

# 68 The Chase, Sinfin, Derby DE24 9PD

## Flood Risk Assessment

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### **Executive Summary**

The site under consideration is located at 68 The Chase, Sinfin, Derby. Presently it is a semi-detached property with a existing small single storey rear and side extension.

This planning application seeks approval for a two storey extension to an existing domestic residence and retention of a single storey garden annex.

The site is located within Flood Zone 3 as identified by the EA Flooding Maps as per the Derby City Council Supplementary maps. It is not within any Conservation Area. This report addresses the flooding impact of the scheme. In line with the Environment Agency guidelines the proposed development is considered acceptable.

**1. Flood Risk**

The property lies within Flood Zone 3/2 and therefore has a high risk of flooding from river sources. See the EA Flood Map report. The proposed alterations are either internal or at roof height level. Existing rainwater drainage routes will remain unaltered. The site is a mixture of soft and hard landscaping. It is considered that there will be minimal changes to the impermeable area.

**2. Vulnerability Classification**

The vulnerability class for the proposed development, with respect to Table 2 of the Technical Guidance, is 'more vulnerable'. Table 3 of the Technical Guidance, 'Flood Risk Vulnerability and Flood Zone Compatibility', shows that more vulnerable land uses are suitable for siting within Flood Zone 3.

**Table 3: Flood risk vulnerability and flood zone 'compatibility'**

| Flood risk vulnerability classification (see table 2) |                               | Essential infrastructure | Water compatible | Highly vulnerable       | More vulnerable         | Less vulnerable |
|-------------------------------------------------------|-------------------------------|--------------------------|------------------|-------------------------|-------------------------|-----------------|
| Flood zone (see table 1)                              | Zone 1                        | ✓                        | ✓                | ✓                       | ✓                       | ✓               |
|                                                       | Zone 2                        | ✓                        | ✓                | Exception Test required | ✓                       | ✓               |
|                                                       | Zone 3a                       | Exception Test required  | ✓                | ✗                       | Exception Test required | ✓               |
|                                                       | Zone 3b functional floodplain | Exception Test required  | ✓                | ✗                       | ✗                       | ✗               |

**Key:**      ✓ Development is appropriate.  
                  ✗ Development should not be permitted.

**3. Sequential and Exception Test**

The Sequential Test, as set out in the Technical Guidance, aims to steer development to areas with the lowest risk of flooding (ie to steer developments to Flood Zone 1 where possible). The proposals are for works to an existing residential dwelling which is to remain as part of a single dwelling unit. This classes as 'minor development' in accordance with Paragraph 46 of the Technical Guidance, and therefore, there is no requirement to apply the Sequential and Exceptions Test.

**4. Assessment of flood risk**

The site is located within flood zone 3 and is thought to be vulnerable from flood events. However, this proposal will have no increase in storm run off as the proposal retains a similar permeable area to the existing drained area. There would be a small increase in foul drainage flows which are cyclical and base flow is very low.

The gov.uk flood risk summarises the site risks in the enclosed report. Furthermore, the Environment Agency guidance for householder and other minor extensions

proposes a simplified test for developments upto 250m<sup>2</sup>. This is enclosed in Appendix A.

The proposal includes instructions to all the residents to leave the house to a safe refuge on The Chase.

In general, it is considered that the proposed works will not significantly affect any future flooding and that suitable safe means of escape utilising the existing arrangements will be sufficient.

### 5. Site Specific Mitigation

Site specific key points are noted below:

1. The Cuttle Brook is located at some distance from the site and is in part an open and culverted watercourse. In the hierarchy of means of discharging surface water then this would be the best form for discharging surface water generated by the development. However, such a route would involve working in highway and private land, and it may not be possible to achieve the minimum gradients. It is not practicable to discharge surface water from the new development into an open watercourse.
2. The minimal amount of foul water arising from the new bathroom(s) will be discharged to the existing foul drainage system.
3. Given the site is fairly level then the maximum flood depth is estimated at no more than 300mm. Therefore, there is potential for water to be approximately 150mm above the existing ground floor level. The property should be protected for a flood depth upto 450mm and therefore the proposed alterations take this into account.
4. The risk to the development is no more than the existing risk to the current dwelling, albeit some ground floor space will be used for sleeping purposes on a temporary basis (annex during the construction works). Suitable means to minimise and manage the risk and damage caused by water entering the property will include:
  - a. Habitable Areas:
    - i. The use as a domestic dwelling will remain.
    - ii. Floor levels for the extension will be set at the same level as the existing dwelling.
    - iii. Flood barriers will be made available to be utilised in the event of a flood warning.
    - iv. Windows will be set with cill levels at least 450mm above the floor level to avoid water ingress.
    - v. Electrical sockets will be raised at least 450mm above the floor level.
    - vi. Clear exit routes leading to the highway where flood levels will be less than 200mm depth.
  - b. Storage Areas:
    - i. Electrical sockets will be raised at least 450mm above the floor level.

## Appendix A – EA Guidance Form For Household Extensions

Completed EA Guidance Form.



### Householder and other minor extensions in Flood Zones 2 and 3

This guidance is for domestic extensions; and non-domestic extensions where the additional footprint created by the development does not exceed 250 square metres. It should NOT be applied if an additional dwelling is being created.

We recommend that:

#### Planning Authorities

- 1) Refer the applicant to the standing advice pages on the Environment Agency website or provide them with a copy of this page for them to include as part of the planning application submission.
- 2) Check the planning application to ensure that one or other of the mitigation measures from the table below has been incorporated.

**Applicants** complete the table below and include it with the planning application submission. The table, together with the supporting evidence, will form the Flood Risk Assessment (FRA) and will act as an assurance to the Local Planning Authority that flood risk issues have been adequately addressed. Print the completed form to a PDF writer if submitting this form electronically.

| Applicant to choose one or other of the flood mitigation measures below                                                                                                                                                                                | Applicant to provide the LPA with the supporting information detailed below as part of their FRA                                                                                           | Applicant to indicate their choice in the box below. Enter 'yes' or 'no' |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Either ;<br><br>Floor levels within the proposed development will be set no lower than existing levels AND, flood proofing of the proposed development has been incorporated where appropriate.                                                        | Details of any flood proofing / resilience and resistance techniques, to be included in accordance with 'Improving the flood performance of new dwellings' CLG (2007)                      | Yes                                                                      |
| Or,<br><br>Floor levels within the extension will be set 300mm above the known or modelled 1 in 100 annual probability river flood (1%) or 1 in 200 annual probability sea flood (0.5%) in any year. This flood level is the extent of the Flood Zones | This must be demonstrated by a plan that shows finished floor levels relative to the known or modelled flood level. All levels should be stated in relation to Ordnance Datum <sup>1</sup> |                                                                          |

### Subterranean/basement extensions

Due to the risk of rapid inundation by floodwater; basements should be avoided in areas at risk of flooding.

The LPA may hold additional guidance for basement extensions.

Self-contained basement dwellings are 'Highly Vulnerable' development and should not be permitted in flood zone 3. We are fundamentally opposed to these developments.



### **Cumulative impact of minor extensions and the removal of Permitted Development rights.**

PPS25 paragraph D16 highlights the potential for the cumulative impact of minor extensions to have a significant effect on flood risk. Where local knowledge (Strategic Flood Risk Assessment held by the LPA/information provided by the parish council) suggests this is the case the guidance contained in FRA guidance note 2 should be applied<sup>2</sup>. FRA guidance note 2 can also be applied where permitted development rights have been removed for flood risk reasons. The Environment Agency does not usually comment on minor development in this category.

### **Permeable paving and changes to permitted development rights for householders**

On the 1<sup>st</sup> October 2008 the General Permitted Development Order (GPDO) in England was amended by the Government (Statutory Instrument 2008 No. 2362).

One of the changes introduced by the GPDO amendment is the removal of permitted development rights for householders wishing to install hard surfacing in front gardens which exceeds 5 square metres (i.e. 1m x 5 m) without making provision to ensure permeability. This means that use of traditional materials, such as impermeable concrete, where there is no facility in place to ensure permeability, requires an application for planning permission.

In order to help and advise householders of the options for achieving permeability and meeting the condition for permitted development status the Department for Communities and Local Government (CLG) has produced guidance on permeable paving which can be found on the following link <http://www.communities.gov.uk/publications/planningandbuilding/pavingfrontgardens>.

The Environment Agency support this change to the GPDO as it is in line with the recommendations of the Pitt Report regarding the need to better tackle the impact of surface water flooding. However, Local Planning Authorities should determine these applications in accordance with the CLG guidance **without** consulting the Environment Agency.

### **End of comment**

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## Appendix B – Proposed additional flood resilient measures

The existing building and any ground level extensions should incorporate the following:

1. Smart air bricks to replace existing air bricks.  
<https://www.ukflooddefencealliance.com/products-services/airbrick-protection/smart-airbricks/>



2. Non-return valves on appliance outlets or on the final drainage outlet.



### Appendix C – Flood Response Plan

Prior to occupation all residents shall be provided with the information below to be followed in the event of flooding occurring:

1. Contact numbers for emergency services
2. Map showing a safe route to an external refuge area for all residents. The preferred route will be through the front driveway towards The Chase highway.

