

Flood Risk Assessment
Salterns House,
Salterns Close,
Hayling Island,
Hampshire
PO11 9PL

Prepared By:
Caroline Baker BSc(Hons) PgCert BREEAM CSH

Approved By:
Ian Llewellyn MEng CEng MICE MISTructE

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	Structural Engineering
	Civil Engineering
	CDM Co-ordination
	BREEAM Assessors
	Traffic and Transport
	Flood Risk Assessments

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1.0 Introduction

- 1.1 Scott White and Hookins have been instructed by Murray Planning to undertake a flood risk assessment and provide a drainage strategy as part of the planning submission for the Salterns House development in Hayling Island, Hampshire.
- 1.2 This report considers the flood risk to the proposed development and the impact that the development will have in relation to flooding of adjacent areas and watercourses. It considers any limits relating to flooding that are likely to be imposed to allow the development to be undertaken.
- 1.3 This report is based on information received from the Environment Agency, the Havant and PUSH Strategic Flood Risk Assessments, in addition to a desk top study. Scott White and Hookins cannot accept liability for the accuracy or otherwise of any information derived from third party sources.
- 1.4 This report is for the private and confidential use of Murray Planning and its agents and may not be copied in whole or in part without the written permission of Scott White and Hookins.

2.0 Government Policy on Flood Risk and Drainage of Development

- 2.1 The frequency and severity of river flooding is perceived to have increased in recent years and this is addressed within The National Planning Policy Framework and its supporting technical guidance. This document outlines the importance of the effective management and reduction of flood risk in the land use planning process and ensures the design incorporates the issue of climate change. This guidance updated the previous Planning Policy Statement Note 25: Development and Flood Risk (PPS25).
- 2.2 Traditionally surface water runoff from developments has been conveyed by pipe systems to the nearest watercourse or sewer. This tends to increase the rate and volume of the run off often leading to flooding downstream of the new development. Latest policy promotes the use of sustainable urban drainage systems (SUDS) whereby the control of run off is to be as close to source as possible. This can be achieved by utilizing techniques which mimic the natural drainage processes, the use of direct infiltration for example. The Environment Agency will, in general, seek to restrict the allowable discharge from a new development to that previously expected from the undeveloped land.
- 2.3 The requirements of the revised Building Regulations which came into force on 1st April 2002 are that adequate provision should be made for dealing with rainwater from the roofs of buildings and certain paved areas providing access to the buildings. Run off from such drainage systems are to be discharged to one of the following systems listed in order of priority:-
- A soakaway or other infiltration system
 - A watercourse
 - A sewer or drain
- 2.4 The revised Building Regulations were drafted to address the requirements for SUDS and this has been further reinforced by the Flood and Water Management Act 2010

which places a duty on Hampshire County Council as Lead Local Flood Authority to manage and advise on surface water management.

2.5 The Requirements of a Flood Risk Assessment

- 2.5.1 A Flood Risk Assessment is required in order to ascertain whether a development will exacerbate the risk of flooding elsewhere in the catchment or is at risk of flooding itself.

3.0 Development Site

- 3.1 The proposed development is located at Salterns House, Salterns Close, in Hayling Island, Hampshire.
- 3.2 The development area is an existing residential site comprising a dwelling, outbuilding and associated gravel driveway. The remainder of the site is laid to lawn and soft landscaping. The site is accessed from Salterns Close and is bounded by existing dwellings to the south, east and west of the site, with the sea located at the rear of the site on the north side. See Appendix 1 for site aerial photographs.
- 3.3 The nearest watercourse to the site is the sea which is located on the northern boundary of the development site, approximately 20m metres north of the building.

3.4 Ground Conditions

- 3.4.1 The geology of the area is shown on British Geological Survey map which indicates the site is primarily underlain by London Clay Formation with Clay, Silt and Sand.
- 3.4.2 The cohesive nature of the London Clay Formation is typically associated with poor infiltration, however this should be investigated further.
- 3.4.3 Due to the proximity of the adjacent watercourse, it is likely the existing site discharges to the sea or via traditional rubble soakaways which ultimately will discharge to the sea by percolation through the soil. We would recommend soakage test are carried out during the construction stage in accordance with BRE Digest 365 to inform the surface water strategy and finalise soakaway sizes.

4.0 Development Proposals

- 4.1 The proposed development will involve the construction of a new residential dwelling on the development site situated to the east of the existing dwelling. The existing dwelling has a plan area of approximately 225m² and the outbuilding is 82.2m². The area of the new dwelling and garage will be approximately 262m². See Appendix 3 for the proposed site plan.
- 4.2 It is understood that the remainder of the site will remain as existing, replicating the existing gravel driveway for the new dwelling. The remainder of the garden area is to be retained as soft landscaping as per the existing situation.
- 4.3 The proposed dwelling will seek to replicate the drainage connections of the existing dwelling. As the proposed development increases the impermeable area of the site via the addition of a new dwelling, additional provision should be incorporated to mitigate the additional surface water flow through SUDs techniques.
- 4.4 With reference to National Planning Policy Framework (NPPF): Table 2, as residential buildings used for dwellings, the flood risk vulnerability classification of the site will remain as 'More Vulnerable'.

5.0 Flood risks

5.1 River Catchment and Flooding

- 5.1.1 Based on the Environment Agency flood map shown in Appendix 2, the overall site area is located in Flood Zone 1. The existing and proposed dwelling appears to be predominantly located in Flood Zone 1, with parts of the wider development site along the north-west perimeter of the existing dwelling being located in Flood Zone 2/3. The driveway and access to the site are all located in Flood Zone 1. Flood Zone 2 indicates the area has an annual flooding probability of 1 in 1000 (0.1%) and Flood Zone 3 indicates an annual flooding probability of 1 in 100 (1%).
- 5.1.2 With reference to Section 4 and NPPF: Table 3, a development classified as 'More Vulnerable' is deemed appropriate within Flood Zones 1 and 2. The new proposed dwelling is located within Flood Zone 1.
- 5.1.3 The PUSH SFRA states that due to the coastal frontages of Hayling Island, it has experienced flooding caused by wave overtopping; however also notes that Hayling Island is generally defended to a higher level than other frontages in the sub-region. The PUSH and Havant SFRAs have not recorded incidents of fluvial flooding at or near the development site.
- 5.1.4 The development site also has a sea wall located to the rear of the garden to the north of the site. From the sea wall the garden rises sharply by approximately 750mm to a level where the proposed dwelling is located. The sea wall and natural topography will act as a form of defence to the proposed development site.

5.1.5 Plotting the Environment Agency flood zones on the topographical survey, the extent of Flood Zone 2 on the site of the existing dwelling is approximately 3.4AOD. It is proposed the ground floor level of the new dwelling is set at 3.7AOD which ensures the dwelling is set above the Flood Zone 2 level and provides a minimum 300mm freeboard. See Appendix 4 for the topographical survey.

5.1.6 Flood risk mitigation is discussed in more detail in Section 6.0. Based on the evidence detailed above and the proposals set out in Section 6.0 we would conclude the proposed dwelling is not at risk of flooding, and the risk to the overall site is very low.

5.2 Overland flow from surface water

5.2.1 The existing site has been visually assessed for overland flows. Due to the nature and topography of the existing site and building, although not calculated, the depth of potential flow across the site is thought likely to be very small, and the general velocity over the ground will be minor. The majority of the site is broadly level with the ground, sloping down to the sea wall on the northern edge.

5.2.2 With reference to the information provided in Appendix 2, the Environment Agency provide maps to indicate the risk of flooding from surface water. This map indicates the proposed development and the majority of the site is located in an area considered to be at very low likelihood of flooding from surface water.

5.2.3 Although the proposed dwelling results in an increase on the impermeable area, the remainder of the site will remain as predominantly soft landscaping and the overall drainage characteristic of the site will remain as existing.

5.2.4 The new development should incorporate SUDs measures to deal with surface water flow at source, thus replicating the existing condition and not increasing the flood risk of the site or surrounding areas.

- 5.2.5 We recommend infiltration tests are conducted on site to BRE Digest 365 to determine the site infiltration rate. We recommend the use of cellular crate soakaways located in the rear garden to deal with surface water from the proposed dwelling.
- 5.2.6 Final design and volume of soakaway will depend upon the site infiltration rate. If the site is found to be poor for infiltration we would recommend still providing the soakaway, but with an overflow pipe discharging to the nearby sea. In this situation the proposal will replicate the existing situation as far as technically feasible, not increasing the flood risk for the site. It is assumed permission can be obtained to install a discharge pipe to the sea.
- 5.2.7 With reference to Defra document "Non-statutory technical standards for sustainable drainage systems" dated March 2015, surface water discharge to a large body of water is considered acceptable and will not impact upon the flood risk of the body of water or surrounding area.

5.3 Local flooding of surface water sewer

- 5.3.1 The SFRA identifies that the site is located in an area of low risk of sewer flooding, and although there are some occurrences of sewer flooding on Hayling Island, none are recorded within the vicinity of the development site.
- 5.3.2 The new development will connect to new sustainable drainage and it is therefore not deemed to be at risk of this type of flooding or will increase the risk of flooding for surrounding areas.

5.4 Groundwater flooding

- 5.4.1 The SFRA notes that occurrences of groundwater flooding have occurred within the East Hampshire district where highly permeable geological formations meet areas of lower permeability, and is generally associated with the chalk geology in this area. The SFRA identifies that London Clay bedrock formation, on which the development site is based, has a 'Low' relative permeability. There are however no records of groundwater

flooding occurring at or near the development site. It is therefore concluded that the site is at low risk of groundwater flooding.

6.0 Flood Mitigation Proposals

6.1 Proposed floor levels

- 6.1.1 As discussed above, the ground floor of the proposed development is to be set at 3.7m AOD.

6.2 Safe access and egress

- 6.2.1 Consideration should be given, in the event of a flood, to safe access and egress routes from the site to an area of dry land. As the proposed dwelling and access to the dwelling from the road is located in Flood Zone 1, the occupants are safely able to access and exit the property in the event of flooding to the adjacent road.

7.0 Summary

- 7.1 Based on the Environment Agency map the proposed new dwelling is located in Flood Zone 1, although Flood Zone 2 is present on the northern boundary of the site.
- 7.2 The ground floor level of the proposed dwelling should be set at 3.7m AOD to ensure it is above the potential flood level.
- 7.3 With reference to section 5.1.2, the proposed development is considered appropriate for Flood Zone 1. The proposed dwelling is considered to be at low risk from all sources of flooding.
- 7.4 The proposed dwelling will result in an increase of impermeable area on the site and the proposed works should incorporate SUDs measures to deal with surface water at source, thus replicating the existing situation. Infiltration tests in accordance with BRE Digest 365 should be carried out on site to inform the strategy.
- 7.5 The proposed development and access to the dwelling are all located in Flood Zone 1 and therefore provides safe access and egress from the proposed dwelling.

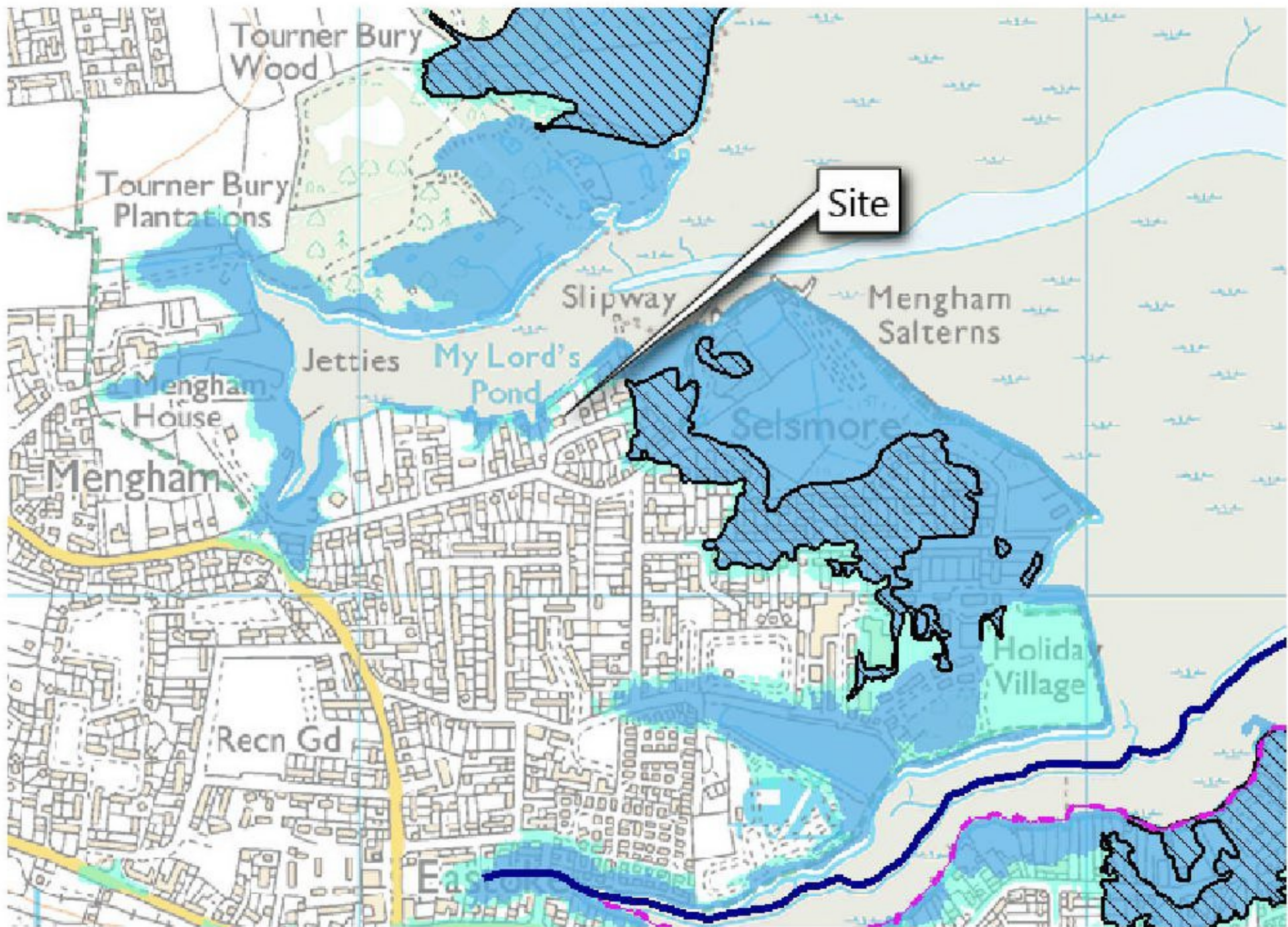
Appendix 1



Photograph 1:

Aerial View of Site Boundary

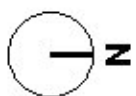
Appendix 2



Environment Agency Flood Maps and data

Appendix 3

Proposed Site Plan



Slipways

My Lord's Pond

Saltern's House, Hayling Island

ESHA
ARCHITECTS

ESHA ARCHITECTS LLP
2nd FLOOR, 38 KING STREET, BRISTOL, BS1 4DZ
TEL: +44 (0)117 8528100 FAX: 0117 8528101
EMAIL: info@esharchitects.co.uk

Drawing Title
Site Plan

Drawing Number
P-SP-A3

Job No
15/014

Date 01.04.2016 Scale 1:500 A3

Appendix 4

Topographical Survey

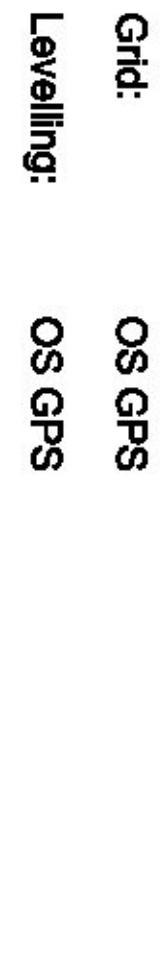
All information contained in this drawing (including digital data) should be checked and verified prior to any fabrication or construction.

FENCES	
BAISED WIRE FENCE	BW
COMPLICATED RAIL FENCE	TR
CLOUT BOARD FENCE	CB
CHESTNUT PALING FENCE	CP
IRON RAILING FENCE	IR
PORT AND OAK FENCE	PO
PORT AND HAIL FENCE	PH
PORT AND WIRE FENCE	PW
QUAIL LINK FENCE	QL
LANCASHIRE FENCE	LF
INTERMEDIATE FENCE	UV

FENCES	
	Tree
	Indigo
	White
	White 2.0m
	White to 2.0m
	CB 1.5m

[illegible]

North	A	Three
675	11.0	10.0
644	3.5	2.4
508	4.0	0.90
489	3.0	0.55
406	30.0	26.0
335	16.0	0.35
333	2.0	1.5
273	0.33	0.73
270	1.0	2.5
220	0.22	7.0
200	0.20	1.50
189	0.60	1.80
180	0.60	1.80
177	18.0	18.0
156	0.56	1.56
147	0.50	1.50
135	0.35	1.35
126	0.26	1.26
116	0.08	0.08
105	1.0	5.04
85	0.85	1.90
70	0.70	1.70
62	0.06	5.04
46	0.46	1.46
30	0.30	1.30
15	0.15	1.15
10	0.10	1.10
5	0.05	0.05
3	0.03	0.03
2	0.02	0.02
1	0.01	0.01



Site Address: **Salterns House
Salterns Close
Hayling Island**



**Murray Planning
Associates**

Surveyor	MM	Drawn By	AH	Verified By	AMF	Date	18.
CM No:	CM/16122T			Rev:			
Scale:	1:200m @ A1			Date:	February 2016		

