

**HARBOUR HOUSE
61 SURREY STREET, LITTLEHAMPTON
SITE SPECIFIC FLOOD RISK ASSESSMENT**

Archibald Shaw

Level 1
Flood Risk Assessment
Harbour House, 61 Surrey Street, Littlehampton

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Issue No.	Copies	Distribution	Format	Date	Status
1	1	Neil Holland Architects	Digital & Paper	6 April 2011	Final
1	1	Mr & Mrs P J Sykes	Paper	6 April 2011	Final

VLC/DP/22899

6 April 2011

1.0 INTRODUCTION

- 1.1 Archibald Shaw was originally commissioned by Mr and Mrs C Leigh-Jones in 2009 to undertake a Flood Risk Assessment in accordance with Planning Policy Statement 25 [PPS 25] on Harbour House, 61 Surrey Street, Littlehampton – herein known as 'the site' - with a view that a former public house and restaurant would be reinstated to its original use as a family home. Subsequently, the property has changed hands, and is currently owned by Mr & Mrs P J Sykes. This report has been re-drafted to support their planning application.
- 1.2 Harbour House is a Grade II listed building built circa 1785 as a family home, but operated in recent years as The Lemon Tree Public House and Restaurant. The current owner is looking to restore Harbour House to a residential property.
- 1.3 Third party information has been collected from Neil Holland Architects and the Environment Agency.
- 1.4 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 DESCRIPTION OF SITE AND SURROUNDING AREAS

- 2.1 The site is located on the north bank of the River Arun, in Littlehampton. The national grid reference of the site is 50 270, 10 190 approximately.
- 2.2 The site comprises a Georgian house within a residential area close to Littlehampton Life Boat Station. The centre of Littlehampton lies to the north and east.
- 2.3 The property has a ground floor level of 3.165m AOD, which sits at a similar level to the frontage, but is lower than the rear courtyard which lies at 3.50m AOD approximately.
- 2.4 Surrey Street rises from a local low part of 3.31m AOD to the north through to 3.95m AOD to the south, close to the Life Boat Station. The River Arun lies to the south west.

3.0 PROPOSED DEVELOPMENT

- 3.1 It is proposed to restore this Grade II listed property close to its original Georgian form. In doing so planning permission for change of use from a redundant public house and restaurant to a family home is required.
- 3.2 Copies of the property survey, topographic survey and proposed alterations may be obtained from Neil Holland Architects.
- 3.1 Environment Agency records show that the site lies within a Flood Zone 3a, should existing defences be breached. The predicted 1 in 200 year surge level for the year 2115 for this area is 5.3m AOD. See Figure 1.
- 3.2 The existing ground floor level of 3.17m AOD lies some 2.13m below the current predicted 1 in 200 year surge level for the year 2115.
- 3.3 Whilst some rise in ground floor level may be undertaken, subject to listed building consent, it would not overcome the apparent flood risk. There are however mitigating measures that can be undertaken to minimise the risk of flooding, and to minimise damage should flooding occur.

3.4 Mitigating Measures

- 3.4.1 Consideration should be given to the following measures:
- (i) Installing flood barriers over doors and windows. Discreet systems can be employed that would not detract from the refurbishment of this listed property. Guidance and examples of such details can be found within 'Flooding and Historic Buildings', a technical advice note published by English Heritage, dated 2004.
 - (ii) Providing electrical sockets at relatively high levels from floor level, say 800mm from floor level, would reduce the risk of electrical damage during a flood event.
 - (iii) The use of laminate covered medium density fibreboard or chipboard as part of any ground floor restoration works should be avoided, as they damage easily when wet.
 - (iv) Ensure any possible water entry points are sealed. Such routes include openings for electricity, gas and water. Air bricks, if present can be sealed with temporary covers.

- (v) Provision of a ground floor sump from which flood waters can be pumped.
- (vi) The owner/occupier should sign up to the Environment Agency's Flood Line Warnings Direct Scheme.

4.0 SEQUENTIAL TEST

4.1 Land Use Vulnerability

- 4.1.1 Within PPS 25 Annex D (Ref. 1) each flood zone has a list of appropriate land uses dependant on vulnerability to flooding. The flood zones are described in Table D.1: Flood Zones reproduced below.

Zone 1 Low Probability Definition This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%). Appropriate uses All uses of land are appropriate in this zone. FRA requirements For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in a FRA. This need only be brief unless the factors above or other local considerations require particular attention. See Annex E for minimum requirements. Policy aims In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development, and the appropriate application of sustainable drainage techniques.
Zone 2 Medium Probability Definition This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year. Appropriate Uses The water-compatible, less vulnerable and more vulnerable uses of land and essential infrastructure in Table D.2 are appropriate in this zone. Subject to the Sequential Test being applied, the highly vulnerable uses in Table D.2 are only appropriate in this zone if the Exception Test (see para. D.9.) is passed. FRA requirements All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements. Policy aims In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development, and the appropriate application of sustainable drainage techniques.

Flood Zones

Note: These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences.

Zone 3a High Probability Definition This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. Appropriate uses The water-compatible and less vulnerable uses of land in Table D.2 are appropriate in this zone. The highly vulnerable uses in Table D.2 should not be permitted in this zone. The more vulnerable and essential infrastructure uses in Table D.2 should only be permitted in this zone if the Exception Test (see para. D.9) is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood. FRA requirements All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements. Policy aims In this zone, developers and local authorities should seek opportunities to: - reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage techniques; - relocate existing development to land in zones with a lower probability of flooding; and - create space for flooding to occur by restoring functional floodplain and flood flow pathways and by identifying, allocating and safeguarding open space for flood storage.	Zone 3B The Functional Floodplain Definition This zone comprises land where water has to flow or be stored in times of flood. SFRA's should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes). Appropriate Uses Only the water-compatible uses and the essential infrastructure listed in Table D.2 that has to be there should be permitted in this zone. It should be designed and constructed to: - remain operational and safe for users in times of flood; - result in no net loss of floodplain storage; - not impede water flows; and - not increase flood risk elsewhere. Essential infrastructure in this zone should pass the Exception Test. FRA requirements All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements. Policy aims In this zone, developers and local authorities should seek opportunities to: - reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage techniques; and - relocate existing development to land with a lower probability of flooding
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Flood Zones (continued)

4.1.2 The vulnerability classes are related to the sensitivity of the development to flooding and considers risk to people, property and services. The vulnerability classification Table D2 from PPS 25 is reproduced below.

Essential Infrastructure	Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk, and strategic utility infrastructure, including electricity generating power stations and grid and primary substations.
Highly Vulnerable	- Police stations, Ambulance stations and Fire stations and Command Centres and telecommunications installations required to be operational during flooding. - Emergency dispersal points. - Basement dwellings. - Caravans, mobile homes and park homes intended for permanent residential use. - Installations requiring hazardous consent.¹
More Vulnerable	- Hospitals. - Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. - Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels. - Non-residential uses for health services, nurseries and educational establishments. - Landfill and sites used for waste management facilities for hazardous waste.² - Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable	- Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non-residential institutions not included in 'more vulnerable; and assembly and leisure. - Land and buildings used for agriculture and forestry. - Waste treatment (except landfill and hazardous waste facilities). - Minerals working and processing (except for sand and gravel working). - Water treatment plants. - Sewage treatment plants (if adequate pollution control measures are in place).
Water-compatible Development	- Flood control infrastructure. - Water transmission infrastructure and pumping stations. - Sewage transmission infrastructure and pumping stations. - Sand and gravel workings. - Docks, marinas and wharves. - Navigation facilities. - MOD defence installations. - Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring waterside location. - Water-based recreation (excluding sleeping accommodation). - Lifeguard and coastguard stations. - Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. - Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.
¹ DETR Circular 04/00 – para. 18: Planning controls for hazardous substances. www.communities.gov.uk/index.asp?id=1144377 ² See Planning for Sustainable Waste Management: Companion Guide to Planning Policy Statement 10 for definition. www.communities.gov.uk/index.asp?id=1500757	

Development Description	Vulnerability Class (PPS 25 Annex D, Table D2)
Harbour House – Residential	more vulnerable

Flood Risk Vulnerability Classification

4.1.3 From PPS 25, a "less vulnerable" land use could be appropriate to Flood Zone 3a (High Probability of flooding at higher than 1 in 100 annual probability) with the "more vulnerable" use only permitted if the exception test is passed.

4.2 Exception Test

4.2.1 For the Exception Test to be passed:

- a) *it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA where one has been prepared. If the DPD has reached the 'submission' stage – see Figure 4 of PPS12: Local Development Frameworks – the benefits of the development should contribute to the Core Strategy's Sustainability Appraisal;*

Restoring the building to its former Georgian glory and the change of use from the redundant public house and restaurant to a family home will provide wider benefits to the Community. Retaining the present situation blights the local community.

- b) *the development should be on developable²³ previously-developed land or, if it is not on previously developed land²⁴, that there are no reasonable alternative sites on developable previously-developed land; and*

This is a restoration project and change of use.

- c) *A FRA must demonstrate that the development will be safe, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.*

The change of use will be safe if managed in accordance with advice given herein.

Extract from PPS 25, section D9 is shown above in italics.

5.0 OBSERVATIONS

- 5.1 The proposed change of use and restoration of a redundant public house and restaurant to a family home would appear to pass both the Sequential test and Exception test as required under PPS 25.
- 5.2 Harbour House will be at an increased risk of tidal and fluvial flooding as sea levels increase with time. However such events should they occur are reasonably predictable and so risk to public health can be managed through systems such as the Environment Agency's Flood Line Warning's Scheme.

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Date: 6 April 2011

