
LEVEL 2 FLOOD RISK ASSESSMENT

Proposed Ground Floor Extension
Weavers Cottage
Weavers Hill
Angmering
West Sussex
BN16 4BP

February 2020



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Issue	Copies	Distribution	Format	Date	Status
1	1	Victoria Holland	By email only: victoria@hollandarchitecture.co.uk	27 February 2020	Planning

1.0 INTRODUCTION

1.1 Archibald Shaw were instructed to undertake a Level 2 Flood Risk Assessment [FRA] in accordance with the National Planning Policy Framework on the development proposed within the curtilage of Weavers Cottage, Weavers Hill, Angmering, West Sussex, BN16 4BP.

1.2 This report has been written in support of a planning application proposing a minor ground floor extension to the cottage.

1.2 Summary of Brief

1.2.1 In accordance with the Client's specific objectives, the purpose of this report is primarily:

- (i) To provide a contemporary record of current flood risks affecting the site and future proposals.
- (ii) To advise on exceptional flooding events that may have an influence on developing the site.
- (iii) To advise on potential methods of mitigating flood risk to the development and neighbouring properties.

1.3 Terms of Reference

1.3.1 This report comprises a Level 2 Flood Risk Assessment in accordance with the requirements and guidance of:

- The National Planning Policy Framework
- Technical Guidance to the National Planning Policy Framework
- Flooding – Engineering Resilience, ICE
- Flood Risks to People – FD2321/TR2 defra
- The SuDS Manual – CIRIA C753

1.4 Limitations

1.4.1 Nothing in this report confers or purports to confer on any third party, any benefit or any right to enforce any term of this report pursuant to the Contract (Rights of Third Parties) Act 1999.

2.0 EXECUTIVE SUMMARY

- 2.1 The proposed development lies within a 'high' risk area of surface water flooding. Statistically the site has a 3.3% Annual Exceedance Probability [AEP] of surface water flooding.
- 2.2 The proposed development has a 'medium' risk of flooding from rivers. Statistically the chance of river flooding lies between 1% and 3.3% AEP.
- 2.3 The proposed ground floor extension will not increase flood risk of neighbouring properties.



Figure 1: Aerial view of site

3.0 SOURCES OF INFORMATION

3.1 Desk Top and Site Based Research

3.1.1 The flood risk assessment research comprised:

Site Information	YES	NO
Review of information supplied by the Client	✓	
Site walkover	✓	
Preliminary discussion with architect/owner/occupier	✓	

Public Domain Information	YES	NO
Geological mapping	✓	
Statutory services information		✓
Local Authority enquiry		✓
Strategic Flood Risk Assessment	✓	
Topographic site survey	✓	
Internet data	✓	
Anecdotal flooding information		✓
Aerial photographs	✓	
LIDAR Survey		✓
Historic mapping		✓

Key: NA = Not applicable
 NR = No records available
 AR = Awaiting response

3.2 Environment Agency Flood Mapping

3.2.1 The Environment Agency's flood mapping [Appendix A] indicates that Weavers Cottage lies within a 'high' risk area, with surface water flooding directly from the highway being the primary flood risk. With reference to the Environment Agency flood mapping the site has a greater than 3.3% AEP of flooding.

3.2.2 The site also has a 'medium' risk of flooding from a local watercourse, which lies in the range of 1% to 3.3% AEP. The route of such flooding would be via the highway and/or surcharging culverts which lie beneath the highway.

4.0 SITE DETAILS

4.1 Proposed Development

4.1.1 The proposed ground floor extension lies to the eastern side of Weavers Cottage. The National Grid Reference of the site is 507000: 104770.

4.1.2 Plans summarising the anticipated 3.3% to 1% AEP extent of surface water and river flooding are given within Appendix A. Details of the proposed extension is given within Appendix B.

4.1.3 The proposed extension broadly occupies a similar footprint to existing save the existing space between the garage and the kitchen. Given the nature of flooding and the building footprint increase it is considered that displaced waters will be of little material consequence. The proposed footprint increase equates to 10m² approximately.

4.1.4 The proposed extension replicates the same floor level as the kitchen and living room which is 6.30m AOD. The paved frontage will receive some minor alterations though its surface level will remain similar to existing.

4.2 Local Topography

4.2.1 Weavers Cottage lies within a gentle depression with rising land to the south, and east along Water Lane.

4.2.2 A low area local to the south west corner of Weavers Cottage is served by three gullies. Local silts and muds are evidence of recent ponding.



South west corner of Weaver's Cottage

4.3 Local Geology

- 4.3.1 With reference to British Geological Survey mapping, the site is underlain by superficial deposits of Clay, Silt, Sand and Gravel, and by bedrock geology of the Tarrant Chalk Member.

Tarrant Chalk Member

This Sedimentary Bedrock was formed approximately 72 to 84 million years ago in the Cretaceous Period when the environment was dominated by shallow seas.

5.0 POTENTIAL FLOOD HAZARDS

5.1 Flooding from Rivers and Sea

5.1.1 This risk relates to out of bank flooding from the local watercourse to the east. The watercourse has a history of flooding out of bank with errant waters flooding the highway and the grounds of Weavers Cottage.

5.1.2 Flooding from the sea is considered to be very low.

5.1.3 A site inspection undertaken on 21 February noted a relatively new trash screen arrangement with a maintenance gallery protecting culverts serving the watercourse. This feature if adequately maintained will reduce the risk of flooding the highway and sites local to Weavers Cottage.



View of culverts protected by trash screens

5.2 Flooding from Land

5.2.1 Intense rainfall of short duration which is unable to soak into the ground or enter drainage systems can run off land in sheet flows resulting in local flooding. Flooding is anticipated local to Weavers Cottage.

5.2.2 Environment Agency mapping indicates that Weavers Cottage is at high risk of surface water flooding, with the annual probability of flooding ranging from 1% to 3.3% AEP.

5.3 Flooding from Groundwater

5.3.1 Given the local geology, the risk of groundwater flooding is considered to be low.

5.4 Flooding from Sewers

5.4.1 Flooding can result when a sewer is overwhelmed by heavy rainfall, groundwater, becomes blocked or is of inadequate capacity.

5.4.2 It is considered that the flood risk presented from surcharging local sewers and culverts is high though the recent installation of trash screens is likely to reduce this risk. See 5.1.3.

5.5 Flooding from Reservoirs, Canals other Manmade Sources

5.5.1 Reservoir or canal flooding may occur as a result of the structure being overwhelmed, or as a result of dam and bank failure.

5.5.2 The site is remote from manmade sources.

6.0 FLOOD MITIGATION MEASURES

- 6.1 The proposed extension would maintain existing ground floor levels in the order of 6.30m AOD which lie in the order of 100 to 300mm below the southern private garden and local highway which are known to flood.
- 6.2 It is considered the proposed additional footprint of 10m² approximately will not have an adverse effect on local flood risk.
- 6.3 The following flood resilient measures are advised to form part of the new works.
- (i) The proposed ground floor should be of resilient construction and prevent water ingress.
 - (ii) External doorways shall incorporate robust flood retention boards.
 - (iii) New ground floor electrical sockets should be set no lower than 900mm above ground floor level. This would reduce the risk of electrical damage during a flood event.
 - (iv) Avoid use of laminate covered, medium density fibreboard or chipboard as part of any ground floor works, as these materials damage easily when wet.
 - (v) Avoid use of plasterboard in the lower ground floor areas. This would reduce time consuming remedial works during a flood event.
 - (vi) The owner/occupier should sign up to the Environment Agency's Flood Line Warnings Direct Scheme.
- 6.4 It is advised a regular check is made on the three local gullies to ensure that they are free from detritus such as leaf litter and silt.

7.0 CONCLUSIONS

- 7.1 The flood risk to Weavers Cottage is considered to be high.
- 7.2 Resilient construction details should be incorporated into the design and construction as outlined in chapter 6.0 of this report.
- 7.3 The proposed extension will not materially affect flood risk to local properties.

Prepared by: 
Eur Ing Vincent Carpenter BSc (Hons) CEng MICE FCWEM MIHTM IoD

Date: 27 February 2020

APPENDIX A

Environment Agency Flood Mapping Data

**WEAVERS COTTAGE, WEAVERS HILL, ANGMERING, LITTLEHAMPTON,
BN16 4BP**

**Rivers and
sea risk**

Medium risk

Medium risk means that each year this area has a chance of flooding of between 1% and 3.3%.

**Surface
water risk**

High risk

High risk means that each year this area has a chance of flooding of greater than 3.3%.

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

**Reservoir
risk**

There is no risk of reservoir flooding

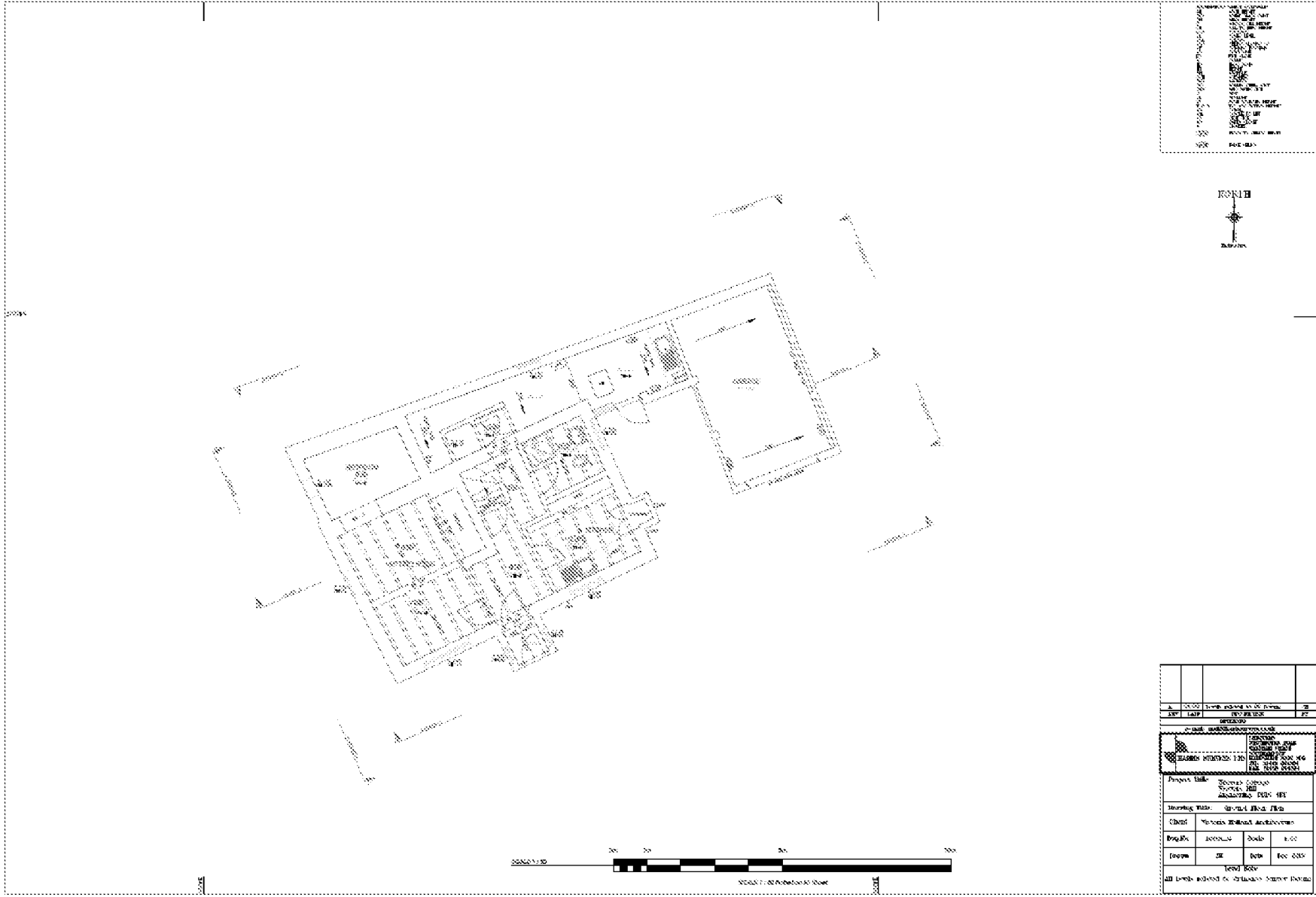
**Groundwater
risk**

No risk of groundwater flooding

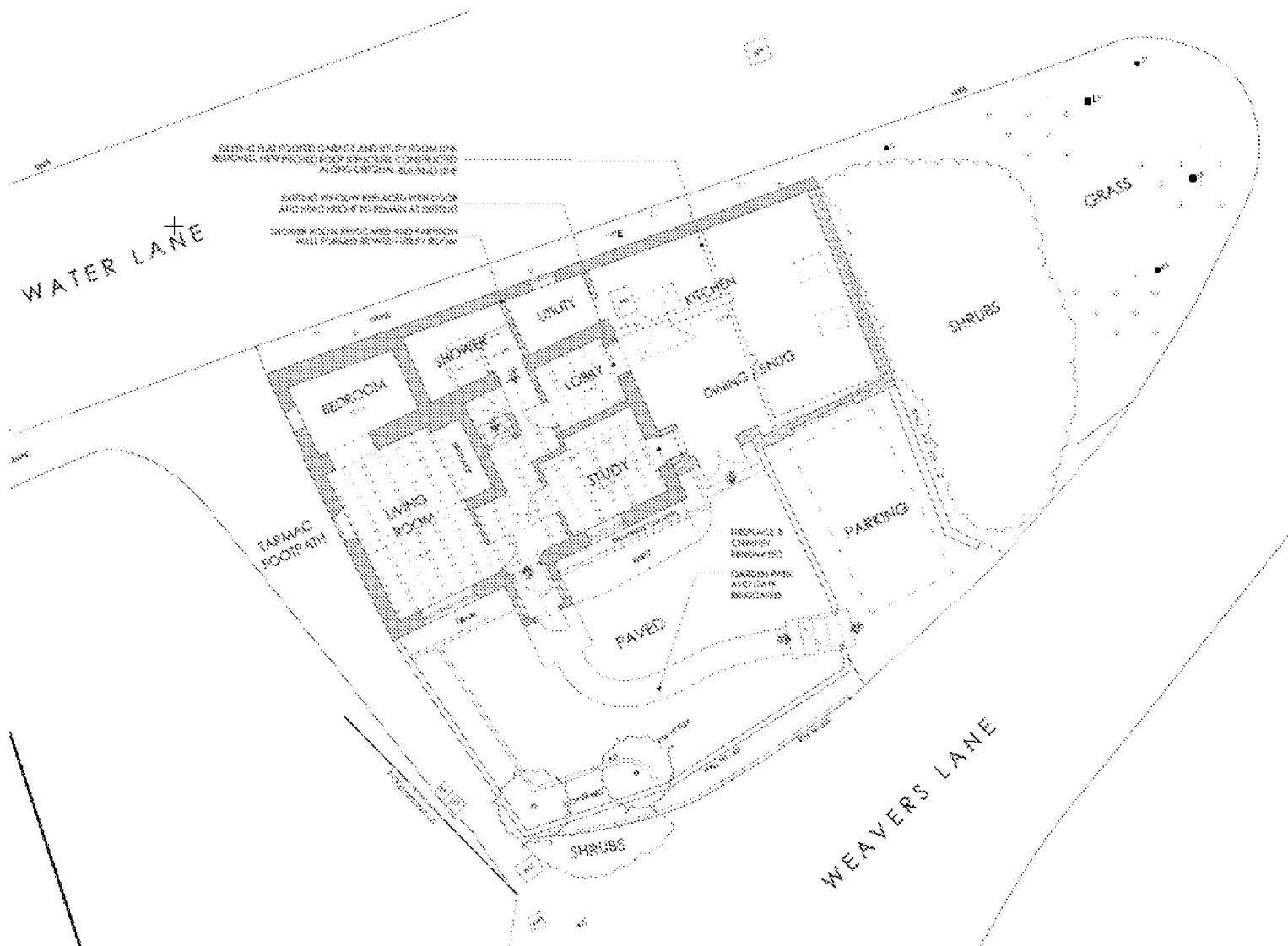


APPENDIX B

Existing and Proposed Floor Plans



A	1000' North arrow as shown	10	
100'	100'	100'	100'
SECTION			
Project Name: WINDY HILLS Client: WINDY HILLS DEVELOPMENT LLC Address: 1000' North arrow as shown Section: 100'			
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This drawing has been prepared for the purpose of providing information only and does not constitute a contract. It is the responsibility of the client to ensure that the drawing is used for the purpose intended. The drawing has been prepared based on the information provided by the client. It is the responsibility of the client to ensure that the drawing is used for the purpose intended. It is the responsibility of the client to ensure that the drawing is used for the purpose intended.

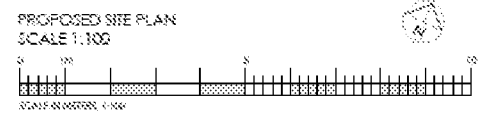
- KEY**
- EXISTING
 - PROPOSED
 - DEMOLISHED

WEAVERS COTTAGE
WEAVERS HILL,
ANGMERING, WEST SUSSEX
BN16 4EP

PROPOSED SITE PLAN
DATE: DECEMBER 2023
SCALE: 1:100
JOB No: 1073
DRWG No: 101 Rev:



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APPENDIX C

Photographs











