

# FLOOD RISK ASSESSMENT

## & SURFACE-WATER DRAINAGE STRATEGY

### 19 Bishops Road

Highgate, London, N6 4HP

**Planning-stage document**

Prepared in support of a householder planning application for a lower-ground-floor rear infill extension, rear roof dormer and three front rooflights. This is a proportionate desktop assessment and drainage strategy only.

|                    |                                          |
|--------------------|------------------------------------------|
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| Prepared by        | Brass Architecture                       |
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This report should be read with the Design & Access Statement and the existing/proposed planning drawings dated July 2026.



Document control

| Revision | Date         | Prepared           | Checked      | Purpose              |
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| P01      | 29 July 2026 | Brass Architecture | Project team | Planning-stage issue |

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# 1. Executive summary

This Flood Risk Assessment (FRA) and surface-water drainage strategy supports the householder application at 19 Bishops Road. The proposals include a lower-ground-floor rear infill extension of approximately 12.70 m<sup>2</sup>, replacing the existing side infill structure at Ground Floor and the Second Floor proposals include, an extended rear dormer and three front rooflights.

|                                                                                  |                                                                                                    |                                                                                                                      |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>FLOOD ZONE</b><br><b>Zone 1</b><br>Low probability of river and sea flooding. | <b>LOCAL DESIGNATION</b><br><b>Critical Drainage Area</b><br>Surface-water betterment is required. | <b>DRAINAGE RESPONSE</b><br><b>At-source SuDS</b><br>Reuse, attenuation, permeable finishes and controlled overflow. |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|

The site is treated as being in Flood Zone 1 and is within Haringey's Critical Drainage Area. The proposal does not seek approval for: a new dwelling; to lower the existing lower-ground-floor level; or to introduce a new basement. The lower-ground-floor finished floor level shown on the measured survey is approximately 9.93 m.

The drainage strategy conservatively treats the full 12.70 m<sup>2</sup> infill area as additional impermeable roof catchment, although part or all of this footprint is already occupied by a glazed roofed structure. The proposals therefore provide significant improvement over the existing condition.

## Key drainage commitments

- Collect runoff from the new rear-extension roof and pass it through a leaf filter to a rainwater reuse and attenuation unit stored in ground.
- Provide a target minimum active attenuation volume of 0.75 m<sup>3</sup> and a preferred active volume of 1.0 m<sup>3</sup>, subject to detailed hydraulic design and available space.
- Use stored rainwater for garden irrigation, with a controlled overflow to the existing lawful drainage connection only after infiltration feasibility has been considered.
- Use permeable planted surfaces and avoid increasing impermeable hardstanding.
- Provide a linear channel drain at the new glazed threshold, with falls directed away from the building.
- Design exceedance routes so that exceptional rainfall is directed toward the rear garden and away from the building and neighbouring properties.

## Planning conclusion

With the measures in this report, the small-scale development can be constructed without increasing flood risk on or off site and will provide a net improvement in the management of surface-water runoff.



## 2. Introduction and scope

Brass Architecture has prepared this document to address flood risk and surface-water drainage for the proposed householder development at 19 Bishops Road, Highgate, London N6 4HP.

The report is proportionate to the scale of the works and has been prepared using the submitted proposals and measured survey, Haringey's adopted flood-risk and drainage policies, Haringey's Strategic Flood Risk Assessment and publicly available flood-risk information.

The objectives are to:

- identify the principal flood-risk sources relevant to the site;
- explain why the proposed development remains appropriate in flood-risk terms;
- set out a practical SuDS-led surface-water strategy;
- provide planning-stage storage parameters and design commitments; and
- identify the verification and detailed-design work required before construction.

### 2.1 Limitations

This is not a detailed civil-engineering design. No CCTV drainage survey, utility search, infiltration testing, trial pits, groundwater monitoring or proprietary hydraulic modelling has been provided. The proposed storage volume and final route of discharge shall be verified during technical design phase.



### 3. Site and proposed development

#### 3.1 Existing site

The site comprises a semi-detached residential property with a small front garden, side access and a substantial rear garden. The accommodation includes an existing lower-ground floor. The measured survey indicates lower-ground-floor levels generally around 9.91-9.98 m, with a representative finished floor level of approximately 9.93 m.

The rear currently contains a lightweight glazed sunroom. Existing rainwater and foul drainage arrangements are not recorded in the planning material and should be confirmed by survey.

#### 3.2 Proposed works

The works relevant to flood risk comprise the removal of the existing glazed sunroom and construction of a permanent lower-ground-floor rear infill extension in line with the rear building line. The Design & Access Statement records an increase of approximately 12.70 m² at lower-ground-floor level.

The rear dormer and front rooflights alter the roof but do not materially increase the overall plan area draining from the main house. The drainage strategy therefore focuses on the rear infill extension and the low-level glazed threshold.

|                              |                                        |
|------------------------------|----------------------------------------|
| Application type             | Householder planning application       |
| Existing use                 | Single residential dwelling            |
| Lower-ground-floor extension | Approx. 12.70 m² additional GIA        |
| Total GIA uplift             | Approx. 17.90 m² including rear dormer |
| Lower-ground-floor level     | Approx. 9.93 m (measured survey)       |
| New basement excavation      | None proposed                          |
| Change of vulnerability      | None; residential use retained         |



## 4. Planning policy and guidance

The strategy has been developed with reference to the National Planning Policy Framework and Planning Practice Guidance, the London Plan and Haringey's local flood-risk policy framework.

| Document / policy                | Topic                   | Relevance to the proposal                                                                                                       |
|----------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| National planning policy and PPG | Flood risk and SuDS     | Use a proportionate, risk-based approach; avoid increasing flood risk and prioritise sustainable drainage.                      |
| London Plan 2021: SI 12          | Flood risk              | Development should minimise flood risk and remain safe for its lifetime.                                                        |
| London Plan 2021: SI 13          | Sustainable drainage    | Follow the drainage hierarchy and manage runoff as close to source as practicable.                                              |
| Haringey Strategic Policy SP5    | Water management        | Reduce flood risk and improve sustainable water management.                                                                     |
| Haringey DMDPD DM24              | Managing flood risk     | All development should avoid, reduce and manage flood risk and surface runoff.                                                  |
| Haringey DMDPD DM25              | SuDS                    | Minor development should aim for greenfield runoff and at least a 50% reduction in existing runoff where practicable.           |
| Haringey DMDPD DM26              | Critical Drainage Areas | Development within a CDA must incorporate measures that reduce overall flood risk.                                              |
| Haringey SFRA Level 1            | Evidence base           | Provides borough-wide evidence on fluvial, surface-water, sewer and groundwater risk; site assessments should be proportionate. |

For this small householder extension, the policy response is to retain the existing use and levels, avoid creating new vulnerable space below the existing lower-ground floor, and deliver measurable surface-water run off improvements.



## 5. Flood-risk screening

The following screening assessment considers the main potential sources of flooding. The ratings are planning-stage judgements based on available desktop information and the submitted proposals.

| Source             | Baseline                   | Assessment                                                                                                                                    | Mitigation                                                                                          | Residual |
|--------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------|
| River / sea        | Low                        | The site is treated as Flood Zone 1. No watercourse is shown within or immediately adjoining the submitted site.                              | Retain use and levels; no new basement.                                                             | Low      |
| Surface water      | CDA sensitivity            | The site is treated as lying within Haringey's Critical Drainage Area. Intense rainfall may surcharge local drainage or create overland flow. | Reuse, attenuation, permeable finishes, threshold drainage and safe exceedance.                     | Low      |
| Sewer surcharge    | Possible                   | The existing drainage configuration is unverified and may include a combined sewer connection typical of older London streets.                | Controlled surface-water discharge; non-return valve where suitable.                                | Low      |
| Groundwater        | Low                        | No new basement excavation or lower floor level is proposed. The works should not create a new pathway or increase groundwater exposure.      | Maintain waterproofing continuity; inspect during works; provide maintainable drainage details.     | Low      |
| Artificial sources | Low                        | No reservoir, canal or other artificial water body is identified in the submitted site information.                                           | Not applicable                                                                                      | Low      |
| Exceedance         | Possible in extreme storms | Events beyond the design standard may exceed local drainage capacity.                                                                         | Proposals Direct flows away from openings and neighbours toward the rear garden's lower-risk areas. | Low      |

### 5.1 Flood Zone and sequential approach

Flood Zone 1 is the lowest probability category for river and sea flooding. The works are minor alterations to an existing dwelling and do not involve a change to a more vulnerable use. A strategic sequential relocation exercise is therefore not proportionate.

### 5.2 Critical Drainage Area

The Critical Drainage Area designation indicates catchment-scale sensitivity to surface-water runoff and drainage capacity. The dwelling is known not to flood, but it requires the development to avoid increasing runoff and, where practicable, to reduce the burden on downstream drainage.

### 5.3 Lower-ground-floor resilience

The existing lower-ground-floor use and level are retained. New external works shall preserve and improve resilience by forming the terrace to fall away from the façade, providing a continuous threshold channel and ensuring that gullies and drainage access points remain maintainable.



## 6. Surface-water drainage strategy

### 6.1 Drainage hierarchy

The proposed hierarchy is: (1) rainwater reuse; (2) infiltration where site testing confirms feasibility; (3) discharge to a surface-water sewer where available; and (4) controlled discharge to the existing combined sewer as the last practicable option. There is no watercourse available to the site.



### 6.2 At-source measures

| Measure              | Planning-stage specification                                                                                                                                                                                                           |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roof runoff          | Collect the new rear-extension roof to a dedicated rainwater downpipe. Fit a removable leaf guard and accessible filter.                                                                                                               |
| Rainwater reuse      | Provide a garden irrigation tap supplied from the storage unit. Regular use creates capacity before subsequent rainfall.                                                                                                               |
| Attenuation          | Provide a proprietary unit with a target minimum active volume of 0.75 m³ and a preferred active volume of 1.0 m³. The unit may be buried or slimline, subject to garden layout and structural constraints.                            |
| Flow control         | Provide a maintainable controlled outlet or defined attenuation compartment. The final rate must be agreed during technical design and must not exceed the existing lawful rate for the same catchment.                                |
| Infiltration         | Use infiltration only if BRE 365 testing and site constraints confirm that it is safe and effective. No infiltration device should be positioned where it could affect the building, neighbouring foundations or retaining structures. |
| Hard landscape       | Any renewed rear terrace will use permeable jointed paving or drain to planted areas. The works will not increase impermeable hardstanding.                                                                                            |
| Threshold protection | A continuous linear channel drain in front of the new glazed doors, connected to the controlled drainage system. External surfaces will fall away from the building.                                                                   |

### 6.3 Foul and surface-water separation

New foul and surface-water pipework will be kept separate within the site. Surface water will not be connected to a foul-only sewer.

Thames Water records and any necessary approvals shall be obtained by the project team during RIBA Stage 4.



## 6.4 Design standard and climate change

No flooding of the building should occur in the design event. Events beyond the design standard would follow planned exceedance routes without increasing risk to adjoining property.



## 7. Indicative storage assessment

This report uses 12.70 m<sup>2</sup> as a conservative incremental impermeable roof catchment. Because an existing glazed sunroom already occupies the area, the actual net increase in impermeable area may be smaller.

Indicative runoff volume is calculated as rainfall depth × catchment area. The figures below do not replace event-based hydraulic modelling, but they demonstrate the scale of storage appropriate to the proposal.

| Rainfall depth | Runoff from 12.70 m <sup>2</sup> | Equivalent litres | Comment                                                 |
|----------------|----------------------------------|-------------------|---------------------------------------------------------|
| 10 mm          | 0.127 m <sup>3</sup>             | 127 L             | Captured before allowing for controlled outflow.        |
| 20 mm          | 0.254 m <sup>3</sup>             | 254 L             | Captured before allowing for controlled outflow.        |
| 30 mm          | 0.381 m <sup>3</sup>             | 381 L             | Captured before allowing for controlled outflow.        |
| 40 mm          | 0.508 m <sup>3</sup>             | 508 L             | Captured before allowing for controlled outflow.        |
| 50 mm          | 0.635 m <sup>3</sup>             | 635 L             | Captured before allowing for controlled outflow.        |
| 60 mm          | 0.762 m <sup>3</sup>             | 762 L             | Approx. capacity of a 0.75 m <sup>3</sup> active store. |
| 80 mm          | 1.016 m <sup>3</sup>             | 1016 L            | Approx. capacity of a 1.0 m <sup>3</sup> active store.  |

### Indicative provision

A **1.0 m<sup>3</sup>** active attenuation volume can hold approximately 79 mm of direct rainfall from a **12.70 m<sup>2</sup>** roof before allowing for controlled discharge.

### 7.1 Betterment

The existing sunroom runoff is understood to discharge without documented attenuation. Routing the replacement roof through a reuse and attenuation unit, combined with permeable landscaping and controlled overflow, provides a clear improvement even if the net impermeable area is unchanged.

The scheme targets (at least) a **50% reduction** in the peak runoff from the extension catchment compared with an unrestricted connection. A more restrictive rate will only be used where technically and financially feasible and not vulnerable to blockage.



## 8. Exceedance, resilience and construction

### 8.1 Exceedance routing

- Set the rear terrace to fall away from the glazed doors.
- Form local falls toward planted garden areas and away from party boundaries.
- Avoid enclosed low points that could trap water against the lower-ground-floor elevation.
- Keep the top of storage and inspection covers accessible and above local ponding points where practical.
- Ensure overflow from the storage unit is connected to a verified drainage route and cannot discharge against the building.

### 8.2 Property resilience

- Use a proprietary threshold channel with removable grating and accessible silt trap.
- Maintain waterproofing continuity at the lower-ground-floor wall, floor and new extension junctions.
- Set external levels below the damp-proof course and threshold where practicable; any accessible threshold detail should include a robust drainage and waterproofing design.
- Use flood-resilient finishes at the immediate threshold zone where compatible with the architectural specification.
- Fit a non-return valve to low-level drainage where the survey and drainage engineer confirm that it will operate safely without obstructing the wider system.

### 8.3 Construction-stage controls

- Do not block existing gullies, channels or drainage runs during demolition and construction.
- Protect drains from concrete washout, silt, mortar and debris.
- Provide temporary covers and silt-control measures before removing the existing sunroom.
- Store excavated materials so that they do not create an overland-flow barrier or direct runoff toward neighbours.
- Inspect and clean the drainage system before practical completion.



## 9. Maintenance and management

The SuDS components will remain in private ownership and will be maintained by the property owner or occupier. Product-specific instructions should be retained in the property manual.

| Component                   | Action                                                                | Frequency                                | Responsibility               |
|-----------------------------|-----------------------------------------------------------------------|------------------------------------------|------------------------------|
| Roof, gutter and leaf guard | Remove leaves, moss and sediment; check fixings and falls.            | Twice yearly and after major storms      | Owner / contractor           |
| Rainwater filter            | Clean or replace filter media; confirm free flow.                     | Every 3-6 months                         | Owner                        |
| Reuse / attenuation tank    | Inspect sediment, inlet, outlet, overflow and access cover.           | Annually                                 | Competent contractor         |
| Flow control                | Inspect for blockage and confirm discharge path.                      | Annually and after poor performance      | Drainage contractor          |
| Threshold channel           | Lift grate, remove silt and test outlet.                              | Quarterly and after major storms         | Owner                        |
| Permeable paving            | Remove debris and weeds; vacuum sweep if required.                    | Annually                                 | Owner / landscape contractor |
| Private drains              | Jet or repair only where inspection identifies restriction or damage. | As required; formal review every 5 years | Drainage contractor          |



## 10. Conclusions

1. The site is treated as lying in Flood Zone 1, where the probability of river and sea flooding is low.
2. The site is treated as being within Haringey's Critical Drainage Area, so the development should deliver surface-water run-off improvements.
3. The proposal retains the existing residential use and lower-ground-floor level. It does not create a new basement or increase vulnerability.
4. The 12.70 m<sup>2</sup> rear infill extension replaces an existing infill extension; using the whole area as additional impermeable catchment is conservative.
5. The proposed strategy uses rainwater reuse, attenuation, permeable surfaces, threshold drainage, controlled overflow and planned exceedance routing.
6. A target active attenuation volume of 0.75-1.0 m<sup>3</sup> is proportionate at planning stage, subject to detailed hydraulic verification.
7. The existing drainage route and connection type must be confirmed by survey before construction.
8. Subject to the commitments in this report, the development will not increase flood risk elsewhere and will **provide a net improvement in surface-water management.**

The proposal is acceptable in flood-risk and drainage terms, subject to implementation of the drainage commitments and completion of the stated technical verification before construction.



## Appendix B. Sources reviewed

The following sources informed this assessment:

London Borough of Haringey;

Development Management Development Plan Document: Policies DM24, DM25 and DM26.

Strategic Flood Risk Assessment Level 1 Report, April 2022, and associated appendices.

Local Flood Risk Management Strategy and flood-water management evidence.

The London Plan 2021: Policies SI 12 and SI 13.

Environment Agency / GOV.UK, flood-risk mapping and climate-change allowance guidance for peak rainfall intensity.

Haringey Council planning reports and policy material relating to Bishops Road and the surrounding Highgate Critical Drainage Area.

