

FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

Proposed First Floor Front Extension over Garage and Porch, and Rear Single Storey Extension with Mono-Pitched Roof over Existing Single Storey

Client	Mr and Mrs Steel
Site Address	17 The Warren, Burgess Hill, West Sussex, RH15 0DU
Proposal	Proposed first floor front extension over garage and porch, and rear single storey extension with mono-pitched roof over existing single storey
Planning Reference	DM/26/1593 (Mid Sussex District Council, application received 29 June 2026)
National Grid Reference	OS Easting / Northing 532289 / 118314
Site Area	286 m ² (0.029 ha)
Flood Zone	Flood Zone 1 — low probability of flooding from rivers and the sea (EA Flood Map for Planning, 22 July 2026)
Local Planning Authority	Mid Sussex District Council
Lead Local Flood Authority	West Sussex County Council
Sewerage / Water Undertaker	Southern Water Services Ltd (sewerage); South East Water Ltd (water supply)
Planning Agent / Architect	Simon Harvey Designs Ltd
Drawing References	Simon Harvey Designs Ltd drawings 181_01 to 181_06 (April 2026); Foresite Geomatics Ltd topographical survey 26068_01 (July 2026); Flood Risk Environmental drawings 1061_1001 and 1061_1002
FRE Reference	FRE-WARREN-2026
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Executive Summary

Flood Risk

This Flood Risk Assessment (FRA) has been prepared by Flood Risk Environmental on behalf of Mr and Mrs Steel in support of planning application DM/26/1593 to Mid Sussex District Council for a first floor front extension over the existing garage and porch, and a rear single storey extension with a mono-pitched roof over the existing single storey element, at 17 The Warren, Burgess Hill.

The application was received by Mid Sussex District Council on 29 June 2026. By letter dated 27 July 2026 the Council requested a flood risk assessment on the grounds that the site falls within an area at risk of surface water flooding. This report responds to that request.

The Environment Agency Flood Map for Planning, generated on 22 July 2026 for OS Easting/Northing 532289 / 118314, confirms that the site lies within **Flood Zone 1** — an area of low probability of flooding from rivers and the sea. The site area is 286 m² (0.029 ha), far below the 1 ha threshold at which an FRA is automatically required in Flood Zone 1. The governing source of flood risk is **surface water**.

Environment Agency Risk of Flooding from Surface Water (NaFRA2) data records the dwelling and both extension footprints as being at High risk of surface water flooding — a chance of flooding of 3.3% or greater in any year. Mapped depths across the dwelling footprint are 200 to 300 mm in the present day 1 in 30 year event, rising to 300 to 600 mm in the 1 in 100 year event including the 2061–2125 climate change allowance. No cell within the site exceeds 600 mm in the present day 1 in 1,000 year event.

The topographical survey explains the exposure. The rear garden falls from 50.07 m AOD at the western boundary to 49.58 m AOD at the head of a sleeper retaining wall, behind which the rear patio sits at 49.24 to 49.30 m AOD. A continuous low corridor runs along the northern boundary from 49.24 m AOD at the rear of the dwelling to 48.99 m AOD at the back of the footway in The Warren, at a gradient of approximately 1 in 90. Overland flow arriving from the west and north-west is checked by the retaining wall, passes around the rear elevation and is conveyed along that corridor to the highway. The existing finished floor level is 49.430 m AOD.

The design flood level for the 1% annual exceedance probability event including climate change is **49.900 m AOD**, being the highest adjacent ground level at the rear of the dwelling (49.300 m AOD) plus the upper bound of the mapped 300 to 600 mm depth band. Flood resistance and resilience measures are provided to **50.030 m AOD**, being 600 mm above finished floor level and 130 mm above the design flood level. Certified flood resistant doorsets are provided to the front and rear entrances and flood resilient construction is provided to the ground floor of the proposed extensions.

The development is a householder extension to an existing dwelling. The use is classified as More Vulnerable under Annex 3 of the National Planning Policy Framework and is appropriate in Flood Zone 1 without application of the Exception Test. Householder development is expressly exempt from the Sequential Test under the Environment Agency's standing advice.

External ground levels are not raised, the northern overland flow route is retained clear and unobstructed, and the sleeper retaining wall to the rear garden is retained. The development therefore does not increase flood risk to any third party.

Summary of Flood Risk by Source

Flood Source	Risk to Site	Risk to Access / Egress
Fluvial (rivers)	Low — Flood Zone 1 confirmed by the EA Flood Map for Planning. The nearest main river lies approximately 90 m east of the site and no part of the site falls within Flood Zone 2 or Flood Zone 3.	Low — The Warren is in Flood Zone 1 along the whole of the site frontage.
Tidal	Negligible — the site is inland at approximately 49 m AOD and remote from any tidal reach.	Negligible
Surface water (pluvial)	High — the governing source. NaFRA2 records the dwelling footprint as being at High risk, with depths of 200 to 300 mm in the present day 1 in 30 year event and 300 to 600 mm in the 1 in 100 year event including climate change. Addressed at Sections 4.3 and 7.	Medium — the mapped flow route follows the northern boundary of the plot and the carriageway of The Warren. Depths on the flow route are shallow and a dry refuge is available at first floor.
Groundwater	Low — the site lies outside any Environment Agency groundwater flood alert area. The bedrock is Weald Clay Formation mudstone with no superficial deposits.	Low
Sewer	Low — no public surface water sewer serves the property. Roof water discharges to a private surface water drainage system and the proposals reduce the peak rate discharged to it.	Low
Reservoir	Negligible — the Environment Agency advises that flooding from reservoirs is unlikely in this area.	Negligible
Artificial sources	Negligible — there are no canals, ponds or other artificial water-bearing infrastructure within the hydrological setting of the site.	Negligible

Surface Water Drainage

The building footprint increases from 95.032 m² to 111.597 m², an increase of 16.565 m². The rear extension roof of 23.931 m² replaces an existing extension roof of 15.787 m² and the front extension roof of 23.380 m² replaces an existing extension roof of 17.557 m², so the roof area connected at the two extension rainwater pipes increases from 33.344 m² to 47.311 m².

The underlying bedrock is Weald Clay Formation mudstone with no superficial deposits and infiltration is not viable. There is no public surface water sewer and no watercourse within the applicant's control. Roof water is therefore attenuated on plot and discharged to the existing private surface water drainage system serving the property, in accordance with the drainage hierarchy at Building Regulations Approved Document H.

A GreenBlue Urban SuDSPod on-plot attenuation unit is fitted to the rainwater pipe of each extension. Hydraulic modelling in Causeway Flow+ v15.0 using FEH22 point rainfall for OS 532290 / 118316 confirms that neither unit floods in any modelled event up to and including the 1 in 100 year event with a 45% climate change allowance. Peak discharge from the two extensions is reduced by between 27% and 57% relative to the existing arrangement, notwithstanding the 41.9% increase in connected roof area.

1. Introduction

1.1 This Flood Risk Assessment (FRA) has been prepared by Flood Risk Environmental (FRE) on behalf of Mr and Mrs Steel in support of planning application **DM/26/1593** to Mid Sussex District Council for a first floor front extension over the existing garage and porch, and a rear single storey extension with a mono-pitched roof over the existing single storey element, at **17 The Warren, Burgess Hill, West Sussex, RH15 0DU**.

1.2 The application was received by the Council on 29 June 2026. By letter dated 27 July 2026 the Council's Validation Officer requested a flood risk assessment on the grounds that the site falls within an area at risk of surface water flooding. That letter is reproduced at Appendix A. This report is provided in response to it.

1.3 The Environment Agency Flood Map for Planning confirms that the site lies in Flood Zone 1 and that the site area is well below 1 ha. In Flood Zone 1 a site-specific FRA is required for a site of less than 1 ha where the land is at risk from sources of flooding other than rivers and the sea. The Flood Map for Planning records a risk of flooding from surface water at this location and the Environment Agency Risk of Flooding from Surface Water dataset records the dwelling as being at High risk. An FRA is accordingly required and proportionate.

1.4 This assessment has been prepared in accordance with the Environment Agency's standing advice for carrying out a flood risk assessment and its national flood risk standing advice for local planning authorities. Reference has been made to the following sources:

- Mid Sussex District Council validation letter for application DM/26/1593, dated 27 July 2026 (Appendix A).
- Environment Agency Flood Map for Planning — report and 1:2,500 map, generated 22 July 2026 at 08:44 and 08:45 for OS Easting/Northing 532289 / 118314 (Appendix B).
- Environment Agency flood risk screening for the site — flood map for planning extract, bedrock and superficial geology, groundwater flood alert area and reservoir flood risk results (Appendix C).
- Environment Agency Risk of Flooding from Surface Water (NaFRA2) extent and depth mapping — 1 in 30, 1 in 100 and 1 in 1,000 year events including the 2061–2125 climate change allowance (Appendix D), and the corresponding present-day likelihood bandings at the 0 mm, 200 mm, 300 mm, 600 mm and 900 mm depth thresholds obtained from the Environment Agency web mapping service on 1 August 2026.
- Simon Harvey Designs Ltd planning drawings 181_01 to 181_06, dated April 2026 (Appendix E).
- Foresite Geomatics Ltd topographical survey, drawing 26068_01, surveyed July 2026 to Ordnance Survey National Grid and Ordnance Survey Datum (Appendix F).
- FEH22 point rainfall data for OS 532290 / 118316, FEH Web Service, exported 1 August 2026 (Appendix G).
- Causeway Flow+ v15.0 hydraulic calculations for the front and rear on-plot attenuation units (Appendix H).
- GreenBlue Urban SuDSPod On-Plot Attenuation product literature (Appendix I).
- Mid Sussex District Council Strategic Flood Risk Assessment Level 1 and Level 2 (2024), and West Sussex County Council Local Flood Risk Management Strategy.
- British Geological Survey Geology of Britain mapping — bedrock and superficial deposits.



1.5 The purpose of this report is to demonstrate that the development will be safe over its lifetime, that it will not increase flood risk elsewhere, and that appropriate flood resistance, flood resilience and surface water drainage measures are incorporated into the design.

1.6 The site lies in Flood Zone 1 and no detailed hydraulic model of a main river is relevant to it. The published NaFRA2 surface water datasets, the measured topographical survey and the FEH22 rainfall data represent the best available evidence base for this location and are used accordingly.

2. Site Description

2.1 Location and Setting

2.1.1 The site comprises 17 The Warren, a two storey detached dwelling with an attached garage and porch, situated on the western side of The Warren in the Franklands ward of Burgess Hill, West Sussex. The plot is a long, narrow rectangle of approximately 32 m by 11 m, aligned broadly east to west, with the dwelling towards the eastern end and a rear garden extending to the west. The site area is 286 m² (0.029 ha).

2.1.2 The Warren forms the eastern boundary of the plot. Nos. 15 and 19 The Warren adjoin the site to the south and north respectively. The playing field and grounds of Woodlands Meed school lie immediately to the west of the rear garden, and Kirdford Close lies opposite the site to the east. The wider setting is a low-density post-war residential suburb on the south-eastern edge of Burgess Hill, with Folders Lane approximately 180 m to the south.

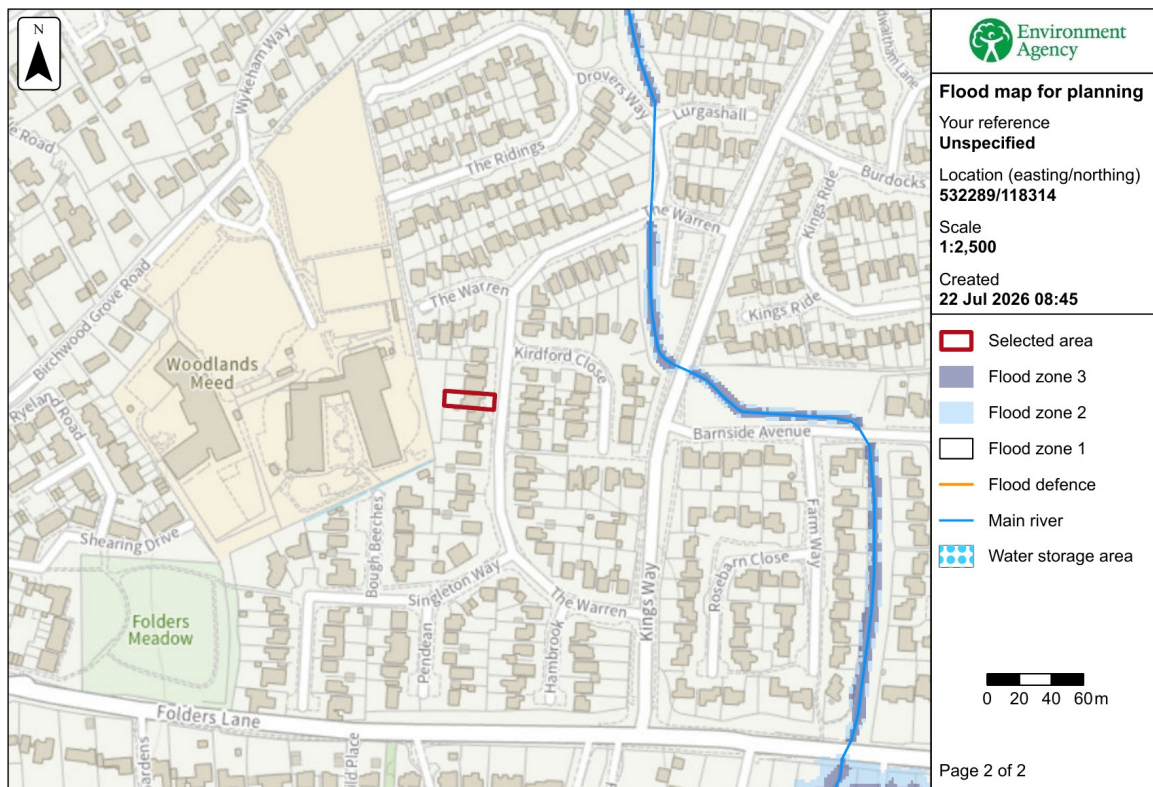


Figure 1: Environment Agency Flood Map for Planning extract at 1:2,500, generated 22 July 2026 for OS Easting/Northing 532289 / 118314. The application site is shown by the red rectangle. No Flood Zone 2 or Flood Zone 3 is mapped at the site; the nearest main river and its associated Flood Zones lie approximately 90 m to the east along the line of Barnside Avenue and Farm Way.

2.2 Existing and Proposed Development

2.2.1 The existing dwelling is of two storey brick and tile construction with an attached single storey garage and porch to the front (east) elevation and a flat-roofed single storey element to the rear (west) elevation. The existing building footprint is 95.032 m². The front of the plot is laid to brick paving and grass and the rear is laid to stone paving slabs, concrete and gravel, with a lawn beyond the sleeper retaining wall.

2.2.2 The proposals, as described on the planning application and shown on the Simon Harvey Designs drawings at Appendix E, comprise a first floor front extension over the existing garage and porch, and a rear single storey extension with a mono-pitched roof over the existing single storey element. The principal parameters are as follows:

Element	Parameter	Flood risk / drainage note
Existing building footprint	95.032 m ²	Baseline for the assessment of impermeable area
Proposed building footprint	111.597 m ²	Taken from the proposed roof plan, drawing 181_06
Net increase in footprint	16.565 m ² (+17.4%)	Falls on ground presently laid to stone paving slabs and gravel
Rear extension roof	23.931 m ² , replacing an existing 15.787 m ²	Drained through a new on-plot attenuation unit (Section 6.3)
Front extension roof	23.380 m ² , replacing an existing 17.557 m ²	Drained through a new on-plot attenuation unit (Section 6.3)
Roof area connected at the extension rainwater pipes	Increases from 33.344 m ² to 47.311 m ² (+41.9%)	Peak discharge reduced notwithstanding the increase (Section 5.3)
Finished floor level	49.430 m AOD	Matches the existing dwelling; no change of level internally
Storeys	Single storey to the rear; first floor to the front over existing footprint	Dry refuge available at first floor
Site area	286 m ² (0.029 ha)	Below the 1 ha Flood Zone 1 FRA threshold

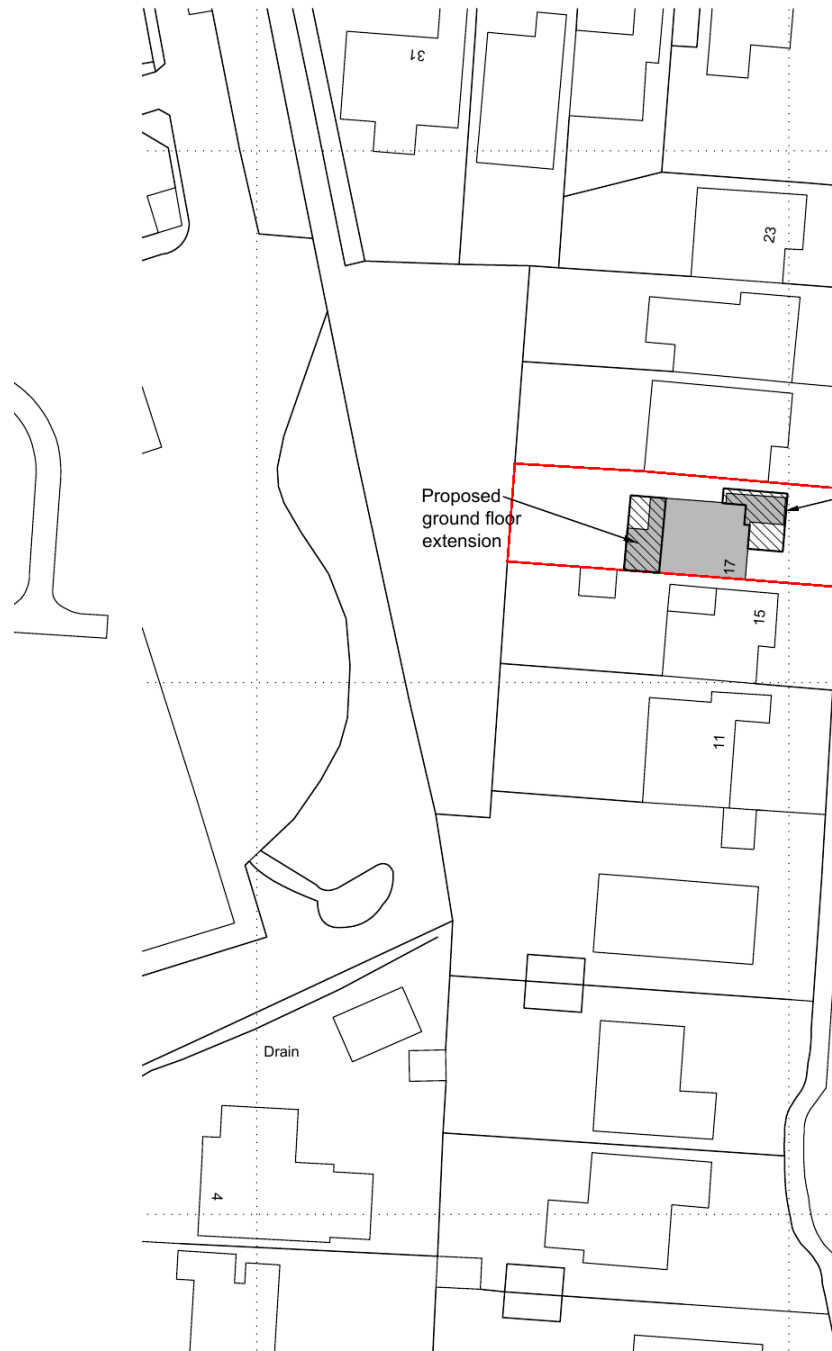


Figure 2: Site block plan at 1:500 — Simon Harvey Designs Ltd drawing 181_01, April 2026. The application site is shown by the red line. The proposed ground floor rear extension is hatched to the west of the existing dwelling and the proposed first floor front extension over the garage and porch is hatched to the east.

2.3 Topography and Levels

2.3.1 A measured topographical survey was carried out by Foresite Geomatics Ltd in July 2026, drawing 26068_01, tied to Ordnance Survey National Grid and Ordnance Survey Datum. The survey is reproduced at Appendix F and all levels quoted in this report are taken from it.

2.3.2 The site falls from west to east, from 50.07 m AOD at the western end of the rear garden to 48.99 m AOD at the back of the footway in The Warren, a total fall of approximately 1.08 m over 34 m. The key levels are as follows:

Location	Level (m AOD)	Comment
Rear garden, western boundary	50.07 to 49.87	Highest ground on the plot
Rear garden, mid plot	49.75 to 49.58	Falls eastwards towards the retaining wall
Sleeper retaining wall, top of wall	49.590	Retains the rear garden above the patio
Rear patio and side passage, at the dwelling	49.240 to 49.300	Lowest ground adjacent to the rear elevation
Finished floor level of the dwelling	49.430	Surveyed at the rear threshold
Northern boundary corridor	49.240 falling to 48.990	Continuous fall to the highway at approximately 1 in 90
Front drive, southern side	49.490 to 49.300	Brick paving
Front of dwelling, northern side	49.190 to 49.100	Lowest ground at the front elevation
Back of footway, The Warren	49.030 to 48.990	Highway gully surveyed at 532307.3 E
Eaves level	54.200 and 54.370	—
Ridge level	56.620	—

2.3.3 Two features of the survey are material to this assessment. First, the rear garden behind the sleeper retaining wall stands at 49.58 to 49.61 m AOD, some 150 to 180 mm above the finished floor level of the dwelling at 49.430 m AOD, so overland flow arriving from the west is checked by that wall before it reaches the building. Second, the levels along the northern boundary form a continuous fall from 49.240 m AOD at the rear of the dwelling, through 49.180, 49.130 and 49.140 m AOD, to 49.030 and 48.990 m AOD at the highway. That corridor is the overland flow route through the site and is the reason for the surface water exposure recorded in the national mapping.

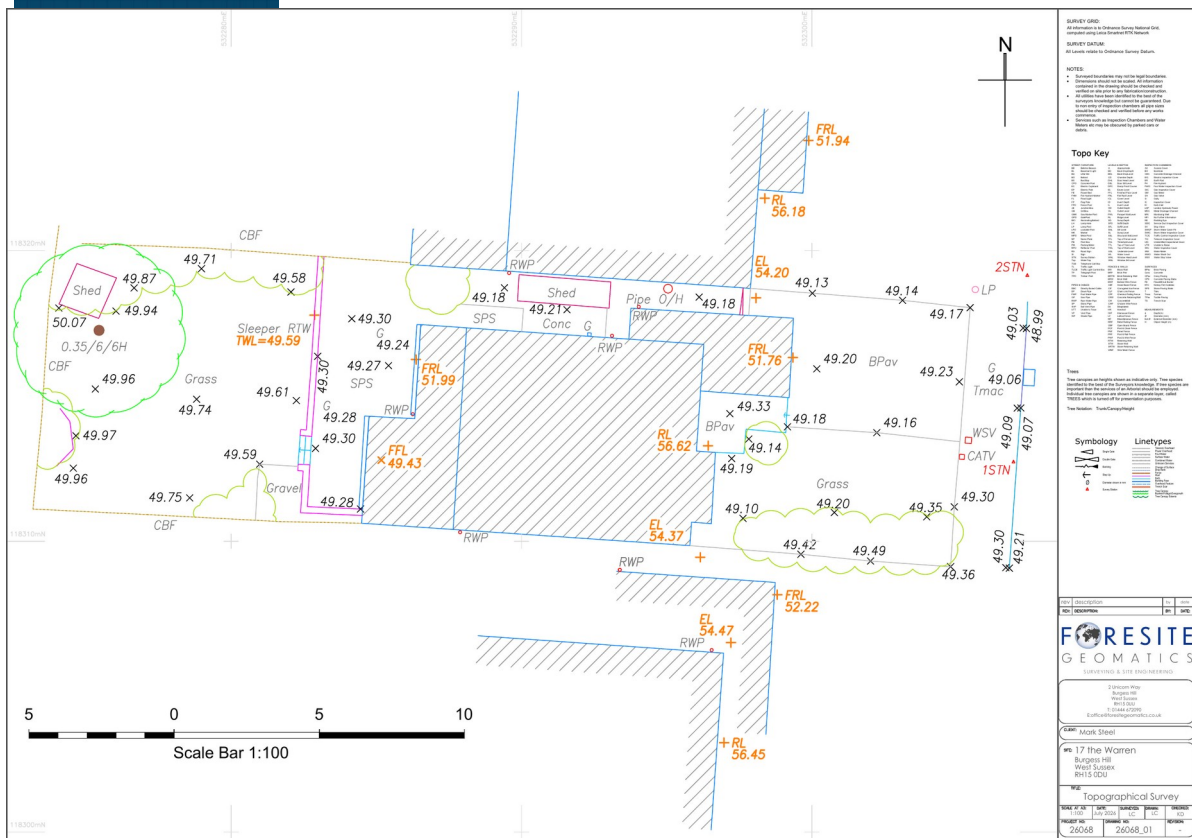


Figure 3: Topographical survey extract — Foresite Geomatics Ltd drawing 26068_01, July 2026. The finished floor level of 49.43 m AOD is shown at the rear threshold, the sleeper retaining wall at a top of wall level of 49.59 m AOD, and the fall along the northern boundary from 49.24 m AOD to 48.99 m AOD at the highway.

2.4 Geology and Hydrogeology

2.4.1 The bedrock beneath the site is the Weald Clay Formation — mudstone. These sedimentary rocks are fluvial, palustrine and shallow-marine in origin; they are detrital, forming deposits reflecting the channels, floodplains and deltas of a river in a coastal setting with periodic inundation from the sea. No superficial deposits are recorded at the site.

2.4.2 The Weald Clay Formation is classified as Unproductive Strata and is of very low permeability. In the absence of any superficial deposits, infiltration drainage is not viable at this location and is discounted at Section 6.1. The mudstone is also a cohesive, shrinkable stratum and foundation design is a matter for the building control body; it has no bearing on the flood risk conclusions of this report.

2.4.3 The site lies outside any Environment Agency groundwater flood alert area. Groundwater levels are not monitored at this location.

2.5 Hydrology and Existing Drainage

2.5.1 There is no watercourse within or adjoining the site. The nearest watercourse designated as a main river lies approximately 90 m to the east, running broadly southwards along the line of Barnside Avenue and Farm Way, with associated Flood Zone 2 and Flood Zone 3 shown on the Flood Map for Planning. The site lies within the Adur (Burgess Hill) waterbody of the Adur and Ouse management catchment, South East River Basin District. An open drain is annotated on the Ordnance Survey base within the Woodlands Meed grounds approximately 60 m to the south-west of the site; it lies outside the applicant's control and forms no part of these proposals.

2.5.2 The existing drainage arrangement recorded by the topographical survey comprises rainwater pipes to the front, rear and side elevations of the dwelling, two linear channel drains along the rear elevation of 3.19 m and 3.11 m in length, a gully to the side passage and a highway gully in The Warren opposite the site frontage. Roof water and rear yard water are collected by these and discharge to a private below-ground surface water drainage system serving the property. There is no public surface water sewer in The Warren serving the site.

2.5.3 Foul drainage from the dwelling discharges by gravity to the public foul sewer. The proposals do not alter the foul drainage arrangement other than the internal reconfiguration described at Section 6.7.

3. Planning Policy Framework

3.1 National Planning Policy Framework (December 2024)

3.1.1 Chapter 14 of the National Planning Policy Framework (NPPF) sets out the Government's policy on planning and flood risk. Paragraph 173 requires that development is not permitted where there are more suitable sites available in areas at lower risk of flooding. Paragraph 181 requires that development in areas at risk of flooding is made safe for its lifetime without increasing flood risk elsewhere.

3.1.2 Annex 3 of the NPPF sets out the flood risk vulnerability classification. Dwelling houses are classified as More Vulnerable development.

3.2 Planning Practice Guidance — Flood Risk and Coastal Change

3.2.1 The Planning Practice Guidance (PPG) on Flood Risk and Coastal Change requires a site-specific flood risk assessment for development in Flood Zone 1 where the site is at risk from sources of flooding other than rivers and the sea and the development would be affected by, or would affect, that risk. This site is at High risk of surface water flooding and an FRA is accordingly required.

3.2.2 The PPG requires that the assessment is proportionate to the degree of flood risk and to the scale, nature and location of the development. This is a householder extension of 16.565 m² net additional footprint on a site of 286 m² in Flood Zone 1. The assessment is scaled accordingly and rests on the measured topographical survey, the published national surface water datasets and site-specific hydraulic calculations for the drainage design.

3.3 Development Plan and Strategic Flood Risk Assessment

3.3.1 The development plan for the area comprises the Mid Sussex District Plan and the Burgess Hill Neighbourhood Plan. Mid Sussex District Council has published a Strategic Flood Risk Assessment Level 1 (2024) and a Strategic Flood Risk Assessment Level 2 (2024), both reviewed and signed off by the Environment Agency and by West Sussex County Council as Lead Local Flood Authority. The site is not an allocated site and is not the subject of a site assessment in the Level 2 SFRA.

3.3.2 West Sussex County Council is the Lead Local Flood Authority. Burgess Hill is identified in the West Sussex Local Flood Risk Management Strategy as one of the county's priority areas for surface water flood risk management. The measures set out at Sections 6 and 7 of this report reduce peak surface water discharge from the property and improve the flood resilience of the dwelling, and are consistent with that strategy.

3.3.3 Mid Sussex District Council advises that the Environment Agency's May 2022 climate change guidance applies to all applications validated after 10 May 2022, including discharge of condition applications. The peak rainfall allowance applied to the drainage design in this report is drawn from that guidance and is set out at Section 4.8.

3.4 Flood Risk Vulnerability Classification

3.4.1 The proposal is an extension to an existing dwelling house. The use is More Vulnerable under NPPF Annex 3. Table 3 of the PPG confirms that More Vulnerable development is appropriate in Flood Zone 1 and that the Exception Test is not required.

3.4.2 The proposal does not create any new dwelling, does not introduce sleeping accommodation at ground floor level in the rear extension, and does not increase the flood risk vulnerability classification of the property.

3.5 Sequential Test

3.5.1 The Environment Agency's standing advice states that development is exempt from the Sequential Test where it is householder development such as residential extensions, conservatories or loft conversions. This proposal is a householder extension to an existing dwelling and the Sequential Test does not apply.

3.5.2 In any event the site lies wholly within Flood Zone 1, the zone of lowest probability of flooding from rivers and the sea, and the extensions are located on the footprint of the existing dwelling and its existing extensions. There is no alternative location for an extension to this dwelling within the applicant's control.

3.6 Exception Test

3.6.1 The Exception Test is not required. More Vulnerable development is appropriate in Flood Zone 1 under Table 3 of the Planning Practice Guidance.

4. Flood Risk to the Site

4.1 Flood Zone Classification

4.1.1 The Environment Agency Flood Map for Planning generated on 22 July 2026 for OS Easting/Northing 532289 / 118314 confirms that the selected location is in Flood Zone 1, an area with a low probability of flooding. The report and the accompanying 1:2,500 map are reproduced at Appendix B and the map is shown at Figure 1.

4.2 Fluvial and Tidal Flood Risk

4.2.1 Flood Zone 1 comprises land assessed as having a less than 0.1% annual probability of river or sea flooding. No part of the site falls within Flood Zone 2 or Flood Zone 3, and the site does not fall within an area shown as at increased risk of flooding from rivers or the sea in the future under the flood zones plus climate change dataset.

4.2.2 The nearest main river lies approximately 90 m to the east of the site. The site stands at approximately 49.0 to 50.1 m AOD, above the level of the mapped floodplain of that watercourse. Fluvial flood risk to the site is Low and no fluvial mitigation is required.

4.2.3 The site is approximately 13 km from the coast at Shoreham-by-Sea and stands at approximately 49 m AOD. Tidal flood risk is Negligible.

4.3 Surface Water Flood Risk

4.3.1 Surface water is the governing source of flood risk at this site and is the reason the Council requested this assessment. Two Environment Agency datasets have been interrogated: the Risk of Flooding from Surface Water (NaFRA2) likelihood bandings at fixed depth thresholds for present-day conditions, and the NaFRA2 depth mapping including the 2061–2125 climate change allowance.

4.3.2 The present-day likelihood bandings returned for the site are set out below. High means a chance of flooding of 3.3% or greater in any year; Medium means less than 3.3% but 1% or greater; Low means less than 1% but 0.1% or greater.

Depth threshold	Dwelling footprint	Rear extension footprint	Northern flow route
Flood extent (greater than 0 mm)	High	High	High
Greater than or equal to 200 mm	High	Medium to High	High
Greater than or equal to 300 mm	Low	Low	High
Greater than or equal to 600 mm	Not mapped	Not mapped	Not mapped
Greater than or equal to 900 mm	Not mapped	Not mapped	Not mapped

4.3.3 In present-day conditions the dwelling footprint is therefore at High risk with depths of 200 to 300 mm in the 1 in 30 year event, and depths of 300 to 600 mm arise only in the 1 in 1,000 year

event. Along the northern flow route depths of 300 mm or more arise at High likelihood. No cell within the site is mapped at 600 mm or greater in any present-day event.

4.3.4 The NaFRA2 depth mapping including the 2061–2125 climate change allowance has been analysed across the application site polygon. The proportion of the site falling within each depth band is as follows:

Event (including 2061–2125 climate change allowance)	No surface water shown	0 to 150 mm	150 to 300 mm	300 to 600 mm
1 in 30 year (3.3% AEP)	25%	26%	43%	6%
1 in 100 year (1% AEP)	15%	28%	13%	44%
1 in 1,000 year (0.1% AEP)	8%	21%	24%	47%

4.3.5 Over the existing dwelling footprint specifically, the mapped depth is 150 to 300 mm in the 1 in 30 year event and 300 to 600 mm in the 1 in 100 and 1 in 1,000 year events. A small area of 600 to 900 mm is mapped within the site in the 1 in 1,000 year event with climate change, on the northern flow route.

4.3.6 The mechanism is clear from the topographical survey described at Section 2.3. Overland flow generated on the higher ground to the west and north-west arrives at the rear garden, is checked by the sleeper retaining wall at 49.590 m AOD, passes around the northern side of the dwelling and is conveyed along the northern boundary corridor at a gradient of approximately 1 in 90 to the highway gully in The Warren.

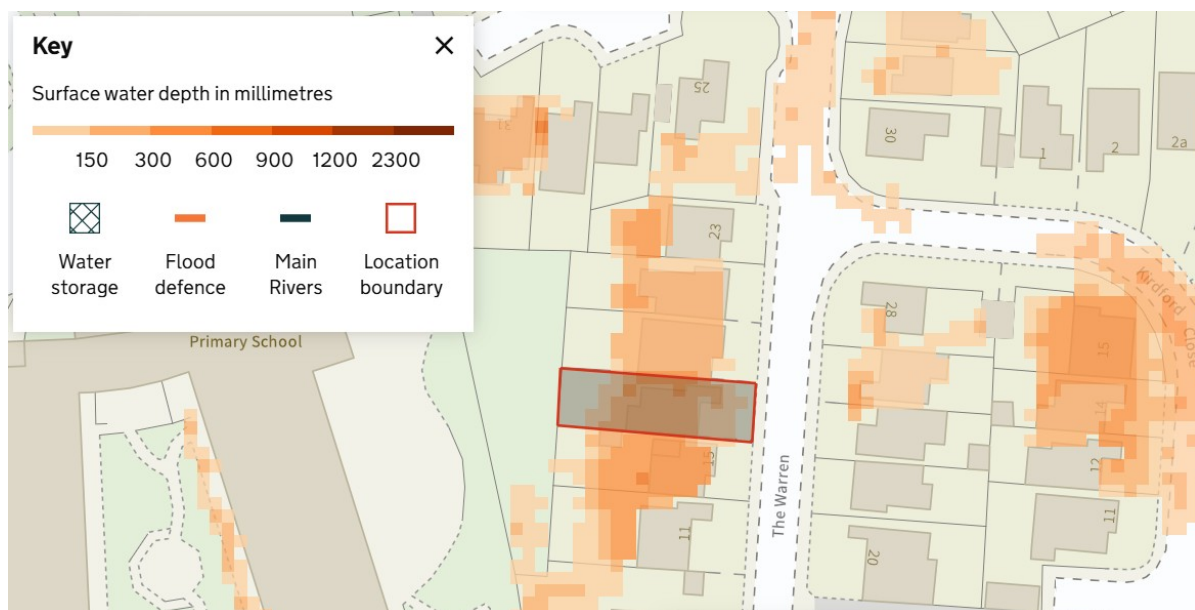


Figure 4: Environment Agency Risk of Flooding from Surface Water — 1 in 30 year (3.3% AEP) event including the 2061–2125 climate change allowance. Depths across the site are predominantly 150 to 300 mm, with 300 to 600 mm mapped over 6% of the site.

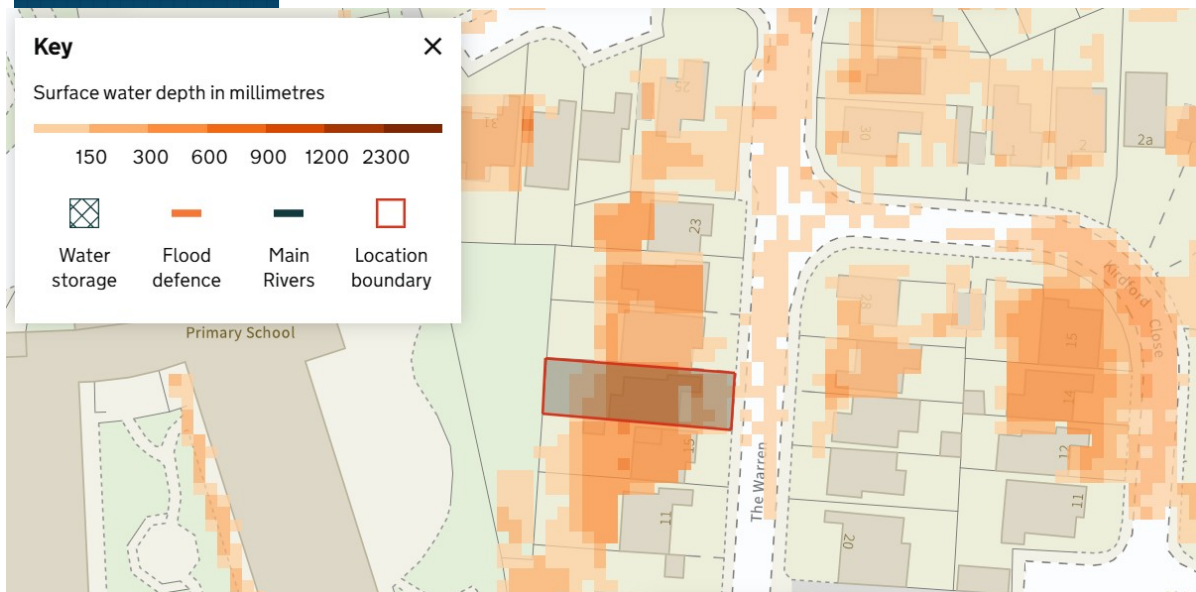


Figure 5: Environment Agency Risk of Flooding from Surface Water — 1 in 100 year (1% AEP) event including the 2061–2125 climate change allowance. Depths of 300 to 600 mm are mapped over 44% of the site, including the dwelling footprint.

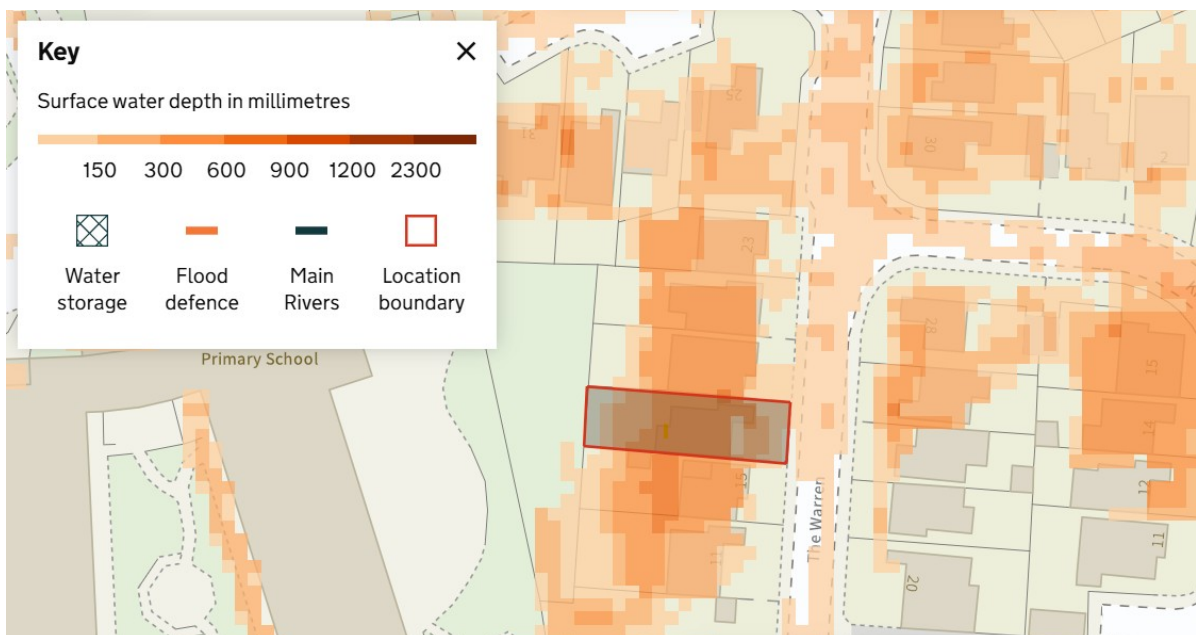


Figure 6: Environment Agency Risk of Flooding from Surface Water — 1 in 1,000 year (0.1% AEP) event including the 2061–2125 climate change allowance. The flow route along the northern boundary and the rear of the dwelling is continuous, with depths of 300 to 600 mm over 47% of the site.

4.3.7 The Risk of Flooding from Surface Water dataset is produced at national scale on a 2 m grid and does not model the private drainage system serving the property. The depths mapped over the building footprint represent water standing against the structure rather than water within it. The dataset is nevertheless the appropriate basis for setting the design flood level and the resilience level for this development, and is used for that purpose at Section 7.

4.4 Groundwater Flood Risk

4.4.1 The Environment Agency confirms that the site lies outside any groundwater flood alert area and that groundwater levels are not monitored in this area. The bedrock is Weald Clay Formation

mudstone, classified as Unproductive Strata, and there are no superficial deposits. Groundwater flood risk is Low.

4.4.2 The extensions are single storey and two storey structures with no basement and no below-ground habitable space. No dewatering is required.

4.5 Sewer Flooding

4.5.1 Southern Water Services Ltd is the sewerage undertaker. There is no public surface water sewer serving the site; surface water from the property discharges to a private below-ground drainage system. Foul drainage discharges to the public foul sewer.

4.5.2 The proposals reduce the peak rate of surface water discharge from the two extension roofs, as demonstrated at Section 5.3, and therefore reduce rather than increase the loading on the receiving system. A non-return valve is provided on the foul drainage connection as set out at Section 6.7. Sewer flood risk is Low.

4.6 Reservoirs, Canals and Other Artificial Sources

4.6.1 The Environment Agency advises that flooding from reservoirs is unlikely in this area. There are no canals, ponds, raised watercourses or other artificial water-bearing infrastructure within the hydrological setting of the site. Risk from artificial sources is Negligible.

4.7 Historic Flooding

4.7.1 No Environment Agency recorded flood outline covers the site. The site is not within a flood warning or flood alert area.

4.7.2 Burgess Hill is identified in the West Sussex Local Flood Risk Management Strategy as one of twenty-five county priority areas for surface water flood risk management, and the Adur Catchment Flood Management Plan identifies the preparation of a Surface Water Management Plan for Burgess Hill as an action. Surface water flooding of highways and gardens has been recorded across the town during intense rainfall, most recently during the storms of February 2020. This wider context is consistent with the High surface water risk banding recorded for this location and is reflected in the design flood level adopted at Section 7.1.

4.8 Climate Change

4.8.1 The Environment Agency's climate change allowances guidance provides peak rainfall allowances by management catchment for two epochs. The 2050s epoch applies to development with a lifetime up to 2060 and the 2070s epoch to development with a lifetime between 2061 and 2125. A residential extension has a design life extending beyond 2060 and the 2070s epoch accordingly applies.

4.8.2 The site lies in the Adur and Ouse management catchment. A peak rainfall allowance of 45% has been applied to the 1% annual exceedance probability event in the drainage design at Section 6, being the applicable upper end allowance for the 2070s epoch for that management catchment. The peak rainfall allowance is the correct allowance for a drainage catchment of this size and character; peak river flow allowances are not applicable because the development does not lie in a fluvial floodplain.

4.8.3 The surface water flood risk to the site has been assessed against the Environment Agency's NaFRA2 datasets incorporating the 2061–2125 climate change allowance, as set out at Section 4.3, and the design flood level at Section 7.1 is derived from those datasets.

5. Flood Risk from the Development

5.1 Conveyance and Obstruction of Overland Flow

5.1.1 The overland flow route through the site runs along the northern boundary, between the flank wall of the dwelling and the boundary with No. 19 The Warren, from 49.240 m AOD at the rear to 48.990 m AOD at the highway. The proposed rear extension squares off the existing stepped rear elevation and projects approximately 0.5 m further west; the proposed first floor front extension is constructed over the existing garage and porch and adds no footprint at ground level.

5.1.2 Neither extension encroaches into the northern boundary corridor. The corridor remains open and unobstructed over its full length and its gradient is unaltered. No gates, walls, fences or stored materials are proposed within it.

5.1.3 External ground levels are not raised anywhere on the site. The sleeper retaining wall to the rear garden, with a top of wall level of 49.590 m AOD, is retained; it performs a useful function in checking overland flow arriving from the west and is not removed or lowered as part of the works.

5.1.4 The two linear channel drains presently at the rear elevation are relocated to the new rear elevation of the extension and reconnected to the existing surface water drainage system, maintaining the existing arrangement for the interception of yard water at the rear of the dwelling.

5.2 Impermeable Area

5.2.1 The building footprint increases from 95.032 m² to 111.597 m², an increase of 16.565 m² across a site of 286 m². Built coverage of the plot increases from 33.2% to 39.0%.

5.2.2 The additional footprint is located on ground presently laid to stone paving slabs, concrete and gravel, as recorded by the topographical survey. The increase in genuinely impermeable area is accordingly smaller than the increase in footprint. Hard surfaces displaced by the works are reinstated as permeable paving or gravel over a free-draining sub-base, so that the permeable proportion of the plot is not reduced.

5.2.3 The garden areas to the rear and the grassed areas to the front are unaffected by the proposals.

5.3 Runoff Rates — Existing and Proposed

5.3.1 The two extension roofs presently discharge to the private surface water drainage system without attenuation. Peak runoff from the existing arrangement has been calculated by the rational method using FEH22 point rainfall for OS 532290 / 118316 (Appendix G), with a volumetric runoff coefficient of 1.0 for roof surfaces and a 15 minute critical duration corresponding to the time of concentration of a direct roof connection. The 1 in 1 year rainfall is the one-year partial duration equivalent, derived from the FEH22 annual maximum series at a Gumbel reduced variate of zero.

5.3.2 The proposed arrangement passes the roof water of each extension through an on-plot attenuation unit before discharge. Peak discharge from each unit has been derived from the peak water levels reported by the Causeway Flow+ model at Appendix H and the geometry of the flow control arrangement described at Section 6.3.

5.3.3 The comparison of peak discharge to the private surface water drainage system is as follows:

Event	Existing — 33.344 m ² unattenuated (l/s)	Proposed — 47.311 m ² through two units (l/s)	Reduction
1 in 1 year	0.25	0.11	57%
1 in 2 year	0.30	0.16	45%
1 in 30 year	0.75	0.41	45%
1 in 100 year + 45% climate change	1.36	0.99	27%

5.3.4 The equivalent comparison for each extension individually is as follows:

Event	Rear extension — 15.787 m ² to 23.931 m ² (l/s)	Front extension — 17.557 m ² to 23.380 m ² (l/s)
1 in 1 year	0.117 reduced to 0.053 (55%)	0.130 reduced to 0.053 (59%)
1 in 2 year	0.142 reduced to 0.082 (42%)	0.158 reduced to 0.082 (48%)
1 in 30 year	0.353 reduced to 0.203 (42%)	0.392 reduced to 0.203 (48%)
1 in 100 year + 45% CC	0.643 reduced to 0.493 (23%)	0.715 reduced to 0.493 (31%)

5.3.5 Peak discharge is therefore reduced across every return period assessed, notwithstanding a 41.9% increase in the roof area connected at the two rainwater pipes. The proposals deliver a betterment over the existing situation.

5.4 Impact on Third Parties

5.4.1 The development does not increase flood risk elsewhere. Peak surface water discharge from the property is reduced at every return period; external ground levels are not raised; the overland flow route along the northern boundary is retained clear, unobstructed and at its existing gradient; the sleeper retaining wall is retained; and the extensions occupy the footprint of the existing dwelling and its existing extensions on land that is already largely hard surfaced.

5.4.2 No floodplain storage is displaced. The site lies wholly within Flood Zone 1 and no part of the development encroaches into any fluvial floodplain, so no floodplain compensation is required.

6. Surface Water Drainage Strategy

6.1 Drainage Hierarchy and Discharge Destination

6.1.1 The drainage hierarchy at Building Regulations Approved Document H and in the Defra non-statutory technical standards for sustainable drainage systems requires surface water to be discharged, in order of preference, to an infiltration system, to a watercourse, and then to a sewer. Each option has been considered.

Option	Position	Basis
Infiltration	Not viable	The bedrock is Weald Clay Formation mudstone, classified as Unproductive Strata and of very low permeability, with no superficial deposits recorded. The plot is 286 m ² and is fully occupied by the dwelling, its drive, its patio and its garden, with no space for a soakaway at the separation distances required from the building and the boundaries.
Watercourse	Not available	There is no watercourse within or adjoining the site and none within the applicant's control. The nearest main river is approximately 90 m to the east and is not accessible from the property.
Surface water sewer	Not available	There is no public surface water sewer serving the site.
Existing private surface water drainage system	Adopted	Roof water from both extensions is attenuated on plot and discharged to the existing private surface water drainage system serving the property, at a peak rate lower than that presently discharged.

6.1.2 The strategy therefore retains the existing point of discharge and reduces the peak rate delivered to it. This is the only available destination and it is the destination presently used by the roofs in question.

6.2 Design Criteria

6.2.1 The drainage design has been carried out in Causeway Flow+ v15.0 to the following criteria. The calculation output is reproduced at Appendix H.

Parameter	Value
Rainfall methodology	FEH22
Rainfall location	OS 532290 / 118316, FEH Web Service, exported 1 August 2026
Return periods assessed	1 in 1, 1 in 2, 1 in 30 and 1 in 100 year
Climate change allowance	45% peak rainfall, applied to the 1 in 100 year event
Storm durations	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960 and 1,440 minutes
Summer and winter profiles	Both; summer Cv 1.000, winter Cv 0.840
Volumetric runoff coefficient	1.000

Parameter	Value
Time of entry	5.00 minutes
Additional flow allowance	0%
Drain down time	1,440 minutes
Contributing area, each unit	0.002 ha
Storage safety factor	2.0
Design standard	No flooding of any unit in any event up to and including the 1 in 100 year event with a 45% climate change allowance

6.3 Attenuation — On-Plot SuDS Units

6.3.1 A GreenBlue Urban SuDSPod on-plot attenuation unit is fitted to the rainwater pipe of each extension — one to the front and one to the rear. The unit is a raised planter measuring 1,262 mm by 623 mm by 1,025 mm with a total water capacity of 445 litres, an internal water storage volume of 81 litres for reuse, a 68 mm outlet, an integral silt trap and debris filter block, a levelling frame, growing medium and stone mulch. The product literature is reproduced at Appendix I.

6.3.2 The unit has been modelled as a tank of 0.4 m² plan area and 0.830 m effective depth at a porosity of 0.80, giving an effective storage volume of 0.266 m³ per unit and 0.532 m³ across the two units. Discharge is controlled by the unit's patented internal flow control, modelled as four orifices with an overflow weir:

Control	Invert level (m)	Size	Discharge coefficient
Orifice 1	99.170	8 mm diameter	0.600
Orifice 2	99.330	8 mm diameter	0.600
Orifice 3	99.470	9 mm diameter	0.600
Orifice 4	99.630	9 mm diameter	0.600
Overflow weir	99.870	0.320 m wide	0.590

6.3.3 Each unit is installed on a level, compacted base in accordance with the manufacturer's instructions, using the integral levelling feet. The 68 mm outlet of each unit is connected to the existing private surface water drainage system serving the property. The location of each unit is shown on drawing 1061_1001 at Appendix J.

6.4 Hydraulic Performance

6.4.1 The modelled performance of each unit is as follows. The mass balance of every run is 100.00% and no flooding occurs in any event.

Event	Critical storm	Peak water level (m)	Storage used (m ³)	Peak discharge (l/s)
1 in 1 year	240 minute summer	99.329	0.051	0.053
1 in 2 year	480 minute summer	99.361	0.061	0.082

Event	Critical storm	Peak water level (m)	Storage used (m³)	Peak discharge (l/s)
1 in 30 year	60 minute summer	99.570	0.128	0.203
1 in 100 year + 45% CC	60 minute summer	99.873	0.225	0.493

6.4.2 In the 1 in 100 year event with a 45% climate change allowance each unit uses 0.225 m³ of the 0.266 m³ of storage available, or 85% of its capacity, and the peak water level reaches 99.873 m against an overflow weir invert of 99.870 m and a unit soffit of 100.000 m. There is 127 mm of freeboard within the unit at the peak of the design event.

6.4.3 Peak discharge from the two units combined is 0.99 l/s in the 1 in 100 year event with climate change, against 1.36 l/s presently discharged from the same roofs without attenuation. The corresponding figures for the 1 in 30 year event are 0.41 l/s against 0.75 l/s.

6.5 Water Quality

6.5.1 The contributing surfaces are domestic pitched roofs. Under the Simple Index Approach in CIRIA C753 The SuDS Manual, roofs are a low pollution hazard land use with pollution hazard indices of 0.2 for total suspended solids, 0.05 for metals and 0.05 for hydrocarbons.

6.5.2 Each attenuation unit provides treatment before discharge. Runoff percolates through the stone mulch and growing medium at the head of the unit, trapping sediment and debris at the surface, and any residual silt is retained by the integral silt trap and debris filter block. The mitigation indices provided exceed the pollution hazard indices for a roof catchment and the discharge is acceptable in water quality terms.

6.6 Exceedance

6.6.1 In a storm exceeding the 1 in 100 year event with a 45% climate change allowance, or in the event of a blockage, flow exceeding the capacity of an attenuation unit passes over the internal overflow weir at 99.870 m and continues to the outlet. Beyond the capacity of the outlet, flow discharges at the surface adjacent to the unit.

6.6.2 Both units are positioned on the hard surfaced areas adjacent to the dwelling and above the level of the adjacent overland flow route. Exceedance flow from either unit therefore joins the existing overland flow route along the northern boundary, which is retained clear and unobstructed and conveys flow to the highway gully in The Warren. Exceedance flow is not directed towards the dwelling, towards No. 15 or towards No. 19 The Warren.

6.7 Foul Drainage

6.7.1 Foul drainage from the dwelling discharges by gravity to the public foul sewer and that arrangement is retained. The rear extension provides a reconfigured kitchen and the first floor extension provides an additional bedroom and en-suite; the additional foul loading from a single dwelling house is nominal and no capacity constraint arises.

6.7.2 A non-return valve is fitted on the foul drainage connection from the dwelling. This prevents backflow into the property in the event of surcharge of the public sewer during an intense rainfall event, which is a recognised secondary flood mechanism at properties in areas of High surface water risk.

6.8 Maintenance

6.8.1 The drainage system serves a single dwelling house and is maintained by the homeowner. The maintenance requirements are as follows:

Item	Frequency	Action
Attenuation unit silt trap and debris filter block	Twice annually and after any significant storm	Inspect and remove accumulated silt and debris
Attenuation unit planting and mulch surface	Twice annually	Remove leaf litter, maintain planting, confirm free percolation through the mulch
Attenuation unit outlet and flow control	Annually	Confirm free discharge and clear any obstruction
Rainwater goods and hopper heads	Twice annually	Clear leaves and debris
Linear channel drains at the rear elevation	Twice annually and after any significant storm	Lift gratings, remove silt and debris, confirm free discharge
Northern overland flow route	Twice annually	Confirm the route remains clear of stored materials, garden waste and obstructions
Flood resistant doorsets and seals	Annually	Inspect seals, operate and confirm correct closure in accordance with the manufacturer's instructions

7. Flood Risk Mitigation and Residual Risk

7.1 Design Flood Level

7.1.1 The design flood level is derived from the Environment Agency NaFRA2 depth mapping for the 1% annual exceedance probability event including the 2061–2125 climate change allowance, applied to the measured survey levels. The highest adjacent ground level within the affected area at the rear of the dwelling is 49.300 m AOD, and the mapped depth band at that location is 300 to 600 mm. Taking the upper bound of that band gives a design flood level of 49.900 m AOD.

7.1.2 The corresponding present-day levels are 49.600 m AOD in the 1 in 30 year event, being 49.300 m AOD plus the mapped 200 to 300 mm depth band, and 49.900 m AOD in the 1 in 1,000 year event. The level stack is as follows:

Level	m AOD	Derivation
Highest adjacent ground, rear elevation	49.300	Topographical survey 26068_01
Finished floor level	49.430	Topographical survey 26068_01; retained for the extensions
1 in 30 year, present day	49.600	49.300 plus the mapped 200 to 300 mm depth band
Design flood level — 1% AEP + 45% CC	49.900	49.300 plus the mapped 300 to 600 mm depth band
Flood resistance and resilience level	50.030	Finished floor level plus 600 mm; 130 mm above the design flood level

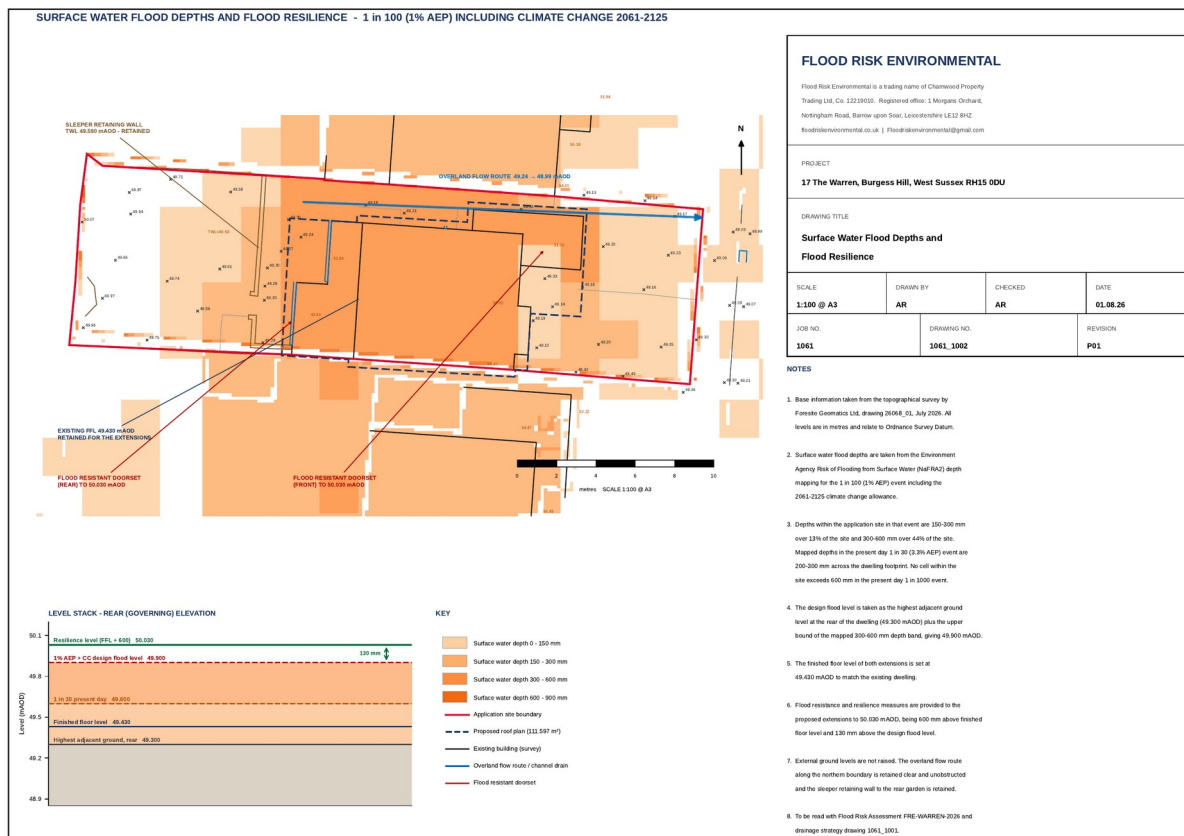


Figure 7: Flood Risk Environmental drawing 1061_1002, Surface Water Flood Depths and Flood Resilience, showing the mapped 1 in 100 year depth bands including climate change on the survey base, the overland flow route, the flood resistant doorset positions and the level stack. Reproduced at full size at Appendix K.

7.2 Finished Floor Levels

7.2.1 The finished floor level of both extensions is set at 49.430 m AOD, matching the existing dwelling. The rear extension is an internal continuation of the existing ground floor and the front extension is at first floor level over the existing garage and porch, so the floor level of the existing dwelling governs in both cases.

7.2.2 The finished floor level stands 130 mm above the highest adjacent ground level at the rear elevation, 190 mm above the lowest ground level at the rear, and 240 to 330 mm above the ground level at the front elevation. Because the finished floor level cannot be raised, protection is delivered by flood resistance and flood resilience relative to that level, as set out at Sections 7.3 and 7.4.

7.2.3 No new sleeping accommodation is created at ground floor level. The additional bedroom is at first floor level.

7.3 Flood Resistance

7.3.1 Flood resistance measures are provided to 50.030 m AOD, being 600 mm above the finished floor level and 130 mm above the design flood level. The following measures are incorporated:

- Certified flood resistant doorsets to the front and rear entrances of the dwelling, tested to BS 851188-1:2018, with a minimum head of 600 mm above finished floor level and openable from the inside without the use of a key.
- Water resistant construction to the external walls of the extensions below the resistance level: a dense concrete blockwork inner leaf, a clear cavity, and water resistant render or

parge below 50.030 m AOD, so that the doorsets perform as part of a continuous line of defence rather than in isolation.

- All service penetrations through the external walls of the extensions below 50.030 m AOD fully sealed with a proprietary flood resistant sealing system.
- A non-return valve on the foul drainage connection from the dwelling, preventing backflow during surcharge of the public sewer.
- The linear channel drains at the rear elevation relocated to the new rear elevation and reconnected, continuing to intercept yard water at the rear threshold.

7.3.2 The measures apply to the proposed extensions. Retro-fitting the remainder of the existing dwelling forms no part of this application and is not required in order to make the development safe. The extent of the measures is proportionate to a householder application for 16.565 m² of additional footprint on a site in Flood Zone 1, in accordance with the requirement in the Planning Practice Guidance that a flood risk assessment is proportionate to the degree of flood risk and to the scale, nature and location of the development.

7.4 Flood Resilient Construction and Services

7.4.1 Flood resilient construction is provided to the ground floor of the rear extension to 50.030 m AOD, so that in the event that water enters the extension in an extreme or exceedance event it can be dried and returned to use quickly and with minimal damage. The following measures are incorporated:

- Closed cell insulation in lieu of mineral wool below the resilience level within the extensions.
- Cement based or lime plaster to the extension walls below the resilience level, or demountable dry lining fixed above it.
- Solid or tiled floor finishes to the rear extension; no chipboard or medium density fibreboard below the resilience level within the extensions.
- Water resistant kitchen carcasses, or a raised plinth detail, in the new kitchen within the rear extension.
- Demountable skirtings to the rear extension below the resilience level.
- Electrical sockets and switches within the rear extension set at a minimum of 450 mm above finished floor level, with circuits dropped from above.

7.4.2 These measures are specified in accordance with CIRIA C790 Design guidance for flood resistance and resilience and the MHCLG guidance Improving the flood performance of new buildings: flood resilient construction.

7.5 Maintaining Overland Flow Conveyance

7.5.1 The overland flow route along the northern boundary is retained clear, unobstructed and at its existing gradient over the full length of the plot, from the rear of the dwelling at 49.240 m AOD to the back of the footway at 48.990 m AOD. No structure, gate, wall, fence or stored material is placed within it.

7.5.2 External ground levels are not raised anywhere on the site. The sleeper retaining wall to the rear garden at a top of wall level of 49.590 m AOD is retained.

7.5.3 The attenuation units are positioned adjacent to the dwelling, clear of the flow route, and are of an above-ground raised planter form which does not obstruct conveyance.

7.6 Safe Access and Egress

7.6.1 The property has direct access to The Warren, which lies in Flood Zone 1 along the whole of the site frontage. Surface water flood risk on the flow route and in the carriageway is shallow, with mapped depths on the northern boundary corridor of 300 mm or more only in the highest likelihood band and no cell within the site mapped at 600 mm or greater in any present-day event.

7.6.2 Surface water flooding is short in duration and recedes within a matter of hours. The property is a two storey dwelling and a dry refuge is available at first floor level at all times, well above the design flood level of 49.900 m AOD. Safe access and egress is available and no additional measures are required.

7.7 Flood Warning and Occupier Flood Plan

7.7.1 The site is not within an Environment Agency flood warning or flood alert area and no flood warning service is available for surface water flooding. The occupiers register for Met Office severe weather warnings, which provide advance notice of the intense rainfall that generates surface water flooding at this location.

7.7.2 The occupiers maintain a simple flood plan for the property recording the following:

- The location and method of deployment of the flood resistant doorsets and the position of the isolation points for electricity, gas and water.
- The action to be taken on receipt of a Met Office severe weather warning for heavy rain: close and secure the flood resistant doorsets, confirm the channel drains and the northern flow route are clear, and confirm the attenuation unit silt traps are clear.
- The contact details for the Lead Local Flood Authority, West Sussex County Council, for the reporting of any flood incident, and for Southern Water in the event of a sewer flooding incident.
- A record of any flood incident affecting the property, including date, depth, duration and source.

8. Schedule of Flood Risk and Drainage Measures

The following measures are incorporated into the development and are shown on Flood Risk Environmental drawings 1061_1001 and 1061_1002 at Appendices J and K.

No.	Measure	Detail
1	Finished floor level	Both extensions constructed at 49.430 m AOD to match the existing dwelling.
2	Flood resistant doorsets	Certified doorsets to BS 851188-1:2018 to the front and rear entrances of the extensions, minimum 600 mm head to 50.030 m AOD, openable from the inside without a key.
3	Water resistant construction	Dense blockwork inner leaf, clear cavity and water resistant render or parge to the external walls of the extensions below 50.030 m AOD; all service penetrations through those walls below that level sealed.
4	Flood resilient internal fabric	Closed cell insulation, cement based or lime plaster or demountable dry lining, solid or tiled floor finishes and demountable skirtings to the extensions below 50.030 m AOD.
5	Raised services	Sockets and switches within the rear extension at a minimum of 450 mm above finished floor level, with circuits dropped from above.
6	Non-return valve	Fitted to the foul drainage connection from the dwelling.
7	On-plot attenuation	One GreenBlue Urban SuDSPOD unit fitted to the rainwater pipe of each extension, discharging to the existing private surface water drainage system.
8	Channel drains	The two existing linear channel drains relocated to the new rear elevation and reconnected to the existing surface water system.
9	Overland flow route	The northern boundary corridor retained clear, unobstructed and at its existing gradient over its full length.
10	External levels	No raising of external ground levels anywhere on the site. The sleeper retaining wall at 49.590 m AOD retained.
11	Permeable reinstatement	Hard surfaces displaced by the works reinstated as permeable paving or gravel over a free-draining sub-base.
12	Maintenance	The maintenance regime at Section 6.8 implemented by the homeowner for the lifetime of the development.
13	Occupier flood plan	The flood plan at Section 7.7 prepared and maintained, with registration for Met Office severe weather warnings.

9. Environment Agency Standing Advice Checklist

This assessment has been checked against the Environment Agency's standing advice for preparing a flood risk assessment and its national flood risk standing advice for local planning authorities.

Requirement	Position	Where addressed
Flood zone of the site identified	Met	Section 4.1; Appendix B
Development class and vulnerability classification identified	Met	Section 3.4
Sequential Test addressed	Met — exempt	Section 3.5
Exception Test addressed	Met — not required	Section 3.6
All sources of flooding assessed	Met	Section 4
Climate change allowances applied	Met	Sections 4.8 and 6.2
Finished floor levels stated in m AOD	Met	Section 7.2
Design flood level derived and stated	Met	Section 7.1
Flood resistance and resilience measures specified	Met	Sections 7.3 and 7.4
Safe access and egress considered	Met	Section 7.6
No increase in flood risk elsewhere demonstrated	Met	Sections 5.1 to 5.4
Surface water managed in accordance with the drainage hierarchy	Met	Section 6.1
Surface water runoff rates assessed and betterment demonstrated	Met	Sections 5.3 and 6.4
Exceedance routes identified	Met	Section 6.6
Water quality addressed	Met	Section 6.5
Maintenance arrangements set out	Met	Section 6.8
Residual risk and occupier response addressed	Met	Section 7.7
Levels based on a measured topographical survey	Met	Section 2.3; Appendix F

10. Conclusions

10.1 The site lies within Flood Zone 1, an area of low probability of flooding from rivers and the sea. It has an area of 286 m², well below the 1 ha threshold at which a flood risk assessment is automatically required in Flood Zone 1. This assessment has been prepared because the site is at High risk of flooding from surface water and Mid Sussex District Council requested it on that basis by letter of 27 July 2026.

10.2 Surface water is the governing source of flood risk. Environment Agency NaFRA2 data records the dwelling footprint at High risk, with mapped depths of 200 to 300 mm in the present day 1 in 30 year event and 300 to 600 mm in the 1 in 100 year event including the 2061–2125 climate change allowance. The mechanism is a west to east overland flow route conveyed along the northern boundary of the plot to the highway. Fluvial, tidal, groundwater, sewer, reservoir and artificial source risks are all Low or Negligible.

10.3 The proposal is householder development. It is More Vulnerable development in Flood Zone 1, which is appropriate under Table 3 of the Planning Practice Guidance without application of the Exception Test, and it is exempt from the Sequential Test under the Environment Agency's standing advice.

10.4 The design flood level for the 1% annual exceedance probability event including climate change is 49.900 m AOD. The finished floor level of both extensions is 49.430 m AOD, matching the existing dwelling. Flood resistance and flood resilience measures are provided to the proposed extensions to 50.030 m AOD, being 600 mm above finished floor level and 130 mm above the design flood level. A dry refuge is available at first floor level.

10.5 Surface water from the two extension roofs is attenuated on plot in a proprietary attenuation unit at each rainwater pipe and discharged to the existing private surface water drainage system, infiltration being unviable in the Weald Clay Formation and there being no watercourse and no public surface water sewer available. Hydraulic modelling to FEH22 rainfall confirms that neither unit floods in any event up to and including the 1 in 100 year event with a 45% climate change allowance, with 127 mm of freeboard within the unit at the peak of the design event.

10.6 Peak surface water discharge from the property is reduced by between 27% and 57% across the return periods assessed, notwithstanding a 41.9% increase in the roof area connected at the two rainwater pipes. External ground levels are not raised, the overland flow route is retained clear and unobstructed, and the sleeper retaining wall to the rear garden is retained.

10.7 The development is safe for its lifetime, does not increase flood risk elsewhere and delivers a betterment over the existing situation both in the rate of surface water discharge from the property and in the flood performance of the dwelling. It accords with Chapter 14 of the National Planning Policy Framework, with the Planning Practice Guidance on Flood Risk and Coastal Change, with the development plan for the area and with the Environment Agency's standing advice for development in Flood Zone 1. There is no flood risk or drainage reason to withhold planning permission.

11. References

Reference	Details
NPPF (December 2024)	Ministry of Housing, Communities and Local Government. National Planning Policy Framework, December 2024. Chapter 14 and Annex 3.
PPG	Ministry of Housing, Communities and Local Government. Planning Practice Guidance — Flood Risk and Coastal Change, including Tables 2 and 3 and the Flood Zone 1 flood risk assessment requirements.
EA standing advice	Environment Agency. Preparing a flood risk assessment: standing advice; and National flood risk standing advice for local planning authorities. gov.uk.
EA Flood Map for Planning	Environment Agency. Flood Map for Planning — report and 1:2,500 map, generated 22 July 2026 for OS 532289 / 118314. Confirms Flood Zone 1.
EA NaFRA2 surface water	Environment Agency. Risk of Flooding from Surface Water — extent and depth mapping, 1 in 30, 1 in 100 and 1 in 1,000 year events, present day and including the 2061–2125 climate change allowance. Dataset b5aaa28d-6eb9-460e-8d6f-43caa71fbe0e, revised 17 September 2025. Interrogated 1 August 2026.
EA climate change allowances	Environment Agency. Flood risk assessments: climate change allowances — peak rainfall allowances by management catchment; Adur and Ouse management catchment, 2070s epoch.
Mid Sussex District Council	Mid Sussex District Council. Strategic Flood Risk Assessment Level 1 (2024) and Level 2 (2024); Flood Risk and Drainage for Planning guidance. Validation letter for application DM/26/1593, 27 July 2026.
West Sussex County Council	West Sussex County Council. Local Flood Risk Management Strategy 2021–2026, identifying Burgess Hill as a county priority area for surface water flood risk management.
Adur CFMP	Environment Agency. River Adur Catchment Flood Management Plan.
Non-statutory technical standards	Defra. Sustainable drainage systems: non-statutory technical standards for sustainable drainage systems.
Approved Document H	HM Government. The Building Regulations 2010, Approved Document H — Drainage and waste disposal.
CIRIA C753	CIRIA. The SuDS Manual (C753), including the Simple Index Approach to water quality.
CIRIA C790	CIRIA. Design guidance for flood resistance and resilience (C790).
MHCLG resilient construction	MHCLG. Improving the flood performance of new buildings: flood resilient construction.
BS 851188-1:2018	British Standards Institution. BS 851188-1:2018 Smart water management — flood protection products, specification and test methods.
FEH22 rainfall	FEH Web Service. FEH22 design rainfall, annual maximum, point calculation at OS 532290 / 118316, exported 1 August 2026.
Causeway Flow+	Causeway Technologies Ltd. Flow+ v15.0 hydraulic calculations for the front and rear on-plot attenuation units, 1 August 2026.

Reference	Details
GreenBlue Urban	GreenBlue Urban Ltd. SuDSPod On-Plot Attenuation product literature and technical specification.
BGS	British Geological Survey. Geology of Britain viewer. Bedrock: Weald Clay Formation — mudstone. Superficial deposits: none recorded.
Topographical survey	Foresite Geomatics Ltd. Topographical survey, drawing 26068_01, project 26068, July 2026.
Architect's drawings	Simon Harvey Designs Ltd. Drawings 181_01 to 181_06, April 2026.



Document Control

Rev	Date	Description	Author	Checked
1.0	August 2026	Issue for planning. Prepared in response to the Mid Sussex District Council validation letter of 27 July 2026 for application DM/26/1593.	AR	AR

This document has been prepared by Flood Risk Environmental for Mr and Mrs Steel and their planning agent, Simon Harvey Designs Ltd, in support of planning application DM/26/1593 to Mid Sussex District Council. It is based on the measured topographical survey by Foresite Geomatics Ltd, the architect's drawings, published data from the Environment Agency, the British Geological Survey and Ordnance Survey, and hydraulic calculations prepared by Flood Risk Environmental.

Flood Risk Environmental is a trading name of Charnwood Property Trading Ltd, company number 12219010, registered office 1 Morgans Orchard, Nottingham Road, Barrow upon Soar, Leicestershire LE12 8HZ.

Antony Riozzi BEng (Hons)

Director, Flood Risk Environmental
Floodriskenvironmental@gmail.com

Appendices

The following appendices are provided with this report, each preceded by a title page.

Appendix A

Mid Sussex District Council validation letter, application DM/26/1593, dated 27 July 2026

Appendix B

Environment Agency Flood Map for Planning — report and 1:2,500 map, 22 July 2026

Appendix C

Environment Agency flood risk screening for the site — flood map for planning extract, geology, groundwater and reservoir results

Appendix D

Environment Agency Risk of Flooding from Surface Water (NaFRA2) depth extracts — 1 in 30, 1 in 100 and 1 in 1,000 year events including the 2061–2125 climate change allowance

Appendix E

Simon Harvey Designs Ltd — planning drawings 181_01 to 181_06

Appendix F

Foresite Geomatics Ltd — topographical survey, drawing 26068_01

Appendix G

FEH22 point rainfall data for OS 532290 / 118316

Appendix H

Causeway Flow+ v15.0 hydraulic calculations — front and rear on-plot attenuation units

Appendix I

GreenBlue Urban SuDSPod On-Plot Attenuation product literature

Appendix J

Flood Risk Environmental drawing 1061_1001 — Drainage Strategy

Appendix K

Flood Risk Environmental drawing 1061_1002 — Surface Water Flood Depths and Flood Resilience



FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

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Appendix A

Mid Sussex District Council Validation Letter

Application DM/26/1593, dated 27 July 2026



Oaklands
Oaklands Road
Haywards Heath
West Sussex
RH16 1SS

Switchboard 01444 458166
DX 300320 Haywards Heath 1
www.midsussex.gov.uk

Mr And Mrs Steel
c/o Mr Simon Harvey
Simon Harvey Designs Ltd
2 Greenfield Way
Storrington
RH20 4PY

CONTACT: Christine Pound
PHONE: 01444 477120
E-MAIL: planningvalidation@midsussex.gov.uk
DATE: 27th July 2026

**Town and Country Planning Act 1990 (as amended)
Town and Country Planning (Development Management Procedure) (England)
Order 2015**

Dear Mr Simon Harvey

REFERENCE: DM/26/1593

DESCRIPTION: PROPOSED FIRST FLOOR FRONT EXTENSION OVER GARAGE AND PORCH, AND REAR SINGLE STOREY EXTENSION WITH MONO-PITCHED ROOF OVER EXISTING SINGLE STOREY.

LOCATION: 17 THE WARREN BURGESS HILL WEST SUSSEX RH15 0DU

I refer to the above application received on 29th June 2026, and my previous communication with this regard. The following matter(s) remain outstanding:

1. Because the site falls within an area at risk for surface water flooding, please provide a flood risk assessment.

Please submit a copy of the above documents to the address at the head of this letter. Alternatively, a single copy can be submitted electronically to **Christine Pound** on planningvalidation@midsussex.gov.uk. No further action will be taken until the information above has been received.

Please note: If the above matters are not addressed within 21 days from the date of this letter the application will be withdrawn and any fees paid for this application will be returned to you following confirmation of account details.

Note: If you have submitted your planning application via the planning portal please do not resubmit amended plans via this system. Any additional information should be submitted directly to the Validation Officer on the details above.

Yours sincerely

Planning Services Division

Eric Owens
Interim Assistant Director Planning and Sustainable Economy

Planning Service Support Team

DP2



FLOOD RISK ASSESSMENT

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Appendix B

Environment Agency Flood Map for Planning

Report and 1:2,500 map, generated 22 July 2026 for OS 532289 / 118314

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
532289/118314

Created
22 July 2026 08:44

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 2026 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference

Unspecified

Location (easting/northing)
532289/118314

Scale
1:2,500

Created
22 Jul 2026 08:45

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



0 20 40 60m



FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

FRE-WARREN-2026 | Rev 1.0 | August 2026

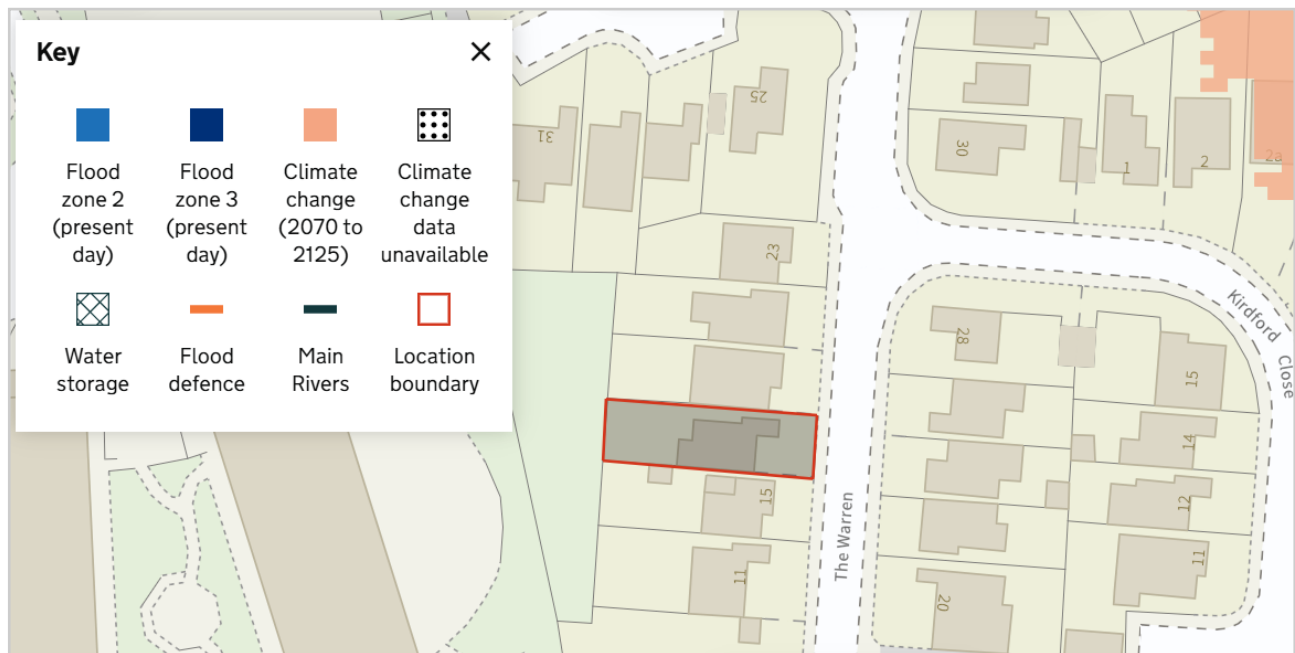
Appendix C

Environment Agency Flood Risk Screening for the Site

Flood map for planning extract, geology, groundwater and reservoir results

Environment Agency flood risk screening for the site

Flood map for planning, OS 532289 / 118314, accessed 22 July 2026



Bedrock geology

Weald Clay Formation — Mudstone. These sedimentary rocks are fluvial, palustrine and shallow-marine in origin. They are detrital, forming deposits reflecting the channels, floodplains and deltas of a river in a coastal setting, with periodic inundation from the sea.

Superficial deposits

No superficial deposits are recorded at this location.

Groundwater

This location is outside of a groundwater flood alert area.

This location is not part of a groundwater flood alert area. Groundwater levels are not monitored in this area.

Reservoirs

Flooding from reservoirs is unlikely in this area.



FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

FRE-WARREN-2026 | Rev 1.0 | August 2026

Appendix D

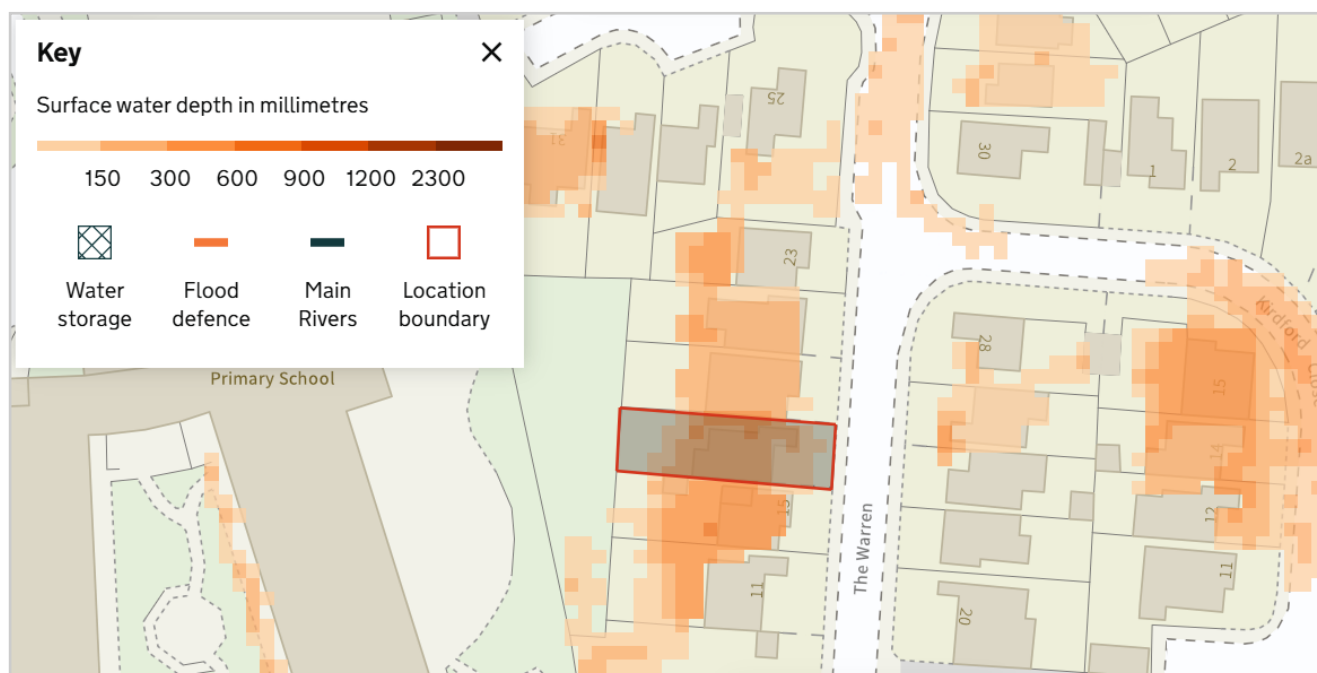
Environment Agency Risk of Flooding from Surface Water

NaFRA2 depth extracts — 1 in 30, 1 in 100 and 1 in 1,000 year events including the 2061–2125 climate change allowance

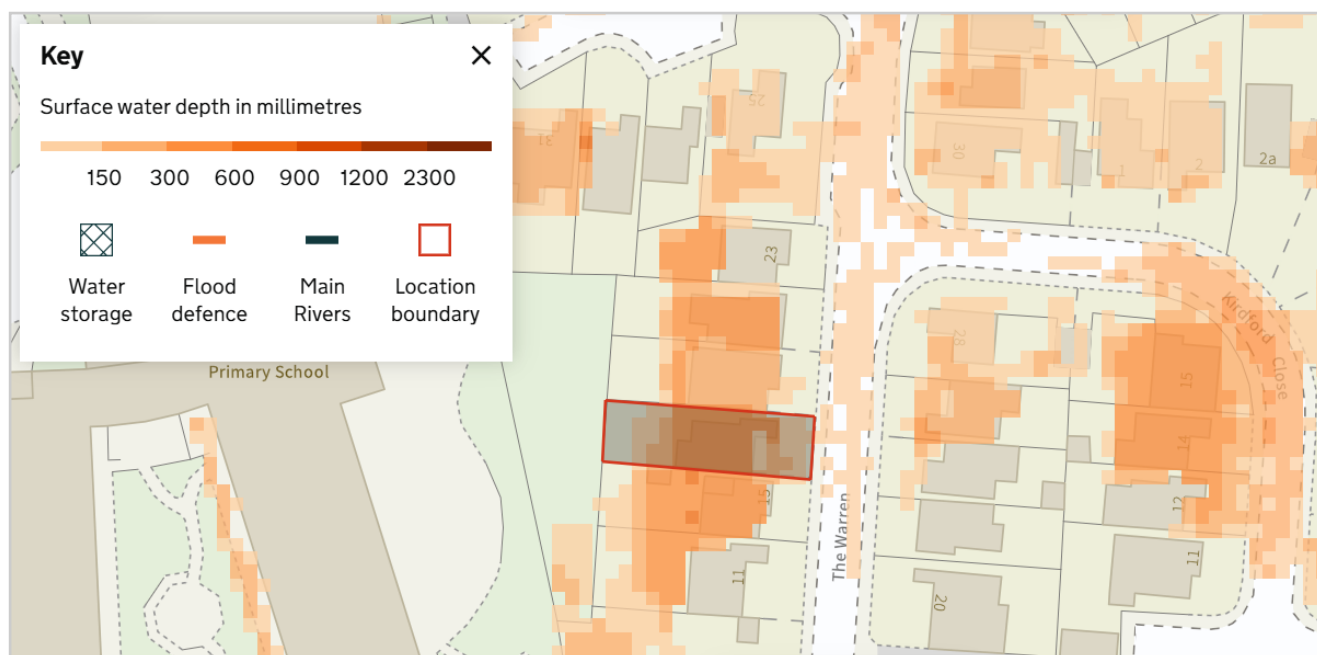
Risk of Flooding from Surface Water — depth mapping

Environment Agency NaFRA2 surface water depth data, accessed for the application site

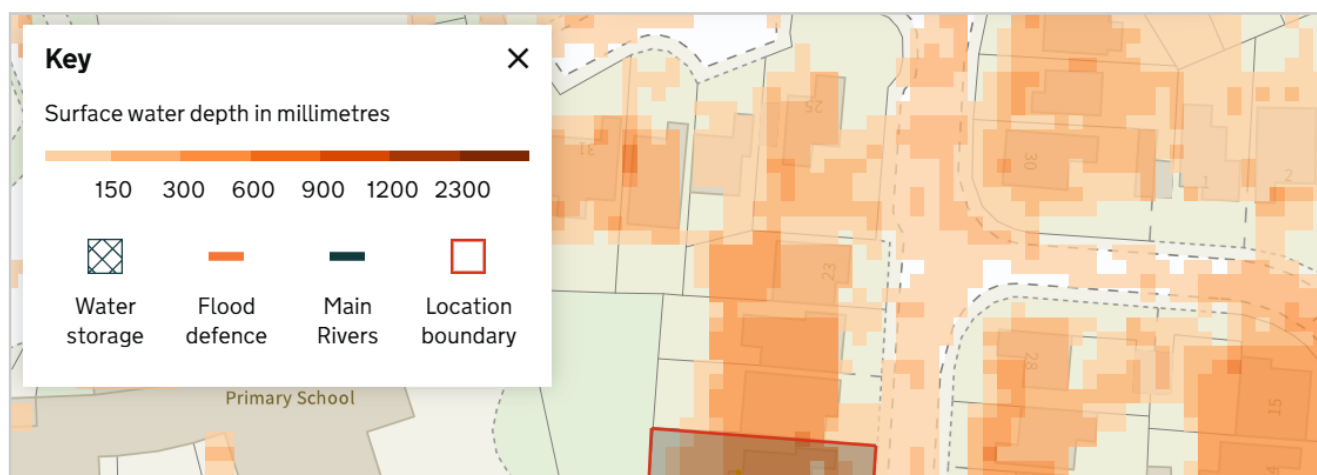
1 in 30 year (3.3% AEP) event including the 2061–2125 climate change allowance



1 in 100 year (1% AEP) event including the 2061–2125 climate change allowance



1 in 1,000 year (0.1% AEP) event including the 2061–2125 climate change allowance





FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

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Appendix E

Simon Harvey Designs Ltd — Planning Drawings

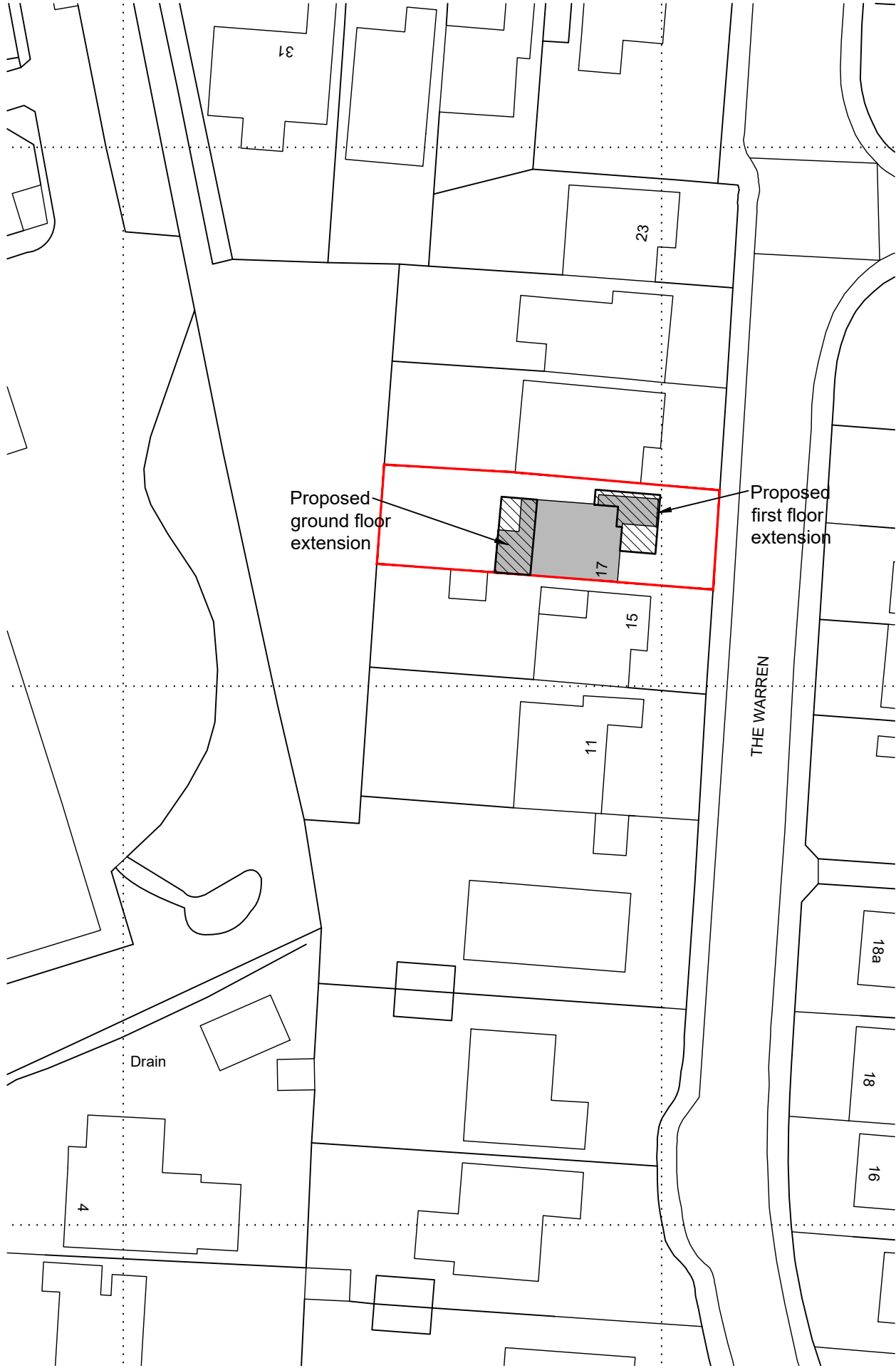
Drawings 181_01 to 181_06, April 2026



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SITE LOCATION PLAN
1:1250



SITE BLOCK PLAN
1:500

This drawing is to be read in conjunction with all other relevant drawings and specifications. Do not scale from this drawing (Unless for planning purposes). Use figured dimensions only. All levels and dimensions to be checked on site prior to commencement of works on site. All dimensional discrepancies are to be brought to the immediate attention of the originator. Responsibility cannot be accepted for alteration and/or deviation from this design without prior knowledge. Copyright reserved. This drawing may only be used under licence for the client and location specified in the title block. It may not be copied or disclosed to any other third party without prior written consent. It is the responsibility of the Client to check Legal Boundaries are correctly indicated and that relevant Party Wall Notices (usually served via a Surveyor) where required have been served to adjoining neighbours prior to any commencement of works. No responsibility will be held by Simon Harvey Designs Ltd for any failure in the above.

Revision



SIMON HARVEY DESIGNS LTD
2 Greenfield Way,
Storrington,
West Sussex.
RH20 4PY
t: 07833 178649
e: office@simonharveydesigns.com

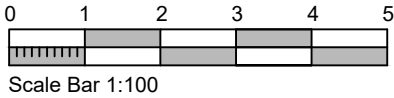
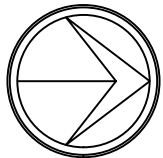
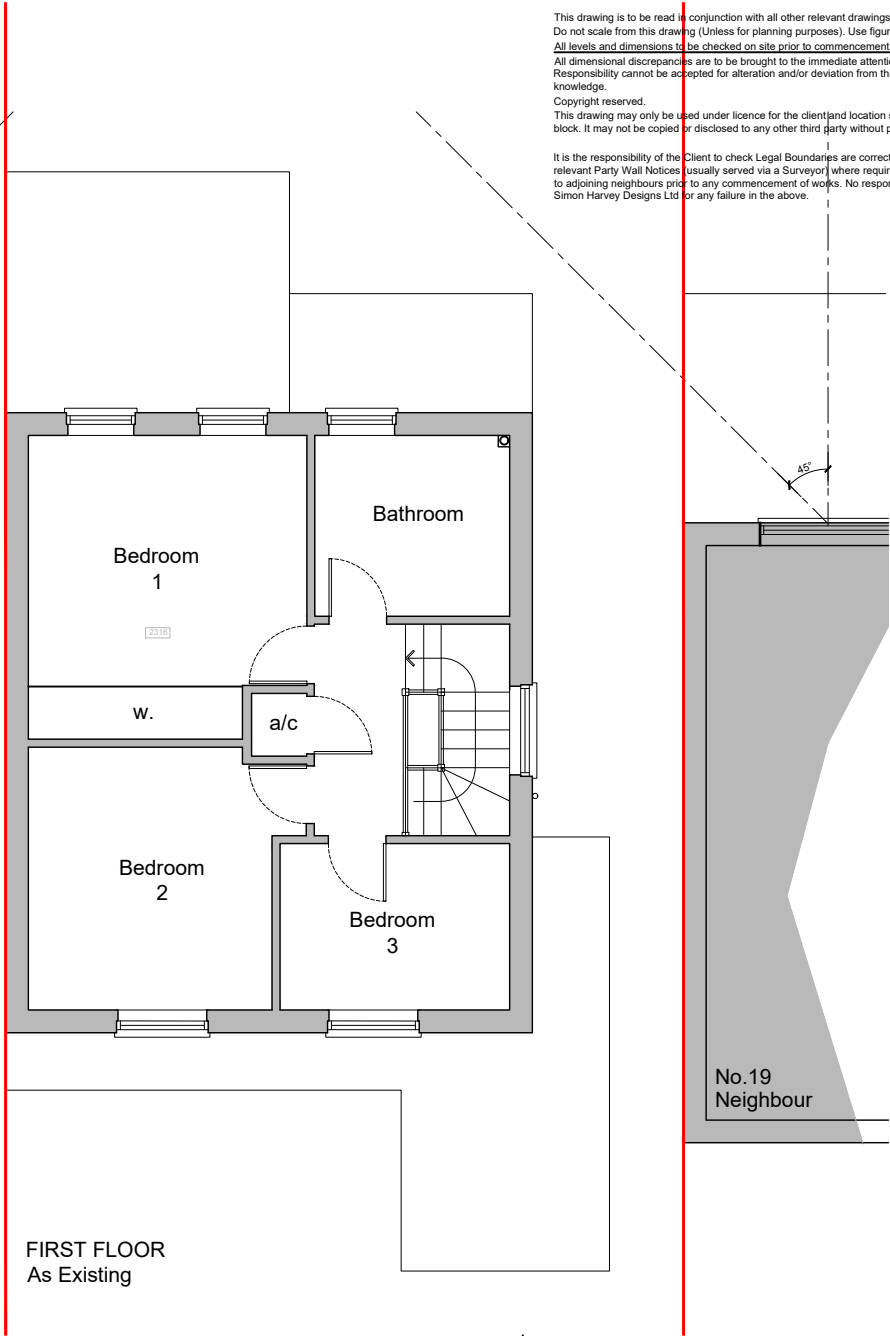
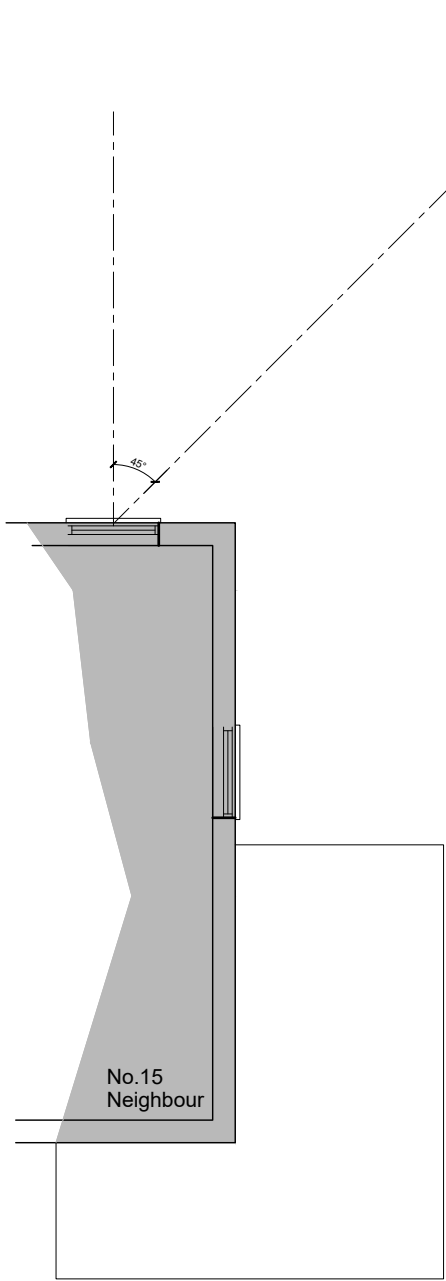
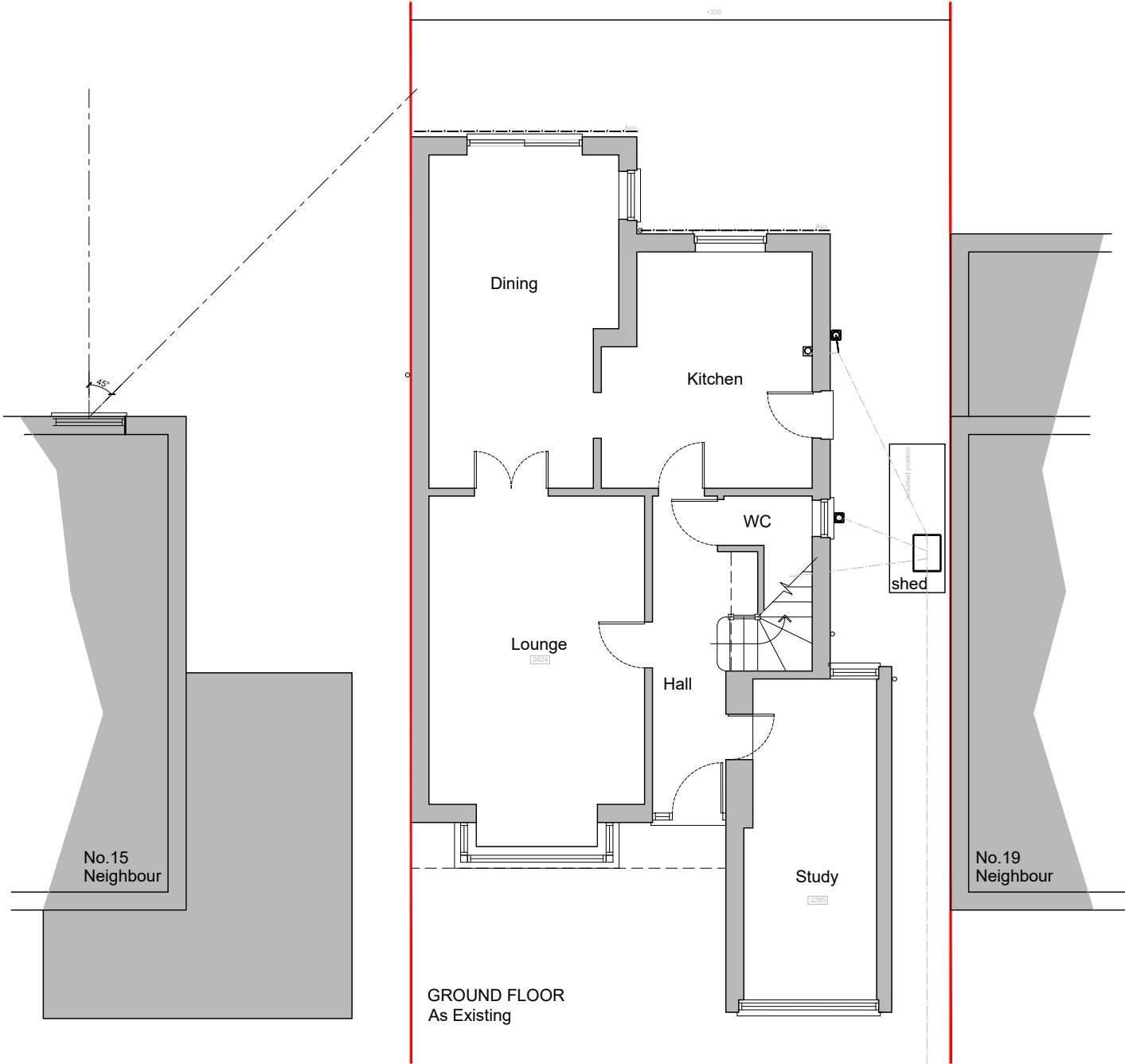
Client: Mr & Mrs Steel
Project: Rear Extension

Address: 17 The Warren,
Burgess Hill,
West Sussex.
RH15 0DU

Drawing Title: SITE LOCATION & BLOCK PLANS
Drawing Number: 181_01
Date: April 2026
Scale: 1:1250/1:500@A3

PLANNING

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Revision	
	SIMON HARVEY DESIGNS LTD 2 Greenfield Way, Storrington, West Sussex. RH20 4PY t: 07833 178649 e: office@simonharveydesigns.com
	Client: Mr & Mrs Steel Project: Rear Extension Address: 17 The Warren, Burgess Hill, West Sussex. RH15 0DU
Drawing Title: EXISTING PLANS	
Drawing Number: 181_02	
Date: April 2026	Scale: 1:100 @A3

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FRONT ELEVATION (East)
As Existing



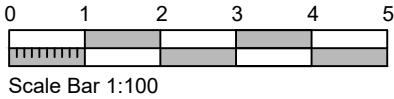
SIDE ELEVATION (North)
As Existing



REAR ELEVATION (West)
As Existing



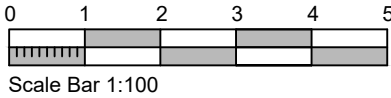
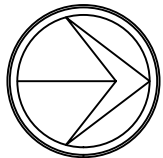
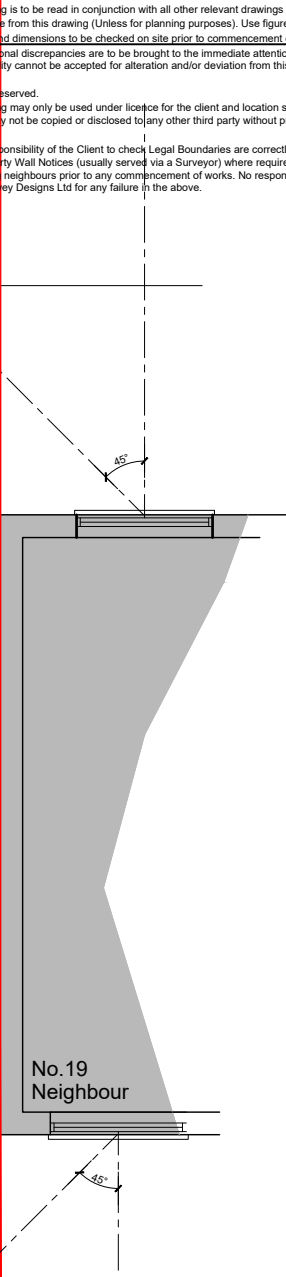
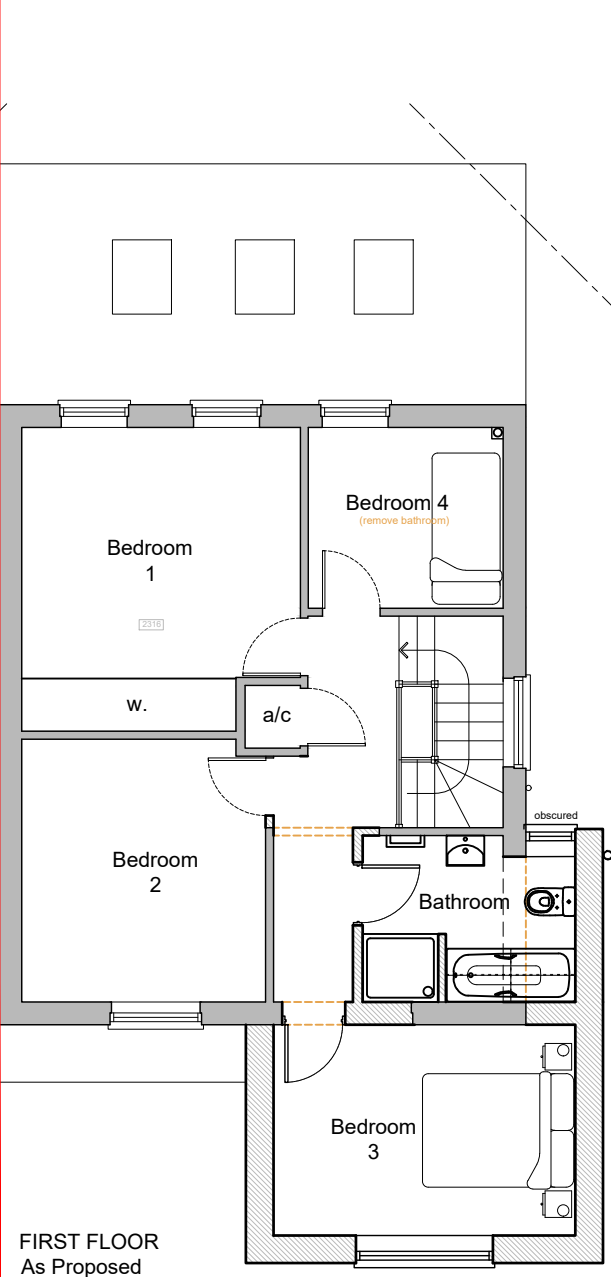
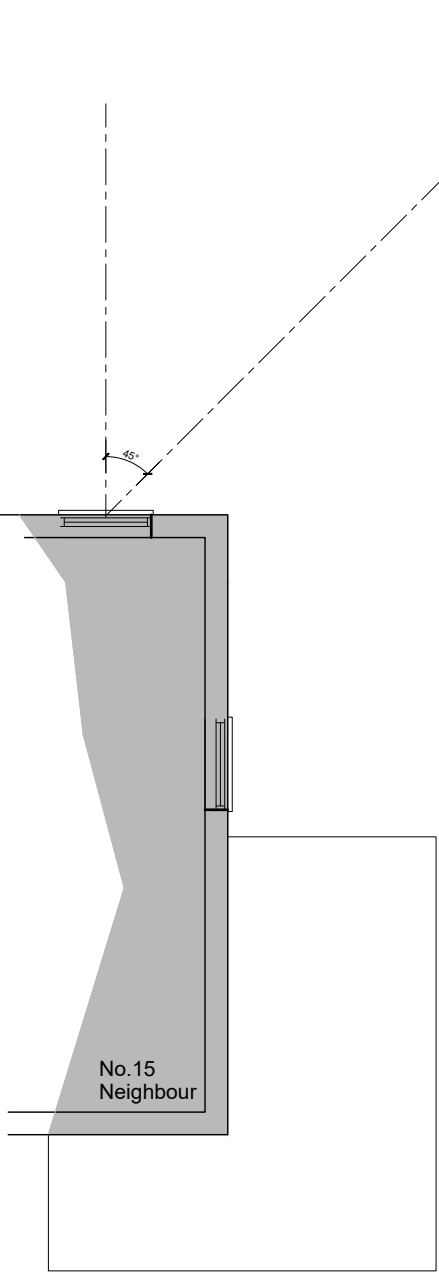
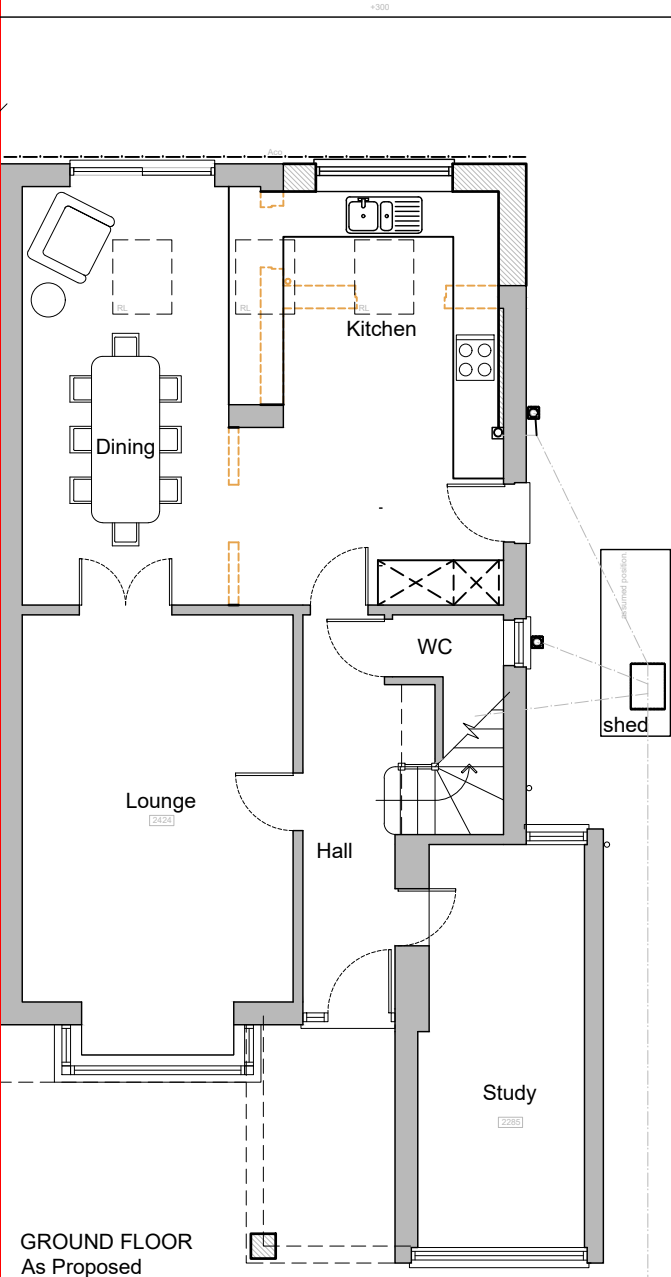
SIDE ELEVATION (South)
As Existing



PLANNING

Revision	
	SIMON HARVEY DESIGNS LTD 2 Greenfield Way, Storrington, West Sussex. RH20 4PY t: 07833 178649 e:office@simonharveydesigns.com
Client:	Mr & Mrs Steel
Project:	Rear Extension
Address: 17 The Warren, Burgess Hill, West Sussex. RH15 0DU	
Drawing Title: EXISTING ELEVATIONS	
Drawing Number: 181_03	
Date: April 2026	Scale:1:100 @A3

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Revision	
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	Client: Mr & Mrs Steel Project: Rear Extension Address: 17 The Warren, Burgess Hill, West Sussex. RH15 0DU
Drawing Title: PROPOSED PLANS	
Drawing Number: 181_04	
Date: April 2026	Scale: 1:100 @A3

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MATERIAL SCHEDULE:

Roof interlocking tiles to close match existing.

Facing brickwork to close match existing.

DG uPVC casement windows to close match.

Composite horizontal cladding to upper parts - light stone colour



FRONT ELEVATION (East)
As Proposed



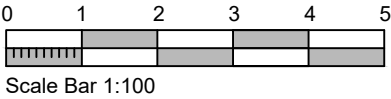
SIDE ELEVATION (North)
As Proposed



REAR ELEVATION (West)
As Proposed



SIDE ELEVATION (South)
As Proposed

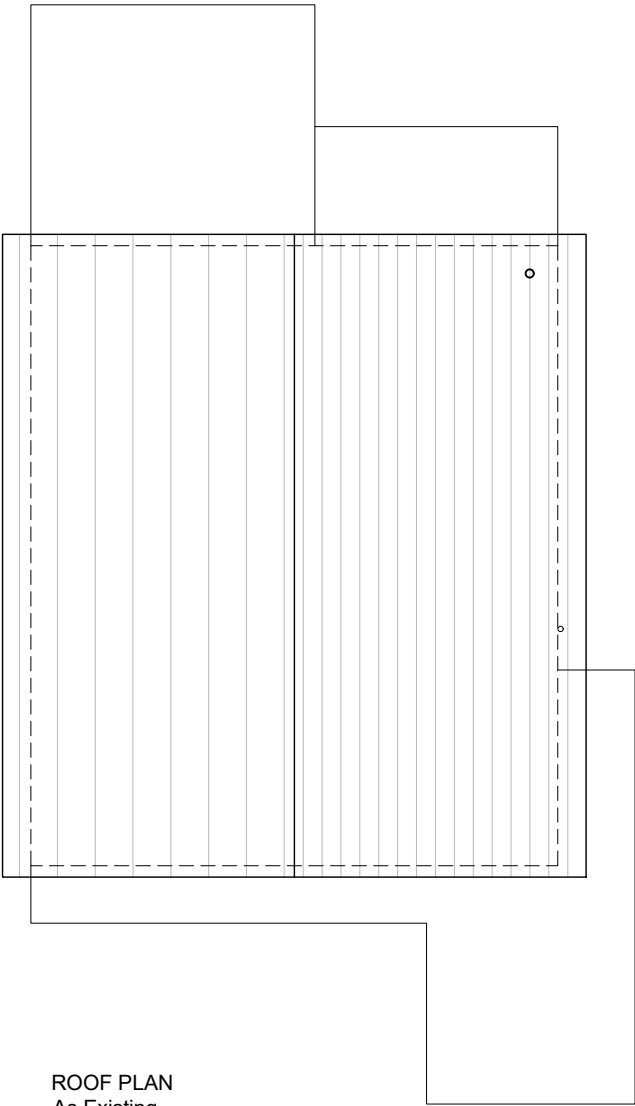


PLANNING

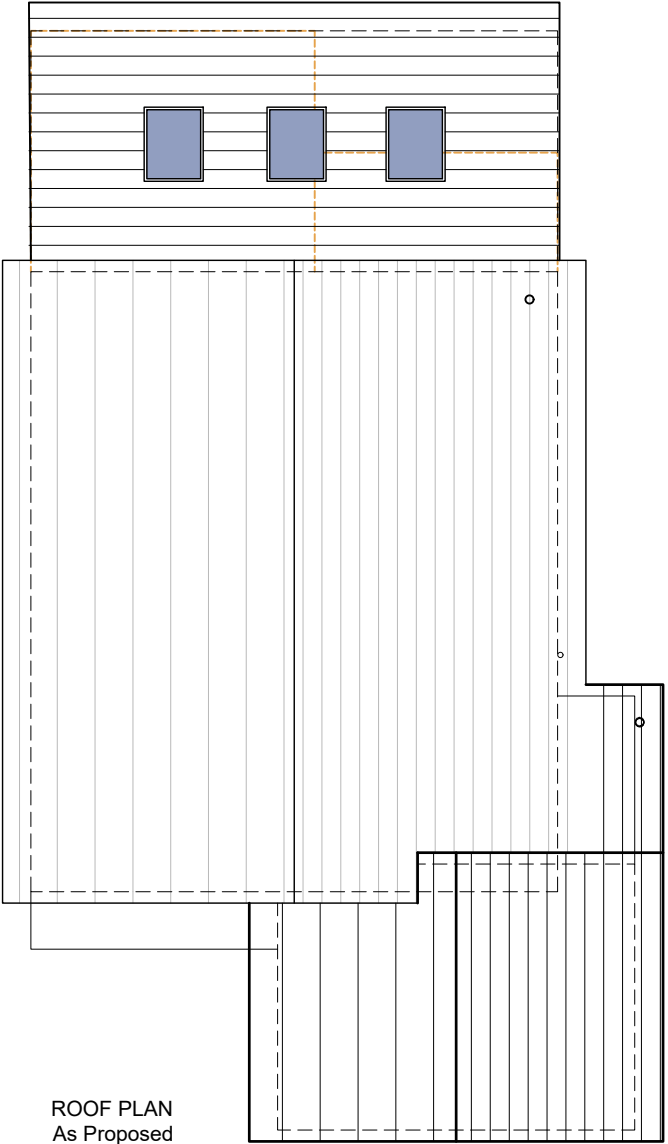
Revision	
	SIMON HARVEY DESIGNS LTD 2 Greenfield Way, Storrington, West Sussex. RH20 4PY t: 07833 178649 e: office@simonharveydesigns.com
	Client: Mr & Mrs Steel Project: Rear Extension
Address: 17 The Warren, Burgess Hill, West Sussex. RH15 0DU	
Drawing Title: PROPOSED ELEVATIONS	
Drawing Number: 181_05	
Date: April 2026	Scale: 1:100 @A3

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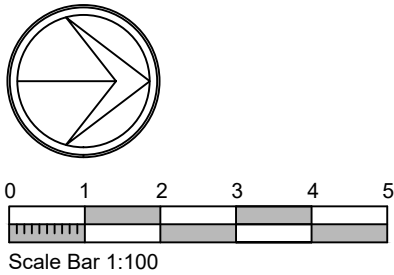
It is the responsibility of the Client to check Legal Boundaries are correctly indicated and that relevant Party Wall Notices (usually served via a Surveyor) where required have been served to adjoining neighbours prior to any commencement of works. No responsibility will be held by Simon Harvey Designs Ltd for any failure in the above.



ROOF PLAN
As Existing



ROOF PLAN
As Proposed



Scale Bar 1:100

DRAFT ISSUE
FOR DISCUSSION

PLANNING	Revision	
		SIMON HARVEY DESIGNS LTD 2 Greenfield Way, Storrington, West Sussex. RH20 4PY t: 07833 178649 e:office@simonharveydesigns.com
	Client: Mr & Mrs Steel	
	Project: Rear Extension	
	Address: 17 The Warren, Burgess Hill, West Sussex. RH15 0DU	
	Drawing Title: ROOF PLANS	
	Drawing Number: 181_06	
	Date: April 2026	Scale:1:100 @A3



FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

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Appendix F

Foresite Geomatics Ltd — Topographical Survey

Drawing 26068_01, project 26068, July 2026



FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

FRE-WARREN-2026 | Rev 1.0 | August 2026

Appendix G

FEH22 Point Rainfall Data

FEH Web Service design rainfall, annual maximum, OS 532290 / 118316, exported 1 August 2026

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 1

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
0.25	8.08	12.47	15.5	18.4	20.1	22.27	25.26	28.4	36.76
0.5	10.52	16.38	20.4	24.37	26.75	29.71	33.88	38.32	50.28
0.75	12.1	18.78	23.46	28.12	30.9	34.46	39.36	44.62	58.74
1	13.32	20.63	25.8	30.95	34.01	37.92	43.4	49.22	64.96
1.25	14.74	22.45	27.85	33.22	36.4	40.46	46.19	52.27	69
1.5	16.14	24.1	29.64	35.13	38.38	42.54	48.43	54.7	72.23
1.75	17.46	25.59	31.21	36.79	40.08	44.32	50.33	56.76	74.99
2	18.68	26.95	32.62	38.26	41.59	45.89	52	58.57	77.45
2.25	19.68	28.1	33.87	39.59	42.99	47.36	53.59	60.34	79.91
2.5	20.59	29.15	35	40.81	44.26	48.7	55.06	61.97	82.22
2.75	21.43	30.11	36.03	41.92	45.43	49.94	56.41	63.5	84.4
3	22.2	31	36.99	42.95	46.51	51.09	57.67	64.92	86.46
3.25	22.91	31.82	37.88	43.92	47.52	52.16	58.86	66.27	88.43
3.5	23.58	32.59	38.71	44.82	48.47	53.17	59.98	67.55	90.31
3.75	24.21	33.31	39.49	45.66	49.36	54.12	61.04	68.77	92.11
4	24.8	33.98	40.22	46.46	50.2	55.02	62.05	69.94	93.85
4.25	25.35	34.61	40.91	47.22	50.98	55.87	63.01	71.06	95.56
4.5	25.86	35.21	41.57	47.93	51.73	56.69	63.94	72.14	97.2
4.75	26.35	35.77	42.19	48.61	52.44	57.46	64.83	73.18	98.79
5	26.82	36.31	42.78	49.26	53.12	58.2	65.68	74.18	100.33
5.25	27.26	36.82	43.35	49.89	53.78	58.92	66.5	75.15	101.82
5.5	27.69	37.31	43.89	50.48	54.4	59.6	67.3	76.1	103.26
5.75	28.09	37.78	44.41	51.05	55	60.26	68.06	77.01	104.67
6	28.48	38.23	44.91	51.6	55.58	60.89	68.81	77.9	106.04
6.25	28.85	38.66	45.38	52.12	56.13	61.51	69.52	78.78	107.38
6.5	29.21	39.08	45.83	52.62	56.66	62.1	70.22	79.63	108.69
6.75	29.56	39.47	46.27	53.1	57.18	62.67	70.89	80.46	109.96
7	29.89	39.86	46.69	53.56	57.68	63.22	71.55	81.28	111.2
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7.5	30.53	40.6	47.49	54.45	58.63	64.28	72.81	82.85	113.57
7.75	30.83	40.95	47.88	54.87	59.09	64.79	73.41	83.61	114.72
8	31.12	41.29	48.25	55.29	59.53	65.29	74.01	84.35	115.83
8.25	31.41	41.62	48.61	55.69	59.97	65.78	74.59	85.08	116.92
8.5	31.69	41.94	48.96	56.08	60.39	66.25	75.15	85.79	117.98
8.75	31.96	42.25	49.31	56.46	60.8	66.71	75.71	86.49	119.02
9	32.22	42.56	49.64	56.83	61.2	67.16	76.25	87.18	120.03
9.25	32.48	42.86	49.97	57.19	61.6	67.6	76.79	87.85	121.02
9.5	32.73	43.15	50.29	57.54	61.98	68.03	77.31	88.51	121.99
9.75	32.98	43.43	50.6	57.89	62.36	68.46	77.82	89.16	122.94
10	33.22	43.71	50.9	58.23	62.73	68.87	78.33	89.8	123.87
10.25	33.46	43.98	51.2	58.56	63.09	69.28	78.82	90.43	124.77
10.5	33.69	44.25	51.49	58.88	63.44	69.68	79.31	91.05	125.66
10.75	33.91	44.51	51.78	59.2	63.79	70.07	79.79	91.66	126.53
11	34.13	44.76	52.06	59.51	64.13	70.45	80.26	92.26	127.38

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 2

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
11.75	34.77	45.49	52.86	60.42	65.11	71.56	81.63	94	129.84
12	34.98	45.73	53.12	60.71	65.43	71.92	82.07	94.56	130.63
12.25	35.18	45.96	53.38	60.99	65.74	72.27	82.51	95.12	131.4
12.5	35.38	46.19	53.63	61.28	66.05	72.62	82.94	95.66	132.14
12.75	35.57	46.41	53.88	61.56	66.35	72.97	83.37	96.2	132.88
13	35.77	46.63	54.12	61.83	66.65	73.3	83.79	96.73	133.6
13.25	35.95	46.85	54.36	62.1	66.95	73.64	84.21	97.26	134.3
13.5	36.14	47.06	54.59	62.37	67.24	73.97	84.62	97.77	135
13.75	36.33	47.27	54.83	62.63	67.52	74.29	85.03	98.28	135.68
14	36.51	47.47	55.05	62.89	67.8	74.61	85.43	98.79	136.35
14.25	36.68	47.68	55.28	63.14	68.08	74.92	85.82	99.28	137
14.5	36.86	47.88	55.5	63.39	68.36	75.23	86.21	99.77	137.65
14.75	37.03	48.08	55.72	63.64	68.63	75.54	86.6	100.26	138.28
15	37.2	48.27	55.94	63.89	68.89	75.84	86.98	100.73	138.91
15.25	37.37	48.46	56.15	64.13	69.16	76.14	87.36	101.2	139.52
15.5	37.54	48.65	56.36	64.37	69.42	76.44	87.73	101.67	140.12
15.75	37.7	48.84	56.57	64.6	69.67	76.73	88.1	102.13	140.71
16	37.87	49.03	56.78	64.84	69.93	77.02	88.46	102.58	141.3
16.25	38.03	49.21	56.98	65.07	70.18	77.31	88.82	103.03	141.87
16.5	38.19	49.39	57.18	65.29	70.43	77.59	89.18	103.47	142.44
16.75	38.34	49.57	57.38	65.52	70.67	77.87	89.53	103.91	142.99
17	38.5	49.75	57.57	65.74	70.91	78.14	89.88	104.34	143.54
17.25	38.65	49.92	57.77	65.96	71.15	78.42	90.22	104.77	144.07
17.5	38.8	50.09	57.96	66.17	71.39	78.69	90.57	105.19	144.6
17.75	38.95	50.26	58.15	66.39	71.62	78.96	90.9	105.61	145.13
18	39.1	50.43	58.34	66.6	71.85	79.22	91.24	106.02	145.64
18.25	39.24	50.6	58.52	66.81	72.08	79.48	91.57	106.42	146.13
18.5	39.39	50.77	58.71	67.02	72.31	79.74	91.89	106.82	146.61
18.75	39.53	50.93	58.89	67.22	72.53	80	92.22	107.22	147.09
19	39.67	51.1	59.07	67.42	72.75	80.25	92.54	107.61	147.56
19.25	39.81	51.26	59.25	67.62	72.97	80.51	92.86	107.99	148.03
19.5	39.95	51.42	59.43	67.82	73.19	80.76	93.17	108.37	148.48
19.75	40.09	51.58	59.6	68.02	73.4	81	93.48	108.75	148.94
20	40.22	51.73	59.78	68.21	73.62	81.25	93.79	109.12	149.38
20.25	40.36	51.89	59.95	68.41	73.83	81.49	94.09	109.49	149.82
20.5	40.49	52.05	60.12	68.6	74.04	81.74	94.4	109.86	150.26
20.75	40.62	52.2	60.29	68.79	74.25	81.98	94.7	110.22	150.69
21	40.76	52.35	60.46	68.98	74.45	82.21	94.99	110.58	151.11
21.25	40.89	52.51	60.63	69.17	74.66	82.45	95.29	110.93	151.53
21.5	41.02	52.66	60.79	69.35	74.86	82.68	95.58	111.28	151.95
21.75	41.15	52.81	60.96	69.54	75.06	82.92	95.87	111.63	152.36
22	41.28	52.96	61.12	69.72	75.26	83.15	96.16	111.97	152.77
22.25	41.4	53.1	61.29	69.91	75.46	83.38	96.44	112.31	153.17
22.5	41.53	53.25	61.45	70.09	75.66	83.6	96.73	112.65	153.56

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 3

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
23.25	41.91	53.69	61.93	70.62	76.24	84.28	97.56	113.64	154.73
23.5	42.03	53.83	62.09	70.8	76.43	84.5	97.83	113.97	155.11
23.75	42.15	53.97	62.24	70.97	76.63	84.72	98.11	114.29	155.48
24	42.28	54.11	62.4	71.15	76.81	84.93	98.38	114.61	155.86
24.25	42.4	54.25	62.55	71.32	77	85.15	98.64	114.93	156.23
24.5	42.52	54.39	62.71	71.49	77.19	85.37	98.91	115.24	156.6
24.75	42.64	54.53	62.86	71.67	77.38	85.58	99.17	115.55	156.97
25	42.77	54.67	63.01	71.84	77.57	85.79	99.43	115.86	157.33
25.25	42.89	54.81	63.16	72.01	77.75	86.01	99.69	116.16	157.69
25.5	43.01	54.95	63.32	72.18	77.94	86.22	99.95	116.46	158.05
25.75	43.13	55.08	63.47	72.34	78.12	86.43	100.2	116.76	158.4
26	43.25	55.22	63.62	72.51	78.3	86.63	100.46	117.06	158.75
26.25	43.36	55.35	63.76	72.68	78.48	86.84	100.71	117.35	159.1
26.5	43.48	55.49	63.91	72.84	78.66	87.05	100.96	117.64	159.44
26.75	43.6	55.62	64.06	73.01	78.84	87.25	101.21	117.93	159.79
27	43.72	55.76	64.21	73.17	79.02	87.45	101.45	118.22	160.12
27.25	43.84	55.89	64.35	73.34	79.2	87.66	101.7	118.51	160.46
27.5	43.95	56.02	64.5	73.5	79.37	87.86	101.94	118.79	160.79
27.75	44.07	56.15	64.64	73.66	79.55	88.06	102.18	119.07	161.13
28	44.18	56.28	64.79	73.82	79.72	88.25	102.42	119.35	161.45
28.25	44.3	56.41	64.93	73.98	79.9	88.45	102.66	119.63	161.78
28.5	44.41	56.54	65.07	74.14	80.07	88.65	102.9	119.9	162.1
28.75	44.53	56.67	65.21	74.3	80.24	88.84	103.14	120.17	162.42
29	44.64	56.8	65.35	74.46	80.42	89.04	103.37	120.45	162.74
29.25	44.76	56.93	65.49	74.62	80.59	89.23	103.6	120.71	163.06
29.5	44.87	57.06	65.63	74.77	80.76	89.42	103.83	120.98	163.37
29.75	44.98	57.19	65.77	74.93	80.92	89.62	104.06	121.25	163.69
30	45.09	57.31	65.91	75.08	81.09	89.81	104.29	121.51	163.99
30.25	45.21	57.44	66.05	75.24	81.26	90	104.52	121.77	164.3
30.5	45.32	57.57	66.19	75.39	81.43	90.18	104.74	122.03	164.61
30.75	45.43	57.69	66.33	75.55	81.59	90.37	104.97	122.29	164.91
31	45.54	57.82	66.46	75.7	81.76	90.56	105.19	122.55	165.21
31.25	45.65	57.94	66.6	75.85	81.92	90.74	105.41	122.8	165.51
31.5	45.76	58.07	66.74	76	82.09	90.93	105.63	123.05	165.8
31.75	45.87	58.19	66.87	76.15	82.25	91.11	105.85	123.3	166.1
32	45.98	58.31	67.01	76.3	82.41	91.3	106.07	123.55	166.39
32.25	46.09	58.44	67.14	76.45	82.57	91.48	106.29	123.8	166.68
32.5	46.2	58.56	67.27	76.6	82.73	91.66	106.5	124.05	166.97
32.75	46.31	58.68	67.41	76.75	82.89	91.84	106.72	124.29	167.26
33	46.41	58.8	67.54	76.9	83.05	92.02	106.93	124.54	167.54
33.25	46.52	58.92	67.67	77.05	83.21	92.2	107.14	124.78	167.82
33.5	46.63	59.04	67.81	77.19	83.37	92.38	107.35	125.02	168.1
33.75	46.74	59.16	67.94	77.34	83.53	92.55	107.56	125.26	168.38
34	46.84	59.28	68.07	77.49	83.69	92.73	107.77	125.5	168.66

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 4

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
34.75	47.16	59.64	68.46	77.92	84.15	93.25	108.39	126.2	169.48
35	47.27	59.76	68.59	78.06	84.31	93.43	108.6	126.43	169.75
35.25	47.37	59.88	68.72	78.21	84.46	93.6	108.8	126.66	170.02
35.5	47.48	60	68.85	78.35	84.62	93.77	109	126.89	170.29
35.75	47.58	60.12	68.97	78.49	84.77	93.94	109.2	127.12	170.56
36	47.69	60.23	69.1	78.63	84.92	94.11	109.4	127.35	170.82
36.25	47.79	60.35	69.23	78.77	85.07	94.28	109.6	127.57	171.08
36.5	47.9	60.47	69.36	78.92	85.23	94.45	109.8	127.8	171.34
36.75	48	60.58	69.48	79.06	85.38	94.62	110	128.02	171.6
37	48.1	60.7	69.61	79.2	85.53	94.79	110.19	128.24	171.86
37.25	48.21	60.81	69.73	79.33	85.68	94.96	110.39	128.46	172.12
37.5	48.31	60.93	69.86	79.47	85.83	95.12	110.58	128.68	172.37
37.75	48.41	61.04	69.98	79.61	85.97	95.29	110.78	128.9	172.62
38	48.52	61.16	70.11	79.75	86.12	95.45	110.97	129.11	172.88
38.25	48.62	61.27	70.23	79.89	86.27	95.62	111.16	129.33	173.13
38.5	48.72	61.39	70.36	80.02	86.42	95.78	111.35	129.54	173.38
38.75	48.82	61.5	70.48	80.16	86.56	95.94	111.54	129.76	173.62
39	48.92	61.61	70.61	80.3	86.71	96.11	111.73	129.97	173.87
39.25	49.03	61.73	70.73	80.43	86.86	96.27	111.92	130.18	174.11
39.5	49.13	61.84	70.85	80.57	87	96.43	112.11	130.39	174.36
39.75	49.23	61.95	70.97	80.7	87.15	96.59	112.29	130.6	174.6
40	49.33	62.07	71.1	80.84	87.29	96.75	112.48	130.81	174.84
40.25	49.43	62.18	71.22	80.97	87.43	96.91	112.66	131.02	175.08
40.5	49.53	62.29	71.34	81.11	87.58	97.07	112.85	131.22	175.32
40.75	49.63	62.4	71.46	81.24	87.72	97.23	113.03	131.43	175.56
41	49.73	62.51	71.58	81.37	87.86	97.39	113.21	131.63	175.79
41.25	49.83	62.62	71.7	81.51	88.01	97.54	113.4	131.83	176.03
41.5	49.93	62.74	71.82	81.64	88.15	97.7	113.58	132.04	176.26
41.75	50.03	62.85	71.94	81.77	88.29	97.86	113.76	132.24	176.49
42	50.13	62.96	72.06	81.9	88.43	98.01	113.94	132.44	176.73
42.25	50.23	63.07	72.18	82.03	88.57	98.17	114.11	132.64	176.96
42.5	50.33	63.18	72.3	82.17	88.71	98.32	114.29	132.83	177.18
42.75	50.43	63.29	72.42	82.3	88.85	98.47	114.47	133.03	177.41
43	50.52	63.4	72.54	82.43	88.99	98.63	114.65	133.23	177.64
43.25	50.62	63.5	72.66	82.56	89.13	98.78	114.82	133.42	177.86
43.5	50.72	63.61	72.77	82.69	89.27	98.93	115	133.62	178.09
43.75	50.82	63.72	72.89	82.82	89.4	99.09	115.17	133.81	178.31
44	50.92	63.83	73.01	82.94	89.54	99.24	115.34	134	178.53
44.25	51.01	63.94	73.13	83.07	89.68	99.39	115.52	134.19	178.76
44.5	51.11	64.05	73.24	83.2	89.82	99.54	115.69	134.39	178.98
44.75	51.21	64.16	73.36	83.33	89.95	99.69	115.86	134.58	179.19
45	51.3	64.26	73.48	83.46	90.09	99.84	116.03	134.76	179.41
45.25	51.4	64.37	73.59	83.58	90.22	99.99	116.2	134.95	179.63
45.5	51.5	64.48	73.71	83.71	90.36	100.13	116.37	135.14	179.84

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 5

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
46.25	51.79	64.8	74.06	84.09	90.76	100.58	116.87	135.7	180.49
46.5	51.88	64.9	74.17	84.22	90.9	100.72	117.04	135.88	180.7
46.75	51.98	65.01	74.29	84.34	91.03	100.87	117.21	136.07	180.91
47	52.08	65.12	74.4	84.47	91.16	101.02	117.37	136.25	181.12
47.25	52.17	65.22	74.51	84.59	91.3	101.16	117.54	136.43	181.33
47.5	52.27	65.33	74.63	84.72	91.43	101.31	117.7	136.61	181.54
47.75	52.36	65.43	74.74	84.84	91.56	101.45	117.87	136.79	181.74
48	52.46	65.54	74.86	84.96	91.69	101.59	118.03	136.97	181.95
48.25	52.55	65.65	74.97	85.09	91.82	101.74	118.19	137.15	182.15
48.5	52.65	65.75	75.09	85.21	91.95	101.88	118.35	137.32	182.35
48.75	52.75	65.86	75.2	85.34	92.09	102.02	118.51	137.49	182.55
49	52.84	65.97	75.32	85.46	92.22	102.16	118.66	137.67	182.74
49.25	52.94	66.07	75.43	85.58	92.35	102.3	118.82	137.84	182.94
49.5	53.04	66.18	75.55	85.71	92.48	102.44	118.98	138.01	183.14
49.75	53.13	66.29	75.66	85.83	92.6	102.58	119.14	138.18	183.33
50	53.23	66.39	75.78	85.95	92.73	102.72	119.29	138.35	183.53
50.25	53.32	66.5	75.89	86.07	92.86	102.86	119.45	138.52	183.72
50.5	53.42	66.61	76.01	86.19	92.99	103	119.6	138.69	183.91
50.75	53.52	66.71	76.12	86.32	93.12	103.13	119.75	138.86	184.1
51	53.61	66.82	76.23	86.44	93.25	103.27	119.91	139.03	184.29
51.25	53.71	66.92	76.35	86.56	93.37	103.41	120.06	139.2	184.48
51.5	53.8	67.03	76.46	86.68	93.5	103.54	120.21	139.36	184.67
51.75	53.9	67.13	76.57	86.8	93.63	103.68	120.37	139.53	184.86
52	53.99	67.24	76.68	86.92	93.76	103.82	120.52	139.69	185.05
52.25	54.09	67.34	76.8	87.04	93.88	103.95	120.67	139.86	185.24
52.5	54.18	67.45	76.91	87.16	94.01	104.09	120.82	140.02	185.43
52.75	54.28	67.55	77.02	87.28	94.13	104.22	120.97	140.19	185.61
53	54.37	67.65	77.13	87.4	94.26	104.36	121.12	140.35	185.8
53.25	54.46	67.76	77.25	87.52	94.38	104.49	121.27	140.51	185.98
53.5	54.56	67.86	77.36	87.64	94.51	104.63	121.42	140.67	186.17
53.75	54.65	67.97	77.47	87.76	94.63	104.76	121.57	140.84	186.35
54	54.75	68.07	77.58	87.87	94.76	104.89	121.71	141	186.53
54.25	54.84	68.17	77.69	87.99	94.88	105.03	121.86	141.16	186.71
54.5	54.93	68.28	77.8	88.11	95.01	105.16	122.01	141.32	186.89
54.75	55.03	68.38	77.91	88.23	95.13	105.29	122.16	141.48	187.07
55	55.12	68.48	78.02	88.35	95.25	105.42	122.3	141.64	187.25
55.25	55.21	68.59	78.13	88.46	95.38	105.55	122.45	141.79	187.43
55.5	55.31	68.69	78.24	88.58	95.5	105.69	122.59	141.95	187.61
55.75	55.4	68.79	78.35	88.7	95.62	105.82	122.74	142.11	187.79
56	55.49	68.89	78.46	88.81	95.75	105.95	122.88	142.26	187.97
56.25	55.59	69	78.57	88.93	95.87	106.08	123.03	142.42	188.15
56.5	55.68	69.1	78.68	89.05	95.99	106.21	123.17	142.58	188.32
56.75	55.77	69.2	78.79	89.16	96.11	106.34	123.31	142.73	188.5
57	55.86	69.3	78.9	89.28	96.23	106.47	123.45	142.89	188.67

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 6

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
57.75	56.14	69.61	79.23	89.63	96.6	106.85	123.88	143.35	189.19
58	56.23	69.71	79.34	89.74	96.72	106.98	124.02	143.5	189.37
58.25	56.33	69.81	79.45	89.86	96.84	107.11	124.16	143.65	189.54
58.5	56.42	69.91	79.55	89.97	96.96	107.24	124.3	143.8	189.71
58.75	56.51	70.01	79.66	90.08	97.08	107.37	124.44	143.96	189.88
59	56.6	70.11	79.77	90.2	97.2	107.49	124.58	144.11	190.05
59.25	56.69	70.21	79.88	90.31	97.32	107.62	124.72	144.26	190.22
59.5	56.78	70.32	79.99	90.43	97.44	107.75	124.86	144.41	190.39
59.75	56.88	70.42	80.09	90.54	97.55	107.87	125	144.56	190.56
60	56.97	70.52	80.2	90.65	97.67	108	125.14	144.71	190.73
60.25	57.06	70.62	80.31	90.77	97.79	108.12	125.28	144.85	190.9
60.5	57.15	70.72	80.42	90.88	97.91	108.25	125.41	145	191.06
60.75	57.24	70.82	80.52	90.99	98.03	108.38	125.55	145.15	191.23
61	57.33	70.92	80.63	91.11	98.15	108.5	125.69	145.3	191.4
61.25	57.42	71.02	80.74	91.22	98.26	108.62	125.82	145.44	191.56
61.5	57.51	71.12	80.84	91.33	98.38	108.75	125.96	145.59	191.73
61.75	57.6	71.22	80.95	91.44	98.5	108.87	126.09	145.74	191.89
62	57.69	71.32	81.06	91.56	98.62	109	126.23	145.88	192.06
62.25	57.78	71.41	81.16	91.67	98.73	109.12	126.36	146.03	192.22
62.5	57.87	71.51	81.27	91.78	98.85	109.24	126.5	146.17	192.38
62.75	57.96	71.61	81.37	91.89	98.96	109.37	126.63	146.32	192.55
63	58.06	71.71	81.48	92	99.08	109.49	126.77	146.46	192.71
63.25	58.15	71.81	81.58	92.11	99.2	109.61	126.9	146.6	192.87
63.5	58.24	71.91	81.69	92.23	99.31	109.74	127.03	146.75	193.03
63.75	58.33	72.01	81.8	92.34	99.43	109.86	127.17	146.89	193.19
64	58.41	72.11	81.9	92.45	99.54	109.98	127.3	147.03	193.35
64.25	58.5	72.21	82.01	92.56	99.66	110.1	127.43	147.17	193.51
64.5	58.59	72.3	82.11	92.67	99.77	110.22	127.56	147.32	193.67
64.75	58.68	72.4	82.22	92.78	99.89	110.34	127.7	147.46	193.83
65	58.77	72.5	82.32	92.89	100	110.46	127.83	147.6	193.99
65.25	58.86	72.6	82.42	93	100.12	110.59	127.96	147.74	194.15
65.5	58.95	72.7	82.53	93.11	100.23	110.71	128.09	147.88	194.31
65.75	59.04	72.79	82.63	93.22	100.35	110.83	128.22	148.02	194.46
66	59.13	72.89	82.74	93.33	100.46	110.95	128.35	148.16	194.62
66.25	59.22	72.99	82.84	93.44	100.57	111.07	128.48	148.3	194.78
66.5	59.31	73.09	82.95	93.55	100.69	111.19	128.61	148.43	194.93
66.75	59.4	73.18	83.05	93.65	100.8	111.3	128.74	148.57	195.09
67	59.49	73.28	83.15	93.76	100.91	111.42	128.87	148.71	195.24
67.25	59.58	73.38	83.26	93.87	101.03	111.54	128.99	148.85	195.4
67.5	59.66	73.48	83.36	93.98	101.14	111.66	129.12	148.99	195.55
67.75	59.75	73.57	83.46	94.09	101.25	111.78	129.25	149.12	195.71
68	59.84	73.67	83.57	94.2	101.37	111.9	129.38	149.26	195.86
68.25	59.93	73.77	83.67	94.31	101.48	112.02	129.51	149.4	196.01
68.5	60.02	73.86	83.77	94.41	101.59	112.13	129.63	149.53	196.17

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 7

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
69.25	60.28	74.15	84.08	94.74	101.93	112.49	130.01	149.94	196.62
69.5	60.37	74.25	84.18	94.84	102.04	112.6	130.14	150.07	196.77
69.75	60.46	74.35	84.29	94.95	102.15	112.72	130.26	150.21	196.92
70	60.55	74.44	84.39	95.06	102.26	112.84	130.39	150.34	197.07
70.25	60.63	74.54	84.49	95.16	102.37	112.95	130.52	150.47	197.22
70.5	60.72	74.63	84.59	95.27	102.48	113.07	130.64	150.61	197.37
70.75	60.81	74.73	84.69	95.38	102.59	113.18	130.77	150.74	197.52
71	60.9	74.83	84.8	95.48	102.7	113.3	130.89	150.87	197.67
71.25	60.98	74.92	84.9	95.59	102.81	113.42	131.01	151	197.82
71.5	61.07	75.02	85	95.7	102.92	113.53	131.14	151.14	197.97
71.75	61.16	75.11	85.1	95.8	103.03	113.65	131.26	151.27	198.11
72	61.25	75.21	85.2	95.91	103.14	113.76	131.38	151.4	198.26
72.25	61.33	75.3	85.3	96.02	103.25	113.88	131.51	151.53	198.41
72.5	61.42	75.4	85.41	96.12	103.36	113.99	131.63	151.66	198.55
72.75	61.51	75.49	85.51	96.23	103.47	114.11	131.75	151.79	198.7
73	61.6	75.59	85.61	96.33	103.58	114.22	131.88	151.92	198.85
73.25	61.68	75.68	85.71	96.44	103.69	114.33	132	152.05	198.99
73.5	61.77	75.78	85.81	96.54	103.8	114.45	132.12	152.18	199.14
73.75	61.86	75.87	85.91	96.65	103.91	114.56	132.24	152.31	199.28
74	61.94	75.97	86.01	96.75	104.02	114.67	132.36	152.44	199.43
74.25	62.03	76.06	86.11	96.86	104.13	114.79	132.48	152.57	199.57
74.5	62.12	76.16	86.21	96.96	104.23	114.9	132.6	152.7	199.71
74.75	62.2	76.25	86.31	97.07	104.34	115.01	132.72	152.82	199.86
75	62.29	76.35	86.41	97.17	104.45	115.13	132.85	152.95	200
75.25	62.38	76.44	86.51	97.28	104.56	115.24	132.97	153.08	200.14
75.5	62.46	76.54	86.61	97.38	104.67	115.35	133.09	153.21	200.29
75.75	62.55	76.63	86.71	97.48	104.77	115.46	133.21	153.33	200.43
76	62.64	76.72	86.81	97.59	104.88	115.58	133.32	153.46	200.57
76.25	62.72	76.82	86.91	97.69	104.99	115.69	133.44	153.59	200.71
76.5	62.81	76.91	87.01	97.8	105.1	115.8	133.56	153.71	200.85
76.75	62.89	77.01	87.11	97.9	105.2	115.91	133.68	153.84	200.99
77	62.98	77.1	87.21	98	105.31	116.02	133.8	153.96	201.13
77.25	63.07	77.19	87.31	98.11	105.42	116.13	133.92	154.09	201.27
77.5	63.15	77.29	87.41	98.21	105.52	116.24	134.04	154.21	201.41
77.75	63.24	77.38	87.51	98.31	105.63	116.35	134.15	154.34	201.55
78	63.32	77.48	87.61	98.42	105.74	116.47	134.27	154.46	201.69
78.25	63.41	77.57	87.71	98.52	105.84	116.58	134.39	154.59	201.83
78.5	63.49	77.66	87.8	98.62	105.95	116.69	134.51	154.71	201.97
78.75	63.58	77.76	87.9	98.73	106.06	116.8	134.62	154.83	202.11
79	63.67	77.85	88	98.83	106.16	116.91	134.74	154.96	202.25
79.25	63.75	77.94	88.1	98.93	106.27	117.02	134.86	155.08	202.38
79.5	63.84	78.04	88.2	99.03	106.37	117.13	134.97	155.2	202.52
79.75	63.92	78.13	88.3	99.13	106.48	117.24	135.09	155.33	202.66
80	64.01	78.22	88.4	99.24	106.58	117.34	135.21	155.45	202.8

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 8

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
80.75	64.26	78.5	88.69	99.54	106.9	117.67	135.55	155.82	203.2
81	64.35	78.59	88.79	99.64	107	117.78	135.67	155.94	203.34
81.25	64.43	78.68	88.89	99.75	107.11	117.89	135.78	156.06	203.47
81.5	64.52	78.78	88.98	99.85	107.21	118	135.9	156.18	203.61
81.75	64.6	78.87	89.08	99.95	107.32	118.11	136.01	156.3	203.74
82	64.69	78.96	89.18	100.05	107.42	118.21	136.13	156.42	203.88
82.25	64.77	79.05	89.28	100.15	107.53	118.32	136.24	156.54	204.01
82.5	64.86	79.15	89.38	100.25	107.63	118.43	136.35	156.66	204.15
82.75	64.94	79.24	89.47	100.35	107.74	118.54	136.47	156.78	204.28
83	65.03	79.33	89.57	100.46	107.84	118.65	136.58	156.9	204.41
83.25	65.11	79.42	89.67	100.56	107.94	118.75	136.69	157.02	204.55
83.5	65.2	79.52	89.76	100.66	108.05	118.86	136.81	157.14	204.68
83.75	65.28	79.61	89.86	100.76	108.15	118.97	136.92	157.26	204.81
84	65.37	79.7	89.96	100.86	108.25	119.07	137.03	157.38	204.95
84.25	65.45	79.79	90.06	100.96	108.36	119.18	137.15	157.5	205.08
84.5	65.54	79.88	90.15	101.06	108.46	119.29	137.26	157.61	205.21
84.75	65.62	79.97	90.25	101.16	108.56	119.39	137.37	157.73	205.34
85	65.7	80.07	90.35	101.26	108.67	119.5	137.48	157.85	205.47
85.25	65.79	80.16	90.44	101.36	108.77	119.61	137.59	157.97	205.6
85.5	65.87	80.25	90.54	101.46	108.87	119.71	137.71	158.08	205.73
85.75	65.96	80.34	90.64	101.56	108.97	119.82	137.82	158.2	205.86
86	66.04	80.43	90.73	101.66	109.08	119.92	137.93	158.32	206
86.25	66.12	80.52	90.83	101.76	109.18	120.03	138.04	158.44	206.13
86.5	66.21	80.62	90.92	101.86	109.28	120.14	138.15	158.55	206.25
86.75	66.29	80.71	91.02	101.96	109.38	120.24	138.26	158.67	206.38
87	66.38	80.8	91.12	102.06	109.49	120.35	138.37	158.78	206.51
87.25	66.46	80.89	91.21	102.16	109.59	120.45	138.48	158.9	206.64
87.5	66.54	80.98	91.31	102.26	109.69	120.56	138.59	159.02	206.77
87.75	66.63	81.07	91.4	102.36	109.79	120.66	138.7	159.13	206.9
88	66.71	81.16	91.5	102.45	109.89	120.77	138.81	159.25	207.03
88.25	66.8	81.25	91.6	102.55	110	120.87	138.92	159.36	207.16
88.5	66.88	81.34	91.69	102.65	110.1	120.98	139.03	159.48	207.28
88.75	66.96	81.43	91.79	102.75	110.2	121.08	139.14	159.59	207.41
89	67.05	81.53	91.88	102.85	110.3	121.18	139.25	159.71	207.54
89.25	67.13	81.62	91.98	102.95	110.4	121.29	139.36	159.82	207.67
89.5	67.21	81.71	92.07	103.05	110.5	121.39	139.47	159.93	207.79
89.75	67.3	81.8	92.17	103.15	110.6	121.5	139.58	160.05	207.92
90	67.38	81.89	92.26	103.24	110.7	121.6	139.69	160.16	208.05
90.25	67.46	81.98	92.36	103.34	110.8	121.7	139.79	160.28	208.17
90.5	67.55	82.07	92.46	103.44	110.91	121.81	139.9	160.39	208.3
90.75	67.63	82.16	92.55	103.54	111.01	121.91	140.01	160.5	208.42
91	67.71	82.25	92.65	103.64	111.11	122.01	140.12	160.61	208.55
91.25	67.8	82.34	92.74	103.74	111.21	122.12	140.23	160.73	208.68
91.5	67.88	82.43	92.84	103.83	111.31	122.22	140.33	160.84	208.8

FEH22 design rainfall — point, annual maximum — OS 532290 / 118316

FEH Web Service (2.13.9615.22806), exported 1 August 2026. Depths in millimetres. Page 9

Duration (h)	2 year yr	5 year yr	10 year yr	20 year yr	30 year yr	50 year yr	100 year yr	200 year yr	1000 year yr
92.25	68.13	82.7	93.12	104.13	111.61	122.53	140.65	161.18	209.17
92.5	68.21	82.79	93.21	104.22	111.71	122.63	140.76	161.29	209.3
92.75	68.3	82.88	93.31	104.32	111.81	122.73	140.87	161.4	209.42
93	68.38	82.97	93.4	104.42	111.91	122.84	140.97	161.51	209.55
93.25	68.46	83.06	93.5	104.52	112.01	122.94	141.08	161.62	209.67
93.5	68.54	83.15	93.59	104.61	112.11	123.04	141.19	161.73	209.79
93.75	68.63	83.24	93.69	104.71	112.21	123.14	141.29	161.84	209.92
94	68.71	83.33	93.78	104.81	112.31	123.24	141.4	161.96	210.04
94.25	68.79	83.42	93.87	104.9	112.4	123.35	141.51	162.07	210.16
94.5	68.88	83.51	93.97	105	112.5	123.45	141.61	162.18	210.29
94.75	68.96	83.6	94.06	105.1	112.6	123.55	141.72	162.29	210.41
95	69.04	83.69	94.16	105.2	112.7	123.65	141.82	162.4	210.53
95.25	69.12	83.78	94.25	105.29	112.8	123.75	141.93	162.51	210.65
95.5	69.21	83.87	94.34	105.39	112.9	123.85	142.03	162.62	210.77
95.75	69.29	83.95	94.44	105.49	113	123.95	142.14	162.73	210.89
96	69.37	84.04	94.53	105.58	113.1	124.05	142.24	162.83	211.02



FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

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Appendix H

Causeway Flow+ v15.0 Hydraulic Calculations

On-plot attenuation units — rear extension and front extension

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	1	Connection Type	Level Soffits
Additional Flow (%)	0	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	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
Depth/Area 1	0.002	5.00	100.000	-6.344	59.306	0.830

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)	1440	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
100	45	0	0

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.170	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.008		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.330	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.008		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.470	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.009		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.630	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.009		

Node Depth/Area 1 Online Weir Control

Flap Valve	x	Invert Level (m)	99.870	Discharge Coefficient	0.590
Replaces Downstream Link	✓	Width (m)	0.320		

Node Depth/Area 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	99.170
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.80	Time to half empty (mins)	45

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	0.4	0.0	0.830	0.4	0.0	0.831	0.0	0.0

Results for 1 year 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
240 minute summer	Depth/Area 1	144	99.329	0.159	0.1	0.0509	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
240 minute summer	Depth/Area 1	Orifice	0.1	0.3
240 minute summer	Depth/Area 1	Orifice	0.0	0.0
240 minute summer	Depth/Area 1	Orifice	0.0	0.0
240 minute summer	Depth/Area 1	Orifice	0.0	0.0
240 minute summer	Depth/Area 1	Weir	0.0	0.0

Results for 2 year 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
480 minute summer	Depth/Area 1	272	99.361	0.191	0.1	0.0613	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
480 minute summer	Depth/Area 1	Orifice	0.1	0.4
480 minute summer	Depth/Area 1	Orifice	0.0	0.0
480 minute summer	Depth/Area 1	Orifice	0.0	0.0
480 minute summer	Depth/Area 1	Orifice	0.0	0.0
480 minute summer	Depth/Area 1	Weir	0.0	0.0

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute summer	Depth/Area 1	40	99.570	0.400	0.6	0.1279	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
60 minute summer	Depth/Area 1	Orifice	0.1	0.5
60 minute summer	Depth/Area 1	Orifice	0.1	0.2
60 minute summer	Depth/Area 1	Orifice	0.1	0.1
60 minute summer	Depth/Area 1	Orifice	0.0	0.0
60 minute summer	Depth/Area 1	Weir	0.0	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 (m ³)	Flood (m ³)	Status
60 minute summer	Depth/Area 1	39	99.873	0.703	1.2	0.2249	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
60 minute summer	Depth/Area 1	Orifice	0.1	0.6
60 minute summer	Depth/Area 1	Orifice	0.1	0.3
60 minute summer	Depth/Area 1	Orifice	0.1	0.2
60 minute summer	Depth/Area 1	Orifice	0.1	0.1
60 minute summer	Depth/Area 1	Weir	0.1	0.0

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	1	Connection Type	Level Soffits
Additional Flow (%)	0	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	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
Depth/Area 1	0.002	5.00	100.000	-6.344	59.306	0.830

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)	1440	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
100	45	0	0

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.170	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.008		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.330	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.008		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.470	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.009		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.630	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.009		

Node Depth/Area 1 Online Weir Control

Flap Valve	x	Invert Level (m)	99.870	Discharge Coefficient	0.590
Replaces Downstream Link	✓	Width (m)	0.320		

Node Depth/Area 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	99.170
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.80	Time to half empty (mins)	45

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.4	0.0	0.830	0.4	0.0	0.831	0.0	0.0

Results for 1 year 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
240 minute summer	Depth/Area 1	144	99.329	0.159	0.1	0.0509	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
240 minute summer	Depth/Area 1	Orifice	0.1	0.3
240 minute summer	Depth/Area 1	Orifice	0.0	0.0
240 minute summer	Depth/Area 1	Orifice	0.0	0.0
240 minute summer	Depth/Area 1	Orifice	0.0	0.0
240 minute summer	Depth/Area 1	Weir	0.0	0.0

Results for 2 year 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
480 minute summer	Depth/Area 1	272	99.361	0.191	0.1	0.0613	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
480 minute summer	Depth/Area 1	Orifice	0.1	0.4
480 minute summer	Depth/Area 1	Orifice	0.0	0.0
480 minute summer	Depth/Area 1	Orifice	0.0	0.0
480 minute summer	Depth/Area 1	Orifice	0.0	0.0
480 minute summer	Depth/Area 1	Weir	0.0	0.0

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute summer	Depth/Area 1	40	99.570	0.400	0.6	0.1279	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
60 minute summer	Depth/Area 1	Orifice	0.1	0.5
60 minute summer	Depth/Area 1	Orifice	0.1	0.2
60 minute summer	Depth/Area 1	Orifice	0.1	0.1
60 minute summer	Depth/Area 1	Orifice	0.0	0.0
60 minute summer	Depth/Area 1	Weir	0.0	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 (m ³)	Flood (m ³)	Status
60 minute summer	Depth/Area 1	39	99.873	0.703	1.2	0.2249	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
60 minute summer	Depth/Area 1	Orifice	0.1	0.6
60 minute summer	Depth/Area 1	Orifice	0.1	0.3
60 minute summer	Depth/Area 1	Orifice	0.1	0.2
60 minute summer	Depth/Area 1	Orifice	0.1	0.1
60 minute summer	Depth/Area 1	Weir	0.1	0.0



FLOOD RISK ASSESSMENT

17 The Warren, Burgess Hill, West Sussex, RH15 0DU

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Appendix I

GreenBlue Urban SuDSPod On-Plot Attenuation

Product literature and technical specification

SuDSPod™ On Plot Attenuation



GreenBlue
URBAN

Creating healthier urban spaces in harmony with nature



SuDSPod On Plot Attenuation

NEW FEATURE

New cladding style

SuDSPod now comes with vertical cladding, available in a range of stained and painted finishes.



Enhances biodiversity



Filters the water

NEW FEATURE

Water storage for reuse

SuDSPod's unique patented internal chamber is now capable of storing water for reuse.



All water attenuated in 98% of storms



Pressure on the network significantly reduced



Customisable flow control

NEW FEATURE

In built levelling system

SuDSPod's comes with an in built levelling system that allows for fast installation and adaptability to suit all sites.

Hydraulic Performance

Peak flow reduction examples	
Storm event	Peak flow reduction
1:30 year 15 min summer	76%
1:1 year 60 min summer	51%
1:1 year 240 min summer	31%
1:100 year + 40% CC 15 min winter	25%

Peak outflow performance	
Storm event	Outflow
All events up to 1:10 year storms	< 0.7l/s
89% of annual events**	< 0.3l/s
98% of annual events**	< 0.8l/s

**Based on 2018 London rainfall data

Peak flow delay	
Storm event	Outflow
1:1 year 180min winter	30 minutes
1:2 year 360min winter	50 minutes
1:1 year 360min winter	50 minutes

Testing at Hull University



Testing situation commenced at Hull University at the beginning of April 2024, providing reliable real life data to verify our modelled performance data. Early results indicate the SuDS Pod may perform even better than expected.

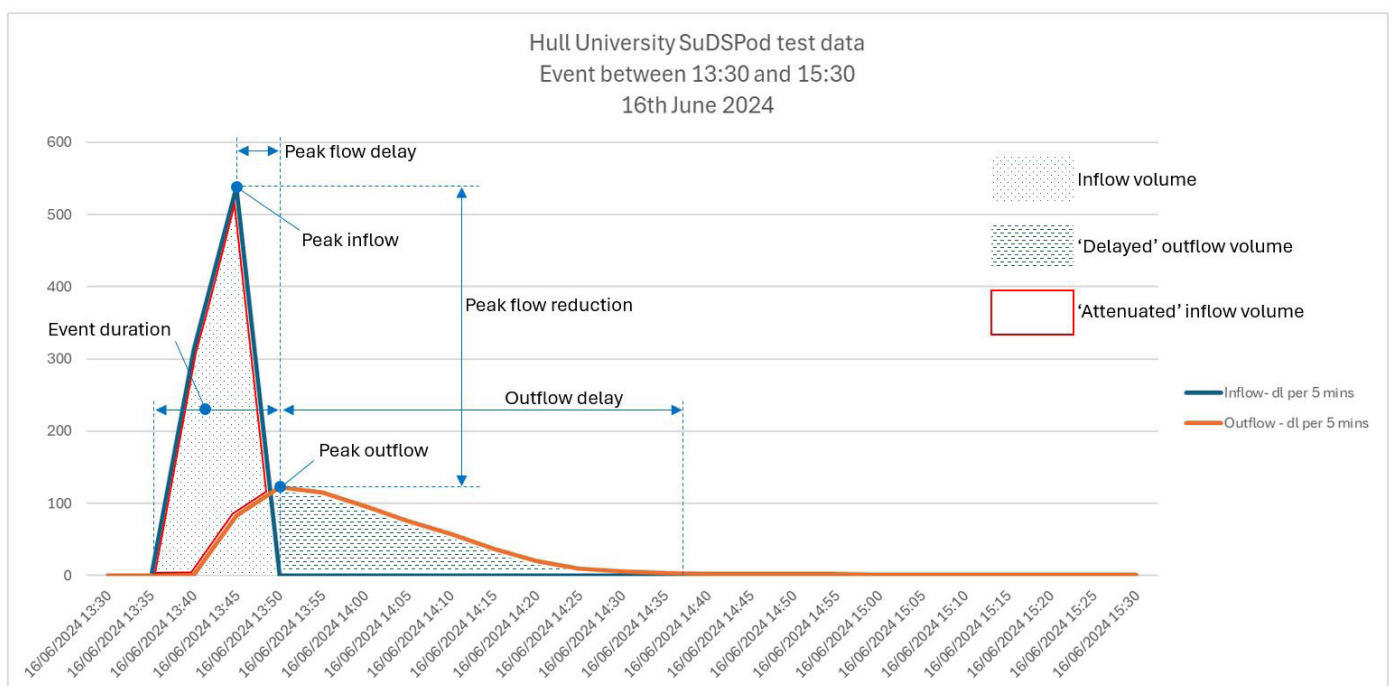
InfoDrainage Modelling



InfoDrainage

Model available on request.

A detailed InfoDrainage model of the SuDS Pod has been generated giving us the ability to model the performance for any catchment and for any rain event.



All based on InfoDrainage modelled data unless otherwise specified.

On Plot Attenuation

On-plot attenuation involves managing stormwater directly at its source, reducing the volume and speed of water entering drainage systems.

MicroSuDS, such as above-ground planters, play a key role by slowing down and filtering rainwater before it reaches sewers. These systems offer multiple benefits, including reducing the risk of flooding, lowering pressure on public drainage, and enhancing urban green spaces.

By integrating stormwater management into individual properties, microSuDS provide a sustainable, localised solution that supports wider environmental resilience and water quality improvement efforts

GreenBlue Urban has launched SuDSPod, an innovative and cost-effective solution for stormwater management. SuDSPod improves on-plot attenuation, reducing peak flow rates by up to 76% resulting in reduction of pressure on combined sewer overflow issues.

Its patented design offers exceptional performance, managing stormwater in 98% of rain events, and can be retrofitted to existing properties. SuDSPod adheres to Sustainable Drainage Systems (SuDS) principles, enhancing flood resilience, water quality, and urban sustainability. GreenBlue Urban invites developers and planners to explore SuDSPod's transformative potential for stormwater management and sustainable development.



Contribution towards reduction of CSO spills

Through intelligent on-plot attenuation



Potential sewer upgrade avoidance

Through highly effective peak flow attenuation

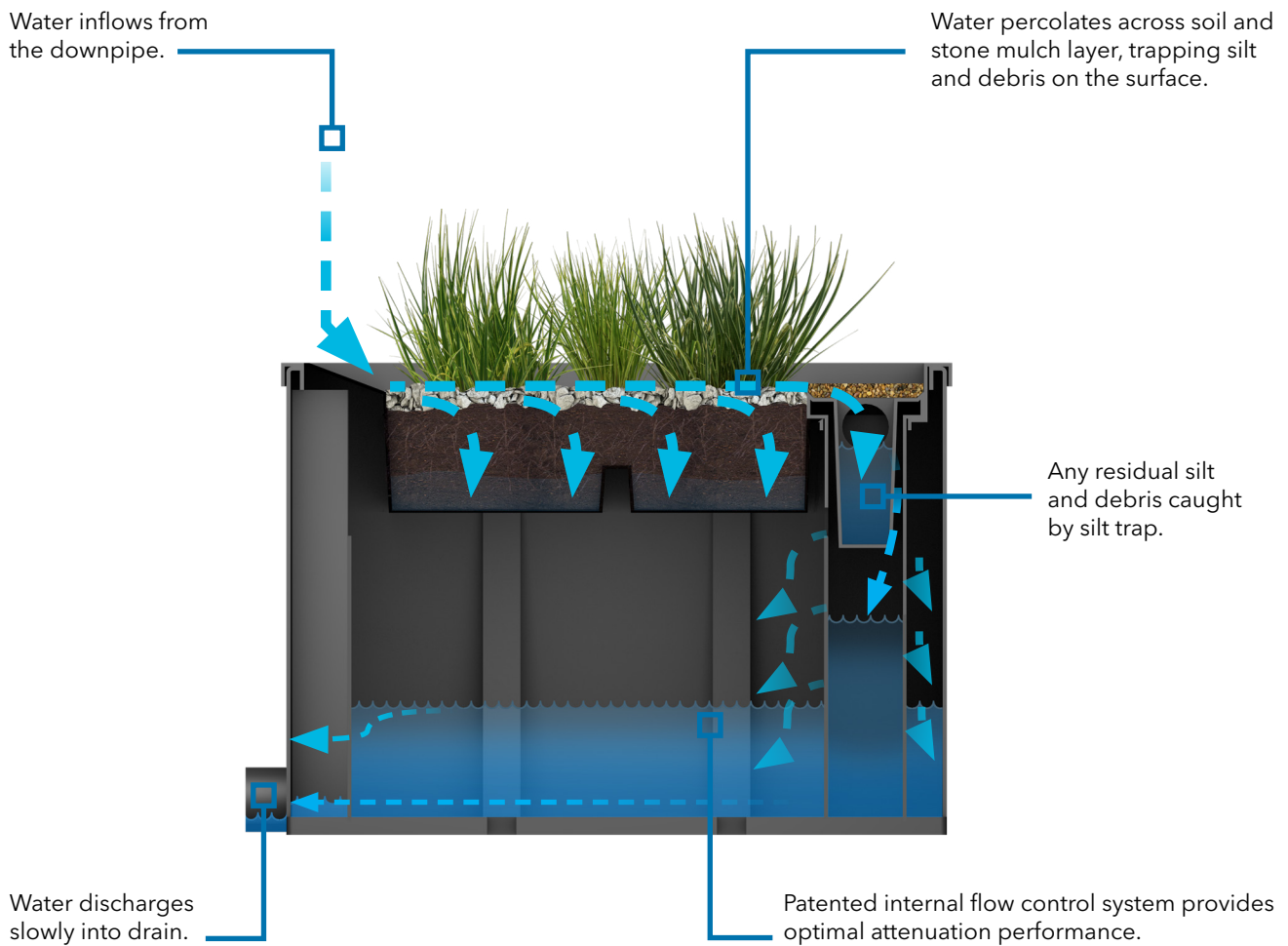


Maximise land values

Through reduction of downstream retention pond/tank size



How SuDSPod works



Why SuDSPod?

GreenBlue Urban's **cost effective**, cutting-edge solution addresses a myriad of challenges associated with stormwater management, ranging from peak flow rates from roofs, to complex microSuDS designs to combat **CSO overflows**.

SuDSPod offers a **versatile and innovative** on plot attenuation approach that benefits new developments, and can be seamlessly retrofitted to private, public housing and service buildings.

The **patented design** is the next generation of a traditional drain-down vessel, delivering industry leading attenuation performance.

With a focus on simplicity, effectiveness, and adaptability, SuDSPod delivers on **all four pillars of SuDS** as set in the CIRIA SuDS Manual Guidance and is poised to transform the landscape of drainage systems.

With its **NEW and IMPROVED** innovative design and **unmatched performance**, SuDSPod is set to transform the landscape of drainage systems and usher in a new era of sustainable urban development.



Enhances Biodiversity



Filters the water



Peak flow reduction up to 76%



Easy to install and maintain

Technical Specifications



Standard finish may vary.

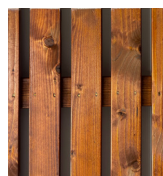
Included with SuDSPod

- Patented flow control mechanism
- Cladding kit
- Internal storage and hand pump
- Integral levelling feet
- Growing medium
- Stone mulch
- Debris filter block and silt trap

Available finishes



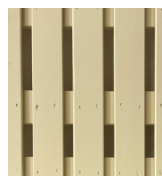
Standard



Rustic Oak
(stained)



Weathered Grey
(Paint)



Birch Wood
(Paint)



Green (Paint)

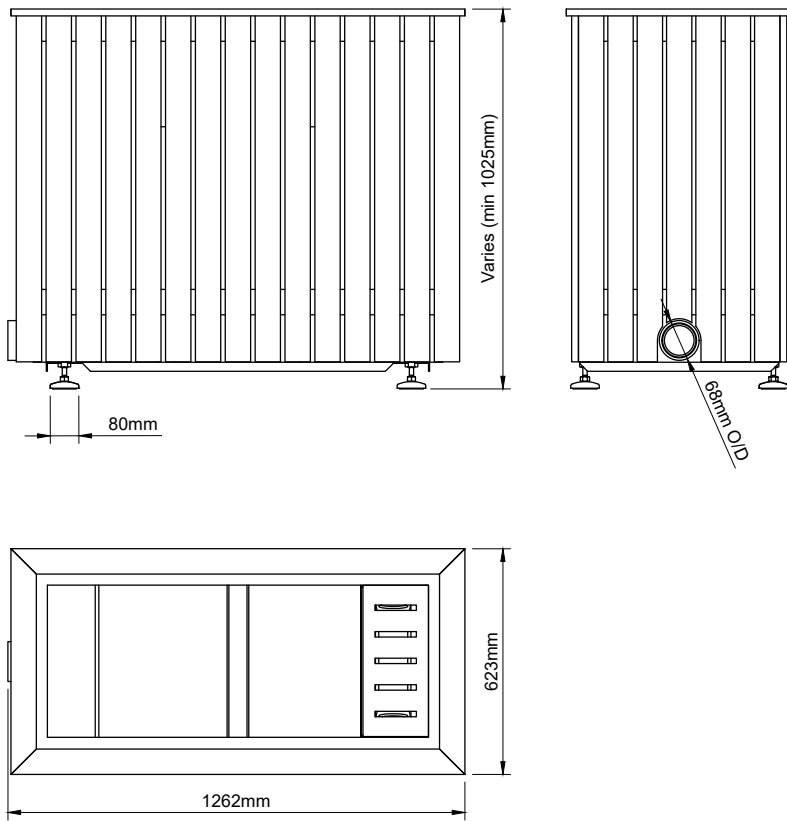


Black (Paint)

Product Code	Description	Cladding	Storage
SP12X5A	SuDSPod On-Plot Attenuation Raised Planter 1262x623x1025mm with vertical tanalised timber cladding, levelling frame, growing medium, slate mulch, silt trap and 68mm outlet. Plants not included.	Standard	No
SP12X5SA	SuDSPod On-Plot Attenuation Raised Planter 1262x623x1025mm with water storage and reuse capacity, vertical tanalised timber cladding, levelling frame, growing medium, slate mulch, silt trap and 68mm outlet. Plants not included.	Standard	Yes
SP12X5B	SuDSPod On-Plot Attenuation Raised Planter 1262x623x1025mm with colour-stained vertical timber cladding, levelling frame, growing medium, slate mulch, silt trap and 68mm outlet. Plants not included.	Coated	No
SP12X5SB	SuDSPod On-Plot Attenuation Raised Planter 1262x623x1025mm with water storage and reuse capacity, colour-stained vertical timber cladding, levelling frame, growing medium, slate mulch, silt trap and 68mm outlet. Plants not included.	Coated	Yes
SP12X5C	SuDSPod On-Plot Attenuation Raised Planter 1200x500x950mm with levelling frame, growing medium, slate mulch, silt trap and 68mm outlet. Plants and cladding not included.	None	No
SP12X5SC	SuDSPod On-Plot Attenuation Raised Planter 1200x500x950mm with levelling frame, growing medium, slate mulch, silt trap and 68mm outlet. Plants and cladding not included.	None	Yes

Dry weight:	191kg
Maximum weight when 100% full of water:	635kg
Total water capacity:	445ltrs
Stored water volume:	81ltrs

Dimensions



Planting schemes

South



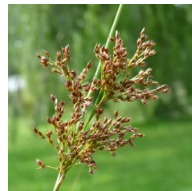
Carex Pendula
South, East or West



Iris pseudacorus
South or East



Caltha palustris
South, East or West

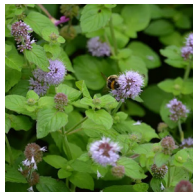


Juncus inflexus
South, East or West

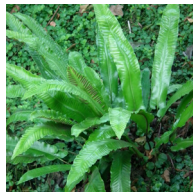
North



Astilbe chinensis
North, East or West



Mentha aquatica
North, South, East or West



Asplenium scolopendrium
North, East or West



Acorus gramineus Ogon
North, South, East or West

Plants supplied may vary subject to availability.

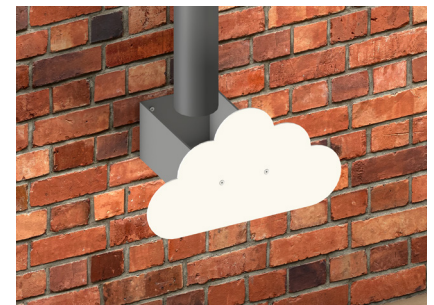
Accessories



Custom display board



SPDPFBA - Downpipe fitting kit



SPCLDA - Cloud downpipe feature



SPBNCHA - Timber seat unit

Product specification/design may vary.

How we can support you

Water Companies

Innovative products, like SuDSPod's, ease pressure and prevent combined sewer overflows. GreenBlue Urban's solutions also enhance community spaces, promote biodiversity, and offer cost-effective, long-term infrastructure improvements that align with environmental goals, making them valuable partners in creating resilient and sustainable water management systems.



Lead Local Flood Authorities

Lead Local Flood Authorities (LLFAs) play a significant role in managing flood risk at the local level in England. GreenBlue Urban can help with flood risk management activities in relation to SuDSPod, by supporting within borough impact assessments and planning policy guidance.



Developers

A design storm impact assessment for developers is a comprehensive process that evaluates the potential impacts of intense weather events, specifically design storms, on a development project. Design storms are hypothetical, yet realistic, rainfall events with specific characteristics used in engineering and planning to assess the resilience and effectiveness of infrastructure. GreenBlue Urban can work with Developers to help create these.

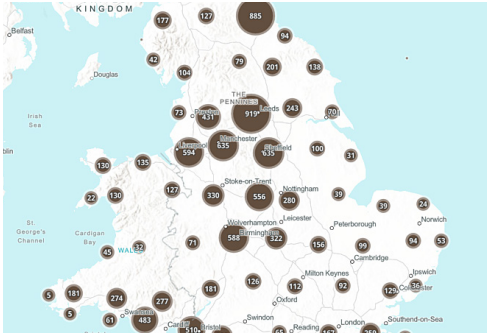


Drainage Engineers

InfoDrainage is a software application designed for stormwater and drainage modeling. It provides tools for hydraulic analysis and design of stormwater drainage systems. Below are general instructions for using InfoDrainage for drainage modeling. Keep in mind that the specific steps may vary depending on the version of the software and the project requirements. GreenBlue Urban can advise on specific modelling requirements.



Technical Guidance & Support

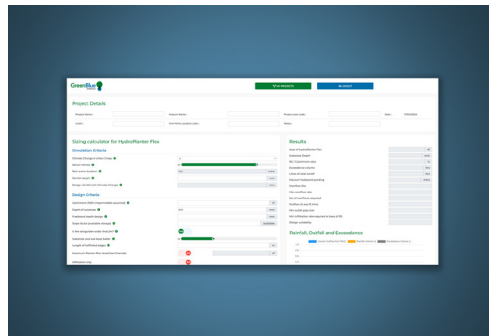


CSO Spill Hot Spot Catchment Cost-Benefit Analysis

Assess the economic feasibility and benefits of implementing measures to mitigate CSO spills in a specific catchment area.

PR Support Pack for Households

Develop a public relations support pack to inform and engage households in the catchment area about CSO mitigation efforts and encourage their participation.



On-site support & technical guidance

Our team are always available to speak to over the phone for technical guidance, as well as in-person with our free on-site support service.

Catchment modelling / consultation

GreenBlue Urban can support with specific modelling requirements and partners with industry leading experts to offer an advise and design service when integrating our products into your SuDS designs.

Case Studies

Anglian Water

Kibworth Mead Academy, faced recurring flooding issues, partnered with GreenBlue Urban and Leicestershire County Council to implement a two-phase flood mitigation project. The first phase involved installing SuDSPods to divert 50% of roof water away from public sewers, reducing flood risk and enhancing school infrastructure.

The project, successfully improved drainage and engaged students in green initiatives.



Hull University

Hull University installed a trial SuDSPod with monitoring equipment to measure inflow and outflow, with monthly data summaries provided. Monitoring will continue for two years, and all collected data will be made openly available on their data-sharing platform.



Severn Trent

As part of the renowned Mansfield sustainable flood resilience programme, Severn Trent collaborated with the Coal Authority for a SuDSPod trial at their head office. With installation complete, long-term monitoring by a PhD student from Sheffield University will evaluate performance alongside other interventions on-site.



Southern Water

With various SuDSPod installations taking place including locations in Chichester, Portsmouth and the Isle of Wight, Southern Water are trialling various interventions as part of their Pathfinder projects. A community-based solutions programme to reduce storm overflows by slowing surface water entering sewers and preventing groundwater infiltration.



United Utilities

The installation at Lingley Mere headquarters involved three SuDSPods to manage stormwater by capturing runoff from roof downpipes at the Northern Gatehouse building, easing pressure on combined sewer systems during storms.

This installation, along with future monitoring and additional SuDSPods on site, demonstrates the importance of reducing stormwater impact on infrastructure.



Wessex Water

Addressing storm overflow issues in Ubley, Somerset six SuDSPods were installed. By diverting rainwater from combined sewer systems to reduce overflows during heavy rainfall and protecting rivers.

Despite challenges, the project has been positively received. Highlighting collaboration is key for successful sustainable drainage projects. The success has laid a foundation for expanded use of SuDSPods across the region.





SuDSPod

On plot attenuation

T: +44 (0)1580 830 800
E: enquiries@greenblue.com
W: greenblue.com



FLOOD RISK ASSESSMENT

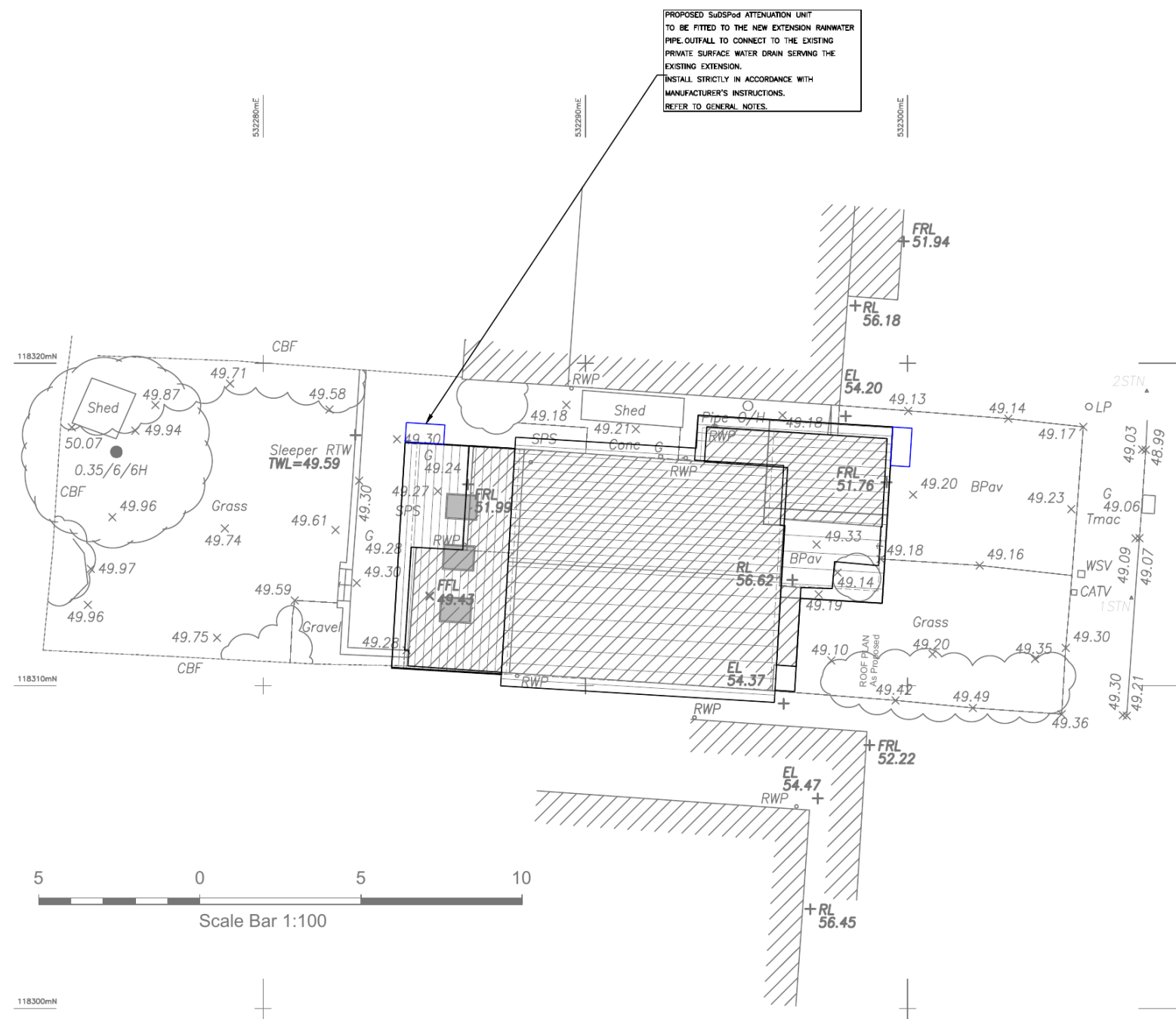
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Appendix J

Flood Risk Environmental Drawing 1061_1001

Drainage Strategy



GENERAL NOTES

1. This drawing is to be read in conjunction with Flood Risk Assessment ref FRE-WARREN-2026 and with all drawings and specifications prepared by Simon Harvey Designs Ltd (181_01 to 181_06).

2. Do not scale from this drawing. All levels and dimensions to be verified on site prior to commencement of works.

3. All levels are in metres and relate to Ordnance Survey Datum. Levels taken from topographical survey by Foresite Geomatics Ltd, drawing 26068_01, July 2026.

4. The site lies within Flood Zone 1. The site is at High risk of flooding from surface water (Environment Agency NaFRA2). The measures below are to be implemented in full.

LEVELS

5. Finished floor level of the proposed extensions to be set at 49.430 mAOD, to match the existing dwelling.

6. External ground levels are not to be raised. The existing overland flow route along the northern boundary is to be kept clear and unobstructed at all times.

7. The existing sleeper retaining wall to the rear garden (top of wall 49.590 mAOD) is to be retained.

SURFACE WATER DRAINAGE

8. Roof water from the front and rear extensions to be collected by new

rainwater pipes and passed through a SuDSPod attenuation unit at each location before discharge.

9. Each SuDSPod to be installed strictly in accordance with the manufacturer's instructions, including bedding, surround and cover level requirements.

10. Outfall from each SuDSPod to connect to the existing private surface water drain serving the existing extension. The existing drainage is to be located and its condition and capacity verified on site before connection. If no suitable connection is found, the contractor is to notify the engineer before proceeding.

11. No infiltration drainage is proposed. The underlying bedrock is Weald Clay Formation mudstone with no superficial deposits; infiltration is unlikely to be viable.

12. Existing linear channel drainage at the rear of the dwelling to be relocated to the new rear elevation and reconnected to the existing surface water system.

13. Hard surfaces displaced by the works to be reinstated as permeable paving or gravel over a free-draining sub-base.

14. All drainage works to comply with Building Regulations Approved Document H, BS EN 752 and BS EN 12056-3.

FLOOD RESISTANCE AND RESILIENCE

15. Flood resistance and resilience measures to be provided to 600 mm above finished floor level (50.030 mAOD).

16. Flood resistant doorsets to the front and rear entrances, tested to BS 851188-1:2018, minimum 600 mm head, openable from the inside without a key.

17. Below the resilience level: closed-cell insulation in lieu of mineral wool; cement-based or lime plaster, or demountable dry lining; solid or tiled floor finishes; water-resistant kitchen carcasses or a raised plinth detail.

18. Electrical sockets, consumer unit and boiler controls to be set a minimum of 450 mm above finished floor level.

19. All service penetrations below the resilience level to be fully sealed. Non-return valve to be fitted to the foul drainage connection.

20. Measures to be specified in accordance with CIRIA C790 and MHCLG 'Improving the flood performance of new buildings: flood resilient construction'.

MAINTENANCE

21. SuDSPod units, rainwater goods, channel drains and gullies to be inspected and cleared at least twice annually and following any significant storm event. Maintenance is the responsibility of the homeowner.

Key:

Site Boundary

SuDSPod to extension rwp — connect to existing private surface water drain in accordance with building regs part h.

Rev.	Description	Drawn	Date
------	-------------	-------	------

Flood Risk Environmental is a trading name of Charnwood Property Trading Ltd: Co 12219010.
Registered office: 1 Morgans Orchard, Barrow upon Soar, Leicestershire LE12 8HZ
floodrisksenvironmental.co.uk | floodrisksenvironmental@gmail.com | 07826705389

Project Title
17 The Warren, Burgess Hill RH15 0DU

Drawing Title
Drainage Strategy

Scale	Drawn By	Designer	Check	Engineer	Check
1:125	AR	AR			
	Date 01.08.26	Date 01.08.26	Date		
Job No.	Drawing No.			Revision	
1061	_1001			—	
Original Sheet Size A2					



FLOOD RISK ASSESSMENT

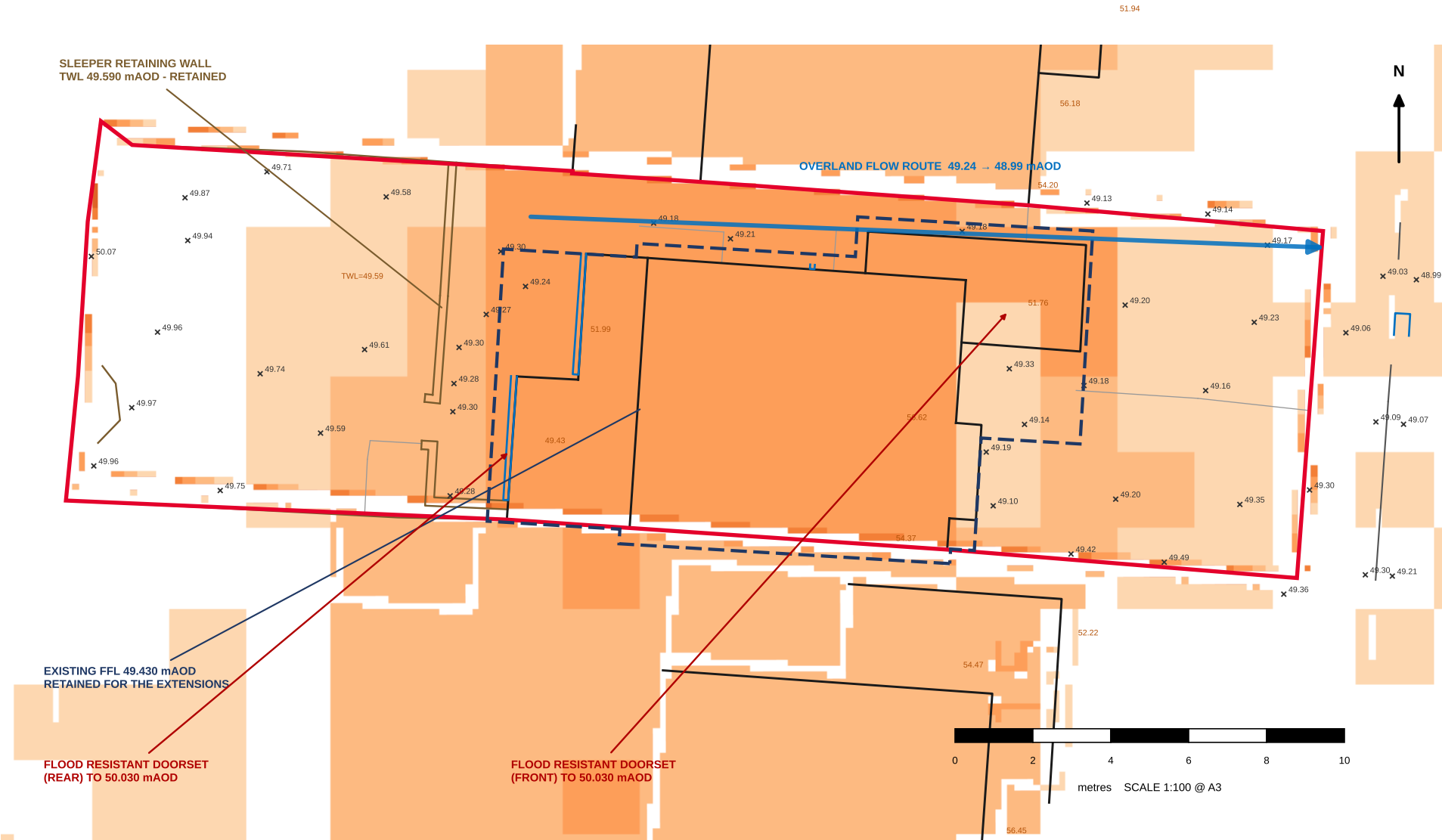
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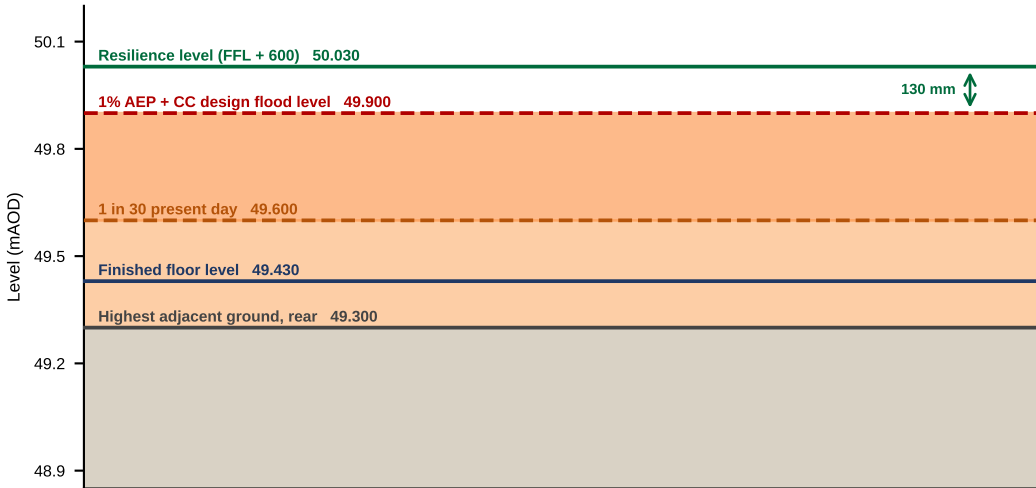
Appendix K

Flood Risk Environmental Drawing 1061_1002

Surface Water Flood Depths and Flood Resilience



LEVEL STACK - REAR (GOVERNING) ELEVATION



KEY

- Surface water depth 0 - 150 mm
- Surface water depth 150 - 300 mm
- Surface water depth 300 - 600 mm
- Surface water depth 600 - 900 mm
- Application site boundary
- Proposed roof plan (111.597 m²)
- Existing building (survey)
- Overland flow route / channel drain
- Flood resistant doorset

FLOOD RISK ENVIRONMENTAL

Flood Risk Environmental is a trading name of Charnwood Property Trading Ltd, Co. 12219010. Registered office: 1 Morgans Orchard, Nottingham Road, Barrow upon Soar, Leicestershire LE12 8HZ
floodriskenvironmental.co.uk | Floodriskenvironmental@gmail.com

PROJECT

17 The Warren, Burgess Hill, West Sussex RH15 0DU

DRAWING TITLE

Surface Water Flood Depths and
Flood Resilience

SCALE

1:100 @ A3

DRAWN BY

AR

CHECKED

AR

DATE

01.08.26

JOB NO.

1061

DRAWING NO.

1061_1002

REVISION

P01

NOTES

- Base information taken from the topographical survey by Foresite Geomatics Ltd, drawing 26068_01, July 2026. All levels are in metres and relate to Ordnance Survey Datum.
- Surface water flood depths are taken from the Environment Agency Risk of Flooding from Surface Water (NaFRA2) depth mapping for the 1 in 100 (1% AEP) event including the 2061-2125 climate change allowance.
- Depths within the application site in that event are 150-300 mm over 13% of the site and 300-600 mm over 44% of the site. Mapped depths in the present day 1 in 30 (3.3% AEP) event are 200-300 mm across the dwelling footprint. No cell within the site exceeds 600 mm in the present day 1 in 1000 event.
- The design flood level is taken as the highest adjacent ground level at the rear of the dwelling (49.300 mAO) plus the upper bound of the mapped 300-600 mm depth band, giving 49.900 mAO.
- The finished floor level of both extensions is set at 49.430 mAO to match the existing dwelling.
- Flood resistance and resilience measures are provided to the proposed extensions to 50.030 mAO, being 600 mm above finished floor level and 130 mm above the design flood level.
- External ground levels are not raised. The overland flow route along the northern boundary is retained clear and unobstructed and the sleeper retaining wall to the rear garden is retained.
- To be read with Flood Risk Assessment FRE-WARREN-2026 and drainage strategy drawing 1061_1001.