

**PROPOSED EXTENSIONS TO AND
TRANSFORMATION OF 19 GANDER HILL,
HAYWARDS HEATH, WEST SUSEX, RH16
1QU.**

FLOOD RISK ASSESSMENT

J-3803-Rev.01



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FLOOD RISK ASSESSMENT

Report No.	Issue Detail	Originator	Date	Checked by	Date
J-3803	01	LT	20/02/2025	AW	19/02/25

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Job No: J-3403
Date: February 2025
Edition: 01

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1.0 INTRODUCTION

Mr S. Mogg is proposing to extend and transform the existing dwelling at 19 Gander Hill, Haywards Heath, West Sussex, RH16 1QU.

The site has been shown to be located in Flood Zone 1 according to Flood Maps for Planning Published by GOV.UK and the Environment Agency's Interactive Flood Map. West Sussex Council have highlighted that the site may be susceptible to surface water flooding. Therefore, the proposal would need to be accompanied by a Flood Risk Assessment (FRA).

Mr S. Mogg has commissioned Engineering and Development Solutions Ltd. (EDS) to undertake a Flood Risk Assessment for the development. This report presents the findings of the FRA. It is prepared in line with the National Planning Policy (NPPF), the Planning Practice Guidance and as such may be used to support the planning application. The primary aim of the FRA will be to investigate any sources of flooding which may affect the property and proposed suitable mitigation measures to manage any associated risks.

The site is located in the town of Haywards Heath in West Sussex, as seen in **Figure 1** and **Figure 2** below.



Figure 1 - Site Location and Wider Geographic Area

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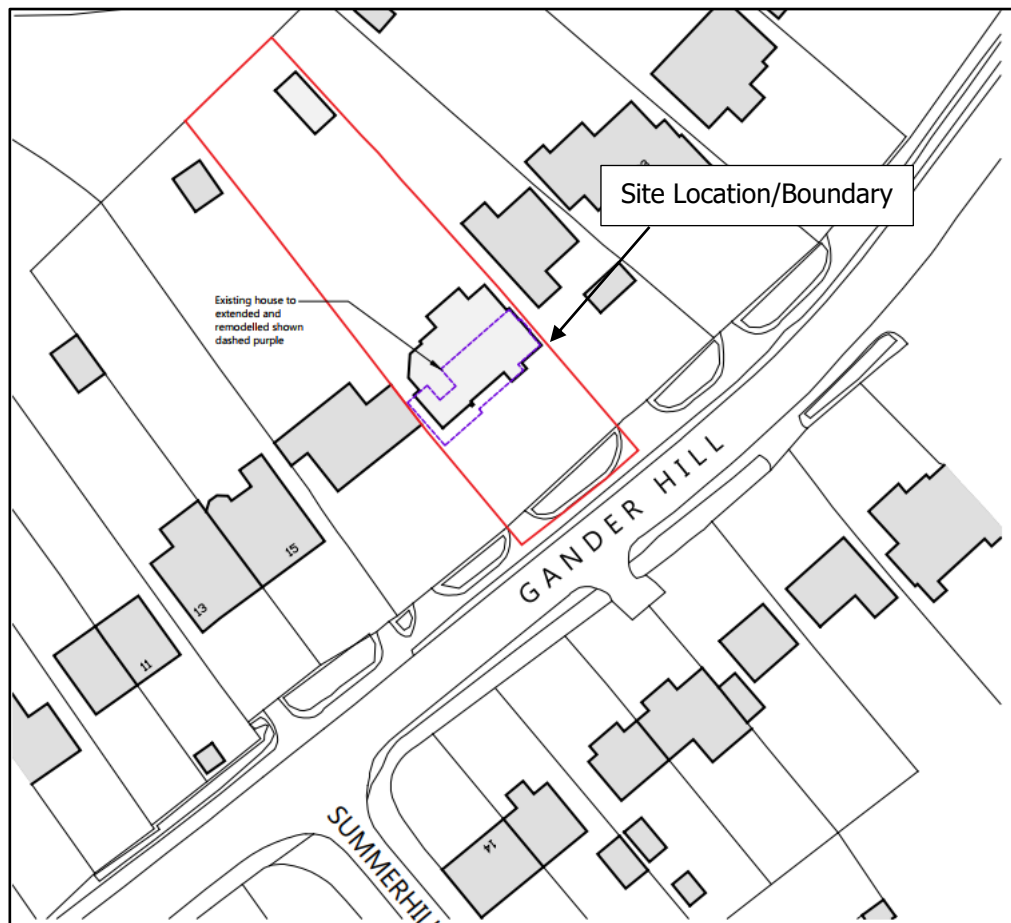


Figure 2 – Site Boundary

Site Description and Usage

The site currently has an existing dwelling and garage with associated driveway, parking areas and gardens. The site can be accessed via Gander Hill which can be found adjacent to the southern boundary of the site. The approximate Ordnance Survey Grid Reference for the site is TQ 33539 25228.

The site is located in a predominantly residential area, the closest watercourse (Scrase Stream) can be found approximately 139 metres away from the site to the south. The Scrase Stream continues to flow south away from the site's location towards the Scrase Valley.

A topographic Survey of the site has been undertaken, this can be seen in **Appendix A**. With reference to this survey, the site slopes in a general northeast to southwest direction. The highest ground elevation on site has been noted at 52.62m AOD in the northeastern area of the site and the low point is at the southwestern end of the driveway at an elevation of 47.00m AOD.

Proposed Site Use

The development proposal is to construct two extensions, one to the front, which shall consist of the removal of the existing garage and car port to be replaced with a new attached garage.

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This extension shall move the property further away from the boundary and neighbouring dwelling. The rear extension will incorporate a new boots/utility room, kitchen and gym. Development proposals can be found in **Appendix B**.

2.0 ASSESSMENT OF FLOOD RISKS

Flood Risk Content

The site is shown to be located in Flood Zone 1 according to Flood Maps for Planning published by GOV.UK, see **Figure 3** below and in **Appendix B**. As such, an FRA is required to inform the development.

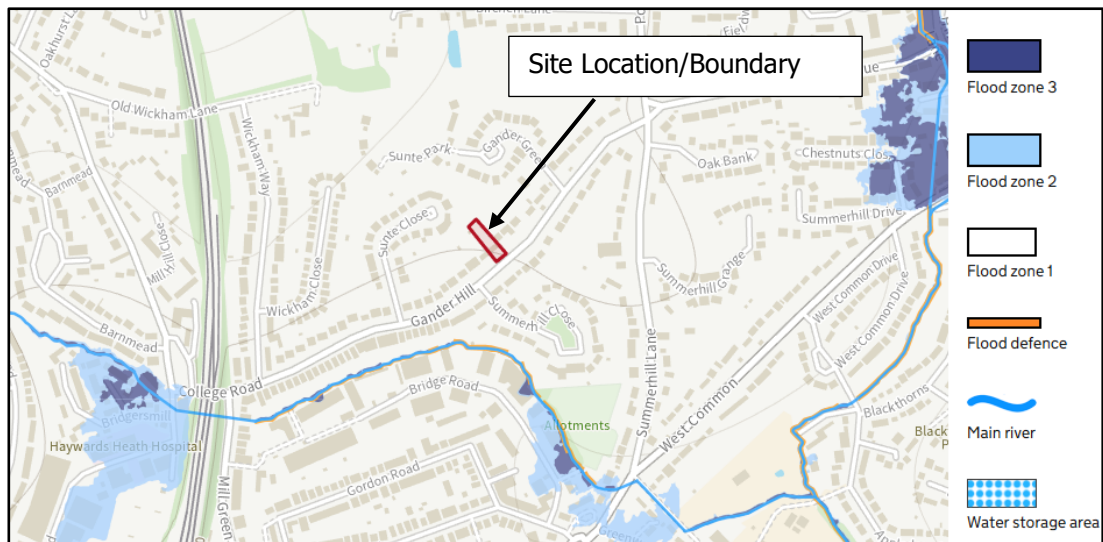


Figure 3 - Extract from GOV.UK Flood Map for Planning showing Flood Zone Extents

Fluvial Flood Risk

The Environment Agency indicative flood mapping (**Figure 3**) shows that the site is located within Flood Zone 1.

The access for the site is also found to be located within Flood Zone 1.

Flood information provided by the Environment Agency as part of a Product 4 Information Request was not able to be provided for this study. Therefore, there is no modelled flood levels for the watercourses surrounding the site. As such, the Flood Map for Planning (**Figure 3**) is the only method available to determine the flood risk at the site.

The flood extents shown within **Figure 3** indicate that fluvial flooding is not considered a risk at the site's location. Therefore, shall not be considered any further within this report.

Groundwater

Groundwater flooding is linked to the ability of the ground to hold water and the presence of aquifers. It is considered that groundwater is not an issue on this site, due to the local watercourses in the area that would act as a sump to drain groundwater away from the site area. The GOV.UK Website corroborates this, confirming that groundwater flooding is unlikely in this area. Therefore, the risk of groundwater flooding at the site is assessed to be low and is not considered further in this report.

Tidal

The site is situated inland, approximately 13.7 miles north of Brighton on the coast and is elevated at a minimum elevation of 47m AOD. Therefore, the risk of tidal flooding at the site is not considered any further within this report.

Historic Flooding

The EA have provided no evidence of historic flooding in the area; additionally, the subject site is not shown to lie within any recorded flood outline, nor is it expressly referred to within the EA schedule of recorded flooding. This is also supported by the GOV.UK Historical Flood Database Mapping.

Surface Water Overland Flow

Data collected from the GOV.UK website has shown the site to be at a very low risk of surface water flooding. This can be seen in greater detail below in **Figure 4**.

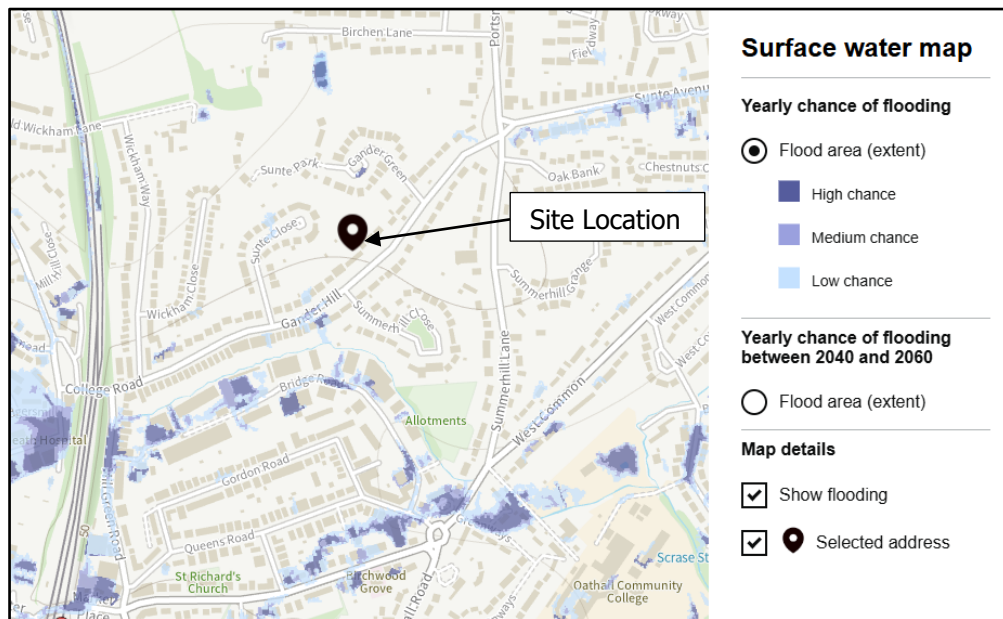


Figure 4 – Environment Agency Risk of Surface Water Flooding Map

Further review of the information provided on the GOV.UK website indicates the site is at 'very low' risk of surface water flooding for all flood depths considered. This corresponds to less than 0.1% chance of a flood each year. **Figures 5, 6 and 7 below** show extracts from the website indicating the surface water flood risk level for the site.

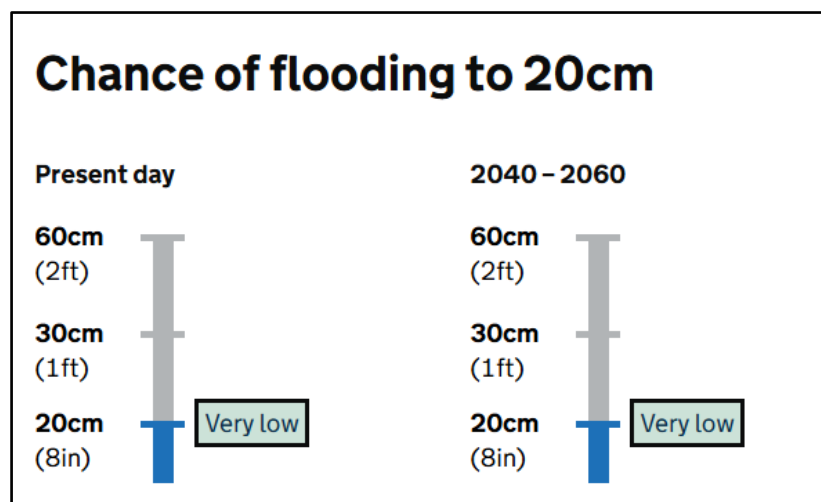


Figure 5 – Environment Agency Assessment of chance of surface water flooding to 20cm

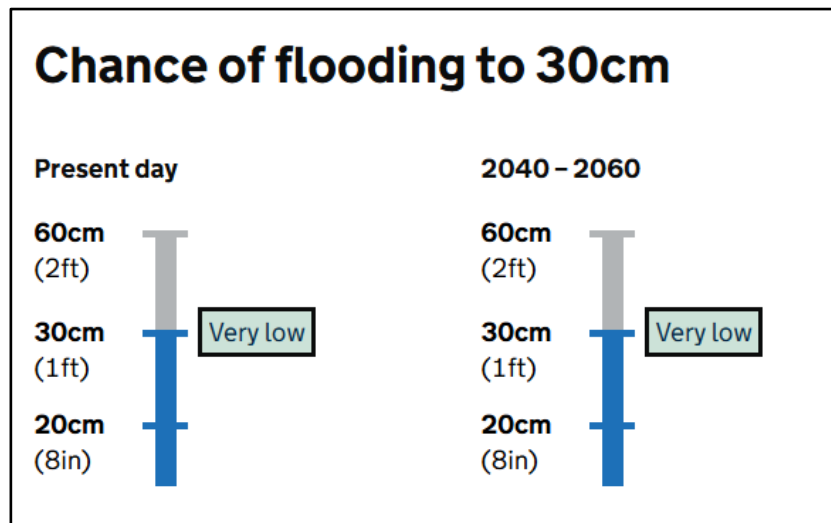


Figure 6 – Environment Agency Assessment of chance of surface water flooding to 30cm

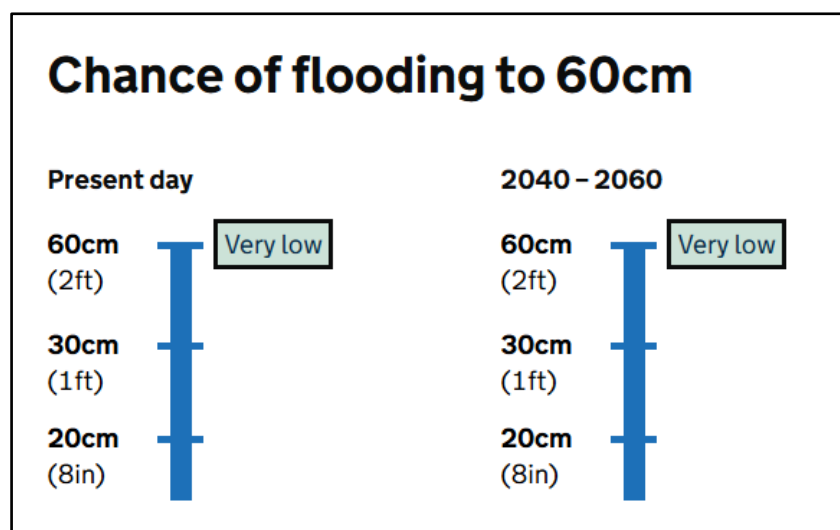


Figure 7 – Environment Agency Assessment of chance of surface water flooding to 60cm

The Mid Sussex District Council Strategic Flood Risk Assessment Mapping (SFRA) provides more detail with regards to the potential surface water flood risk to the site. The mapping is shown below in **Figure 8**. This indicates there is a very low risk for the 1 in 1,000-year surface water flood flows to travel through the site. No depths or specific detail is provided in relation to the potential flows.

The mapping is coarse and does not represent building outlines accurately as can be seen by the flows travelling through buildings on the map, for example through number 21. It does,

however, show a potential for accumulation of surface water along a route to the northwest side of the built development on Gander Hill.

The surface water flood route appears to begin at number 23 Gander Hill and travel in a south westerly direction following the local topography. The flows eventually discharge into the river to the southwest.



Figure 8 –Mid West Sussex Surface Water Flood Extents Mapping

Detailed inspection of the existing topographic survey of the site allows for further consideration of potential surface water flood routing should any overland flows be generated upstream of the site. Any flows that are generated would be considered to be small due to the limited upstream catchment and building obstructions as can be seen in **Figure 8**.

Presently, overland flow entering the site from the neighbouring property to the northeast, number 21, would travel onto the site and in a generally southwest direction, as per **Figure 9**. Flows will follow the natural ground falls and local landscaping in the rear garden area of the subject site.

Once on site, it is likely most flow from the northeast will be located away from the back of the existing house and will pass to the southwest and onto the neighbouring property, number 17 Gander Hill. This is similar to the situation shown on the SFRA mapping (**Figure 8**).

There is potential for a proportion of flow to move towards the back of the existing house and down on to the patio. At this point the ground falls through a covered walkway between the house and the garage. From here flows would travel to the south east down the driveway towards Gander Hill. This flow route varies from that shown on the SFRA, indicating the large-scale conceptual nature of the mapping.



Figure 10 shows the overland flow routing in the proposed situation. This route should be kept clear with no significant obstructions which could impede overland flows. Mitigation measures will be detailed later in this report.

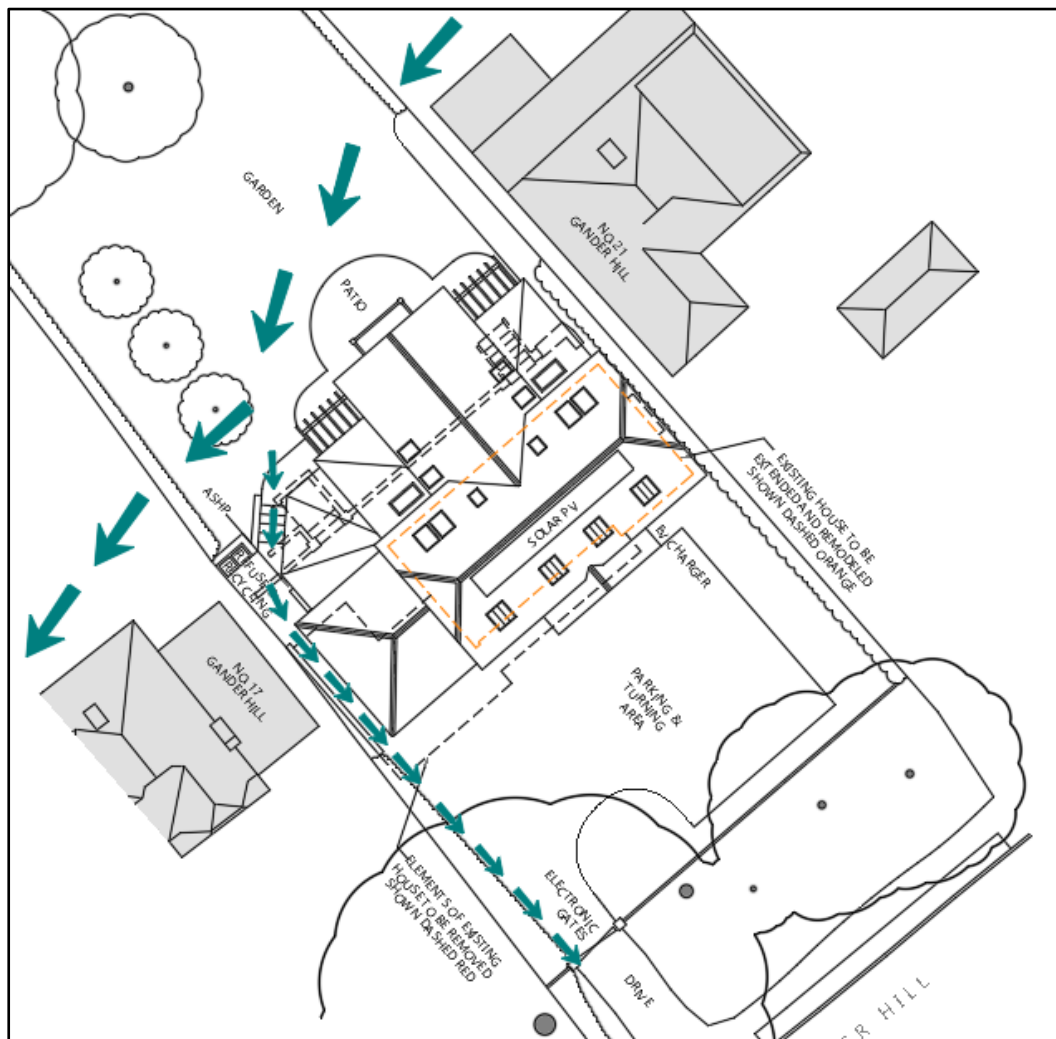


Figure 10 –Proposed surface water overland flow routes

Flooding As a Result of Development

In general terms, development and paving of permeable areas have the potential to increase flood risks to properties and interests down slope of the proposed development site, due to potential increased surface water runoff post development. A well-designed and constructed surface water drainage system is key to mitigating surface water flood risks post development.

In this case there will be an increase in impermeable areas found on-site post development.

Careful design and construction of the surface water drainage system serving the proposed development will mitigate the risks of surface water runoff from the site post development, and in turn reduce flood risks to third parties down slope of the proposed development site.

3.0 ACCESS AND EGRESS

The access and egress for the proposal will remain the same as for the existing dwelling, which can be found on the southern elevation of the building. The proposal will be redirecting the overland flow route from between the house and garage, to the western boundary of the site. Should any overland surface water flooding occur, the main access and egress route from the site will be away from the overland flow route. This will provide a reduce in risk to residents and an improvement compared to the current situation. The access/egress route is indicated below in **Figure 11**.

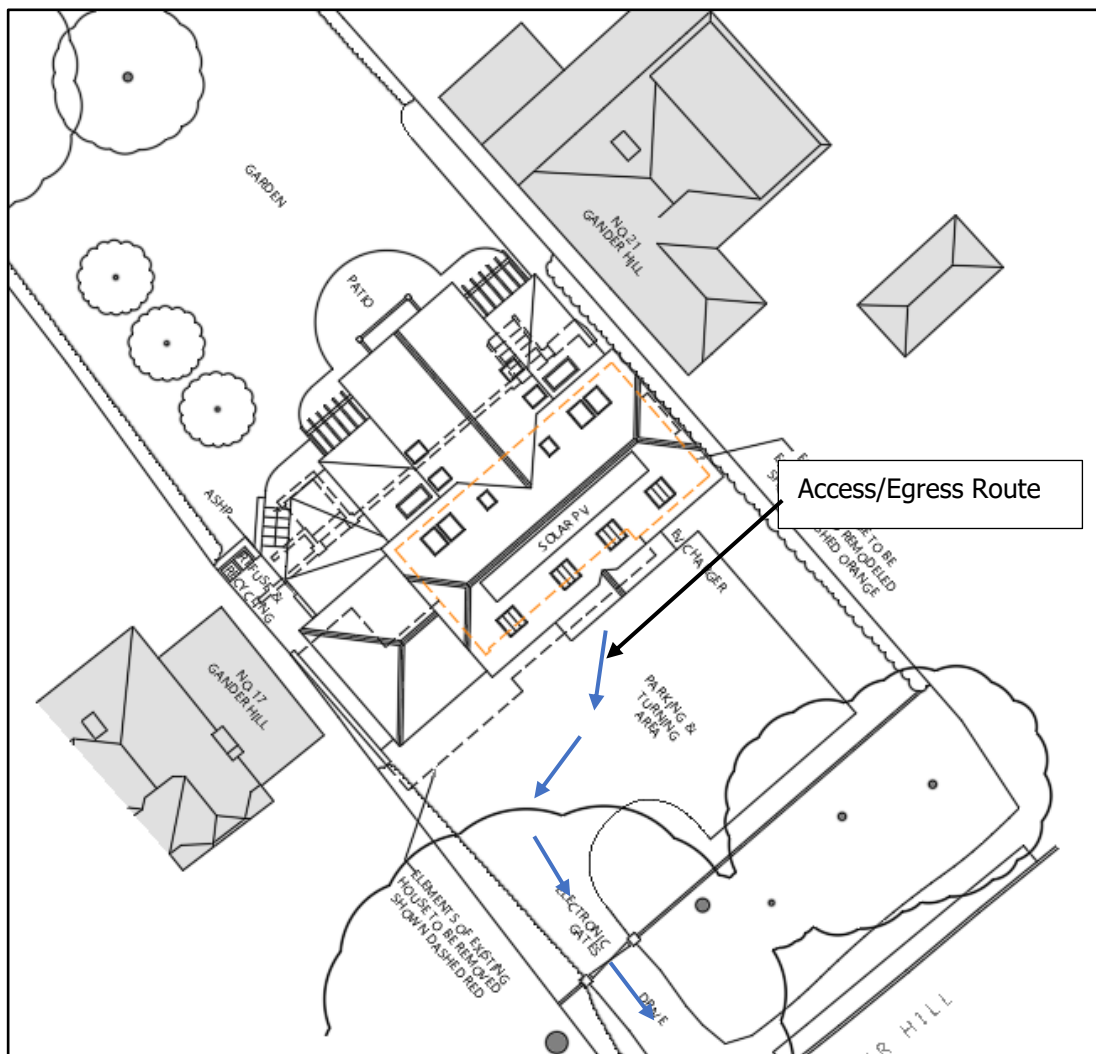


Figure 11 –Access/Egress Route

4.0 MITIGATION MEASURES

It has been demonstrated that the entirety of the site is located within Flood Zone 1, so no special measures are deemed necessary in respect of the development in relation to fluvial or tidal flooding.

The proposed development will alter an existing potential overland flow route through the site. Therefore, the development should ensure the new overland flow route is made available. The following mitigation measures below are recommended.

1. Landscaping to the rear of the property should ensure that ground falls direct any overland flow away from the proposed building. This could be in the form of slightly lowered ground levels to direct flows.
2. The overland flow route shown below should be free from obstruction and allow the unimpeded flow of water around the site of the building and onto the driveway.
3. It is recommended patio and pathway falls are away from the building to direct any flow away from building walls.
4. It is recommended that the external levels along the overland flow route are 150mm below the building finished floor level (FFL). Any electrical circuitry and equipment should be installed at least 150mm above the external ground levels.

5.0 POLICY

The development proposal is for extension to the existing building, and it has been demonstrated previously that the entirety of the site lies within Flood Zone 1.

The access/Egress route for the development lies within Flood Zone 1.

In accordance with Planning Practice Guidance Annex 3, buildings used for dwelling houses are classified as 'Less Vulnerable'.

Referring to Annex 3 of PPG shown in **Figure 12 below**, a 'Less Vulnerable' development within Flood Zone 1 is entirely appropriate from a flood risk perspective.

Additionally, this proposal should be classed as a minor development as it comprises extensions to the existing property. There will be no increase in flood risk vulnerability as it will be the same as the existing scenario.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	x	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	x	x	x	✓*

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

Figure 12 –NPPG Annex 3

7.0 SUMMARY AND CONCLUSIONS

The development proposal is for extension of the existing dwelling at 19 Gander Hill, Haywards Heath, West Sussex, RH16 1QU.

The flood risk assessment has confirmed information shown on indicative flood mapping classification for the site, being that the location of the proposed development lies within Flood Zone 1. The Access and Egress route for the site has been shown to be located within Flood Zone 1.

It has been demonstrated that there are no flood risks to the proposal from fluvial or tidal flooding. However, there is a very low risk of surface water flooding to the rear of the property when considering the future 1 in 1,000-year flood event scenario shown on the Mid West Sussex SFRA online mapping. This represents a 'very low' risk of flooding with a 0.1% chance of this flood event occurring in any given year.

Surface water flow routes have been discussed in detail within the report. The existing overland flow routing through the site will be altered slightly. An overland flow route will still be available post development to convey surface water through the site and onto Gander Hill should this be required. This will be as per the pre-development scenario. The risk from surface water flooding is considered to be 'very low' according to the GOV.UK website, therefore deemed appropriate for this type of minor development.

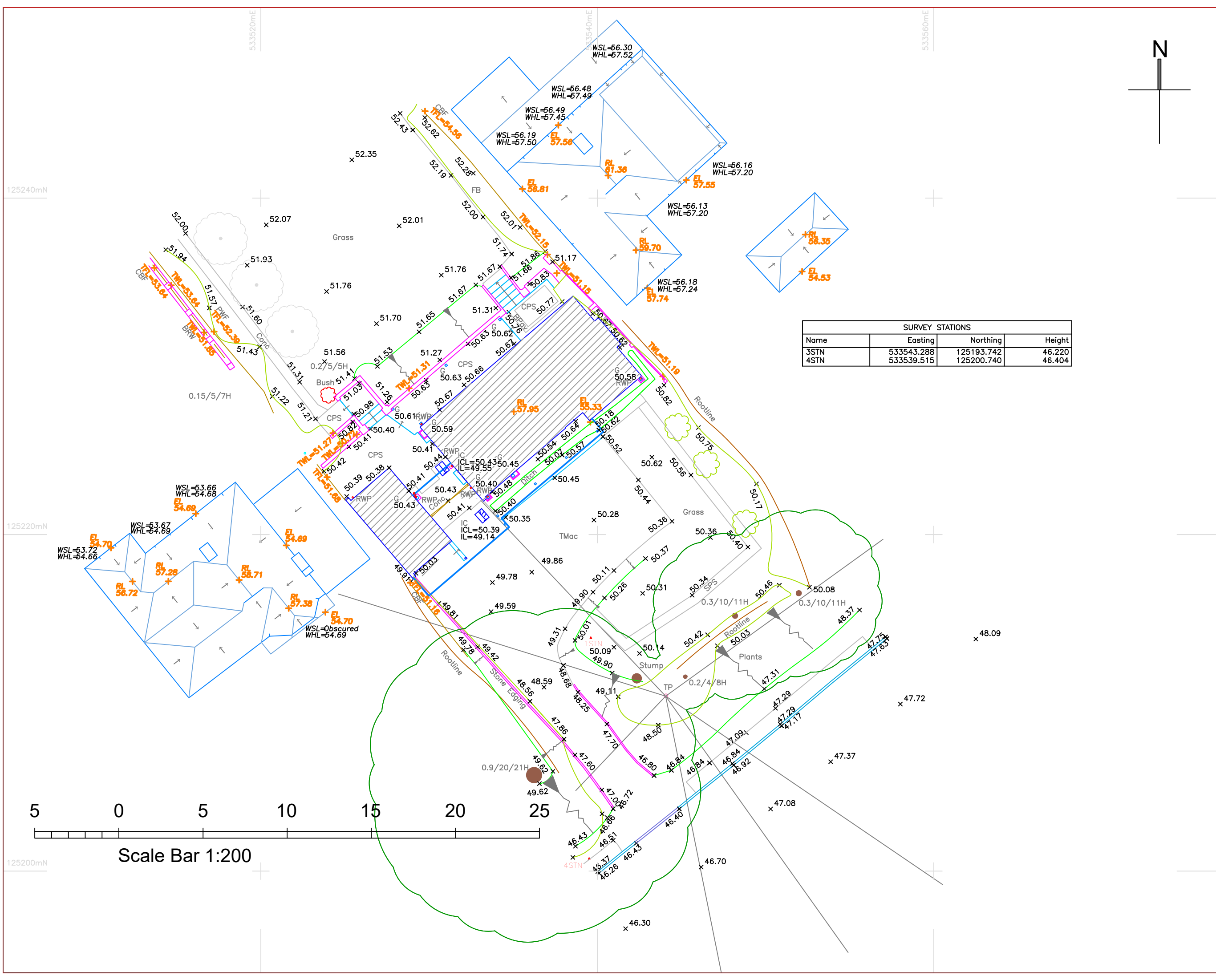
Mitigation measures have been presented in this report which focus on continuing to allow for an overland flow route on the site.

In accordance with NPPF Annex 3 the proposed development is classified as 'Less Vulnerable' and located within Flood Zone 1. Therefore, the development would be deemed acceptable from a flood risk perspective. It should also be considered that the development would be classed as a minor development and deemed entirely appropriate from a flood risk perspective.

On this basis, the development is appropriate on flood risk terms according to planning policy.

APPENDIX A

TOPOGRAPHIC SURVEY



GRID:
All information is to Ordnance Survey National Grid, computed using
Leica Smartnet RTK Network

DATUM:
All Levels are Orthometric Heights Related To OSGM15
Datum.

- NOTES:
- Surveyed boundaries may not be legal boundaries.
 - Dimensions should not be scaled. All information contained in the drawing should be checked and verified on site prior to any fabrication/construction.
 - All utilities have been identified to the best of the surveyors knowledge but cannot be guaranteed. Due to non entry of inspection chambers all pipe sizes should be checked and verified before any works commence.
 - Services such as Inspection Chambers and Water Meters etc may be obscured by parked cars or debris.
 - Tree spreads shown indicatively only.
 - A separate layer with each individual tree spread exists. Layer is turned off.

Topo Key

STREET FURNITURE	LEVELS & DEPTHS	INSPECTION CHAMBERS
A Avenue Beacon	AO Avenue Depth	AO Avenue Cover
BL Back Light	BO Back Drop/Depth	BO Back Cover
BO Backlight	CO Chamber Depth	CO Chamber Cover
CD Chamber Depth	EO Electric Depth	EO Electric Cover
EO Electric Depth	FO Fire Depth	FO Fire Cover
FO Fire Depth	GO Gas Depth	GO Gas Cover
GS Gas Depth	HS Hot Water Depth	HS Hot Water Cover
HS Hot Water Depth	IS Inspection Depth	IS Inspection Cover
IS Inspection Depth	LS Land Depth	LS Land Cover
LS Land Depth	MS Manhole Depth	MS Manhole Cover
MS Manhole Depth	PS Pipe Depth	PS Pipe Cover
PS Pipe Depth	RS Road Depth	RS Road Cover
RS Road Depth	SS Sewer Depth	SS Sewer Cover
SS Sewer Depth	TS Trench Depth	TS Trench Cover
TS Trench Depth	WS Water Depth	WS Water Cover
WS Water Depth	YS Yards Depth	YS Yards Cover
YS Yards Depth	ZS Zebra Depth	ZS Zebra Cover
ZS Zebra Depth		

Trees

Tree canopies are heights shown as indicative only. Tree species identified to the best of the Surveyors knowledge. If tree species are important than the services of an Arborist should be employed. Individual tree canopies are shown in a separate layer, called TREES which is turned off for presentation purposes.

Tree Notation: Trunk/Canopy/Height

Symbology	Linetypes
Single Gate	Telecom Overhead
Double Gate	Power Overhead
Banking	Ford Water
Step Up	Unconfined Water
Survey Station	Confined Water
	Change of Surface
	Step Up
	Fence
	Path
	Building Footprint
	Overhead Feature
	Tree Canopy
	Tree Canopy Extent

rev	description	by	date
REV:	DESCRIPTION:	BY:	DATE:



2 Unicorn Way
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CLIENT: Steve Mogg

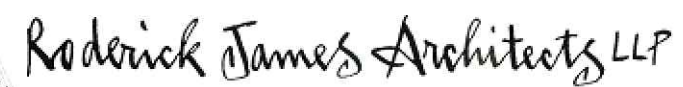
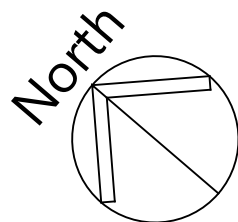
SITE: 19 Gander Hill
Haywards Heath
RH16 1QU

TITLE:
Topographical Survey

SCALE AT A3:	DATE:	SURVEYED:	DRAWN:	CHECKED:
1:200	Oct 2024	HH	KD	DC
PROJECT NO:	DRAWING NO:	REVISION:		
24096	24096_01	-		

APPENDIX B DEVELOPMENT PROPOSALS

1. Do not scale from drawings for construction purposes. All dimensions to be confirmed on site prior to construction.
2. Roderick James Architects LLP to be notified of any discrepancies before construction continues.
3. These drawings are the copyright property of Roderick James Architects LLP.
4. All Roderick James Architects LLP drawings to be read in conjunction with the proposed building notes, timber framers drawings, specialist sub-contractors designs and the structural engineers drawings and specification.
5. All external works shown are indicative. Design and extent is to be provided by others.
6. This document should only be used for the purpose indicated by the drawing status below.
7. Construction (Design & Management) Regulations 2015. The CDM 2015 regulations apply to this project. If constructed then the contractor should prepare a Construction Phase Plan for the project. Guidance on how to compile this is available from the HSE or CITB. If there is to be more than one contractor on the project (including sub-contractors) a Health and Safety File should be created by the contractor at completion of the works for the client to retain.



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A	21/11/2024	Amended prior to submission
revision	date	details
drawing status		

PLANNING

project Proposed extension to and transformation of 19 Gander Hill, Haywards Heath, RH16 1QU	drawing Proposed Site Plan & Roof Plan	
client Mr Mogg	drawing number MOGG/2/PL01	revision A
scale 1:200 @ A3	date Nov' 2024	



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