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Surface Water Drainage Information

20th August 2026

45 Warblington Road, Emsworth, PO10 7HG

Erection of first-floor side and rear extensions, a single-storey rear extension and a modest front extension to the existing garage, together with associated roof alterations, formation of a balcony above the garage and a rear Juliet balcony, and alterations to existing rear fenestration and other associated external alterations.

1. Introduction

This Surface Water Drainage Information has been prepared in support of the proposed extensions and associated alterations to the existing dwelling at 45 Warblington Road, Emsworth.

The purpose of the statement is to explain how surface water arising from the proposed development will be managed and to demonstrate that the development can be accommodated without increasing surface-water flood risk to the application property or adjoining land.

The drainage approach follows the principle that surface water from new development should, where reasonably practicable, be managed within the site using infiltration rather than discharged to the public sewer network.

The preferred drainage solution for the proposed development is therefore a new soakaway system located within the substantial garden serving the property.

2. Existing Site and Drainage Context

The application site comprises an existing detached dwelling within a substantial established residential garden.

The existing dwelling has an approximate roof area, measured in plan, of 212.7 m².

The precise existing surface-water drainage arrangements have not been confirmed. Given the age of the property, elements of the existing drainage system may pre-date current drainage standards.

The existing drainage arrangements serving those parts of the dwelling which are to remain unaffected by the development will be retained where appropriate.

No reliance is placed upon the existing drainage system for the disposal of surface water from the new and altered roof areas.

The site contains substantial areas of soft landscaping and garden which provide ample opportunity for the installation of a new infiltration system.

3. Proposed Development

Following completion of the development, the total roof area of the dwelling will be approximately 224.9 m².

This represents an overall increase in roofed area of approximately 12.2 m² compared with the existing property.

However, the works involve alteration and replacement of a considerably larger proportion of the existing roof arrangement.

Approximately 122.3 m² of new and altered roof area has therefore been identified as the proposed catchment to be directed to the new surface-water drainage system.

The drainage strategy does not rely solely upon dealing with the net increase in roof area. Instead, the intention is to provide a new dedicated infiltration system serving the new and substantially altered roof areas wherever practicable.

4. Impermeable Areas

The approximate roof areas are as follows:

Existing total roof area: 212.7 m²

Proposed total roof area: 224.9 m²

Net increase in total roof area: 12.2 m²

New and altered roof area proposed to discharge to the new soakaway: 122.3 m²

No new impermeable driveway, parking area or extensive hardstanding is proposed as part of the development.

The existing gravel driveway will be retained.

The principal change in impermeable area therefore relates to the proposed extensions and alterations to the roof of the dwelling.

5. Proposed Surface Water Drainage Strategy

Surface water from approximately 122.3 m² of new and altered roof area will be directed to a new infiltration system located within the residential garden.

The preferred solution is a modular cellular soakaway system constructed using purpose-made attenuation/infiltration crates or an equivalent approved system.

Rainwater from the relevant roof areas will be collected through conventional gutters, rainwater pipes and below-ground drainage and directed to the new soakaway.

The substantial size of the garden provides flexibility in determining an appropriate position for the infiltration system.

The soakaway will be positioned a minimum of 5 metres from any building.

Its final location will also take account of existing trees, boundaries, underground services and other site constraints.

6. Soakage Testing

No site-specific infiltration testing has yet been undertaken.

Prior to final design and construction of the soakaway, infiltration testing will be undertaken in accordance with BRE 365 or an equivalent accepted methodology.

The results of the testing will establish the infiltration characteristics of the underlying ground and enable the required storage volume and dimensions of the soakaway to be calculated.

The final soakaway design will therefore be based upon actual site conditions rather than assumed infiltration rates.

7. Soakaway Capacity and Detailed Design

The precise dimensions, storage volume and configuration of the proposed soakaway cannot reasonably be determined until the infiltration characteristics of the site have been established.

Detailed design will take account of:

- the approximate 122.3 m² contributing roof catchment;
- the measured infiltration rate;
- appropriate design rainfall events;
- allowance for climate change where required;
- the available storage volume within the proposed cellular system;
- suitable emptying time following a rainfall event;
- proximity to buildings, boundaries and vegetation; and
- appropriate access for inspection and maintenance where necessary.

The system will be sized so that rainfall generated by the contributing roof catchment can be appropriately managed within the site without increasing surface-water flood risk elsewhere.

8. Drainage Hierarchy

The proposed strategy gives preference to infiltration within the application site.

No new connection from the proposed roof drainage to the public surface-water or combined sewer network is proposed.

Subject to satisfactory BRE 365 testing, surface water from the new and altered roof areas will therefore be disposed of entirely through the proposed soakaway system.

Should infiltration testing demonstrate that the ground conditions are unsuitable for an infiltration solution, the surface-water drainage hierarchy will be followed and an appropriate alternative means of discharge will be established at detailed design stage.

Any alternative arrangement would be designed so that the development does not increase surface-water flood risk elsewhere.

9. Existing Drainage

The existing surface-water drainage serving retained areas of the dwelling has not been investigated in detail as part of the planning application.

The proposed strategy does not depend upon increasing the loading on the existing system.

Where existing roof areas remain unchanged, their existing drainage arrangements may continue to be used where they are functioning satisfactorily.

New and substantially altered roof areas will instead be directed to the new infiltration system described within this statement.

This approach reduces reliance upon the existing drainage infrastructure and provides a dedicated modern drainage solution for a substantial proportion of the proposed roof.

10. Ground Levels and Overland Flow

Existing external ground levels around the dwelling and within the garden will remain broadly unchanged.

No significant regrading of the site is proposed.

The development will therefore not intentionally redirect existing overland surface-water flow towards adjoining properties.

The proposed soakaway will be located within the application site and positioned so that its operation does not adversely affect the dwelling or neighbouring property.

11. Flood Risk

The accompanying Flood Risk Assessment confirms that the application site is located within Flood Zone 1 and is identified as being at very low risk from surface-water flooding.

The proposed drainage strategy will further minimise the potential for increased surface-water runoff by managing the new and altered roof drainage within the application site.

The proposal is therefore not expected to increase flood risk either to the application property or to surrounding land.

12. Maintenance

The proposed surface-water drainage system will be designed to provide a simple and durable long-term drainage solution.

Gutters and rainwater pipes will be periodically inspected and cleared of leaves and other debris as part of normal property maintenance.

Where required, suitable silt traps or catchpits will be provided upstream of the soakaway to reduce the entry of sediment into the infiltration system.

Any accessible inspection points associated with the below-ground drainage system will be maintained so that the system can be inspected and cleared if necessary.

The modular soakaway will remain permanently available for surface-water drainage and will not be built over or otherwise obstructed.

13. Summary

The proposed drainage strategy can be summarised as follows:

- the existing roof area is approximately 212.7 m²;
- the proposed total roof area is approximately 224.9 m²;
- the overall increase in roof area is approximately 12.2 m²;

- approximately 122.3 m² of new and altered roof area will be directed to the proposed new drainage system;
- no new impermeable driveway or significant hardstanding is proposed;
- the existing gravel driveway will be retained;
- the preferred drainage solution is a new modular cellular soakaway;
- the site contains ample garden space to accommodate an infiltration system;
- the soakaway will be positioned a minimum of 5 metres from any building;
- the final location, dimensions and capacity will be established following BRE 365 infiltration testing;
- no new surface-water connection to the public sewer network is proposed; and
- retained existing roof areas may continue to use their existing drainage arrangements where appropriate.

14. Conclusion

The proposed development results in a relatively modest overall increase in roofed area, from approximately 212.7 m² to approximately 224.9 m².

Notwithstanding the limited net increase, the drainage strategy proposes that approximately 122.3 m² of new and altered roof area will be directed to a new dedicated infiltration system.

The property benefits from a substantial garden with ample space available for a new modular cellular soakaway located at least 5 metres from any building.

The final position, dimensions and storage volume of the soakaway will be determined following BRE 365 infiltration testing and detailed drainage design.

No new connection to the public surface-water or combined sewer network is proposed, subject to infiltration testing confirming suitable ground conditions.

The strategy therefore provides a proportionate and sustainable means of managing surface water arising from the proposed development and will ensure that the development does not materially increase surface-water flood risk to the application site or neighbouring land.