

Householder and other minor extensions in Flood Zones 2 and 3

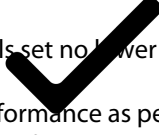
This guidance is for domestic extensions; and non-domestic extensions where the additional footprint created by the development does not exceed 250 square metres. It should NOT be applied if an additional dwelling is being created.

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'
<p>Either ;</p> <p>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.</p>	<p>Details of any flood proofing / resilience and resistance techniques, to be included in accordance with <i>'Improving the flood performance of new dwellings'</i> CLG (2007)</p>	<p>Yes</p> <p>Floor levels set no lower than existing levels. </p> <p>Flood performance as per attached additional information.</p>
<p>Or;</p> <p>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</p>	<p>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 Datum¹</p>	<p>No</p>

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.

Continued...

¹ Ordnance Datum or the abbreviation 'OD' is the mean level of the sea at Newlyn in Cornwall from which heights above sea level are taken. The contour lines on Ordnance Survey maps measure heights above OD for example, though these are not accurate enough for a flood risk assessment..

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 applied². 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 1st 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

Additional information to accompany Environment Agency form FRSA009

Proposed Classroom Extension at Swiss Gardens Primary School, Shoreham-by-Sea

The following information was obtained from the *Adur District Council SFRA (Strategic Flood Risk Assessment)*:

- SFRA Drg. No. F1-T13 indicates that the entire site lies within Tidal Flood Zone 3a.
- SFRA Drg. No. C2-T13 indicates that the entire site lies within Future Tidal Flood Zone 3b (2056) and Future Tidal Flood Zone 3b (2106).
- SFRA Drg. No.s F1-F13 and C2-F13 indicate that none of the site lies within Current or Future Fluvial Flood Zones.
- SFRA Drg. No. A3-T13 indicates that most of the site and including the area of proposed works lies within a zone of 0.00 – 0.25 m/s Defended 0.5% AEP Tidal Flood Velocity.
- SFRA Drg. No. A2-T13 indicates that the Defended 0.5% AEP Tidal Flood Depth varies across the site from 0m to 1.0-1.25m range.

This drawing also indicates that the footprint of the existing school buildings lies within the same range of zones from 0m to 1.0-1.25m range.

This drawing also indicates that the area of proposed works lies within the range of zones from 0.5-0.75m to 1.0-1.25m range.

There is no indication that any of the existing school buildings have been designed, constructed, equipped or furnished with consideration to flood performance or managing the flood risk.

With reference to the guidance contained within the document *Improving the Flood Performance of New Buildings CLG (2007)*:

- In accordance with the recommendations of the document, the proposed extension avoids adding to the source, cause or impact of flooding risk.
- Flood avoidance is not considered practicable due to the siting, levels, configuration and nature of the existing buildings, and with consideration of the AEP Tidal Flood Depth across the site.
- The document advises to attempt to prevent water ingress at design water depth <0.6m (or <0.3m where structural concerns exist). Due to the intended purpose of the proposed extension (classroom enlargement), it is not practicable to separate it from the existing building to which it is attached, and therefore any flooding of the existing building will cause a corresponding equal level of flooding within the proposed extension.

As such, the achievable flood resistance of the proposed extension is restricted by the flood resistance performance limitations of the existing building to which it is attached. Subsequently, there is no benefit to design and construct the proposed extension to prevent water ingress to a standard any higher than that of the existing building to which the proposed extension is attached. (note that the water exclusion performance of the existing building is considered to be poor, partly due to the presence of a number of external doors and ventilation openings)

With regard to resistance to water ingress at design water depth <0.3m, the proposed extension will be at least equal in performance to the existing building to which it is attached, and will not cause a reduction in performance to any part of the existing building.

- The document advises to permit water ingress at design water depth >0.6m (or >0.3m where structural concerns exist) to avoid excessive water pressures. For the proposed extension this also needs to be considered in conjunction with the existing building because there is no separation.

With consideration of the AEP Tidal Flood Velocity and the existing building construction, the proposed extension in combination with the attached existing building will permit water ingress to satisfy the document advice without need for special design.

- The document advises the use of materials and construction design which are resilient to the effects of flooding.

Floors, walls, doors and windows of the proposed extension are of suitable design and materials to maintain structural integrity. Foundations and steel frame will be designed by the Structural Engineer with due consideration of the flood risk.

Floors: Ground supported concrete slab, with continuous DPM and rigid closed-cell insulation.

Walls: Brick & block cavity wall construction with rigid closed-cell insulation.

Doors: Aluminium framed part-glazed doors, with glazing to relevant standards.

Windows: Aluminium framed D/G units, with glazing to relevant standards.

Finishes, fixtures and fittings will be selected primarily for their everyday function and durability. Although consideration will be given to the effects of flooding, the probability and predicted frequency of flooding and subsequent likelihood of flood damage occurring must be considered when selecting such items, which may be more expensive and/or less suitable for everyday purpose. As such, some or all of these items may be considered sacrificial with respect to flood resilience.