

## Flood Risk Assessment (FRA)

### Proposed Side Extension to Existing Garage

**Site Address: FELDEN, WEST HILL, EAST GRINSTEAD, WEST SUSSEX, RH19 4EP**

**Prepared for Planning Submission – Mid-Sussex District Council**

**1. Introduction** This Flood Risk Assessment has been prepared in support of a householder planning application for a proposed side extension to the existing garage at **Felden, West Hill, East Grinstead, West Sussex, RH19 4EP**.

The assessment has been prepared following a request from Mid Sussex District Council for a Flood Risk Assessment on the basis that the application site is identified as being within an area potentially at risk of **surface water flooding**.

The purpose of this assessment is to consider the flood risk associated with the proposed development and to demonstrate that the proposed works can be undertaken safely without increasing flood risk to the existing dwelling, neighbouring properties or elsewhere.

This assessment is proportionate to the nature and scale of the development, which comprises a relatively small householder extension to an existing residential property.

## 2. Site Location and Existing Development

The application site comprises the established residential property known as **Felden**, situated on West Hill, East Grinstead.

The property is an existing detached dwelling with an attached garage and associated residential curtilage.

The submitted location plan identifies the property and surrounding development, while the site/block plan shows the proposed extension on the side of the existing garage.

The site lies within an established residential area. The Ordnance Survey information incorporated into the submitted plans indicates levels in the immediate locality of approximately **117 m AOD**, although this is contextual mapping information rather than a detailed topographical survey.

## 3. Proposed Development

The development comprises a **single-storey side extension to the existing garage**.

The proposed ground-floor plan shows the extension immediately alongside the existing garage, with the principal section extending approximately **6.425 m** along the side of the garage. The

works remain directly associated with the existing dwelling and do not create an additional residential unit.

The extension is to be covered by a new roof, as shown on the proposed roof plan.

The proposed elevations show the extension constructed principally in brickwork to match the existing dwelling, with the new side element incorporating a PPC metal-sheet flat roof.

The proposal therefore represents a relatively modest increase in built footprint within the existing residential curtilage.

#### 4. Planning and Flood Risk Context

Mid Sussex District Council requires flood risk to be considered from all relevant sources, including surface water.

The Council's published flood-risk guidance confirms that surface-water flood risk should be established using the Environment Agency mapping and that areas identified as being at **high or medium surface-water flood risk are treated as equivalent to Flood Zone 3**, while areas of **low surface-water flood risk are treated as equivalent to Flood Zone 2** for flood-risk assessment purposes.

The Environment Agency's current standing advice also states that a householder or non-domestic extension with a floor area of no more than **250 m<sup>2</sup>** is regarded as a minor extension for the purposes of flood-risk standing advice.

The proposed development falls well within this category.

The Environment Agency requires a site-specific assessment to be appropriate to the scale, nature and location of the development and proportionate to the degree of flood risk.

#### 5. Sources of Flood Risk

##### 5.1 Surface Water Flooding

Surface water represents the principal source of flood risk relevant to this planning application and is the reason Mid Sussex District Council has requested this assessment.

Surface-water flooding generally occurs during intense rainfall events when rainfall cannot infiltrate into the ground or enter drainage systems sufficiently quickly, resulting in temporary overland flow or localised ponding.

The potential surface-water risk affecting the site is therefore acknowledged.

The development is, however, a small extension to an existing garage rather than a new dwelling or intensification of residential use.

The development should be detailed so that existing overland flow routes are not obstructed and surface water is not displaced towards the existing dwelling or adjoining properties.

## 5.2 Fluvial Flooding

The proposal does not relate to works within or immediately adjacent to a mapped main river or ordinary watercourse.

The flood-risk issue raised by the Council relates specifically to **surface water flooding**, rather than a known fluvial flood constraint.

## 5.3 Groundwater

No site-specific evidence has been provided indicating a significant history of groundwater flooding affecting the existing dwelling.

Nevertheless, appropriate construction detailing, damp-proofing and drainage measures will be incorporated as part of the detailed construction design.

## 5.4 Sewer Flooding

There is no information available to the applicant indicating a particular history of sewer flooding affecting the property.

The development is not expected to result in a material increase in foul drainage discharge because the proposal is an extension to the existing garage and does not create an additional dwelling.

## 6. Surface Water Management

The proposed development introduces an additional roof area and therefore requires appropriate management of the resulting surface-water runoff.

Surface water from the proposed roof will be collected by suitable gutters and rainwater pipes and discharged using an appropriate drainage solution.

The preferred drainage hierarchy will be:

**1. Infiltration to ground**, where ground conditions permit, through a suitably located soakaway or other infiltration feature;

**2. Where infiltration is demonstrated to be unsuitable, discharge to an appropriate existing surface-water drainage system at an appropriately controlled rate, subject to the necessary technical approvals.**

The final drainage arrangement will be confirmed as part of the detailed construction/Building Regulations design.

Any soakaway will be positioned an appropriate distance from buildings and boundaries and designed having regard to ground conditions and infiltration capability.

Surface-water runoff from the proposed extension will **not be intentionally discharged onto neighbouring land or onto the public highway.**

The Environment Agency advises that development in an area at risk of flooding should manage surface water so that water is safely directed away from buildings and managed within the site wherever practicable.

## **7. Finished Floor Level and Flood Resilience**

The extension is ancillary to the existing dwelling and primarily extends the existing garage accommodation.

The proposed extension should be constructed with its finished internal floor level **no lower than the existing garage floor level**, subject to the requirements of access and detailed construction design.

Where practicable, thresholds and external ground levels should be detailed to prevent surface-water runoff entering the extension.

External paving and ground immediately adjoining the extension should fall away from the building or otherwise be drained so that runoff is not directed towards door openings.

Where appropriate, the detailed construction should incorporate flood-resilient measures including:

- suitable damp-proof construction;
- low-permeability materials at lower wall level;
- sealed service penetrations at vulnerable low levels;
- external levels arranged to direct runoff away from the building; and
- drainage channels or other local interception measures where necessary at vulnerable thresholds.

These measures provide an additional degree of resilience should exceptional surface-water flooding occur.

## 8. Effect of the Development on Surface Water Flood Risk

The proposal represents a relatively small increase in built footprint compared with the overall residential plot.

The proposed development will not involve substantial changes to the wider site topography and should not create a barrier across a significant surface-water flow route.

Any increase in runoff generated by the additional roof area will be managed within the site through the proposed surface-water drainage arrangements.

Accordingly, subject to the drainage and mitigation measures identified within this assessment, the development is not expected to:

- materially increase the rate or volume of uncontrolled surface-water runoff;
- divert floodwater towards neighbouring properties;
- increase flood risk to the public highway;
- materially obstruct an existing surface-water flow path; or
- increase flood risk elsewhere.

## 9. Climate Change

Climate change has the potential to increase the frequency and intensity of extreme rainfall events and consequently increase the risk of surface-water flooding.

The Environment Agency identifies the design surface-water flood event for FRA purposes as the **1% annual probability (1 in 100 year) event including an allowance for climate change**.

The proposed drainage and resilience measures should therefore be detailed with appropriate allowance for more intense future rainfall rather than being based solely upon existing rainfall conditions.

Given the limited scale of the extension, the proposed management of roof runoff and retention of safe overland flow arrangements are considered proportionate responses to this risk.

## 10. Access and Escape

The development does not create an additional dwelling or materially alter the existing residential access arrangements.

The existing means of access to and from the dwelling will therefore remain available.

In the event of an exceptional surface-water flood event, occupants would also retain the existing dwelling as a place of refuge, including accommodation at first-floor level.

The proposal therefore does not introduce a materially greater risk to occupants in respect of emergency access or escape.

## 11. Sequential Test

The development comprises a **householder extension to an existing dwelling**.

Current Environment Agency standing advice confirms that householder development such as residential extensions, conservatories and loft conversions is **exempt from the Sequential Test**.

The proposal is therefore not considered to require a separate Sequential Test.

## 12. Residual Risk

It is recognised that no drainage system can entirely eliminate the possibility of flooding during rainfall events exceeding its design capacity.

Residual risk can nevertheless be appropriately managed through:

- appropriate management of roof runoff;
- maintaining or improving existing overland flow paths;
- preventing external ground levels from directing water towards the building;
- suitable threshold detailing;
- appropriate flood-resistant construction at vulnerable lower levels; and
- ensuring that the development does not displace surface water towards neighbouring properties.

These measures are considered proportionate to the nature and scale of the proposed householder development.

## 13. Conclusion

This Flood Risk Assessment has been prepared in response to Mid Sussex District Council's request for further information regarding the site's identified potential **surface-water flood risk**.

The assessment acknowledges that surface-water flooding represents a potential constraint affecting the site.

However, the proposed development comprises only a **small single-storey extension to the existing garage of an established residential property** and does not create an additional dwelling or increase the vulnerability classification of the site.

The development can be appropriately mitigated through suitable management of roof runoff, appropriate finished floor and threshold detailing, maintenance of safe overland flow routes and incorporation of proportionate flood-resilient construction measures.

Surface water from the proposed roof will be appropriately managed within the site, with infiltration utilised where feasible and an alternative suitable controlled drainage arrangement provided where infiltration is demonstrated to be unsuitable.

The proposal will not intentionally discharge additional surface water onto adjoining property or the public highway.

Subject to the mitigation measures set out within this assessment, it is concluded that:

- **the proposed extension can remain safe from surface-water flooding for its intended lifetime;**
- **the development will not materially increase surface-water flood risk elsewhere;**
- **appropriate measures are available to manage the additional runoff generated by the extension; and**
- **the development is acceptable in flood-risk terms.**

Accordingly, the identified surface-water flood risk **should not represent a reason for withholding planning permission** for the proposed householder development.