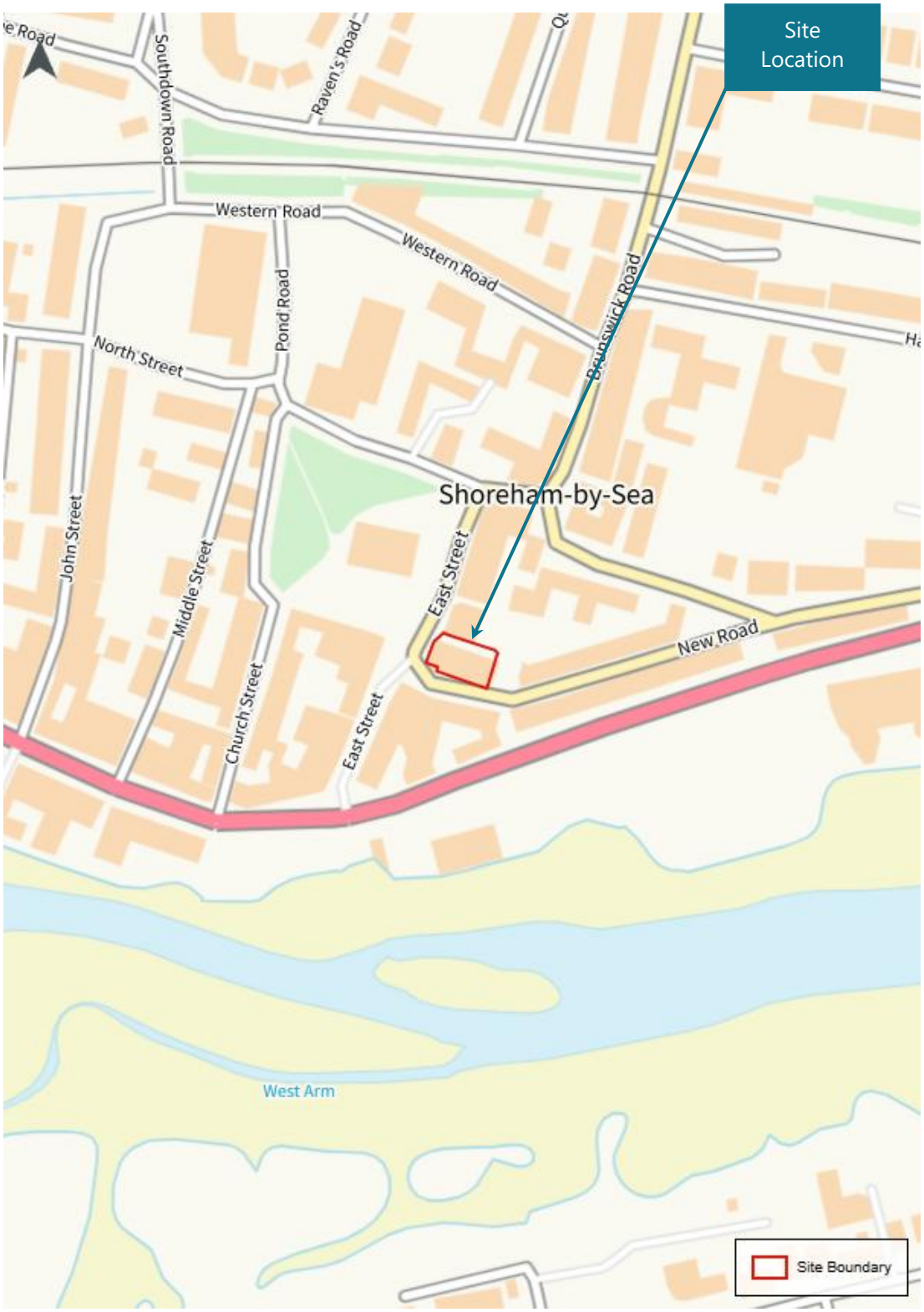
3.9 Maintenance of the drainage networks shall be the responsibility of each of the freeholders. The pipes/manholes shall be maintained in line with industry standards.

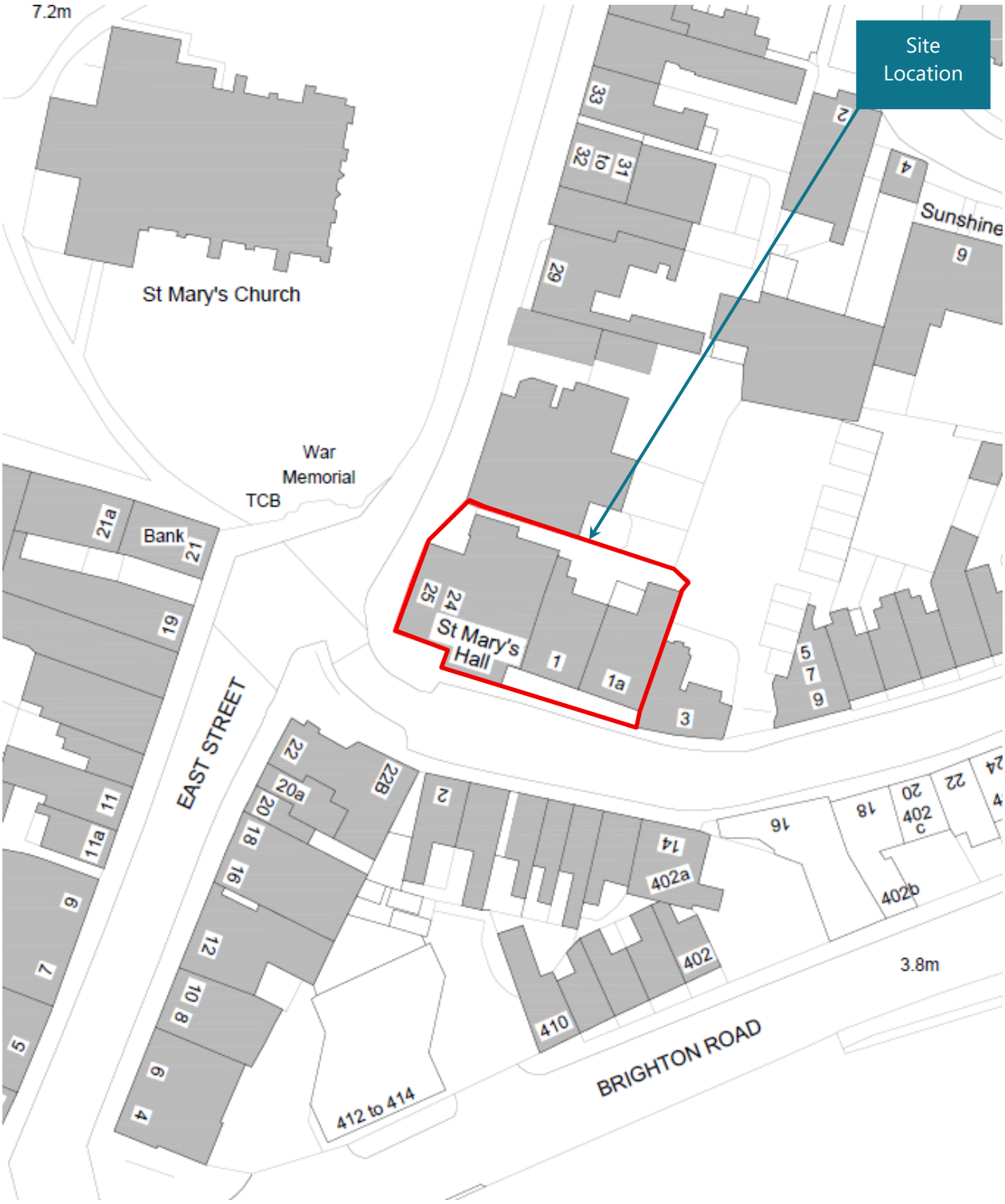
3.10 Conclusion: This development will not increase the flood risk, either on this site or to neighbouring properties, and so complies fully with the 2025 NPPF and current PPG.

- End of Report -

Appendix A

Site Location Maps & Aerial Photo



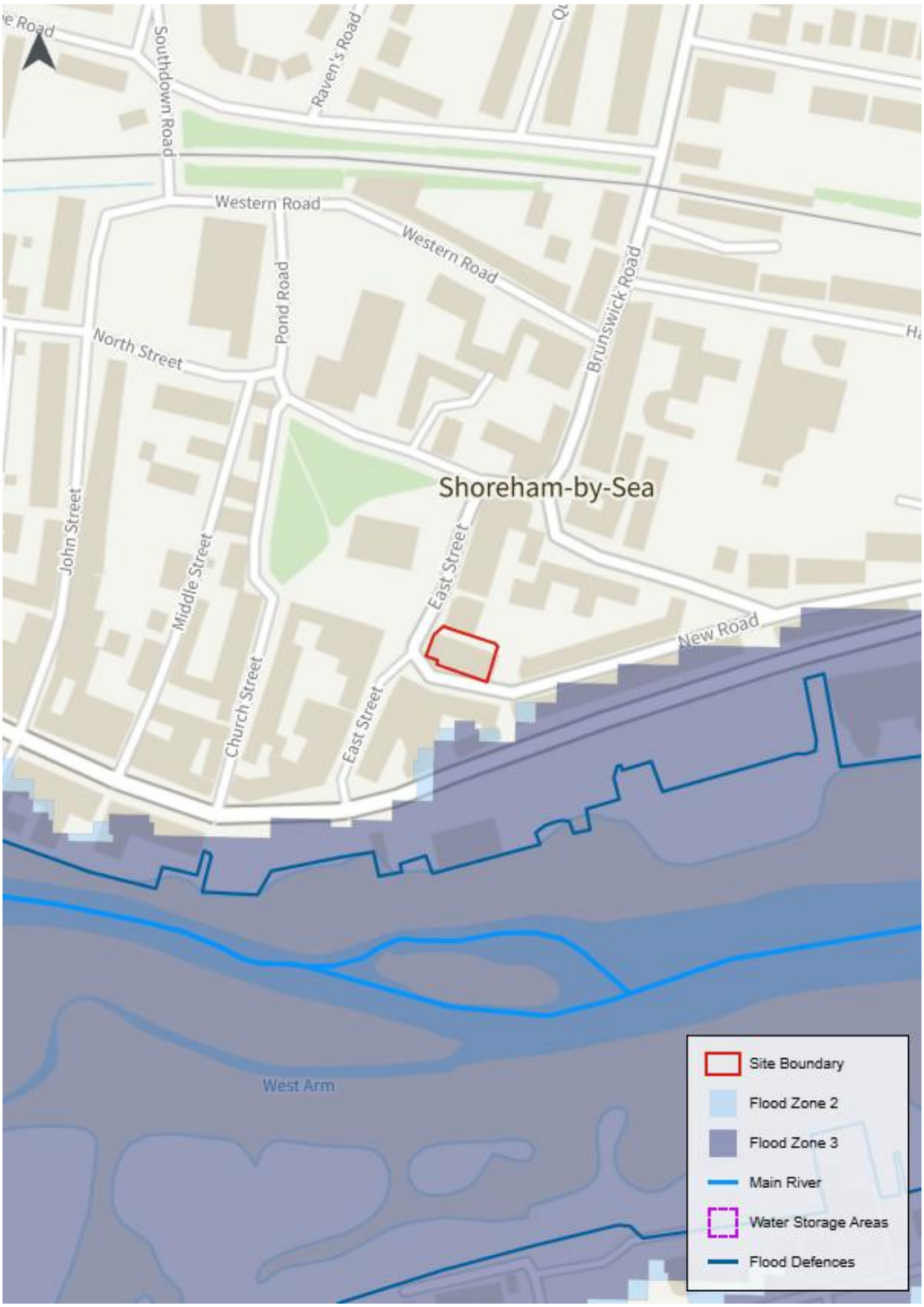

Site Location
7.2m
St Mary's Church
War Memorial
TCB
Bank
St Mary's Hall
EAST STREET
BRIGHTON ROAD
412 to 414
3.8m
Sunshine


Site
Location
Site Boundary

Appendix B

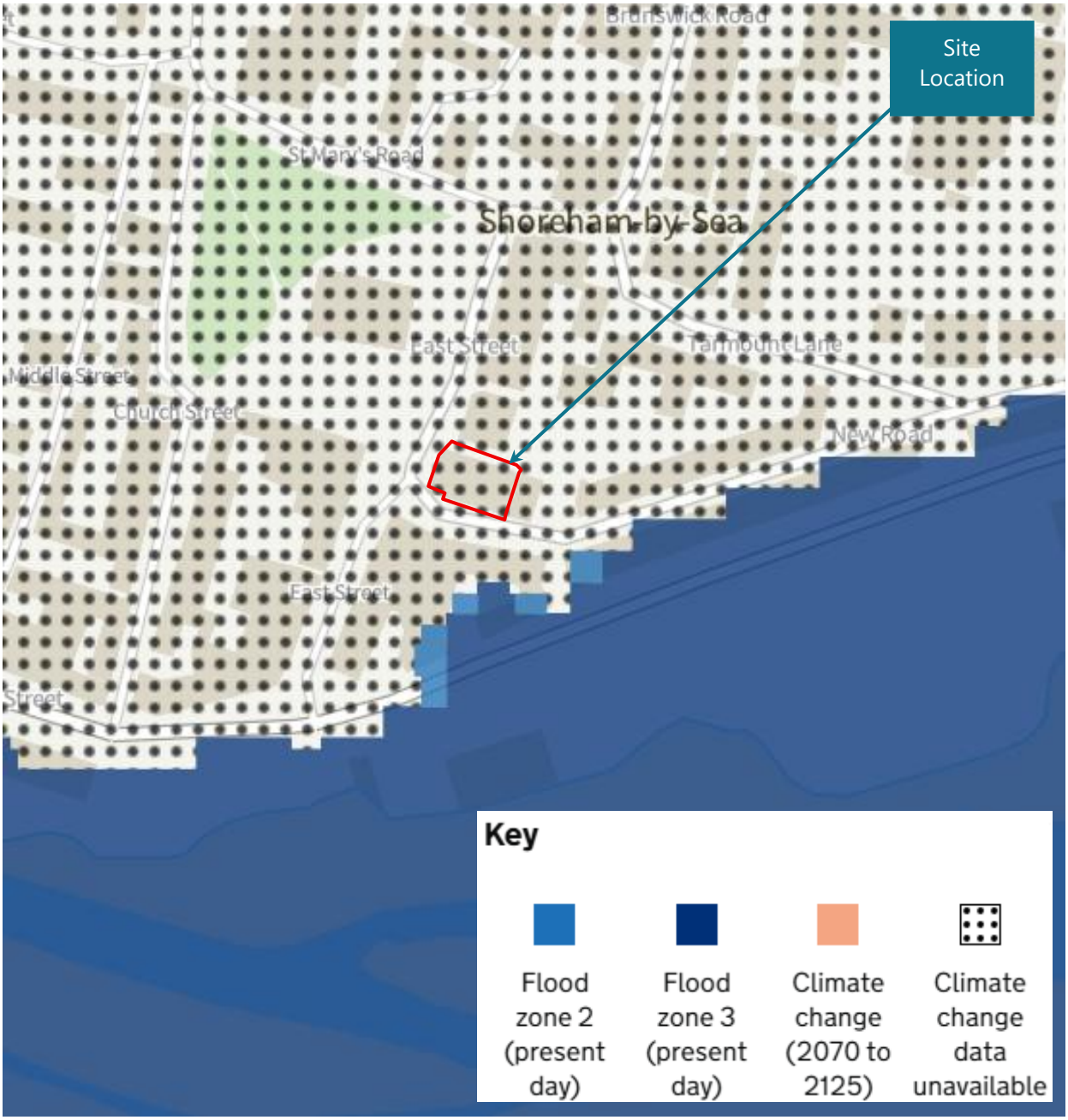
Environment Agency Flood Maps

Environment Agency Main Rivers Map



Environment Agency Flood Map for Planning

The site is located in Flood Zone 1



Environment Agency Flood Map for Planning (with Climate Change)

From: PSO West Sussex <PSOWestSussex@environment-agency.gov.uk>
Sent: 03 September 2025 09:35
To: John Pakenham <jpakenham@gtacivils.co.uk>
Cc: SSD Enquiries <SSDEnquiries@environment-agency.gov.uk>
Subject: RE: EIR2025/24405 - Data Request - St Mary's Church Hall & 1-1a New Road, Shoreham-by-Sea, BN43 5ZQ

Dear John,

Thank you for your Product 4 data request for **St Mary's Church Hall & 1-1a New Road, Shoreham-by-Sea, BN43 5ZQ**.

Please be advised that your requested site is within Flood Zone 1. We are therefore unable to provide Product 4/Flood Risk Assessment data from our detailed fluvial or tidal models which is relevant to your site. Please see the attached letter and maps that will provide further information.

This information is supplied subject to the notice which can be viewed via the following link: http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

Rights of appeal: If you are not satisfied you can contact us within 2 calendar months to ask for our decision to be reviewed. We shall review our response to your request and give you our decision in writing within 40 working days.

If you are still not satisfied following this, you can raise a concern with the Information Commissioner, who is the statutory regulator for Freedom of Information and the Environmental Information Regulations. The contact details are:

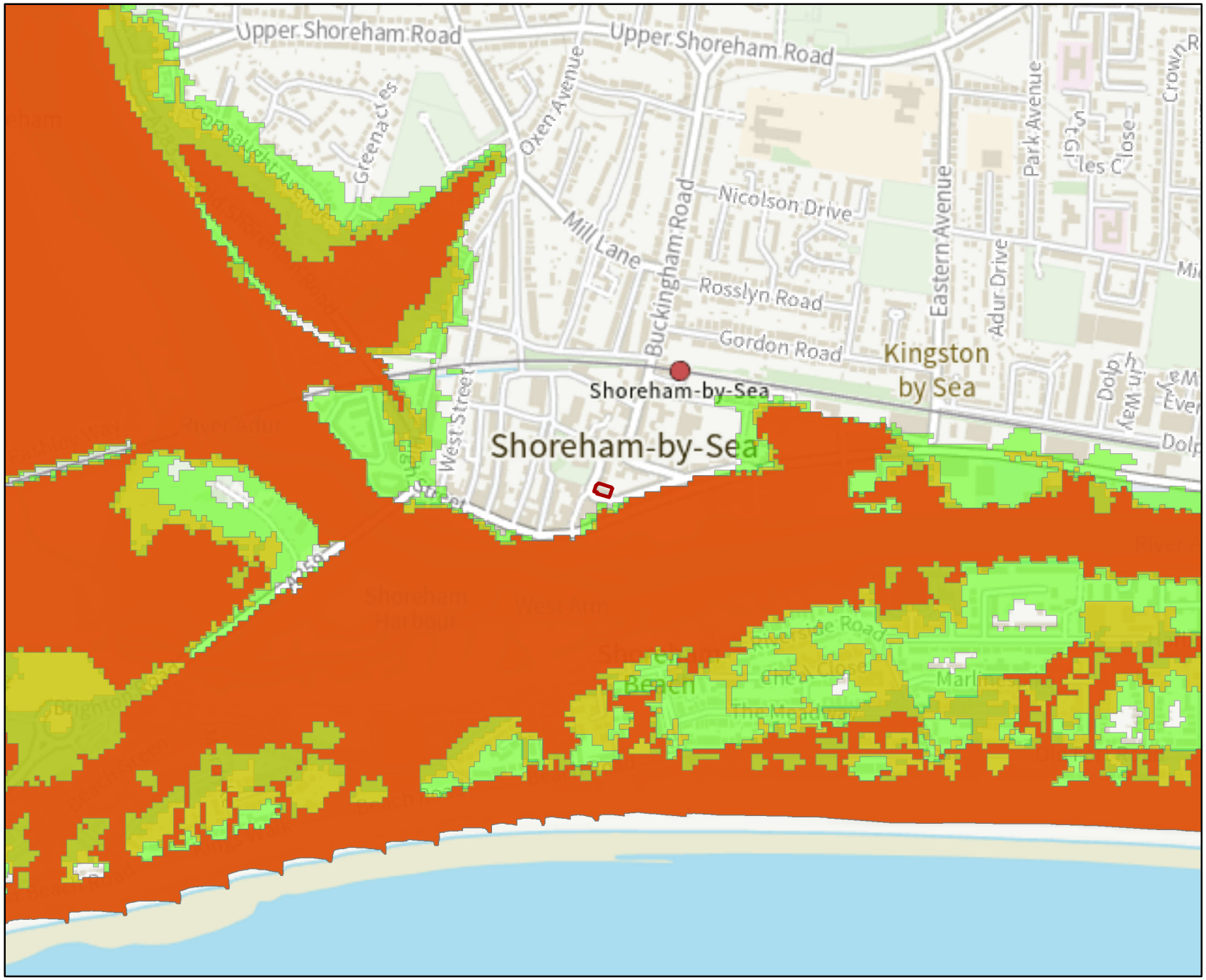
- Address: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF
- Tel: 303 123 1113
- Website: http://ico.org.uk

If you have any further queries about this request, please do not hesitate to contact us at psowestsussex@environment-agency.gov.uk.

Kind regards,

Amy O'Donnell (*she/her*)
Flood & Coastal Risk Officer
Partnership and Strategic Overview West Sussex, Solent and South Downs
Environment Agency | Teville Gate House, Teville Road, Worthing, West Sussex, BN11 1UR
PSOWestSussex@environment-agency.gov.uk

Modelled Flood Outlines (Defended Tidal). Centred BN43 5ZQ. Created 03/09/2025.



Environment Agency

N

Legend

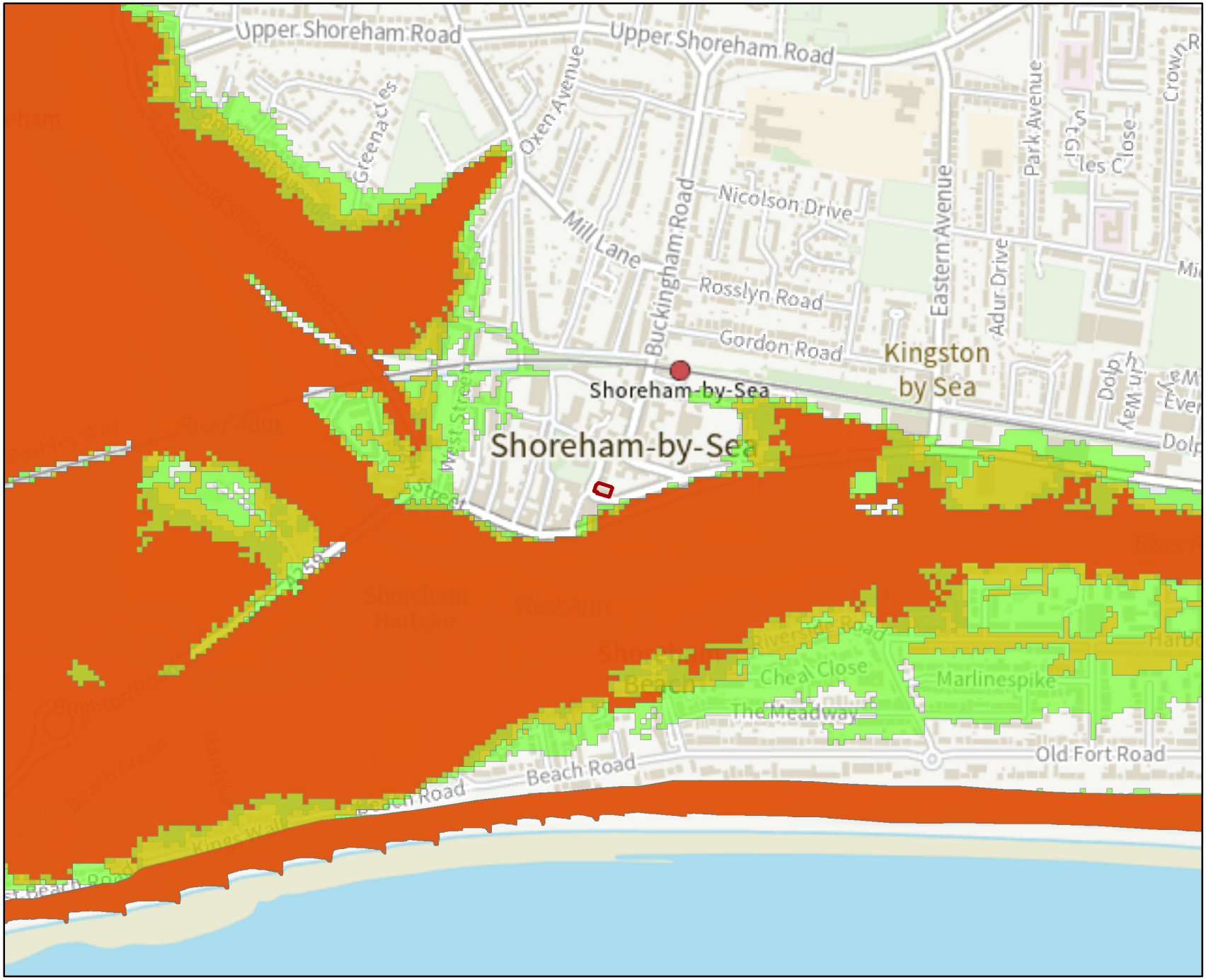
- Site Boundary
- 0.5% AEP (2012) (Defended)
- 0.5% AEP (2070) (Defended)
- 0.5% AEP (2115) (Defended)
- 0.1% AEP (2012) (Defended)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000

0 0.225 0.45
Kilometers

Modelled Flood Outlines (Undefended Tidal). Centred BN43 5ZQ. Created 03/09/2025.



Environment Agency

N

Legend

- Site Boundary
- 0.5% AEP (2012) (Undefended)
- 0.5% AEP (2070) (Undefended)
- 0.5% AEP (2115) (Undefended)
- 0.1% AEP (2012) (Undefended)

Annual Exceedance Probability (AEP) The probability of a flood of a particular magnitude, or greater occurring in any given year.

Scale: 1:10,000

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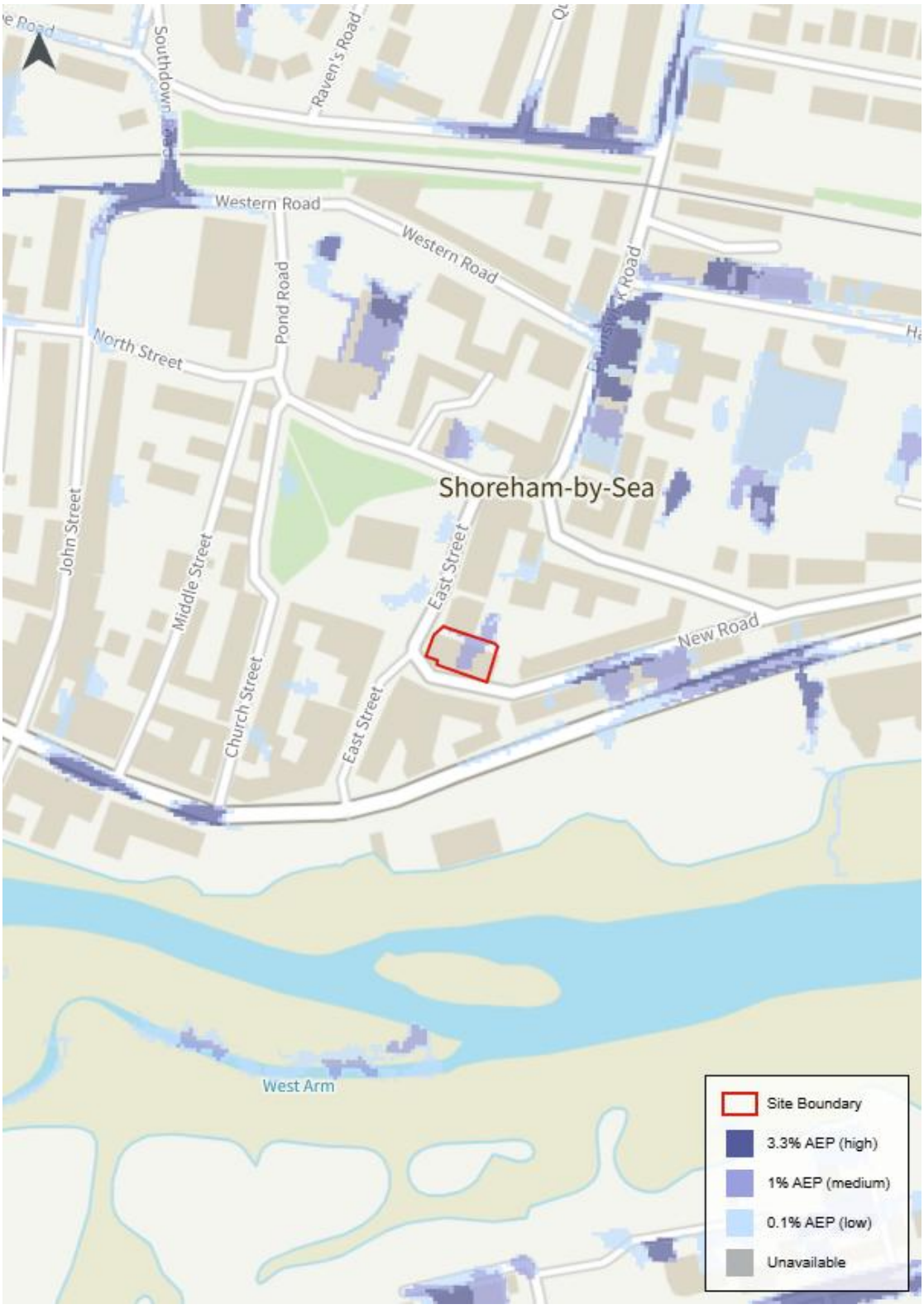
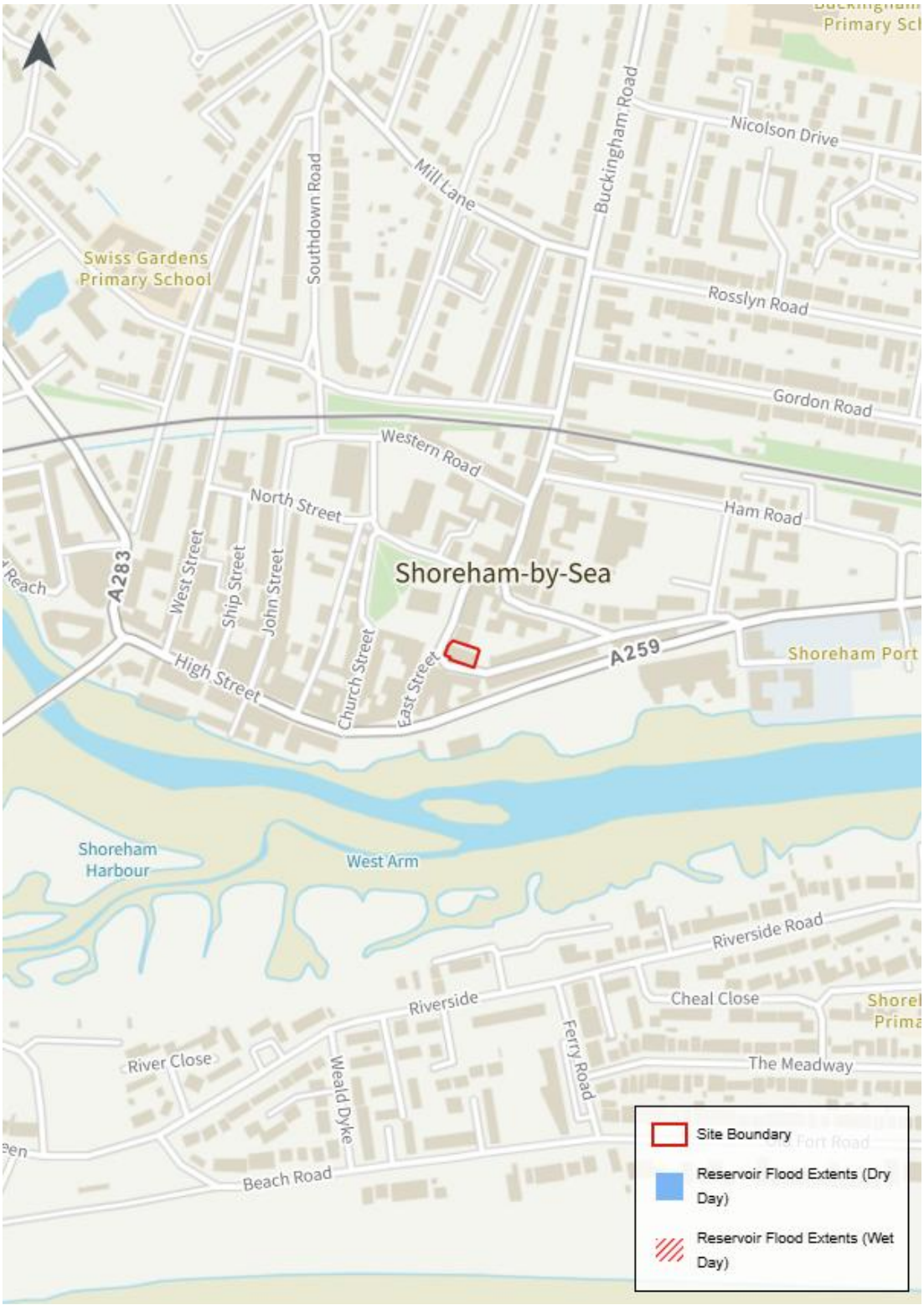
Kilometers

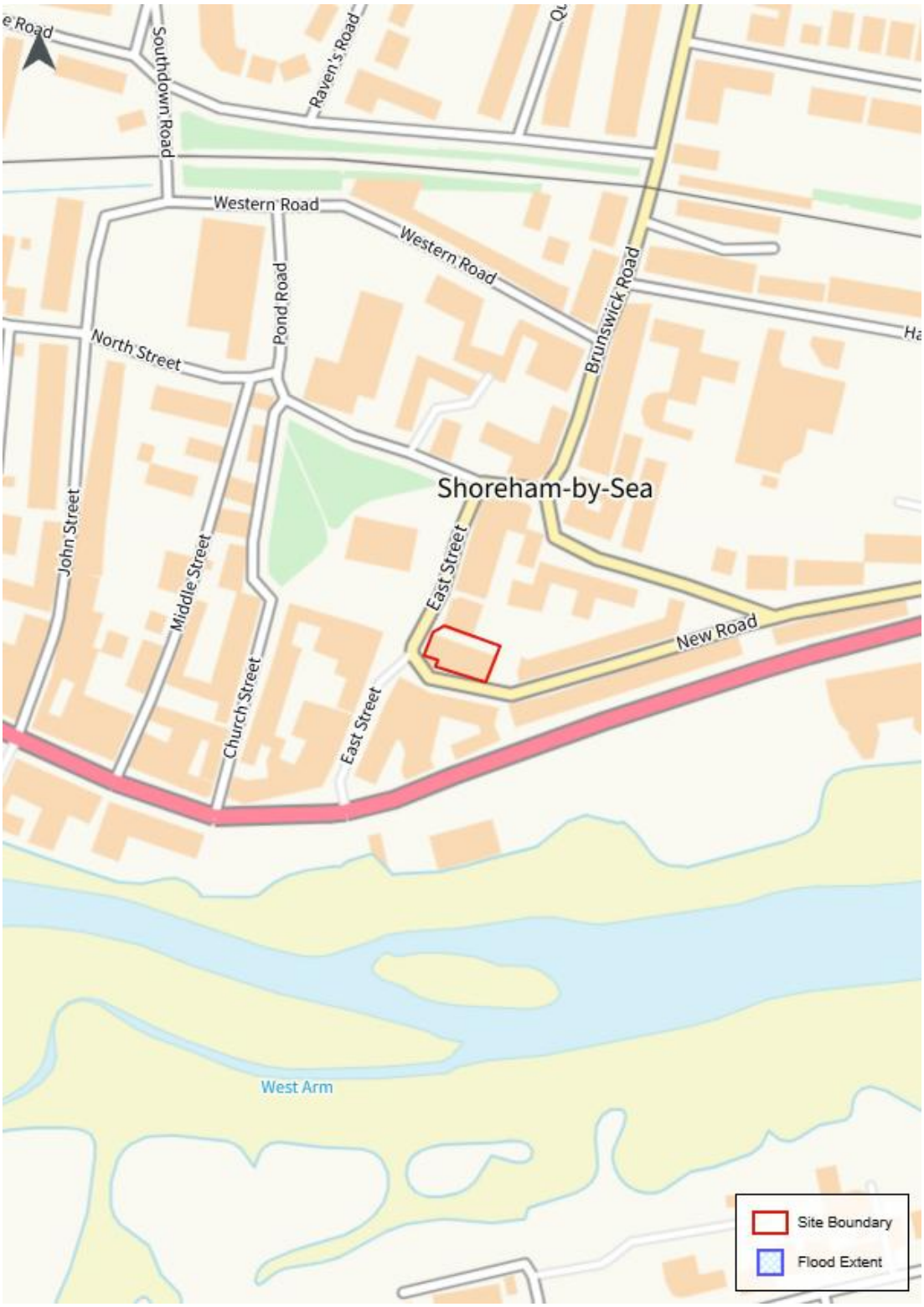


Environment Agency Surface Water Flood Extents Map



Environment Agency Flood Risk from Reservoirs

The site is clear from the risk of flooding from this source

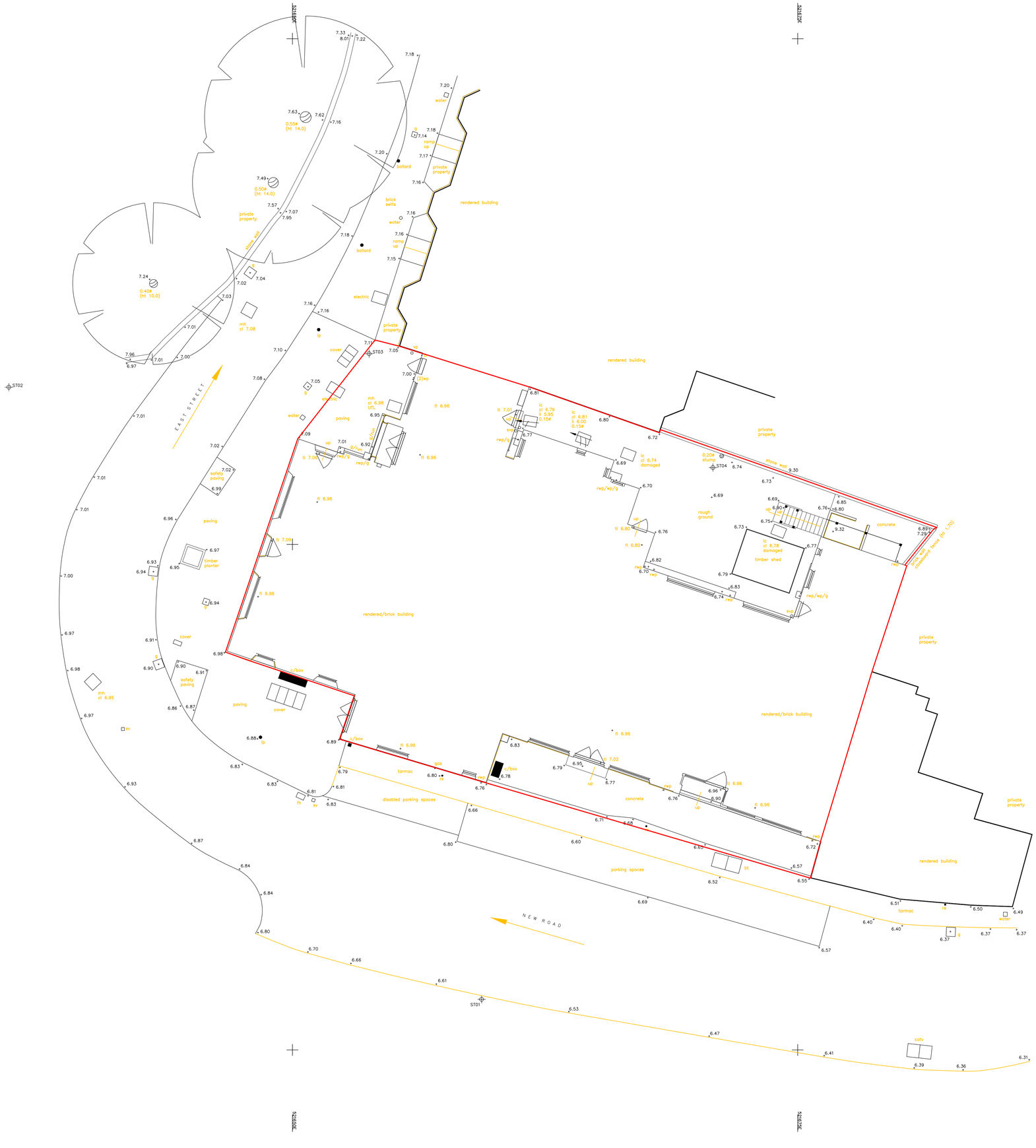


DEFRA Historical Flooding Map

Neither this site nor anywhere in the vicinity has been affected by flooding in the past

Appendix C

Topographic Survey, Sewer Records & Excerpts from CCTV Survey



1094SM | St Marys

24-25 East Street, Shoreham

key:

APPLICATION & SITE OWNERSHIP BOUNDARY

rev.	date	notes	drawn	checked
A	29/08/2025	Issued for information. Revised Site Boundary.	SP	PT
/	18/08/2025	Issued for information.	SP	PT

client:
Empire Land and Homes Ltd.

architect:
WILLOW
DESIGN PLANNING DELIVERY
370 The Yard Brighton Road, Shoreham by Sea, West Sussex, BN43 6RE
tel. 01273 456519
info@willowarchitects.net

issued for:
Information

drawn by: SP
checked by: PT

project north:

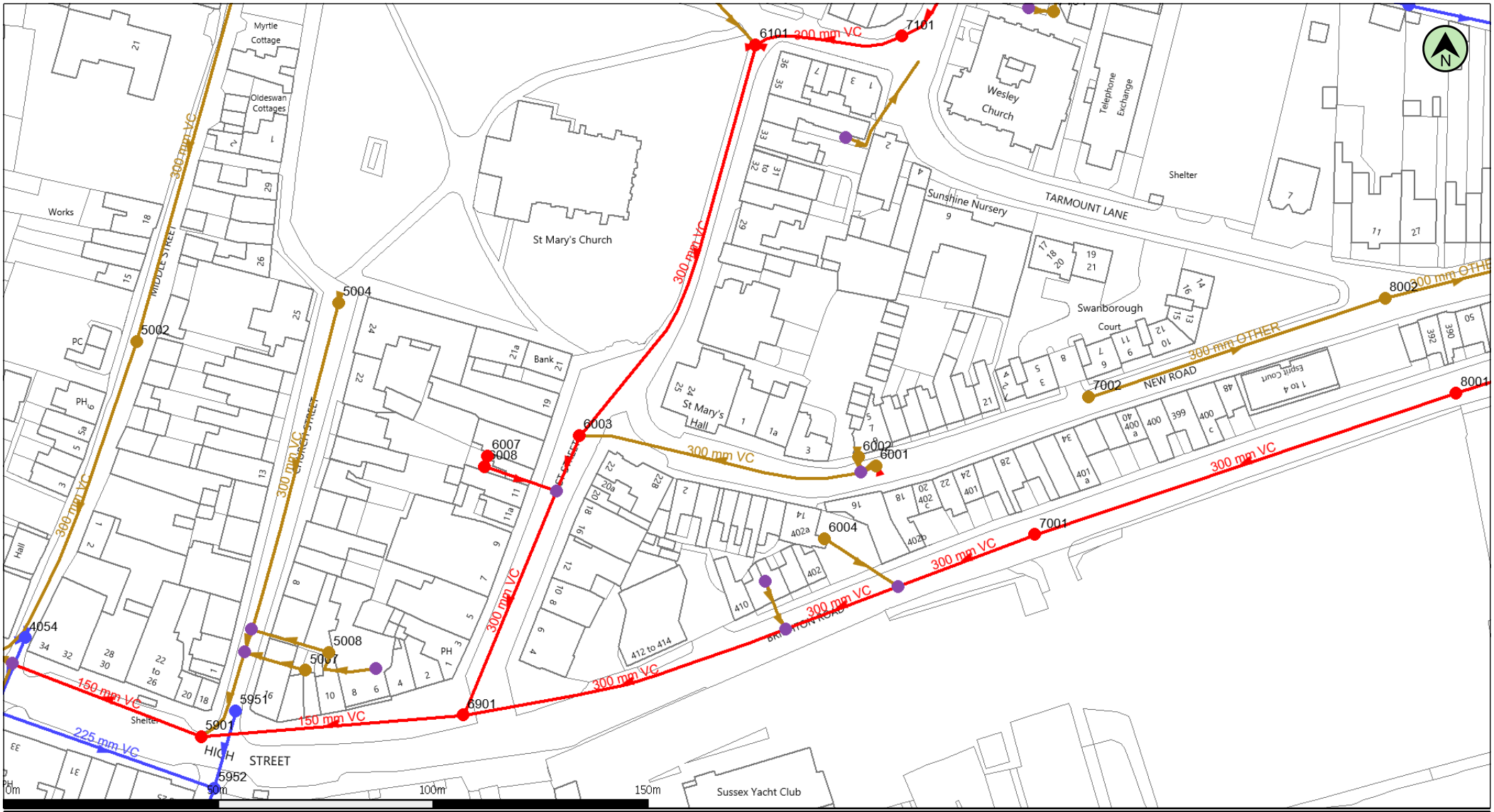
N

drawing title:
Existing Site Plan

scale @ A1: 1:100

(10)010 A

drawing no. revision



(c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122 | Date: 20/08/25 | Scale: 1:1250 | Map Centre: 521667,105070 | Data updated: 23/07/25 | Our Ref: 1856222 - 1 | Wastewater Plan A4 Powered by digdat

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 2025 Ordnance Survey AC0000808122 .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.

Foul Gravity Sewer
Combined Gravity Sewer
Culverted Water Course or Treated Effluent
Surface Water Gravity Sewer
Rising Main, Vacuum or Syphon
Combined Pumping Station
Surface Water Pumping Station
Foul Pumping Station
Combined Outfall
Surface Water Outfall
Foul Outfall
Surface Water Inlet
Water Treatment Works
Section 104 Area
Building Over Agreement Area
Foul Manhole
Combined Manhole
Surface Water Manhole
Side Entry Manhole, Demarcation Chamber, Dummy Manhole or Surface Water Soakaway

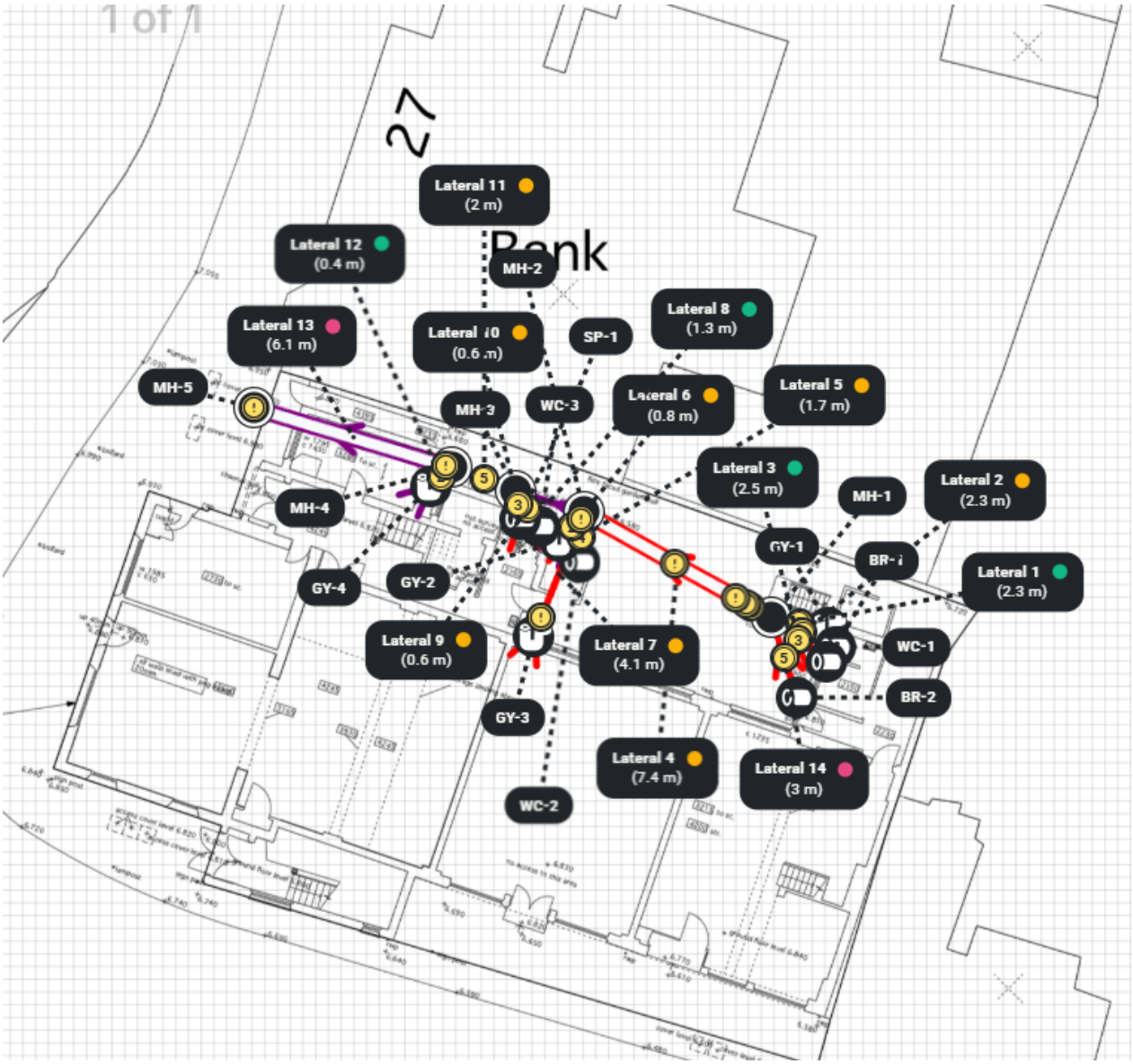
kdaines@gtacivils.co.uk

14008/FVV

WATER for LIFE from Southern Water.

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
5901	C	0.00	0.00	-
6003	C	6.63	0.00	-
6007	C	0.00	0.00	-
6008	C	0.00	0.00	-
6101	C	6.76	2.56	-
6901	C	0.00	0.00	-
7001	C	3.88	0.00	-
7101	C	6.27	2.67	-
8001	C	3.66	1.56	-
5002	F	6.35	2.15	-
5004	F	6.84	0.00	-
5007	F	0.00	0.00	-
5008	F	0.00	0.00	-
6001	F	6.20	0.00	-
6002	F	6.31	0.00	-
6004	F	0.00	0.00	-
7002	F	0.00	0.00	-
7104	F	0.00	0.00	-
8002	F	0.00	0.00	-
4054	S	5.89	0.00	-
5951	S	0.00	0.00	-
5952	S	0.00	0.00	-
8153	S	0.00	0.00	-

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert


1 of 1
27
Lateral 11 (2 m)
Lateral 12 (0.4 m)
MH-2
Lateral 13 (6.1 m)
Lateral 10 (0.6 m)
SP-1
Lateral 8 (1.3 m)
MH-5
MH-3
WC-3
Lateral 6 (0.8 m)
Lateral 5 (1.7 m)
Lateral 3 (2.5 m)
MH-4
MH-1
Lateral 2 (2.3 m)
GY-1
BR-1
GY-4
GY-2
Lateral 1 (2.3 m)
Lateral 9 (0.6 m)
Lateral 7 (4.1 m)
WC-1
BR-2
GY-3
Lateral 4 (7.4 m)
Lateral 14 (3 m)
WC-2

Happy Drains
Lees@happydrains.co.uk

PDF Report
2025-08-26

C1016241

MSCC5 (Commercial)
25 East Street, Shoreham-by-Sea, West Sussex, BN43 5ZQ,
United Kingdom

Supplier

Orgination **Happy Drains**
Engineer **Ross Perry**
Surveyor certification number

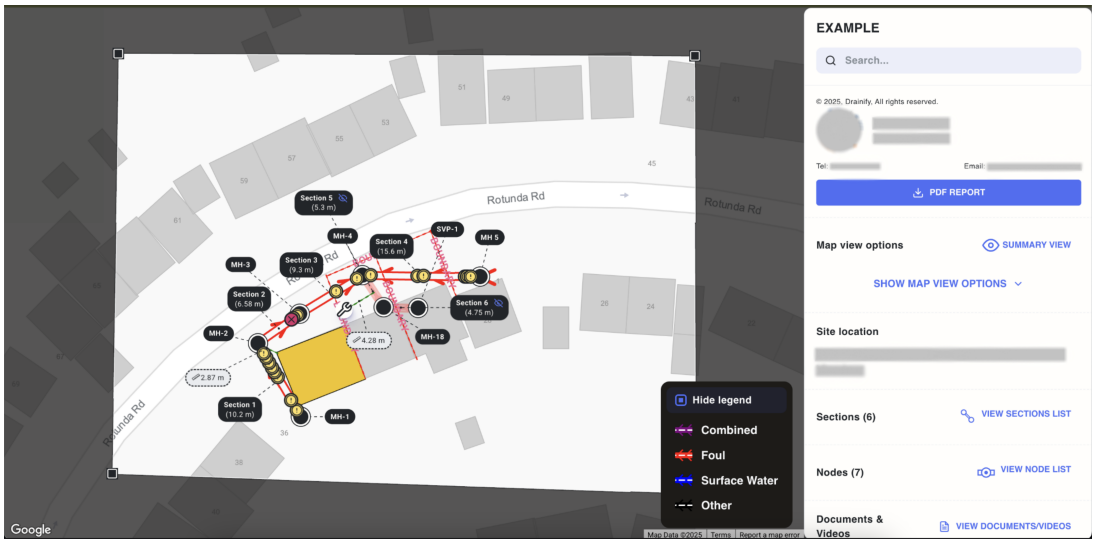
Client

Name **W Group**
Contact Phone Number **07825874605**
Address **25 East Street, Shoreham-by-Sea, West Sussex, BN43 5ZQ, United Kingdom**
Job Reference

Click for the FULL LIVE REPORT & plan

Interactive Report

Experience your report in full detail with our interactive viewer



Interactive data visualizations

Full plan details

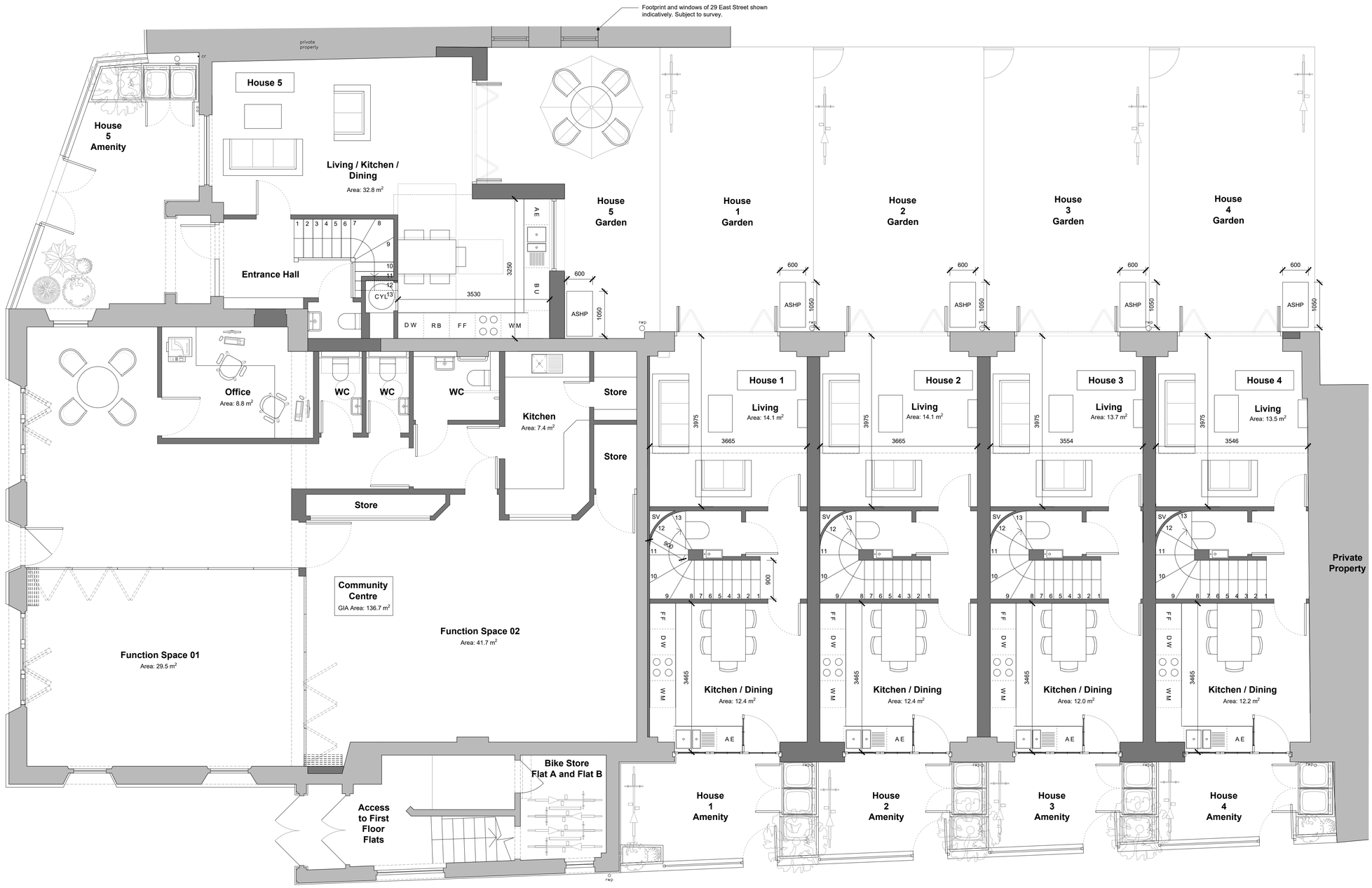
Easy sharing and downloading

Open Interactive Report

Click the button above to access your full interactive report experience

Appendix D

Architect's Scheme Drawings



1 **Proposed** 1:50
Ground Floor Plan

0 0.5 1.0 2.0 3.0 4.0 5.0
Scale in metres

1094SM | St Marys
24-25 East Street, Shoreham

key:
- EXISTING WALL
- NEW WALL
- SV SERVICE VOID

rev.	date	notes	drawn	checked
C	21/10/2025	Issued for information. Revised furniture layouts & added bifold doors to Houses 1-4. House 05 layout amended.	SP	PT
B	19/09/2025	Issued for information.	SP	PT
A	04/09/2025	Issued for information.	SP	PT
/	28/08/2025	Issued for information.	SP	PT

client:
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370 The Yard Brighton Road, Shoreham by Sea, West Sussex, BN43 6RE
tel. 01273 456519
info@willowarchitects.net

issued for:
Information

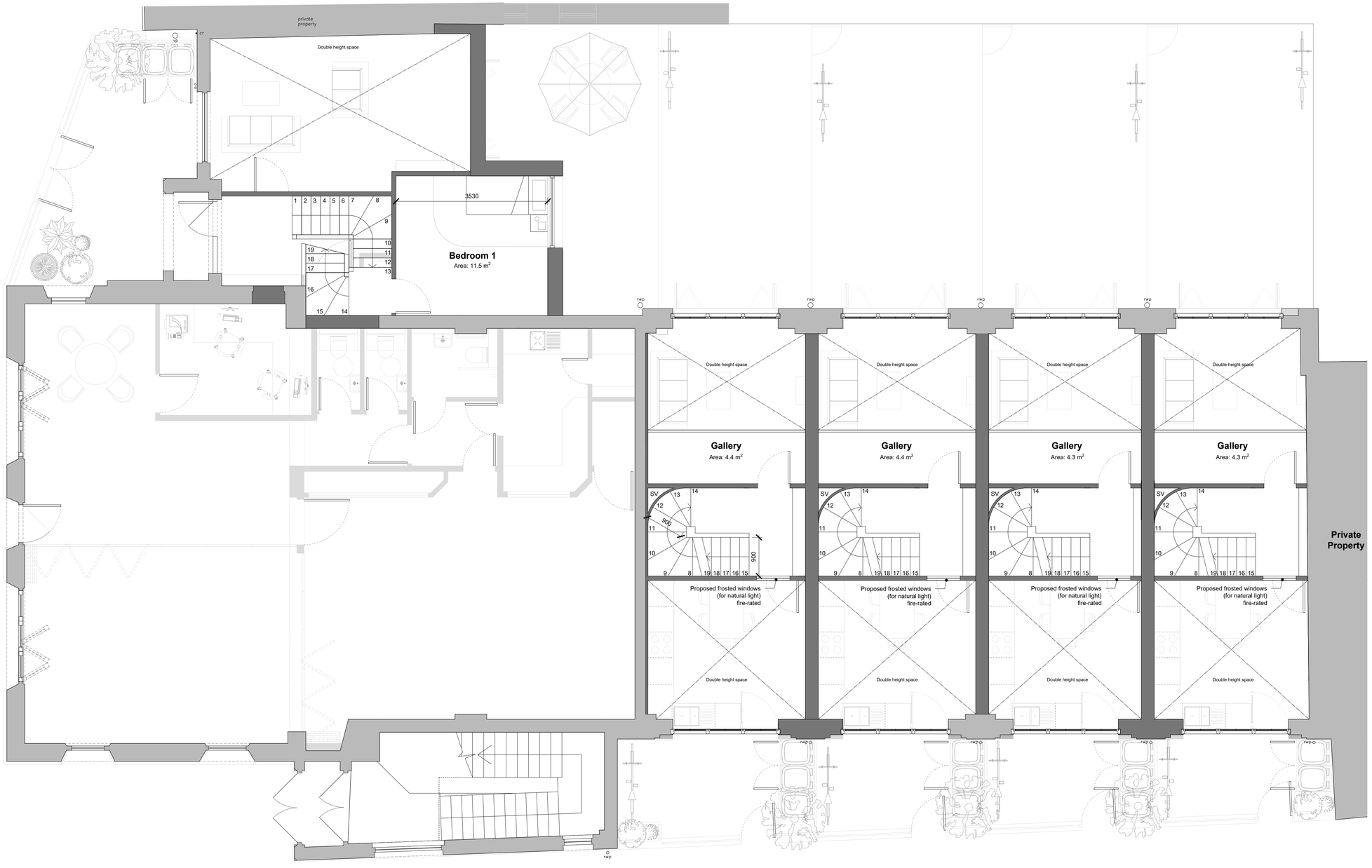
drawn by: SP
checked by: PT

project north:

drawing title:
Proposed
Ground Floor Plan

scale @ A1:
1:50

(21)000 C
drawing no. revision



1 **Proposed** 1:50
Lower First Floor Plan

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Scale in metres

1094SM | St Marys
24-25 East Street, Shoreham

key:
- EXISTING WALL
- NEW WALL
- SV SERVICE VOID

rev.	date	notes	drawn	checked
C	21/10/2025	Issued for information. Furniture layouts amended. House 05 stair layout amended.	SP	PT
B	19/09/2025	Issued for information.	SP	PT
A	04/09/2025	Issued for information.	SP	PT
/	28/08/2025	Issued for information.	SP	PT

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info@willowarchitects.net

issued for:
Information

drawn by: SP
checked by: PT

project north:

drawing title:
Proposed
Lower First Floor Plan

scale @ A1:
1:50

(21)001 C
drawing no. revision

1 **Proposed** 1:50
First Floor Plan

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Scale in metres

1094SM | St Marys
24-25 East Street, Shoreham

key:
- EXISTING WALL
- NEW WALL
- SV SERVICE VOID

rev.	date	notes	drawn	checked
C	21/10/2025	Issued for information. Furniture layouts amended. House 05 stair layout amended.	SP	PT
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A	04/09/2025	Issued for information.	SP	PT
/	28/08/2025	Issued for information.	SP	PT

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info@willowarchitects.net

issued for:
Information

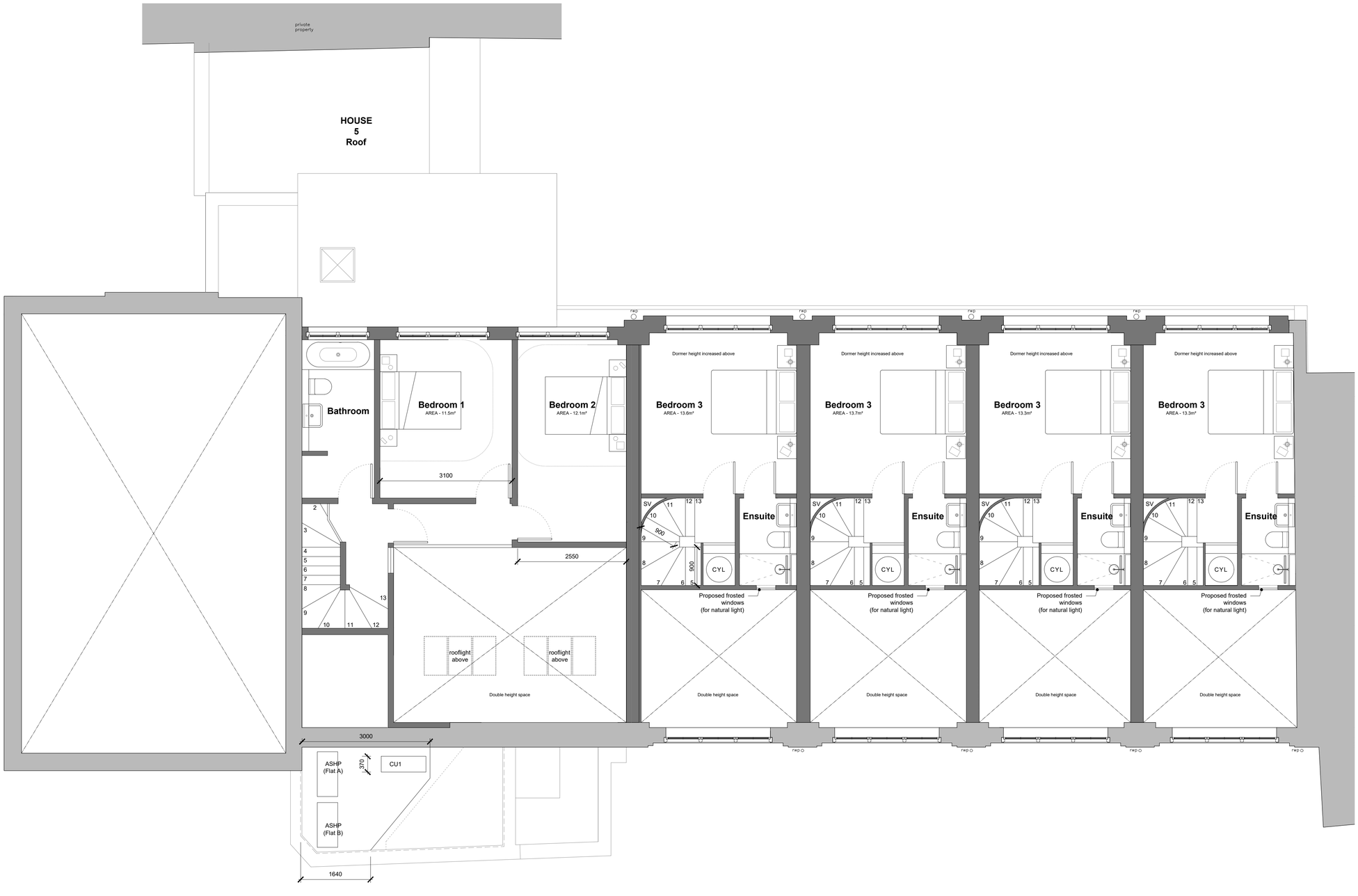
drawn by: SP
checked by: PT

project north:

drawing title:
Proposed
First Floor Plan

scale @ A1:
1:50

(21)002 C
drawing no. revision



1 **Proposed** 1:50
Second Floor Plan

0 0.5 1.0 2.0 3.0 4.0 5.0
Scale in metres

1094SM | St Marys
24-25 East Street, Shoreham

key:
- EXISTING WALL
- NEW WALL
- SV SERVICE VOID

rev.	date	notes	drawn	checked
C	21/10/2025	Issued for information. Furniture layouts amended.	SP	PT
B	19/09/2025	Issued for information.	SP	PT
A	04/09/2025	Issued for information.	SP	PT
/	28/08/2025	Issued for information.	SP	PT

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info@willowarchitects.net

issued for:
Information

drawn by: SP
checked by: PT

project north:

drawing title:
Proposed
Second Floor Plan

scale @ A1:
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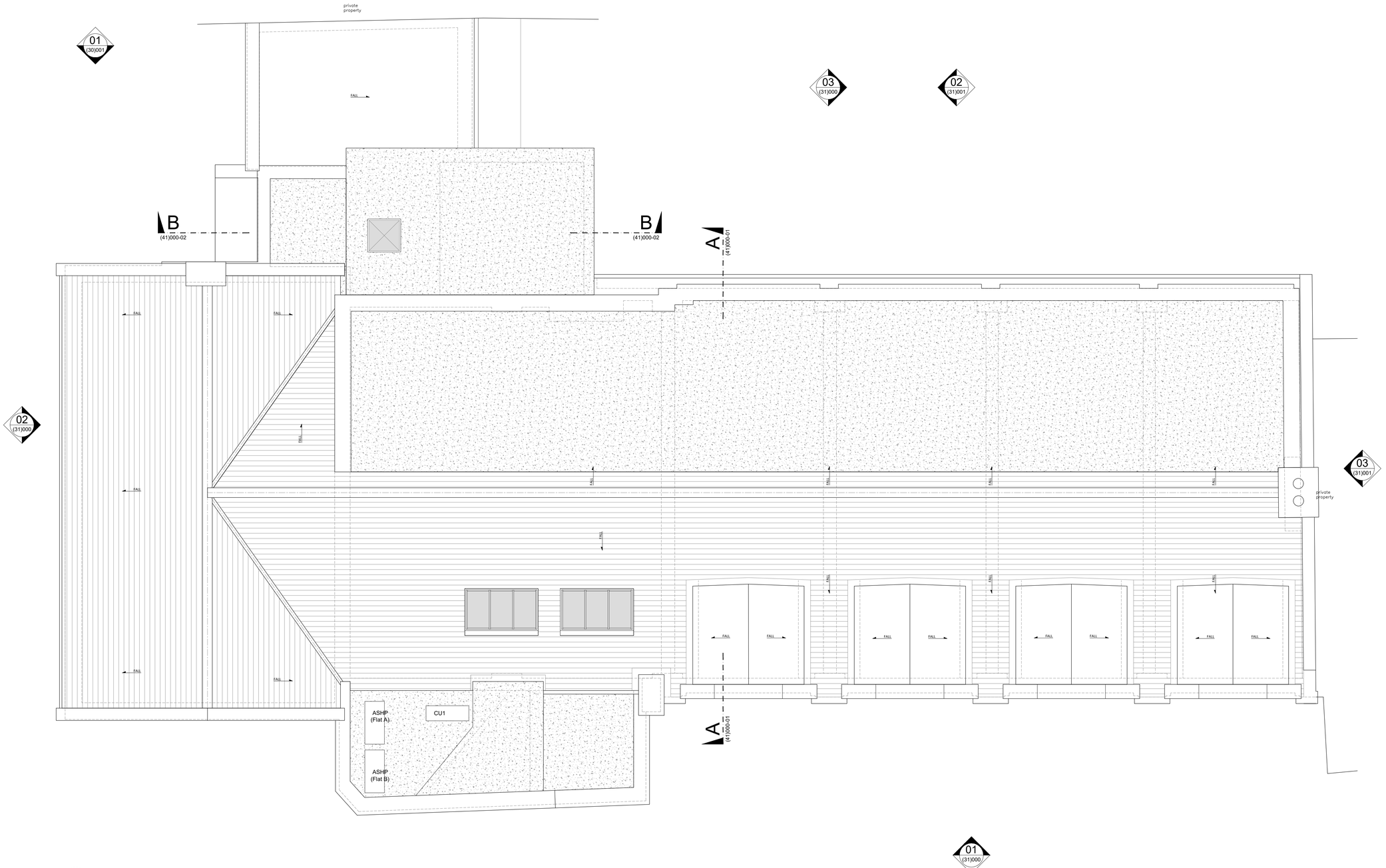
(21)003 C

drawing no. revision



1 Proposed Roof Plan 1:50

0 0.5 1.0 2.0 3.0 4.0 5.0

Scale in metres

*Roof plan drawn indicatively from measured survey information.

1094SM | St Marys | 24-25 East Street, Shoreham

key:

rev.	date	notes	drawn	checked
B	21/10/2025	Issued for information. Massing adjusted. MEP equipment indicated.	SP	PT
A	19/09/2025	Issued for information.	SP	PT
/	04/09/2025	Issued for information.	SP	PT

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tel. 01273 456519
info@willowarchitects.net

issued for:
Information

drawn by: SP
checked by: PT

project north:

drawing title:
Proposed Roof Plan

scale @ A1: 1:50

(21)004 B

drawing no. revision

Appendix E

Proposed Drainage Strategy Layout & Drainage Calculation Sheets

0 1m 2m 3m 4m 5m 10m

GENERAL NOTES

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations , record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. any discrepancies shall be notified to gta prior to works commencing.

2. Tender or billing drawings shall not be used for construction or the ordering of materials.

3. Do not scale. All dimensions and levels to be site confirmed.

4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.

5. Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.

6. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals is considered wholly at the Clients risk. gta hold no responsibility for resulting abortive works or costs.

DESIGN NOTES

1. SURFACE WATER DISRCHARGE RATES CALCULATED BASED ON 1 IN 100YR + 45% CC STORM EVENT.
2. EXISTING SURFACE WATER DISCHARGE RATE CALCULATED AT 14.2l/s, BASED ON AN APPLIED IMPERMEABLE AREA OF 0.025ha. PROPOSED SURFACE WATER DISCHARGE RATE CALCULATED AT 13.5l/s, BASED ON AN APPLIED IMPERMEABLE AREA OF 0.021ha.
3. NO OPPORTUNITY FOR SUDS DUE TO DEPTH AND SPACE CONSTRAINTS.
4. ALL EXISTING DRAINS SHOWN BASED ON CCTV SURVEY BY 'HAPPY DRAINS' ON 26/08/25
5. ALL DRAIN POINTS SUBJECT TO CONFIRMATION BY ARCHITECT

KEY

- Existing Foul Water Sewer
- Existing Combined Water Sewer
- Proposed Combined Water Sewer
- Proposed Surface Water Sewer
- Proposed Foul Water Sewer
- RWP — Proposed Rainwater Pipe
- RP — Proposed Rodding Point
- PPCP (PVC Catchpit) — Proposed 800mmØ Catchpit
- FIC — Proposed 450mmØ Foul Inspection Chamber
- CW — Proposed 450mmØ Combined Sewer Chamber
- SVP — Proposed Soil Vent Pipe
- Direction of Flow
- Non-Return Valve

Rev	Amendments	Date	Dsn	Chk
P4	Updated to reflect client comments	20.10.25	KW	FVV
P3	Updated with redundant existing drainage hidden	15.10.25	AW	FVV
P2	Updated to reflect client comments	14.10.25	AW	FVV
P1	Initial Issue	01.10.25	AW	FVV

Status: PRELIMINARY

Client: W GROUP

Architect: WILLOW

Project: ST MARY'S CHURCH SHOREHAM

Title: PROPOSED DRAINAGE STRATEGY PLAN

Date: OCTOBER 2025 | Scale @ A1: 1:100

Clients Ref. | Project Ref.: 14008

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Drawing Number: 14008_1100 | Rev.: P4

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	45	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
Depth/Area 1	0.025	5.00	6.700		-16.711	80.936	0.400
1			6.800	1200	-7.184	79.315	0.600
2			7.000	1200	4.324	76.986	1.050

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)
1.000	Depth/Area 1	1	9.664	6.300	6.200	0.100	96.6	100	5.21
1.001	1	2	11.741	6.200	5.950	0.250	47.0	100	5.38

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)
1.000	0.782	6.1	6.6	0.300	0.500	0.025
1.001	1.127	8.9	6.6	0.500	0.950	0.025

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	20.0		

Storm Durations

30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	Depth/Area 1	16	6.700	0.400	20.3	1.6532	0.0000	FLOOD RISK
30 minute summer	1	19	6.800	0.600	16.4	0.6786	0.2942	FLOOD
30 minute summer	2	17	6.045	0.095	14.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	Depth/Area 1	1.000	1	16.4	2.668	0.0756	
30 minute summer	1	1.001	2	14.2	1.609	0.0909	12.5

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	45	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
Depth/Area 1	0.021	5.00	6.700		-16.711	80.936	0.400
1			6.800	1200	-7.184	79.315	0.600
2			7.000	1200	4.324	76.986	1.050

Links

Name	US Node	DS Node	Length (m)	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)
1.000	Depth/Area 1	1	9.664	6.300	6.200	0.100	96.6	100	5.21
1.001	1	2	11.741	6.200	5.950	0.250	47.0	100	5.38

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)
1.000	0.782	6.1	5.5	0.300	0.500	0.021
1.001	1.127	8.9	5.5	0.500	0.950	0.021

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	20.0		

Storm Durations

30	60	120	180	240	360	480	600	720	960	1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	45	0	0

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	Depth/Area 1	16	6.700	0.400	17.0	1.0651	0.0000	FLOOD RISK
30 minute summer	1	20	6.725	0.525	14.4	0.5936	0.0000	FLOOD RISK
30 minute summer	2	17	6.045	0.095	13.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	Depth/Area 1	1.000	1	14.4	2.337	0.0756	
30 minute summer	1	1.001	2	13.5	1.527	0.0909	10.8

Civil Engineering - Transport Planning - Flood Risk

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