



UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks
and adjoining land, Bedford

Flood Resilience Scheme

Addendum 2

CONDITION 57 – FLOOD RISK

Revision Number: 01
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1.0 INTRODUCTION AND SCOPE

- 1.1 This Addendum 2 forms part of the Flood Resilience Scheme submitted for endorsement under Schedule 3 paragraph 57 (“Flood Risk”) of the Town and Country Planning (Entertainment Resort Complex at Kempston Hardwick, Bedford) Special Development (No. 2) Order 2025.
- 1.2 This Addendum 2 explains the methodology used to assess and manage surface water runoff volume, and the control process by which the outcomes will be secured through later design and delivery.
- 1.3 This Addendum 2 should be read in conjunction with the following documents:
 - Flood Resilience Scheme dated 2 June 2026 (260602 – IN - FR.1 – UDX - C57 - Flood Resilience Scheme – Rev 01);
 - Appendix A - Flood Maps and Plans (260602 – IN - FR.1 – UDX - C57 – Appendix A – Flood Maps and Plans – Rev 01); and
 - The Flood Resilience Scheme Addendum 1 dated 16 June 2026 (260616-IN-FR.1-UDX-C57-Flood Resilience Scheme Addendum 1).

2.0 SURFACE WATER RUNOFF MANAGEMENT

- 2.1 The methodology below accords with Reference Document 16 (Drainage Strategy) and the principles of managing surface water runoff volumes recognised by the Environment Agency, CIRIA, and DEFRA. Runoff rates are controlled by restricting surface water runoff to the agreed greenfield-equivalent runoff rates in litres per second per hectare, for the contributing impermeable area. Runoff volumes are assessed by comparing the greenfield existing runoff volume with the proposed runoff volume based on 1 in 100 year rainfall event 6 hour duration as stated in Environment Agency guidance ¹.
- 2.2 For each zone, the calculation sequence is:
- define the contributing catchment and impermeable area;
 - calculate existing greenfield runoff volume;
 - calculate proposed runoff volume;
 - determine amount of additional runoff volume (proposed, less existing);
 - utilise additional runoff volume in the Order land, preventing it from entering the receiving waterbody (Elstow Brook), i.e. deduct strategic rainwater harvesting, infiltration, and/or evaporation volumes; then
 - monitor and control runoff volumes and discharge rates through the operational measures described below.
- 2.3 The Scheme uses strategic rainwater harvesting, attenuation storage, controlled discharge and operational monitoring measures via the pumping station in Lake Zone, to manage runoff volumes and rates generated by urbanisation of the catchment within the Order land. The surface water drainage system is designed to:
- manage runoff volume within the Lake Zone Strategic Clay Pits Wetland Basins;
 - control runoff rates at the approved greenfield-equivalent runoff rates;
 - monitor system performance and operating conditions via the Lake Zone pumping station;
 - provide appropriate resilience and contingency arrangements; and

¹ Kellagher, R., 2013. Rainfall runoff management for developments Report – SC030219, Bristol: Environment Agency.

https://assets.publishing.service.gov.uk/media/602e7158d3bf7f7220fe109d/Rainfall_Runoff_Management_for_Developments_-_Revision_E.pdf (Last accessed 01/07/2026)

- demonstrate compliance with Reference Document 14 FRA and Reference Document 16 Drainage Strategy, through data logging of system performance.

2.4 The specification of monitoring, control and operational equipment will be finalised through detailed design and delivery. The design must continue to achieve the assessed runoff-rate and runoff-volume outcomes and comply with the controls set out in Section 3 of this Addendum.

3.0 CONTROLS TO SECURE COMPLIANCE

3.1 The following controls, set out in Table 3-1, will be used to ensure that later design and delivery do not exceed the assessed runoff-rate or runoff-volume outcomes, unless an equal or improved flood-risk outcome is demonstrated through formal technical review and change control.

Table 3-1: Controls to secure compliance

Control step	Requirement
Design baseline	Each relevant design package must include a drainage compliance schedule confirming catchment area, impermeability, runoff-volume method, strategic RWH / long-term storage where applicable, attenuation provision, exceedance routing, and controlled discharge rate.
Rate control	Discharge must remain at or below the relevant agreed greenfield-equivalent runoff rate for the catchment unless a lower rate or equal / improved flood-risk outcome is approved.
Volume and storage control	Design must demonstrate that runoff volume is managed in accordance with the methodology set out in this Addendum: strategic RWH / long-term storage where applicable, attenuation storage, and controlled discharge.
Change control	Any material change to catchment area, impermeability, storage, RWH / long-term storage, or discharge control must be supported by updated calculations before implementation and must demonstrate no adverse increase in flood risk within or beyond the Order land.
Pre-construction verification	Relevant works packages must not proceed until the Promoter's technical review confirms compliance with the rate, volume, storage, exceedance-routing and fixed-control requirements.
As-built verification	As-built records and commissioning information must confirm that attenuation, RWH / long-term storage where applicable, flow controls and exceedance routes have been delivered in accordance with the approved design intent.