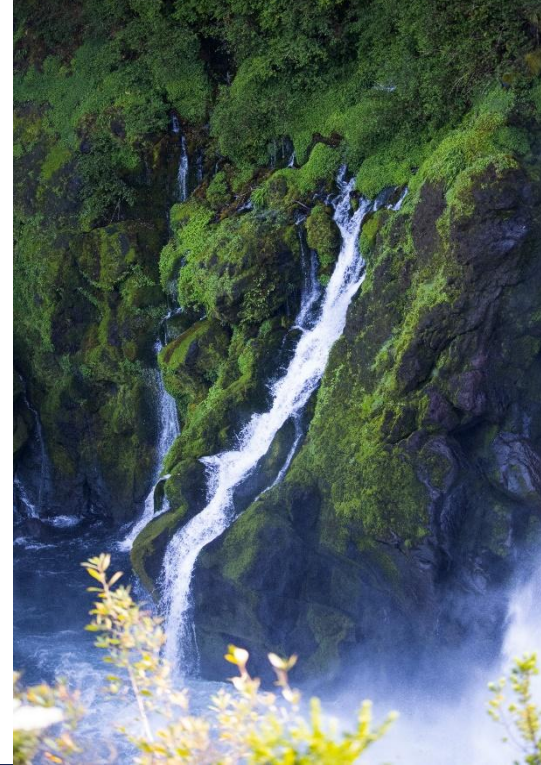




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Flood Risk Assessment AEG8187_RH15_BurgessHill_01

Site Address: 58 Potters Lane
Mid Sussex
West Sussex
RH15 9JS

UK Experts in Flood Modelling, Flood Risk
Assessments, and Surface Water Drainage Strategies

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water, civils and environment

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Prepared for: Julian Eley

Reference: AEG8187_RH15_BurgessHill_01

Site Location: 58 Potters Lane, Mid Sussex, West Sussex, RH15 9JS

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Summary

Development Description	Existing	Proposed
Development Type	A residential dwelling	The construction of a rear extension to the residential dwelling.
EA Vulnerability Classification	More Vulnerable	More Vulnerable
Ground Floor Level	Ground levels of the site vary between 33.0m AOD and 33.3m AOD based on EA LiDAR data.	No change - FFLs of the proposed extension are to be set no lower than existing FFLs.
Level of Sleeping Accommodation	First floor	No change
Surface Water Drainage	N/A ¹	To drain as per existing drainage arrangements. Small scale SuDS such as rainwater planters and water butts could be implemented in external areas to provide betterment over existing situation.
Site Size	c. 290m ²	No change
Development Size	N/A ¹	Proposed development less than 250m ² (minor development in terms of flood risk).
Risk to Development	Summary	Comment
EA Flood Zone	Flood Zone 1 (Fluvial and Tidal)	Mid Sussex District Council SFRA (2024) includes surface water into Flood Zone extents and therefore site is considered pluvial Flood Zone 3b (proposed development is outside all modelled pluvial scenarios and flood extents)
Flood Source	Pluvial	
SFRA Available	Level 1 Strategic Flood Risk Assessment (Mid Sussex District Council, 2024) and Strategic Flood Risk Assessment Level 1 (Mid Sussex District Council, 2015)	
Management Measures	Summary	Comment

Ground floor level above extreme flood levels	Yes	Proposed footprint outside all modelled fluvial and pluvial extents.
Safe Access/Egress Route	N/A ¹	Proposal is for an extension to an existing dwelling and thus access/egress arrangements would not differ from existing situation, post-development.
Flood Resilient Design	Precautionary mitigation has been recommended.	See details in Section 5.
Site Drainage Plan	N/A ¹	To drain as per existing drainage arrangements. Small scale SuDS such as rainwater planters and water butts could be implemented in external areas to provide betterment over existing situation.
Flood Warning and Evacuation Plan	N/A ¹	Recommended that occupier monitor Met Office Weather Warnings for extreme weather events.
Offsite Impacts		Summary
Displacement of floodwater	Negligible	Development is classified as a minor development in terms of flood risk and therefore in isolation should not result in an increase in flood risk elsewhere in accordance with Paragraph 051 of the NPPG. In addition, proposed extension in Flood Zone 1 and outside modelled pluvial flood extents.
Increase in surface run-off generation	Negligible	Proposal is a minor development and thus runoff should be discharged via existing system. Small scale SuDS such as rainwater planters and water butts could be implemented in external areas to provide betterment over existing situation.
Impact on hydraulic performance of channels	No	The nearest watercourse is c. 70m north of the site.

¹ not required for this assessment

² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Julian Eley to undertake a Flood Risk Assessment (FRA) to facilitate a planning application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.
- 1.2. This FRA is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

- 1.3. The site of the proposed development is 58 Potters Lane, Mid Sussex, West Sussex, RH15 9JS (Figure 1).



Figure 1: Site Location (Base map and data from Google Satellite Imagery ©)

- 1.4. It is understood that the client is submitting a planning application for the construction of a rear extension, to provide greater habitable space to the existing dwelling.

- 1.5. In the absence of a topographical survey, Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to review the topography of the site (Figure 2). The LiDAR data shows the ground elevation of the site varies between approximately 33.0m AOD (metres Above Ordnance Datum) and 33.3m AOD. Analysis of topographic levels indicates that the site generally slopes with a fall to the north-west.

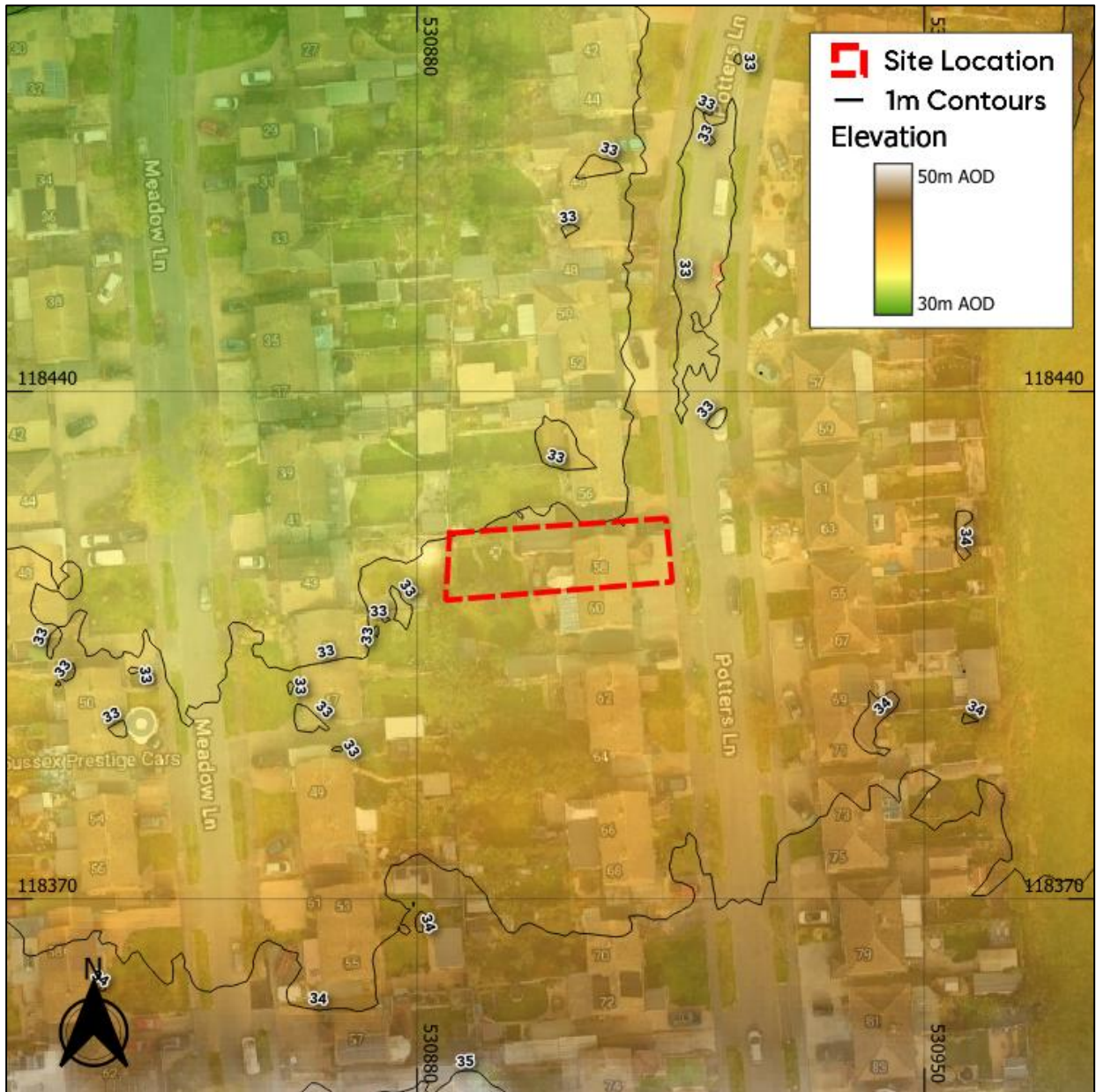


Figure 2: Site Topography (Base map and data from Google Satellite imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

- 1.6. Mid Sussex District Council is the Local Planning Authority (LPA) for the site and West Sussex County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Solent and South Downs region.

Planning Policy and Guidance

- 1.7. UK government planning guidance states¹ that an FRA is required for developments which are:

- *in flood zones 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

- 1.8. It has been identified in this FRA that the site is situated within Flood Zone 1; however, is within an area at 'high' risk of surface water flooding. The Mid Sussex District Council (MSDC) Drainage Team have outlined since the NaFRA2 outputs in January 2025:

The Planning Practice Guidance: Flood Risk and Coastal Change was updated in August 2022 and requires all sources of flood risk "to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability" (of development).

Due to the need to considered all sources of flooding consistently with river flooding, Mid Sussex District Council (in line with West Sussex Lead Local Flood Authority advice) now follow the below table when considering flood risk.

¹ <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment>

Annual exceedance	Flood Zone	Surface Water Flood Risk
Greater than 3.3% (>1:30-year)	3b	High
Between 1% and 3.3% (1:100-year and 1:30-year)	3a	Medium
Between 0.1% and 1% (1:1,000-year and 1:100-year)	2	Low
Less than 0.1% (<1:1,000-year)	1	Very Low

- 1.9. As such, with the site being situated within an area identified as at 'high' risk of surface water flooding, this would be considered equivalent to Flood Zone 3b and required an FRA, with subsequent mitigation measures.
- 1.10. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:
- Fluvial/tidal flood risk
 - Surface water flood risk
 - Risk of flooding from other sources

2. Planning Policy

- 2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional, and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

National Planning Policy Framework (NPPF)

- 2.2. The National Planning Policy Framework² (NPPF) (MHCLG, 2024) which includes UK Government policy on development and flood risk states:

170. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

176. Applications for some minor development and changes of use should also not be subject to the sequential test, nor the exception test [set out below], but should still meet the requirements for site-specific flood risk assessments set out in footnote 63.

181. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

- a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*

² <https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Dec 2024

- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*
- d) any residual risk can be safely managed; and*
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.*

2.3. Paragraph 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

Minor development means:

- minor non-residential extensions (industrial/commercial/leisure etc): extensions with a floorspace not in excess of 250 square metres.*
- alterations: development that does not increase the size of buildings, e.g. alterations to external appearance.*
- householder development: for example, sheds, garages, games rooms etc within the curtilage of the existing dwelling, **in addition to physical extensions to the existing dwelling itself.** This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling (e.g. subdivision of houses into flats) or any other development with a purpose not incidental to the enjoyment of the dwelling.*

2.4. As such, the proposal would be considered a Minor Development under the PPG.

2.5. Footnote 63 of the NPPF states:

A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

2.6. Flood Zones in England are defined as follows:

Table 1: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

- 2.7. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.
- 2.8. An assessment of hydrological impacts should be undertaken, including to surface water runoff and impacts to drainage networks in order to demonstrate how flood risk to others will be managed following development and taking climate change into account.

Local Plan

- 2.9. The Local Plan prepared by the Local Planning Authority, Mid Sussex District Council, sets out the policies for development in the local area.
- 2.10. Policy DP41 Flood Risk and Drainage outlines the requirements for new development within the area. It states:

Strategic Objectives: 1) To promote development that makes the best use of resources and increases the sustainability of communities within Mid Sussex, and its ability to adapt to climate change; and 2) To support sustainable communities which are safe, healthy and inclusive.

Evidence Base: Gatwick Sub Region Water Cycle Study; Strategic Flood Risk Assessment; Water. People. Places SuDS guidance.

Proposals for development will need to follow a sequential risk-based approach, ensure development is safe across its lifetime and not increase the risk of flooding elsewhere. The District Council's Strategic Flood Risk Assessment (SFRA) should be used to identify areas at present and future flood risk from a range of sources including fluvial (rivers and streams), surface water (pluvial), groundwater, infrastructure and reservoirs.

Particular attention will be paid to those areas of the District that have experienced flooding in the past and proposals for development should seek to reduce the risk of flooding by achieving a reduction from existing run-off rates.

Sequential and Exception Tests

- 2.11. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.
- 2.12. Under the NPPF, all new planning applications should undergo a Sequential Test in accordance with Paragraph 172 and Footnote 63. This test should be implemented by local planning authorities with a view to location; particularly vulnerable new developments outside of the floodplain.
- 2.13. However, Paragraph 176 of the NPPF states:

*176. Applications for some **minor development** and change of use should also not be subject to the sequential test, but should still meet the requirements for site-specific flood risk assessments set out in footnote 63.*

- 2.14. As such, a site-specific Sequential and Exception Test for the proposed minor development is not considered necessary in line with the NPPF.

Summary

- 2.15. This flood risk assessment has been prepared with due consideration to the above local and national policy.

3. Document Review

Documents and Online Mapping

- 3.1. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.
- 3.2. The following sources of information have been reviewed for this assessment:
- Flood Map for Planning on the Environment Agency website <https://flood-map-for-planning.service.gov.uk/>
 - Long Term Flood Risk Information on the Environment Agency website <https://www.gov.uk/check-long-term-flood-risk>
 - National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024)
 - Planning Practice Guidance - Flood Risk and Coastal Change (Ministry of Housing, Communities and Local Government, 2022)
 - Geoindex Onshore (British Geological Survey, 2024)
 - Mid Sussex District Plan 2014-2031³ (Mid Sussex District Council, 2018)
 - West Sussex Preliminary Flood Risk Assessment⁴ (West Sussex County Council, 2011) and Preliminary Flood Risk Assessment Addendum⁵ (West Sussex County Council, 2017)

³ <https://www.midsussex.gov.uk/media/3406/mid-sussex-district-plan.pdf>

⁴ https://www.westsussex.gov.uk/media/1626/west_sussex_pfra.pdf

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/698548/PFRA_West_Sussex_County_Council_2017.pdf

- Level 1 Strategic Flood Risk Assessment (Mid Sussex District Council, 2024)⁶ and Level 1 Strategic Flood Risk Assessment⁷ (Mid Sussex District Council, 2015)
- West Sussex Local Flood Risk Management Strategy (2013-2018)⁸ (West Sussex County Council, 2014)

Preliminary Flood Risk Assessment (PFRA)

- 3.3. The PFRA, published in 2011 and 2017, is a high-level appraisal of flood risk across Lead Local Flood Authority West Sussex County Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.
- 3.4. The PFRA summarises historical flood incidents in West Sussex County Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

- 3.5. The SFRA, published in 2015 and 2024, provides the evidence base for the Local Planning Authority Mid Sussex District Council Local Plan and guidance for consideration when determining planning applications. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.
- 3.6. The SFRA mapping provided by Mid Sussex District Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

- 3.7. The Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.

⁶ <https://www.midsussex.gov.uk/media/sl2jkh0z/env11-strategic-flood-risk-assessment-level-1-2024.pdf>

⁷ <https://www.midsussex.gov.uk/media/2609/strategic-flood-risk-assessment.pdf>

⁸ https://www.westsussex.gov.uk/media/1595/local_flood_risk_management_strategy.pdf

- 3.8. The West Sussex County Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

4. Sources of Flood Risk

Fluvial/Tidal

- 4.1. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.
- 4.2. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the river bank or river defences when tide levels are high.

Main Rivers and Ordinary Watercourses

- 4.3. The nearest watercourse is an ordinary watercourse which is situated c. 70m north of the site and is culverted at this location. This watercourse is identified as an EA Main River further downstream, c. 800m northwest of the site. This EA Main River is referred to as the 'Pook Bourne'.
- 4.4. There are no other mapped watercourses in the vicinity of the site according to OS mapping.

EA Flood Map for Planning

- 4.5. Figure 3 shows the site is situated within Flood Zone 1 (all land outside Flood Zones 2 and 3). Flood Zone 1 denotes land having less than 1 in 1,000 annual probability of river or sea flooding.

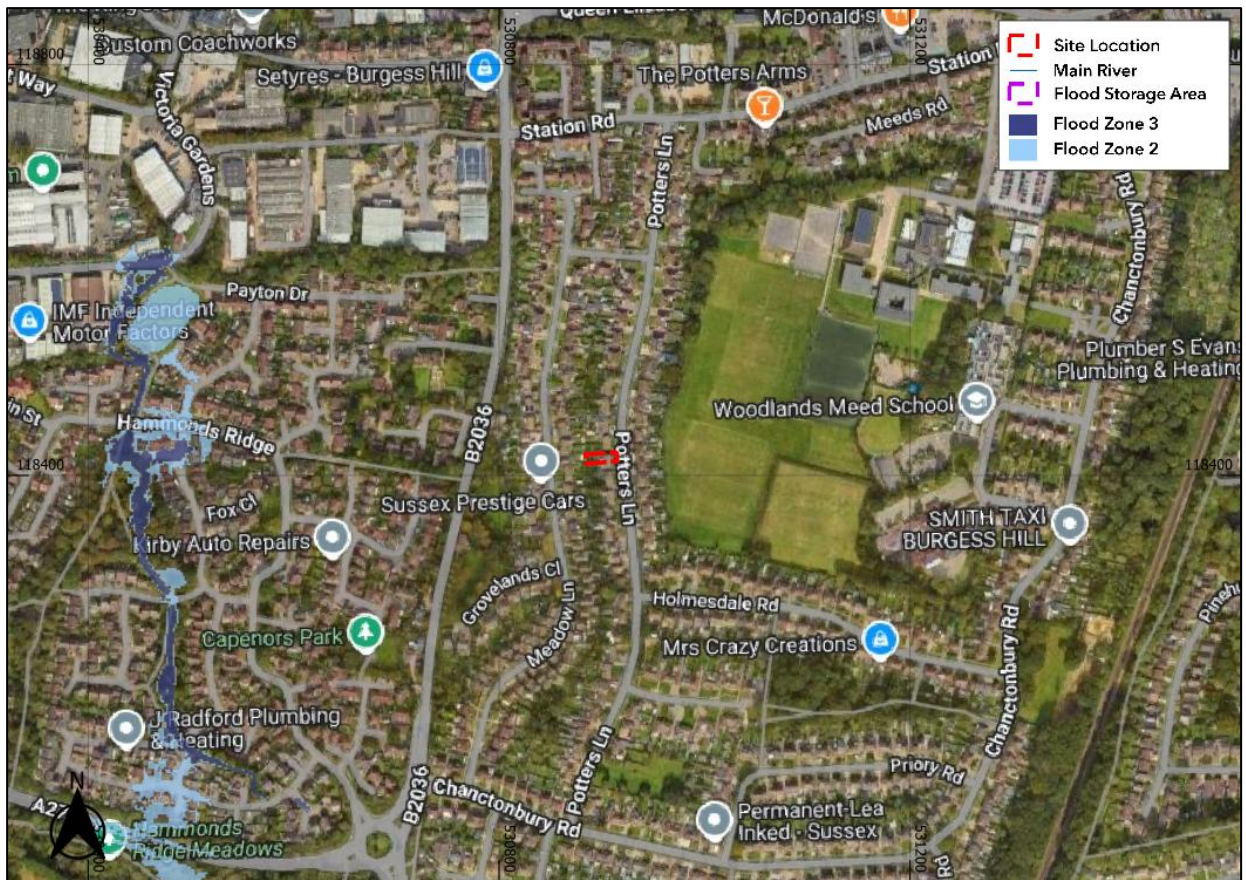


Figure 3: EA Flood Map for Planning (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

Historical Fluvial/Tidal Flooding

- 4.6. Review of the EA Historical Flood Outline dataset shows that fluvial or tidal flooding has not occurred on or in the vicinity of the site previously (Figure 4).

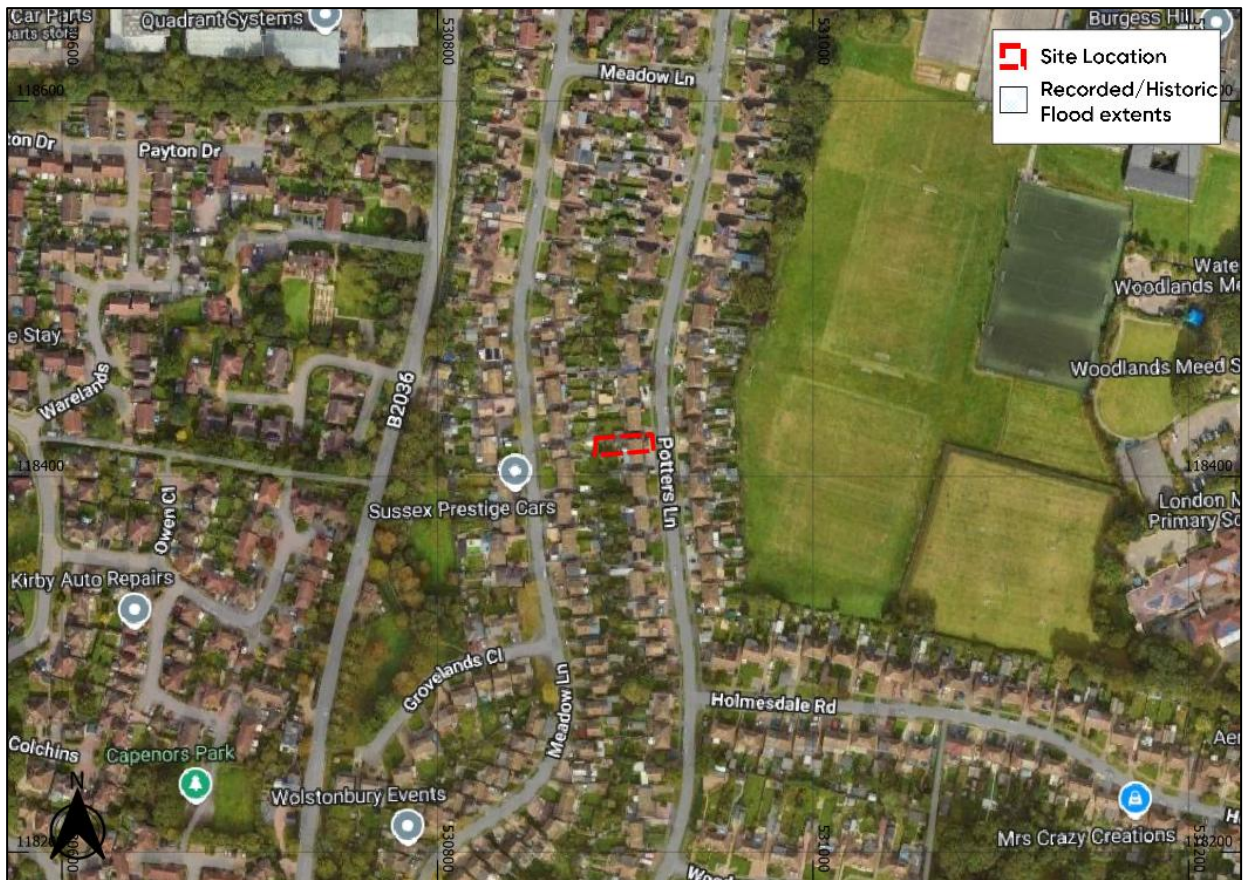


Figure 4: EA Historic Flood Mapping (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

Fluvial/Tidal Flood Risk Summary

- 4.7. Based on the analysis above, the fluvial and tidal flood risk to the site and proposed development is considered low.

Canals

- 4.8. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.

- 4.9. No CRT maintained canals were identified within 1km of the site according to the UK CRT Network mapping⁹
- 4.10. The risk of flooding to this site from canals is considered to be low.

Pluvial

- 4.11. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

RoFSW Data Analysis

- 4.12. The new National Flood Risk Assessment (NaFRA2), published in Jan 2025, has updated the Risk of Flooding from Surface Water (RoFSW) products which show the chance of flooding from surface water to areas of land.
- 4.13. The RoFSW products are an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. It includes information about flooding extents and depths including the potential impact of climate change on flood risk, based on the latest UK Climate Projections (UKCP18).
- 4.14. Risk is displayed as one of three likelihood categories:
- 'High Risk'; >3.3% AEP (annual probability greater than 1 in 30).
 - 'Medium Risk'; 1.1% to 3.3% AEP (annual probability between 1 in 100 and 1 in 30).
 - 'Low Risk'; 0.1% to 1% AEP (annual probability between 1 in 1000 and 1 in 100).
- 4.15. The new RoFSW depth mapping shows the annual chance of flooding (based on the three risk categories listed above) beyond a specific depth, for depths at the following intervals from 20cm to 120cm (i.e. 0.2m, 0.3m, 0.6m, 0.9m, and 1.20m).
- 4.16. As well as present day risk of flooding from surface water, climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk. The climate

⁹ <https://canalrivertrust.org.uk/canals-and-rivers>

change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 “2050s” epoch) and central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

RoFSW Present Day Scenario

- 4.17. The EA Online ‘Flood Risk from Surface Water’ map (published in January 2025) indicates that c. 60% of the site is not at risk of surface water flooding (Figure 5). The areas that are not at risk are located to the rear garden and west of the site. The remaining 40% of the site is at ‘low’ to ‘high’ risk situated at the north and east of the site.
- 4.18. It is important to note that the proposed development is not at risk of surface water flooding – however, does border an area of ‘medium’ risk of flooding.



Figure 5: EA Present Day Surface Water Flood Risk Mapping (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.19. The proposed rear extension is not at risk of flooding to any depth in the present day scenario.

4.20. Analysis of 0.2m depth interval shows that part of the site is at 'low' to 'high' risk of experiencing surface water flood depths greater than 0.2m (Figure 6). These areas are confined to the north and east areas of the site with the existing dwelling being partially affected.



Figure 6: RoFSW Present Day Likelihood of Flood Depths Exceeding 0.2m (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

4.21. Analysis of the 0.3m depth interval shows that part of the site is at 'low' and 'medium' risk of flooding with a single pixel at the north boundary at 'high' risk (Figure 7). This does not impact the proposed extension.



Figure 7: RoFSW Present Day Likelihood of Flood Depths Exceeding 0.3m (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.22. Review of the other surface water flood depth intervals during the present day scenario shows that the site is not at risk of flood depths exceeding 0.6m.

RoFSW Climate Change Scenario

- 4.23. The EA Online 'Flood Risk from Surface Water – Climate Change' map (published in January 2025) indicates that c. 60% of the site (areas to the east) are not at risk of surface water flooding inclusive of the proposed development (Figure 8). The remaining 40% of the site is at 'high' risk of experiencing surface water flooding with a small area to the east at 'medium' risk.
- 4.24. It is important to note that the proposed development is not at risk of surface water flooding – however, does border an area of 'high' risk of flooding.



Figure 8: EA Climate Change Surface Water Flood Risk Mapping (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.25. The proposed rear extension is not at risk of experience flooding to any depths in the climate change scenario.
- 4.26. Analysis of 0.2m depth interval shows that part of the site is at 'low' to 'high' risk of experiencing surface water flood depths greater than 0.2m (Figure 9). These areas are confined to the north and east areas of the site with the existing dwelling being partially affected.



Figure 9: RoFSW Climate Change Likelihood of Flood Depths Exceeding 0.2m (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.27. Analysis of the 0.3m depth interval shows that part of the site is at 'low' and 'medium' risk of flooding with a single pixel at the north boundary at 'high' risk. This does not impact the proposed extension.



Figure 10: RoFSW Climate Change Likelihood of Flood Depths Exceeding 0.3m (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

- 4.28. Review of the other surface water flood depth intervals during the climate change scenario shows that the site is not at risk of flood depths exceeding 0.6m.

Pluvial Flood Risk Summary

- 4.29. Given the proposed extension is not at risk of surface water flooding, therefore the pluvial flood risk to the development is considered low. However, it has been highlighted that the proposed development borders areas at 'medium' risk of flood depths exceeding 0.3m – therefore, mitigation measures are recommended in Section 5 as a precautionary approach.

Reservoirs

- 4.30. Large waterbodies or reservoirs that have walls built above the surrounding ground level pose a risk of flooding. Walls could fail due to old age, accident, or because excess flood water has been added to the reservoir. Although a breach is unlikely the consequences would be significant, leading to rapid inundation of the downstream floodplain.

4.31. According to the EA's Flood Risk from Reservoirs mapping the site is outside modelled flood extents in the event of reservoir flooding (Figure 11).

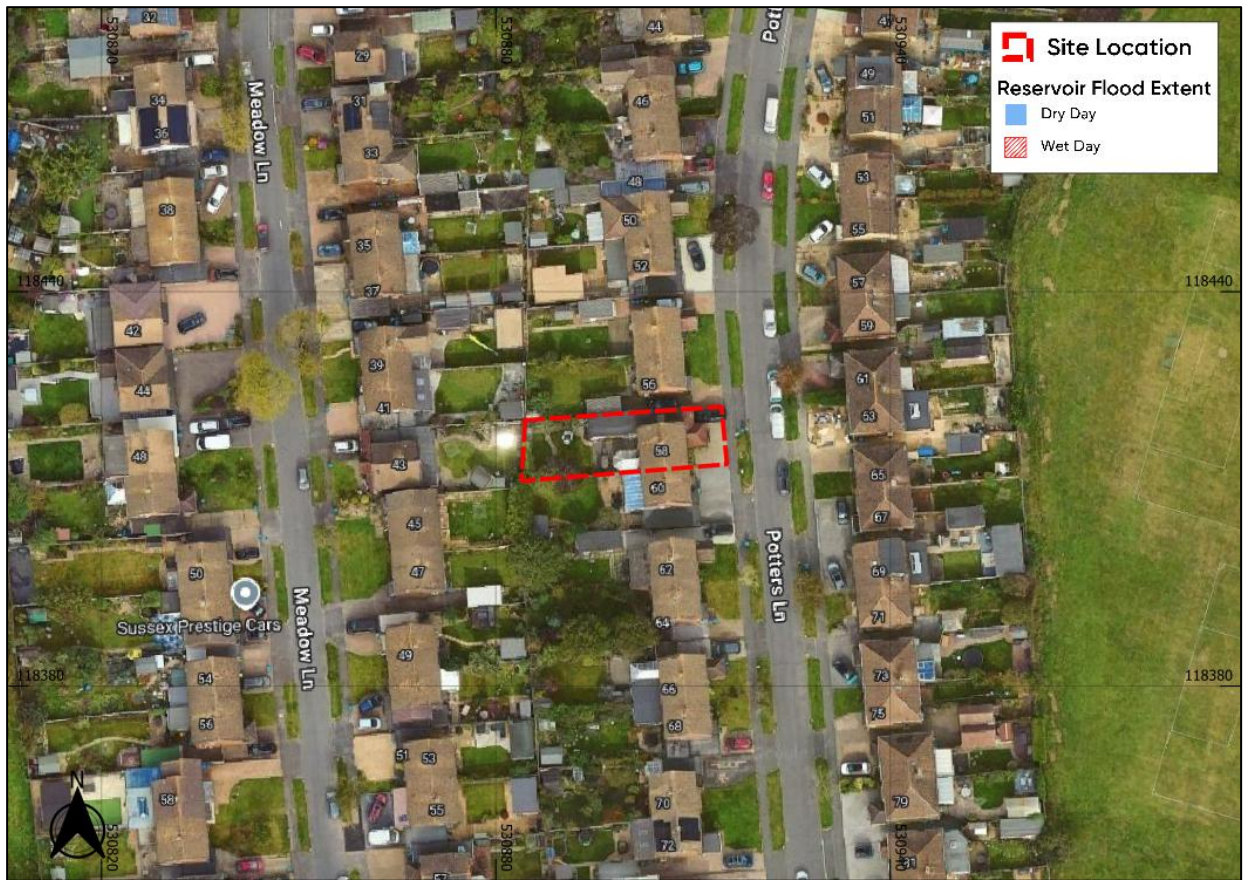


Figure 11: EA Reservoir Flood Risk Mapping (Base map and data from Google Satellite Imagery ©. Contains public sector information licensed under the Open Government Licence v3.0)

4.32. Therefore, the site and proposed development is considered low risk from reservoir flooding.

Groundwater

4.33. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.

- 4.34. The British Geological Survey's (BGS) mapping shows no superficial deposits underlying the site. The bedrock geology underlying the site is Weald Clay Formation comprised of mudstone. Review of Magic Map¹⁰ shows that there are no aquifers beneath the site.
- 4.35. There are no publicly available boreholes within a 300m radius of the site according to BGS mapping.
- 4.36. The Mid Sussex District Council SFRA (2015) details the following on groundwater flooding.

- *Area affected by groundwater flooding: 0.164km², 0.049% of Total Area.*
- *The majority of the district is considered to have medium potential for groundwater flooding.*
- *The West Sussex Strategic Flood Risk Assessment (2010), produced by Capita Symonds on behalf of West Sussex County Council, identified a single groundwater flooding event at Cuckfield.*

- 4.37. Furthermore, the updated SFRA (2024) states:

It is evident that majority of Mid Sussex is considered to have a low potential for groundwater flooding as a result of the underlying geology.

- 4.38. Considering the information above from the 2015 and 2024 SFRAs, coupled with the fact that the development proposals do not include any proposed basements, the risk from groundwater flooding to the development is considered to be low.

Sewers

- 4.39. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.
- 4.40. It is noted that limited information was provided in the 2024 SFRA and therefore information from the predated 2015 SFRA has been used.

¹⁰ <https://magic.defra.gov.uk/MagicMap.html>

4.41. The SFRA (2015) includes mapping of internal and external sewer incidents provided by Southern Water DG5 database. The site is not located within areas identified as being impacted by historical internal or external sewer incidents (Figure 12).

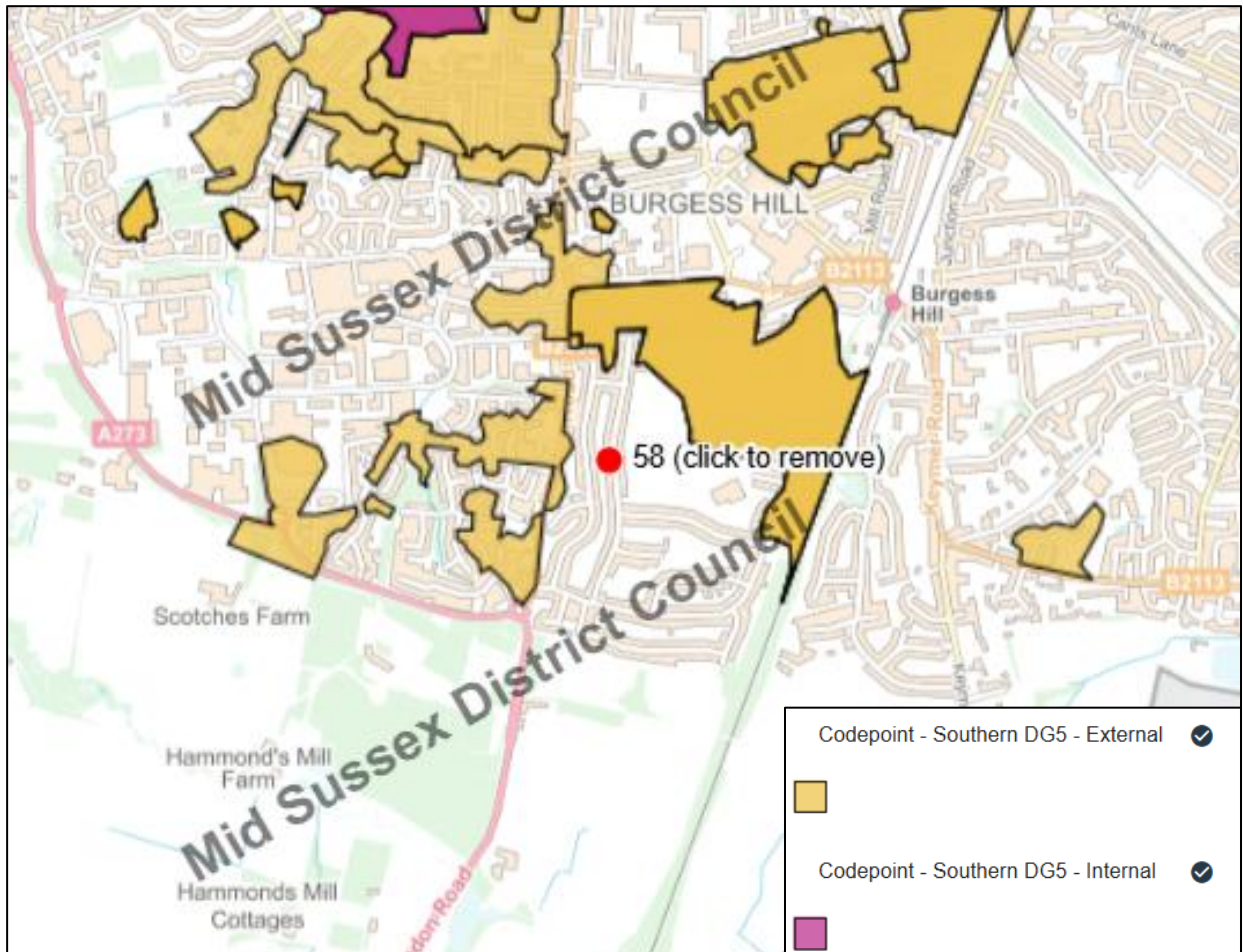


Figure 12: Southern Water Internal and External Flooding Incidents (Mid Sussex District Council SFRA, 2015). Site represented by red circle labelled '58 (click to remove)'

4.42. Therefore, the site is considered to be at a low risk from sewer flooding.

4.43. In addition, small scale SuDS such as rainwater planters and water butts are recommended to provide a betterment in terms of surface water runoff compared to the existing situation.

5. Flood Risk Mitigation

Sources of Flooding

- 5.1. Based on the data reviewed above and analysis in Section 4 of this report, flood risk to the proposed development from fluvial, tidal, canal, pluvial, reservoir, groundwater and sewer flood sources are considered to be low.
- 5.2. However, as the site (but not the proposed extension) is within the pluvial Flood Zone 3b extent (based on the SFRA) and the proposed extension borders areas at 'medium' risk of surface water flood depths greater than 0.2m during the modelled climate change scenario, a precautionary approach should be taken to reduce the flood risk to the site.
- 5.3. Therefore, it is recommended that the extension incorporates flood resistance and resilience measures in accordance with *Improving the Flood Performance of New Buildings – Flood Resilient Construction*¹¹. The following measures are recommended, but are not limited to, to be incorporated into the design where possible:

- *Air brick covers to be installed.*
- *Engineering bricks to be used to at least 300mm to act as a freeboard; this will increase resistance to water penetration.*
- *External renders are effective barriers to water penetration and should be used with blocks (or bricks) to at least 300mm for a freeboard. External cement renders with lime content (in addition to cement) can induce faster surface drying.*
- *All new plumbing insulation to be a closed cell design.*
- *Cavity insulation should preferably incorporate rigid closed cell materials as these retain integrity and have low moisture take-up.*
- *Non-return valves should be installed on the new drainage systems throughout the new development. It is also recommended that these valves*

¹¹ https://assets.publishing.service.gov.uk/media/5a797ab2ed915d07d35b5da4/flood_performance.pdf

are retrofitted on to any reused existing sewer connections to prevent backflow of diluted sewage. Maintenance of these valves is important to ensure their continued effectiveness so should be maintained in line with manufactures recommendations.

- *Electrical sockets and components should be raised 300mm above ground level.*

- 5.4. Small scale SuDS such as rainwater planters and water butts should be incorporated into the rear garden and front areas of the residential dwelling to provide betterment over the existing scenario.
- 5.5. Residents of the residential dwelling should also monitor Met Office Weather Warnings to be prepared for extreme weather events.
- 5.6. The Met Office issues weather warnings up to 5 days in advance, through the National Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. It is also possible to stay up to date with weather warnings through the Met Office app (available on Apple and Android devices), social media e.g. X (formerly Twitter) and Facebook or email alerts.
- 5.7. Flood warnings/alerts can be enforced at any time of the day or night. Signing up for this service provides residents some notice before a flood event. The amount of time afforded before a flood occurs depends on the site-specific location (e.g. proximity to the source of flooding, topography of the surrounding area) and the flood mechanism (e.g. bank over topping versus a breach event). Flood alerts and warnings provide residents with time to take necessary action, e.g. communication of the risk of flooding to others, evacuation of residents offsite or to a safe level and the removal of valuable items out of reach of flooding.
- 5.8. It is also noted that access and egress will remain as per existing. In the unlikely event that it is needed, safe refuge can be sought at first floor level within the existing residential dwelling.

Increase to Flood Risk Elsewhere

- 5.9. The proposal constitutes a Minor Development under the NPPF and Paragraph 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

Minor developments are unlikely to raise significant flood issues unless:

- *they would have an adverse effect on a watercourse, floodplain or its flood defences;*
- *they would impede access to flood defence and management facilities, or;*
- *where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.*

5.10. As such, and given that the proposed extension is in Flood Zone 1 and outside the modelled pluvial flood events, the proposed development in isolation should have a negligible impact on flood risk elsewhere.

6. Conclusions

- 6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at 58 Potters Lane, Mid Sussex, West Sussex, RH15 9JS. It has been written to support a planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.
- 6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

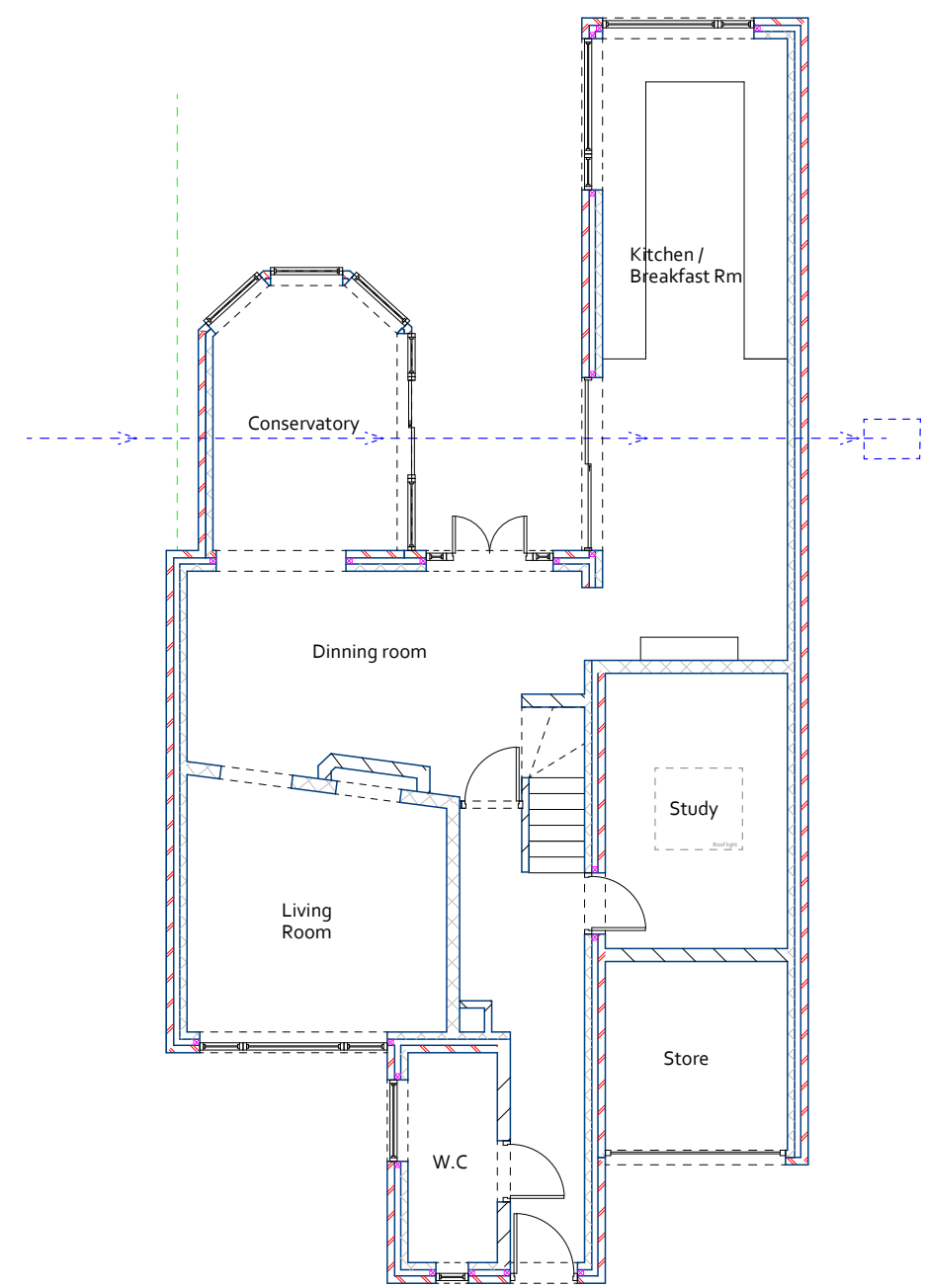
Source of Flooding	Flood Risk Summary
Fluvial Pluvial Tidal Reservoirs Groundwater Sewers Canals	The proposed development is considered to be at low risk from these analysed sources of flooding. However, flood resilience and resistance mitigation measures have been recommended to be incorporated into the rear extension.

- 6.3. The FRA supports the planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are implemented in the scheme. The development does not increase flood risk off site or to the wider area.
- 6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A - Development Proposals

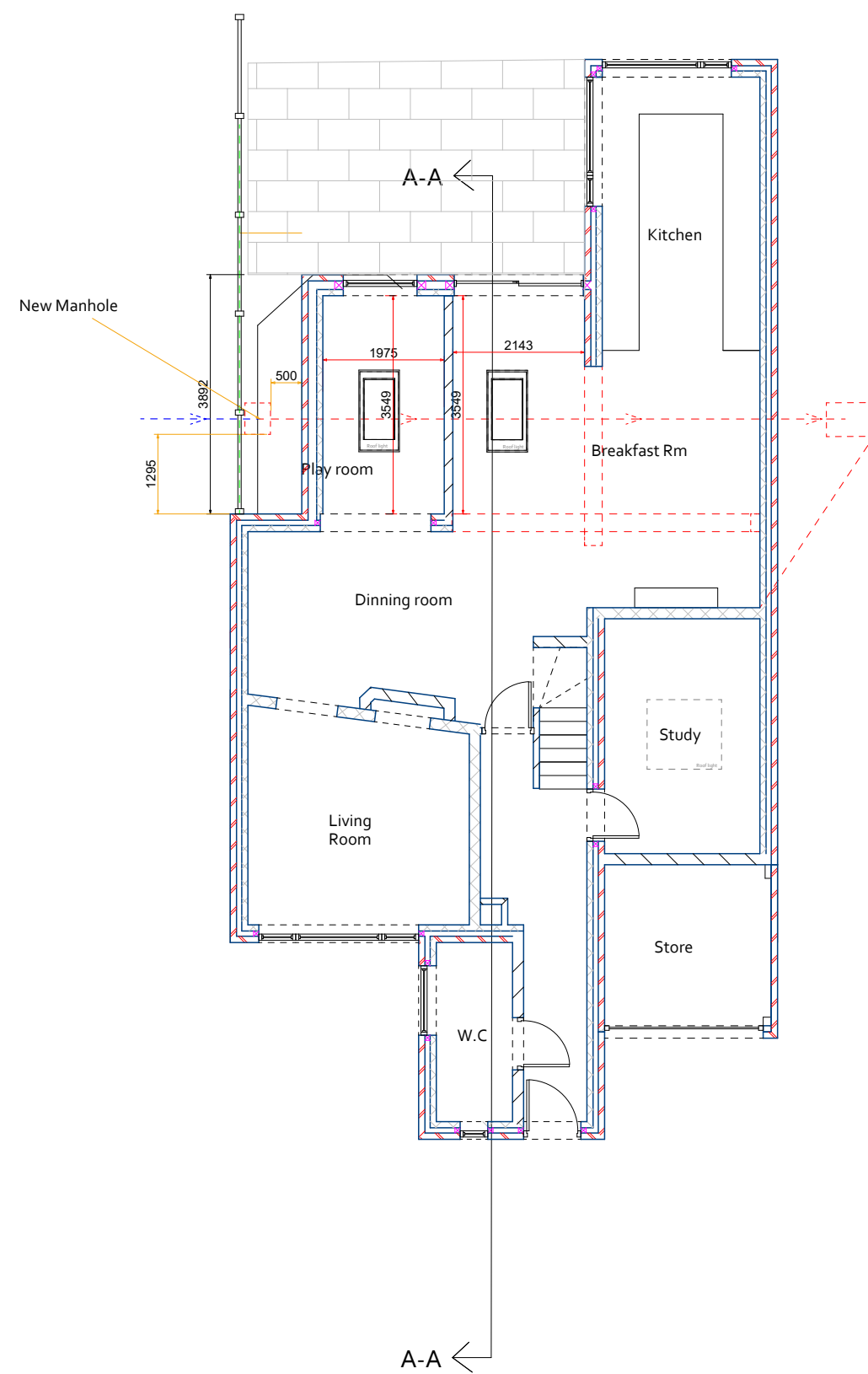
Existing Layout

Scale 1 : 100



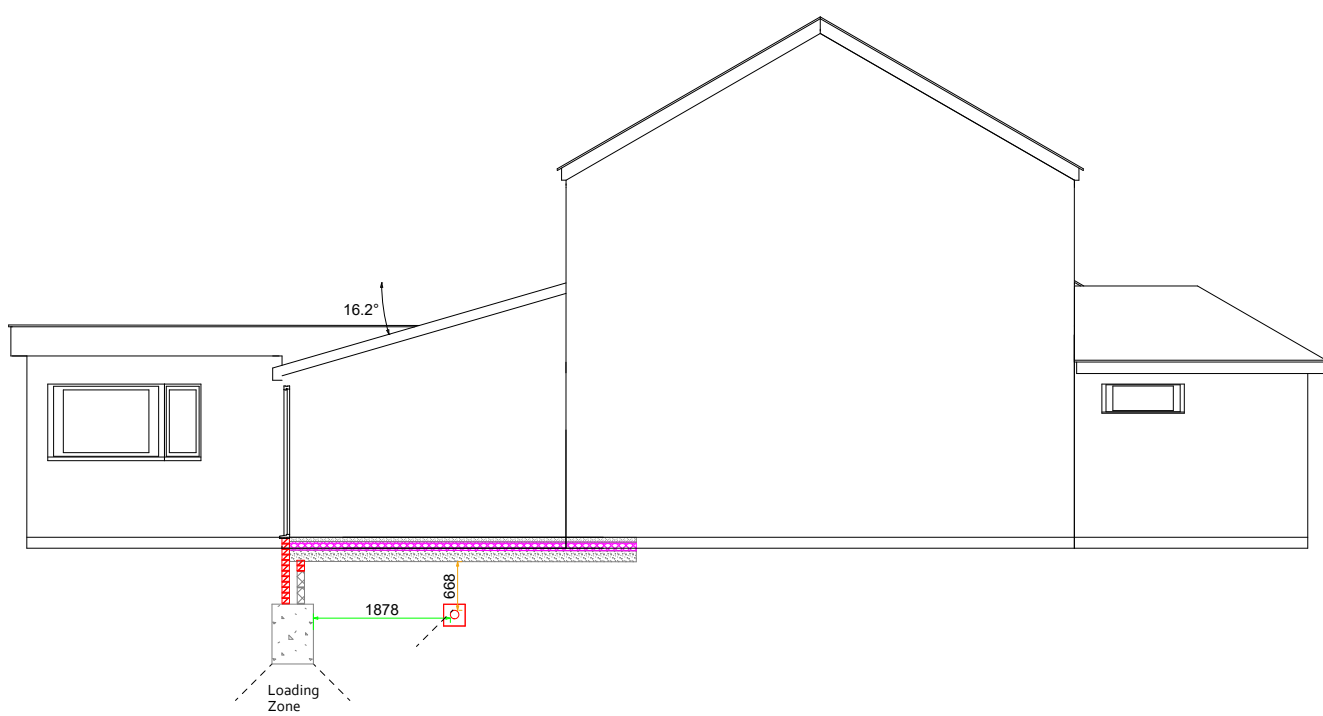
Proposed Layout

Scale 1 : 100



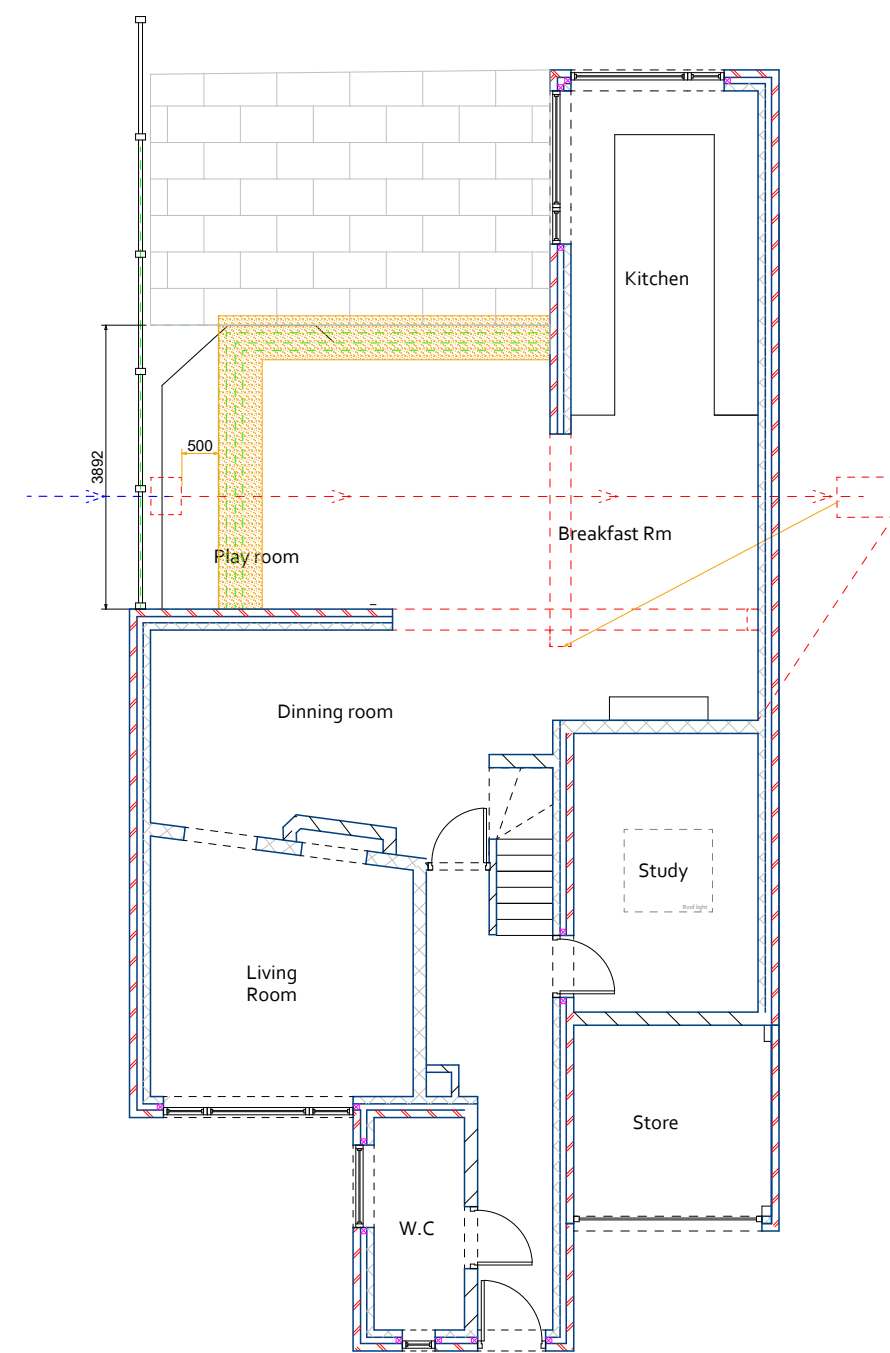
SECTION A - A
1 : 100

Cross sectional Detail



Foundation Layout

Scale 1 : 100



Drainage Disclaimer

The plans show a scheme that works with the build over agreement , as per the cc tv survey
The position of pipes have been electronically traced by a third party and their route and location are believed to be correct .
Jones Projects Architectural accepts no responsibility in the event of inaccuracy .

Before mechanical plant is used the actual position and route of drainage system should be verified on site by the main contractor - prior to any works starting

Key

- Old Drainage Run
- New Drainage Run
- Surface drainage
- Boundary between properties
- * Sewer Pipe size - 150mm
- * Main Sewer Depth - 1000 mm

Location plan

Scale 1 : 1250



58 Potters Lane, Burgess Hill, RH15 9JS



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