

London Borough of Hillingdon

Hillingdon Water Sports Facility and Activity Centre (HWSFAC) - Broadwater Lake

Environmental Statement Final Review Report

Reference: 294428-00/ARP

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Job number 294428-00

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1. Introduction to the review

1.1 Introduction

- 1.1.1 Ove Arup & Partners Limited ('Arup') has been appointed by Hillingdon Council Strategic and Major Applications Team, as the Local Planning Authority ('LPA'), to provide independent environmental review services to Hillingdon Council Development Team (the 'Applicant') for the full application (ref: 2382/APP/2023/2906) for the new Hillingdon Water Sports Facility and Activity Centre ('HWSFAC'). The HWSFAC is located at Broadwater Lake, Moorhall Road, Harefield, Uxbridge, UB9 6PE (the 'site').
- 1.1.2 A full planning application was originally submitted to the LPA in November 2023 for the new HWSFAC (from herein the '2023 scheme'). An Environmental Statement ('ES'), dated November 2023 and prepared by Quod (from herein the '2023 ES'), was submitted with the application. Arup carried out an initial review of the 2023 ES and identified areas requiring the submission of further information and clarification with the 'Interim Review Report', dated December 2023, available in 0.
- 1.1.3 Since then, the Applicant has further engaged with Statutory Consultees, including LPA officers, Natural England and Environment Agency, to consider issues raised during consultation on the 2023 scheme. In response to feedback, revisions have been made to the 2023 scheme and the associated construction, design and operational assumptions.
- 1.1.4 As a consequence, the Applicant has reviewed and updated the various environmental assessments and a new ES has been submitted, which replaces the 2023 ES in its entirety. This replacement ES (from herein the '2025 ES'), assesses the revised 2023 scheme – 'the 2025 scheme' or 'proposed development' – as well as addresses comments raised in the Interim Review Report.
- 1.1.5 The 2025 scheme continues to be described as follows:
- “Redevelopment of the site to create the Hillingdon Watersports Facility and Activity Centre including demolition of existing Broadwater Lake Sailing Club (BSC) clubhouse at the north of the lake and erection of a building to be occupied by HOAC and BSC including changing facilities, meeting rooms, storage, Workshop and seasonal worker accommodation (sui generis), activity shelters; installation of pontoons and concrete slipways; boat shed; equipment storage huts (north of lake and at entrance); boat parking and racking areas; camping area; outdoor activity areas; ecological enhancement throughout the site; new pedestrian routes through the peninsula; landscaping including new woodland, dense vegetation screens and boundary treatment; new access and access road; localised dredging and land reclamation; relocation of existing sailing area and creation of floating and fixed islands within the lake; coach drop off and turning area; vehicle parking; cycle parking; and associated works.”*
- 1.1.6 This report identifies whether the 2025 ES meets the requirements set out in Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017¹ (as amended)² (hereafter referred to as the EIA Regulations), including:
- a description of the proposed development comprising information on the site and its location and characteristics, design, size and other relevant features or land-use requirements of the proposed development during its construction and operational phases;
 - a description of the reasonable alternatives studied by the Applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;
 - a description of the likely significant effects of the proposed development on the environment;

¹ The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 Available at: <http://www.legislation.gov.uk/uksi/2017/571/contents/made>

² The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018 Available at: <https://www.legislation.gov.uk/uksi/2018/695/regulation/2/made>

- a description of any features of the proposed development, or measures envisaged in order to avoid, prevent, reduce or, if possible, offset likely significant adverse effects on the environment;
- a non-technical summary (NTS) of the information referred to above; and
- any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.

- 1.1.7 This report also considers whether the 2025 ES sufficiently addresses the aspects identified as requiring further information or clarification in the Interim Review Report.
- 1.1.8 Furthermore, in accordance with Regulation 18(4), the 2025 ES must be '*based on the most recent scoping opinion*' which was adopted by the LPA on 19 May 2023 (Ref: 2382/APP/2023/525) and to be read in conjunction with the submitted scoping report (dated February 2023). It has been agreed with the LPA that the 2025 scheme has not materially changed from the 2023 scheme and that the scope and methodology set out within the adopted scoping opinion is still valid for the assessment of the 2025 scheme.
- 1.1.9 As well as the adopted scoping opinion and Schedule 4 criteria, this review has taken into account the Institute of Sustainability and Environmental Professionals (ISEP, formerly the Institute of Environmental Management and Assessment) ES Review Criteria and relevant Planning Practice Guidance (PPG) in relation to EIAs³. Arup is a registrant of the ISEP EIA Quality Mark scheme, demonstrating a commitment to excellence that is independently reviewed.
- 1.1.10 Following a request by the LPA, this report also includes a review of the submitted Biodiversity Net Gain (BNG) assessment and Energy Statement.

1.2 The ES review process

- 1.2.1 This report constitutes the Final ES Review Report, which collates the findings of the Interim Review Report, considers the Applicant responses to the Interim Review Report, as well as providing a review of the new and updated information submitted with the 2025 ES.
- 1.2.2 Each section provides a review of the updated technical assessments for topics scoped in to the 2025 ES, along with a review of the Applicant responses to the '**further information**', submitted under Regulation 25 of the EIA Regulations, and '**clarifications**' identified in the Interim Review Report.

1.3 Structure of the submitted 2025 ES, subject of this review

- 1.3.1 This review has been undertaken on all volumes of the submitted 2025 ES which includes new information (highlighted in **green**) or information that has been updated since the Interim Review Report and submitted with the 2025 scheme:

- **Non-technical Summary**
- **ES: Volume 1**
 - Chapter 1: Introduction
 - Chapter 2: Site and Setting
 - Chapter 3: EIA Methodology
 - Chapter 4: Alternatives
 - Chapter 5: Description of the Development
 - Chapter 6: Construction
 - Chapter 7: Biodiversity
 - Chapter 8: Water Resources and Flood Risk
 - Chapter 9: Ground Conditions and Contamination
 - Chapter 10: Landscape and Visual
 - Chapter 11: Summary

³ Planning Practice Guidance, Environmental Impact Assessment, last updated 13 May 2020 <https://www.gov.uk/guidance/environmental-impact-assessment> [December 2025]

- **ES: Volume II**

- Appendix 2.1: Historical Photographs of Broadwater Lake
- Appendix 2.2: Site Photographs
- [Appendix 2.3: HS2 Schedule 17 Plans](#)
- Appendix 3.1: Location of Specified Information in the ES
- Appendix 3.2: EIA Scoping Report (February 2023)
- Appendix 3.3: LBH EIA Scoping Opinion
- Appendix 3.4: Addendum to EIA Scoping Report - HWSFAC Addendum Note (April 2023)
- [Appendix 3.5: Response to ARUP Review Comments](#)
- Appendix 4.1: Alternative Site Assessment
- Appendix 4.2: Alternative Peninsula Layouts
- Appendix 5.1: Planning Application Drawings
- Appendix 5.2: Addendum Landscape Strategy
- Appendix 5.3: Operational Management Plan (November 2025)
- Appendix 6.1: Outline Construction Environmental Management Plan (November 2025)
- Appendix 6.2: Construction Phasing Drawings
- Appendix 7.1: Preliminary Ecological Appraisal Including (PEA) Including 2022 and 2023 Survey Report (February 2023)
- Appendix 7.2: Figures
- [Appendix 7.3: Wintering Bird Survey Summary \(2022 – 2025\)](#)
- [Appendix 7.4: Breeding Bird Survey Summary \(2022-2025\)](#)
- [Appendix 7.5: Wildfowl Disturbance \(Summary of Disturbance Monitoring 2023/2024\)](#)
- [Appendix 7.6: Freshwater Ecology Surveys](#)
- [Appendix 7.7: Bat Survey Report \(August 2025\)](#)
- [Appendix 7.8: Water Vole Survey \(2024\)](#)
- [Appendix 7.9: Outline Mitigation, Enhancement and Management Plan](#)
- [Appendix 7.10: Biodiversity Net Gain Assessment \(and BNG metric\)](#)
- [Appendix 7.11: Biodiversity Air Quality Modelling Assessment](#)
- [Appendix 7.12: Natural England Discretionary Advice Service](#)
- Appendix 8.1: Relevant Legislation and Policy
- Appendix 8.2: Flood Risk, Drainage and Sequential Assessment (including topographic and bathymetric data) (August 2025)
- Appendix 8.3: Groundwater Risk Assessment (August 2025)
- Appendix 8.4: Water Framework Directive Assessment (August 2025)
- Appendix 8.5: Lake Water Quality Profiles
- Appendix 8.6: Bathing Water Assessment
- Appendix 9.1: Relevant Planning Policy
- Appendix 9.2: Geo-Integrity Phase I Geo-Environmental Assessment & Site Walkover Sept. 2023
- Appendix 9.3: Geo-Integrity Phase II Geo-Environmental Site Investigation September 2023
- Appendix 9.4: Drawing 1 Landfill Locations Within the Study Area
- Appendix 9.5: Preliminary Explosive Ordnance Risk Assessment
- [Appendix 9.6: Lake Bed Sediment Sampling](#)
- [Appendix 9.7: Lake Bed Photos](#)
- [Appendix 9.8: Relevant Environment Agency Correspondence](#)
- [Appendix 9.9: Review of Updated Groundsure Desk Study Searches](#)
- Appendix 10.1: Planning Policy and Local Guidance Context
- Appendix 10.2: Proposed Landscape and Ecological Masterplans
- Appendix 10.3: Figures
- Appendix 10.4: Baseline Photographs of the Site from Key Viewpoints
- Appendix 10.5: Accurate Visual Representations (AVRS)
- Appendix 10.6: Stage 1 and 2 Arboricultural Impact Assessment Report
- [Appendix 10.7: Arboricultural Impact Assessment Addendum \(November 2025\)](#)
- [Appendix 11.1: Schedule of Mitigation and Enhancements](#)

2. Review of proposed development and site information

2.1 Description of the site

- 2.1.1 The site, its setting and characteristics are described in ES Volume 1, Chapter 1 and Chapter 2 and associated Volume II appendices.
- 2.1.2 The site is located within London Borough of Hillingdon, approximately five kilometres north of Uxbridge town. The site boundary has not changed and continues to cover an area of 79.95 hectares (ha), with the majority of the area comprising Broadwater Lake (approximately 60 ha) along with a number of small islands boarded by trees and scrub. The site comprises a number of former quarry structures on and in vicinity of the peninsula shaped landform (the ‘peninsula’) which occupies the southern part of the site. Broadwater Lake is the largest of the four lakes within the Mid Colne Valley Site of Special Scientific Interest (SSSI).
- 2.1.3 Towards the end of 2024, the High Speed Two (HS2) Colne Valley Viaduct, located to the west of Broadwater Lake, was completed and now forms part of the baseline within the surrounding area.
- 2.1.4 The site is divided into four parcels including the main Broadwater Lake, access road (via Moorhall Road), eastern parcel and southern parcel which are shown in ES Volume I, Chapter 2, Figure 2.2. The planning application boundary aligns with the site boundary considered as part of the adopted scoping opinion.
- 2.1.5 The part of the site that contains Broadwater Lake is bound to the east by the London Loop/Colne Valley Public Right of Way and Grand Union Canal; to the north and east by the River Colne and to the south by the Harefield Moor Lake waterbody; to the west, the site is bound by the River Colne and the small body of water known as the Denham Waterski Lake.
- 2.1.6 The area of site that contains the access road which connects the south parcel to Broadwater Lake, is bound by hedgerow and the London Loop to the east. Existing businesses including GRS Bagging, a construction material wholesaler, Harleyford Aggregates and a sand and gravel supplier, are located to the west of the access road along with residential properties and a small number of motorhomes.
- 2.1.7 The east parcel is bound by the Grand Union Canal to the west, a logistics facility (Mayling Transport) to the south and residential properties in Harefield to the east. The south parcel is bound by Moorhall Road to the south, Harefield Moor Lake waterbody to the north and Korda Lake to the west.
- 2.1.8 The 2025 ES provides a clear summary of the site characteristics and its environmental context.

2.2 Description of the proposed development

- 2.2.1 Since December 2023, the proposed development has been updated in response to ongoing consultation and feedback from key stakeholders. The 2025 scheme is described in ES Volume I, Chapter 5 and Chapter 6 which includes details of the proposed activities during the construction phase
- 2.2.2 The 2025 scheme will continue to create a new, combined water sports facility and activity centre for the Hillingdon Outdoor Activity Centre (‘HOAC’) and Broadwater Lake Sailing Club (‘BSC’), known as Hillingdon Water Sports and Activity Centre’ (HWSFAC). The 2025 scheme will continue to provide a package of landscape and ecological mitigation measures and enhancements. These are reviewed within Section 4, as part of the review of the biodiversity assessment.
- 2.2.3 In general, the scale and extent of the 2023 scheme have been reduced to consolidate and combine the proposed facilities which will be shared by both HOAC and BSC. A summary of the revisions made to the 2023 scheme as part of the 2025 scheme is set out in [Table 1](#).

Table 1 Summary of revisions to the 2023 scheme

Aspect of the scheme	2023 scheme	2025 scheme	Net change
New floorspace	4,749 square metres (sqm) gross external area (GEA) to	3,745 sqm GEA for an Operations Zone and Safety Zone (for equipment/workshop)	Reduction of 1,004 sqm GEA and consolidation of

Aspect of the scheme	2023 scheme	2025 scheme	Net change
	be shared by HOAC and BSC across multiple buildings.	to be shared by HOAC and BSC, across three areas.	built floorspace to be shared by HOAC and BSC.
Height of new buildings	Seven buildings ranging from 4.5 metres (m) in height to 10.98 m.	Three buildings 11 m (two-storeys), 6 m (one storey and 5 m (one storey) in height.	Main building to comprise sloped / pitched roofs.
Dredging and land reclamation	No information provided on proposed dredge depths required to achieve the anticipated 47,500 cubic metres fill volume. Land reclamation of 16,114 sqm required to extend the peninsula, removal of two existing small islands in the middle of Broadwater Lake (2,412 sqm), creation of a beach area (approximately 300 sqm) and creation of smaller islands using dredged material (4,307 sqm).	Localised dredging within the eastern channel only, to increase depth up to 2 m. Dredge volume estimated as approximately 7,100 cubic metres. Small area of reclamation to extend the north-east of the Peninsula to provide boat storage, beach and slipways. Reclaimed area approximately 2,892 sqm, requiring circa 8,000 cubic metres of fill. Removal of one island and re-shaping of two islands generating approximately 5,652 cubic metres of material.	Extent of proposed dredging, land reclamation and island works reduced in scale and extent. Clearer strategy for cut and fill material.
Surface water area within Broadwater Lake	Reduction in total surface area of open water within the lake by approximately 13,956 sqm (net).	Increase in total surface area of open water within the lake by approximately 716 sqm (net). Tern rafts to be installed by HS2.	Overall net increase in open water within the lake.
Parking	82 car parking spaces for use by both HOAC and BSC.	50 car parking spaces to be provided across the site (45 spaces re-provided for BSC)	Car parking reduced and consolidated.
Boat storage	New open boat yard area for storage of up to 400 boats.	Reclaimed area on the Peninsula for approximately 214 boats. Boat storage racks also included in the Safety Zone.	Consolidation and reduction in boat storage.
Operation	Open from 01 April and 31 September. Water based activities will each have 10 to 15 users at any one time between 08:30 - 17:30, (e.g. up to 15 kayaking, up to 15 rowing). Assumptions for permitted number of users set out in Table 5.1.	Open from 01 April and 31 September. BSC to continue all-year round operation. Land and water-based activities will take place between 10:00 and 15:00 throughout the week. Assumptions for permitted number of users set out in Table 5.3.	Reduction in the duration of water-based activities.

2.2.4 The 2025 ES provides a clear description of the key elements of the 2025 scheme, including a clearer strategy for the proposed dredging and land reclamation. The proposed land-based operational uses and activities are clearly described and include artificial above-ground caving (as opposed to a man-made caving system), zip line (the high- and low-level ropes and zip wire have been removed), big swing, bird watching, foraging, pond dipping and environment training and education.

- 2.2.5 The overall maximum height of the Operations Zone continues to exceed the maximum height stated in the Scoping Report (up to 6.2 m); however, it is acknowledged that the Applicant has scoped in the topics of landscape and visual amenity to the 2025 ES and provided a detailed assessment (ES Volume 1, Chapter 10).
- 2.2.6 Section 5.7 onwards of ES Volume I, Chapter 5 sets out a description of various measures and management plans that will be implemented as part of the 2025 scheme. A clear schedule of embedded and additional mitigation and management plans is now presented within ES Volume II, Appendix 11.1, along with the proposed securing mechanism for each measure.
- 2.2.7 Paragraph 5.7.8 of ES Volume I, Chapter 5, states that the ‘BNG assessment was undertaken voluntarily in the original planning submission ahead of the mandatory legal requirement came into force. The Proposed Development is therefore exempt from the BNG Regulations² however the Applicant has sought to maximise opportunities to improve and enhance the biodiversity at the Site.’. This point is discussed further in the review of the biodiversity assessment in Section 4 and Section 8.

Construction

- 2.2.8 The description of enabling works, dredging, land reclamation, construction and demolition works of the project is clear and includes an indicative programme of activities. The construction programme has been reviewed and updated to reflect an anticipated delivery within 16 months, likely commencing in the second quarter (Q2) of 2026 and to be completed by the beginning of 2028.
- 2.2.9 ES Volume I, Chapter 6, Table 6.1, sets out the proposed timing of specific construction activities, which seeks to impose seasonal restrictions to those activities with potential to impact habitats and species. It is expected that these restrictions would be reflected in suitably worded planning conditions to any future planning permission.
- 2.2.10 The construction of the HS2 Colne Valley Viaduct was completed at the end of 2024 and so the proposed construction programme will no longer overlap with the HS2 construction works. Therefore, it is unlikely there will be any cumulative effects from construction traffic along Moorhall Road. The proposed construction programme and activities have been updated to reflect completion of the Colne Valley Viaduct.
- 2.2.11 The assessments rely heavily on the measures set out within ES Volume I, Chapter 6 and state that a Contractor will be appointed to inform the detailed design of the measures. In the absence of providing additional details at this stage, it will be important for there to be a robust set of planning conditions requiring detailed management plans to be agreed with LBH and relevant stakeholders ahead of works commencing.

Operation

- 2.2.12 A clear description of the proposed timings, duration of activities and likely number of permitted users on Broadwater Lake for HWSFAC (which includes both HOAC and BSC) is provided in ES Volume I, Chapter 5, Section 5.3 and Table 5.3. Timings for operations associated with BSC are set out in ES Volume I, Chapter 2, Table 2.1. It is expected these operational restrictions will be secured via suitably worded planning conditions to any future planning permission.

2.3 Consideration of alternatives

- 2.3.1 The alternative site assessment has been updated to include a wider search area and a comprehensive initial long list of 71 alternative locations (from the previously reported 28) and a more detailed consideration of five short-listed alternative locations (Broadwater Lake, Ruislip Lido, Bury Lake, Aldenham Reservoir and Denham Quarry).
- 2.3.2 The alternatives to the 2025 scheme which have been considered are clearly described within ES Volume I, Chapter 4 and the appended Alternative Sites Assessment, along with a description of the environmental factors taken into account when considering the short-listed sites. Table 4.3 and Table 4.4 set out alternative layouts for development and built form within Broadwater Lake.

2.4 Review of the Applicant responses to the Interim Review Report

2.4.1 This section considers the information and responses provided by the Applicant to address the comments raised in the Interim Review Report (December 2023).

Summary of potential Regulation 25 information request	Review of Applicant response	Further information required?
Further information is needed on the proposed dredge depths to provide confidence that the 47,500 cubic metres fill volume can be achieved. Confirm what measures will be put in place should the fill volume not be matched by the proposed dredge volume. Confirm whether there would be any intention to import additional material for land reclamation or what measures would be in place should dredged material need to be removed from the site.	Proposed dredging and land reclamation activities along with proposed cut and fill strategy much more clearly described in ES Volume I, Chapter 5. Scale and extent of these proposed activities considerably reduced.	No
Confirm what measures will be in place to maintain the new dredge depths within Broadwater Lake and the likely impacts of any future dredging requirements.	ES Volume 1, Chapter 5, paragraph 5.7.16 sets out that maintenance dredging is unlikely to be required.	No
No details are provided on what the man-made caving system will entail, along with other proposed activities in the outdoor area such as the high- and low-level ropes and zip wire. Confirm how the man-made caving system, along with other elements in the outdoor activity area, will be constructed and whether any excavation or foundation works will be required.	Proposed artificial caving system shown on Figure 5.2 and described in ES Volume I, Chapter 5, paragraph 5.5.9.	No
Provide further information to demonstrate that the proposed development has sought to maximise BNG towards the minimum 10% requirement and explore further opportunities to improve and enhance biodiversity at the site.	The Applicant has provided a revised metric calculation which sets out the 2025 scheme will deliver a 9.72% area-based BNG. The requirement to achieve 10% BNG is not mandatory for this project.	No
Confirm when construction of HS2 is expected to be completed and whether there is likely to be any overlap with the proposed development construction works during 2024, particularly along Moorhall Road. Assess the likely cumulative construction impacts of the proposed development alongside HS2.	The Colne Valley Viaduct was completed towards the end of 2024 and now forms part of the baseline. This has been taken into account within the proposed construction programme.	No
Confirm the activities, associated with the enabling works, intended to take place during the summer / spawning season 2024 and the likely impacts of these activities on aquatic species. Confirm how these impacts will be mitigated and managed.	ES Volume I, Chapter 6, Table 6.1 sets out seasonal restrictions for key activities which have been informed by an ecologist. It is expected these restrictions will be secured via suitably worded planning conditions to any future planning permission.	No

Summary of clarifications required	Review of Applicant response	Further clarification required?
Confirm the sensitivity and location of the 'semi-formal' residential properties mentioned in ES Volume 1, Chapter 2, paragraph 2.2.4 and that these properties have been fully assessed.	Clarification has been provided that these properties are motorhomes which have been assigned a 'high' sensitivity. This is agreed.	No
The proposed development appears to include a number of additional buildings categorised under 'other buildings' which increases the overall footprint of the proposed development. Noting the site is within green belt, confirm whether it is possible to consolidate any of the buildings to reduce the overall development footprint.	Overall built development footprint has been consolidated and reduced. Clear description provided of the proposed Zones. Reduction in floorspace based on figures reported in Table 5.2 of both the 2023 ES and 2025 ES equals 1,004 sqm GEA (not 1,200 sqm as quoted).	No
Confirm whether the Broadwater Rowing Club will continue to operate at the site as part of the new HOAC facilities and if so, confirm where these facilities will be located.	Noted.	No
Confirm which measures have been considered embedded mitigation and taken into account as part of the pre-mitigation technical assessments, and which measures are considered additional mitigation. The list should be more detailed and consistent with that described in ES Volume 1, Chapter 11, Summary.	A clear schedule of mitigation has now been included within a new technical appendix of the 2025 ES (Appendix 11.1). This includes a description of the relevant embedded and additional mitigation measures, along with a securing mechanism for each topic.	No
Confirm whether HOAC will be operational at the weekend. Present timings of existing BSC operations alongside Table 5.1 to demonstrate level of activity on Broadwater Lake throughout the week/ year.	Text within 2025 ES not explicit that activities, with the exception of camping, will not take place at the weekend. Expected that operating times will be controlled through conditions on any future planning permission. Table 5.3 of 2025 ES provides a clear, simplified breakdown of activities and permitted users / uses across the site.	No

2.5 Proposed development and site information review conclusion

- 2.5.1 The 2025 ES provides a clear description of the existing baseline at the site, along with the proposed 2025 scheme, including a summary of the proposed land-based and water-based activities and the proposed layout across the site.

3. Review of ES format, presentation and scope

3.1 Scope and methodology of the EIA

- 3.1.1 The scope and EIA methodology are described within ES Volume I, Chapter 3. The technical topics scoped into the 2025 ES for detailed assessment aligns with those established in the adopted scoping opinion (ref: 2382/APP/2023/525)⁴.
- 3.1.2 The front end of each chapter provides a short, clear summary of what has been updated since the 2023 ES. ES Volume I, Chapter 3 set outs that a new scoping opinion has not been sought from LBH as it considered that the proposed development has not materially changed since the 2023 scheme and assessment scope and methodology applied in the 2023 ES still remains appropriate for the 2025 scheme. This is agreed.
- 3.1.3 Given the time that has passed since the original submission of the 2023 scheme, and that the majority of the baseline information has been gathered between 2022 and 2025, the baseline assessment year has been updated to 2025. The proposed development is expected to be completed and operational in 2028 and so the year of assessment or future baseline has been updated to be 2028. This is considered appropriate.
- 3.1.4 ES Volume 1, Chapter 3, Paragraph 3.7.30 clearly states that residual effects reported as major or moderate are considered significant.
- 3.1.5 ES Volume 1, Chapter 3, Table 3.2 sets out the general significance criteria applied to the 2025 ES assessments, unless otherwise stated in the technical chapters. It is queried whether a negligible impact on a high sensitivity receptor should be 'minor adverse' as opposed to 'negligible'. Equally, a high magnitude of impact on a receptor of negligible sensitivity is usually considered 'minor adverse' as opposed to 'negligible'. However, it is agreed that this would not alter the overall significance of the effects should the criteria be amended.

3.2 Consultation

- 3.2.1 ES Volume I, Chapter 3, Section 3.5 presents a summary of the consultation undertaken with respect to the EIA, with more detail of key issues raised and discussed presented in the specific technical chapters. Consultation responses from Natural England and Environment Agency have also been provided as technical appendices.

3.3 Cumulative effects

- 3.3.1 The approach to cumulative assessment set out in ES Volume I, Chapter 3, Section 3.8 sets out the 2025 ES has considered both intra-project effects and cumulative effects of the proposed development with other planned developments (inter-project effects). It is agreed that intra-project effects are inherent to the technical assessments set out in ES Volume I, Chapters 7 – 9.

3.4 Non-technical summary (NTS)

- 3.4.1 The NTS is provided as a standalone document and in general has been updated to reflect and align with the conclusions of the main ES Volume 1 within the 2025 ES. The NTS presents all the information required under the EIA Regulations, including statements of significance, and is supported by clear illustrations and maps.

⁴ Arup 2022, Environmental Statement Scoping Opinion - Hillingdon Water Sports Facility and Activity Centre -Broadwater Lake

3.5 Review of the Applicant responses to the Interim Review Report

3.5.1 This section considers the information and responses provided by the Applicant to address the comments raised in the Interim Review Report (December 2023).

Summary of potential Regulation 25 information request	Review of Applicant response	Further information required?
Provide an assessment of the likely intra-project cumulative effects.	It is agreed that intra-project cumulative effects are inherent to the assessments reported in Chapters 7 to 9 and that there would be no intra-project cumulative effects with the receptors assessed in Chapter 10 (landscape and visual assessment).	No
Update the NTS to take account of any changes to the significance of effects as a result of comments on the detailed technical assessments and to include potentially significant cumulative effects.	The NTS has been updated to reflect the updated assessment and conclusions reports in the 2025 ES.	No

Summary of clarifications required	Review of Applicant response	Further clarification required?
Review the detailed design of the proposed development that was submitted for planning against the description of development set out within the adopted scoping opinion and provide a commentary on the technical topics scoped out and whether there would likely be any change to the assessment of likely significant effects.	ES Volume II, Appendix 3.6 does not appear to have been provided. However, it is agreed that the 2025 scheme description of development is not materially different to the 2023 scheme. Therefore, the adopted scoping opinion, and assessment scope and methodology applied in the 2023 ES, are still considered to remain valid for the assessment of likely significant environmental effects as a result of the 2025 scheme.	No
Confirm how HS2 has been considered within the future baseline and whether this is consistent with what was set out in paragraph 2.6.3 of the adopted scoping opinion.	No specific response has been provided but it is acknowledged within ES Volume I Chapter 2 that the Colne Valley Viaduct has now been completed and details are provided in Appendix 2.3 of the HS2 landscape and ecological masterplan which has been taken into account.	No

3.6 ES format, presentation and scope review conclusion

3.6.1 Overall, the 2025 ES provides a clear assessment scope and methodology to assess the 2025 ES. It is agreed that the scope and methodology set out within the adopted scoping opinion and that was applied within the 2023 ES, remains appropriate for the assessment of the 2025 scheme.

4. Chapter 7: Biodiversity

- 4.1.1 The review of the biodiversity assessment has considered ES Volume I Chapter 7 of the 2025 ES and its associated technical appendices within ES Volume II (Appendices 7.1 to 7.12).
- 4.1.2 The text set out within Section 4.2 to Section 4.8 has not been updated and remains as reported in the Interim Review Report.

4.2 Scope of technical chapter

- 4.2.1 The scope of the chapter is broadly appropriate and aligns with the adopted scoping opinion. The Applicant has identified the principal ecological features and receptors that are likely to be affected by the proposed development and the types and nature of activities likely to cause impacts to those receptors.
- 4.2.2 The ES suggests that the assessment scope has been agreed with key stakeholders such as the Environment Agency and Natural England, which adds weight and consensus; however, only a set of responses from the Applicant to comments made by those stakeholders have been provided (with no clear evidence that the stakeholders agree with those responses). There are no immediate concerns over any species and/or designated sites scoped out of the assessment (non-significant effects); justifications for these omissions appear to be appropriate.

4.3 Baseline conditions

- 4.3.1 Broadly, the baseline conditions have been adequately described.
- 4.3.2 The Figures in Appendix 7.2 show the habitats that have been mapped at the site. It is not entirely clear whether any of the area mapped as *artificial unvegetated unsealed surface* in the south of the site, or any other area of the site, may qualify as brownfield land that could be of higher ecological value in terms of plant and/or invertebrate communities present, and ought to be retained.
- **Potential Regulation 25 request: Confirm whether any of the habitats at the site could qualify as brownfield land and be of higher ecological value and would require compensation should they be lost.**
- 4.3.3 It might have been expected that for a site of this significance (SSSI, national level), that a baseline survey dataset across multiple years would have been necessary to fully assess the impacts to, in particular, wintering bird communities. This could be an issue when the baseline level of bird activity is subsequently suggested to be lower than reported in association with the site's designation, as is the case here. The ES states that surveys have taken place between November 2022 and February 2023 (paragraph 7.3.33), or October 2022 to March 2023 (paragraph 7.3.35), so it is unclear which but, either way, this is restricted to a single survey season. Justification should be provided for the provision of just one wintering bird survey season of data or it is recommended that additional surveys are undertaken during the current season to supplement the understanding of current populations at the site.
- **Potential Regulation 25 request: Provide justification for the single season of wintering bird survey data given the sensitivities at the site. It is recommended that wintering bird survey data for the current survey season is collected to supplement the submitted survey results and provide additional information on the current populations.**

4.4 Determination of magnitude, sensitivity and significance

- 4.4.1 There is no clear recognition of the potential increase in baseline value of the habitats present over time. The fact that the current habitats have evolved naturally over time and will continue to further mature is not referenced and should align with Chartered Institute for Ecology and Environmental Management (CIEEM) guidance⁵ on future baselining. The suggestion that habitat condition will

⁵ Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland, September 2018, Version 1.1, updated September 2019 [Guidelines for Ecological Impact Assessment \(EcIA\) | CIEEM](#)

continue to decline if unmanaged is not well evidenced. Furthermore, there appears to be no consideration of how the effects of climate change will impact the existing baseline conditions, for example, warmer conditions potentially affecting oxygen levels in Broadwater Lake

- **Potential Regulation 25 request: In line with CIEEM guidance, provide further information on the ecological value of the baseline habitats and the site, taking into account changes in the future condition as a result of climate change. Any updates should be considered within revised calculations for biodiversity net gain. Review and update the impact assessment, as necessary.**

4.4.2 The assessment is not clear on land-based activities, such as camping, associated with future HOAC operations. There is a lot of focus on disturbance of waterbirds from on-lake activities but very little mention of additional on-land activities that would presumably result from operation of HOAC in addition to BSC across the site, including the general presence of a far great number of people, which would no doubt have some level of additional disturbance to, for example, breeding bird communities.

- **Potential Regulation 25 request: Provide further information on the intended land-based outdoor activities including the extent of where these will be located across the site and which habitat areas will be accessible for activity users. Provide more detail on how these land-based activities will be managed to avoid disturbance to habitats and species present at the site.**

4.4.3 Furthermore, the focus of the assessment on impacts to waterbirds seems to be to the detriment of other aquatic species that may be equally vulnerable to and adversely impacted by disturbance. In the case of otters, their ability to move away from disturbance and use other resources in the surrounding landscape seems to be heavily relied upon, without acknowledging that in itself is an adverse impact.

- **Potential Regulation 25 request: Provide further assessment of the likely significant impacts on other aquatic species, such as otters, to ensure a comprehensive approach to ecological mitigation at the site.**

4.5 Mitigation and monitoring

4.5.1 The ES states that 50% of the Mid Colne Valley SSSI within which the site is located is in favourable condition and 50% in unfavourable condition, as assessed by Natural England. It does not make clear whether the mitigation proposed addresses or links to any of the factors that are causing the unfavourable condition. This link should be made clear.

- **Potential Regulation 25 request: Confirm how the proposed mitigation measures link to, address, or ideally enhance the areas of the Mid Colne Valley SSSI that are currently assessed by Natural England as being in unfavourable condition.**

4.5.2 A great deal of significance has been placed on the potential enhancements to be made to the existing lake habitat present, through activities including reprofiling and dredging, to create more heterogeneity of habitat condition. More is needed on the quantity/scale of those operations (for example, how deep is the current lakebed and how much deeper will it be post-dredging; how much variability in depth will be created) in order to understand how significant or otherwise those benefits may be. The same would apply to the extent to which woodland management will enhance the current condition of the existing woodland to be retained.

- **Potential Regulation 25 request: Provide more information on the proposed extent of the reprofiling and dredging works to inform the assessment of how the proposed design will impact ecology.**

4.5.3 It is not entirely clear how HS2's mitigation proposals align with those of the proposed development. There is reference to "*requirements for its [HS2's] own mitigation within an area of water onsite adjacent to the peninsula*" in ES Volume 1, Chapter 7, paragraph 7.3.3, and to an HS2 mitigation island in Section 2.8, but because the two developments are being progressed independently of each other (acknowledging that there have been discussions between the two proponents), there is no sense of a joined-up mitigation solution.

- **Clarification required: Confirm how the proposed development mitigation aligns with the HS2 mitigation requirements in terms of delivery timings and an integrated ecological strategy to maximise benefits.**

- 4.5.4 There is a fence line proposed that, if implemented, may serve as a barrier to species dispersal across different areas of the site, for example otter moving between the canal and the adjacent lake. Further discussion of this issue is recommended.

4.6 Cumulative effects

- 4.6.1 There is an insufficient evidence base for the conclusions drawn on the cumulative effects of disturbance, particularly operational disturbance, to result from the combination of the proposed development and the HS2 project. It appears that the HS2 project will be disturbing birds away from the south-west corner of Broadwater Lake and the proposed development will be displacing birds towards this area. The suggestion is that the provision of a number of islands to act as visual screens for both projects will fully mitigate this combined pressure. It is not at all clear how this conclusion has been reached or whether or not it is justified.
- 4.6.2 Furthermore, there has been no clear assessment of the likely significant combined effects of the proposed development upon ecological receptors for example, noise, visual and light intrusion, effects on water quality impacting birds.
- **Potential Regulation 25 request: Provide a more detailed cumulative assessment of the likely in-combination effects arising from the proposed development and HS2, as well as the in-combination effects of the proposed development on ecological receptors. Related to this, provide more evidence to demonstrate that the proposed landscaping will be an effective measure to mitigate the impacts of disturbance.**
- 4.6.3 There is also no mention of the loss of open water as a result of constructing the 'HS2 mitigation island' in combination with the loss of open water resulting from the proposed development. It is not clear whether the combined loss of open water from the two projects exceeds the 5% trigger stated in ES Volume 1, Chapter 7, paragraph 7.6.14. The basis for this trigger and why it is appropriate, should be clearly referenced. There is also no explanation of what would result in the scenario that the trigger is exceeded. Should clarification confirm that the trigger is exceeded, further information may be required to address the trigger exceedance and reduce the overall loss of open water.
- **Clarification required: Confirm whether the combined loss of open water from the HS2 and proposed development will exceed the 5% trigger and provide a clear reference for this trigger and why it is appropriate.**

4.7 Commentary on the ES conclusions

- 4.7.1 It is difficult to see how some relatively minor habitat creation and enhancements (such as provision of new floating islands and shallow edge habitat) will fully compensate for losses of key habitat (open water and woodland) and a significant increase in operational disturbance levels to the key species interests of this site (breeding and wintering bird communities). It may not be possible to fully compensate for these effects alongside the proposed change of use and it is likely that the potential impacts to the site and the SSSI continue to outweigh these enhancements. As the SSSI is a resource of national significance, it is not clear how the current proposal could be seen to meet the legislative and policy requirements associated with the protection of biodiversity.
- 4.7.2 The current level of detail in the assessment does not provide sufficient confidence that the impacts on ecological receptors can be robustly mitigated and further information is requested.

4.8 Commentary on the NTS

- 4.8.1 A generally well written and structured section on Biodiversity, though a number of minor typographical errors are noted. The approach to the assessment (how were the effects identified) and the baseline are adequately described, fairly comprehensively in terms of the baseline.
- 4.8.2 In terms of the assessment of effects, there is little or no description of the scale/magnitude of change from the current site use and operations (and therefore of the levels of long-term disturbance associated with the proposals), which needs to be much more explicit, even in an NTS. For example, there is reference to water-based activities being limited to the north and centre of the lake, but a new launch area is proposed at the south of the lake, which suggests that disturbance effects will be felt across the whole of the lake area. This is not acknowledged. The assessment also does not clearly

state whether or not there will be an increase in recreational pressure and so the reader has to make their own assessment.

- 4.8.3 The cumulative effects of the proposals with the adjacent HS2 development are not properly assessed, even within the context of an NTS. Stating that the impact could be greater if HS2 disturbs this area as well is not considered to be sufficient. The subsequent statement that visually screening a section of the lake, during construction and operation, to prevent these combined effects will effectively negate them, has not been justified and cannot be relied upon. The NTS should be updated to reflect the conclusions of any additional information submitted. This is included as a potential Regulation 25 request earlier in this report.

4.9 Review of the Applicant responses to the Interim Review Report

- 4.9.1 This section considers the information and responses provided by the Applicant to address the comments raised in the Interim Review Report (December 2023).

Summary of potential Regulation 25 information request	Review of Applicant response	Further information required?
Confirm whether any of the habitats at the site could qualify as brownfield land and be of higher ecological value and would require compensation should they be lost.	Applicant has provided further technical commentary on the classification of habitats that may have qualified as open mosaic (OMH), and has updated the baseline conditions section of ES Volume I Chapter 7, accordingly. This confirms that the habitat failed to meet 3 of 5 qualifying criteria for OMH, but does not seem to provide the detail behind that assessment. On balance, because of the nature of the site and its history, it is still likely that the conclusion that has been reached is correct, but supporting detail for this conclusion would be useful to evidence this decision.	No
Provide justification for the single season of wintering bird survey data given the sensitivities at the site. It is recommended that wintering bird survey data for the current survey season is collected to supplement the submitted survey results and provide additional information on the current populations.	Further wintering bird survey work has been carried out (and now incorporated within the assessment) since the time at which the information request was made. This means that three years of data plus review of several desk study sources (e.g., WeBS data) has now been used to update the assessment outcomes. This is deemed to be sufficient to take account of temporal fluctuations, inform a more robust assessment of these values, and of impacts to them.	No
In line with CIEEM guidance, provide further information on the ecological value of the baseline habitats and the site. This should be taken into account within any calculations for biodiversity net gain. Review and update the impact assessment, as necessary.	This has now been reviewed by the Applicant and documented within the Future Baseline section of the ES Chapter. The information provided is now considered and robust. It makes clear that the project offers an opportunity for long-term, adaptive management of the lake that could result in benefits to biodiversity; however, it is discussed in a theoretical context rather than something that has been committed to at this stage. It is recommended that a management plan that fully addresses all of these points is committed to as part of any application	No

Summary of potential Regulation 25 information request	Review of Applicant response	Further information required?
	and/or permission such that those benefits are secured.	
Provide further information on the intended land-based outdoor activities including the extent of where these will be located across the site and which habitat areas will be accessible for activity users. Provide more detail on how these land-based activities will be managed to avoid disturbance to habitats and species present at the site.	The outline Operational Management Plan (OMP) (ES Volume II, Appendix 5.3) now provides additional detail on both the nature and locations of land and water-based activities. It doesn't specifically reference biodiversity (other than biosecurity) in terms of how activities will be managed to avoid and reduce impacts to biodiversity (although it is suggested that it does this in Section 7.7.4). However, there is enough, in combination with the text in Section 7.7 more generally, to adequately describe the detail of activities in order to inform the subsequent assessment. It is recommended that the full OMP (noting that the submitted version is in outline) provides more detail of proposed management actions specifically with reference to biodiversity resources, as well as a clear commitment to those actions. The full OMP should make clear how the plan will deliver on actions identified in the outline OMP as potential opportunities and how the outcomes of monitoring will be used to feedback into future management (including adaptive management and the possible need for remedial actions where monitoring identifies adverse outcomes or trends).	No
Provide further assessment of the likely significant impacts on other aquatic species, such as otters, to ensure a comprehensive approach to ecological mitigation at the site.	Updates to survey information and assessment have been made, including for water vole and otter, as well as further aquatic receptors (fish and European eel). Additional mitigation measures have been discussed and recommended, as well as future opportunities for enhancement. The reported presence of European eel is probably the most significant receptor to account for, but mitigation measures are proposed to ensure that works that could impact them take place at a time of year when eels could move away from the source of impact.	No
Confirm how the proposed mitigation measures link to, address, or ideally enhance the areas of the Mid Colne Valley SSSI that are currently assessed by Natural England as being in unfavourable condition.	The Applicant's response to this query suggests that enhancement works to other parts of the SSSI that are not in favourable condition would not be possible because they are outside of the Applicant's ownership. That in itself does not seem to be a valid reason for dismissing such works. If it were considered necessary to provide additional compensation as part of the 2025 scheme, it	No

Summary of potential Regulation 25 information request	Review of Applicant response	Further information required?
	would seem logical to suggest that such areas are considered to complement those measures within the current application and site boundary. The Tilehouse South and Harefield/Korda Lake units comprise similar habitats to those of Broadwater Lake and so could be subject to similar enhancement measures and the Coppermill Down comprises an area of lowland calcareous grassland that could be restored to a higher value. It may be that the Applicant considers that further compensation is not required ‘off-site’ given that provision of 10% BNG is not mandatory but their reasoning for not considering it is unclear, and we would suggest that this may represent an opportunity missed.	
Provide more information on the proposed extent of the reprofiling and dredging works to inform the assessment of how the proposed design will impact ecology.	Revisions to the 2023 scheme include substantially reduced levels of land reclamation, lake dredging and in-lake works. Dredging activities are now restricted to the East Channel only to ensure a minimum 2.0 m depth across this boat traffic area, but with 2.0 m either side being left undisturbed. It is also made clear that this activity will only take place in the month of September to avoid/minimise impacts to breeding birds, wintering birds and European eel. The predicted impacts of these works are discussed more comprehensively than previously in the 2025 ES Chapter 7, as well as in Chapter 8 Water Environment.	No
Provide a more detailed cumulative assessment of the likely in-combination effects arising from the proposed development and HS2, as well as the in-combination effects of the proposed development on ecological receptors. Related to this, provide more evidence to demonstrate that the proposed landscaping will be an effective measure to mitigate the impacts of disturbance.	The Applicant has provided a more detailed cumulative assessment of the likely in-combination effects of the 2025 scheme with HS2 within the 2025 ES Chapter 7. The assessment is improved and now considered appropriate, but there (rightly) remains a reliance upon long-term monitoring to verify that the predictions around no significance disturbance and habituation to multiple disturbance sources (activities on the site, in combination with the operational HS2) remain accurate. Therefore, it follows that the detailed monitoring programme for the site needs to be set up such that it includes for adaptive management measures and clear mechanisms for the funding of additional remedial measures, if required, to address unforeseen ongoing disturbance effects should those occur in the future.	No

Summary of clarifications required	Review of Applicant response	Further clarification required?
Confirm how the proposed development mitigation aligns with the HS2 mitigation requirements in terms of delivery timings and an integrated ecological strategy to maximise benefits.	There appears to be some level of co-ordination between the project and HS2, which has been evidenced by the Applicant, but this co-ordination is considered to be minimal. The handover of a small number of tern rafts for LBH to manage is relatively inconsequential; what will be more important is the full co-ordination of monitoring (and, where necessary) additional (remedial) mitigation measures in the future, operational phases of both projects.	No
Confirm whether the combined loss of open water from the HS2 and proposed development will exceed the 5% trigger and provide a clear reference for this trigger and why it is appropriate.	The Applicant has simply stated that there will be no loss of open water associated with the proposals. This statement is reviewed further in the subsequent section of this report that considers the project's work on Biodiversity Net Gain (BNG).	No (but see response on BNG, which relates to this point).

4.10 Biodiversity assessment review conclusion

- 4.10.1 ES Volume I, Chapter 7 Biodiversity of the 2025 ES, and accompanying technical documents within ES Volume II are now more detailed and robust than those reviewed as part of the Interim Review Report in 2023. Key updates include those to stakeholder consultation information, baseline survey results (taking account of further survey work between 2023 and 2025), amended evaluation levels (of SSSI components) and subsequent assessments, and superseded, more extensive supporting appendices.
- 4.10.2 Furthermore, revisions to the 2023 scheme have also served to reduce the likely significance of potential effects on key biodiversity resources, by downsizing the scale of the proposals and/or implementing further considerations around sensitive design.
- 4.10.3 These updates and revisions have sought to address many of the key concerns of the previous review and of the key stakeholders (e.g. Natural England).
- 4.10.4 The latest conversations with Natural England suggest that, whilst they have some ongoing concerns with respect to the potential operational impacts of the proposals (disturbance of species), especially in combination with an operational HS2 scheme, they no longer have fundamental objections to the 2025 scheme. Natural England has placed an emphasis on the importance of getting a robust management and monitoring plan in place to ensure that any future potential for adverse impact is highly unlikely.
- 4.10.5 Taking into account all of the above, the conclusion is that the work carried out for the 2025 scheme is robust and appropriate. There needs to be a focus on the delivery of a flexible, adaptive and fully-funded management plan that comprehensively delivers on the predicted enhancements to ensure the long-term maintenance of biodiversity value in line with the SSSI status of the site.
- 4.10.6 With this management plan in place at the next stage of the project, no further clarifications or information are required.

4.11 Committee report text

- 4.11.1 The Environment Act 2021 has established that all planning permissions granted in England have to deliver at least 10% BNG from January 2024 (see Section 8 for further details).
- 4.11.2 Paragraph 187 of the NPPF (2024) also states that planning decisions should contribute to and enhance the natural and local environment by: d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

- 4.11.3 This is supported by Policy G6 of the London Plan (2021), which emphasizes the importance of protecting and enhancing biodiversity and ensuring access to nature across London, and Policy DMEI 7 of the Hillingdon Local Plan: Part 2 (2020), which states that development must provide positive contributions to the protection and enhancement of sites or features of ecological value and that proposals that result in significant harm to biodiversity which cannot be avoided, mitigated, or, as a last resort, compensated for, will normally be refused.
- 4.11.4 The Applicant has considered ecology and biodiversity within the 2025 ES and as part of a separate BNG Assessment.
- 4.11.5 Effects to designated sites, habitats and species were identified and assessed, with a primary focus on those relating to the SSSI and its qualifying interests (principally wintering birds). Following embedded mitigation, through scheme design and proposed future management, no significant residual effects are identified and no additional mitigation is considered to be required.
- 4.11.6 There are a number of management plans that have been provided as outline within ES Volume II which will need to be provided in detail and agreed prior to commencement of works as part of a planning condition requirement. These include:
- Operational Management Plan – outline within ES Volume II, Appendix 5.3
 - Construction Environmental Management Plan – outline within ES Volume II, Appendix 6.1
 - Mitigation, Enhancement and Management Plan – outline within ES Volume II, Appendix 7.9
 - Biodiversity Gain Plan - to follow BNG Assessment, outline within ES Volume II Appendix 7.10.
- 4.11.7 Subject to such conditions, the 2025 scheme is considered to accord with the NPPF (2024), Policy G6 of the London Plan (2021) and Policy DMEI 7 of the Hillingdon Local Plan: Part 2 (2020).

5. Chapter 8: Water resources and flood risk

- 5.1.1 The review of the water resources and flood risk assessment has considered ES Volume I Chapter 8 and its associated technical appendices within ES Volume II (Appendices 5.3 and 8.1 to 8.7) of the 2025 ES. Section 5.2 to Section 5.8 have been reviewed and updated, accordingly. The interim review is available in the Interim Review Report in Appendix B.

5.2 Scope of technical chapter

- 5.2.1 The Chapter states that its scope has been agreed with LBH and the Environment Agency. The scope of this Chapter is as expected and appropriately defines the assessment methodology, establishes the baseline conditions, identifies receptors and their sensitivity, assesses the magnitude of impacts and the significance of the effects, discusses monitoring and embedded and additional mitigation measures, and summarises the residual effects. The scope covers both the construction phase and the completed development and aligns with the adopted scoping opinion.
- 5.2.2 An assessment of the lake ecology and water-dependent habitats falls outside the scope of this Chapter; these receptors are assessed in ES Volume I, Chapter 7: Biodiversity.

5.3 Baseline conditions

- 5.3.1 The description of the baseline conditions relating to groundwater, surface water and flood risk is thorough and is evidenced with relevant open-source data. The updated assessment within the 2025 ES summarises the baseline conditions for surface water and foul water and has identified existing drainage infrastructure at the site (ES Volume I, Chapter 8, paragraphs 8.4.10 to 8.4.11).
- 5.3.2 The assessment sets out that there are no operational private foul water / sewerage facilities at the site. The only public sewerage infrastructure located within the site, as noted by Thames Water asset records, is a 300 mm diameter sewer that runs on a north / south alignment to the east of the Grand Union Canal. There is no known private drainage infrastructure within the site. Direct rainfall is noted to currently infiltrate into the ground where it is permeable.
- 5.3.3 The 2025 ES assessment within ES Volume I, Chapter 8, has scoped in a detailed assessment of effects on Harefield Moor Lake and Korda Lake on a precautionary basis, which addresses the queries raised in the Interim Review Report. The assessment considers the potential effects on surface water from construction activities and the completed development.
- 5.3.4 The 2010 Upper Colne hydraulic model was used to assess flood risk at the site; however, an updated model was published in October 2025. It is acknowledged the updated model was not available at the time of preparing the updated Flood Risk Assessment (FRA) (in August 2025); however, latest information should be used, where possible, to assess on and/or off-site flood risk and likely flood levels.

5.4 Determination of magnitude, sensitivity and significance

- 5.4.1 This element of the Chapter is based on professional judgement, as is reasonable. The assessment of the sensitivity of receptors identified is considered appropriate, as is the assessment of the magnitude of impacts identified. Therefore, it is considered that the significance of the effects, as assessed, is reasonable.

5.5 Mitigation and monitoring

- 5.5.1 The Outline Operational Management Plan (OMP) provided in ES Volume II, Appendix 5.3 has proposed a number of typical mitigation measures which relate to pollution prevention, water quality, flood risk and hydro-morphological protection and enhancement. Measures relevant to the construction phase are proposed in the Outline Construction Environmental Management Plan (CEMP) provided in ES Volume II, Appendix 6.1. The lake dredging process in the construction phase has been identified as a potential source of groundwater and surface water contamination. The Outline CEMP has identified in-lake dredging and land reclamation as part of the construction activities and notes a detailed construction method statement will be provided by the Contractor. These are deemed appropriate for the outline stage. Planning conditions should be implemented to

provide detailed information about the management of the lake during the construction and operational phases, this should also consider utilising the lake as a firefighting water source. Coordination with the Environment Agency and Affinity Water should be maintained during the development and implementation of the management plans.

- 5.5.2 The updated assessment includes a cut-fill analysis which states the proposed extent of dredging (now localised and confined to the eastern channel) and island removal volumes have substantially decreased, and the volume of cut material exceeds the volume of fill material by 4,456 cubic metres. Due to the reduction in dredging and island removal volumes, the updated FRA produced by Weetwood in August 2025 stated *“the proposals would not reduce the storage volume of the lake, nor impact existing water levels. As such, the proposals would not increase flood risk elsewhere”*. It is acknowledged that floodplain compensation will not be negatively impacted; however, there is a net increase in open water surface area as land removed (cut) is greater than land created or reclaimed (fill). Subject to consultation with the Environment Agency, it is likely that updated flood modelling, using the October 2025 model, will be required to demonstrate that any increase in flood capacity does not increase flood risk downstream, particularly as the publicly available data demonstrates an increase in flooding on the peninsula.
- 5.5.3 In relation to surface water drainage, Section 7.2 of the FRA discusses the disposal of surface water at the site in line with the drainage hierarchy provided in the Environment Agency Planning Practice Guidance (paragraph. 7.056) and identified infiltration as a suitable method of disposal. However, this is contradicted by information provided in Appendix J of the FRA where it notes there will be *‘9no. outfalls to the lake’*. It is recommended that final details of the drainage strategy are confirmed as a requirement of a suitably worded planning condition.
- 5.5.4 Planning conditions will also be required to secure site-specific flood mitigation measures (i.e. flood emergency plan).

5.6 Cumulative effects

- 5.6.1 HS2 remains the only cumulative scheme to consider with respect to this topic and the HS2 ES does not identify any residual impacts on the water resources baseline for Broadwater Lake. There is a potentially significant residual impact on groundwater abstractions, which will require a management strategy to be agreed by HS2 with the Environment Agency and Affinity Water. The Applicant’s assessment that significant adverse cumulative effects will not arise is considered reasonable provided that consultation with Affinity Water is undertaken to confirm they are satisfied with mitigation measures proposed to protect groundwater abstraction sources.

5.7 Commentary on the ES conclusions

- 5.7.1 ES Volume I, Chapter 8 water resources and flood risk assessment adequately identifies and assesses the potential effects and their significance during construction and operation, with mitigation and monitoring proposed to minimise adverse effects. A clear summary of the assessment is provided in ES Volume I, Chapter 8, Table 8.11.

5.8 Commentary on the NTS

- 5.8.1 The summary for this Chapter provided in the NTS sufficiently reflects the content of the water resources and flood risk Chapter.

5.9 Review of the Applicant responses to the Interim Review Report

- 5.9.1 This section considers the information and responses provided by the Applicant to address the comments raised in the Interim Review Report (December 2023).

Summary of potential Regulation 25 information request	Review of Applicant response	Further information required?
Provide the baseline conditions for surface water and foul water, as well as identify any existing drainage infrastructure at the site.	The updated assessment reported in the 2025 ES has summarised the existing foul water and sewerage infrastructure (paras 8.4.10 to 8.4.11). It is confirmed there are no operational private foul water / sewerage facilities at the site. The only public sewerage infrastructure located within the site, as noted by Thames Water asset records, is a 300 mm diameter sewer that runs on a north / south alignment to the east of the Grand Union Canal. There is no known private drainage infrastructure within the Site. Direct rainfall is noted to currently infiltrate into the ground where it is permeable.	No
Provide further quantitative information to demonstrate that the proposed dredging activities, land reclamation and small island creation, will not result in an increase in flood risk either within the site or elsewhere.	The Applicant has confirmed the dredging and island removal volumes have decreased significantly from c. 47,356 cubic metres in the 2023 scheme to circa. 7,100 (7,094) cubic metres. The volume of cut material exceeds the volume of fill material by 4,456 cubic metres indicating floodplain compensation is not negatively impacted; however, there is a net increase in open water surface area. The Applicant has submitted further clarification to address issues raised by the Environment Agency regarding the use of the updated October 2025 model and whether the increase in flood capacity would increase flood risk downstream, particularly as the publicly available data demonstrates an increase in flooding on the peninsula. This is discussed in Section 5.10.	No

Summary of clarifications required	Review of Applicant response	Further clarification required?
Clarify why Korda Lake and Harefield Moor Lake are not specifically identified as receptors in ES Volume 1, Chapter 8, paragraph 8.4.25.	The 2025 ES has considered Harefield Lake and Korda Lake alongside Broadwater Lake to understand the potential effects on surface water from construction activities and the completed development.	No

5.10 Review of the Environment Agency consultation response

- 5.10.1 An objection was submitted by the Environment Agency which raised issues on four grounds. The Applicant has submitted further clarification to address each of these grounds which are discussed in turn in the following sections.

Objection 1: Inadequate FRA

- 5.10.2 The Environment Agency raised an initial objection to the FRA as it was not satisfied there was an adequate assessment of whether the 2025 scheme would increase flood risk elsewhere. The cut and fill approach showed there would be no net loss in volume in the flood storage of Broadwater Lake; however, there was an increase in open water. The Environment Agency was concerned an increase in flood capacity may result in greater water levels entering the River Colne. Further information was also requested regarding an outfall on site that appeared to divert water into the River Colne.

- 5.10.3 In terms of the modelling data that was available: An updated Upper Colne Flood Model for the upstream catchment was published in October 2025 which was difficult timing given the submitted updated FRA was dated August 2025 and the re-submitted application documentation was validated in November 2025. A recommendation was made to the Applicant to use the latest Upper Colne flood model if any further work was carried out.
- 5.10.4 The Applicant provided a flood risk clarification note to address concerns raised within Objection 1. This note considered the impact of the 2025 Upper Colne model to validate the 2025 scheme would not increase flood risk elsewhere. Additionally, the Applicant clarified the outfall pipe referred to in Objection 1 has no material influence on flood levels in the River Colne or Broadwater Lake given the scale of the pipe in comparison to the overall flow within the River Colne. The Environment Agency is now satisfied sufficient information has been provided to address Objection 1 and will propose a planning condition (Confirmed in EA Letter Ref: NE/2024/137219/06-L02).

Objection 2: More detailed consideration of pollution control

- 5.10.5 The 2025 scheme will require an environmental permit due to excavation and redepositing activities taking place in a sensitive location for biodiversity and groundwater. The points raised in Objection 2 are typically covered by detailed management plans prepared post-planning, as part of pre-commencement conditions or the environmental permit application. The Environment Agency requested for these details to be brought forward and for the Applicant to progress the environmental permit application in parallel with the planning application.
- 5.10.6 The Applicant initiated early engagement with the Environment Agency permitting team to seek pre-application advice and provided a letter listing appropriate permitting pathways, information requirements to support future permit applications and the scope of environmental controls. The information is still currently being reviewed by the Environment Agency. Where possible, the Applicant should progress the permitting applications.

Objection 3: Unacceptable impacts to waterbodies in the RBMP

- 5.10.7 The Environment Agency requested an update to the Water Framework Directive Assessment (WFDA), requiring more detail on the mitigation measures which would typically be provided post-consent as part of the pre-commencement management plans or permit application. However, the Environment Agency had set out clearly what they wanted to see within the WFDA at this stage, and the Applicant agreed which aspects of the requirements could be provided for planning and which could be secured through planning condition.
- 5.10.8 The Applicant provided a WFDA addendum which set out further details on the Broadwater Lake baseline conditions, likely hydro-morphological impacts and physical habitat change. The WFDA addendum specifically addressed the Environment Agency's comments and clarified details on shoreline revegetation and lake edge restoration in Section 1.6, long-term lake restoration in Section 1.7, separation of WFD and SSSI mitigation in Section 1.8 and use of artificial concrete in Section 1.9. The ability for Broadwater Lake to reach Good Ecological Potential is discussed in Section 1.12. Based on the information provided, the Environment Agency is satisfied this information is sufficient to overcome Objection 3. The WFDA addendum was further updated and provided to the Environment Agency on 24/02/2026 to embed an explicit and non-optional commitment to the Lake Restoration Strategy and an indicative programme, further clarity on delivery and timing, and the no-deterioration monitoring framework and remediation pathway. The Environment Agency was satisfied with information provided and will propose a planning condition ((Confirmed in EA Letter Ref: NE/2024/137219/07).

Objection 4: Assessment of European eel and water voles

- 5.10.9 The Environment Agency raised that the most recent update survey work was undertaken at a time outside of the recommended survey window for the species. Arup advised that more detail should be provided on why the limitations of the survey work did not affect the outcome of the assessment, with reference to the credentials of those undertaking the survey in terms of their professional judgement on these matters. An alternative option would have been to undertake further surveys from Spring 2026, to add to the existing dataset.

- 5.10.10 With respect to European eel, the Environment Agency was more focused on the lack of detail in the Outline Management Plans than on how the potential presence of eel will be considered to ensure no adverse impacts on any population if present. This mirrored Arup's broader review comments around level of definition and commitment to ecological management measures more generally, where we would concur that the Applicant cites numerous potential enhancement opportunities but without clearly committing to them. It is noted that Natural England has also referenced that robust and flexible management and monitoring is critical to the successful delivery of the predicted outcomes for biodiversity.
- 5.10.11 The Applicant provided additional clarification to the Environment Agency who has agreed that the objection could be satisfied with the implementation of an appropriate planning condition with respect to both Eel and Water Vole species (Confirmed in EA Letter Ref: NE/2024/137219/06).

5.11 Water resources and flood risk review conclusion

- 5.11.1 ES Volume I, Chapter 8 water resources and flood risk assessment adequately identifies and assesses the potential effects and their significance during construction and operation, with mitigation and monitoring proposed to minimise adverse effects. The 2025 ES has addressed previous comments raised with respect to the existing baseline conditions and proposed dredging activities.
- 5.11.2 The Applicant has satisfactorily addressed issues raised by the Environment Agency regarding use of the latest Upper Colne hydraulic model published in October 2025 and potential downstream flood risk impacts due to land reclamation and dredging activities in Broadwater Lake. The Applicant has provided more explicit commitments with respect to mitigation and monitoring measures during the construction and operational phase. It is expected this information will be captured dynamically in pre-commencement management plans as a requirement of robustly worded planning conditions recommended by the Environment Agency.

5.12 Committee report text

Flood risk

- 5.12.1 Policy EM6 of the Local Plan: Part 1 (2012) outlines that the LPA will require new development to be directed away from Flood Zones 2 and 3 in accordance with the principles of the National Planning Policy Framework (NPPF). Policy DMEI 9 of the Local Plan: Part 2 (2020) outlines that development proposals in Flood Zones 2 and 3 will be required to demonstrate that there are no suitable sites available in areas of lower flood risk. Where no appropriate sites are available, development should be located on the areas of lowest flood risk within the site. The approach in the Development Plan is consistent with Policy SI 12 of the London Plan (2021) and the NPPF (2024). The Local Plan: Part 2 (2020) was adopted in January 2020 and included a site allocation document. The site is not allocated within the Development Plan.
- 5.12.2 The majority of the application site (i.e. Broadwater Lake) is located within Flood Zone 3 with the peninsula and access road located in Flood Zone 1. The 2010 Upper Colne hydraulic model was used for the assessment and indicated Broadwater Lake is at risk of flooding during a (defended) 5.0% AEP event and as such may be defined as Flood Zone 3b. The main part of the peninsula where built development is proposed experiences no flooding during a present day (defended and undefended) 0.1% AEP event and a (defended) 1% AEP event + 20% climate change. As such, it is at Low risk of flooding. The southern parcel and a small part of the access road are at Medium risk of flooding. The Applicant has established the design flood level to be 37.89m AOD, the maximum in-channel water level for the River Colne during design flood event of 1.0% AEP event + 20% climate change. Much of the peninsula is above 37.89m AOD; however, certain areas proposed for camping and around the buildings are lower. The finished floor level (FFL) of all proposed buildings has been set at a minimum of 38.23m AOD, the maximum modelled in-channel water level for the River Colne during the 0.1% AEP event.
- 5.12.3 In line with Annex 3 of the NPPF (2024), water-based recreation and outdoor sports uses are classified as 'Water Compatible'. Water-based recreation is an appropriate form of development in all flood zones. The sequential test was applied and concluded no alternative sites at a lower risk of flooding were available and suitable for the proposed development. It is considered that the sequential test is passed and the exception test does not apply as the development is 'Water Compatible' in Flood Zone 3.

- 5.12.4 The Environment Agency raised an objection regarding the Flood Risk Assessment as the Applicant did not clarify the offsite impact of the proposed development. To overcome the objection, the Applicant undertook further modelling using the 2025 Upper Colne Model. The modelling found the effect of the proposed development was a negligible increase in volume stored at any given level which was insignificant compared to the total volume of water within Broadwater Lake. The Environment Agency was satisfied with the information provided and will propose planning conditions to be applied. The risk of flooding from all other sources (artificial sources, surface water and groundwater) is considered to be Low.
- 5.12.5 Planning conditions are also recommended requiring the provision of detailed mitigation measures to manage flood resilience and agreement of a flood warning emergency plan which should set out procedures to be followed in the event of flooding.
- 5.12.6 Subject to approval from the Environment Agency, the scheme will comply with Policy SI 12 of the London Plan (2021), Policy EM6 of the Hillingdon Local Plan: Part 1 (2012) and Policy DMEI 9 of the Hillingdon Local Plan: Part 2 (2020).

Drainage

- 5.12.7 Policy SI 13 of the London Plan (2021) requires development proposals to utilise sustainable urban drainage systems (SuDS) unless there are practical reasons for not doing so, as well as aim to achieve greenfield run-off rates to ensure that surface water run-off is managed as close to its source as possible. This is supported by Policy EM6 of the Hillingdon Local Plan: Part 1 (2012) and Policy DMEI 10 of the Hillingdon Local Plan: Part 2 (2020).
- 5.12.8 These policies are acknowledged in the submitted FRA; however, surface water proposals are assessed against Planning Practice Guidance (PPG) para. 7-056. There is a limited assessment against the drainage hierarchy outlined in Policy SI 13 to showcase all possible methods of surface water disposal have been considered.
- 5.12.9 However, the submitted surface water drainage strategy sets out the intention for infiltrating runoff into the ground or into Broadwater Lake. This follows the existing arrangement whereby direct rainfall infiltrates into the ground, where permeable. Infiltration testing has also been carried out on site which confirmed that this method is viable. The potential for rainwater harvesting and other methods of localised storage to manage surface water run-off as close to its source are also mentioned but these proposals have not been developed further.
- 5.12.10 A condition has been recommended to secure the final details of the drainage strategy and implementation of the drainage scheme. Subject to these conditions, the proposed development would comply with the Policy EM6 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 10 of the Hillingdon Local Plan: Part 2 (2020) and Policy SI 13 of the London Plan (2021).

Water infrastructure / water quality

- 5.12.11 Policy SI 5 of the London Plan (2021) sets out water infrastructure and water quality requirements for proposed developments. In terms of water quality, the proposed development should take into account the water environment in line with the Thames River Basin Management Plan, as well as Catchment Plans. The proposed development should seek to improve the water environment, ensure that adequate wastewater infrastructure is provided and minimise the potential for misconnections between foul and surface water networks.
- 5.12.12 According to Policy EM8 of the Hillingdon Local Plan: Part 1 (2012) and Policy DMEI 10 of the Hillingdon Local Plan: Part 2 (2020), the proposed development should safeguard and improve all water quality, both ground and surface. The LPA has identified Principle Aquifers, Source Protection Zones and the River Colne as priority water sources.
- 5.12.13 The proposed development involves in-lake dredging and land reclamation as part of the construction activities. Due to the sensitivity of Broadwater Lake, a number of typical mitigation measures have been proposed which relate pollution prevention, water quality, flood risk and hydro-morphological protection and enhancement. These have been identified in the Outline Operational Management Plan (OMP) and Construction Environmental Management Plan (CEMP). The Environment Agency has also been consulted and updates have been made to relevant reports such as the Water Framework Directive assessment which confirms an explicit and non-optional commitment to the preparation of Lake Restoration Strategy and an indicative programme, further clarity on delivery and timing, and

the no-deterioration monitoring framework and remediation pathway. The Environment Agency is satisfied with the information provided at this stage and have proposed planning conditions to secure further details.

- 5.12.14 Conditions to safeguard the lake during construction and operational phases are recommended. Subject to these conditions, the scheme will comply with the Policy EM8 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 10 of the Hillingdon Local Plan: Part 2 (2020) and Policy SI 5 of the London Plan (2021).

Table 2 Proposed planning conditions

Condition	Proposed wording	Reason
Emergency Flood Management Plan	Prior to the occupation of the development, a detailed Emergency Flood Management Plan confirming provision of safe access/egress and/or safe refuge to be prepared in accordance with Environment Agency Flood risk emergency plans for new development (https://www.adeptnet.org.uk/floodriskemergencyplan).	To ensure that safe access and egress routes that are accessible for users of all vulnerabilities are available in the case of flooding
Detailed Drainage Strategy	Prior to commencement (with exception for ground investigations, groundworks, demolition, site clearance and piling works), a fully coordinated drainage strategy must be provided and approved by the local planning authority and include details of the following: 1. Proposed method and location of discharging the collected surface water from the site in accordance with hierarchy set out in Policy SI 13 of the London Plan (2021). Justification should be provided where the proposal does not utilise the most sustainable solution. 2. Details of Sustainable Drainage System (SuDS) elements that are embedded, where practicable, within the landscaping plan for the development. Preference should be given to above-ground SuDS elements that control water at source and provide wider biodiversity, water quality and amenity benefits. 3. Provide the greenfield and proposed runoff rates for a variety of return periods including the 1 in 1 year, 1 in 30, 1 in 100, and 1 in 100 plus 40% climate change. Developments should aim to meet greenfield runoff rates unless a suitable justification can be provided. 4. Provide hydraulic qualification to demonstrate that the volume of storage and size of drainage features provided is adequate to control surface water for a range of storm duration and rainfall intensities for the entire site area for events up to and including the critical 1 in 100 plus 40% climate change rainfall event. 5. Provide a plan showing the route surface water will take through the development for rainfall events exceeding the 1 in 100-year event. Where it is intended to store water on the ground surface, the maximum extent of overland flooding should be mapped and the depth of the flooding confirmed. Safe access and egress for the site must be demonstrated. 6. Provide a management and maintenance plan for the drainage system that includes clear plans showing the above and below ground drainage network, and identifies the responsibility of different parties each component of the drainage network. Prior to occupation of the proposed development: 7. A drainage verification report should be prepared by a suitably qualified engineer and submitted to and approved in writing by the Local Planning Authority for that Phase or Building. The report shall provide evidence that the drainage system (incorporating SuDS) has been constructed according to the approved details and specifications (or detail any minor variations where relevant) and shall include plans, photographs and national grid references of key components of the drainage network such as surface water attenuation structures, flow control devices and outfalls. The report shall also include details of the responsible management company.	To satisfy the requirements of Policy EM6 of the Hillingdon Local Plan: Part 1 (2012), Policy DMEI 10 of the Hillingdon Local Plan: Part 2 (2020) and Policy SI 13 of the London Plan (2021).

Condition	Proposed wording	Reason
Construction and operational water management	Conditions related to CEMP and OMP should request the detail of construction and operational management of Broadwater Lake. Affinity Water and the Environment Agency have recommended conditions and advice requiring this information.	

6. Chapter 9: Ground conditions and contamination

- 6.1.1 The review of the ground conditions and contamination assessment has considered ES Volume 1 Chapter 9 of the 2025 ES and its associated technical appendices within ES Volume II (Appendices 9.1 to 9.9). Given the scale of proposed changes to the extent of dredging and land reclamation, as well as the submission of additional ground investigation, the review in this section has been updated to reflect the 2025 ES and 2025 scheme. The Interim Review Report is available in 0.

6.2 Scope of technical chapter

- 6.2.1 This Section focuses on potential contamination related effects, with regards to human health, controlled waters, ground gases, building materials and ecological receptors.
- 6.2.2 The Ground Conditions and Contamination assessment was prepared by Hydrogeo Ltd in November 2025. The scope of the chapter is generally considered appropriate for the assessment of the effects from potential land contamination and aligns with the adopted scoping opinion. Current legislation, planning policy context and guidance documents have been set out and are adequately addressed.

6.3 Baseline conditions

- 6.3.1 The baseline conditions set out the environmental conditions of the site and surrounding area, within a radius of 250 m from the site boundary, for the years 2022-2025. This distance from the site boundary is considered reasonable, given the context of the 2025 scheme and sensitivity of the study area.
- 6.3.2 Baseline conditions were established through the completion of the following:
- Phase I Geo-environmental Assessment by Geo-Integrity (September 2023) which included a site walkover survey (October 2022), a review of publicly available information from British Geological Survey (BGS) and Environment Agency (EA) websites, as well as data obtained from a Groundsure Report (December 2022); this Phase I report is included as ES Volume II Appendix 9.2;
 - Broadwater Lake sediment sampling by Johns Associates in March 2023, by Miles Water Engineering in June 2023, and again by Johns Associates in March 2025 (included as ES Volume II Appendix 9.6);
 - Phase II Geo-Environmental Site Investigation report by Geo-Integrity (April 2023 and September 2023 update); this is included as ES Volume II Appendix 9.3;
 - Updated Groundsure desk study searches (August 2025), included as ES Volume II Appendix 9.9. The Applicant states there are no material changes compared to the data presented previously; therefore, the 2023 Phase I report remains valid;
 - A submarine survey of Broadwater Lake by Greengage in September and October 2024 and March 2025 (included as ES Volume II Appendix 9.7); and
 - Establishment of surface water quality baseline for Broadwater Lake through the use of Defra monitoring data obtained between October 2019 and June 2025, and LBH sample data obtained between November 2024 and June 2025.
- 6.3.3 The baseline condition data has been updated to include the Grand Union Canal, as well as more recent surface water sampling data obtained from Broadwater Lake by DEFRA (the text incorrectly states that the sampling was carried out by the EA). ES Volume II, Appendix 9.8 includes copies of correspondence with the EA, following the submission of the 2023 ES.
- 6.3.4 ES Volume I, Chapter 9 Water Environment adequately addresses limitations of the Phase I and Phase II reports, namely the fact that the Phase I report does not acknowledge the unregistered landfill, and the Phase II report had substantial limitations due to access restrictions (dense vegetation) during the ground investigation. Therefore, the Applicant states that it considers the 2023 investigation to be preliminary and it recognises that additional site investigation will be required once the planning application has been granted, the scope of which will be agreed with stakeholders including LBH (contaminated land officer) and EA.

- 6.3.5 Whilst this approach is considered appropriate, it was understood that additional ground investigation was planned for September 2025. It would have been helpful for the findings of this additional investigation to have been included within the 2025 ES; however, it accepted that this will be submitted at a later date, to discharge relevant planning conditions.
- 6.3.6 Comments and recommendations were issued, and the ES Volume I Table 9.4 states that this further ground investigation was planned to take place in September 2025. Considering the ES chapter is dated November 2025, it would have been helpful to include the findings of the ground investigation in this report, although it is accepted that these will
- 6.3.7 The ES Chapter includes responses to earlier comments made by Arup and other stakeholders. The responses to queries raised by Arup set out in ES Volume 1, Chapter 9, Tables 9.1, 9.2 and 9.4, are considered broadly adequate. It is noted that an updated human health risk assessment and ground gas risk assessment are included in this ES chapter.

6.4 Determination of magnitude, sensitivity and significance

Construction

- 6.4.1 The sensitivity of the various receptors identified, the magnitude of the impacts described, and the resulting significance of the effects on the receptors during the construction stage is generally agreed. The assessment has generally considered mitigation measures to be embedded within the design.
- 6.4.2 The ground gas/ vapour assessment remains incomplete and will need to be updated once an additional ground investigation has been undertaken. The characterisation included in the Phase II report is not deemed adequate, in particular because it does not take into consideration the unregistered landfill. This is accepted by the Applicant, who has confirmed further investigation will be carried out in future.

Operation

- 6.4.3 The assessment of sensitivity of the various receptors identified, magnitude of impacts described and resulting significance of effects on receptors during operation is generally agreed and appropriate. Again, the assessment has generally considered mitigation measures to be embedded within the design and clear commitments for this to be delivered will need to be secured by planning conditions.
- 6.4.4 As mentioned previously, the Applicant has stated that further ground investigation will be undertaken to inform an updated ground gas risk assessment. This will in turn inform imbedded construction features for the new buildings to be constructed on site, and will provide inherent mitigation for the operational phase.

6.5 Mitigation and monitoring

- 6.5.1 The chapter describes embedded mitigation measures and additional mitigation measures to be undertaken during the construction phase and included within the completed development.
- 6.5.2 The Applicant acknowledges that further ground investigation will be required following the planning application determination, to inform the enabling and construction phases of the 2025 scheme. The Applicant also states that a detailed quantitative risk assessment (DQRA) will be undertaken to establish site specific reuse criteria for any excavated soils and materials.
- 6.5.3 The Applicant has confirmed that further ground gas risk assessment will be undertaken following the additional phase of ground investigation. It has also been confirmed that existing ground gas monitoring boreholes will be retained during the enabling, construction and operational phases of the 2025 scheme, and will be monitored at regular frequencies prior to, during and following the enabling and construction phases, particularly during times of large scale works (piling, foundation excavations etc.). This monitoring is welcomed; however, reporting will need to be submitted to LBH for review, and to discharge relevant planning condition(s) expected to be placed on any future permission.
- 6.5.4 It is expected that standard planning conditions will be placed on the permission which will require the submission of additional ground investigation and risk assessment, a remediation strategy and verification requirements. This approach is considered appropriate.

- 6.5.5 The proposed scope of the additional ground investigation and specifically the additional ground gas monitoring was reviewed by Arup in July 2025, with comments and recommendations provided. It is expected the Applicant will have taken these on board, but should there be any deviation from these, the Applicant will need to provide sufficient rationale. Mitigation measures will need to be outlined in the remediation strategy, verified and agreed with LBH.
- 6.5.6 The Outline CEMP submitted in ES Volume II, Appendix 6.1 includes details of general good construction practices (e.g. dust suppression, stockpile management) and a discovery strategy for managing unexpected contamination. The Applicant acknowledges that Environmental Permits and a Piling Risk Assessment will also be required, which is welcomed.
- 6.5.7 The mitigation measures proposed for the completed development are typical for former brownfield sites, such as the installation of clean cover systems, ‘no dig’ layers and drainage control measures to restrict infiltration of rainwater. On-going surface water monitoring will be undertaken during operation. The frequency of monitoring will need to be discussed and agreed with the EA and LBH as part of a future planning condition requirement.
- 6.5.8 Based on the implementation of the mitigation measures, the effect significance on identified receptors has been considered negligible. This is considered appropriate.

6.6 Cumulative effects

- 6.6.1 The Applicant has not identified any committed developments which are likely to lead to cumulative ground conditions and contamination effects in combination with the 2025 scheme. This is agreed.

6.7 Commentary on the ES conclusions

- 6.7.1 Whilst the assessment provided within the ES and its conclusions are generally agreed, the underlying data (in the form of the current Phase I and Phase II reports) remains lacking. The Applicant has acknowledged this, and has provided assurance that further ground investigation and risk assessment (in particular ground gas risk assessment) would be undertaken, as well as DQRA to establish reuse criteria for excavated soils. This should be reported on in an updated interpretative report. The Applicant has stated that this information will be submitted for review to discharge the planning conditions expected to be placed on the development. This proposed approach is found to be acceptable.
- 6.7.2 Mitigation measures will be implemented predominantly via a detailed CEMP and remediation strategy, both expected to be secured via standard planning conditions. It is agreed that no significant residual effects will remain following the implementation of embedded and additional mitigation measures.

6.8 Commentary on the NTS

- 6.8.1 The text in the NTS remains very general and does not clarify that many areas of uncertainty remain. It is currently stated for instance that “*no buildings (...) is proposed on areas of historic landfill*”; however, it is acknowledged in ES Volume I, Chapter 9, paragraph 9.3.8 that the boundaries of the unregistered landfill were provided by the EA based on anecdotal evidence, and no exercise has been undertaken by the Applicant to delineate it accurately. The Applicant will need to take this into consideration, especially when producing the remediation strategy.
- 6.8.2 The NTS should be clearer that there is still uncertainty with regards to historical landfilling activities on site and that further investigations are to be carried out to inform the remediation strategy. No update to the NTS is required as this would not alter any of the assessment conclusions.

6.9 Review of the Applicant responses to the Interim Review Report

- 6.9.1 This section considers the information and responses provided by the Applicant to address the comments raised in the Interim Review Report (December 2023).

Summary of potential Regulation 25 information requests	Review of Applicant response	Further information required?
Provide the updated Phase II geo-environmental interpretative report, including the updated human health and ground gas risk assessments, to ensure a robust and comprehensive risk assessment has been undertaken for the site, taking into consideration the known baseline conditions and submitted proposed development design.	An updated risk assessment, informed by the additional ground investigation carried out since the 2023 ES has been provided in paragraphs 9.6.21 to 9.6.36 and 9.7.20 to 9.7.26 of ES Volume I, Chapter 9. The assessment conclusions are agreed. The Applicant will need to provide an updated interpretative report following completion of the additional phase of ground investigation. This should include a comprehensive and robust ground gas risk assessment. The requirement for such a report should be secured by an appropriately worded planning condition.	No
The ground gas assessment should be updated to reflect the proposed development design submitted for planning. The assessment should also take into account any likely significant effects associated with the unregistered landfill.	An updated risk assessment, informed by the additional ground investigation carried out since the 2023 ES, has been provided in paragraphs 9.6.21 to 9.6.36 and 9.7.20 to 9.7.26 of ES Volume I, Chapter 9. The assessment conclusions are agreed. The Applicant has confirmed that earthworks planned within the limits of the regulated historical landfill will be minimal, as they are limited to parking spaces, upgrading the existing access road, and construction of a shelter and bike shelter/ storage area. It is expected an updated ground gas risk assessment will be secured by an appropriately worded planning condition.	No
The NTS should be updated to reflect any changes to the assessment following the submission of the updated geo-environmental interpretative report.	The NTS has been updated to include a high level summary of the ground conditions and contamination assessment. There is no mention of remaining uncertainty with regards to ground gas risk assessment. The NTS should make it clear that further ground investigation is to be undertaken to better define the risks from contaminated land at the site; however, it is expected that this will be a requirement of suitable planning condition(s). An update to the NTS is not required as this will not alter the outcomes of the assessment.	No

Summary of clarifications required	Review of Applicant response	Further clarification required?
No clarifications required.		

6.10 Ground conditions and contamination review conclusion

- 6.10.1 Additional baseline information has been used by the Applicant to inform the 2025 ES Volume I, Chapter 9 ground conditions and contamination assessment, particularly in terms of up to date regulatory data and more thorough sediment data from Broadwater Lake. However, there remains some gaps which the Applicant has acknowledged, notably in relation to the ground gas risk assessment which will be addressed through additional ground investigation. It is expected that suitably worded planning conditions will be placed requiring an updated Phase II interpretative report, a remediation strategy and ultimately a validation report are produced and submitted for agreement.

6.11 Committee report text

- 6.11.1 Policy DMEI 12 of the Local Plan: Part 2 (2020) states that development on potentially contaminated sites shall assess conditions and demonstrate that the site can be safely developed. Planning conditions and S106 legal agreements can be used to secure the appropriate level of ground contamination information and detail required.
- 6.11.2 A Ground Conditions assessment and Phase 1 Contamination Risk Assessment have been submitted with the Environmental Statement, in support of the application. These assessments have been informed by initial Phase II ground investigations and a geo-environmental interpretative report, as well as a ground gas risk assessment and details raised by the Environment Agency in relation to an unregistered historic landfill.
- 6.11.3 The Applicant has confirmed that earthworks planned within the limits of the regulated historical landfill will be minimal and limited to parking spaces, upgrading the existing access road, and construction of a shelter and bike shelter/ storage area.
- 6.11.4 The submitted assessments have been reviewed and are considered to be sufficient and acceptable at this stage of the planning process. A series of conditions have been recommended to secure the requirement for submission and agreement of a remediation strategy which is informed by updated ground investigation and ground gas testing, as well as a validation report to confirm works have been completed in line with agreed protocols.
- 6.11.5 Subject to suitable information being submitted to address condition required, the proposed development is considered to be line with Policy DMEI 12 of the Hillingdon Local Plan: Part 2 (2020).

7. Chapter 10: Landscape and visual impact assessment

- 7.1.1 The review of the landscape and visual impact assessment has considered ES Volume 1 Chapter 10 and its associated technical appendices within ES Volume II (Appendices 10.1 to 10.6).
- 7.1.2 This review has been carried out with reference to Landscape Institute Technical Guidance Note 01/20: Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs). The results of the technical review are available in 0 of this report and summarised in the following sections.
- 7.1.3 Section 7.2 to Section 7.8 remain as reported in the Interim Review Report. The Applicant responses to the queries raised have been considered and the full review set out within 0 has been updated.

7.2 Scope of technical chapter

- 7.2.1 The assessment scope was agreed with the LPA as part of the EIA scoping process and the Chapter provides evidence of how the Applicant has responded to this and other consultees comments. The assessment includes appropriate references to other chapters but also includes occasional references to the Green Belt designation. There appears to be no separate consideration of Green Belt impacts in the assessment.
- **Potential Regulation 25 request: Provide an assessment of the impact on Green Belt and the associated loss of openness.**

7.3 Baseline conditions

- 7.3.1 The landscape baseline discusses Landscape Character Areas (LCA) defined using the South Buckinghamshire and the Colne Valley Regional Park (CVRP) Landscape Character Assessments. Only the LCAs defined within the CVRP Landscape Character Assessment were taken forward for further assessment. The landscape baseline also discusses the physical components of the site, but it is unclear how this relates to the other landscape receptors identified for assessment.
 - 7.3.2 Justification is given for the scoping of viewpoints but there is no rationale given for the list of visual receptors that was taken forward for further assessment.
- **Clarification required: Clarify how the landscape and visual receptors taken for further assessment have been determined.**
- **Potential Regulation 25 request: Provide the value and susceptibility of each visual receptor and viewpoint to justify their sensitivity.**
- 7.3.3 The supporting graphics in the appendices, particularly the Landscape Strategy, are effective in communicating the characteristics of the landscape.
 - 7.3.4 The supporting LCA Figure in ES Volume II, Appendix 10.1 does not contain all the LCAs listed that are identified as landscape receptors and does not have a corresponding key.
- **Clarification required: Provide a key on the LCA figures contained at ES Volume II, Appendix 10.1.**
- 7.3.5 The text refers to only two viewpoint locations warranting Accurate Visual Representations (AVR), but three have been included at ES Volume II, Appendix 10.5.

7.4 Determination of magnitude, sensitivity and significance

- 7.4.1 The assessment methodology was agreed through consultation with the LPA and has been undertaken largely in accordance with good practice guidance, namely the Guidelines for Landscape and Visual Impact Assessment, third edition (GLVIA3). However, it includes reference to Landscape Institute (LI) Technical Guidance Note (TGN) 01/11 for the production of the photography and visualisations, which has been superseded by LI TGN 06/19 Visual Representation of development proposals.
- **Clarification required: Clarify how the visualisations comply with the LI TGN 06/19 Visual Representation of the proposed development.**

- 7.4.2 The assessment provides separate consideration of landscape and visual effects, and generally contains defined criteria and thresholds for each, but there are some inconsistencies between landscape and visual. For example, there are no value or susceptibility criteria provided for visual receptors, and there are no thresholds provided for the duration, reversibility and geographic extent of landscape impacts. This has raised a number of areas for clarification.
- **Clarification required: Provide the baseline scenario for the visual receptors and their associated value on which the assessment has been based.**
 - **Clarification required: Clarify the value of each landscape receptors with reference to the criteria given in the methodology.**
 - **Clarification required: Clarify the specific effects of the proposed development for each identified landscape receptors to justify the magnitude with reference to scale, geographic extent, duration, and reversibility.**

7.5 Mitigation and monitoring

- 7.5.1 The assessment provides suitable evidence of the iterative assessment-design process, and the proposed mitigation seems adequate from a landscape and visual perspective.

7.6 Cumulative effects

- 7.6.1 The cumulative assessment does not consider the cumulative landscape effects.
- **Potential Regulation 25 request: Provide an assessment of the cumulative landscape impacts and confirm the combined effect of the cumulative schemes in the cumulative visual assessment.**

7.7 Commentary on the conclusion of the ES

- 7.7.1 The assessment of landscape effects begins with an overview of landscape effects of the component parts of the proposed development, but it is unclear which receptors these relate to. There is limited discussion of how the proposed development as a whole would change the baseline of the different receptors. There are limited and inconsistent references to the different factors that contribute to magnitude of change, and which are mentioned in the methodology.
- 7.7.2 The visual assessment considers individual viewpoints as well as the visual amenity of different groups of people. However, there is no baseline description of the views these groups currently experience or their value, as has been provided for some of the individual viewpoints. Some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance with no explanation to justify these inconsistencies.
- **Clarification required: Provide greater rationale for the levels of significance to justify how some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance.**
- 7.7.3 Throughout the assessment of effects, there is little consideration given to if or how the magnitude of change would alter over time for each landscape and visual receptor.
- **Clarification required: Clarify how the landscape and visual effects would change over time with reference to the identified assessment scenarios.**
- 7.7.4 The term 'significant' is also used interchangeably in its EIA context and as a general adjective which is not always immediately clear.

7.8 Commentary on the NTS

- 7.8.1 It is not clear from the NTS what landscape receptors have been assessed.
- 7.8.2 The NTS statements are contradictory initially stating that 'the Proposed Development would not result in significant adverse effects on the identified landscape and visual receptors', but later noting 'significant beneficial landscape effects are predicted to woodland and vegetation features within the Site'. The likely significant effects of the proposed development should be clearly reported.
- **Potential Regulation 25 request: The NTS should be updated to reflect any changes to the assessment following the submission of the updated information.**

7.9 Review of the Applicant responses to the Interim Review Report

7.9.1 This section considers the information and responses provided by the Applicant to address the comments raised in the Interim Review Report (December 2023).

Summary of potential Regulation 25 information request	Review of Applicant response	Further information required?
Provide an assessment of the impact on Green Belt and the associated loss of openness.	The Applicant states that an assessment of the impact of the 2025 scheme on the Green Belt is provided in the Planning Statement. This is considered appropriate.	No
Provide the value and susceptibility of each visual receptor and viewpoint to justify their sensitivity.	Table 10.15 presents the value and susceptibility to change of each visual receptor and representative viewpoint VP01-15 (not including VP10) to justify visual sensitivity. VP10 is included on the zone of theoretical visibility (ZTV) plan but omitted from ES Volume I, Chapter 10. It is suspected that this is a typo and unlikely to change the assessment conclusions.	No
Provide an assessment of the cumulative landscape impacts and confirm the combined effect of the cumulative schemes in the cumulative visual assessment.	An assessment of the cumulative effects is included in Section 10.7, with HS2 mitigation works as the only potential project identified.	No
The NTS should be updated to reflect any changes to the assessment following the submission of the updated information.	Applicant states that the NTS has been updated in line updates to ES Volume I, Chapter 10. The NTS update states: <i>‘Once new planting has matured (Year 15), it is envisaged that there would be significant beneficial landscape effects on Broadwater Lake and the Peninsula. Other landscape effects would be beneficial but not significant.’</i>	No

Summary of clarifications required	Review of Applicant response	Further clarification required?
Clarify how the landscape and visual receptors taken for further assessment have been determined.	Commentary has been provided in ES Volume I, Chapter 10 on why the various landscape receptors have been taken forward for assessment, including a hierarchy of character areas including National Character Areas, Local Character Areas and landscape assets. Commentary also provided on how visual receptors determined, including production and analysis of a ZTV and verified during site visits. This is considered appropriate.	No
Provide a key on the LCA figures contained at ES Volume II, Appendix 10.	A key has been provided on all LCA figures in the updated Chapter 10: Landscape and Visual Impact Assessment (ES Volume I, Appendix 10.3). This is considered appropriate.	No
Clarify how the visualisations comply with the LI TGN 06/19 Visual Representation of the proposed development.	Applicant confirms visualisations have been updated to assess the revised scheme and ensured they comply with LI TGN 06/19 Visual Representation. This is considered appropriate.	No

Summary of clarifications required	Review of Applicant response	Further clarification required?
Provide the baseline scenario for the visual receptors and their associated value on which the assessment has been based.	Baseline scenarios for VP03 and VP15 are described in ES Volume I, Chapter 10, with assessment of value included in Table 10.15. This is considered appropriate.	No
Clarify the value of each landscape receptors with reference to the criteria given in the methodology.	The landscape value of each landscape receptor with commentary is provided in ES Volume I, Chapter 10 , Table 10.14. This is considered appropriate.	No
Clarify the specific effects of the proposed development for each identified landscape receptors to justify the magnitude with reference to scale, geographic extent, duration, and reversibility.	The specific effects of the 2025 scheme for each identified landscape receptor have been provided in ES Volume I, Chapter 10, Table 10.20. This is considered appropriate.	No
Provide greater rationale for the levels of significance to justify how some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance.	The assessment of significance has been reviewed and expanded. This is considered appropriate.	No
Clarify how the landscape and visual effects would change over time with reference to the identified assessment scenarios.	ES Volume I, Chapter 10, Table 10.20 and Table 10.21 summarise how the landscape and visual effects would change over time (i.e. Year 1 and 15) for the completed 2025 scheme. This is considered appropriate.	No

7.10 LVIA review conclusion and committee report text

- 7.10.1 ES Volume I, Chapter 10 provides a comprehensive and robust assessment. It is considered proportionate to the scale and sensitivity of the site.
- 7.10.2 The LVIA demonstrates that an appropriate methodology has been applied in accordance with good practice guidance and that the assessment has been informed by a comprehensive understanding of the site context, its landscape character, and the sensitivity of surrounding visual receptors. The assessment provides suitable evidence of the iterative assessment-design process, and the proposed mitigation seems adequate.
- 7.10.3 A number of clarifications and additional information were required during the review process, including providing the value and susceptibility of each visual receptor and viewpoint to justify sensitivity and assessing the cumulative landscape impacts. These matters have now been satisfactorily addressed within the updated LVIA.
- 7.10.4 The updated assessment demonstrates that the proposed development would result in negligible to minor beneficial landscape effects, improving to some moderate beneficial effects predicted in the long term once landscape planting has matured. Visual effects include some adverse effects at year 1 which would similarly reduce over time, with residual effects generally assessed as not significant for visual receptors.

8. Biodiversity Net Gain assessment

8.1 Introduction

8.1.1 Documents reviewed include:

- ES Volume II Appendix 7.10 BNG and ES Volume II Appendix 7.10 BNG Metric
- Arup BNG Response Addendum

8.2 Review summary

- 8.2.1 Our original review (December 2025) focused on the BNG Report and BNG Metric provided by the Applicant.
- 8.2.2 This review found the reporting and metric to be broadly appropriate but focused on a specific issue with the technical interpretation of the metric, where it was considered that one element of the gain was being 'double-counted'.
- 8.2.3 In this instance, the floating reedbed habitats were being counted as a gain of additional habitat creation but not as a loss of open water, whilst also being counted as a gain in the improved condition of Broadwater Lake.
- 8.2.4 It was considered (and advised) that the latest guidance and best practice would suggest that the habitat should be counted only as part of the open water habitat, if a loss was not being acknowledged, and not as an additional layer of habitat if an improved lake condition was also being claimed.
- 8.2.5 Following that review, the Applicant provided a response titled Arup BNG Response Addendum (January 2026).
- 8.2.6 The Applicant's response agreed with the advice from Arup and altered the way in which the floating reedbeds were classified (as part of the diversified open water habitat leading to an improved condition) and updated the metric calculation, accordingly.
- 8.2.7 This resulted in a change in the metric result from a gain of 10.01% to a gain of 9.72%. As the application is not subject to mandatory biodiversity net gain, the achievement of at least 10% net gain is not enforceable.
- 8.2.8 The Applicant referenced a willingness to support any further on-site enhancement opportunities, as required.

8.3 Review conclusion

- 8.3.1 The BNG work appears to be largely robust in its findings. The authors of the BNG assessment and metric work are evidently competent and qualified to undertake this work, but BNG is an evolving discipline, and the interpretation of the metric can (and often does) vary between specialists. The Applicant has responded positively to the review advice and adjusted their approach accordingly. This has not resulted in a significant change to the net gain outcome to be delivered by the project.
- 8.3.2 The amended BNG metric has addressed the previous review comments. The Applicant has indicated that they are willing to continue to consider additional enhancement actions if required. Given that the focus of the review on the ecological work undertaken (Chapter 4 of this report) concluded that further effort was necessary to firm up commitments referred to in outline management plans to ensure successful positive outcomes, the same could be applied to BNG. As such, it is recommended that as many of the potential enhancements as possible are committed to now and are brought forward within the programme, as far as is feasible.
- 8.3.3 A Biodiversity Gain Plan will need to follow this assessment. This can be developed post-application but will likely form a pre-commencement condition requirement.

9. Energy Statement

9.1 Introduction

9.1.1 Review of the Energy Statement has taken into account the following documents:

- 2906HWSFAC - Energy Statement - Final (November 2025);
- 2906HWSFAC - Operational Energy Calculation (November 2025);
- 2906HWSFAC - Overheating Analysis (November 2025);
- 2906HWSFAC - Part L Calculations (November 2025); and
- 2906HWSFAC - TM54 Energy Report (November 2025).

9.1.2 It has also taken into account the requirements of the Building Regulations Part L 2021.

9.2 Review summary

- 9.2.1 Overall, the Building Emission Rate (BER) is less than the Target Emission Rate (TER) and the Building Primary Emissions Rate (BPER) is less than the Target Primary Emissions Rate (TPER) with a 35% CO₂ reduction target (London Plan minimum) for both the Operations and Camp Zone buildings. There is a >35% CO₂ saving against Part L 2021 Notional buildings with significant primary energy reductions. For non-residential buildings, at least 15% of this reduction must come from energy efficiency measures, this is not shown in the reports, although the overall saving is achieved.
- 9.2.2 The report (and subsequent reports) use IESVE 2024 modelling with CIBSE London TRY weather files and a Part L Notional building comparison methodology.
- 9.2.3 The fabric performance is adequate (and exceeds requirements in some respects). Walls (0.20 W/m²K) have better insulation than standard new non-domestic buildings Roofs and floors (0.15 W/m²K) offer high thermal resistance. The glazing G-values show strong solar gain control with a balance of daylight. These values align with what was modelled in the Part L calculations report. A target of 5 m³/hr·m² @ 50Pa is adequate but not exceptional. Many high-performance buildings target <3; however, 5 still meets London Plan expectations for non-residential buildings.
- 9.2.4 Ventilation specified mechanical ventilation with heat recovering (MVHR) with greater than 75% heat recovery and a Specific Fan Power of 1.8 W/l/s in key spaces which is strong performance.
- 9.2.5 Proposed heating and domestic hot water (DHW) supply is from a central Water Source Heat Pump (WSHP) with underfloor heating and a SCOP of 3.0 (seasonal efficiency). WSHPs typically outperform air source heat pumps (ASHPs) because water temperatures are more stable than air temperatures. If plant efficiency cannot be achieved, compensatory improvements elsewhere will be required. Underfloor heating works well with WSHPs as they typically operate at lower water temperatures (35 – 45° C).
- 9.2.6 The solar photovoltaic (PV) system (515 m²) yields circa 83 MWh/year with a 7–8-year simple payback.
- 9.2.7 The Operations Building has a carbon emissions reduction from 9.97 to 6.46 t/yr while the Camp Building has a reduction from 12.54 to 8.28 t/yr which demonstrates a 35–40% reduction overall, meeting London Plan Policy SI2 requirements.
- 9.2.8 The CIBSE DSY 2020 London Heathrow (High, 50th percentile) weather file has been used for Overheating. All listed zones (cabins and operational areas) pass two or more (of 3) TM52 criteria resulting in an overall “Pass” but indicating some spaces are close to TM52 limits. The model demonstrates that thermal comfort is acceptable on paper, but with limited headroom. There is no future climate modelling, which is advised but not a specific requirement at the planning stage.

- 9.2.9 A TM54 Operational Energy assessment has been undertaken in line with the GLA guidance⁶ which states operational predictions are encouraged but not mandatory. The assessment indicates good results with Likely, Low-End, High-End and Worst-case scenarios. The assessment uses a comparison with CIBSE Guide F benchmarks and exceeds GLA expectations.

9.3 Review conclusion

- 9.3.1 The statement and supporting documents are aligned with Part L 2021. The Energy Statement is technically robust and includes the expected and required modelling outputs.
- 9.3.2 The Dynamic Thermal Simulation demonstrates all occupied spaces meet the overheating requirements of CIBSE TM52/TM59, with each space passing the required two out of three compliance criteria. Therefore, the building is in line with the requirements of London Plan Policy SI4.
- 9.3.3 The following aspects should be noted:
- A 'Be Seen' monitoring plan, the Applicant states a monitoring will be developed and a brief outline of what metering will be installed and how performance data will be reported post-completion should be included. This is not a mandatory requirements at the planning stage.
 - The Applicant provided an updated Energy Statement with a 'Be Seen' Post Occupancy Energy Monitoring Plan (pg 11) that outlines all the requirements needed at this design stage, especially performance data reporting.
- 9.3.4 No calculation has been provided for the carbon offset value. This is required: *"The energy assessment must clearly outline the CO₂ savings... including any carbon shortfall to be paid as a cash-in-lieu contribution."*
- The Applicant provided an updated Energy Statement which clarifies the carbon offset as £42,821.25 (pg 12) (calculation based on the standard 30 years and £95 per tonne)
- 9.3.5 A GLA Carbon Emissions Reporting Spreadsheet has been submitted. The GLA explicitly requires that the carbon reporting spreadsheet must be submitted with every energy assessment. The spreadsheet also highlights the breakdown between Be Lean / Be Clean / Be Green CO₂ savings as well as the Energy Use Intensity (EUI) and space heating demand reporting (mandatory since 2022).
- The Applicant has provided the GLA Carbon Emissions spreadsheet as required, which provides a breakdown of the savings over each stage.
 - The spreadsheet shows an overall saving of 35%, whilst there is a shortfall for the required saving at the Be Lean stage (-17%), this can be common in commercial buildings and the fabric interventions have been adequately considered.
 - EUI and space heating demand has been reported in the spreadsheet, as required.
- 9.3.6 Both the GLA Carbon Emissions Reporting Spreadsheet and the "Be Seen" energy-monitoring requirements are part of the London Plan 2021, but they are implemented through the GLA's 2022 Energy Assessment.
- The Applicant has now addressed both of these requirements through the GLA Carbon Emissions Reporting Spreadsheet as well as the updated Energy Spreadsheet (including the Be Seen monitoring plan and carbon offset).

⁶ Mayor of London, Energy Assessment Guidance *Greater London Authority guidance on preparing energy assessments as part of planning applications* June 2022. Available online at: <https://www.london.gov.uk/programmes-strategies/planning/planning-applications-and-decisions/pre-planning-application-meeting-service/energy-planning-guidance>

Appendix A

LVIA Technical Review Form

A.1 Step 1: Checking the methodology used to undertake the assessment, the criteria selected (including balance between), and the process followed

Does the scope of the assessment meet the requirements set out in the Scoping Opinion and/ or as defined in the LVIA or LVA? If substantively different, are the reasons clearly set out and explained?	Compliance:
Comment: Yes, the assessment scope meets the requirements of the adopted scoping opinion. This is set out at Table 10.2 of the LVIA, which summarises the relevant points of the adopted scoping opinion and how the assessment has responded to them.	Y

What consultations have been carried out and have responses been acted upon?	Compliance:
Comment: Consultations have been undertaken with the LPA, Natural England, Broadwater Sailing Club, Hillingdon Outdoor Activity Centre, Greater London Authority, and Hertfordshire and the Middlesex Wildlife Trust. Table 10.1 of the LVIA describes how the consultees' comments have been addressed.	Y

Has the scope and methodology of the assessment been formally agreed with the determining authority? If not, why not?	Compliance:
Comment: Yes, the scope of the assessment has been agreed with the LPA as part of the adopted scoping opinion.	Y

As part of the methodology, has the terminology been clearly defined, have the criteria to form judgements including thresholds been clearly defined and have any deviations from good practice guidance (such as GLVIA3) been clearly explained	Compliance:
Comment: Yes, the terminology has been clearly defined and the criteria contains clearly defined thresholds.	Y

Does the assessment demonstrate a clear understanding and provide a separate consideration of landscape and visual effects	Compliance:
Comment: Yes, the assessment demonstrates a clear understanding and provides a separate consideration of landscape and visual effects.	Y

Does the assessment demonstrate comprehensive identification of receptors and of all potential effects	Compliance:
Comment: Yes, the assessment demonstrates a comprehensive identification of receptors.	Y

Does the assessment provide clarity and transparency of its reasoning, the basis for its findings and conclusions?	Compliance:
Comment: Yes, the assessment generally provides the basis for its findings and conclusions.	Y

A.2 Step 2: Checking the baseline, content and findings of the assessment

Is the scope and content (detail, geographic extent) of the landscape and visual baseline studies appropriate and sufficient to form the basis for the assessment of effects, (supported by appropriate graphic such as ZTV's etc)?	Compliance:
Comment: The visual assessment considers individual viewpoints as well as the visual amenity of different groups of people. However, there is no baseline description of the views these groups currently experience, as has been provided for some of the individual viewpoints. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

Is the methodology applied in the assessment clear, including: consistent process; use of terms; clarity in reaching judgements; and transparency of decision-making?	Compliance:
Comment: The assessment of landscape effects is hard to follow. The subsections on construction and operation begin with an overview of landscape effects of component parts of the Proposed Development but it is unclear which receptors these relate to. There is also limited discussion of how the proposed development as a whole would change the baseline of the different receptors. The assessment tables set out the judgements for each receptor but provide limited additional information. The assessment also includes two judgements in the 'magnitude and description of impact' column for some receptors, and only one for others, but is not clear why. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

Is the value of landscape and visual resources clearly set out and defensible (including but not necessarily limited to considerations of: local, regional and national designations and LI TGN 02/21 / GLVIA3 Box. 5.1 criteria)?	Compliance:
Comment: Judgements on landscape value appear to wrongly consider Green Belt and SSSIs which are planning and ecological designations respectively. The assessment of landscape value refers to Box 5.1 from GLVIA3 but there is no reference to TGN 02/21. There is also no consideration of the value of visual receptors. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

Are the criteria to inform levels of sensitivity (both landscape and visual) and magnitude of change clear (avoiding scales which distort reported results)?	Compliance:
Comment: Criteria are provided but there are some inconsistencies between landscape and visual. For example, there are no value or susceptibility criteria provided for visual receptors, and there are no thresholds provided for the duration, reversibility and geographic extent of landscape impacts. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

Is the crossover with other topics, such as heritage or ecology adequately addressed?	Compliance:
Comment: Yes, crossover with other topics adequately addressed.	Y

Is there evidence or not of an iterative assessment-design process?	Compliance:
Comment: Yes, there is evidence of an iterative design process	Y

Are the viewpoints used appropriate in number, distribution and location?	Compliance:
Comment: Yes, the viewpoints are appropriate in number, distribution and location.	Y

Is the proposed mitigation, both measures incorporated into the scheme design and those identified to mitigate further the effects of the scheme, and mechanisms for delivering the mitigation adequate?	Compliance:
Comment: Yes, the proposed mitigation measures are adequate.	Y

Is the application of the criteria and thresholds set out in the methodology for assessing the sensitivity of receptors, the magnitude of changes arising from the project, the degree/ nature of effects, and the approach to judging the significance of the effects identified, in the case of EIA projects consistent and objective?	Compliance:
Comment: In the landscape assessment, there are limited and inconsistent references to the different factors that contribute to magnitude of change, and which are mentioned in the methodology. In the visual assessment, some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance with no explanation to justify the inconsistencies e.g. users of the Hillingdon Trail, users of the Grand Union Canal towpath and residents. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

Is the volume, relevance and completeness of the information provided about the development or project including where relevant, detail about various development stages such as construction, operation, decommissioning, restoration, etc sufficient?	Compliance:
Comment: Yes, the information provided about the proposed development is sufficient.	Y

Does the document clearly identify potential landscape and visual effects which need to be considered in the assessment?	Compliance:
Comment: Yes, the document clearly identifies the potential landscape and visual effects which need to be considered in the assessment.	Y

Have levels of effect been clearly defined and in the case of LVIA, have thresholds for significance been clearly defined and cumulative landscape and visual effects been addressed?	Compliance:
Comment: The term 'significant' is used interchangeably in its EIA context and as a general adjective which is not always immediately clear. The cumulative assessment does not consider the cumulative landscape impacts. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

A.3 Step 3: Checking the presentation of the assessment findings

Is there clear evidence of transparency, objectivity and clarity of thinking, appropriate and proportionate communication of all aspects of the assessment of landscape and visual effects, including cumulative effects? In particular, have the findings of the assessment been clearly set out and are they readily understood?	Compliance:
Comment: The landscape baseline discusses LCAs from the South Bucks and the CVRP Landscape Character Assessments but only the CVRP LCA was taken forward for further assessment. The landscape baseline also discusses the physical components of the site but it is unclear how this relates to the other landscape receptors identified for assessment. Justification is given for the scoping of viewpoints but there is no rationale given for the list of visual receptors that was taken forward for further assessment. There is little consideration given to if or how the magnitude of change would change over time for each landscape and visual receptor. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

Is the communication of the assessment clear and comprehensive, in text, tables and illustrations etc?	Compliance:
Comment: The assessment is hard to follow at times and would benefit from a consistent and concise subheading structure. For example, Section 10.4 on baseline conditions contains the follow level 2 headings: - Landscape - Visual Baseline - Future Baseline - Summary of Receptors and Sensitivity - Visual Receptors <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

Are graphics and/or visualisations effective in communicating the characteristics of the receiving landscape and visual effects of the proposals at agreed representative viewpoints?	Compliance:
Comment: Yes, the graphics are effective at communicating the proposals.	Y

Are graphics and/or visualisations fit for purpose and compliant with other relevant guidance and all standards? E.g. Data sources and license text is correct and clearly legible. North arrow, legend, project details including revision matrix is correct.	Compliance:
Comment: The supporting LCA figure in App 10.1 does not contain all the LCAs that are identified as landscape receptors and does not have a corresponding key. The text refers to only two viewpoint locations warranting AVRs but three have been included at Appendix 10.5.	Y

Is there a clear and concise summation of the effects of the proposals?	Compliance:
Comment: The landscape and visual effects are summarised in Table 10.20 but it is not clear if or how the magnitude of change would change over time for each landscape and visual receptor. <i>This has now been satisfactorily addressed by the updated LVIA.</i>	Y

A.4 Step 4: Drawing conclusions

Describe how the review was undertaken:
This technical review has been undertaken by a Chartered Member of the Landscape Institute and Recognised Practitioner in Urban Design at Arup in accordance with LI TGN 01/20. The LVIA chapter was read alongside the supporting figures, and comments were noted in response to the questions set out in TGN 01/20.

Summarise the findings of the review of the assessment methodology: The assessment methodology was agreed through consultation with LBH and has been undertaken largely in accordance with good practice guidance, namely GLVIA3. However, it includes reference to the now superseded LI TGN 01/11 for the production of the photography and visualisations. The assessment provides separate consideration of landscape and visual effects, and generally contains defined criteria and thresholds for each, but there are some inconsistencies between landscape and visual. Value or susceptibility criteria have now provided for visual receptors, along with thresholds for the duration, reversibility and geographic extent of landscape impacts.
Summarise the findings of the review of the scope of the assessment: The assessment scope has been formally agreed with LBH as part of adopted scoping opinion and the chapter provides evidence of how it has responded to this and other consultees comments. The assessment includes appropriate references to other chapters but also includes occasional references to the Green Belt including in the conclusion. It was confirmed that consideration of Green Belt openness is presented separately, outwith the EIA.
Summarise the findings of the review of the actual assessment of effects: The assessment provides suitable evidence of the iterative assessment-design process and the proposed mitigation seems adequate. The volume of the information provided within the assessment seems proportionate but there remain some points of clarity regarding the assessment of effects. The landscape baseline discusses LCAs from the South Bucks and the CVRP Landscape Character Assessments but only the CVRP LCA was taken forward for further assessment. The landscape baseline also discusses the physical components of the site. The assessment of landscape effects begins with an overview of landscape effects of the component parts of the proposed development but it is unclear which receptors these relate to. There is limited discussion of how the proposed development as a whole would change the baseline of the different receptors. There are limited and inconsistent references to the different factors that contribute to magnitude of change, and which are mentioned in the methodology. Justification and rationale is given for the scoping of viewpoints taken forward for further assessment. The visual assessment considers individual viewpoints as well as the visual amenity of different groups of people. However, there is no baseline description of the views these groups currently experience or their value, as has been provided for some of the individual viewpoints. Some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance with no explanation to justify the inconsistencies. The updated assessment has addressed this.
Summarise the findings of the presentation of the assessment: The supporting graphics in the appendices, particularly the Landscape Strategy, are effective in communicating the characteristics of the landscape. The supporting LCA figure in App 10.1 does not contain all the LCAs listed that are identified as landscape receptors and does not have a corresponding key. The text refers to only two viewpoint locations warranting AVR's but three have been included at Appendix 10.5.
Provide a statement by the reviewer in respect of appropriateness, quality, comprehensiveness, compliance and conformity with relevant guidance and regulations:

The LVIA chapter is fairly comprehensive and responses to the Interim Review Report have addressed the clarifications raised.

Can the assessment be relied upon in order to make an informed decision and in the case of incompleteness or in adequacy of the assessment? If not, please provide a summary statement of areas of concern and recommendations for further study and assessment:

ES Volume I, Chapter 10 provides a comprehensive and robust assessment. It is considered proportionate to the scale and sensitivity of the site.

The LVIA demonstrates that an appropriate methodology has been applied in accordance with good practice guidance and that the assessment has been informed by a comprehensive understanding of the site context, its landscape character, and the sensitivity of surrounding visual receptors. The assessment provides suitable evidence of the iterative assessment-design process, and the proposed mitigation seems adequate.

A number of clarifications and additional information were required during the review process, including providing the value and susceptibility of each visual receptor and viewpoint to justify sensitivity and assessing the cumulative landscape impacts. These matters have now been satisfactorily addressed within the updated LVIA.

The updated assessment demonstrates that the proposed development would result in negligible to minor beneficial landscape effects, improving to some moderate beneficial effects predicted in the long term once landscape planting has matured. Visual effects include some adverse effects at year 1 which would similarly reduce over time, with residual effects generally assessed as not significant for visual receptors.

Appendix B

Interim Review Report

London Borough of Hillingdon

Hillingdon Water Sports Facility and Activity Centre (HWSFAC) - Broadwater Lake

Environmental Statement Interim Review Report

Reference: 294428-00/AEC

1.0 | 19 December 2023

Interim



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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 294428-00

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Project title	Hillingdon Water Sports Facility and Activity Centre (HWSFAC) - Broadwater Lake
Document title	Environmental Statement Interim Review Report
Job number	294428-00
Document ref	294428-00/AEC
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Issue Document Verification with Document	✓
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1. Introduction to the review

1.1 Introduction

1.1.1 Ove Arup & Partners Limited ('Arup') has been appointed by Hillingdon Council Strategic and Major Applications Team, as the Local Planning Authority ('LPA'), to provide an independent review of the Environmental Statement ('ES'), dated November 2023 and prepared by Quod, submitted by Hillingdon Council Development Team (the 'Applicant') with an application (Ref: 2382/APP/2023/2906) for the new Hillingdon Water Sports Facility and Activity Centre ('HWSFAC') (from herein the 'proposed development'). The proposed development is located at Broadwater Lake, Moorhall Road, Harefield, Uxbridge, UB9 6PE (the 'site').

1.1.2 The proposed development, as described, comprises:

“Redevelopment of the site to create the Hillingdon Watersports Facility and Activity Centre including demolition of existing Broadwater Lake Sailing Club (BSC) clubhouse at the north of the lake and erection of a building to be occupied by HOAC and BSC including changing facilities, meeting rooms, storage, Workshop and seasonal worker accommodation (sui generis), activity shelters; installation of pontoons and concrete slipways; boat shed; equipment storage huts (north of lake and at entrance); boat parking and racking areas; camping area; outdoor activity areas; ecological enhancement throughout the site; new pedestrian routes through the peninsula; landscaping including new woodland, dense vegetation screens and boundary treatment; new access and access road; localised dredging and land reclamation; relocation of existing sailing area and creation of floating and fixed islands within the lake; coach drop off and turning area; vehicle parking; cycle parking; and associated works.”

1.1.3 This report identifies whether the submitted ES meets the requirements set out in Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017¹ (as amended)² (hereafter referred to as the EIA Regulations), including:

- a description of the proposed development comprising information on the site and its location and characteristics, design, size and other relevant features or land-use requirements of the proposed development during its construction and operational phases;
- a description of the reasonable alternatives studied by the Applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;
- a description of the likely significant effects of the proposed development on the environment;
- a description of any features of the proposed development, or measures envisaged in order to avoid, prevent, reduce or, if possible, offset likely significant adverse effects on the environment;
- a non-technical summary (NTS) of the information referred to above; and
- any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.

1.1.4 Furthermore, in accordance with Regulation 18(4), the ES must be 'based on the most recent scoping opinion' which was adopted by the LPA on 19 May 2023 (Ref: 2382/APP/2023/525). The adopted scoping opinion should be read in conjunction with the submitted scoping report (dated February 2023).

1.1.5 As well as the adopted scoping opinion and Schedule 4 criteria, this ES review has taken into account the Institute of Environmental Management and Assessment (IEMA) ES Review Criteria and relevant

¹ The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 Available at: <http://www.legislation.gov.uk/uksi/2017/571/contents/made>

² The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018 Available at: <https://www.legislation.gov.uk/uksi/2018/695/regulation/2/made>

1.2 The ES review process

- 1.2.1 This report constitutes the Interim ES Review Report IERR, which collates the findings of the ES review. Each report section provides a list of ‘**clarifications required**’, along with potential gaps or errors identified in the ES which may require the LPA to request further environmental information from the Applicant under Regulation 25 of the EIA Regulations - ‘**potential Regulation 25 information requests**’. Identifying aspects of the ES that require clarification does not preclude the future need for the LPA to request further environmental information from the Applicant to address the points raised. Equally, should the Applicant response to the clarification either prompt further queries or confirm that an aspect of the assessment has an omission or error, then further environmental information to address the issues raised may need to be submitted and consulted upon by the LPA under Regulation 25 of the EIA Regulations.

1.3 Structure of the submitted ES, subject of this review

- 1.3.1 This review has been undertaken on all volumes of the submitted ES which is structured as follows:

- **Non-technical Summary**
- **ES: Volume 1**
 - Chapter 1: Introduction
 - Chapter 2: Site and Setting
 - Chapter 3: EIA Methodology
 - Chapter 4: Alternatives
 - Chapter 5: Description of the Development
 - Chapter 6: Construction
 - Chapter 7: Biodiversity
 - Chapter 8: Water Resources and Flood Risk
 - Chapter 9: Ground Conditions and Contamination
 - Chapter 10: Landscape and Visual Impact Assessment
 - Chapter 11: Summary
- **ES: Volume II**
 - Appendix 2.1: Historical Photographs of Broadwater Lake
 - Appendix 2.2: Site Photographs
 - Appendix 3.1: Location of Specified Information in the ES
 - Appendix 3.2: EIA Scoping Report (February 2023)
 - Appendix 3.3: LBH EIA Scoping Opinion
 - Appendix 3.4: Response to Draft Scoping Opinion
 - Appendix 4.1: Alternative Site Assessment
 - Appendix 4.2: Alternative Peninsula Layouts
 - Appendix 5.1: Planning Application Drawings
 - Appendix 5.2: Landscape Strategy
 - Appendix 6.1: Outline Construction Environmental Management Plan
 - Appendix 6.2: Construction Phasing Drawings
 - Appendix 7.1: Preliminary Ecological Appraisal Including (PEA) Including 2022 and 2023 Survey Report (February 2023)
 - Appendix 7.2: Figures
 - Appendix 7.3: SSSI Impact Assessment
 - Appendix 7.4: Draft Mitigation and Ecological Management Plan (MEMP) Vol 1

³ Planning Practice Guidance, Environmental Impact Assessment, last updated 13 May 2020 [Environmental Impact Assessment - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/planning-practice-guidance-environmental-impact-assessment)

- Appendix 7.5: Draft Mitigation and Ecological Management Plan (MEMP) Vol 2 Parts A-D
- Appendix 7.6: Wintering Bird and Disturbance Survey Report (October 2023)
- Appendix 7.7: Breeding Bird Survey Report (August 2023)
- Appendix 7.8: Invertebrate Survey Report (August 2023)
- Appendix 7.9: Ecology Report (terrestrial habitats, lacustrine habitats, survey for invasive non-native species, badger, otter, water vole) (October 2023)
- Appendix 7.10: Bat Survey Report (October 2023)
- Appendix 7.11: Biodiversity Net Gain Assessment
- Appendix 7.12: Biodiversity Air Quality Modelling Assessment
- Appendix 7.13: Natural England Discretionary Advice
- Appendix 8.1: Relevant Legislation and Policy
- Appendix 8.2: Flood Risk, Drainage and Sequential Assessment (including topographic and bathymetric data)
- Appendix 8.3: Groundwater Risk Assessment
- Appendix 8.4: Water Framework Directive Assessment
- Appendix 8.5: Lake Water Column Profiles
- Appendix 8.6: Bathing Water Assessment
- Appendix 8.7: Draft Lake Management Plan
- Appendix 9.1: Relevant Planning Policy
- Appendix 9.2: Geo-Integrity Phase I Geo-Environmental Assessment & Site Walkover September 2023
- Appendix 9.3: Geo-Integrity Phase II Geo-Environmental Site Investigation September 2023
- Appendix 9.4: Drawing 1 Landfill Locations Within the Study Area
- Appendix 9.5: Preliminary Explosive Ordnance Risk Assessment
- Appendix 10.1: Planning Policy and Local Guidance Context
- Appendix 10.2: Proposed Landscape and Ecological Masterplans
- Appendix 10.3: Figures
- Appendix 10.4: Photographs of Site From Key Viewpoints
- Appendix 10.5: Accurate Visual Representations (AVRS) of Proposed Development
- Appendix 10.6: Stage 1 and 2 Arboricultural Impact Assessment Report

2. Review of proposed development and site information

2.1 Description of the site

- 2.1.1 The site, its setting and characteristics are described in ES Volume 1, Chapter 1 and Chapter 2 and associated Volume II appendices. The ES provides a clear summary of the site characteristics and its environmental context, subject to the comments set out below.
- 2.1.2 The site is located within London Borough of Hillingdon, approximately five kilometres north of Uxbridge town. The site covers an area of 79.95 hectares (ha). The majority of the site comprises Broadwater Lake (approximately 62 ha) along with a number of small islands boarded by trees and scrub. The site comprises a number of former quarry structures on and in vicinity of the peninsula shaped landform (the ‘peninsula’) which occupies the southern part of the site. Broadwater Lake is the largest of the four lakes within the Mid Colne Valley Site of Special Scientific Interest (SSSI).
- 2.1.3 The site is divided into four parcels including the main Broadwater Lake, access road (via Moorhall Road), eastern parcel and southern parcel which are shown in Chapter 2, Figure 2.2. The planning application boundary aligns with the site boundary considered as part of the adopted scoping opinion.
- 2.1.4 The part of the site that contains Broadwater Lake is bound to the east by the London Loop/Colne Valley Public Right of Way and Grand Union Canal; to the north and east by the River Colne and to the south by the Harefield Moor Lake waterbody; to the west, the site is bound by the River Colne and the small body of water known as the Denham Waterski Lake.
- 2.1.5 The area of site that contains the access road which connects the south parcel to Broadwater Lake, is bound by hedgerow and the London Loop to the east. Existing businesses including GRS Bagging, a construction material wholesaler, Harleyford Aggregates and a sand and gravel supplier, are located to the west of the access road together with formal and semi-formal residential properties. The term ‘semi-formal’ residential properties used in ES Volume 1, Chapter 2, paragraph 2.2.4 is not clear.
- **Clarification required: Confirm the sensitivity and location of the ‘semi-formal’ residential properties mentioned in ES Volume 1, Chapter 2, paragraph 2.2.4 and that these properties have been fully assessed.**
- 2.1.6 The east parcel is bound by the Grand Union Canal to the west, a logistics facility (Mayling Transport) to the south and residential properties in Harefield to the east. The south parcel is bound by Moorhall Road to the south, Harefield Moor Lake waterbody to the north and Korda Lake to the west.

2.2 Description of the proposed development

- 2.2.1 The proposed development is described in ES Volume I, Chapter 5 and Chapter 6 which includes details of the proposed activities during the construction phase.
- 2.2.2 The proposed development will create a new water sports facility and activity centre for the Hillingdon Outdoor Activity Centre (‘HOAC’) and Broadwater Lake Sailing Club (‘BSC’) with the following key features and activities:
- Construction of new buildings including a main building for HOAC and BSC, boat shed, workshop and activity centre storage, seven activity shelters, toilet block, energy centre and anglers hut with a total new floorspace area equal to 4,749 square metres (sqm) gross external area (GEA).
 - Localised dredging to increase depths for sailing activities, land reclamation of 16,114 sqm to extend the peninsula, removal of two existing small islands in the middle of Broadwater Lake (2,412 sqm), creation of a beach area (approximately 300 sqm) and creation of smaller islands using dredged material (4,307 sqm). ES Volume 1, Chapter 5, paragraph 5.4.2 states that dredging details will be confirmed once a contractor has been appointed. An estimated cut / dredge volume of 47,500 cubic metres is provided in Chapter 6, paragraph 6.5.4 which equals the required fill volume. The land reclamation and many of the landscaping features to be created rely on the use of dredged material. It is not clear what measures are in place should further site investigation or testing indicate that the dredge material is not suitable for re-use and the required ‘fill’ volume of

47,500 cubic metres cannot be met. It is also not clear whether there will be a need for any future management of the lake sediments to maintain the new depths.

- Removal of three existing BSC pontoons and installation of three new floating pontoons and two concrete slipways on the reclaimed land, to allow access to the water and for mooring sailing dinghies.
- Use of part of Broadwater Lake for water-based recreational activities (the overall surface water area of Broadwater Lake will be reduced by 13,956 sqm).
- Camping area and outdoor land-based activities field for archery, high- and low-level ropes, zip wire, swings, man-made caving system and pond dipping.
- New open boat yard area for storage of up to 400 boats along with 82 car parking spaces.
- Package of landscape and ecological mitigation measures and enhancements.

- **Clarification required: The proposed development appears to include a number of additional buildings categorised under ‘other buildings’ which increases the overall footprint of the proposed development. Noting the site is within green belt, confirm whether it is possible to consolidate any of the buildings to reduce the overall development footprint.**
- **Potential Regulation 25 request: Further information is needed on the proposed dredge depths to provide confidence that the 47,500 cubic metres fill volume can be achieved. Confirm what measures will be put in place should the fill volume not be matched by the proposed dredge volume. Confirm whether there would be any intention to import additional material for land reclamation or what measures would be in place should dredged material need to be removed from the site.**
- **Potential Regulation 25 request: Confirm what measures will be in place to maintain the new dredge depths within Broadwater Lake and the likely impacts of any future dredging requirements.**
- **Potential Regulation 25 request: No details are provided on what the man-made caving system will entail, along with other proposed activities in the outdoor area such as the high- and low-level ropes and zip wire. Confirm how the man-made caving system, along with other elements in the outdoor activity area, will be constructed and whether any excavation or foundation works will be required.**

2.2.3 The Scoping Report indicated that the existing Broadwater Rowing Club which currently forms part of the existing HOAC facilities, would be accommodated in the new facilities. It is not clear what the intention is for the Broadwater Rowing Club i.e. whether its associated activities will continue at the site or if these have been assumed to comprise part of the BSC activities.

- **Clarification required: Confirm whether the Broadwater Rowing Club will continue to operate at the site as part of the new HOAC facilities and if so, confirm where these facilities will be located.**

2.2.4 During the scoping process, the maximum height of the new buildings was stated as being up to 6.2 metres (m). Chapter 5, Table 5.3 indicates that two of the new proposed buildings, the main building and workshop, will exceed that height, reaching 7.04 m and 10.98 m, respectively. However, it is acknowledged that the Applicant has scoped in the topics of landscape and visual amenity to the ES for detailed assessment (ES Volume 1, Chapter 10), given the exceedance of the scoped maximum height.

2.2.5 Section 5.8 onwards of ES Volume 1, Chapter 5 sets out a description of various measures and management plans that will be implemented as part of the proposed development. It is not clear which of the measures listed within this chapter are considered as ‘embedded mitigation’ and which measures are considered as ‘additional mitigation’. The lists are not comparable with those set out in the technical chapters, for example, ES Volume 1, Chapter 7, paragraph 7.5.4 does not compare with Section 5.8 and Chapter 11 only provide a high-level summary.

- **Clarification required: Confirm which measures have been considered embedded mitigation and taken into account as part of the pre-mitigation technical assessments, and which measures are considered additional mitigation. The list should be more detailed and consistent with that described in ES Volume 1, Chapter 11, Summary.**

2.2.6 ES Volume 1, Chapter 5, paragraph 5.8.10 reports a biodiversity net gain (BNG) of 35.26 biodiversity units associated with area-based habitats compared with pre-development value. This is equivalent to

a 3.59 % net gain with trading rules satisfied. Paragraph 174 of the adopted National Planning Policy Framework (NPPF, 2021) sets out a mandatory requirement for certain developments to achieve a minimum of 10% BNG.

- **Potential Regulation 25 request: Provide further information to demonstrate that the proposed development has sought to maximise BNG towards the minimum 10% requirement and explore further opportunities to improve and enhance biodiversity at the site.**

2.2.7 ES Volume 1, Chapter 5, paragraph 5.8.9 states that the BNG assessment does not ‘specifically include an assessment of the value of said habitat(s) for protected species / groups of species. This is an important note to consider because although the proposals can be demonstrated to have an overall small net gain for biodiversity, the actual value, in qualitative terms for the faunal species that use these habitats is considered in our professional opinion to be significantly greater.’ While the BNG assessment is reporting a small gain for habitats, it is likely the opposite is true for species given the levels of disturbance and increased land-based activity at the site. This point is discussed further in the review of the biodiversity assessment in Section 4 of this report.

Construction

2.2.8 The description of enabling works, dredging, land reclamation, construction and demolition works of the project is clear and includes an indicative programme of activities. The proposed development works are expected to commence in Q3 2024 and be completed by the end of Q3 2025.

2.2.9 ES Volume 1, Chapter 6, paragraph 6.8.19 states that High Speed Two (HS2) construction works will be complete in December 2023, prior to commencement of the proposed development enabling works in June 2024, and so no overlap with the HS2 construction programme is expected. However, this contradicts ES Volume 1, Chapter 3, paragraph 3.6.6, which states that the Colne Vally Viaduct is due to be completed by mid-2025.

- **Potential Regulation 25 request: Confirm when construction of HS2 is expected to be completed and whether there is likely to be any overlap with the proposed development construction works during 2024, particularly along Moorhall Road. Assess the likely cumulative construction impacts of the proposed development alongside HS2.**

2.2.10 Under the proposed construction programme, enabling works are expected to commence in June / Summer 2024. Many aquatic and fish species spawn over the summer and in other areas, works within waterbodies or rivers are often restricted at this time of year (for example, April to September). It is not clear what measures will be in place to manage enabling works that may cause noise, vibration, disturbance or disruption within the water column of the lake or its immediate surrounding area to aquatic species during the summer months or spawning seasons.

- **Potential Regulation 25 request: Confirm the activities, associated with the enabling works, intended to take place during the summer / spawning season 2024 and the likely impacts of these activities on aquatic species. Confirm how these impacts will be mitigated and managed.**

Operation

2.2.11 The proposed timings and duration of activities on Broadwater Lake for HOAC are set out in ES Volume 1, Chapter 5, paragraph 5.6.6 – 5.6.8 and Table 5.1. It is not explicitly stated that HOAC will not be operational at the weekend. This should be clarified. It would be useful to include the BSC operational timings set out in ES Volume I, Chapter 2, Table 2.1, alongside the proposed HOAC timings to demonstrate that there will be almost continuous activity on and around Broadwater Lake throughout the year, and throughout the weekdays and weekends. This will assist in the understanding of the impacts on bird species associated with the Mid-Colne Valley SSSI.

- **Clarification required: Confirm whether HOAC will be operational at the weekend. Present timings of existing BSC operations alongside Table 5.1 to demonstrate level of activity on Broadwater Lake throughout the week/year.**

2.3 Consideration of alternatives

2.3.1 The alternatives to the proposed development which have been considered are clearly described in ES Volume 1, Chapter 4. Table 4.1 provides a comprehensive long list of the alternative sites that have been considered and the proceeding sections include a description of the environmental factors taken

into account when considering the short-listed sites. Table 4.2 and Table 4.3 set out alternative layouts for development within the site.

Summary of potential Regulation 25 information requests

1. Further information is needed on the proposed dredge depths to provide confidence that the 47,500 cubic metres fill volume can be achieved. Confirm what measures will be put in place should the fill volume not be matched by the proposed dredge volume. Confirm whether there would be any intention to import additional material for land reclamation or what measures would be in place should dredged material need to be removed from the site.
2. Confirm what measures will be in place to maintain the new dredge depths within Broadwater Lake and the likely impacts of any future dredging requirements.
3. No details are provided on what the man-made caving system will entail, along with other proposed activities in the outdoor area such as the high- and low-level ropes and zip wire. Confirm how the man-made caving system, along with other elements in the outdoor activity area, will be constructed and whether any excavation or foundation works will be required.
4. Provide further information to demonstrate that the proposed development has sought to maximise BNG towards the minimum 10% requirement and explore further opportunities to improve and enhance biodiversity at the site.
5. Confirm when construction of HS2 is expected to be completed and whether there is likely to be any overlap with the proposed development construction works during 2024, particularly along Moorhall Road. Assess the likely cumulative construction impacts of the proposed development alongside HS2.
6. Confirm the activities, associated with the enabling works, intended to take place during the summer / spawning season 2024 and the likely impacts of these activities on aquatic species. Confirm how these impacts will be mitigated and managed.

Summary of clarifications required

7. Confirm the sensitivity and location of the 'semi-formal' residential properties mentioned in ES Volume 1, Chapter 2, paragraph 2.2.4 and that these properties have been fully assessed.
8. The proposed development appears to include a number of additional buildings categorised under 'other buildings' which increases the overall footprint of the proposed development. Noting the site is within green belt, confirm whether it is possible to consolidate any of the buildings to reduce the overall development footprint.
9. Confirm whether the Broadwater Rowing Club will continue to operate at the site as part of the new HOAC facilities and if so, confirm where these facilities will be located.
10. Confirm which measures have been considered embedded mitigation and taken into account as part of the pre-mitigation technical assessments, and which measures are considered additional mitigation. The list should be more detailed and consistent with that described in ES Volume 1, Chapter 11, Summary.
11. Confirm whether HOAC will be operational at the weekend. Present timings of existing BSC operations alongside Table 5.1 to demonstrate level of activity on Broadwater Lake throughout the week/ year.

3. Review of ES format, presentation and scope

3.1 Scope and methodology of the EIA

- 3.1.1 The scope and EIA methodology are described within ES Volume 1, Chapter 3. The technical topics scoped into the ES for detailed assessment aligns with those established in the adopted scoping opinion (Ref: 2382/APP/2023/525) 4.
- 3.1.2 It would have been useful for Chapter 3 to have included a commentary on the technical topics that have been scoped out of detailed assessment in the ES, to confirm whether any changes arising from the more detailed design submitted for planning, would not alter the conclusions of the adopted scoping opinion i.e. there would be no likely significant effects arising from changes to the detailed design. Clarification should be provided that this is the case.
- **Clarification required: Review the detailed design of the proposed development that was submitted for planning against the description of development set out within the adopted scoping opinion and provide a commentary on the technical topics scoped out and whether there would likely be any change to the assessment of likely significant effects.**
- 3.1.3 The proposed development is expected to be completed in 2025 and so the year of assessment or future baseline has been assumed to be 2025. It is not clear from this Chapter whether this assumes that HS2 is in operation but the verified visuals presented as part of the landscape and visual impact assessment include the completed viaduct in the ‘without proposed development’ scenario.
- 3.1.4 ES Volume 1, Chapter 3, Paragraph 3.7.30 clearly states that residual effects reported as major or moderate are considered significant.
- 3.1.5 ES Volume 1, Chapter 3, Table 3.2 sets out the general significance criteria applied to the ES assessments, unless otherwise stated in the technical chapters. It is queried whether a negligible impact on a high sensitivity receptor should be ‘minor adverse’ as opposed to ‘negligible’. Equally, a high magnitude of impact on a receptor of negligible sensitivity is usually considered ‘minor adverse’ as opposed to ‘negligible’. However, it is agreed that this would not alter the overall significance of the effects should the criteria be amended.

3.2 Consultation

- 3.2.1 ES Volume 1, Chapter 3, Section 3.5 presents a summary of the consultation undertaken with respect to the EIA, with more detail of key issues raised and discussed presented in the specific technical chapters. Specific technical comments raised during consultation are considered in the review of the technical chapters later in this report.

3.3 Cumulative effects

- 3.3.1 The approach to cumulative assessment set out in ES Volume 1, Chapter 3, Section 3.8 sets out the ES has considered both intra-project effects and cumulative effects of the proposed development with other planned developments (inter-project effects). Section 3.8 also states that intra-project effects will be presented within each of the technical chapters; however, intra-project effects do not appear to have been assessed within any of the technical chapters (Chapters 7 – 10). An assessment of intra-project cumulative effects should be provided.
- **Potential Regulation 25 request: Provide an assessment of the likely intra-project cumulative effects.**
- 3.3.2 Section 3.8 indicates that intra-project effects will be presented within each topic chapter. It should be noted that this has not been completed rather each chapter only includes consideration of inter-project effects. This is included as potential regulation 25 request in the summary table below.

⁴ Arup 2022, Environmental Statement Scoping Opinion - Hillingdon Water Sports Facility and Activity Centre -Broadwater Lake

3.4 Non-technical summary (NTS)

- 3.4.1 The NTS is provided as a standalone document and in general reflects and aligns with the conclusions of the main ES Volume 1. The NTS presents all the information required under the EIA Regulations, including statements of significance, and is supported by clear illustrations and maps.
- 3.4.2 The NTS provides a summarised version of proposed floorspace and use, combining six buildings/uses into one 'other buildings' row. Although not considered a requirement for clarification, it would have been clearer for the reader to understand the constituent parts of this use within the NTS.
- 3.4.3 The NTS does not specify the effect interactions. Any revision to the NTS to account for comments made on the detailed technical assessments should ensure that potential for significant cumulative effects is included.

- **Potential Regulation 25 request: Update the NTS to take account of any changes to the significance of effects as a result of comments on the detailed technical assessments and to include potentially significant cumulative effects.**

Summary of potential Regulation 25 information requests
12. Provide an assessment of the likely intra-project cumulative effects. 13. Update the NTS to take account of any changes to the significance of effects as a result of comments on the detailed technical assessments and to include potentially significant cumulative effects.
Summary of clarifications required
14. Review the detailed design of the proposed development that was submitted for planning against the description of development set out within the adopted scoping opinion and provide a commentary on the technical topics scoped out and whether there would likely be any change to the assessment of likely significant effects. 15. Confirm how HS2 has been considered within the future baseline and whether this is consistent with what was set out in paragraph 2.6.3 of the adopted scoping opinion.

4. Chapter 7: Biodiversity

- 4.1.1 The review of the biodiversity assessment has considered ES Volume 1 Chapter 7 and its associated technical appendices within ES Volume II (Appendices 7.1 to 7.13).

4.2 Scope of technical chapter

- 4.2.1 The scope of the chapter is broadly appropriate and aligns with the adopted scoping opinion. The Applicant has identified the principal ecological features and receptors that are likely to be affected by the proposed development and the types and nature of activities likely to cause impacts to those receptors.
- 4.2.2 The ES suggests that the assessment scope has been agreed with key stakeholders such as the Environment Agency and Natural England, which adds weight and consensus; however, only a set of responses from the Applicant to comments made by those stakeholders have been provided (with no clear evidence that the stakeholders agree with those responses). There are no immediate concerns over any species and/or designated sites scoped out of the assessment (non-significant effects); justifications for these omissions appear to be appropriate.

4.3 Baseline conditions

- 4.3.1 Broadly, the baseline conditions have been adequately described.
- 4.3.2 The Figures in Appendix 7.2 show the habitats that have been mapped at the site. It is not entirely clear whether any of the area mapped as *artificial unvegetated unsealed surface* in the south of the site, or any other area of the site, may qualify as brownfield land that could be of higher ecological value in terms of plant and/or invertebrate communities present, and ought to be retained.
- **Potential Regulation 25 request: Confirm whether any of the habitats at the site could qualify as brownfield land and be of higher ecological value and would require compensation should they be lost.**
- 4.3.3 It might have been expected that for a site of this significance (SSSI, national level), that a baseline survey dataset across multiple years would have been necessary to fully assess the impacts to, in particular, wintering bird communities. This could be an issue when the baseline level of bird activity is subsequently suggested to be lower than reported in association with the site's designation, as is the case here. The ES states that surveys have taken place between November 2022 and February 2023 (paragraph 7.3.33), or October 2022 to March 2023 (paragraph 7.3.35), so it is unclear which but, either way, this is restricted to a single survey season. Justification should be provided for the provision of just one wintering bird survey season of data or it is recommended that additional surveys are undertaken during the current season to supplement the understanding of current populations at the site.
- **Potential Regulation 25 request: Provide justification for the single season of wintering bird survey data given the sensitivities at the site. It is recommended that wintering bird survey data for the current survey season is collected to supplement the submitted survey results and provide additional information on the current populations.**

4.4 Determination of magnitude, sensitivity and significance

- 4.4.1 There is no clear recognition of the potential increase in baseline value of the habitats present over time. The fact that the current habitats have evolved naturally over time and will continue to further mature is not referenced and should align with Chartered Institute for Ecology and Environmental Management (CIEEM) guidance⁵ on future baselining. The suggestion that habitat condition will continue to decline if unmanaged is not well evidenced. Furthermore, there appears to be no consideration of how the effects of climate change will impact the existing baseline conditions, for example, warmer conditions potentially affecting oxygen levels in Broadwater Lake

⁵ Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland, September 2018, Version 1.1, updated September 2019 [Guidelines for Ecological Impact Assessment \(EcIA\) | CIEEM](#)

- **Potential Regulation 25 request: In line with CIEEM guidance, provide further information on the ecological value of the baseline habitats and the site, taking into account changes in the future condition as a result of climate change. Any updates should be considered within revised calculations for biodiversity net gain. Review and update the impact assessment, as necessary.**

4.4.2 The assessment is not clear on land-based activities, such as camping, associated with future HOAC operations. There is a lot of focus on disturbance of waterbirds from on-lake activities but very little mention of additional on-land activities that would presumably result from operation of HOAC in addition to BSC across the site, including the general presence of a far great number of people, which would no doubt have some level of additional disturbance to, for example, breeding bird communities.

- **Potential Regulation 25 request: Provide further information on the intended land-based outdoor activities including the extent of where these will be located across the site and which habitat areas will be accessible for activity users. Provide more detail on how these land-based activities will be managed to avoid disturbance to habitats and species present at the site.**

4.4.3 Furthermore, the focus of the assessment on impacts to waterbirds seems to be to the detriment of other aquatic species that may be equally vulnerable to and adversely impacted by disturbance. In the case of otters, their ability to move away from disturbance and use other resources in the surrounding landscape seems to be heavily relied upon, without acknowledging that in itself is an adverse impact.

- **Potential Regulation 25 request: Provide further assessment of the likely significant impacts on other aquatic species, such as otters, to ensure a comprehensive approach to ecological mitigation at the site.**

4.5 Mitigation and monitoring

4.5.1 The ES states that 50% of the Mid Colne Valley SSSI within which the site is located is in favourable condition and 50% in unfavourable condition, as assessed by Natural England. It does not make clear whether the mitigation proposed addresses or links to any of the factors that are causing the unfavourable condition. This link should be made clear.

- **Potential Regulation 25 request: Confirm how the proposed mitigation measures link to, address, or ideally enhance the areas of the Mid Colne Valley SSSI that are currently assessed by Natural England as being in unfavourable condition.**

4.5.2 A great deal of significance has been placed on the potential enhancements to be made to the existing lake habitat present, through activities including reprofiling and dredging, to create more heterogeneity of habitat condition. More is needed on the quantity/scale of those operations (for example, how deep is the current lakebed and how much deeper will it be post-dredging; how much variability in depth will be created) in order to understand how significant or otherwise those benefits may be. The same would apply to the extent to which woodland management will enhance the current condition of the existing woodland to be retained.

- **Potential Regulation 25 request: Provide more information on the proposed extent of the reprofiling and dredging works to inform the assessment of how the proposed design will impact ecology.**

4.5.3 It is not entirely clear how HS2's mitigation proposals align with those of the proposed development. There is reference to "*requirements for its [HS2's] own mitigation within an area of water onsite adjacent to the peninsula*" in ES Volume 1, Chapter 7, paragraph 7.3.3, and to an HS2 mitigation island in Section 2.8, but because the two developments are being progressed independently of each other (acknowledging that there have been discussions between the two proponents), there is no sense of a joined-up mitigation solution.

- **Clarification required: Confirm how the proposed development mitigation aligns with the HS2 mitigation requirements in terms of delivery timings and an integrated ecological strategy to maximise benefits.**

4.5.4 There is a fence line proposed that, if implemented, may serve as a barrier to species dispersal across different areas of the site, for example otter moving between the canal and the adjacent lake. Further discussion of this issue is recommended.

4.6 Cumulative effects

- 4.6.1 There is an insufficient evidence base for the conclusions drawn on the cumulative effects of disturbance, particularly operational disturbance, to result from the combination of the proposed development and the HS2 project. It appears that the HS2 project will be disturbing birds away from the south-west corner of Broadwater Lake and the proposed development will be displacing birds towards this area. The suggestion is that the provision of a number of islands to act as visual screens for both projects will fully mitigate this combined pressure. It is not at all clear how this conclusion has been reached or whether or not it is justified.
- 4.6.2 Furthermore, there has been no clear assessment of the likely significant combined effects of the proposed development upon ecological receptors for example, noise, visual and light intrusion, effects on water quality impacting birds.
- **Potential Regulation 25 request: Provide a more detailed cumulative assessment of the likely in-combination effects arising from the proposed development and HS2, as well as the in-combination effects of the proposed development on ecological receptors. Related to this, provide more evidence to demonstrate that the proposed landscaping will be an effective measure to mitigate the impacts of disturbance.**
- 4.6.3 There is also no mention of the loss of open water as a result of constructing the 'HS2 mitigation island' in combination with the loss of open water resulting from the proposed development. It is not clear whether the combined loss of open water from the two projects exceeds the 5% trigger stated in ES Volume 1, Chapter 7, paragraph 7.6.14. The basis for this trigger and why it is appropriate, should be clearly referenced. There is also no explanation of what would result in the scenario that the trigger is exceeded. Should clarification confirm that the trigger is exceeded, further information may be required to address the trigger exceedance and reduce the overall loss of open water.
- **Clarification required: Confirm whether the combined loss of open water from the HS2 and proposed development will exceed the 5% trigger and provide a clear reference for this trigger and why it is appropriate.**

4.7 Commentary on the ES conclusions

- 4.7.1 It is difficult to see how some relatively minor habitat creation and enhancements (such as provision of new floating islands and shallow edge habitat) will fully compensate for losses of key habitat (open water and woodland) and a significant increase in operational disturbance levels to the key species interests of this site (breeding and wintering bird communities). It may not be possible to fully compensate for these effects alongside the proposed change of use and it is likely that the potential impacts to the site and the SSSI continue to outweigh these enhancements. As the SSSI is a resource of national significance, it is not clear how the current proposal could be seen to meet the legislative and policy requirements associated with the protection of biodiversity.
- 4.7.2 The current level of detail in the assessment does not provide sufficient confidence that the impacts on ecological receptors can be robustly mitigated and further information is requested.

4.8 Commentary on the NTS

- 4.8.1 A generally well written and structured section on Biodiversity, though a number of minor typographical errors are noted. The approach to the assessment (how were the effects identified) and the baseline are adequately described, fairly comprehensively in terms of the baseline.
- 4.8.2 In terms of the assessment of effects, there is little or no description of the scale/magnitude of change from the current site use and operations (and therefore of the levels of long-term disturbance associated with the proposals), which needs to be much more explicit, even in an NTS. For example, there is reference to water-based activities being limited to the north and centre of the lake, but a new launch area is proposed at the south of the lake, which suggests that disturbance effects will be felt across the whole of the lake area. This is not acknowledged. The assessment also does not clearly state whether or not there will be an increase in recreational pressure and so the reader has to make their own assessment.
- 4.8.3 The cumulative effects of the proposals with the adjacent HS2 development are not properly assessed, even within the context of an NTS. Stating that the impact could be greater if HS2 disturbs this area

as well is not considered to be sufficient. The subsequent statement that visually screening a section of the lake, during construction and operation, to prevent these combined effects will effectively negate them, has not been justified and cannot be relied upon. The NTS should be updated to reflect the conclusions of any additional information submitted. This is included as a potential Regulation 25 request earlier in this report.

Summary of potential Regulation 25 information requests

16. Confirm whether any of the habitats at the site could qualify as brownfield land and be of higher ecological value and would require compensation should they be lost.
17. Provide justification for the single season of wintering bird survey data given the sensitivities at the site. It is recommended that wintering bird survey data for the current survey season is collected to supplement the submitted survey results and provide additional information on the current populations.
18. In line with CIEEM guidance, provide further information on the ecological value of the baseline habitats and the site. This should be taken into account within any calculations for biodiversity net gain. Review and update the impact assessment, as necessary.
19. Provide further information on the intended land-based outdoor activities including the extent of where these will be located across the site and which habitat areas will be accessible for activity users. Provide more detail on how these land-based activities will be managed to avoid disturbance to habitats and species present at the site.
20. Provide further assessment of the likely significant impacts on other aquatic species, such as otters, to ensure a comprehensive approach to ecological mitigation at the site.
21. Confirm how the proposed mitigation measures link to, address, or ideally enhance the areas of the Mid Colne Valley SSSI that are currently assessed by Natural England as being in unfavourable condition.
22. Provide more information on the proposed extent of the reprofiling and dredging works to inform the assessment of how the proposed design will impact ecology.
23. Provide a more detailed cumulative assessment of the likely in-combination effects arising from the proposed development and HS2, as well as the in-combination effects of the proposed development on ecological receptors. Related to this, provide more evidence to demonstrate that the proposed landscaping will be an effective measure to mitigate the impacts of disturbance.

Summary of clarifications required

24. Confirm how the proposed development mitigation aligns with the HS2 mitigation requirements in terms of delivery timings and an integrated ecological strategy to maximise benefits.
25. Confirm whether the combined loss of open water from the HS2 and proposed development will exceed the 5% trigger and provide a clear reference for this trigger and why it is appropriate.

5. Chapter 8: Water resources and flood risk

- 5.1.1 The review of the water resources and flood risk assessment has considered ES Volume 1 Chapter 8 and its associated technical appendices within ES Volume II (Appendices 8.1 to 8.7).

5.2 Scope of technical chapter

- 5.2.1 The Chapter states that its scope has been agreed with the LPA and Environment Agency (EA). The scope of this Chapter is typical; as expected it defines the assessment methodology, establishes the baseline conditions, identifies receptors and their sensitivity, assesses the magnitude of impacts and the significance of the effects, discusses monitoring and embedded and additional mitigation measures, and summarises the residual effects. The scope covers both the construction phase and the completed development and aligns with the adopted scoping opinion.
- 5.2.2 An assessment of the lake ecology and water-dependent habitats falls outside the scope of this Chapter; these receptors are assessed in Chapter 7: Biodiversity.

5.3 Baseline conditions

- 5.3.1 The description of the baseline conditions relating to groundwater, surface water and flood risk is thorough and is evidenced with relevant open-source data; however, the Surface and Foul Water Drainage section (paras 8.4.105 to 8.4.107) appears to summarise the proposed drainage rather than outlining the baseline (i.e. existing) condition for drainage. The baseline conditions section should include a description of how surface water and foul water currently discharges from the site, including overland flow paths for surface water, and identify any drainage infrastructure including surface/ foul/ combined sewer networks using Statutory Undertakers' asset records.
- **Potential Regulation 25 request: Provide the baseline conditions for surface water and foul water, as well as identify any existing drainage infrastructure at the site.**
- 5.3.2 Korda Lake and Harefield Moor Lake are water bodies located adjacent to the boundary of the south parcel' of the site. Despite the potential for any proposed construction activity in the "south parcel" to impact these water bodies, by virtue of their proximity, they are not identified specifically as receptors (ES Volume 1, Chapter 8, paragraph 8.4.25). Furthermore, it is unclear what construction is to be undertaken within the "south parcel", as it is located within the red line boundary but not shown on the general layout plans. It is likely that many of the mitigation measures introduced to control surface water pollution, already identified in the Outline CEMP (ES Volume II Appendix 6.1), would mitigate potential impacts to Korda Lake and Harefield Moor Lake.
- **Clarification required: Clarify why Korda Lake and Harefield Moor Lake are not specifically identified as receptors in ES Volume 1, Chapter 8, paragraph 8.4.25.**

5.4 Determination of magnitude, sensitivity and significance

- 5.4.1 This element of the Chapter is based on professional judgement, as is reasonable. The assessment of the sensitivity of receptors identified is considered appropriate, as is the assessment of the magnitude of impacts identified. Therefore, it is considered that the significance of the effects, as assessed, is reasonable.

5.5 Mitigation and monitoring

- 5.5.1 A number of typical mitigation measures are proposed in the Outline CEMP with respect to water pollution prevention and a strategy for sampling and monitoring water quality is presented. These are considered appropriate.
- 5.5.2 The lake dredging process in the construction phase has been identified as a potential source of groundwater and surface water contamination. A cut-fill analysis has been provided as requested in the adopted scoping opinion, as has a brief discussion of possible construction methods including mitigation measures. It is noted that the details of this process are to be confirmed by the Contractor. As stated earlier in this review, further information is requested on the proposed dredging activities.

- 5.5.3 The Draft Lake Management Plan submitted in ES Volume II, Appendix 8.7 does not make reference to dredging activity. As this will alter the lake morphology and has the potential to impact water quality significantly it should be addressed specifically in this Plan. Furthermore, the Flood Risk Assessment (FRA) (ES Volume II, Appendix 8.2) states that following the lake reprofiling activities (dredging, island creation, etc.) consequent lake water level *“increases are considered to be capable of being accommodated within Broadwater Lake”* such that the proposed development would *“not be expected to have a detrimental impact flood risk elsewhere”*. Although a calculation of the rise in lake water level has been presented, the statement that this can be accommodated within Broadwater Lake, has not been quantitatively justified.
- **Potential Regulation 25 request: Provide further quantitative information to demonstrate that the proposed dredging activities, land reclamation and small island creation, will not result in an increase in flood risk either within the site or elsewhere.**

5.6 Cumulative effects

- 5.6.1 It is stated that HS2 is the only cumulative scheme to consider with respect to this topic and that the HS2 ES does not identify any residual impacts on the water resources baseline for Broadwater Lake. There is a potentially significant residual impact on groundwater abstractions, which will require a management strategy to be agreed by HS2 with the Environment Agency and Affinity Water. The Applicant’s assessment that significant adverse cumulative effects will not arise is considered reasonable provided that consultation with Affinity Water is undertaken to confirm they are satisfied with mitigation measures proposed to protect groundwater abstraction sources.

5.7 Commentary on the ES conclusions

- 5.7.1 Apart from the instances highlighted in this report, the water resources and flood risk Chapter adequately identifies and assesses the potential effects and their significance during construction and operation, with mitigation and monitoring proposed to minimise adverse effects.
- 5.7.2 Due to the sensitivity of Broadwater Lake, further detail on dredging activities has been requested to inform the Lake Management Plan. It is expected that the Lake Management Plan would be updated once a Contractor has been appointed to undertake the works, with particular attention given to how water quality will be managed effectively during the construction stages that involve dredging, land reclamation and the creation of islands.

5.8 Commentary on the NTS

- 5.8.1 The summary for this Chapter provided in the NTS sufficiently reflects the content of the water resources and flood risk Chapter. As stated elsewhere in this report, updates to the NTS should be made to reflect any changes required following the submission of further environmental information by the Applicant.

Summary of potential Regulation 25 information requests	
26.	Provide the baseline conditions for surface water and foul water, as well as identify any existing drainage infrastructure at the site.
27.	Provide further quantitative information to demonstrate that the proposed dredging activities, land reclamation and small island creation, will not result in an increase in flood risk either within the site or elsewhere.
Summary of clarifications required	
28.	Clarify why Korda Lake and Harefield Moor Lake are not specifically identified as receptors in ES Volume 1, Chapter 8, paragraph 8.4.25.

6. Chapter 9: Ground conditions and contamination

- 6.1.1 The review of the ground conditions and contamination assessment has considered ES Volume 1 Chapter 9 and its associated technical appendices within ES Volume II (Appendices 9.1 to 9.5).

6.2 Scope of technical chapter

- 6.2.1 This chapter focuses on potential contamination related effects, with regards to human health, controlled waters, ground gases, building materials and ecological receptors.
- 6.2.2 The Ground Conditions and Contamination chapter was prepared by Hydrogeo in November 2023. The scope of the chapter is generally considered appropriate for the assessment of the effects from potential land contamination and aligns with the adopted scoping opinion. Current legislation, planning policy context and guidance documents have been set out and are adequately addressed.

6.3 Baseline conditions

- 6.3.1 The baseline conditions set out the environmental conditions of the site and surrounding area for the years 2022-2023 and cover the site and surrounding area within a 250 m radius. This distance from the site boundary is considered reasonable, given the context of the proposed development and sensitivity of the study area.
- 6.3.2 Baseline conditions were established through the completion of the following:
- site walkover survey (October 2022) to establish the current land use;
 - Phase I Geoenvironmental Assessment by Geo-Integrity (September 2023) which included a review of publicly available information, from British Geological Survey (BGS) and Environment Agency (EA) websites, as well as data obtained from a Groundsure Report (December 2022);
 - preliminary ground investigation (February 2023) followed by gas and groundwater monitoring and sediment sampling from the base of Broadwater Lake (both in March 2023);
 - Phase II Geotechnical and Geo-Environmental Report (September 2023).
- 6.3.3 The Geo-Integrity Phase I and Phase II reports are included as ES Volume II Appendix 9.2 and Appendix 9.3, respectively. The ES chapter references incorrect dates for the second site walkover and ground investigation.
- 6.3.4 The ground investigation was carried out without prior consultation with the LPA or the opportunity to comment on the proposed scope of the works. The Phase I report does not acknowledge the unregistered landfill, as indicated by the EA, although the ES chapter does include reference. The Phase II report acknowledges substantial limitations, including that the ground investigation did not cover the new pontoons, camping ground, extension of land to the north of the peninsula and construction of new islands.
- 6.3.5 The ES Chapter includes responses to earlier comments made by Arup and other stakeholders. The responses to queries raised by Arup set out in ES Volume 1, Chapter 9, Table 9.1, are not considered to fully address the points raised, particularly in relation to the request for the submission of a robust ground gas risk assessment. The proposal to retain existing boreholes during the enabling and construction phases and monitor them at regular interval is welcomed; however, this does not replace the need for a robust risk assessment. The Chapter (Table 9.1) indicates that an updated geo-environmental assessment, which will include an updated human health risk assessment, has been commissioned. This should be submitted as part of the application to inform consideration of the contamination impacts of the proposed development. The updated geo-environmental assessment should also include consideration of the impacts associated with the unregistered landfill identified by the EA.
- **Potential Regulation 25 request: Provide the updated Phase II geo-environmental interpretative report, including the updated human health and ground gas risk assessments, to ensure a robust and comprehensive risk assessment has been undertaken for the site, taking into consideration the known baseline conditions and submitted proposed development design.**

6.4 Determination of magnitude, sensitivity and significance

Construction

- 6.4.1 The sensitivity of the various receptors identified, the magnitude of the impacts described, and the resulting significance of the effects on the receptors during the construction stage is generally agreed. The assessment has generally considered mitigation measures to be embedded within the design.
 - 6.4.2 The ground gas/ vapour assessment is incomplete and will need to be updated once an additional ground investigation has been undertaken. The characterisation included in the Phase II report is not deemed adequate, in particular because it does not take into consideration the unregistered landfill.
 - 6.4.3 It is agreed that should dredging need to be undertaken outside areas where lake sediment has already been sampled, then additional samples will need to be taken to further quantify the risks from further dredging, as well as the reuse potential of the material excavated.
- **Potential Regulation 25 request: The ground gas assessment should be updated to reflect the proposed development design submitted for planning. The assessment should take into account any likely significant effects associated with the unregistered landfill. This is required to adequately assess effects during the construction phase, due to potential health and safety implications.**

Operation

- 6.4.4 The assessment of sensitivity of the various receptors identified, magnitude of impacts described and resulting significance of effects on receptors during operation is generally agreed and appropriate. Again, the assessment has generally considered mitigation measures to be embedded within the design and clear commitments for this to be delivered will need to be secure by planning conditions.
 - 6.4.5 The ground gas assessment should be revised to take into account the latest development proposals. ES Volume 1, Chapter 5, clearly states there will be several smaller structures constructed, and therefore it cannot be said that all buildings will be large in size and therefore well ventilated. In addition, similarly to the construction phase assessment, the assessment for the operational phase does not take into consideration the unregistered landfill.
- **Potential Regulation 25 request: The ground gas assessment should be updated to reflect the proposed development design submitted for planning. The assessment should also take into account any likely significant effects associated with the unregistered landfill.**

6.5 Mitigation and monitoring

- 6.5.1 The chapter describes embedded mitigation measures and additional mitigation measures to be undertaken during the construction phase and included within the completed development.
- 6.5.2 The Applicant acknowledges that further ground investigation will be required following the planning application determination, to inform the enabling and construction phases of the proposed development. It is expected that standard planning conditions will be placed on the permission which will require the submission of additional ground investigation and risk assessment, a remediation strategy and verification requirements. This approach is considered appropriate. Mitigation measures will need to be outlined in the remediation strategy, verified and agreed with the LPA.
- 6.5.3 The CEMP (which will update the Outline CEMP submitted in ES Volume II, Appendix 6.1) will need to include details of general good construction practices (e.g. dust suppression, stockpile management) and a discovery strategy for managing unexpected contamination. Environmental Permits and a Piling Risk Assessment will also be required. This is to be expected for a development of this nature, size and scale.
- 6.5.4 The mitigation measures proposed for the completed development are typical for former brownfield sites, such as the installation of clean cover systems, 'no dig' layers and drainage control measures to restrict infiltration of rainwater. On-going surface water monitoring will be undertaken during operation. The frequency of monitoring will need to be discussed and agreed with the EA and LPA as part of a future planning condition requirement.
- 6.5.5 Based on the implementation of the mitigation measures, the effect significance on identified receptors has been considered negligible. This is considered appropriate.

6.6 Cumulative effects

- 6.6.1 The Applicant has not identified any committed developments which are likely to lead to cumulative ground conditions and contamination effects in combination with the proposed development. This is agreed.

6.7 Commentary on the ES conclusions

- 6.7.1 Whilst the assessment provided within the ES and its conclusions are generally agreed, the underlying data (in the form of the Phase I and Phase II reports) remains lacking. The current information is neither complete nor comprehensive. The Applicant will need to provide an updated robust human health, ground gas and controlled waters risk assessment. It is expected that the updated interpretative report (referred to by the Applicant as the ‘updated geo-environmental assessment report’) will address these concerns.
- 6.7.2 It will be essential that the LPA is consulted prior to the next phase of ground investigation and that written confirmation is sought on the scope, by the Applicant, prior to the commencement of the works as part of an appropriately worded planning condition.
- 6.7.3 Mitigation measures will be implemented predominantly via a detailed CEMP and remediation strategy, both expected to be secured via standard planning conditions. It is agreed that no significant residual effects will remain following the implementation of embedded and additional mitigation measures.

6.8 Commentary on the NTS

- 6.8.1 Many gaps remain in the Applicant’s understanding of the situation with regards to historical landfilling activities on site, therefore the statement included in the NTS that “*records indicate that areas within the peninsula have been used for historic landfilling*” is not sufficiently substantiated. The NTS should reflect any updated conclusions in the main assessment with regards to the unregistered landfill.
- 6.8.2 The majority of the mitigation measures to address the risks from ground contamination will be detailed in a remediation strategy once supplementary ground investigation has been completed. The NTS is misleading in putting emphasis on the Outline CEMP including a range of relevant mitigation measures, when discussing potential effects during construction. These may be appropriate but are incomplete. The NTS should be clearer in stating that further ground investigation is to be carried out to define the risk more accurately from ground contamination on site.

- **Potential Regulation 25 request: The NTS should be updated to reflect any changes to the assessment following the submission of the updated geo-environmental interpretative report.**

Summary of potential Regulation 25 information requests

29. Provide the updated Phase II geo-environmental interpretative report, including the updated human health and ground gas risk assessments, to ensure a robust and comprehensive risk assessment has been undertaken for the site, taking into consideration the known baseline conditions and submitted proposed development design.
30. The ground gas assessment should be updated to reflect the proposed development design submitted for planning. The assessment should also take into account any likely significant effects associated with the unregistered landfill.
31. The NTS should be updated to reflect any changes to the assessment following the submission of the updated geo-environmental interpretative report.

Summary of clarifications required

No clarifications required at this stage.

7. Chapter 10: Landscape and visual impact assessment

- 7.1.1 The review of the landscape and visual impact assessment has considered ES Volume 1 Chapter 10 and its associated technical appendices within ES Volume II (Appendices 10.1 to 10.6).
- 7.1.2 This review has been carried out with reference to Landscape Institute Technical Guidance Note 01/20: Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs). The results of the technical review are available in Appendix A of this report and summarised in the following sections.

7.2 Scope of technical chapter

- 7.2.1 The assessment scope was agreed with the LPA as part of the EIA scoping process and the Chapter provides evidence of how the Applicant has responded to this and other consultees comments. The assessment includes appropriate references to other chapters but also includes occasional references to the Green Belt designation. There appears to be no separate consideration of Green Belt impacts in the assessment.
- **Potential Regulation 25 request: Provide an assessment of the impact on Green Belt and the associated loss of openness.**

7.3 Baseline conditions

- 7.3.1 The landscape baseline discusses Landscape Character Areas (LCA) defined using the South Buckinghamshire and the Colne Valley Regional Park (CVRP) Landscape Character Assessments. Only the LCAs defined within the CVRP Landscape Character Assessment were taken forward for further assessment. The landscape baseline also discusses the physical components of the site, but it is unclear how this relates to the other landscape receptors identified for assessment.
- 7.3.2 Justification is given for the scoping of viewpoints but there is no rationale given for the list of visual receptors that was taken forward for further assessment.
- **Clarification required: Clarify how the landscape and visual receptors taken for further assessment have been determined.**
- **Potential Regulation 25 request: Provide the value and susceptibility of each visual receptor and viewpoint to justify their sensitivity.**
- 7.3.3 The supporting graphics in the appendices, particularly the Landscape Strategy, are effective in communicating the characteristics of the landscape.
- 7.3.4 The supporting LCA Figure in ES Volume II, Appendix 10.1 does not contain all the LCAs listed that are identified as landscape receptors and does not have a corresponding key.
- **Clarification required: Provide a key on the LCA figures contained at ES Volume II, Appendix 10.1.**
- 7.3.5 The text refers to only two viewpoint locations warranting Accurate Visual Representations (AVR), but three have been included at ES Volume II, Appendix 10.5.

7.4 Determination of magnitude, sensitivity and significance

- 7.4.1 The assessment methodology was agreed through consultation with the LPA and has been undertaken largely in accordance with good practice guidance, namely the Guidelines for Landscape and Visual Impact Assessment, third edition (GLVIA3). However, it includes reference to Landscape Institute (LI) Technical Guidance Note (TGN) 01/11 for the production of the photography and visualisations, which has been superseded by LI TGN 06/19 Visual Representation of development proposals.
- **Clarification required: Clarify how the visualisations comply with the LI TGN 06/19 Visual Representation of the proposed development.**
- 7.4.2 The assessment provides separate consideration of landscape and visual effects, and generally contains defined criteria and thresholds for each, but there are some inconsistencies between landscape and visual. For example, there are no value or susceptibility criteria provided for visual

receptors, and there are no thresholds provided for the duration, reversibility and geographic extent of landscape impacts. This has raised a number of areas for clarification.

- **Clarification required: Provide the baseline scenario for the visual receptors and their associated value on which the assessment has been based.**
- **Clarification required: Clarify the value of each landscape receptors with reference to the criteria given in the methodology.**
- **Clarification required: Clarify the specific effects of the proposed development for each identified landscape receptors to justify the magnitude with reference to scale, geographic extent, duration, and reversibility.**

7.5 Mitigation and monitoring

- 7.5.1 The assessment provides suitable evidence of the iterative assessment-design process, and the proposed mitigation seems adequate from a landscape and visual perspective.

7.6 Cumulative effects

- 7.6.1 The cumulative assessment does not consider the cumulative landscape effects.

- **Potential Regulation 25 request: Provide an assessment of the cumulative landscape impacts and confirm the combined effect of the cumulative schemes in the cumulative visual assessment.**

7.7 Commentary on the conclusion of the ES

- 7.7.1 The assessment of landscape effects begins with an overview of landscape effects of the component parts of the proposed development, but it is unclear which receptors these relate to. There is limited discussion of how the proposed development as a whole would change the baseline of the different receptors. There are limited and inconsistent references to the different factors that contribute to magnitude of change, and which are mentioned in the methodology.
- 7.7.2 The visual assessment considers individual viewpoints as well as the visual amenity of different groups of people. However, there is no baseline description of the views these groups currently experience or their value, as has been provided for some of the individual viewpoints. Some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance with no explanation to justify these inconsistencies.
- **Clarification required: Provide greater rationale for the levels of significance to justify how some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance.**
- 7.7.3 Throughout the assessment of effects, there is little consideration given to if or how the magnitude of change would alter over time for each landscape and visual receptor.
- **Clarification required: Clarify how the landscape and visual effects would change over time with reference to the identified assessment scenarios.**
- 7.7.4 The term 'significant' is also used interchangeably in its EIA context and as a general adjective which is not always immediately clear.

7.8 Commentary on the NTS

- 7.8.1 It is not clear from the NTS what landscape receptors have been assessed.
- 7.8.2 The NTS statements are contradictory initially stating that 'the Proposed Development would not result in significant adverse effects on the identified landscape and visual receptors', but later noting 'significant beneficial landscape effects are predicted to woodland and vegetation features within the Site'. The likely significant effects of the proposed development should be clearly reported.
- **Potential Regulation 25 request: The NTS should be updated to reflect any changes to the assessment following the submission of the updated information.**

Summary of potential Regulation 25 information requests

32. Provide an assessment of the impact on Green Belt and the associated loss of openness.
33. Provide the value and susceptibility of each visual receptor and viewpoint to justify their sensitivity.
34. Provide an assessment of the cumulative landscape impacts and confirm the combined effect of the cumulative schemes in the cumulative visual assessment.
35. The NTS should be updated to reflect any changes to the assessment following the submission of the updated information.

Summary of clarifications required

36. Clarify how the landscape and visual receptors taken for further assessment have been determined.
37. Provide a key on the LCA figures contained at ES Volume II, Appendix 10.
38. Clarify how the visualisations comply with the LI TGN 06/19 Visual Representation of the proposed development.
39. Provide the baseline scenario for the visual receptors and their associated value on which the assessment has been based.
40. Clarify the value of each landscape receptors with reference to the criteria given in the methodology.
41. Clarify the specific effects of the proposed development for each identified landscape receptors to justify the magnitude with reference to scale, geographic extent, duration, and reversibility.
42. Provide greater rationale for the levels of significance to justify how some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance.
43. Clarify how the landscape and visual effects would change over time with reference to the identified assessment scenarios.

Appendix A

LVIA Technical Review Form

A.1 Step 1: Checking the methodology used to undertake the assessment, the criteria selected (including balance between), and the process followed

Does the scope of the assessment meet the requirements set out in the Scoping Opinion and/ or as defined in the LVIA or LVA? If substantively different, are the reasons clearly set out and explained?	Compliance:
Comment: Yes, the assessment scope meets the requirements of the adopted scoping opinion. This is set out at Table 10.2 of the LVIA, which summarises the relevant points of the adopted scoping opinion and how the assessment has responded to them.	Y

What consultations have been carried out and have responses been acted upon?	Compliance:
Comment: Consultations have been undertaken with the LPA, Natural England, Broadwater Sailing Club, Hillingdon Outdoor Activity Centre, Greater London Authority, and Hertfordshire and the Middlesex Wildlife Trust. Table 10.1 of the LVIA describes how the consultees' comments have been addressed.	Y

Has the scope and methodology of the assessment been formally agreed with the determining authority? If not, why not?	Compliance:
Comment: Yes, the scope of the assessment has been agreed with the LPA as part of the adopted scoping opinion.	Y

As part of the methodology, has the terminology been clearly defined, have the criteria to form judgements including thresholds been clearly defined and have any deviations from good practice guidance (such as GLVIA3) been clearly explained	Compliance:
Comment: Yes, the terminology has been clearly defined and the criteria contains clearly defined thresholds.	Y

Does the assessment demonstrate a clear understanding and provide a separate consideration of landscape and visual effects	Compliance:
Comment: Yes, the assessment demonstrates a clear understanding and provides a separate consideration of landscape and visual effects.	Y

Does the assessment demonstrate comprehensive identification of receptors and of all potential effects	Compliance:
Comment: Yes, the assessment demonstrates a comprehensive identification of receptors.	Y

Does the assessment provide clarity and transparency of its reasoning, the basis for its findings and conclusions?	Compliance:
Comment: Yes, the assessment generally provides the basis for its findings and conclusions.	Y

A.2 Step 2: Checking the baseline, content and findings of the assessment

Is the scope and content (detail, geographic extent) of the landscape and visual baseline studies appropriate and sufficient to form the basis for the assessment of effects, (supported by appropriate graphic such as ZTV's etc)?	Compliance:
Comment: The visual assessment considers individual viewpoints as well as the visual amenity of different groups of people. However, there is no baseline description of the views these groups currently experience, as has been provided for some of the individual viewpoints.	N

Is the methodology applied in the assessment clear, including: consistent process; use of terms; clarity in reaching judgements; and transparency of decision-making?	Compliance:
Comment: The assessment of landscape effects is hard to follow. The subsections on construction and operation begin with an overview of landscape effects of component parts of the Proposed Development but it is unclear which receptors these relate to. There is also limited discussion of how the proposed development as a whole would change the baseline of the different receptors. The assessment tables set out the judgements for each receptor but provide limited additional information. The assessment also includes two judgements in the 'magnitude and description of impact' column for some receptors, and only one for others, but is not clear why.	N

Is the value of landscape and visual resources clearly set out and defensible (including but not necessarily limited to considerations of: local, regional and national designations and LI TGN 02/21 / GLVIA3 Box. 5.1 criteria)?	Compliance:
Comment: Judgements on landscape value appear to wrongly consider Green Belt and SSSIs which are planning and ecological designations respectively. The assessment of landscape value refers to Box 5.1 from GLVIA3 but there is no reference to TGN 02/21. There is also no consideration of the value of visual receptors.	N

Are the criteria to inform levels of sensitivity (both landscape and visual) and magnitude of change clear (avoiding scales which distort reported results)?	Compliance:
Comment: Criteria are provided but there are some inconsistencies between landscape and visual. For example, there are no value or susceptibility criteria provided for visual receptors, and there are no thresholds provided for the duration, reversibility and geographic extent of landscape impacts.	N

Is the crossover with other topics, such as heritage or ecology adequately addressed?	Compliance:
Comment: Yes, crossover with other topics adequately addressed.	Y

Is there evidence or not of an iterative assessment-design process?	Compliance:
Comment: Yes, there is evidence of an iterative design process	Y

Are the viewpoints used appropriate in number, distribution and location?	Compliance:
Comment: Yes, the viewpoints are appropriate in number, distribution and location.	Y

Is the proposed mitigation, both measures incorporated into the scheme design and those identified to mitigate further the effects of the scheme, and mechanisms for delivering the mitigation adequate?	Compliance:
Comment: Yes, the proposed mitigation measures are adequate.	Y

Is the application of the criteria and thresholds set out in the methodology for assessing the sensitivity of receptors, the magnitude of changes arising from the project, the degree/ nature of effects, and the approach to judging the significance of the effects identified, in the case of EIA projects consistent and objective?	Compliance:
Comment: In the landscape assessment, there are limited and inconsistent references to the different factors that contribute to magnitude of change, and which are mentioned in the methodology. In the visual assessment, some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance with no explanation to justify the inconsistencies e.g. users of the Hillingdon Trail, users of the Grand Union Canal towpath and residents.	N

Is the volume, relevance and completeness of the information provided about the development or project including where relevant, detail about various development stages such as construction, operation, decommissioning, restoration, etc sufficient?	Compliance:
Comment: Yes, the information provided about the proposed development is sufficient.	Y

Does the document clearly identify potential landscape and visual effects which need to be considered in the assessment?	Compliance:
Comment: Yes, the document clearly identifies the potential landscape and visual effects which need to be considered in the assessment.	Y

Have levels of effect been clearly defined and in the case of LVIA, have thresholds for significance been clearly defined and cumulative landscape and visual effects been addressed?	Compliance:
Comment: The term 'significant' is used interchangeably in its EIA context and as a general adjective which is not always immediately clear. The cumulative assessment does not consider the cumulative landscape impacts.	N

A.3 Step 3: Checking the presentation of the assessment findings

Is there clear evidence of transparency, objectivity and clarity of thinking, appropriate and proportionate communication of all aspects of the assessment of landscape and visual effects, including cumulative effects? In particular, have the findings of the assessment been clearly set out and are they readily understood?	Compliance:
Comment: The landscape baseline discusses LCAs from the South Bucks and the CVRP Landscape Character Assessments but only the CVRP LCA was taken forward for further assessment. The landscape baseline also discusses the physical components of the site but it is unclear how this relates to the other landscape receptors identified for assessment. Justification is given for the scoping of viewpoints but there is no rationale given for the list of visual receptors that was taken forward for further assessment. There is little consideration given to if or how the magnitude of change would change over time for each landscape and visual receptor.	N

Is the communication of the assessment clear and comprehensive, in text, tables and illustrations etc?	Compliance:
Comment:	N

The assessment is hard to follow at times and would benefit from a consistent and concise subheading structure. For example, Section 10.4 on baseline conditions contains the follow level 2 headings: - Landscape - Visual Baseline - Future Baseline - Summary of Receptors and Sensitivity - Visual Receptors	
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Are graphics and/or visualisations effective in communicating the characteristics of the receiving landscape and visual effects of the proposals at agreed representative viewpoints?	Compliance:
Comment: Yes, the graphics are effective at communicating the proposals.	Y

Are graphics and/or visualisations fit for purpose and compliant with other relevant guidance and all standards? E.g. Data sources and license text is correct and clearly legible. North arrow, legend, project details including revision matrix is correct.	Compliance:
Comment: The supporting LCA figure in App 10.1 does not contain all the LCAs that are identified as landscape receptors and does not have a corresponding key. The text refers to only two viewpoint locations warranting AVRs but three have been included at Appendix 10.5.	Y

Is there a clear and concise summation of the effects of the proposals?	Compliance:
Comment: The landscape and visual effects are summarised in Table 10.20 but it is not clear if or how the magnitude of change would change over time for each landscape and visual receptor.	N

A.4 Step 4: Drawing conclusions

Describe how the review was undertaken:
This technical review has been undertaken by a Chartered Member of the Landscape Institute and Recognised Practitioner in Urban Design at Arup in accordance with LI TGN 01/20. The LVIA chapter was read alongside the supporting figures, and comments were noted in response to the questions set out in TGN 01/20.

Summarise the findings of the review of the assessment methodology:
The assessment methodology was agreed through consultation with the LPA and has been undertaken largely in accordance with good practice guidance, namely GLVIA3. However, it includes reference to the now superseded LI TGN 01/11 for the production of the photography and visualisations. The assessment provides separate consideration of landscape and visual effects, and generally contains defined criteria and thresholds for each, but there are some inconsistencies between landscape and visual. For example, there

are no value or susceptibility criteria provided for visual receptors, and there are no thresholds provided for the duration, reversibility and geographic extent of landscape impacts.

Summarise the findings of the review of the scope of the assessment:

The assessment scope has been formally agreed with the LPA as part of adopted scoping opinion and the chapter provides evidence of how it has responded to this and other consultees comments. The assessment includes appropriate references to other chapters but also includes occasional references to the Green Belt including in the conclusion but there appears to be no separate consideration of Green Belt openness in the assessment.

Summarise the findings of the review of the actual assessment of effects:

The assessment provides suitable evidence of the iterative assessment-design process and the proposed mitigation seems adequate.

The volume of the information provided within the assessment seems proportionate but there remain some points of clarity regarding the assessment of effects.

The landscape baseline discusses LCAs from the South Bucks and the CVRP Landscape Character Assessments but only the CVRP LCA was taken forward for further assessment. The landscape baseline also discusses the physical components of the site but it is unclear how this relates to the other landscape receptors identified for assessment.

The assessment of landscape effects begins with an overview of landscape effects of the component parts of the proposed development but it is unclear which receptors these relate to. There is limited discussion of how the proposed development as a whole would change the baseline of the different receptors. There are limited and inconsistent references to the different factors that contribute to magnitude of change, and which are mentioned in the methodology.

Justification is given for the scoping of viewpoints but there is no rationale given for the list of visual receptors that was taken forward for further assessment.

The visual assessment considers individual viewpoints as well as the visual amenity of different groups of people. However, there is no baseline description of the views these groups currently experience or their value, as has been provided for some of the individual viewpoints. Some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance with no explanation to justify the inconsistencies.

The cumulative assessment does not consider the cumulative landscape impacts. The cumulative visual impacts appear to assess the proposed development assuming the HS2 viaduct as a future baseline scenario rather the combined effect that the two schemes would have.

Throughout the assessment of effects, there is little consideration given to if/how the magnitude of change would change over time for each landscape and visual receptor.

Summarise the findings of the presentation of the assessment:

The assessment is hard to follow at times due to inconsistency of subheadings, particularly in the baseline sections. The term 'significant' is also used interchangeably in its EIA context and as a general adjective which is not always immediately clear.

The supporting graphics in the appendices, particularly the Landscape Strategy, are effective in communicating the characteristics of the landscape.

The supporting LCA figure in App 10.1 does not contain all the LCAs listed that are identified as landscape receptors and does not have a corresponding key.

The text refers to only two viewpoint locations warranting AVRs but three have been included at Appendix 10.5.

Provide a statement by the reviewer in respect of appropriateness, quality, comprehensiveness, compliance and conformity with relevant guidance and regulations:

The LVIA chapter is fairly comprehensive but there are some clarifications required before a decision can be made on its conformity with relevant guidance and EIA Regulations.

Can the assessment be relied upon in order to make an informed decision and in the case of incompleteness or in adequacy of the assessment? If not, please provide a summary statement of areas of concern and recommendations for further study and assessment:

It is considered that the assessment in its current form cannot yet be relied upon to make an informed decision. The following recommendations are therefore made:

- Provide an assessment of the impact on Green Belt and the associated loss of openness.
- Provide the value and susceptibility of each visual receptor and viewpoint to justify their sensitivity.
- Provide an assessment of the cumulative landscape impacts and confirm the combined effect of the cumulative schemes in the cumulative visual assessment.
- The NTS should be updated to reflect any changes to the assessment following the submission of the updated information.
- Clarify how the landscape and visual receptors taken for further assessment have been determined.
- Provide a key on the LCA figures contained at ES Volume II, Appendix 10.
- Clarify how the visualisations comply with the LI TGN 06/19 Visual Representation of the proposed development.
- Provide the baseline scenario for the visual receptors and their associated value on which the assessment has been based.
- Clarify the value of each landscape receptors with reference to the criteria given in the methodology.
- Clarify the specific effects of the proposed development for each identified landscape receptors to justify the magnitude with reference to scale, geographic extent, duration, and reversibility.
- Provide greater rationale for the levels of significance to justify how some receptors with the same sensitivity and levels of magnitude have been assessed as having different levels of significance.
- Clarify how the landscape and visual effects would change over time with reference to the identified assessment scenarios.