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ARCHITECT

## **Flood Risk Assessment**

**5 Sea Way, Elmer, Bognor Regis, PO22 6JX**

### **Proposed Extensions, Alterations and Refurbishment to Existing Dwelling**

Prepared in support of a Householder Planning Application to Arun District Council.

#### **1. Introduction**

This Flood Risk Assessment (FRA) has been prepared in support of a householder planning application for proposed extensions, alterations and refurbishment of the existing dwelling at 5 Sea Way, Elmer, Bognor Regis, PO22 6JX.

The site is occupied by an existing detached residential dwelling and lies within Flood Zone 3.

The proposal retains the property as a single residential dwelling and does not involve the creation of an additional dwelling or a change to a more vulnerable use.

A previous, more extensive scheme of extensions and alterations was granted planning permission by Arun District Council under application M/61/25/HH on 1 October 2025. The approved documents expressly included a Flood Risk Assessment and Lidsey Drainage Impact Assessment.

The Local Planning Authority considered flood risk when determining that application and concluded that the development would not result in increased flood risk, subject to the finished internal floor levels of the extensions being no lower than those of the existing dwelling.

The current proposal represents a substantial simplification and reduction of the previously approved development and continues the same general flood-risk principles.

#### **2. Site Description**

5 Sea Way is an existing detached two-storey residential dwelling situated within the established residential area of Elmer.

The site contains the existing dwelling together with driveway, hardstanding, terraces and established garden areas.

The property will remain in residential use as a single dwelling.

The existing dwelling contains three bedrooms and the proposed dwelling will also contain three bedrooms. There is therefore no increase in the number of dwellings or principal bedrooms as a consequence of the proposed development.

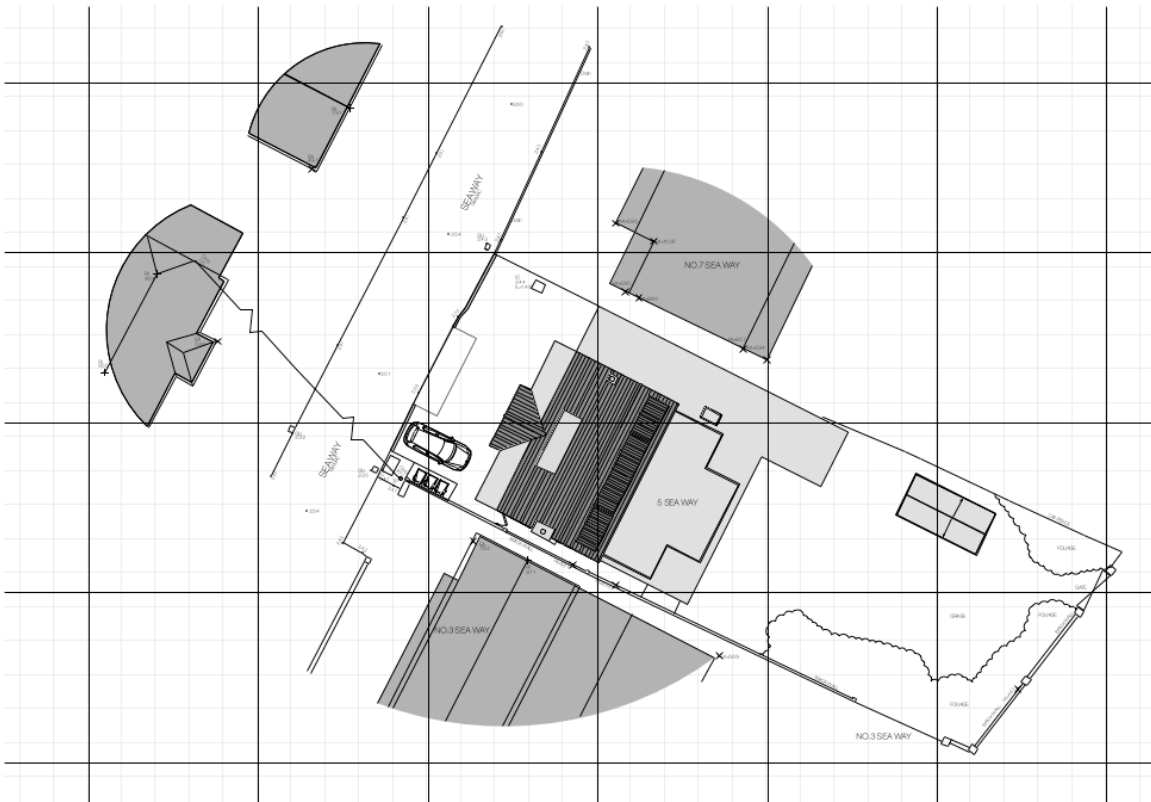
The current proposal comprises:

- a modest alteration and extension to the front entrance;
- a new single-storey garage to the northern side;
- demolition and replacement of existing single-storey rear additions;
- new single-storey rear extensions;
- a first-floor roof terrace;
- internal alterations and refurbishment;
- replacement windows, doors and external finishes; and
- associated landscaping, parking and drainage works.

There are no proposed basements and the development does not involve lowering the existing ground levels.

The existing principal first-floor building envelope, main roof form and overall height of the dwelling are substantially retained.

### Proposed Site Plan



### 3. Flood Risk Classification

The site lies within Flood Zone 3.

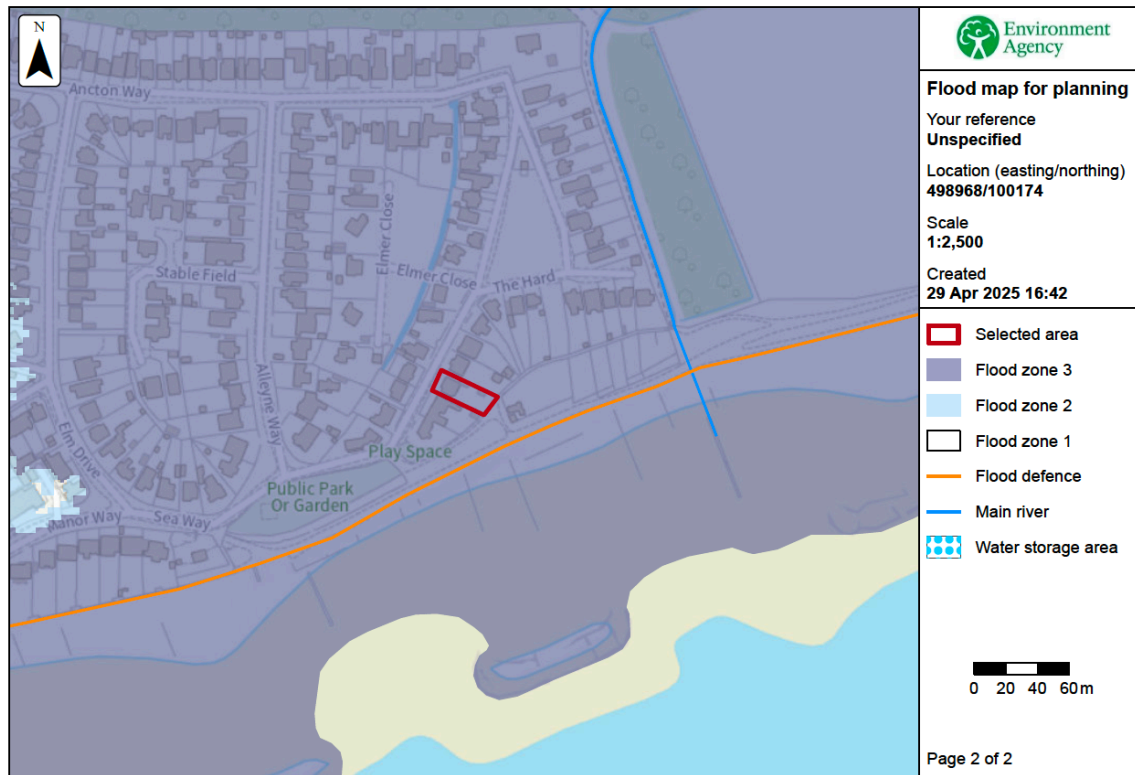
The Local Planning Authority's assessment of application M/61/25/HH also identified the property as being within an area with potentially high groundwater levels, the Lidsey Local Flood Risk Zone and the Lidsey Treatment Catchment Area.

The site's location within Flood Zone 3 means that flood risk is an important consideration when alterations and extensions to the dwelling are proposed.

However, the proposal is for alterations and extensions to an established residential property. There is no new dwelling and no change from the established residential use.

The current development also largely occupies areas of existing built form and hardstanding.

### Environment Agency Flood Map



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## 4. Previous Planning Permission and Flood Risk

The planning history of the property is particularly relevant to the assessment of flood risk.

Planning permission M/61/25/HH permitted a considerably more extensive development comprising two-storey front, side and rear extensions, reconfiguration of the internal layout, a first-floor terrace with external stair and associated works.

That application was accompanied by a Flood Risk Assessment and Lidsey Drainage Impact Assessment, both of which were included within the approved documents.

In considering that proposal, the planning officer acknowledged that the site lies within Flood Zone 3 and the Lidsey Treatment Catchment Area.

The officer noted that the previously proposed front and side extensions extended over existing paved areas and that the rear extension would largely replace existing extensions and paved areas.

The officer concluded that, subject to the finished floor levels being set no lower than those of the existing dwelling, the development would not result in increased flood risk.

A condition was subsequently imposed requiring:

“The finished internal floor levels of all the proposed extensions are to be set no lower than the existing dwelling.”

The reason given was in the interests of flood risk and compliance with Arun Local Plan Policy W DM2.

The current proposal follows this previously accepted approach.

## **5. Proposed Development and Flood Vulnerability**

The property is currently occupied as a residential dwelling and will remain a residential dwelling following completion of the proposed works.

There is therefore no change in the established use of the site.

The existing house contains three bedrooms and the proposed dwelling will retain three principal bedrooms. A home office and first-floor lounge provide flexible ancillary accommodation but do not constitute separate residential accommodation.

The development does not therefore create an additional dwelling or introduce a new residential use onto previously undeveloped land.

The proposed works are domestic extensions and alterations to an established dwelling.

Finished internal floor levels within the proposed extensions will be set no lower than the corresponding existing finished floor level, consistent with the approach previously accepted by the Local Planning Authority.

## **6. Finished Floor Levels**

Finished floor levels are an important element of the flood-risk mitigation strategy.

No lowering of the existing internal floor levels is proposed.

The finished internal floor levels of all new extensions will be set no lower than those of the existing dwelling.

This directly reflects the requirement imposed upon the previously approved development under condition 4 of planning permission M/61/25/HH.

Maintaining the established floor level also enables the extensions to integrate appropriately with the retained dwelling while avoiding the creation of lower internal areas that could be more susceptible to flooding.

## **7. Surface Water Flood Risk**

Surface-water management is addressed in detail within the separate Surface Water Drainage Information and Lidsey Drainage Impact Assessment accompanying the application.

The existing site contains approximately:

Existing roof area: 127 m<sup>2</sup>

Existing impermeable ground surfaces: 166 m<sup>2</sup>

Total existing impermeable area: 293 m<sup>2</sup>

The proposed development will contain approximately:

Proposed roof area: 198 m<sup>2</sup>

Proposed external ground surfacing: 154 m<sup>2</sup>

Of the proposed external ground surfacing, approximately 85 m<sup>2</sup> of the front driveway will comprise permeable resin surfacing.

The remaining conventional impermeable external hardstanding is therefore approximately 69 m<sup>2</sup>.

The resulting area of proposed roof and conventional impermeable hardstanding requiring positive drainage is approximately:

$$198 \text{ m}^2 + 69 \text{ m}^2 = 267 \text{ m}^2$$

This compares with approximately 293 m<sup>2</sup> of existing impermeable roof and ground surfaces.

The proposed development therefore provides an approximate 26 m<sup>2</sup> reduction, equivalent to approximately 9%, in conventionally impermeable contributing area.

Surface water from roof areas and remaining impermeable hardstanding will be directed to below-ground attenuation crates before controlled discharge to the existing drainage system.

The attenuation system will be designed at detailed design stage to accommodate the relevant design rainfall event, including the 1-in-100-year event plus a 40% climate-change allowance.

The proposed drainage strategy therefore provides a managed system for dealing with surface water rather than allowing additional unrestricted runoff to the existing drainage network.

## **8. Flood Resilience and Resistance**

Although the proposals comprise extensions to an existing dwelling rather than a new dwelling, appropriate flood-resilient construction measures will be incorporated into the new works where reasonably practicable.

Measures will include consideration of:

- flood-resilient and water-resistant materials at lower levels;
- suitable damp-proof membranes within new floor construction;
- positioning electrical sockets and vulnerable services above low level where reasonably practicable;
- appropriate sealing of service penetrations;
- water-resistant finishes and construction methods where appropriate; and

- non-return/backflow protection to new drainage connections where appropriate.

The objective is to reduce potential damage and facilitate drying, cleaning and recovery should an exceptional flood event occur.

These measures follow the general approach contained within the Flood Risk Assessment submitted with the previously approved scheme.

## **9. Foul Drainage and Backflow**

The property is understood to be served by the existing public combined sewer system.

The development will retain the existing residential use and there will be no increase in the principal number of bedrooms.

Foul drainage from the refurbished and extended dwelling will continue to connect to the existing drainage system serving the property, subject to any detailed alterations required during construction.

Where appropriate, non-return valves or equivalent backflow protection will be incorporated into new drainage connections to reduce the potential for surcharge from the downstream sewer system to enter the property.

Any such devices will be accessible for inspection and maintenance in accordance with the manufacturer's requirements.

## **10. Groundwater**

The Local Planning Authority's previous assessment identifies the site as being within an area with potentially high groundwater levels.

The proposed development does not include a basement, significant excavation below the existing building or lowering of existing ground-floor levels.

The proposed surface-water strategy also does not rely solely upon conventional soakaways as the means of disposing of runoff.

Instead, the scheme uses permeable driveway construction as a source-control measure together with attenuation and controlled discharge for roof water and remaining impermeable areas.

This avoids reliance upon unverified deep infiltration in an area where groundwater conditions may constrain its effectiveness.

## **11. Flood Warning and Safe Occupation**

The development remains an existing residential property and does not introduce a new dwelling into the flood-risk area.

Occupants should register for and monitor available Environment Agency flood warnings applicable to the area and remain aware of relevant local flood information.

In the event that a flood warning is issued, occupants should follow the advice of the Environment Agency and emergency services and avoid unnecessary travel through floodwater.

Important documents, medicines and vulnerable possessions should, where practicable, be stored above potential flood level.

Electrical isolation points and other important services should remain readily accessible.

The property contains first-floor accommodation, providing an upper level within the existing dwelling should occupants need to remain above ground-floor level temporarily during an extreme event.

## **12. Sequential and Exception Tests**

The proposal comprises householder extensions and alterations to an existing residential dwelling.

It does not involve the allocation of land for development, the creation of a new dwelling or the introduction of a residential use onto a previously non-residential site.

The previously submitted Flood Risk Assessment for M/61/25/HH considered the Sequential and Exception Tests not to be required for the householder development, and the Local Planning Authority subsequently approved that application.

The current proposal is a reduced form of development at the same existing dwelling and does not materially alter the established flood-vulnerability circumstances of the site.

## **13. Flood Risk Elsewhere**

The proposal has been designed so that it does not increase flood risk elsewhere.

The development largely occupies areas of existing building and hardstanding, and the amount of conventionally impermeable contributing area will reduce from approximately 293 m<sup>2</sup> to approximately 267 m<sup>2</sup>.

Approximately 85 m<sup>2</sup> of the proposed front driveway will use permeable construction.

Runoff from roofs and the remaining impermeable external surfaces will be collected and attenuated before controlled discharge.

The Local Planning Authority previously concluded that the more extensive development permitted under M/61/25/HH would not increase the chances of flooding elsewhere in the district.

The present proposal maintains the same underlying principle while incorporating a permeable driveway and reducing the area of conventional impermeable surface compared with the existing site.

## **14. Residual Risk**

As with any property situated within Flood Zone 3, a residual risk from an extreme flood event cannot be entirely eliminated.

The proposal responds to that residual risk through a combination of:

- retaining the established residential use;

- creating no additional dwelling;
- retaining the existing three-bedroom arrangement;
- maintaining finished floor levels no lower than the existing dwelling;
- incorporating flood-resilient construction where appropriate;
- providing backflow protection where appropriate;
- providing first-floor accommodation within the retained dwelling;
- managing surface water through permeable surfacing, attenuation and controlled discharge; and
- encouraging occupants to make use of Environment Agency flood-warning information.

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

## **15. Conclusion**

5 Sea Way is an existing residential dwelling situated within Flood Zone 3 and the Lidsey Treatment Catchment Area.

The current proposal comprises extensions, alterations and refurbishment of the existing property. It does not create an additional dwelling, does not change the established residential use and does not increase the principal number of bedrooms.

The existing house is a three-bedroom dwelling and the completed property will remain a three-bedroom dwelling.

Finished internal floor levels within the proposed extensions will be set no lower than those of the existing dwelling, consistent with the approach previously accepted by Arun District Council.

Surface-water runoff will be appropriately managed through a combination of approximately 85 m<sup>2</sup> of permeable driveway construction, below-ground attenuation and controlled discharge.

The area of conventional impermeable roof and external surfacing requiring positive drainage is calculated to reduce from approximately 293 m<sup>2</sup> in the existing situation to approximately 267 m<sup>2</sup> following development.

The development will incorporate appropriate flood-resilient construction and drainage safeguards, including backflow protection where appropriate.

Of particular relevance, Arun District Council previously granted planning permission M/61/25/HH for a substantially more extensive scheme at the property. The supporting Flood Risk Assessment formed part of the approved documents, and the planning officer concluded that the development would not result in increased flood risk, subject to maintaining appropriate finished floor levels.

The present proposal represents a substantially simplified development and continues the flood-risk principles previously accepted by the Local Planning Authority.

On this basis, the proposed development is considered capable of being undertaken safely without increasing flood risk elsewhere, subject to the mitigation and drainage measures described within this assessment.

