HOUSEHOLDER FLOOD RISK ASSESSMENT (FRA)

Site Address: 52 Bridge Avenue, Upminster, RM14 2LR

Development Proposal: Erection of a single-storey detached outbuilding for use as a home gym, fitness suite and incidental leisure space, incorporating localized ground levelling, an engineered structural retaining wall and a low-impact foundation system.

Applicant: Adrian Alexandru

Date: 28 October 2026

1. Introduction and Local Catchment Baseline

This site-specific Householder Flood Risk Assessment (FRA) has been prepared in accordance with **Chapter 14 of the National Planning Policy Framework (NPPF)** and **Policy CP15 of the Havering Local Plan**. The application site falls within a designated flood risk catchment zone managed under the London Borough of Havering Level 1 Strategic Flood Risk Assessment (SFRA).
Local flood risk within this specific catchment basin is actively managed and suppressed by the Local Planning Authority and the Environment Agency via ongoing strategic infrastructure operations. These include the routine maintenance of the River Ingrebourne trash screens, proactive bank management, and localized sustainable highway drainage upgrades implemented post-June 2016.
The proposed development is strictly for private, domestic, non-habitable outbuilding use ("Less Vulnerable" asset classification). It involves zero commercial activity, sleeping accommodation or structural changes to the primary dwellinghouse.

2. Topographical Context and Structural Plateau Engineering

A formal topographic survey executed on 22nd September 2026 establishes a pronounced natural ground drop across a 16-metre span, sloping downwards from the high-ground boundary at No. 54 toward the lower eastern boundary interface.
To create a perfectly level structural plateau while minimizing global landscape disturbance, the outbuilding's Finished Floor Level (FFL) is engineered to co-exist with this sloping topography:

- **The High-Ground Zone (Adjacent to No. 54):** The structure sits in a localized excavation basin enclosed by a tanked structural retaining wall (**BS 8102:2022**).
- **The Low-Ground Zone:** The structural frame naturally emerges from the slope, supported on elevated, non-invasive helical screw-piles within the Root Protection Area (RPA).

3. Core Flood Resilience and Resistance Measures (BS 85500:2015)

To satisfy national standing advice and ensure the building introduces zero life-safety or structural hazards during an extreme climate event, the development incorporates a comprehensive suite of engineered flood resilience features designed in strict compliance with **BS 85500:2015**:

- **Primary Finished Floor Level Elevation (300mm Freeboard):**
  In strict accordance with Environment Agency guidelines, the FFL of the outbuilding is structurally elevated to maintain a minimum safety freeboard of 300mm above the established local flood design level. This is achieved non-invasively via the natural slope layout and the helical pile support frame.

- **Structural Waterproofing and Resilient Internal Linings:**
  The ground floor construction integrates a high-specification, heavy-duty waterproof damp-proof membrane (DPM) tied directly into the high-ground retaining wall tanking. Internal walls are specified with waterproof plastering and moisture-resistant backing boards up to a height of 1.2 metres above FFL. This ensures that in an emergency scenario, the building fabric remains structurally secure and can be rapidly pressure-washed, disinfected and dried out.

- **Elevated Electrical Infrastructure (Ceiling-Down Drop Protocol):**
  To completely eliminate the risk of electrical short-circuiting or life-safety water exposure, all ring-main wiring will be fed via drops routing from the ceiling downward. All electrical sockets, switches, isolation keys, and the dedicated consumer unit will be rigidly fixed at a minimum horizontal height of 1.0 metre above the FFL.

- **Foul and Greywater Sewer Backflow Prevention:**
  The outbuilding's ancillary shower and WC drainage pipeline will feature fully integrated, heavy-duty mechanical non-return valves. This structural safeguard completely eliminates the risk of public sewer surcharging or reverse backflow into the building during an extreme local surcharge event.

4. Sustainable Drainage Strategy (SuDS) & Boundary Impact Protection

The surface water drainage layout has been engineered to strictly satisfy the requirements of the *Havering Local Flood Risk Management Strategy (LFRMS)* and *Surface Water Management Plan (SWMP)*:

- **Sub-Surface SuDS Soakaway:**
  All clean rainwater falling onto the 89.6 sq.m dual-pitched roof will be collected via high-capacity guttering and directed to a dedicated subsurface soakaway located within the applicant's private garden curtilage.

- **Boundary Buffering:**
  The SuDS soakaway is situated at an absolute minimum distance of over 5.0 metres away from all property boundary lines. Concurrently, the tanked retaining wall at the high end provides an impermeable barrier to

subterranean lateral water travel. This configuration guarantees **zero net increase in surface water runoff, localized pooling or groundwater migration onto third-party land**.

- **Utility Asset Clearance:**
  Historical utility mapping derived from a formal *Thames Water CON29DW Report* confirms that the proposed outbuilding footprint maintains full clearance buffers and introduces zero conflicts with any water company infrastructure or statutory public easements.

5. Emergency Preparedness and Safe Management

The occupants of 52 Bridge Avenue will register the outbuilding zone directly with the Environment Agency's automated **Flood Warning Service** to secure immediate digital alerts.
The household maintains a robust emergency evacuation protocol with direct escape routes through the higher ground of the primary domestic curtilage. Furthermore, demountable, engineered flood barriers will be kept on-site in readiness to mechanically lock across all external door thresholds if an extreme warning is triggered.

6. Conclusion

This Householder FRA demonstrates that the proposed outbuilding is safe, resiliently engineered, and introduces **absolute zero flood or surface water risk to third-party land**. It fully complies with Policy CP15 of the Havering Local Plan and the sequential principles of the NPPF.

Yours faithfully,
The Owner & Applicant
Adrian Alexandru
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