UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks and adjoining land, Bedford

Environmental Statement Volume 1

Chapter 19 - Summary of Residual Likely Significant Effects

Report reference: 2.19.0

Revision number: 00

Date: June 2025

CONTENTS

TABLES

19. SUMMARY OF RESIDUAL LIKELY SIGNIFICANT EFFECTS

19.1. INTRODUCTION

19.1.1. This chapter reports the full list of residual likely significant effects that result from the Proposed Development, after the application of mitigation measures identified in **Chapter 5** to **Chapter 18 (Volume 1)** of the Environmental Statement. **Table 19-1** to **Table 19-15** below present a summary of the relevant receptor, description of effect, and the proposed mitigation measures associated with each of the residual likely significant effects of the Proposed Development. Note that effects that are identified as negligible or minor following mitigation are not considered to be significant and, therefore, they are not included within the summary tables.

SUMMARY STRUCTURE

19.1.2. The summary of effects presented in **Table 19-1** to **Table 19-15** below includes the following information:

- The sensitive receptor;
- A description of the effect;
- A summary of the significance of likely effects prior to the implementation of additional mitigation;
- A summary of the additional mitigation measures to be implemented to minimise the significance of the effects (further information is provided in each technical chapter); and
- The residual significance of these effects assuming all proposed additional mitigation is implemented.

19.1.3. Due to the nature of the assessments, the above format is not suitable for the summary of significant effects for **Chapter 11: Ground Conditions, Soils and Agricultural Land (Volume 1)** and **Chapter 16: Major Accidents and Disasters (Volume 1)**. Therefore, these summaries are presented in a different format in **Table 19-7** and **Table 19-13** respectively.

19.2. SIGNIFICANCE OF EFFECTS

19.2.1. As set out in Section 3.3 of **Chapter 3: Approach to EIA (Volume 1)**, effects, whether adverse or beneficial, assessed as having "*moderate*" or "*major*" significance are deemed to be significant. Effects determined to be "*minor*" or "*negligible*" are deemed to be not significant. Any deviation from this approach is detailed in the methodology for each assessment within **Chapter 5** to **Chapter 18 (Volume 1)** or the topic specific section of **Appendix 3.2: Significance Criteria for All ES Technical Topics (Volume 3)**.

Table 19-1 – Summary of Residual Likely Significant Effects – Traffic and Transport

Receptor	Effect and Definition of Term	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Scenario 2 – 2023 Existing plus Peak Construction and Scenario 2a – 2023 Existing plus Average Construction				
Link 31- Wootton – Woburn Road (Medium Sensitivity)	**NMU Amenity** *(the relative pleasantness of a journey. Affected by traffic along with pavement width/ separation from traffic and NMU activity).* At present, a footway is provided on the east side of the carriageway south from Fields Road to an existing commercial property. There is a PROW access just south of this commercial property, but no footway provision. There is also unlikely to be material levels of pedestrian demand on this link. As part of the Proposed Development, a new footway will be constructed along the east side of this link, where current provision is missing, although this may not be in place at the point of the Peak Construction Year. The magnitude of change in relation to NMU Amenity has been adjusted to reflect the very limited potential for NMU's on this link based on observations during Site visits and the lack of continuous desire lines, cyclists may be present on the carriageway. Given the location, there will be an increase in HDVs of over 100% within Scenario 2 and this will result in medium magnitude of change for NMU Amenity.	**Moderate Adverse** (**Significant**)	As required by the Travel Plan and detailed in the OCEMP, the Transport Steering Group will review and monitor active travel use and suggest alternative routes for pedestrians and cyclists when and if needed.	Direct, temporary, short term residual effect of **Moderate Adverse** significance (**Significant**)
	Fear & Intimidation *(Dependent on a traffic volumes, HGV composition, speed of vehicles and proximity of people to traffic).* At present, a footway is provided on the east side of the carriageway south from Fields Road to an existing commercial property. There is a PROW access just south of this commercial property, but no footway provision. There is also unlikely to be material levels of pedestrian demand on this link. As part of the Proposed Development, a new footway will be constructed along the east side of this link, where current provision is missing, although this may not be in place at the point of the Peak Construction Year. The magnitude of change in relation to Fear & Intimidation has been adjusted to reflect the very limited potential for NMU's on this link based on observations during Site visits and the lack of continuous desire lines, cyclists may be present on the carriageway. Given the location, there will be an increase in HDVs of over 100% within Scenario 2 and this will result in medium magnitude of change for Fear & Intimidation.	**Moderate Adverse** (**Significant**)	As required by the Travel Plan and detailed in the OCEMP, the Transport Steering Group will review and monitor active travel use and suggest alternative routes for pedestrians and cyclists when and if needed.	Direct, temporary, short term residual effect of **Moderate Adverse** significance (**Significant**)
Link 35- Woburn Road (Low Sensitivity)	**NMU Amenity** There are no real pedestrian facilities and only a small section of footway extends from the Fields Road roundabout north for approximately 85m and then stops. No further footways are provided. In relation to NMU Amenity, the increases in HDV traffic flows significantly exceed 100%. As described previously, pedestrian activity is not anticipated during the Peak Construction Year due to a lack of desire lines. Cyclists may be present on the link and may be impacted by the increase in HDV movements. Given the location, there will be an increase in HDVs of over 100% within Scenario 2 and this will result in medium magnitude of change for NMU Amenity.	**Moderate Adverse** (**Significant**)	As required by the Travel Plan and detailed in the OCEMP, the Transport Steering Group will review and monitor active travel use and suggest alternative routes for pedestrians and cyclists when and if needed.	Direct, temporary, short term residual effect of **Moderate Adverse** significance (**Significant**)

Receptor	Effect and Definition of Term	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
	Fear & Intimidation There are no real pedestrian facilities and only a small section of footway extends from the Fields Road roundabout north for approximately 85m and then stops. No further footways are provided. In relation to Fear & Intimidation, the increases in HDV traffic flows significantly exceed 100%. As described previously, pedestrian activity is not anticipated during the Peak Construction Year due to a lack of desire lines. Cyclists may be present on the link and may be impacted by the increase in HDV movements. Given the location, there will be an increase in HDVs of over 100% within Scenario 2 and this will result in high magnitude of change for Fear & Intimidation.	**Moderate Adverse** (**Significant**)	As required by the Travel Plan and detailed in the OCEMP, the Transport Steering Group will review and monitor active travel use and suggest alternative routes for pedestrians and cyclists when and if needed.	Direct, temporary, short term residual effect of **Moderate Adverse** significance (**Significant**)
Scenario 4 – Primary Opening Year - Reference Case plus Development, Scenario 4a – Primary Opening Year - Reference Case plus Development plus Construction and 5 – Future Year - Reference Case plus Development				
Link 24- Broadmead Road (Medium Sensitivity)	**Accidents & Safety** *(Professional judgement to assess local circumstance or factors, which may increase of decrease the risk of accidents).* Footways are not provided on this link beyond the roundabout with Kiln Drive. Currently, the presence of pedestrians beyond this point is unlikely. In future, it is considered unlikely to attract large volumes of pedestrians, given the lack of pedestrian facilities. As a result, the magnitude of change has been defined as medium in relation to accidents and safety, based on professional judgement. Cycle facilities are not provided and cyclists will be on-carriageway. Based on professional judgement, it is unlikely that there would be any material change in pedestrian / cycle flows and only a small change in traffic flows; therefore, this effect has been classed as Moderate Adverse, but is unlikely to materialise in practice.	**Moderate Adverse** (**Significant**)	The proposed active travel connection onto Broadmead Road would not be opened for use until there was wider active travel connections to the south into Stewartby. This would therefore reduce the residual effect to Minor Adverse (Not Significant). As part of the Statement of Agreed Position (SoAP) with Bedford BC it has been agreed that “Bedford BC to work with partners to improve and grow the local connections and other active travel networks in the wider community”.	Direct, permanent, long term residual effect of **Minor Adverse** significance (**Not Significant**)
Link 36- Manor Road (High Sensitivity)	**Severance** *(Division that can occur when it becomes separated by a major traffic artery).* High quality pedestrian and cycle facilities will be provided, including signalised crossing points, there will therefore be an overall beneficial impact on this section of Manor Road as a result of the Proposed Development.	**Moderate Beneficial** (**Significant**)	No additional mitigation is proposed	Direct, permanent, long term residual effect of **Moderate Beneficial** significance (**Significant**)
Link 42- Fisherwood Road (Medium Sensitivity)	**Driver Delay** *(Delay to motor vehicles, although the effects are only likely to be significant when the traffic on the network is predicted to be at or close to capacity).* Based on the material reduction in vehicle speeds the magnitude of change in relation to driver delay is therefore reduced to medium; however, driver delay will still occur. It is noted that this only occurs in a single hour and in one direction only, and hence limited effect.	**Moderate Adverse** (**Significant**)	Given the effect is only in a single hour and a single direction there is no additional mitigation proposed.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**)

Table 19-2 – Summary of Residual Likely Significant Effects – Ecology and Nature Conservation

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase				
Designated Sites				
Kempston Hardwick Pit County Wildlife Site (CWS)	Temporary disturbance and long-term change of CWS Habitats - up to approximately 26.7ha (31%) of CWS is located within the Lake Zone within the Site. Approximately 15.1ha (17.4%) of this area is expected to experience change due to implementation of the drainage strategy for the Site and related works in the Lake Zone. Indirect effects on the CWS habitats located adjacent to the Site (to the east of the Core Zone) from accidental spillages, silt laden run-off and dust.	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**). Temporary, indirect, long term effect of **Moderate Adverse** significance (**Significant**)	Habitats within Kempston Hardwick Pit CWS will be retained and enhanced within the layout of the Lake Zone proposals as shown on the Indicative Habitat Creation and Enhancement Plan (**Figure 1: Indicative Habitat Creation and Enhancement Plan** of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan** (**Volume 3**)). The northeast lake within the CWS will over time partially transition from an early-successional wetland ecosystem to include greater areas of standing water. These may hold deeper water at certain times, for example when periods of extended heavy rainfall occur over the winter. Measures to enhance the bank profile in combination with the drainage work will be undertaken which will provide opportunities to retain and enhance the marginal fen and wetland habitats. This will support retention of some of the current key characteristics of the CWS. The following habitats will be created in this new lake environment: ▪ Shallow, littoral banks supporting aquatic vegetation; ▪ Fringing marginal reedbeds and swamp habitat around approximately 60% of the new lake; ▪ Shallow areas with small islands which could support nesting/roosting wetland birds; ▪ Steep bank/cliff habitat which could support sand martin and/or kingfisher; and ▪ On the new lake southern shore, an open mosaic of grassland, scrub and ruderal vegetation will be created. Provision and establishment of compensation habitats will therefore be provided. It is not yet possible to quantify the area of each habitat sub-type. The extent of compensation will be based upon the area of the CWS located within the Lake Zone which is subject to land use changes either through development or changes required for either water resource requirements as outlined in **Chapter 12: Water Resources (Volume 1)** or remediation of contaminated land material (as outlined in **Chapter 11: Ground Conditions, Soils and Agricultural Land (Volume 1)** and **Appendix 11.1: Contaminated Land Preliminary Risk Assessment (Volume 3)**. Compensatory habitats will be delivered during the Construction and/or Operational Phases, depending on the detailed phasing of the Proposed Development. The Proposed Development will not use the new lake environment for fishing, water sports or hunting (wildfowling) or other activities which are in conflict with wildlife conservation. This would be supported by appropriate design and routing of footpaths and, where appropriate, use of fencing and/or other barriers to manage access to these locations. Any lighting required in the Lake Zone will be designed to ensure sensitive illumination of the new lake environment above current baseline conditions (lux levels and wavelengths) and will be in keeping with Bat Conservation Trust/Institute of Lighting Professionals guidelines for avoiding impact on bats. This habitat retention and creation measures will be incorporated into the detailed Habitat Creation and Enhancement Plan which will be produced at the detailed design stage. Scrub and young trees located to the south of Kempston Hardwick Pits main lake and to the north of Manor Road will be retained to maintain a buffer of vegetation to the water's edge (as shown on the **Indicative Habitat Creation and Enhancement Plan; Figure 1: Indicative Habitat Creation and Enhancement Plan** of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan** (**Volume 3**)). The habitat type and species composition will be fully determined at detailed design stage but will be reflective of surrounding habitat and contribute to the provision of similar habitat within the local area. This will provide habitat for a range of fauna.	Direct, permanent, medium term residual effect of **Moderate Beneficial*** significance (**Significant**). Direct, permanent, medium term residual effect of **Major Adverse** significance (**Significant**). * The alteration of the currently present ephemeral wetland ecosystem will not be fully mitigated. However, the provision of a different range and distribution of habitats will provide alternate ecological benefit. Temporary, indirect, medium term residual effect of **Minor Adverse** significance (**Not Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
			Tree and scrub planting will be undertaken at the boundaries of the Core Zone (which will also act as landscape and visual mitigation and enhance the diverted watercourse to the east of the Core Zone) and within the Lake Zone. Construction mitigation measures in relation to water-borne pollution risk management, dust suppression, noise and vibration management, lighting and ecology as described in **Appendix 2.3: Outline Construction Environmental Management Plan (OCEMP)** (**Volume 3**) will mitigate indirect impacts upon retained areas of the CWSs adjacent to the Site. In addition to those measures, the boundary of the Site will be marked with protective fencing and signage displayed to ensure that these sensitive areas are protected from construction works. To manage water quality within the remediated lakes, water filtration will be incorporated throughout the drainage design. These measures are detailed in Section 12.6 of **Chapter 12: Water Resources (Volume 1)**. The management of new lakes, reedbed habitat and habitats on the banks of lakes in the Lake Zone is described within Sections 3.5 and 4.3 of **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**.	
Habitats				
Habitats of Principal Importance - Woodlands	Direct loss of woodland habitat and individual trees Approximately 15.6ha is located within the Site but outside the boundaries of any of the on-Site CWS. Approximately 12.4ha of this is expected to be removed to facilitate development Damage to retained woodland and trees Fragmentation of woodland habitats by Site clearance and subsequent infrastructure delivery	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Woodland and tree habitats will be created across the Site as indicated on the **Indicative Habitat Creation and Enhancement Plan** (see **Figure 1: Indicative Habitat Creation and Enhancement Plan** of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan** (**Volume 3**)) and as per Section 3.4 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan** (**Volume 3**). Proposals for woodland planting will be fully determined at the detailed design stage within the Ecological Enhancement Areas (EEAs) and will include replacement tree and woodland planting. Areas of new woodland will link to existing areas of woodland where possible, within the wider landscape to retain habitat corridors. Woodland areas will be predominantly native broadleaved woodland, with a smaller component of mixed woodland to increase climate change resilience. The management of areas of woodland will be aimed at enhancing biodiversity (and where conducive landscape and amenity) value rather than any commercial purpose and be designed to support structural and species diversity. Planting will use transplants wherever practicable. Photodegradable rabbit and deer guards will be installed around each transplant to minimise damage to the woodland planting during establishment. Contractors shall secure plants in accordance with required provenance for each location. Compensatory habitats may be delivered during the Construction and/or Operational Phases, depending on the detailed phasing of construction. Enhancement of retained woodland (e.g. along Elstow Brook, to the east of the Lake Zone and Core Zone) will be undertaken to promote the improvement of the natural habitat for native species. Measures will include increasing the diversity of the canopy cover through the removal of species not native to the locality and the planting of native species, such as oak, hazel, silver birch, beech and field maple, to increase their distribution. Construction mitigation measures in relation to water-borne pollution risk management, dust suppression, soil protection, and ecology as described in Sections 3.2, 3.6, 3.9 and 3.10 of **Appendix 2.3: OCEMP (Volume 3)** will also support mitigation of impacts upon retained areas of habitat within and adjacent to the Site. As set out in Section 3.2 of **Appendix 2.3: OCEMP (Volume 3**), retained woodland habitats located within the Site or adjacent to it will be protected through the provision of suitable barrier fencing and retained trees (including woodland) in accordance with British Standard BS5837:2012 Trees in Relation to Construction. This will include the adoption of a sufficient buffer to protect tree roots (as directed by the **Arboricultural Impact Assessment Report (Document Reference: 6.11.0)**) and erection of protective fencing (or similar) encompassing or demarcating root protection. Habitat creation and enhancement measures are set out in Section 3.4 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan** (**Volume 3**), and management measures during the	Direct, permanent, medium term residual effect of **Moderate Adverse** significance (**Not Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
			initial period of establishment are set out in Section 4.3 of **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. Longer term management measures are set out in Section 4.4 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**.	
Habitats of Principal Importance - Reedbeds	Direct loss of reedbed habitat located within the Lake Zone Indirect effects upon retained reedbed habitat during construction including dust, silt and run off and change in hydrological conditions	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	These habitats will be retained and protected within the Proposed Development where possible. Where it is not possible to retain these habitats, compensation habitat will be provided. Compensatory habitats may be delivered during the Construction and/or Operational Phases, depending on the detailed phasing of construction. Reedbed habitats will be created within drainage lakes and where possible alongside retained and new watercourses as indicated on the **Figure 1: Indicative Habitat Creation and Enhancement Plan** of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** and set out in Section 3.4 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. The edges of lakes retained or created and enhanced would be planted with reedbed species. The management of these habitats is set out in **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. Construction mitigation measures in relation to water-borne pollution risk management, dust suppression, and ecology as described in **Appendix 2.3: OCEMP** (**Volume 3**), will also support mitigation of impacts upon retained areas of habitat within and adjacent to the Site. Habitat creation and enhancement measures for new lakes, reedbed habitat and habitats on the banks of lakes are set out in Section 3.4 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**, and management measures during the initial period of establishment are set out in Section 4.3 of **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. Longer term management measures are set out in Section 4.4 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. To manage water quality within the remediated lakes, within the Lake Zone, water filtration will be incorporated throughout the drainage design to treat water discharged into the new lakes. These measures are detailed within **Chapter 12: Water Resources (Volume 1)**. The wet ditch that is located within the Core Zone and runs between Coronation Pit CWS in the south towards the Lake Zone and Manor Road (see **Figure 6.2: UK Habitats Plan (Volume 2)**) will be diverted to enable construction within the Core Zone. The watercourse will be recreated along the eastern boundary of the Core Zone which will include suitable habitat creation through planting, seeding and natural colonisation, where appropriate. New or re-profiled watercourses and water bodies will be designed with suitable water levels and embankment profiles. They will be planted and seeded to support the establishment of a species-rich bankside and aquatic flora. The principles of the design of this new drain are provided in Section 12.6 of **Chapter 12: Water Resources (Volume 1)**. The new watercourse will be created in advance of the destruction of the existing watercourse to enable any protected or important plant and animal species to be relocated to this area. Compensatory habitats may be delivered during the Construction and/or Operational Phases, depending on the detailed phasing of construction. Once the drainage strategy is completed the water bodies located in the Lake Zone will transition from a partly terrestrial/partly ephemeral wetland ecosystem, to a transition (with at times deeper water) lake ecosystem with fringing fen and marginal wetland habitats. The following habitats which have indicative locations shown on the Indicative Habitat Creation and Enhancement Plan (**Figure 1: Indicative Habitat Creation and Enhancement Plan** of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3**)) and as set out in Section 3.4 of **Appendix 6.4 Outline Habitat Creation and Enhancement Plan (Volume 3)** will be created in this new lake environment:	Direct, permanent, medium term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Habitats of Principal Importance – Watercourses and waterbodies	Temporary and permanent loss of aquatic habitats Water affected by pollution draining from the Proposed Development. Noise, vibration, and lighting disturbance from works could disturb aquatic fauna Fragmentation of aquatic habitats by Site clearance and subsequent infrastructure delivery	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).	▪ Shallow, littoral banks supporting aquatic vegetation; ▪ Fringing marginal reedbeds and swamp habitat around approximately 60% of the new lake; ▪ Shallow areas with small islands which may support nesting/roosting wetland birds; ▪ Steep bank/cliff habitat which could support sand martin or kingfisher; and ▪ On the new lake southern shore, a, a mosaic of grassland, scrub and ruderal vegetation will be created. Measures to protect riparian and aquatic habitats from disturbance or degradation, are outlined in Sections 3.2 and 3.10 of **Appendix 2.3: OCEMP** (**Volume 3**) Measures include the following (with additional detail in the **Appendix 2.3: OCEMP** (**Volume 3**)): ▪ A 10m construction exclusion zone from the top of the bank of the Elstow Brook (riparian zone); ▪ Noise, vibration, lighting, and biosecurity measures employed during construction to avoid negative impacts on species present in the brook; and ▪ Sediment, pollution, and surface water run off controls in proximity to the Elstow Brook and any hydrologically connected watercourses. Additional measures to enhance the riparian zone of the Elstow Brook are proposed, including grassland and scrub planting within the 10m buffer zone (where drainage management access allows), particularly in the Lake Zone where this is currently arable habitat. As such there will be no deterioration of the WFD Elstow Brook habitats. The detailed Habitat Creation and Enhancement Plan (HCEP) will set out the refined measures at the detailed design stage. An overview of proposed habitat measures is set out in Section 3.4 of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. All Site-based staff will be made aware of the need to protect watercourses from contamination, including *Environment Agency and Construction Industry Research and Information Association guidance* and legal obligations. This should be implemented through appropriate Site barriers and signage alongside Site inductions and task briefings for contractors. Appropriate measures to protect the water environment will be implemented during the Construction Phase of the Proposed Development in order to eliminate or minimise risk to aquatic flora and fauna. These measures are detailed in full in **Appendix 2.3: OCEMP** (**Volume 3**) with a summary below: ▪ Sediment management and water quality monitoring would be implemented during any construction works with the potential to affect any watercourse, and a plan for appropriate remediation measures to ameliorate any adverse effects should they occur would be prepared; ▪ When construction activities, including stock piling and plant and vehicle washing, occur near a watercourse they would be separated from the watercourse with barriers (e.g. sediment fences) to prevent surface runoff from these sites entering the watercourse; ▪ Construction activities would be as far from the bank top of a watercourse and/or connected hydrological pathways as practicable; and Works required within the 10m buffer would likely require ecological method statements, permits or licences.	Direct, permanent, medium term residual effect of **Moderate Beneficial** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Protected Species				
Bats – Non-Roosting (foraging and commuting)	Loss of bat foraging and commuting habitat -Fragmentation/severance effects through Site clearance and installation of infrastructure could reduce connectivity for foraging and commuting bats within and surrounding the Site Disturbance effects upon foraging habitats and commuting routes during construction from increased traffic, lighting and noise	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	To maintain connectivity for bats throughout the Proposed Development, the landscaping proposals will include planting of woodland, trees and hedgerows around the Site boundary. This will minimise disruption of flight paths and allow connectivity for bats through the landscape. As set out in Section 3.5 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** dark corridors (overnight light levels under one lux) will be incorporated into the design where possible. Bat 'hop-overs' will be created where appropriate using retained mature vegetation and/or transplanted specimen trees. These features will be installed in areas which are likely to require mitigation to facilitate road crossing by bats. Trees will be planted to maintain a flightline of at least 5m above the road height. Gaps between canopies will be less than 10m wherever practicable and no more than 20m. Such a feature is likely to be located within a dark corridor that will be retained for commuting bats on either side of Manor Road, between the Lake Zone and Core Zone. Bat 'hop-overs' will be linked into existing retained and newly proposed hedgerows and new woodlands as far as practicable. Compounds requiring lighting at night will be positioned away from important habitat features for bats, including woodland, trees, lakes, wet ditches, Elstow Brook and boundary habitats such as hedgerows and lines of trees that may be used by bats. No lighting around trees with suitability for roosting bats will be permitted. Any lighting required will be restricted to, and directed towards, the working areas to prevent any light spill and disturbance/displacement of roosting, foraging and commuting bats in adjacent habitat. Habitats of importance for commuting and foraging bats are considered to be ditches and other water bodies, broadleaved woodland, scattered trees, lines of trees, hedgerows, scrub and grassland. Development of a Construction Lighting Management Plan for the Construction Phase, as per the measures outlined in Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**) will help to minimise lighting impacts as far as is practicable. The maintenance and monitoring of the required dark corridors during construction will allow bats to continue to forage and commute across the Site. Construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.7, and 3.10 of the **Appendix 2.3: OCEMP (Volume 3)** would also support minimisation of impacts on bats. Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**) sets out Construction Phase bat mitigation measures Section 3.5 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** sets out bat habitat creation measures, Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out long term mitigation measures relevant to operation.	Direct, permanent, medium term residual effect of **Moderate Adverse** significance (**Significant**).
Otter	Loss of otter habitats Direct killing and injury of otter Disturbance of otter habitat during construction in adjacent areas including from noise and vibration e.g. piling and rock crushing	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Pre-construction surveys will be carried out to re-assess and determine status of water vole and otter on all watercourses and water bodies within the Site and up to 250m and reaffirm the mitigation strategy as outlined in the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. These measures are set out in greater detail in Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**)**.** Updated otter surveys will also be undertaken at each stage of the Proposed Development i.e. latterly in the Lake Zone to inform mitigation requirements at each stage of construction (as set out in **Chapter 2: Description of the Proposed Development (Volume 1)**).	Direct, permanent, medium term residual effect of **Moderate Beneficial** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
	Fragmentation/severance effects through Site clearance and installation of infrastructure, i.e. creating barriers to the movement of otters along watercourses and through water bodies within and adjacent to the Site Disturbance of an otter whilst occupying a holt Disruption and/or reduction in food sources for otter, e.g. through reductions in fish populations resulting from works to lakes and watercourses		Habitats within the Site with suitability to support otter will be retained wherever possible. Elstow Brook will be retained and protected from construction activities by incorporation of a 10m buffer zone on the eastern extent. The lakes within the Lake Zone will be maintained, and whilst subject to activities to facilitate their adoption within the Drainage Strategy (**Appendix 12.3: Drainage Strategy (Volume 3)**) will be retained as suitable otter habitats. Where works are within the vicinity of a watercourse or water body known or assumed to support otter, but will not be directly impacted by the Proposed Development (e.g. sections of Elstow Brook in the Lake Zone, and the water bodies in the Lake Zone) a 10m (minimum) buffer zone will be maintained along the watercourse/to the edge of the water body and the working area wherever practicable. The area will be demarcated to prevent encroachment onto otter habitat. These protection measures would remain in place until the completion of construction activities, potentially longer depending on the Operational Phase activities adjacent to the watercourse corridor or lake areas. Mitigation measures during construction specifically for otter include: ▪ Pre-construction surveys to reconfirm the status of otter habitat usage of the Site and surrounding watercourses within the Proposed Development; ▪ Avoidance of any obstructions to established otter paths and access to open water; and ▪ The marking of, and adherence to, 30m exclusion zones around any holts and shelters identified. If otters are known or suspected to be breeding, the exclusion zone will be extended to a 200m radius and consideration given to whether an EPS licence is required from Natural England. Any exclusion zone could be reduced to 100m depending on the nature of the works, topography, and natural screening. This would require judgement from a Suitably Qualified Ecologist. If breeding was confirmed and exclusion zones of the size set out above were not possible, works will be undertaken in accordance with a EPSML. As part of the licence, appropriate compensation would be provided to make sure that alternative habitat is provided in advance of the potential effect occurring. Works within 30m of a holt, or 100-200m of an active natal den, may need to be delayed until a Natural England otter licence has been obtained or the holt is no longer in use. The increase in the extent and improvement in the condition of water bodies and watercourses within the Site would provide enhanced habitat for otter as they establish following their creation and enhancement. Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase otter mitigation measures in greater detail. Section 3.5 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** sets out otter habitat creation measures, Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out long term mitigation measures relevant to operation. General construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.5 and 3.7 of the **Appendix 2.3: OCEMP (Volume 3**) would also support minimisation of impacts on otter.	
Breeding birds: Annex 1 EU Birds Directive/WCA Schedule 1	Potential for the destruction/damage of active nests (including eggs and/or live young) of WCA Schedule 1 and potentially Annex I species. Disturbance to breeding WCA Schedule 1 and potentially Annex I bird species due to visual presence, lighting, and noise from operatives and their machinery	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Prior to any construction works commencing, a pre-works check for nesting WCA Schedule 1 bird species will be carried out by a suitably qualified ornithologist on any previously identified Potential Nest Sites and other habitats identified as having the potential to support nesting WCA Schedule 1 species, informed by the results obtained from bird surveys undertaken in 2024 and subsequently. A method statement would be produced as part of the detailed CEMP setting out the procedures to be followed in relation to managing potential impacts on Annex 1/WCA Schedule 1 birds. An outline method statement, which it is envisaged would form the basis of the subsequent detailed method statement, is provided in the **Appendix 2.3: OCEMP** (**Volume 3**).	Direct, permanent, medium term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
	during the Construction Phase, including piling and rock crushing. Loss or modification of suitable habitat for nesting and foraging habitat for WCA Schedule 1 species, including removal/modification of all arable farmland within the Site, removal or modification of approximately 2.5ha of open mosaic habitat, 13.5ha of woodland habitats, 6.1ha of reedbed habitats, 2.3km (linear) of hedgerows, 5.5km (linear) of ditch habitat, 9.5ha of freshwater wetland habitats (ponds and lakes), 39.3ha of grassland habitats, and 5.5ha of scrub habitats. Fragmentation of habitats by Site clearance and subsequent infrastructure delivery. Disturbance effects upon retained habitats used by nesting and foraging birds, including through dust, silt and run off and changes in hydrological conditions of water bodies and water courses.		**Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase Annex 1/Schedule 1 bird mitigation measures in greater detail. Sections 3.4 and 3.5 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** set out habitat creation measures and Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to both operation, including habitat creation and management. Proposals for habitat creation and enhancement are set out on Indicative Habitat Creation and Enhancement Plan (**Figure 1: Indicative Habitat Creation and Enhancement Plan in Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**). This includes provision and/or enhancement of woodland, scrub, open mosaic, grassland, reedbed, and watercourse habitats. Habitat measures would take several years or more to mature, and hence the benefits of these habitat measures would not be immediate. Areas of replacement/enhanced scrub and reedbed habitats would provide suitable nesting habitat for Cetti's warbler, mitigating some of the loss/modification to these habitats. The detailed design of the EEA would seek to provide a similar or greater proportion of open mosaic habitat to that lost during Site clearance and construction. This would be provided in the Lake Zone EEA, where there would be limited public access. It would therefore provide potentially suitable breeding habitat for little-ringed plover. It is possible that additional scrub and reedbed habitats could be incorporated into the detailed landscape and ecology design, including in areas outside the EEA. This cannot be confirmed prior to detailed design and is therefore not reflected in the residual effects assessment below. The **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** proposals also include provision of a suitable bank feature on the eastern side of the EEA in the Lake Zone, which would be designed to provide suitable conditions for nesting kingfisher and sand martin. This would be expected to provide potentially suitable conditions for nesting within one year of being constructed, providing enhanced conditions for breeding kingfisher on-Site. The enhancements to the retained Elstow Brook corridor in the Lake Zone and the diverted watercourse in the Core Zone are also likely to provide enhanced conditions for foraging kingfisher along these watercourses, relative to baseline conditions. Rough grassland and woodland/scrub edges would also provide suitable foraging habitat for barn owl, although there would remain a net loss of potential foraging habitat with the reduction in extents of arable farmland and grassland habitats. General construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.7 and 3.10 of the **Appendix 2.3: OCEMP** (**Volume 3**) would also support minimisation of impacts on Annex 1 and WCA Schedule 1 birds.	
Breeding birds: SPI and/or BoCC5 Red Listed	Potential for destruction/damage of nests supporting SPI and/or BoCC5 Red list species during construction period. Disturbance to breeding SPI and/or BoCC5 Red list species due to visual -presence, lighting, and noise from operatives and their machinery during the Construction Phase, including piling and rock crushing. Loss or modification of suitable habitat for nesting and foraging habitat for SPI and/or BoCC5 species, including removal/modification of all arable farmland within the Site, removal or modification of approximately	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).	Where possible, the clearance of vegetation with the potential to support any nesting bird species will be undertaken outside the breeding bird season (the breeding season is typically from 1 March to 31 August inclusive). Where this is not possible, checks for nesting birds will be carried out by a suitably qualified ecologist no more than 48 hours prior to clearance. If active nests are found (which will then be protected under the WCA), suitable mitigation measures will be put in place to avoid destruction/damage to the nest and its contents, until the young have fledged or left the nest. These measures will likely include the implementation of a buffer zone around the nest site in which no works can take place. The Proposed Development includes proposals for habitat retention, creation, enhancement and management that would provide suitable habitat for a range of breeding birds, including SPI and BoCC5 red list species recorded at the Site. Habitat creation measures are referenced in the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. These habitats would be managed in the long term as outlined in the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. The EEA across the Site would include water bodies (ponds, and lakes with associated islands), watercourses including the diverted watercourse in the Core Zone and the enhanced Elstow Brook corridor, woodland habitats, species-rich neutral grassland, OMHs and dense and scattered scrub. Additional habitat would be provided through the provision of green infrastructure within the wider Proposed Development, outside the EEA, with this to be specified as part of the detailed design process. The EEA would provide retained	Direct, permanent, medium term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
	2.5ha of OMH, 13.5ha of woodland habitats, 6.1ha of reedbed habitats, 2.3km (linear) of hedgerows, 5.5km (linear) of ditch habitat, 9.5ha of freshwater wetland habitats (ponds and lakes), 39.3ha of grassland habitats, and 5.5ha of scrub habitats. Fragmentation of habitats by Site clearance and subsequent infrastructure delivery. Disturbance effects upon retained habitats used by nesting and foraging birds, including through dust, silt and run off and changes in hydrological conditions of water bodies and water courses.		and enhanced and new habitat expected to be suitable for the following species recorded at the Site: turtle dove; cuckoo; song thrush; house sparrow; dunnock; yellow wagtail; bullfinch; linnet; yellowhammer; reed bunting; pochard; nightingale; and greenfinch. Provision of additional habitat as part of green infrastructure within the wider development may also provide additional habitat for these and other species. Bird boxes/nesting structures will be installed in areas of retained habitat within the Proposed Development to enhance potential nesting opportunities across the Site. Depending on the design and locations of new structures within the Site, boxes may also be installed on these. Bird box designs will be of long-lasting woodcrete or equivalent and reflect the nesting requirements of species that have been recorded at the Site, as well as common and widespread farmland and woodland species. **Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase bird mitigation measures in greater detail. Sections 3.4 and 3.5 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** sets out relevant habitat creation measures, and Sections 4.3 and 4.4 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to operation. General construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.7 and 3.10 of the **Appendix 2.3: OCEMP** (**Volume 3**) would also support minimisation of impacts on bird SPI/Red list bird species.	
Non-breeding/wintering Birds	Disturbance to foraging/roosting birds due to visual presence, lighting, and noise from operatives and their machinery during the Construction Phase, including piling and rock crushing. Loss or modification of suitable habitat for foraging and roosting, including removal/modification of all arable farmland within the Site, removal or modification of approximately 2.5ha of OMH, 13.5ha of woodland habitats, 6.1ha of reedbed habitats, 2.3km (linear) of hedgerows, 5.5km (linear) of ditch habitat, 9.5ha of freshwater wetland habitats (ponds and lakes), 39.3ha of grassland habitats, and 5.5ha of scrub habitats. Fragmentation of habitats by Site clearance and subsequent infrastructure delivery. Indirect effects upon retained habitats used by roosting and foraging birds, including through dust, silt and run off and changes in hydrological conditions of water bodies and water courses.	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).	To minimise disturbance to wintering birds, particularly within wetland habitats located east of the Lake Zone (Kempston Hardwick Pits) and Core Zone (Coronation Pits), the duration of vegetation clearance and subsequent construction activities would be limited to the shortest time feasible. Strict adherence to construction working zones and fencing around these zones will restrict access into foraging/roosting habitat and will reduce potential effects during the Construction Phase. **Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase bird mitigation measures in greater detail. Sections 3.4 and 3.5 of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** set out habitat creation measures. Sections 4.3 and 4.4 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to operation. The Proposed Development includes proposals for habitat retention, creation, enhancement and management that would provide suitable habitat for a range of non-breeding/wintering birds, including species recorded at the Site. Habitat creation measures are referenced in the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. These habitats would be managed in the long term as outlined in the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. The EEA across the Site would include water bodies (ponds, and lakes with associated islands), watercourses including the diverted watercourse in the Core Zone and the enhanced Elstow Brook corridor, woodland habitats, species-rich neutral grassland, open mosaic habitats, and dense and scattered scrub. Additional habitat would be provided through the provision of green infrastructure within the wider Proposed Development, outside the EEA, with this to be specified as part of the detailed design process. The EEA would provide retained and enhanced and new habitat expected to be suitable for the following species recorded at the Site: little egret; grey heron; cormorant; greylag goose; teal; red kite; kestrel; hobby; sparrowhawk; barn swallow; swift; grey wagtail; oystercatcher; starling; black-headed gull; herring gull; and lesser black-backed gull. Provision of additional habitat as part of green infrastructure within the wider development may also provide additional habitat for these and other species. General construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.7 and 3.10 of the **Appendix 2.3: OCEMP** (**Volume 3**) would also support minimisation of impacts on wintering birds.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Terrestrial Invertebrates	Loss of habitats/habitat features supporting important species or assemblages of terrestrial invertebrates; Degradation/severance effects through Site clearance and installation of infrastructure could reduce connectivity of habitats for terrestrial invertebrates within and surrounding the Site; and Temporary disturbance effects upon terrestrial invertebrate habitats within and adjacent to the Site from construction activities, e.g. incidental release of water-borne pollutants and dust deposition.	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Habitat creation in the Lake Zone would include suitable habitat features for a range of terrestrial invertebrate species as set out in Sections 3.4 and 3.5 of **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. These habitats would be managed in the long term as set out in the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**, with detailed measures to be specified in the detailed LEMP. Mitigation proposals will be designed by determining the habitats, plant species and features needed by each species to complete their life cycle. The mitigation habitat will provide a mosaic of habitats that reflects the range of features required by each species during their lifecycle. Log piles will be created on-Site to serve as invertebrate habitat. These would be placed within sunny positions in grassland and scrub habitats within retained or created habitats. Purpose built invertebrate "*hotels*" will be installed in landscaped areas to provide refuge for specific taxonomic groups, i.e., the provision of nesting habitat for solitary bees. Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase invertebrate mitigation measures in greater detail. Section 3.5 of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** sets out habitat creation measures specific to invertebrates. Sections 4.5 and 4.5 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)** set out longer term mitigation measures relevant to operation. General construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.6 and 3.9 of the **Appendix 2.3: OCEMP** (**Volume 3**) would also support minimisation of impacts on terrestrial invertebrates.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Fish	Indirect effects upon fish habitats from changes to water quality and quantity; Loss of fish habitats, and disturbance to fish populations due to noise, light and vibration; and Fragmentation/severance effects through Site clearance and installation of infrastructure and watercourse diversions/modifications could reduce connectivity of habitats for fish within and surrounding the Site.	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Measures to mitigate disturbance, pollution and potential killing/injury of fish (including spined loach and bullhead) and loss of riparian habitat during the Construction Phase are included in the **Appendix 2.3: OCEMP** (**Volume 3**). Should any part of a watercourse need to be impounded during the works, then a fish translocation may need to be carried out to remove fish from the impoundment. Piling and rock crushing activities in the Lake Zone will adopt 'soft start' procedures when being undertaken in the within the Lake Zone, West Gateway Zone within 50m of the Elstow Brook and within the Core Zone within 50m of the diverted watercourse (once established). Rock crushing in the Lake Zone would be undertaken as far away (and at least 50m) from the Kempston Hardwick Pit lakes (including retained habitats around the lakes) to reduce noise and vibration effects on fish. The diverted watercourse along the eastern boundary of the Core Zone will be designed to include enhancements for fish (e.g. incorporation of pool and riffle features). It will also support a more favourable hydrological regime for fish relative to baseline conditions. The location of the proposed watercourse diversion is shown on **Figure 1: Indicative Habitat Creation and Enhancement Plan** of the **Appendix 6.4: Outline Habitat Creation And Enhancement Plan (Volume 3)**. Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase fish mitigation measures in greater detail. Section 3.5 of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** sets out fish related enhancement measures. Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to operation. General construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.6 and 3.9 of the **Appendix 2.3: OCEMP** (**Volume 3**) would also support minimisation of impacts on fish.	Direct, permanent, long term residual effect of **Moderate Beneficial** significance (**Significant**).
Aquatic macroinvertebrates	Indirect effects upon aquatic macroinvertebrates as a result of	Direct, permanent, long term effect of **Moderate**	Measures to mitigate disturbance, pollution, and loss of riparian habitat during the Construction Phase of the Proposed Development are included in the **Appendix 2.3: OCEMP** (**Volume 3**).	Direct, permanent, long term residual effect of **Moderate Beneficial** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
	changes to water quality and quantity; Loss and disturbance of aquatic habitats; and Fragmentation/severance effects through Site clearance and installation of infrastructure and watercourse diversions/modifications.	**Adverse** significance (**Significant**).	Additional mitigation measures are outlined in the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. These include provision of enhanced/created compensatory habitats, including the enhanced Elstow Brook and the diverted watercourse in the Core Zone, plus the creation of areas of reedbed and other wetland habitats including the expansion of water bodies in the Lake Zone. Proposed locations are shown on **Figure 1: Indicative Habitat Creation and Enhancement Plan** of the **Appendix 6.4: Outline Landscape and Ecology Management Plan** (**Volume 3)**. Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase aquatic macroinvertebrate mitigation measures in greater detail. Sections 4.3 and 4.4 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)** set out longer term mitigation measures relevant to both construction and operation. General construction mitigation measures in relation to general noise and vibration management, lighting, water-borne pollution and ecology as described in Sections 3.2, 3.6 and 3.9 of the **Appendix 2.3: OCEMP** (**Volume 3**) would also support minimisation of impacts on aquatic macroinvertebrates.	
Macrophytes (aquatic plants)	Indirect effects upon macrophytes as a result of changes to water quality and quantity Some removal and disturbance of aquatic habitats would also take place during construction, to facilitate the Outline Surface Water Drainage design and development of the Core Zone	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Measures to mitigate pollution and loss of riparian habitat during the Construction Phase of the Proposed Development are included in the **Appendix 2.3: OCEMP** (**Volume 3**). Additional mitigation measures are outlined in the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. These include provision of enhanced/created compensatory habitats, including the enhanced Elstow Brook and the diverted watercourse in the Core Zone, plus the creation of areas of reedbed and other wetland habitats including the expansion of water bodies in the Lake Zone. Proposed locations are shown on **Figure 1: Indicative Habitat Creation and Enhancement Plan** of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan** (**Volume 3**). Section 3.2 of the **Appendix 2.3: OCEMP** (**Volume 3**), sets out Construction Phase aquatic habitat mitigation measures in greater detail. Sections 4.3 and 4.4 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to both construction and operation. General construction mitigation measures in relation to water-borne pollution and ecology as described in Sections 3.2 and 3.9 of the **Appendix 2.3: OCEMP** (**Volume 3**) would also support minimisation of impacts on aquatic macrophytes.	Direct, permanent, long term residual effect of **Moderate Beneficial** significance (**Significant**).
Operational Phase				
Habitats				
Habitats of Principal Importance – Aquatic Habitats (waterbodies and watercourses).	Water quality and quantity effects e.g. pollution incident or increased silt run-off; and Noise, vibration, and lighting disturbance from works could disturb aquatic fauna using aquatic habitats.	Indirect, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Measures to protect riparian and aquatic habitats from disturbance or degradation, are outlined in **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. A summary of these measures is provided: Wetland habitats - Retained and created wetland habitat will be managed in the long-term using the following measures: ▪ Rotational cutting of reed vegetation to create a variety in age and structure as well as retain areas of open water; ▪ Improvements to water quality in retained habitats though removal of or separation from contaminants through a surface water management strategy; ▪ Retained and created watercourses shall be managed to prevent silting up and choking with vegetation; and ▪ A 10m riparian zone alongside the diverted watercourse in the Core Zone and Elstow Brook in the Core Zone and Lake Zone will be maintained as wildlife habitat and will be allowed to	Indirect, permanent, long term residual effect of **Moderate Beneficial** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
			develop as a mosaic of grassland, wet grassland, scrub and scattered trees (e.g. alder, willow and poplar). A number of other measures are proposed to support the establishment and ongoing management of habitats within the Site. The management of new and retained habitats is described within the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**, with management measures aiming to secure these areas and support the ongoing presence of high value habitats within the Site. Sections 4.3 and 4.4 of the **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out the proposed habitat interventions for the required maintenance and management of the Proposed Development. **Figure 1: Indicative Habitat Creation and Enhancement Plan** of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)** provides an overview of the proposed layout of retained and created habitats. To support maintenance and improvement of water quality within watercourses and lakes, water treatment will be incorporated throughout the drainage design to make sure that water contained and discharged into new and retained watercourses and lakes is appropriately treated. These measures are detailed in **Appendix 12.3: Drainage Strategy (Volume 3)** and are expected to improve water quality in watercourses and water bodies within the Site relative to baseline conditions**.**	
Protected Species				
Bats – Non-Roosting (foraging and commuting)	Increased disturbance (from humans, attractions and vehicles, lighting and firework and/or drone shows) on foraging and commuting habitat could occur during operation Fragmentation of habitat through presence of barriers to dispersal; e.g. extents of developed land, road infrastructure, fencing, noise and lighting Injury and mortality of bats through collision risk from operational activities; roads, built environments specifically those with moving parts such as attractions and firework/drone shows which may operate at height within hours of darkness	Direct, permanent, medium term effect of **Major Adverse** significance (**Significant**).	Mitigation to address potential effects of elements such as fireworks and drone shows on bats is not widely established. Firework and drone show locations will have a minimum horizontal clearance of 50m from any sensitive habitat areas within which no fireworks would be launched/detonated or drone shows take place. Additionally, any fireworks launch locations will be positioned so that the fallout zone does not overlap with any designated EEAs. In addition to the landscaping measures detailed above which will reduce lighting and noise impacts during the Operational Phase, the **Design Standards (Document Reference 6.3.0)** outline measures to reduce light spill on retained habitats during the Operational Phase. This will include measures to reduce lighting impacts on any retained or created bat roosting habitat. It is anticipated that lighting along the new roads and junctions will be required, and lighting of the Theme Park could be required 24-hours a day in certain locations. Lighting specific commitments detailed within the **Design Standards (Document Reference 6.3.0)**, will seek to allow for 'dark corridors' linking the Core Zone and the Lake Zone and linking to off-Site wildlife habitat such as that in adjacent CWSs. This will include sensitive lighting design to minimise impacts on bat foraging and commuting habitats. Lighting will be designed to limit stray light, including laterally and vertically. A dark corridor will be an area of land that is not subject to artificial illumination and/or meets the requirements specified in the *Institution of Lighting Professionals Guidance Note: Bats and Artificial Lighting in the UK* **(Ref. 6.12)**. In addition, measures are included in the **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) to manage recreational disturbance. This will collate and set out measures to control sources of operational noise and vibration and visual disturbance to wildlife. Bat 'hop-overs' planting/transplanting methods and design will be focussed within a dark corridor that will be retained for commuting bats on either side of Manor Road, between the Lake Zone and Core Zone. Two underpass structures will also be provided to maintain habitat connectivity and counter fragmentation between the Northern Ecology Area and the rest of the Lake Zone under proposed road infrastructure. The maintenance/creation of habitat corridors around the margins of the Site, for example the Elstow Brook corridor to the west of the Lake Zone, the EEA to the east of the Lake Zone, the Elstow Brook corridor through the West Gateway Zone and the diverted watercourse corridor through the north and east of the Core Zone will support connectivity between on-Site and off-Site habitats. These measures shown on **Figure 1:**	Direct, permanent, medium term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
			Indicative Habitat Creation and Enhancement Plan of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to addressing effects on bats during operation, and should be referred to for additional detail. As noted within **Chapter 9: Noise and Vibration (Volume 1)**, "…*effective design and management of the Site could substantially reduce Operational Phase noise levels at receptors*". As also noted in **Chapter 9: Noise and Vibration (Volume 1)**, "…*the potential effectiveness of potential mitigation cannot be quantified at this stage*".	
Fish	Changes to water quality and quantity with indirect effects on fish Risk of disturbance from operational activities.	Indirect, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Aquatic habitats will be subject to ongoing management and monitoring as specified in **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. A clear span bridge crossing of the Elstow Brook is proposed for the new access road in the West Gateway Zone. This will support continued up and downstream movement of fish countering fragmentation risks, through maintaining the bank structure of the watercourse and avoiding enclosing the watercourse in a box culvert or similar. This feature is shown on **Figure 1: Indicative Habitat Creation and Enhancement Plan** of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. The **Design Standards (Document Reference 6.3.0)** outline commitments to reduce light spill on retained habitats during the Operational Phase. In addition, measures are included in the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)** to manage operational disturbance. This will collate and set out measures to control sources of operational noise and vibration and visual disturbance to wildlife. Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to addressing effects on fish during operation. These should be referred to for additional detail. To support maintenance and improvement of water quality within watercourses and lakes, water treatment will be incorporated throughout the drainage design to make sure that water contained and discharged into new and retained watercourses and lakes is appropriately treated. These measures are detailed in **Appendix 12.3: Drainage Strategy (Volume 3)** and are expected to improve water quality in watercourses and water bodies within the Site relative to baseline conditions**.**	Indirect, temporary, long term residual effect of **Moderate Beneficial** significance (**Significant**).
Aquatic macroinvertebrates	Habitat degradation and/or loss leading to impacts on the aquatic macroinvertebrate communities Changes to water quality and quantity with indirect effects upon macroinvertebrates	Indirect, temporary, long term effect of **Moderate Adverse** significance (**Significant**).	Aquatic habitats will be subject to ongoing management and monitoring as specified in **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. A clear span bridge crossing of the Elstow Brook is proposed for the new access road in the West Gateway Zone. This will support continued habitat connectivity for aquatic invertebrates and counter fragmentation risks, through maintaining the bank structure of the watercourse and avoiding enclosing the watercourse in a box culvert or similar (which will enable natural light to continue to reach the section of watercourse under the bridge). This feature is shown on **Figure 1: Indicative Habitat Creation and Enhancement Plan** of the **Appendix 6.4: Outline Habitat Creation and Enhancement Plan (Volume 3)**. The **Design Standards (Document Reference 6.3.0)** outline commitments to reduce light spill on retained habitats during the Operational Phase. In addition, measures are included in the **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)** to manage operational disturbance. This will collate and set out measures to control sources of operational noise and vibration and visual disturbance to wildlife. Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan** (**Volume 3**) set out longer term mitigation measures relevant to addressing effects on aquatic invertebrates during operation. These should be referred to for additional detail.	Indirect, temporary, long term residual effect of **Moderate Beneficial** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect Prior to-Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
			To support maintenance and improvement of water quality within watercourses and lakes, water treatment will be incorporated throughout the drainage design to make sure that water contained and discharged into new and retained watercourses and lakes is appropriately treated. These measures are detailed in **Appendix 12.3: Drainage Strategy (Volume 3)** and are expected to improve water quality in watercourses and water bodies within the Site relative to baseline conditions**.**	
Macrophytes (aquatic plants)	Changes to water quality and quantity with indirect effects on macrophytes	Indirect, temporary, long term effect of **Moderate Adverse** significance (**Significant**).	Aquatic habitats will be subject to ongoing management and monitoring as specified in **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)**. Sections 4.3 and 4.4 of **Appendix 6.5: Outline Landscape and Ecology Management Plan (Volume 3)** set out longer term mitigation measures relevant to addressing effects on macrophytes during operation. These should be referred to for additional detail. To support maintenance and improvement of water quality within watercourses and lakes, water treatment will be incorporated throughout the drainage design to make sure that water contained and discharged into new and retained watercourses and lakes is appropriately treated. These measures are detailed in **Appendix 12.3: Drainage Strategy (Volume 3)** and are expected to improve water quality in watercourses and water bodies within the Site relative to baseline conditions**.**	Indirect, temporary, short term residual effect of **Moderate Beneficial** significance (**Significant**).

Table 19-3 – Summary of Residual Likely Significant Effects – Landscape and Visual

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase				
Landscape Character Area (LCA) 5D: North Marston Clay Vale (Host LCA)	Noticeable loss of agricultural land and wooded areas within the LCA	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Where appropriate to deliver the Proposed Development and to allow construction activities the necessary working space, the majority of the existing perimeter planting should be retained as permanent screening. Prior to the start of construction works, and throughout their duration, all existing vegetation identified for retention shall be protected by fencing, in accordance with BS:5837, to protect roots from compaction and prevent damage to the structure of the vegetation. No activity, storage of materials or liquids of any sort shall be permitted within the protective fencing at any time. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Existing vegetation will be retained along the eastern margins of the Marston Vale Railway Line within the Core Zone and Lake Zone as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)** (where the land is within the control of UDX). An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development. Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting. The new A421 Junction under the control of National Highways will have appropriate native planting to screen views and integrate the junction within the existing highway.	Direct, permanent residual effect of **Moderate Adverse** significance (**Significant**).
LCA 6B: Mid Greensand Ridge	Effects on long-distance views resulting in minor adjustments to perceptual characteristics, notably at the northeastern boundary of the LCA, overlooking the lower lying open landscape to the north	Indirect, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Where appropriate to deliver the Proposed Development and to allow construction activities the necessary working space, the existing perimeter planting should be retained as permanent screening. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development.	Indirect, permanent residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Bedford Urban Area LCA	Loss of trees and woodland along northern boundaries of the LCA, altering the area's perception of open countryside	Indirect, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Where appropriate to deliver the Proposed Development and to allow construction activities the necessary working space, existing perimeter planting should be retained as permanent screening. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development.	Indirect, permanent residual effect of **Moderate Adverse** significance (**Significant**).
Landscape elements within the Site	Noticeable loss of trees and woodland, altering the perception of open countryside between surrounding villages	Direct, temporary, medium term effect of **Large Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Where appropriate to deliver the Proposed Development and to allow construction activities the necessary working space, existing perimeter planting should be retained as permanent screening. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Existing vegetation will be retained along the eastern margins of the Marston Vale Railway Line within the Core Zone and Lake Zone as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)** (where the land is within the control of UDX).	Direct, permanent residual effect of **Large Adverse** significance (**Significant**).
Visual Amenity: ▪ Recreational receptors along PRoW and transport receptors along A421 (refer to RVP: 1). ▪ Residential receptors at southern edge of Kempston Hardwick, Meadow Road (refer to RVP: 13); ▪ Residential properties along Manor Road, and users of Manor Road (refer to RVP: 14); ▪ Residential receptors at the northern edge of Stewartby (refer to RVP: 19); ▪ Residents on Broadmead Road, and users of Broadmead Road (refer to RVP: 20); ▪ Representative of residents of Stewartby (refer to RVP: 21). ▪ Residential receptors at the northern edge of Wootton, and recreational receptors at Wootton Play Park and Community Centre (refer to RVP: 32);	Direct, temporary, medium term effect of **Large Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Where appropriate to deliver the Proposed Development and to allow construction activities the necessary working space, existing perimeter planting should be retained as permanent screening. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development. Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting. The new A421 Junction under the control of National Highways will have appropriate native planting to screen views and integrate the junction within the existing highway.	Direct, permanent residual effect of **Large Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
▪ Informal footpath south of Marsh Leys Industrial Estate (refer to RVP: 33).				
Visual Amenity: ▪ Residential receptors at the northern edge of Kempston Hardwick (refer to RVP: 10); ▪ Residential receptors at the northern edge of Wixams (refer to RVP: 11); ▪ Residential receptors at northern edge of Houghton Conquest (refer to RVP: 16); ▪ Residential receptors on the elevated Green Sandstone ridge, recreational receptors visiting Houghton House, and users of local PRoW (refer to RVP: 17); ▪ Residential receptors along northeastern edge of Stewartby (refer to RVP: 18); ▪ Representative of visitors to Ampthill Park RPG/Ampthill Park House residents (refer to RVP: 23). ▪ Representative of visitors to Ampthill Park RPG and parkland/users of PRoW/Greensand Ridge Walk/John Bunyan Trail (refer to RVP: 24); ▪ Recreational receptors at the Forest Centre and Marston Vale Millennium Country Park (refer to RVP: 28); ▪ Residential receptors of Lower Shelton, and recreational receptors along footpath between Lower Shelton and Wootton Green and (refer to RVP: 29); ▪ Residential receptors to the northeast of Wootton, and recreational receptors along bridleway and transport receptors along A421 (refer to RVP: 34); ▪ Residential receptors at Potters Cross and recreational users of footpath north of Wootton (refer to RVP: 35).		Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Where appropriate to deliver the Proposed Development and to allow construction activities the necessary working space, existing perimeter planting should be retained as permanent screening. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated on **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development. Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting. The new A421 Junction under the control of National Highways will have appropriate native planting to screen views and integrate the junction within the existing highway.	Direct, permanent residual effect of **Moderate Adverse** significance (**Significant**).
Operational Phase				
LCA 5D: North Marston Clay Vale (Host LCA)	Noticeable loss of agricultural land and wooded areas within the LCA	Operation Year 1: Direct, permanent effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features.	Direct, permanent residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
		Operation Year 15: Direct, permanent effect of **Moderate Adverse** significance (**Significant**).	The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Existing vegetation will be retained along the eastern margins of the Marston Vale Railway Line within the Core Zone and Lake Zone as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)** (where the land is within the control of Universal Destinations & Experiences (UDX)). An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development. Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting. The new A421 Junction under the control of National Highways will have appropriate native planting to screen views and integrate the junction within the existing highway.	
LCA 6B: Mid Greensand Ridge	Effects on long-distance views resulting in minor adjustments to perceptual characteristics, notably at the northeastern boundary of the LCA, overlooking the lower lying open landscape to the north	Operation Year 1: Indirect, permanent effect of **Moderate Adverse** significance (**Significant**). Operation Year 15: Indirect, permanent effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development.	Indirect, permanent residual effect of **Moderate Adverse** significance (**Significant**).
Bedford Urban Area LCA	Loss of trees and woodland along northern boundaries of the LCA, altering the area's perception of open countryside	Operation Year 1: Indirect, permanent effect of **Moderate Adverse** significance (**Significant**). Operation Year 15: Indirect, permanent effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development.	Indirect, permanent residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Landscape elements within the Site	Noticeable loss of trees and woodland, altering the perception of open countryside between surrounding villages	Operation Year 1: Direct, permanent effect of **Large Adverse** significance (**Significant**). Operation Year 15: Direct, permanent effect of **Large Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Existing vegetation will be retained along the eastern margins of the Marston Vale Railway line within the Core Zone and Lake Zone as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)** (where the land is within the control of UDX). Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting. The new A421 Junction under the control of National Highways will have appropriate native planting to screen views and integrate the junction within the existing highway.	Direct, permanent residual effect of **Large Adverse** significance (**Significant**).
Visual Amenity: ▪ Residential receptors at southern edge of Kempston Hardwick, Meadow Road (refer to RVP: 13); ▪ Residential properties along Manor Road, and users of Manor Road (refer to RVP: 14); ▪ Residential receptors at the northern edge of Stewartby (refer to RVP: 19); ▪ Residents on Broadmead Road, and users of Broadmead Road (refer to RVP: 20); ▪ Representative of residents of Stewartby (refer to RVP: 21). ▪ Residential receptors at the northern edge of Wootton, and recreational receptors at Wootton Play Park and Community Centre (refer to RVP: 32); ▪ Informal footpath south of Marsh Leys Industrial Estate (refer to RVP: 33).		Operation Year 1: Direct, permanent effect of **Large Adverse** significance (**Significant**). Operation Year 15: Direct, permanent effect of **Large Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development. Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting. The new A421 Junction under the control of National Highways will have appropriate native planting to screen views and integrate the junction within the existing highway.	Direct, permanent residual effect of **Large Adverse** significance (**Significant**).
Visual Amenity: ▪ Recreational receptors along PRoW and transport receptors along A421 (refer to RVP: 1).		Operation Year 1: Direct, permanent effect of **Moderate Adverse** significance (**Significant**). Operation Year 15:	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development.	Direct, permanent residual effect of **Large Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
		Direct, permanent effect of **Large Adverse** significance (**Significant**).	Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting.	
Visual Amenity: ▪ Residential receptors at the northern edge of Kempston Hardwick (refer to RVP: 10); ▪ Residential receptors at the northern edge of Wixams (refer to RVP: 11); ▪ Residential receptors at northern edge of Houghton Conquest (refer to RVP: 16); ▪ Residential receptors on the elevated Green Sandstone ridge, recreational receptors visiting Houghton House, and users of local PRoW (refer to RVP: 17); ▪ Residential receptors along northeastern edge of Stewartby (refer to RVP: 18); ▪ Representative of visitors to Ampthill Park RPG/Ampthill Park House residents (refer to RVP: 23). ▪ Representative of visitors to Ampthill Park RPG and parkland/users of PRoW/Greensand Ridge Walk/John Bunyan Trail (refer to RVP: 24); ▪ Recreational receptors at the Forest Centre and Marston Vale Millennium Country Park (refer to RVP: 28); ▪ Residential receptors of Lower Shelton, and recreational receptors along footpath between Lower Shelton and Wootton Green and (refer to RVP: 29); ▪ Residential receptors to the northeast of Wootton, and recreational receptors along bridleway and transport receptors along A421 (refer to RVP: 34); ▪ Residential receptors at Potters Cross and recreational users of footpath north of Wootton (refer to RVP: 35).		Operation Year 1: Direct, permanent effect of **Moderate Adverse** significance (**Significant**). Operation Year 15: Direct, permanent effect of **Moderate Adverse** significance (**Significant**).	Refer to Section 7.6 of the **Chapter 7: Landscape and Visual Impact Assessment (Volume 1)**. Tree planting will be included as part of the surrounding urban realm and adjacent to the transport hubs within the East Gateway Zone and West Gateway Zone by Network Rail to break up the visual mass of these developments and provide gateway features. The perimeter of the Site will be planted (either through retention of existing vegetation or provision of new mitigation planting), as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. This will provide screening of lower elements of the Proposed Development. Mitigation planting, or alternative visual screening, will be provided adjacent to Manor Road (to the south of the new road alignment), and existing planting along the northern side of Manor Road will be retained where feasible to provide screening to Manor Road cottages as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. Where feasible and to allow required access points, existing planting along sections of Broadmead Road (southern boundary to the West Gateway Zone and Core Zone) will be retained as screening as indicated in **Figure 7.9: Landscape Mitigation Plan (Volume 2)**. An articulated skyline is proposed, which will consist of elements of varying heights and would break up the overall outline of the Proposed Development. Roadways within the Proposed Development and under the control of UDX will include appropriate tree and shrub planting. The new A421 Junction under the control of National Highways will have appropriate native planting to screen views and integrate the junction within the existing highway.	Direct, permanent residual effect of **Moderate Adverse** significance (**Significant**).

Table 19-4 – Summary of Residual Likely Significant Effects – Air Quality

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
No significant residual effects.				

Table 19-5 – Summary of Residual Likely Significant Effects – Noise and Vibration

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase - Noise				
NSR05-06 (individual property located off Woburn Road and Broadmead Farm respectively) NSR08-10 (properties off Ampthill Road and Manor Road respectively)	Noise impacts at the closest receptors to the Site during the Construction Phase	Direct, temporary, medium term effect of **Moderate to Major Adverse** significance (**Significant**).	Principal Contractor to employ BPM to limit construction noise. Further details on mitigation set out in Section 4 of **Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)** and Section 3.7 of **Appendix 2.3 OCEMP** (**Volume 3**).	Direct, temporary, medium term residual effect of **Moderate to Major Adverse** significance (**Significant**).
Construction Phase - Vibration				
NSR05-06 (individual property located off Woburn Road and Broadmead Farm respectively) NSR08-10 (properties off Ampthill Road and Manor Road respectively)	Vibration impacts at the closest receptors to the Site during the Construction Phase	Direct, temporary, short term effect of **Moderate Adverse** significance (**Significant**).	Principal Contractor to employ BPM to limit construction noise. Further details on mitigation set out in Section 3.7 of **Appendix 2.3 OCEMP** (**Volume 3**).	Direct, temporary, short term residual effect of **Moderate Adverse** significance (**Significant**).
Kempston Hardwick Moated Site	Vibration impacts during the Construction Phase	Direct, temporary, short term effect of **Moderate to Major Adverse** significance (**Significant**).	Mitigation measures may be required, subject to the results of the Piling Risk Assessment. Further details on mitigation set out in Section 3.7 of **Appendix 2.3 OCEMP** (**Volume 3**).	Direct, temporary, short term residual effect of **Moderate Adverse** significance (**Significant**).
Construction Phase – Road Traffic Noise (Scenario 2 – 2023 Existing plus Peak Construction)				
NSR09-10 (properties along Manor Road)	Road traffic noise impacts at receptors adjacent to Manor Road due to a reduction in traffic flow and proportion of heavy vehicles	Direct, temporary, medium term effect of **Moderate Beneficial** significance (**Significant**).	N/A	Direct, temporary, medium term effect of **Moderate Beneficial** significance (**Significant**).
NSR06 (Broadmead Farm)	Road traffic noise impacts at Broadmead Road due to an increase in proportion of heavy vehicles	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Subcontractors will be encouraged to minimise heavy vehicle movements to the Site by means of consolidating payloads. A delivery management system will also be used to regulate the flow of heavy vehicles to and from the Site and minimise the number of arrivals per hour. Further details on mitigation are set out in Section 3.3 of **Appendix 2.3 OCEMP** (**Volume 3**)	Direct, temporary, medium term residual effect of **Moderate Adverse** significance (**Significant**).
Operational Phase – Road Traffic Noise (Scenario 4 – Opening Year - Reference Case plus Development, Scenario 4a - Opening Year - Reference Case plus Development plus Construction and 5 – Future Year - Reference Case plus Development)				
No significant residual effects.				
Operational Phase – Core Zone				

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
RCL01 (properties on Manor Road)	**Operational noise at maximum allowable level.** Embedded mitigation is incorporated into the design to achieve the noise limits for which consent is being sought. Increased levels of operational noise from the Core Zone during the day and night results in a moderate adverse effect.	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).
RCL02 (isolated properties at east of Manor Road	**Operational noise at maximum allowable level.** Embedded mitigation is incorporated into the design to achieve the noise limits for which consent is being sought. Increased levels of operational noise from the Core Zone during the day and night results in a major adverse effect.	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).
	Operational noise at the typical level. It is unlikely that noise levels will reach the maximum allowable as achieving compliance with the noise limits at closer receptors to the Core Zone, via embedded mitigations by way of design, will result in lower typical noise levels at this receptor and a moderate adverse effect.	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).
RCL03 (traveller's site east of B530 Ampthill Road)	**Operational noise at maximum allowable level.** Embedded mitigation is incorporated into the design to achieve the noise limits for which consent is being sought. Increased levels of operational noise from the Core Zone during the day and night results in a moderate adverse effect.	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).
	Operational noise at the typical level.	No residual significant effects		
RCL04 (residential community south of Wixams)	**Operational noise at maximum allowable level.** Embedded mitigation is incorporated into the design to achieve the noise limits for which consent is being sought. Increased levels of operational noise from the Core Zone during the day and night results in a moderate adverse effect during the day and a moderate to minor adverse effect at night.	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).
	Operational noise at the typical level.	No residual significant effects		
RCL05 (residential community north of Stewartby)	**Operational noise at maximum allowable level.** Embedded mitigation is incorporated into the design to achieve the noise limits for which consent is being sought. Increased levels of operational noise from the Core Zone during the day and night	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
	results in a major adverse effect during the day and moderate effect at night			
RCL06 (Broadmead Farm)	**Operational noise at maximum allowable level.** Embedded mitigation is incorporated into the design to achieve the noise limits for which consent is being sought. Increased levels of operational noise from the Core Zone during the day and night results in a major adverse effect.	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Major Adverse** significance (**Significant**).
Operational Phase – Utility Compound				
RCL01 (dwellings on Manor Road)	Operational noise from the Utility Compound at the limits for which consent is being sought is predicted to give rise to increased noise levels during the day and night resulting in a moderate adverse effect.	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	N/A	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).
Properties >350m from the Utility Compound	No residual significant effects			

Table 19-6 – Summary of Residual Likely Significant Effects – Cultural Heritage

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase				
Kempston Hardwick moated site (scheduled monument)	Construction activities will have a temporary impact on the setting of the asset and how it is understood and experienced	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Mitigation measures regarding temporary artificial lighting are outlined in **Section 3.2 of Appendix 2.3: OCEMP (Volume 3)**. It notes that low-intensity lighting with brightness levels (around 100-300 lumens) is recommended, to help minimise light pollution and avoid distracting from the monument's appearance, especially at night. Lights with a warmer colour temperature (below 3,000 Kelvin) are preferable. Using low height, downward-facing or shielded lights can limit light spillage and focus illumination where required. Potential temporary noise and vibration during construction necessitate adherence to **Section 3.7 of Appendix 2.3: OCEMP (Volume 3)**. As outlined in **Appendix 2.3: OCEMP (Volume 3)**, it is recommended that ground borne vibration from construction related activities is limited to no more than 2mm/s peak particle velocity (PPV) at the monument, reflecting both the sensitive nature of the asset and unknowns regarding its structural integrity. Should vibration levels approach this threshold, a strict monitoring program and a comprehensive Piling Risk Assessment will be required which shall take into account the above proposed vibration limit.	Direct, temporary, medium term residual effect of **Moderate Adverse** significance (**Significant**).
Above ground designated heritage assets in Ampthill (see Section 10.6 of Chapter 10: Cultural Heritage (Volume 1))	Construction activities will have a temporary impact on the setting of the asset and how it is understood and experienced	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Different phases of construction activity, with mitigation measures on noise and vibration set out in **Chapter 9: Noise and Vibration (Volume 1)** and Section 3.6 Mitigation measures regarding temporary artificial lighting outlined in **Section 3.2 of Appendix 2.3: OCEMP (Volume 3)**.	Direct, temporary, medium term residual effect of **Moderate Adverse** significance (**Significant**).
Above ground designated heritage assets in Wootton (see Section 10.6 Chapter 10: Cultural Heritage (Volume 1))	Construction activities will have a temporary impact on the setting of the asset and how it is understood and experienced	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Different phases of construction activity, with mitigation measures on noise and vibration set out in **Chapter 9: Noise and Vibration (Volume 1)** and **Section 3.7 of Appendix 2.3: OCEMP (Volume 3)**. Mitigation measures regarding temporary artificial lighting outlined in **Section 3.2 Construction Lighting Management Plan of Appendix 2.3: Volume 3 (Document reference no. 4.2.3.0)**.	Direct, temporary, medium term residual effect of **Moderate Adverse** significance (**Significant**).
Above ground heritage assets in Stewartby (see Section 10.6 Chapter 10: Cultural Heritage (Volume 1))	Construction activities will have a temporary impact on the setting of the asset and how it is understood and experienced	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Different phases of construction activity, with mitigation measures on noise and vibration set out in **Chapter 9: Noise and Vibration (Volume 1)** and **Section 3.7 of Appendix 2.3: OCEMP (Volume 3)**. Mitigation measures regarding temporary artificial lighting outlined in **Section 3.2 of Appendix 2.3: OCEMP (Volume 3)**.	Direct, temporary, medium term residual effect of **Moderate Adverse** significance (**Significant**).
Church of All Saints (Grade I listed)	Construction activities will have a temporary impact on the setting of the asset and how it is understood and experienced	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Different phases of construction activity, with mitigation measures on noise and vibration set out in **Chapter 9: Noise and Vibration (Volume 1)** and **Section 3.7 of Appendix 2.3: OCEMP (Volume 3)**. Mitigation measures regarding temporary artificial lighting outlined in **Section 3.2 of Appendix 2.3: OCEMP (Volume 3)**.	Direct, temporary, medium term residual effect of **Moderate Adverse** significance (**Significant**).
Above ground designated heritage assets in Elstow (see Section 10.6 Chapter 10: Cultural Heritage (Volume 1))	Construction activities will have a temporary impact on the setting of the asset and how it is understood and experienced	Direct, temporary, medium term effect of **Moderate Adverse** significance (**Significant**).	Different phases of construction activity, with mitigation measures on noise and vibration set out in **Chapter 9: Noise and Vibration (Volume 1)** and **Section 3.7 of Appendix 2.3: OCEMP (Volume 3)**. Mitigation measures regarding temporary artificial lighting outlined in **Section 3.2 of Appendix 2.3: OCEMP (Volume 3)**.	Direct, temporary, medium term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Operational Phase				
Kempston Hardwick moated site (scheduled monument)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3) and Lake Zone (LZ3) in the Design Standards (Document Reference 6.3.0). Whilst mitigation has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Houghton House: a 17th century mansion and associated courtyard and formal garden remains and Ruins of Houghton House, Houghton Park (scheduled monument and Grade I listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3) and East Gateway Zone (EG3, EG4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Ampthill Castle: a medieval magnate's residence (scheduled monument)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Ampthill Park (Grade II registered park and garden)	Ampthill Park (Grade II registered park and garden)	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3), East Gateway Zone (EG3, EG4) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Ampthill Conservation Area	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3), East Gateway Zone (EG3, EG4) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Park House (Cheshire Home for The Disabled), Ampthill Park (Grade II* listed building)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3), East Gateway Zone (EG3, EG4) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Katherine's Cross Ampthill Park (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3), East Gateway Zone (EG3, EG4) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Wootton Conservation Area	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9 : Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Parish Church of St Mary the Virgin (Grade I listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Wootton House (Grade II* listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Former Stables to Wootton House (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
The Old Bakehouse, 23 and 25, Church Road (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9 : Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
21 and 23, Church Row (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Wootton War Memorial (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
The Old Post Office (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (Significant).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
7, Church Road (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (Significant).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
2-8 Church Road (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (Significant).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
3 and 5, Cranfield Road (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for West Gateway Zone (WG3, WB4), Lake Zone (LZ3) and Core Zone (CZ3) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Stewartby Conservation Area (and 6 landmark buildings located within its boundary)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3), East Gateway Zone (EG3, EG4) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Sir Malcolm Stewart Trust Homes, seven lamp standards and wrought-iron railings (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3), East Gateway Zone (EG3, EG4) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Sir Malcolm Stewart Trust Common Room (Grade II listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3), East Gateway Zone (EG3, EG4) and West Gateway Zone (WG3, WB4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Church of All Saints (Grade I listed)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Core Zone (CZ3) and East Gateway Zone (EG3, EG4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Elstow Conservation Area	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Lake Zone (LZ3) and East Gateway Zone (EG3, EG4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Hillersdon Mansion (Grade I listed) and Elstow Manor House (Remains of) (scheduled)	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Lake Zone (LZ3) and East Gateway Zone (EG3, EG4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Parish Church of St Mary and St Helena	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Lake Zone (LZ3) and East Gateway Zone (EG3, EG4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).
Parish Church Tower	The introduction of new built form will have a permanent impact due to changes in the setting of the asset and how it is understood and experienced	Direct, permanent, long term effect of **Moderate Adverse** significance (**Significant**).	Several measures to reduce harm to the asset are set out in **Chapter 9: Noise and Vibration (Volume 1)** along with the Key Design Considerations set out under the Design Intent and other design standards for Lake Zone (LZ3) and East Gateway Zone (EG3, EG4) in the Design Standards (Document Reference no. 6.3.0). Whilst the mitigation strategy has been put in place with the aim to reduce harm, the proposed mitigation measures would not reduce the overall residual effect.	Direct, permanent, long term residual effect of **Moderate Adverse** significance (**Significant**).

Table 19-7 – Summary of Residual Likely Significant Effects – Ground Conditions (Land Contamination Assessment)

Description of Effect	Baseline Level of Risk			Additional Design, Mitigation or Enhancement Measure	Construction Risk Following Mitigation Measure			Change in Risk (Significance)
	Likelihood	Consequence	Risk		Likelihood	Consequence	Risk	
No significant residual effects.								

Table 19-8 – Summary of Residual Likely Significant Effects – Soils and Agricultural Land

Receptor	Description of the Effect	Significance of Effect With Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase				
Agricultural Soils	Potential effects associated with construction activities impacting agricultural soils	Direct, temporary/permanent, long term effect of **Large or Very Large** (‘**Major Adverse**’) significance (**Significant**).	As per Table 11-8 in **Chapter 11: Ground Conditions, Soils and Agricultural Land (Volume 1)**, mitigation for agricultural soils includes: ▪ The completion of a Soil Resource Survey; ▪ Any Site-won material to be reused across the Proposed Development, which should be undertaken in accordance with a Materials Management Plan (MMP); and ▪ A Soil Management Plan should be produced prior to any enabling or construction works commencing.	Direct, temporary/permanent, long term residual effect of **Large or Very Large** (‘**Major Adverse**’) significance (**Significant**).

Table 19-9 – Summary of Residual Likely Significant Effects – Water Resources

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effect
Construction Phase				
No significant residual effects for during the Construction Phase.				
Operational Phase				
Watercourse Core Zone – **Medium**	Enhancement to vegetation, landscape, habitat Increased capacity cross section. Convey Core Zone development flows reducing on and off-Site flood risk	Direct, permanent, long term effect of **Moderate Beneficial** significance (**Significant**).	**Annex 3: SuDS Maintenance Schedule** of the **Appendix 12.3: Drainage Strategy (Volume 3)** contains Maintenance Schedule for Watercourse.	Direct, permanent, long term residual effect of **Moderate Beneficial** significance (**Significant**).
Kempston Hardwick Clay Pits (north) – disused clay pits 1987 – **Low**	Primary positive effects are enhanced strategic SUDS feature, and strategic rainwater harvesting wetland, resulting in an improvement from a water perspective that has a major beneficial magnitude of impact.	Direct, permanent, long term effect of **Moderate Beneficial** significance (**Significant**).	N/A – Embedded mitigation **Appendix 12.3: Drainage Strategy (Volume 3)**. Section 4 of the **Appendix 12.2: Water Strategy (Volume 3)** includes sustainable water solutions.	Direct, permanent, long term residual effect of **Moderate Beneficial** significance (**Significant**).

Table 19-10 – Summary of Residual Likely Significant Effects – Socio-Economics

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase				
Residents	Construction employment – potential temporary employment generation effects (including indirect and induced effects)	Direct and indirect, temporary, short term effect of **Moderate Beneficial** significance at the LCA in 2029 (**Significant**).	N/A	Direct and indirect, temporary, short term residual effect of **Moderate Beneficial** significance at the LCA in 2029 (**Significant**).
Residents	Construction skills and training – potential temporary effect of employment on the labour market, skills and training	Direct, temporary, medium term effect of **Minor Beneficial** significance at the CSA from 2026-2031 (**Not Significant**).	The Employment and Skills Plan (Document Reference: 6.12.0) provides initiatives designed to maximise the employment and skills benefits for residents in the CSA (as well as other nearby local authorities) during construction. The responsibility of implementing these initiatives will be that of the Principal Contractor(s) during construction. Specific measures are summarised below: UDX will make sure that Principal Contractor(s) actively engage with local students within Bedford and Central Bedfordshire and give priority access to qualified local students in the hiring process; UDX will require that the Principal Contractor(s) for construction will have 'The 5% Club' accreditation (or equivalent at the time of contracting services). This will make sure that the Principal Contractor(s) of the proposed Theme Park is committed to providing 5% of positions in 'earn and learn' positions, including apprenticeships, sponsored students, and graduates on formalised training schemes. Members of 'The 5% Club' across the UK collectively employ more than 1.8m employees, 79,000 apprentices, 18,000 people on graduate programmes, and 9,000 sponsored students. This means that more than 106,000 people have been given skills based training opportunities by 'The 5% Club' members; UDX commits to ensuring that local skilled workers within Bedford and Central Bedfordshire receive priority access to employment opportunities. Principal Contractor(s) will be required to actively promote these opportunities, emphasising the importance of hiring qualified people locally within Bedford and Central Bedfordshire; and UDX will require the Principal Contractor(s) and any relevant sub-contractors to pay at least the National Living Wage. A fair and liveable wage enables employees to lead a dignified life, with access to the opportunities and choices needed to fully participate in society.	Direct, temporary, medium term residual effect of **Moderate Beneficial** significance at the CSA from 2026-2031 (**Significant**).
Operational Phase				
Businesses	Trade creation – potential effects of trade creation (and diversion) relating to theme parks	Direct, permanent, long term effect of **Major Beneficial** significance for businesses in the National Area in 2031, 2051 (**Significant**).	N/A	Direct, permanent, long term residual effect of **Major Beneficial** significance for businesses in the National Area in 2031, 2051 (**Significant**).
Businesses	Economic output – potential effects of economic output on the national economy	Direct and indirect, permanent, long term effect of **Moderate Beneficial** significance for businesses in the National Area in 2031, 2051 (**Significant**).	The Employment and Skills Strategy (Document Reference: 6.12.0) provides initiatives designed to maximise the benefits for local businesses in the supply chain.	Direct and indirect, permanent, long term residual effect of **Moderate Beneficial** significance for businesses in the National Area in 2031, 2051 (**Significant**).

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Businesses	Additional spending – potential effect of increased visitor spending on businesses	Direct and indirect, permanent, long term effect of **Moderate/Major Beneficial** significance for businesses in the CSA in 2031, 2051 (**Significant**). Direct and indirect, permanent, long term effect of **Moderate Beneficial** significance for businesses in the SRCA in 2031, 2051 (**Significant**).	N/A	Direct and indirect, permanent, long term residual effect of Mode**rate/Major Beneficial** significance for businesses in the CSA in 2031, 2051 (**Significant**). Direct and indirect, permanent, long term residual effect of **Moderate Beneficial** significance for businesses in the SRCA in 2031, 2051 (**Significant**).
Residents	Employment – potential employment generation effects (including indirect and induced effects, and characteristics of jobs generated by the project)	Direct, permanent, long term effect of **Major Beneficial** significance for residents in the CSA, SRCA in 2031, 2051 (**Significant**). Direct and indirect, permanent, long term effect of **Moderate Beneficial** significance for residents in the National Area in 2031, 2051 (**Significant**).	N/A	Direct, permanent, long term residual effect of **Major Beneficia**l significance for residents in the CSA, SRCA in 2031, 2051 (**Significant**). Direct and indirect, permanent, long term residual effect of **Moderate Beneficial** significance for residents in the National Area in 2031, 2051 (**Significant**).
Residents	Skills and training – potential effect of employment on the labour market, skills and training	Direct, permanent, long term effect of **Moderate Beneficial** significance for residents in the CSA in 2031, 2051 (**Significant**).	UDX has a long track record of providing such training and skills initiatives, having completed a number of initiatives that work with local schools and provide training from their sites in Orlando and Japan. The Employment and Skills Strategy (Document Reference: 6.12.0) provides initiatives designed to maximise the employment and skills benefits for residents in the CSA (as well as other nearby local authorities). The responsibility of implementing these initiatives will be that of the UDX during the Operational Phase. Specific measures are summarised below: UDX will commit to providing 55 apprenticeships annually by the second full year of operation, rising to 70 apprenticeships annually from the fifth full year of operation; UDX will commit to providing 15 internships annually by the second full year of operation, rising to 35 from the fifth full year of operation; By the second full year of operation the Theme Park will provide support for high risk or socio-economically disadvantaged populations. Support will be delivered for 40 eligible students. This could include programming such as Mentorship Programmes, Career Guidance, Job Readiness Upskilling, and other Support for Educational Resources as needed; and UDX will commit to working with local organisations that provide opportunities for those with varying abilities. UDX will commit to providing support, training, and accommodations to help local people with varying abilities secure meaningful employment within the Theme Park.	Direct, permanent, long term residual effect of **Moderate/Major Beneficial** significance for residents in the CSA in 2031, 2051 (**Significant**).
Businesses	Visitor accommodation – potential effect of new visitors on the accommodation market	Indirect, permanent, long term effect of **Major Beneficial** significance for businesses in the CSA in 2031, 2051 (**Significant**). Indirect, permanent, long term effect of **Moderate/Major Beneficial** significance for businesses in the SRCA in 2031, 2051 (**Significant**).	N/A	Indirect, permanent, long term residual effect of **Major Beneficial** significance for residents in the CSA in 2031, 2051 (**Significant**). Indirect, permanent, long term residual effect of **Moderate/Major Beneficial** significance for businesses in the SRCA in 2031, 2051 (**Significant**).

Table 19-11 – Summary of Residual Likely Significant Effects – Greenhouse Gases

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
No significant residual effects.				

A separate assessment is provided in Section 14.5 of **Chapter 14: Greenhouse Gases (Volume 1)** identifying the potential for indirect GHG emissions attributable to visitors using air travel in the Operational Phase, noting that mitigation of GHG emissions associated with air travel is beyond the control of the relevant Undertaker, UDX, and is dependent on measures within the aviation sector and airline operators. The additional assessment for air travel considers that reliance by the aviation sector on offsetting emissions to achieve net-zero for residual emissions and uncertainty regarding the implementation of technological developments would mean that GHG impacts from air travel may only be partially mitigated. On this basis it is considered that in accordance with IEMA guidance for defining significance (described in Section 14.4 of **Chapter 14: Greenhouse Gases (Volume 1)**), with the mitigation measures assumed to be in place for the aviation sector, the overall potential GHG impact of the Proposed Development including indirect GHG emissions for air travel would be a **Moderate Adverse** (**Significant**) effect.

Table 19-12 – Summary of Residual Likely Significant Effects – Climate Resilience

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
No significant residual effects.				

According to our assessment, there are no residual effects. Possible effects from climate change are expected to be managed through the **Design Standards (Document Reference: 6.3.0)** and operational policies as noted in the embedded mitigation table (see **Chapter 15: Climate Resilience (Volume 1) Table 15-9**).

Table 19-13 – Summary of Residual Likely Significant Effects – Major Accidents and Disasters

By definition, a Major Accident and Disaster (MA&D) would have a major significant effect on the environment (including human health, welfare and/or the environment). Accordingly, any risks that could result in a major event without suitable mitigation, management or regulatory controls in place will be assessed as significant in the context of Environmental Impact Assessments. For the potential MA&D events identified in **Chapter 16: Major Accidents and Disasters (Volume 1)**, with the implementation of the suitable mitigation, management or regulatory controls in place, it is considered that the risks will be managed to be As Low As Reasonably Practicable (ALARP). Therefore, the residual effects for MA&Ds are **Not Significant**.

Receptor	Description of the Effect/Reasonable Worst Consequence	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase				
Members of the public	Damage to aircraft and/or collapse of crane causing harm to people	This risk could constitute a MA&D as it could cause loss of life or permanent injury which requires ongoing disability support.	Mitigation measures are identified in Section 16.6 of **Chapter 16: Major Accidents and Disasters (Volume 1)** and **Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3)** and are summarised as follows: ▪ UDX has engaged with Cranfield Airport and Old Warden Aerodrome, the two licensed aerodromes within a 15km radius of the Site boundary; ▪ The Proposed Development is over 10km from Old Warden Aerodrome and outwith the Approach and Departure slopes, and the Air Traffic Zone. The Proposed Development is therefore outside an area where strict control on objects is required. It is also outside the display area; ▪ The Proposed Development is located outside Cranfield Aerodrome's declared safeguarding zone; ▪ Engagement has also been undertaken with the Civil Aviation Authority (CAA) to understand restrictions and notification requirements relating to aviation safety. These are measures controlled via the civil aviation regime, based upon UK legislation and non-legislative regulatory material, which is governed by the CAA in its capacity as UK aviation regulator; and ▪ The CDM Risk Register will identify potential risks associated with the presence of these aerodromes and the requirement to notify as appropriate.	This is considered to be ALARP if all mitigation measures outlined are correctly implemented. Therefore, the residual effects are **Not Significant**.

Receptor	Description of the Effect/Reasonable Worst Consequence	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Operational Phase				
Members of the public	Natural gas toxicity hazard affects neighbouring properties and/or those people in the immediate area	This risk could constitute a MA&D as it could cause loss of life or permanent injury which requires ongoing disability support.	Mitigation measures are identified in Section 16.6 of **Chapter 16: Major Accidents and Disasters (Volume 1)** and **Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3)** and are summarised as follows: ▪ The type, size and intensity of buildings in the Lake Zone shall comply with the HSE's Land Use Planning Methodology to ensure that the risks associated with the existing LNG facility at ASDA, Marsh Leys Cottages Farm, Woburn Road, Kempston, Bedford MK43 9AB is appropriately considered as set out in **Design Standard LZ4.1 (Document Reference 6.3.0)**; and ▪ Engage with the operators of the LNG storage facility to agree emergency procedures as set out in the **Security and Emergency Management Plan (Document Reference 6.4.2.0)**; and the **Security and Emergency Management Plan (Document Reference 6.4.2.0)** will outline the actions to be taken in the event of a release of LNG.	This is considered to be ALARP if all mitigation measures outlined are correctly implemented. Therefore, the residual effects are **Not Significant**.
Members of the public	Damage to aircraft and/or collapse of structure(s) causing harm to people	This risk could constitute a MA&D as it could cause loss of life or permanent injury which requires ongoing disability support.	Mitigation measures are identified in Section 16.6 of **Chapter 16: Major Accidents and Disasters (Volume 1)** and **Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3)** and are summarised as follows: ▪ UDX has engaged with Cranfield Airport and Old Warden Aerodrome, the two licensed aerodromes within a 15km radius of the Site boundary; ▪ The Proposed Development is over 10km from Old Warden Aerodrome and outwith the Approach and Departure slopes, and the Air Traffic Zone. The Proposed Development is therefore outside an area where strict control on objects is required. It is also outside the display area; ▪ The Proposed Development is located outside Cranfield Aerodrome's declared safeguarding zone; and ▪ Engagement has also been undertaken with the Civil Aviation Authority (CAA) to understand restrictions and notification requirements relating to aviation safety. These are measures controlled via the civil aviation regime, based upon UK legislation and non-legislative regulatory material, which is governed by the CAA in its capacity as UK aviation regulator.	This is considered to be ALARP if all mitigation measures outlined are correctly implemented. Therefore, the residual effects are **Not Significant**.

Receptor	Description of the Effect/Reasonable Worst Consequence	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Members of the public	Damage to aircraft causing harm to people	This risk could constitute a MA&D as it could cause loss of life or permanent injury which requires ongoing disability support.	Mitigation measures are identified in Section 16.6 of **Chapter 16: Major Accidents and Disasters (Volume 1)** and **Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3)** and are summarised as follows: ▪ UDX has engaged with Cranfield Airport and Old Warden Aerodrome, the two licensed aerodromes within a 15km radius of the Site boundary; ▪ The Proposed Development is over 10km from Old Warden Aerodrome and outwith the Approach and Departure slopes, and the Air Traffic Zone. The Proposed Development is therefore outside an area where strict control on objects is required. It is also outside the display area; ▪ The Proposed Development is located outside Cranfield Aerodrome's declared safeguarding zone; and ▪ Engagement has also been undertaken with the Civil Aviation Authority (CAA) to understand restrictions and notification requirements relating to aviation safety. These are measures controlled via the civil aviation regime, based upon UK legislation and non-legislative regulatory material, which is governed by the CAA in its capacity as UK aviation regulator.	This is considered to be ALARP if all mitigation measures outlined are correctly implemented. Therefore, the residual effects are **Not Significant**.
Members of the public	Person with intent to cause harm in a crowded area causing fatality and/or injury to members of the public.	This risk could constitute a MA&D as it could cause loss of life or permanent injury which requires ongoing disability support.	Mitigation measures are identified in Section 16.6 of **Chapter 16: Major Accidents and Disasters (Volume 1)** and **Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3)** and are summarised as follows: ▪ The Proposed Development will be designed and constructed in accordance with relevant standards, including consideration of the requirements of the Terrorism (Protection of Premises) Act 2025 (Martyn's Law). Public Road A is to include design to mitigate against hostile vehicle attack; ▪ Development and implementation of a **Security and Emergency Management Plan (Document Reference 6.4.2.0)** that ensures a unified approach is taken to managing, mitigating and controlling potential hostile situations as required by Martyn's Law; ▪ Presence of trained security personnel; ▪ CCTV monitoring; and ▪ Security checks prior to entering the park.	This is considered to be ALARP if all mitigation measures outlined are correctly implemented. Therefore, the residual effects are **Not Significant**.

Table 19-14 – Summary of Residual Likely Significant Effects – Population and Human Health

Receptor	Description of effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase				
Residents	Noise and vibration	Direct, temporary, medium term effect of **Moderate Adverse** significance for residents in the NVAA in the Peak Year of Construction (2029) (**Significant**).	The following mitigation measures will be implemented in the Construction Phase at respective sensitive receptors, as per **Chapter 9: Noise and Vibration (Volume 1)**. *Noise* ▪ Principal Contractor(s) to employ BPM to limit construction noise. Further details on mitigation set out in Section 4 of **Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)**. ▪ Mitigation measures may be required, subject to the results of the Piling Risk Assessment Further details on mitigation set out in Section 4 of **Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)**. *Vibration* ▪ Principal Contractor(s) to employ BPM to limit construction noise. Further details on mitigation set out in Section 4 of **Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)**. ▪ Mitigation measures may be required, subject to the results of the Piling Risk Assessment Further details on mitigation set out in Section 4 of **Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)**. *Road traffic noise* ▪ Subcontractors will be encouraged to minimise heavy vehicle movements to the Site by means of consolidating payloads. A delivery management system will also be used to regulate the flow of heavy vehicles to and from the Site and minimise the number of arrivals per hour. Despite these mitigation measures, all adverse effects generated by noise and vibration are expected to remain significant in the construction phase. These impacts are only expected to endure over a 5-year construction period. These impacts are temporary, not persistent. Whilst there will be ongoing construction to reach the point of full buildout in 2051, the level of construction in this period will be insignificant in comparison to the level of construction experienced between 2026 and 2031. These mitigation measures are detailed in ES **Appendix 2.3: OCEMP (Volume 3)** and it is envisaged that this will be secured by a planning condition.	Direct, temporary, medium term residual effect of **Minor Adverse** significance for residents in the NVAA in the Peak Year of Construction (2029) (**Not Significant**).
Future workers	Employment and training opportunities	Direct, temporary, medium term effect of **Minor Beneficial** significance for future workers in the CSA in the Peak Year of Construction (2029) (**Not Significant**).	The **Employment and Skills Strategy (Document Reference: 6.12.0)** provides evidence of UDX's track record in delivering good quality employment and training and include explicit commitments that the Principal Contractor(s) will have to commit to during construction which are in line with best practice and will deliver good quality employment and training opportunities for workers. Wider employment and skills commitments will benefit wider residents of the CSA. Employment and skills related measures are outlined in **Employment and Skills Plan (Document 6.12)**, and secured through the **Proposed Operative and Controlling Documents (Document Reference 1.16.0)**.	Direct, temporary, medium term residual effect of **Moderate Beneficial** significance for future workers in the CSA in the Peak Year of Construction (2029) (**Significant**).
Operational Phase				
Residents	Effect on community of new sports provision	Direct, permanent, long term effect of **Moderate Beneficial** significance for residents in the CSA in the Full Buildout, (2051) (**Significant**).	N/A	Direct, permanent, long term residual effect of **Moderate Beneficial** significance for residents in the CSA in the Full Buildout, (2051) (**Significant**).

Receptor	Description of effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Future workers	Employment and training opportunities	Direct, permanent, long term effect of **Minor Beneficial** significance for future workers in the CSA in the Opening Year (2031) and the Full Buildout (2051) (**Not Significant**).	UDX has established a reputation for implementing successful employment and training initiatives and is committed to collaborating with local government and education and skills providers to launch similar programmes that cater specifically to the local employment and skill needs. UDX is experienced in delivering in-work training, apprenticeships, and internships, which can also be delivered at the Proposed Development. The UDX existing apprenticeship programme supports those aiming for technical careers by offering comprehensive on-the-job learning and classroom instruction in collaboration with local educational institutions. With hundreds of current participants, the programme covers areas such as ride maintenance, utilities, and restaurant equipment maintenance. The internships offered by UDX across various Universal locations provide immersive experiences and networking opportunities, targeting students and recent graduates to facilitate their entry into the workforce. These initiatives are part of a broader strategy to meet local needs by enhancing skill levels and employability. UDX have detailed a range of employment and skills related commitments that will be delivered at the Proposed Development. UDX will commit to following mechanisms to be an equal opportunities employer. This commitment makes sure UDX will actively work to eliminate discrimination and ensure that all employees and job applicants are treated fairly and have equal access to opportunities within the organisation. Mechanisms UDX will commit to in order to ensure they are an equal opportunity employer include: ▪ Adhering to the Equality Act 2010 or other applicable law, which protects individuals from discrimination based on protected characteristics such as age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation; ▪ Prohibiting discrimination against applicants and employees based on any protected characteristics; ▪ Ensuring inclusive and accessible application processes; and ▪ Providing regular diversity and inclusion training for staff. These mechanisms will ensure that groups such as women and ethnic minorities can benefit from employment opportunities at the Proposed Development. Details of UDX's track record in delivering employment and skills initiatives and the commitments that will be delivered as part of the Proposed Development are available in the **Employment and Skills Strategy (Document Reference: 6.12.0)**. Employment and skills related measures are outlined in **Employment and Skills Plan (Document 6.12)**, and secured through the **Proposed Operative and Controlling Documents (Document Reference 1.16.0)**.	Direct, permanent, long term residual effect of **Moderate Beneficial** significance for future workers in the CSA in the Opening Year (2031) and the Full Buildout (2051) (**Not Significant**).

Table 19-15 – Summary of Significant Effects – Cumulative Effects

Receptor	Description of the Effect	Significance of Effect with Embedded Mitigation	Additional Design, Mitigation or Enhancement Measure	Residual Effects
Construction Phase – Socio-Economics				
Residents Businesses	Potential employment generation effects (including indirect and induced effects, and characteristics of jobs generated) by both the project and the current and future schemes within the Proposed Development's Zone of Influence where their construction timelines overlap with Peak Construction. The Proposed Development's peak domestic construction workforce combined with the workforce requirements of these cumulative schemes would require between 5%-6% of the Labour Catchment Area's construction workforce.	Direct, temporary, short term residual effect of **Moderate Beneficial** significance for residents in the LCA in 2029 (**Significant**).	N/A	Direct, temporary, short term residual effect of **Moderate Beneficial** significance for residents in the LCA in 2029 (**Significant**).

All other cumulative effects or inter-project cumulative effects are not expected to cause any increase in significance over and above the level of significance individually reported. Cumulative effects will be mitigated through implementation of construction and operational management controls such as **Appendix 2.3: OCEMP (Volume 3)**.

WSP House
70 Chancery Lane
London
WC2A 1AF

wsp.com