



UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks
and adjoining land, Bedford

Environmental Controls Document

Part 1/2

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ENVIRONMENTAL CONTROLS DOCUMENT

1 HABITAT CREATION AND ENHANCEMENT CONTROLS

1.1 HABITAT CREATION AND ENHANCEMENT PLAN

- 1.1.1. Prior to the commencement of construction work on any part of the Site (save for the permitted preliminary works, archaeological works, ground remediation works, demolition works, the erection and installation of site compounds (including plant and equipment), mass grading, and creation of site accesses), a detailed **Habitat Creation and Enhancement Plan (HCEP)** for that part of the Site, based on the outline measures set out below, will be submitted to the Secretary of State for approval and the Proposed Development on that part shall be undertaken in accordance with the relevant approved HCEP. The detailed HCEP shall contain the following:

HABITAT TYPES ACROSS THE SITE

- 1.1.2. An **Ecological Enhancement Area (EEA)**, the total area of which shall be a minimum of 49.3 ha consisting of a range of habitat types as set out in **Table 1-1** below.

Table 1-1 – Habitat types to be created/enhanced across the Site

Broad Habitat Type	Approximate Area/Length ¹
Area Habitats	
Standing Water (ponds and lakes)	20.5ha
Woodlands	16.1ha
Reedbeds	3.6ha
Meadow Grassland	3.4ha
Scrub (dense and scattered)	3.2ha
Open Mosaic Habitat	2.5ha
Total	49.3ha
Linear Habitat Lengths	
Watercourse	4.2km
Hedgerow	2.4km

¹ The data in this table is rounded up or down to the nearest one decimal place.

1.1.3. The habitat types listed in **Table 1-1** will be located within the EEA as follows:

- **Northern Ecology Area** – the area of the EEA located along the northernmost boundary of the Lake Zone. In this location an area of grassland, scrub and woodland will be created. This land will be used for species translocation purposes, including for badgers and reptiles. Parts of this area will also be utilised for flood attenuation purposes; therefore, any artificial badger sett and reptile hibernation features or basking banks will be constructed above ground so as not be subject to inundation.
- **Scrub and Open Mosaic Habitat** – the area east of the lake, in the Lake Zone. In this location, existing habitat within the Kempston Hardwick Pit County Wildlife Site (CWS) will be enhanced as a mosaic of grassland, scrub and open mosaic vegetation and habitats.
- **Lake Wetland Habitat** - the lake will contain a varied bank profile including shallow marginal habitats, and a draw-down zone with a fluctuating water level. Aquatic vegetation will be encouraged around the lake shore. A varied bank profile will be created on the lake side of the retaining wall (western shore) so that aquatic vegetation can be established and also areas of bare earth/soil comprising a draw-down zone. In selected locations around the new lake environment, vertical/near-vertical banks will be created to form suitable locations for sand martin and kingfisher to excavate nesting burrows. Small islands will be created in the new lake environment which can support nesting/roosting wetland birds. The islands will be designed to remain above the surface of the highest flood levels but also to be disconnected from the shoreline under the normally expected range of water levels, so that land-based predators (e.g. foxes) cannot gain access.
- **Elstow Brook** - is along the west boundary of the Lake Zone and part of the West Gateway Zone. Parallel to the Elstow Brook in both the Core Zone and West Gateway Zone, riparian habitats will be maintained as predominantly grassland habitat with occasional scattered trees/shrubs (provided they do not block Internal Drainage Board (IDB) access for maintenance).
- **Diverted Watercourse** – along the eastern Core Zone boundary, a new diverted watercourse will be constructed. The watercourse will typically have a 10m buffer either side (the 'Riparian Zone') and incorporation of grassland and scrub/trees, created through planting, seeding and natural colonisation/existing vegetation where appropriate.
- **East Gateway Zone** – several parcels of broadleaved woodland will be retained in the East Gateway Zone. They will be managed to promote their ecological value.
- **West Gateway Zone** – this zone will contain some hedgerow habitat and areas of grassland, scrub and tree planting around the retained Elstow Brook.
- **Core Zone** – existing scrub and woodland in the south of the Core Zone will be retained, with additional areas of new woodland and scrub planting in this location.

SPECIES SPECIFIC HABITAT

1.1.4. The detailed HCEP will also contain species specific habitat features for bats, badger, birds, otter, reptiles, amphibians, invertebrates, and fish as follows:

Bats

- Bat '*hop-overs*' – this 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 where these features exist.
- Bat boxes will be installed on Site to provide additional roosting habitat.

- Should replacement roost structures be required as mitigation, these will be provided within the grounds of the existing Vine Cottages, in the East Gateway Zone, north of Manor Road.

Badgers

- An artificial badger sett will be located in the Lake Zone.

Otters

- Locations of otter fencing to limit the risk of road collision where roads are located close to watercourses and waterbodies that could support otter.

Birds

- Bird boxes will be installed in suitable locations within the Site that reflect the nesting requirements of species known to be present within the local area and that are local conservation priorities, as well as common and widespread farmland and woodland species. Bird boxes will be woodcrete, indicative designs as follows:
 - 1B Schwegler Nest Box – cavity nest box;
 - 2H Schwegler Robin Box – open fronted box;
 - CedarPlus Triple Sparrow House– for sparrow species; and
 - 3S Schwegler Starling Nest Box– for use by starling and other cavity nesters.
- In or by the lake environment in the Lake Zone, the following bird nesting structures will be installed:
 - A sand martin bank or tower; and
 - A kingfisher nesting bank.
- Close to open water habitats, measures may be included to encourage birds to fly higher across the Theme Park area of the Site, i.e. bird flight diverters. These measures will be considered in combination with increased planting around areas where flocks of waterbirds may be present (Kempston Hardwick Pit and Coronation Pit CWSs). The requirement for such features and their design will be evaluated and confirmed in the detailed Habitat Creation and Enhancement Plan.

Reptiles

- Hibernacula/refugia will be created with brash piles and logs arising from the construction and maintenance of the Site which will be placed within relevant EEAs. This must take account of assumed future shading, waterlogging, and maintenance requirements.
- Hibernacula will also be constructed using surplus soil/stone won from Site, where available, and will measure approximately 4m (length) x 2m (width) x 1m (height) in dimension.
- Reptile basking banks will also be included within the design of the Northern Ecology Area. Basking banks will measure up to approximately 30m (length) x 2m (width) x 1m (height) in dimension. Basking banks will be constructed similarly to the hibernacula although will not include any digging down.

Invertebrates

- Log piles will be created on Site to serve as invertebrate habitat. These would be placed within sunny positions in grassland, open mosaic, and scrub habitats. Logs will be stacked in a criss-cross pattern up to a height of 1m. Brash and woody material can be used to fill gaps between layers of logs.

- 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. The proposed cliff/bank habitat provision in the east of the lake in the Lake Zone EEA would also provide suitable habitat conditions for this and other species groups.

Fish

- Where watercourses are re-aligned, habitat enhancements will include specific fish habitat enhancements, such as the creation of riffles and pools, and the presence of in-channel woody debris and an appropriate in-channel macrophyte community.

DISTURBANCE MEASURES

1.1.5. To protect habitat in the Lake Zone EEA, measures will be employed to limit disturbance.

- A visitor pressure, public interpretation and site wardening strategy will be developed for the new lake environment and parts of the Kempston Hardwick County Wildlife Site (CWS) that will be made accessible to visitors from the Proposed Development. This will contain measures including clearly waymarked trails, sensitive areas to be excluded from public, signage, appropriate landscape barrier and/or fencing to direct visitors and provision of screens and bird hides. Consideration will be given to provision of site wildlife staff/wardens, depending on usage numbers.
- The new lake environment will not be used for fishing, water sports or hunting (wildfowling) or other activities which are in conflict with wildlife conservation. This will 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.
- The measures of the visitor pressure, public interpretation and site wardening strategy measures will be managed to ensure they are still functional for their intended purpose to reduce operational disturbance on ecological features throughout the Operational Phase of the Proposed Development.
- Consideration will also be given to including measures to prevent disturbance such as fencing and/or planting of dense vegetation to manage access and screen sensitive EEA areas from visual and noise disturbance; locating pedestrian/maintenance accesses in areas to minimise impacts from disturbance; and consideration of seasonal restrictions on access to certain areas to minimise disturbance during sensitive time periods for protected species.

WILDLIFE CROSSING STRUCTURES

1.1.6. Specific locations and design of wildlife crossing points will be provided in the detailed Habitat Creation and Enhancement Plan.

1.1.7. The Northern Ecology Area EEA will be separated from the Lake Wetland Habitat EEA in the Lake Zone habitats by an internal new road layout. Two wildlife crossing structures will be provided to facilitate connectivity across the new road for badger, reptiles, amphibians and small mammal species. The position and design of the wildlife crossing structure(s) will follow best practice guidance such as that published in the Design Manual for Roads and Bridges² and will be a minimum dimension of 3m x 3m which may be integrated into the design of Public Road B.

² Standards for Highways (n.d.) *Design Manual for Roads and Bridges*. Available at: <https://www.standardsforhighways.co.uk/dmrh> [Accessed: 23 June 2025].

1.2 LANDSCAPE AND ECOLOGY MANAGEMENT

ESTABLISHMENT MEASURES

- 1.2.1. Establishment of the created landscape and ecological habitats (delivered by the detailed Habitat Creation and Enhancement Plan) will be managed in accordance with the programme set out in **Table 1-2** below for the first five years following planting.

Table 1-2 – Programme of Establishment/Maintenance Works

(C = Contractor under instruction of UDX or relevant Undertaker, E = Ecologist, S = Spring, Su = Summer, A = Autumn, W = Winter)

Task	Responsibility	Season	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Woodland, tree, scrub and hedgerow planting	C	A, W, S	X					
Grassland sowing	C	S, A	X					
Weed control	C	Su		X	X	X		
Grassland cutting	C	Au		X	X	X	X	X
Hedgerow cutting to promote dense growth	C	W		X	X	X		
Reedbed creation	C	Au	X					
Reedbed reinforcement planting	C	Au		X	X	X		
Reedbed cutting	C	W				X		X
Ditch slubbing	C	A, W	X					X
Ditch vegetation management	C	A, W		X	X	X	X	X
Mink control	C/E	S, Su, A, W			X	X	X	X
Protected species licenced works/method statements/pre-works surveys	E	Su/A	X	X				

Task	Responsibility	Season	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Hibernacula, reptile basking banks, and invertebrate log piles and hotels construction	C	A/W	X					
Hibernacula, reptile basking banks, and invertebrate log piles and hotels maintenance	C	S or Su		X	X	X	X	X
Bird box maintenance and replacement where necessary	E	A, W		X	X	X	X	X
Bat box maintenance/replacement and monitoring, bat roost structures maintenance and monitoring	E	A, W		X	X	X	X	X

INVASIVE NON-NATIVE SPECIES (INNS) MANAGEMENT MEASURES AND WEED CONTROL

Weed Control

- 1.2.2. Weed control relates to infestations of injurious weeds such as broad-leaved dock *Rumex obtusifolius*, curled dock *Rumex crispus*, common ragwort *Senecio jacobaea*, creeping thistle *Cirsium arvense* and spear thistle *Cirsium vulgare*.
- 1.2.3. Injurious weed control must use mechanical means of control such as topping or pulling. Where weed control by pulling/hand-weeding, the work must consist of the removal of the entire weed, including roots, by digging, forking, hoeing or pulling. Weeds must be removed prior to flowering and the arisings removed from Site.
- 1.2.4. Chemical treatments must only be used as a last resort and must not be used in areas accessible to the public without appropriate controls in place.
- 1.2.5. Herbicides must not be used for any maintenance or management operations that may cause harm to existing land uses (i.e., publicly accessible areas, or agricultural areas) or existing habitats, or could spill into watercourses/water bodies.

INNS Management

- 1.2.6. In the event that invasive weeds are found on Site, specialist advice must be sought for any occurrences of invasive species and an appropriate management strategy for their avoidance or control prepared. Invasive weeds most commonly include:
 - Japanese knotweed;
 - Giant hogweed;
 - Himalayan balsam (a particular problem for river bank erosion);
 - Rhododendron; and
 - New Zealand Pgmyweed.
- 1.2.7. In the event that species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are found on Site during the monitoring, the management strategy will include details of suitable treatment methods and measures to prevent the spread of these species must be implemented.

INNS Monitoring

- 1.2.8. The detailed HCEP will provide monitoring provisions that enable early detection of INNS and treatment and disposal of plants by:
 - Spraying with chemicals;
 - Pulling or digging out live, dead or dying plants;
 - Cutting back plants to prevent the seeds dispersing;
 - Burying them;
 - Burning them; or
 - Disposing of them off-Site.

American Mink

- 1.2.9. American mink will be trapped and removed as per the establishment measures schedule set out in **Table 1-2** and **Table 1-3**.

YEAR 5 SURVEY AND REVIEW

- 1.2.10. There will be a five-year creation and initial maintenance period relevant to each Zone or sub-Zone as it is planted to facilitate establishment of habitats and species-specific mitigation features. Following this period, subject to a review by a suitably qualified ecologist and landscape architect, if the retained and newly created habitats and species-specific mitigation features within that location of the Site are sufficiently well established then the habitat will be subject to the long term monitoring and management measures.
- 1.2.11. The following surveys, at a minimum, must be included in the year five review:
- Protected species surveys (including any protected species licensing conditions); and
 - Monitoring surveys of the reptile population.
- 1.2.12. The results of the surveys must be reviewed to identify any revisions to the management measures deemed to be required to meet the objectives for the medium and long-term. Revised measures must be produced to guide the next five years. This information must be presented as a 'Five Year Monitoring Report'.

LONG TERM MANAGEMENT AND MONITORING MEASURES

- 1.2.13. Long term management and monitoring measures are set out in **Table 1-3**. Monitoring inspections will be used to measure the success of the management measures and determine if interventions are required to deliver the landscape and ecology vision. Data collected during monitoring will inform annual management reviews of the management measures to determine if, for example, supplementary planting is required or if suitable management measures require to be changed.
- 1.2.14. Monitoring will be in place throughout the creation and establishment stages to measure the successful development of mitigation habitats, and long-term management measures will be in place through the maturation of the EEA to up to 35 years from initial planting as set out in **Table 1-3**.
- 1.2.15. Should the monitoring determine that habitat has failed or features such as bird boxes or hibernacula are damaged, remediation measures will be required through replacement, or reinstatement.

Table 1-3 – Programme of Long term Management and Monitoring

Task	Responsibility	Season	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Years 15-19	Year 20	Years 21-24	Year 25	Years 26-29	Year 30	Years 31-34	Year 35
Mink control (indicative)	TBC	N/A	X	X	X	X	X				X		X		X		X		X
Review and update of LEMP	TBC	N/A					X					X	X		X		X		X
Grassland mowing	TBC	S/Su/A	X	X	X	X	X	X	X	X	X	X							
Woodland planting weed control monitoring	TBC	A		X						X		X		X		X		X	
Woodland nurse species removal including stump treatment	TBC	W		X	X	X	X												
Woodland nurse species removal including stump treatment monitoring	TBC	A	X	X	X	X	X												
Woodland thinning and felling (frequency in subsequent years to be reviewed)	TBC	W					X		X			X		X					
Woodland thinning and felling monitoring	TBC	A		X			X			X		X		X		X		X	
Woodland coppicing/rotation	TBC	W		X			X			X		X		X		X		X	

Task	Responsibility	Season	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Years 15-19	Year 20	Years 21-24	Year 25	Years 26-29	Year 30	Years 31-34	Year 35
Woodland coppicing/rotation monitoring	TBC	A		X			X			X		X		X		X		X	
Scrub edge management	TBC	W		X			X			X		X		X		X		X	
Hedgerow rotational cutting (three-year rotation)	TBC	W	X			X			X			X							
Hedgerow rotational cutting monitoring	TBC	A		X			X												
Hedge laying	TBC	W			X	X	X	X	X	X									
Hedge laying monitoring	TBC	A			X	X	X	X	X	X									
Maintenance of hibernacula, reptile basking banks, and invertebrate log piles and hotels	TBC	S, Su	X	X	X	X	X	X	X	X	X	X							
Monitoring of hibernacula, reptile basking banks, and invertebrate log piles and hotels	TBC	S, Su	X	X	X	X	X	X	X	X	X	X							
Bird box maintenance and replacement where necessary	TBC	A, W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Task	Responsibility	Season	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Years 15-19	Year 20	Years 21-24	Year 25	Years 26-29	Year 30	Years 31-34	Year 35
Bat box maintenance/replacement and monitoring, bat roost structures maintenance and monitoring	TBC	A, W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Waterbody maintenance	TBC	A	X	X	X	X	X	X	X	X	X								
Pond life quality and water regimes monitoring	TBC	S			X			X			X								
Reedbed cutting	TBC	W			X														

2 NOISE CONTROLS

2.1 UTILITY COMPOUND NOISE LIMITS

- 2.1.1. The noise limits for the normal operation of the Utility Compound shall apply at the following Utility Compound Receptor Control Locations (RCL):

Table 2-1 – Utility Compound Receptor Control Locations

RCL	Description	Coordinates, British National Grid	
		X (m)	Y (m)
RCL01	Representative of the nearest sensitive receptor to the Utility Compound which is located on Manor Road	502752	244667
NSR13	Representative of the nearest sensitive receptor to the west of the Utility Compound.	502124	245297

- 2.1.2. Noise associated with the operation of the Utility Compound, when assessed in accordance with BS4142:2014+A1:2019³, will not exceed the following rating levels:

- 56 dB $L_{Ar,Tr}$ during the day and 47 dB $L_{Ar,Tr}$ at night⁴

- 2.1.3. The Utility Compound noise limit will only apply to RCL01 for as long as any of the properties associated with RCL01 remain in residential use. If all properties associated with RCL01 are removed from residential use, the Utility Compound noise limit will apply only at NSR13.

2.2 DEMONSTRATION OF COMPLIANCE WITH UTILITY COMPOUND NOISE LIMITS

- A noise model will be developed during the detailed design of the Utility Compound using proprietary 3D noise modelling software in order to predict noise levels at nearby sensitive receptors on Manor Road. The noise model will be based on the final Utility Compound layout and will include all significant noise generating plant associated with the Utility Compound.
- The model will be populated with noise emission data specific to the plant to be installed, as provided by the plant supplier or manufacturer. Where such data is not available, an alternative and relevant data source will be used, for example, manufacturer's data for a comparable plant item.
- The Utility Compound noise levels predicted by the model will be corrected for any acoustic features as defined in BS4142:2014+A1:2019 and the daytime and night-time values of $L_{Ar,Tr}$ determined for comparison with the noise limits.

³ British Standards Institution (2019) *BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound*. UK: British Standards Institution.

⁴ $L_{Ar,Tr}$ is the rating level as defined in BS4142:2014+A1:2019³.

- d) Within 10 days of the Utility Compound becoming operational (post-commission testing and in use) and subject to suitable meteorological conditions (as defined in Item e)), noise monitoring will be undertaken at RCL01 and at NSR13.
- e) Noise measurements will be made by a competent person⁷ and will be of short duration, comprising sequential 15-minute measurements over a 1-hour period during the day and night. Measurements will include, as a minimum, dB $L_{Aeq,T}$. Reasonable endeavours will be made by the competent person taking the measurements to exclude contributions from noise sources other than those associated with the Utility Compound. It would also be acceptable to undertake this exercise during post-processing of the noise measurement data, but only if a much shorter measurement time period than 15 minutes, for example, sequential 1-second measurements, is selected at the time of measurement. Detailed contemporaneous site notes would also need to be taken for reference purposes. It will still be necessary to derive the appropriate $L_{Aeq,T}$ value, i.e. $L_{Aeq,1hr}$ during the day and $L_{Aeq,15min}$ at night, for comparison with the noise limits.
- f) Notes will be made by the attending competent person of the subjective acoustic climate at the measurement location, identifying audible noise sources and noting which are associated with the Utility Compound. Measurements will be made at a height of 1.2 – 1.5m above the ground using a tripod.
- g) Following completion of the noise monitoring survey at RCL01 and NSR13, as applicable, a report will be prepared for submission to the Secretary of State summarising the results of the short-term attended measurements.
- h) Comparisons will be made between the measured noise levels and the noise levels predicted by the computer model with any discrepancies between the two identified and analysed. This will determine any changes to the noise model that may be required to improve its accuracy to within ± 3 dB of measured noise levels at the measurement location. The outcomes of this exercise will be summarised within the noise monitoring report. This process will confirm the verification of modelled noise levels with those measured.
- i) Any subsequent additions or replacements of significant items of noise generating plant will require the noise model to be revised and a report presenting the updates made to the model and the revised predictions at RCL01 and NSR13, issued to the Secretary of State. This process will confirm continued compliance with the Utility Compound noise limits.

2.3 CORE ZONE NOISE LIMITS

2.3.1. The following noise limits for the operation of the Core Zone apply at the RCLs identified in **Table 2-2**.

- Daytime (from 07:00 to 23:00 hours):
 - 60 dB $L_{Aeq,1hour}$
 - 79 dB $L_{eq,1hour}$ at 63 Hz
 - 69 dB $L_{eq,1hour}$ at 125 Hz
- Night-time (from 23:00 to 07:00 hours – applicable to all RCLs with the exception of RCL04 (Wixams) and RCL05 (Stewartby)):
 - 55 dB $L_{Aeq,15minutes}$
 - 74 dB $L_{eq,15minutes}$ at 63 Hz

- 64 dB Leq, 15 minutes at 125 Hz
- Night-time (from 23:00 to 07:00 hours – applicable to RCL04 (Wixams) and RCL05 (Stewartby):
 - 50 dBLAeq, 15 minutes
 - 69 dB Leq, 15 minutes at 63 Hz
 - 59 dB Leq, 15 minutes at 125 Hz

2.3.2. The Core Zone noise limits stated above would only apply to an RCL for as long as any of the properties associated with that RCL remain in residential use. In the case of RCL01, this would include all residential properties east of the Marston Vale Railway Line and west of the B530, excluding the two properties associated with RCL02.

Table 2-2 – Receptor Control Locations (RCLs)

RCL Ref.	Description	Approximate Distance from Core Zone ⁽¹⁾	Coordinates, British National Grid	
			X (m)	Y (m)
RCL01	Manor Road	100m	502752	244667
RCL02	Manor Road, west of B530	200m	503445	244228
RCL03	Amphill Road, north	450m	503607	244024
RCL04	Amphill Road, south	780m	503765	243673
RCL05	Brick Crescent, Stewartby	250m	502493	243019
RCL06	Broadmead Road, Stewartby	50m	502252	243350
Notes				
(1) This is the approximate distance to the closest boundary of the Core Zone				

2.4 DEMONSTRATION OF COMPLIANCE WITH CORE ZONE NOISE LIMITS

PREPARATION OF A VERIFIED NOISE MODEL

- A noise model will be developed during the detailed design of the Core Zone using proprietary 3D noise modelling software in order to predict noise levels at the RCLs defined in **Table 2-2** – Receptor Control Locations (RCLs).
- A report will be prepared and issued to the Secretary of State at least one month prior to Grand Opening summarising the noise modelling work undertaken during the detailed design process, and the predicted Core Zone noise levels at each of the RCLs defined in **Table 2-2** and at the two selected boundary monitoring locations.
- Prior to Grand Opening, two locations at the boundary of the Core Zone and on UDX owned property will be identified and agreed in advance with the Secretary of State where continuous noise monitoring (for the period stated in Item k)) will be undertaken. The two boundary locations will represent the two closest residential communities to the Core Zone, namely Manor Road to the north and Stewartby to the south, unless there is justification for selecting

alternative locations, e.g. if all residential properties associated with the nearest RCL have been removed from residential use.

NOISE MONITORING

- a) Prior to Grand Opening, noise monitoring equipment will be installed at the two boundary locations together with a data logging weather station at one of these locations. This will allow noise to be monitored continuously in 15-minute intervals at fixed monitoring positions using Class 1 sound level meters (SLMs) conforming to BS EN 61672-1:2003⁵ or an equivalent standard and with 1/1 or 1/3 octave band filters. Each SLM shall have the functionality to enable the remote monitoring and collation of noise data. The monitoring equipment will hold a current certification of calibration/conformance and checks will be made to confirm the equipment is fully operational and logging noise levels correctly, prior to Grand Opening.
- b) Within the first few days of Grand Opening, once UDX confirms that the Core Zone is considered to be operating normally and subject to suitable meteorological conditions, noise monitoring will be undertaken at all RCLs defined in **Table 2-2** concurrently with the two locations at the boundary of the Core Zone. Suitable meteorological conditions are considered to be dry with wind speeds <5m/s. Reasonable endeavours will be made to undertake measurements during downwind conditions⁶ at each RCL and the weather conditions during each measurement will be clearly stated in the report.
- c) Noise measurements at the RCLs will be made by a competent person⁷ and will be of short duration, comprising sequential 15-minute measurements over a 1-hour period during the day and night at each RCL. Measurements will include, as a minimum, dB $L_{Aeq,T}$ and octave band $L_{eq,T}$ data. Reasonable endeavours will be made by the competent person taking the measurements to exclude contributions from noise sources other than those associated with the Core Zone. It would also be acceptable to undertake this exercise during post-processing of the noise measurement data, but only if a much shorter measurement time period than 15 minutes, for example, sequential 1-second measurements, is selected at the time of measurement. Detailed contemporaneous site notes would also need to be taken for reference purposes. It will still be necessary to derive the appropriate $L_{Aeq,T}$ value, i.e. $L_{Aeq,1hr}$ during the day and $L_{Aeq,15min}$ at night, for comparison with the noise limits.
- d) Notes will be made by the attending competent person of the subjective acoustic climate at each RCL, identifying audible noise sources and noting which are located within the Core Zone. Measurements will be made at a height of 1.2 – 1.5m above the ground using a tripod.
- e) In the event that the daytime or night-time measurements made at each RCL indicate that the Core Zone noise limits have been exceeded at any of the RCLs, UDX will take action within 5 days of the completion of the noise survey to identify the cause of the exceedance. If the cause of the exceedance is determined to be noise source(s) within the Core Zone, UDX will initiate remedial action to rectify the exceedance. Measurements will then be repeated during the

⁵ British Standards Institution (2003) *BS EN 61672-1:2003 Electroacoustics – Sound level meters – Part 1: Specifications*. UK: British Standards Institution.

⁶ Downwind conditions (i.e. from Core Zone to receiver) are preferable as these provide the cautious worst-case outcome for sound propagation (A cautious worst case that provides a robust assessment of likely significant effects).

⁷ A competent person in this context is defined as a person competent in the measurement of environmental noise, holding an Institute of Acoustics professional qualification (e.g. MloA).

daytime and, if applicable, night-time at each RCL that indicated an exceedance of the noise limits. This process will be repeated until the noise limits have been demonstrated to have been met at all RCLs.

- f) Following completion of the noise monitoring survey at the RCLs, and subject to the Core Zone noise limits having been demonstrated to have been met, an RCL noise monitoring compliance report will be prepared for submission to and verification by the Secretary of State summarising the results of both the short-term attended measurements at each RCL and the concurrently measured noise and weather data from the two boundary locations (note that the boundary monitoring will continue up to the end of the continuous monitoring period).
- g) Comparisons will be made between the measured noise levels and the noise levels predicted by the computer model with any discrepancies between the two identified and analysed. This will determine any changes to the noise model that may be required to improve its accuracy to within ± 3 dB of measured noise levels at each RCL. The outcomes of this exercise will be summarised within the RCL noise monitoring compliance report. This process will confirm the verification of modelled noise levels with those measured.
- h) Continuous noise monitoring at the two boundary locations will be maintained for a period of 120 days from Grand Opening. UDX targets the Grand Opening of its entertainment resort complexes during the spring or summer when visitation is highest and therefore when noise tends to be elevated as compared to slower periods in the autumn or winter. In the unlikely event that the Grand Opening of the Entertainment Resort Complex did not occur during the spring or summer, then the 120-day monitoring period will be extended to a sufficient period to ensure that the first summer period is included within the monitoring period.
- i) Continuous weather monitoring will be maintained at one boundary location for the duration of the continuous noise monitoring period. A minimum of 95% compliance with the noise limits during that 120-day period will be sought under suitable meteorological conditions (as defined in Item e)).
- j) Reasonable endeavours will be made to keep the noise monitoring equipment running at all times and any failures will be attended to within 48hrs of a failure being identified. Where equipment failure beyond 48hrs is identified, the monitoring period will be extended by the length of time the equipment was not operating.
- k) A monthly boundary noise monitoring report will be produced to include a summary of the boundary measurement data, weather conditions and percentage compliance against noise limits. This will be submitted to the Secretary of State for review. The format of the boundary noise monitoring report will be agreed with the Secretary of State in advance of the first boundary noise monitoring report being issued. These reports will continue to be issued until completion of the 120-day monitoring period.
- l) On completion of the 120-day monitoring period and subject to 95% compliance with the Core Zone noise limits having been demonstrated, continuous noise monitoring will cease.
- m) In addition to the 120-day monitoring period, each type of special or seasonal event that takes place during the night (i.e. after 23.00) within the first 12 months of Grand Opening will be subject to a round of night-time measurements at each RCL concurrently with monitoring at the two boundary locations, in line with the procedures detailed in Item a) and Item c). In the event of any exceedances of the night-time noise limits being identified, the procedures for remedial

action described in Item e) are to be followed. The results of these measurements will be summarised into a report for submission to the Secretary of State.

- n) On completion of the noise monitoring process described above, noise monitoring would cease.

ONGOING NOISE MODELLING FOR NEW RIDES

- a) Subsequently, noise modelling will be undertaken by updating the verified noise model each time a new ride is proposed, using appropriate noise model source data associated with that ride. This will be undertaken to demonstrate to the Secretary of State that the Core Zone noise limits will continue to be achieved at the RCLs. A compliance report confirming the outcome of the updated noise model will be provided to the Secretary of State prior to the opening of each new ride.

2.5 NOISE COMPLAINTS PROCEDURE

- 2.5.1. UDX will make services available to allow residents in the local vicinity will be able to make noise complaints by:

- Phone call to a UDX community hotline or the UDX security department; and
- Email to a UDX community hotline inbox and/or online form via UDX website “report a concern” section.

- 2.5.2. On receipt of a noise complaint, notification will occur to the UDX responsible individuals for investigation and resolution. The following actions will then be implemented:

- UDX will ensure noise levels at the relevant sensitive receptor(s) are within the required levels; and
- UDX will respond to the complainant that any issues have been addressed.

3 ARCHAEOLOGICAL MITIGATION CONTROLS

3.1 SITE-SPECIFIC WRITTEN SCHEME(S) OF INVESTIGATION

- 3.1.1. Prior to commencement of the archaeological works (and any nominal compounds related to such works) on an Archaeological Mitigation Area (as identified on the plan provided at **Appendix A**), a detailed Site-Specific Written Scheme of Investigation (SSWSI) for that Archaeological Mitigation Area in accordance with the principles and methods set out below will be submitted to the Secretary of State for approval and the Proposed Development in the relevant Archaeological Mitigation Area shall be undertaken in accordance with the relevant approved SSWSI. The scope and content of the SSWSIs will be consulted upon with the Curators (Archaeological Advisors for Bedford Borough Council (Bedford BC), and, where relevant, Historic England) prior to its submission to the Secretary of State for approval.
- 3.1.2. When an element of fieldwork is complete, a written notice of completion will be provided to the Curators for confirmation of sign off and submitted to the Secretary of State to demonstrate compliance with the SSWSI requirements.

3.2 SSWSI CONTENTS

- 3.2.1. Each SSWSI will provide method and logistical detail as follows:
- Research aims;
 - Objectives;
 - An 'accession number' - a unique project number obtained from The Higgins Art Gallery and Museum Bedford, the project archive repository;
 - Mitigation method/s, sampling requirements, size and location of mitigation area/s;
 - General procedures relating to survey, metal detecting, surface cleaning, recording, environmental sampling, archaeological finds, human remains, scientific dating, treasure, unexpected discoveries, and preservation in situ;
 - Archive security and storage during the programme of fieldwork;
 - Monitoring and reporting requirements between UDX and the Curators during the programme of fieldwork;
 - Constraints information, including utilities and UXO searches;
 - Access arrangements, welfare, site safety, a site and activity specific Risk Assessment and Method Statement (RAMS) and a programme; and
 - Appendices will include an environment management plan and a carbon mitigation plan specific to the archaeological fieldwork being undertaken.

ARCHAEOLOGICAL MITIGATION AREAS AND METHODS

- 3.2.2. The twelve areas of potential or known archaeological interest are described in **Table 3-1** below and shown on **Appendix A: Archaeological Mitigation Areas**. No other areas will require mitigation, and no site-wide watching brief will be undertaken. The areas and the mitigation methods for each area are:

- Six areas (E1 – E6) with intrinsic value which will require excavation. One of these areas (E1) will also be subject to purposive sampling of alluvial deposits (for geoarchaeological assessment and analysis);
- Four areas (S1 – S4) with group value which will require strip, map and sample excavation;
- One area (M1) with unknown value which will be subject to monitoring and, if required, strip, map and sample excavation; and
- One area (P1: Head deposits present at Lake, Core and West Gateway Zones) with unknown value which, where affected by extensive deep construction impact, will be subject to proportionate purposive sampling, deposit modelling and, if required, targeted excavation or strip, map and sample excavation.

3.2.3. A Site wide contingency area of up to an additional 1ha of excavation is allowed for use where localised extension of mitigation areas E1 – E6 and S1 – S4 would allow complete excavation of particularly important archaeological remains. The Archaeological Clerk of Works will only consider use of contingency to locally extend these areas where this will contribute to the SSWSI research questions, or to additional research questions informed by the character and date of the relevant archaeological remains. The location, size and scope of contingency excavation will be defined by the Archaeological Clerk of Works in consultation with Curators. The contingency area is not included in **Table 3-1** or shown on figures as use of the contingency would be a localised response to specific archaeological remains identified at mitigation areas E1 - E6 and S1 - S4.

Table 3-1 – Archaeological Mitigation Areas

Area Number	Zone	Size (hectares)	Summary of archaeology	Mitigation requirements
S1	Lake	0.53	Isolated sub-square enclosure (Roman)	Strip, map and sample excavation (SMS)
E1	Lake	5.3	Extensive rectilinear settlement enclosure system, trackways, potential cremation cemetery and potential unenclosed settlement activity (Late Iron Age and Roman) Palaeochannel (likely contemporary with the Iron Age and Roman settlement activity)	Excavation Sampling (Geoarchaeology)
S2	Lake	1.0	Isolated sub-square enclosure (Roman)	SMS
S3	Core	0.46	Roman farmstead (part)	SMS
E2	Core	3.8	Roman farmstead (entire)	Excavation
E3	Core	3.4	Iron Age/early Roman trackway with appended sub-square enclosures. Enclosed and potential unenclosed settlement.	Excavation

Area Number	Zone	Size (hectares)	Summary of archaeology	Mitigation requirements
E4	Core	4.9	Extensive rectilinear settlement enclosure system and trackways (Iron Age and Roman)	Excavation
E5	Core	2.5	Medieval enclosures	Excavation
E6	Core	0.86	Medieval moated site	Excavation
S4	West Gateway	0.73	Roman farmstead (part)	SMS
M1	East Gateway	5.0	Unknown	Monitoring and potential SMS
P1	Lake, Core and West Gateway Zones	Defined in response to areas of deep construction affecting Head deposits	Potential Terminal Palaeolithic remains (uncertain, possibly low, potential) situated within or beneath spatially extensive Head deposits	Proportionate purposive sampling, deposit modelling and potential targeted excavation or SMS

Purposive Sampling of area P1

- 3.2.4. The SSWSI addressing area P1 will define a strategy for proportionate purposive sampling and deposit modelling of Head deposits where they would be affected by spatially extensive deep construction impacts at Lake, Core and West Gateway Zones. Preparation of this SSWSI will include preliminary deposit modelling using information collected during legacy and recent ground investigation, to inform the purposive sampling strategy. Results of the purposive sampling may prompt production of an addendum SSWSI for Excavation or SMS if earlier prehistoric remains are present within or beneath the Head. The Area P1 SSWSIs will be prepared in consultation with Curators, will consider industry guidance for Palaeolithic sites (HE 2023⁸, 2024⁹) and will identify research questions relevant to the character of any remains identified.

3.3 ARCHIVE SECURITY AND STORAGE

- 3.3.1. The project archive, (i.e. the finds, records and data), generated by the fieldwork will be removed from Site at the end of each working day and will be kept secure until the deposition of the archive. The archaeological contractor will be responsible for the cataloguing and care of the project archive, for providing necessary resources from the start of the fieldwork and throughout the project lifecycle, including the materials for long-term storage, and input of an archaeological conservator.

⁸ Historic England (2023) *Curating the Palaeolithic*. Available at: <https://historicengland.org.uk/images-books/publications/curating-the-palaeolithic/heag313-curating-the-palaeolithic/> [Accessed: 23 June 2025].

⁹ Historic England (2024) *Managing Lithic Sites*. Available at: <https://historicengland.org.uk/images-books/publications/managing-lithic-sites/heag318-managing-lithic-sites/> [Accessed: 23 June 2025].

3.4 REPORTING AND PUBLICATION

POST EXCAVATION ASSESSMENT REPORT

- 3.4.1. Following the completion of the fieldwork, a concordance will be produced and each category of find, or environmental/industrial material will be examined by a suitably qualified specialist and the results will be included in the post-excavation assessment report to be produced at the end of the investigations.
- 3.4.2. A draft programme for the post-excavation assessment report will be submitted to the Curators no more than three months after completion of all fieldwork. The post-excavation assessment report will be submitted to Curators no more than twelve months after submission and acceptance of the post excavation programme, unless an extension is agreed with the Curators.
- 3.4.3. The post-excavation assessment report will include a review of project aims and objectives and contribution of results to identified research questions to determine the scope of any analysis and publication.
- 3.4.4. The preparation of the project archive, post-excavation assessment report and subsequent analysis and publication will be undertaken in accordance with Historic England guidelines¹⁰, and other relevant archaeological standards and national guidelines (e.g., ClfA 2020a¹¹, 2020b¹²).
- 3.4.5. The precise format is dependent upon the findings of the mitigation, but the post excavation assessment report will usually contain the following:
- A non-technical summary;
 - Site location;
 - Brief archaeological, historical and project background;
 - Methodology;
 - Aims and objective;
 - Results – factual data statements (stratigraphic, artefactual, environmental, initial scientific dating results);
 - Statements of potential (stratigraphic, artefactual, environmental, scientific dating);
 - Statements regarding immediate and long-term storage and curation requirements;
 - Review of original aims and objectives;
 - Statement of the significance of the results in their local, regional, national and international context;

¹⁰ Historic England (2015) *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide*. Available at: <https://historicengland.org.uk/images-books/publications/morphe-project-managers-guide/heag024-morphe-managers-guide/> [Accessed: 23 June 2025].

¹¹ Chartered Institute for Archaeologists (2020a) *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*. Available at: <https://www.archaeologists.net/sites/default/files/2023-11/ClfA-SandG-Archaeological-Materials-2020.pdf> [Accessed: 23 June 2025].

¹² Chartered Institute for Archaeologists (2020b) *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*. Available at: <https://www.archaeologists.net/sites/default/files/2023-11/ClfA-SandG-Archaeological-Archives-2020.pdf> [Accessed: 23 June 2025].

- Updated Project Design that sets out how the research aims and objectives of the SSWSIs can be addressed at analysis;
- A report detailing the public engagement methods (planning, delivery and logical approach to evaluation), outputs and evaluation;
- Recommendations for analysis, reporting and publication (including a synopsis of the proposed contents);
- Proposed resources and programming (task list linked to key personnel, cost and key research questions that the task will answer and programme cascade chart);
- General and detailed plans showing the location of the investigation areas accurately positioned on an OS base with grid co-ordinates and a plan of the identified archaeological remains (to a known scale);
- Detailed plans and sections/profiles, deposit models etc., to support the narrative;
- Detailed stratigraphic matrix for each area excavated and how the areas interlink;
- Photographs and illustrations, including any 3D models;
- Bibliography;
- A cross-referenced index to the project archive and summary of contexts; and
- Appendices containing specialist reports.

PUBLICATION AND DISSEMINATION OF PROPOSALS

- 3.4.6. Fieldwork updates will be published annually in fieldwork roundups in appropriate local and period journals. Fieldwork data will be supplied to the Bedford Borough Historic Environment Record.
- 3.4.7. A summary account of the work will be submitted to the editor of the local archaeological journal and any relevant period journals (e.g. Medieval Archaeology, Proceedings of the Prehistoric Society) ideally no later than March 31st of the year following completion of fieldwork.
- 3.4.8. The results of archaeological work will be published and disseminated at a level that is appropriate to the significance of the remains recorded. Publication and dissemination will be finalised within two years of acceptance of the post excavation assessment report unless an extension is agreed with the Curators.
- 3.4.9. In all cases a short summary of the results of the work will be submitted to the Historic Environment Record (HER), and National Record for the Historic Environment (NRHE), as maintained by Historic England, via a standard OASIS archaeological report form.

3.5 ARCHIVE CONSOLIDATION AND DEPOSITION

- 3.5.1. The records and assemblages of the project archive comprise the primary raw data from which all subsequent assessment, analysis and interpretation will be derived. The archive must not be altered or compromised, and due diligence and care must be taken when digitising data.
- 3.5.2. The project archive will contain all the data collected during the fieldwork, including records, finds and all reports.

- 3.5.3. The unique 'accession number' for the project, designated to this project by the Higgins Art Gallery and Museum, will be used as the site identifier for all records produced. Prior to the start of fieldwork, UDX will liaise with the Higgins Art Gallery and Museum to obtain agreement in principle to accept the physical and documentary archive for long-term storage. A retention and discard policy will also be agreed that is consistent and compliant with the archive requirements.
- 3.5.4. It is anticipated that the digital archive will be deposited with the Archaeology Data Service and UDX will seek agreement for this from the Curators and the Higgins.
- 3.5.5. The deposition of the archive will comprise the final stage of this project. Written confirmation of the deposition of the archive including copies of communication with the accredited archive repositories will be submitted to the Secretary of State for verification.

3.6 HISTORIC HEDGEROW

- 3.6.1. A photographic record will be undertaken prior to the removal of the hedgerow that marks the north-south boundary between the historic parishes of Kempston and Wootton. The hedgerow will be examined archaeologically to establish whether there are any associated buried earthworks, such as an earlier boundary bank or hedgerow bank and ditch. This will be achieved through digging a slot every 100m (a maximum of five) archaeologically recording any remains and retrieving any dating evidence (e.g. pottery), where this is feasible (considering ecology or other concerns).

4 LAND REMEDIATION CONTROLS

- 4.1.1. Prior to commencement of any Underground Work in the areas identified in **Areas of Potential Contamination, Appendix B**, completion of remediation works in the relevant identified area will be undertaken in accordance with the Land Remediation Controls set out below.
- 4.1.2. A Land Remediation Verification Report will be prepared detailing that land remediation has been carried out based on the Controls set out below and submitted to the Secretary of State following completion of remediation.
- 4.1.3. Details of what is to be included in the Land Remediation Verification Report are set out in Section 4.2.17.

4.2 LAND REMEDIATION METHODS

RELEVANT POLLUTION LINKAGE (RPL) 1 – ASBESTOS CONTAINING MATERIALS (ACM)

- 4.2.1. Where asbestos containing soils, is present within the upper 600mm of the final finished formation levels following the enabling works site profiling works, residual risks to human health will be mitigated by a pathway interruption method.
- 4.2.2. In areas of proposed soft landscaping, where Made Ground remains in place, a minimum cover will be designed to mitigate residual risks and a marker layer such as orange terram or similar will be required.
- 4.2.3. The clean cover layer will be placed in the sequence as shown below during the Construction Phase.
- 4.2.4. Where present, cement bound asbestos will be subjected to complex sorting and asbestos picking by a licensed asbestos contractor. The asbestos will be removed from Site as hazardous waste. The remaining stockpile materials will be chemically tested in accordance with suitable of use criteria (including asbestos) prior to re-deposit.
- 4.2.5. The re-use criteria for asbestos will be 'below the analytical limit of detection' following quantification. If above the limit of detection but below 0.1 %v/v, a risk-based approach will be adopted for the re-use of the material, if not notifiable.
- 4.2.6. Asbestos exposure risk assessment, mitigation (such as dust suppression) and air monitoring will be undertaken while sorting of stockpiles in the Lake Zone and during works on the former landfill.
- 4.2.7. Earthworks operatives will be given a toolbox talk on potential contaminated land risks in particular the possibility of encountering ACM prior to excavation.
- 4.2.8. If suspected ACM is identified then the following will be undertaken:
 - Stop works in the vicinity of the suspected location;
 - Inform Site manager;
 - Inform the environmental Engineer;
 - Operatives to be provided with appropriate Personal Protective Equipment (PPE);
 - Damp and cover the location to prevent release of asbestos fibres;

- Fence off the area to prevent tracking of fibres across the Site by vehicle/people movements;
- Collection of soil sample by the Contractor for asbestos quantification testing; and
- If material above acceptance criteria remove from Site.

RPL 2 AND 3– PROTECTION OF GROUNDWATER AND SURFACE WATERS

- 4.2.9. If a risk is demonstrated through further assessment, contaminated soils will be removed for off-Site treatment at a Soil Treatment Facility (STF). At this stage any material excavated within the Landfill area designated as a waste will require off-Site disposal to a licensed waste disposal facility.
- 4.2.10. Should groundwater be encountered in the excavations, or significant runoff enter open excavations from any source, dewatering will be undertaken by arranging for the rapid removal of water and maintaining the water level sufficiently by appropriate measures to enable the backfill to be laid and compacted. Any abstracted water will need to be managed, treated and disposed of in accordance with agreed discharge consents from the Local Planning Authority or local foul sewer provider.

RPL 4 GROUND GAS

- 4.2.11. The proposed gas protection measures will be confirmed with the appropriate regulatory authority. The measures will include the specific details of the gas protection measures, installation procedures and the locations in relation to the foundations.
- 4.2.12. Verification of the gas protection measures will be undertaken and provided to the relevant approving authority prior to the foundation works.

RPL 5 PROTECTION OF BELOW GROUND SERVICES

- 4.2.13. Where pyrite is found to be present concrete classification appropriate for the risk will be utilised.

RPL 6 MANAGING UNEXPECTED CONTAMINATION AND FURTHER GROUND INVESTIGATION

- 4.2.14. In areas outside the landfill, excavations will be undertaken with a suitably qualified Environmental Engineer/Scientist overseeing excavation works. The Environmental Engineer/Scientist appointed must be aware of the different types of material 'expected' and 'not expected' on this Site. If suspected contaminated material is encountered during the construction works, it will be managed by implementing the following steps:
- Stop excavation works in that area of the Site;
 - Environmental Engineer/Scientist to assess the material, initially by visual and olfactory assessment;
 - Samples of the material will be collected by the Contractor under the guidance of the Environmental Engineer and sent to an appropriately United Kingdom Accreditation Service (UKAS) and Monitoring Certification Scheme (MCERTS) accredited laboratory for analysis. The suite of analysis shall be suitable for the suspected contaminants of concern, determined by the Environmental Engineer/Scientist;
 - The material will be reported immediately to the relevant Planning Authority;

- The Environmental Engineer/Scientist will assess the risks presented by the encountered material in the context of the Site, its setting and conceptual site model (CSM) in accordance with best practice^{13,14};
- Where remediation is necessary, a revised Land Remediation Strategy will be prepared which ensures the Site will not qualify as contaminated land under Part 2A of the *Environmental Protection Act 1990*¹⁵;
- A survey will be completed of all contaminated material excavated, along with detailed material tracking;
- On completion of the contaminated material excavation, verification sampling will be completed in the excavation faces on the following criteria:
 - Sample from the excavation base, every 10 m by 10 m area;
 - Sample from excavation sides, every 10 linear m or if the excavation is small, one from each face (minimum four samples); and
 - Excavation base and side samples shall be tested against a suite of analysis suitable for the suspected contaminants of concern, determined by the Environmental Engineer.

4.2.15. All of the findings, records and laboratory reports will be reported within the Land Remediation Verification Report.

RADON

4.2.16. If the radon risk assessment, undertaken prior to the commencement of construction identifies that radon mitigation measures are required, the design will be submitted to the Secretary of State and Building Control for approval.

VERIFICATION REPORTING

- 4.2.17. All relevant information will be collected during each phase of remediation works and a series of verification reports compiled on completion of each phase of remediation works. The report will take account of the recommendations in LCRM¹³ and comprise as a minimum:
- A summary of the information contained in the risk assessment reports along with the agreed redevelopment strategy and objectives;
 - Details of all parties involved in the works;
 - Laboratory validation test certificates if unexpected contamination encountered;
 - Details and quantities of excavated soils and soils re-used on-Site or disposed of off-Site;
 - Records of all earthworks, excavations and sorting including as built drawings, photographs, quantities of materials exported and imported;

¹³ Environment Agency (2023) *Land contamination risk management (LCRM)*. Available at: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm> [Accessed: 23 June 2025].

¹⁴ British Standards Institution (2017) *BS 10175:2011+A2:2017 – Investigation of potentially contaminated sites. Code of practice*. UK: British Standards Institution.

¹⁵ HM Government (1990) *Environmental Protection Act 1990, Part IIA*. Available at: <https://www.legislation.gov.uk/ukpga/1990/43/part/IIA> [Accessed: 23 June 2025].

- An annotated photographic record showing sides and base of the excavation during the drainage infrastructure works. Photographs will include details of the location and date and as built survey showing the base of excavation;
- Inclusion of information from an asbestos specialist providing a summary of the asbestos removal works completed which as minimum will include Consignment Notes, Air Monitoring Records and an account of the works completed;
- Verification of backfill materials on completion of the enabling works in order to confirm suitability of re-use;
- As built drawings; and,
- Waste classification and management documentation (including consignment notes, waste carrier licenses and waste management licence).

4.2.18. The procedure for assessing unexpected contamination outside the landfill area will be a risk-based assessment and will be in accordance with the following the procedure outlined in **Table 4-1**. The level of risk assessment will dependant on the identified pollutant linkage and the severity of the unexpected contamination.

Table 4-1 – Flow Chart Showing Procedures for Assessing and Managing Unexpected Contamination

Step	Actions
Identify Pollutant Linkage	Review the CSM to identify any relevant Pollutant Linkages
Conduct Risk Assessment	Undertake a Quantitative Risk Assessment to determine if the level of risk is acceptable
Land Remediation Options Appraisal	If the level of risk is not acceptable then review the options to select the most cost-effective option to either break or remove the pollutant linkage
Determine Land Remediation Strategy	Finalise and present the Strategy for regulatory approval
Submit to Regulator for approval	In the event that regulatory approval is not obtained then revisit the Land Remediation Options Appraisal and Land Remediation Strategy to meet regulatory requirements
Implement Strategy	Implement Remediation in accordance with the agreed strategy
Verification	Undertake verification works and report in the Land Remediation Verification Report to be approved by the relevant Planning Authority

4.3 CUT AND FILL CONTROLS AND MATERIALS MANAGEMENT PLAN

- 4.3.1. A Materials Management Plan (MMP) in accordance with the CL:AIRE DoWCoP¹⁶ will be produced following detailed earthworks modelling.
- 4.3.2. The MMP will require declaration by a CL:AIRE Qualified Person and notification to the relevant Planning Authority and the Environment Agency (EA) prior to commencement of the works.
- 4.3.3. A 'Qualified Person' as defined under the DoWCoP will review the development of the MMP, Risk Assessments and Land Remediation Strategy together with documentation relating to Planning and Regulatory issues will sign a Declaration which is forwarded to the EA and which confirms compliance with the DoWCoP. Any need for the disposal of material off-Site will require appropriate pre-classification and pre-treatment to minimise the waste volume.
- 4.3.4. The Contractor will provide method statements illustrating how compliance with waste management legislation is to be achieved for those materials classified as waste, to include but not limited to:
- Use of imported material;
 - Criteria for assessing of the suitability of imported materials;
 - Management of material that arises during the works and is classified as waste;
 - Waste streams are appropriately classified prior to off-Site disposal;
 - Audit process for the selection of waste management contractors to include the collection and assessment of licences, permits and registrations; and
 - Audit process and record keeping.

IMPORTED FILL

- 4.3.5. Any imported materials will require suitable validation certificates to demonstrate their suitability for use within the Proposed Development. Any material imported onto the Site will first be screened and visually assessed at the site of origin to provide evidence for validation that all material imported to Site is 'free from solvent, hydrocarbon or contaminant odour, discolouration and propagules of aggressive weeds, fragments of glass, wire, ash or other potentially hazardous foreign matter, asbestos and bulk vegetative growth'. Inspection and photos will be required which will form part of the validation report. Sampling will also be taken from the source of the material prior to import.
- 4.3.6. Imported materials will be spot-tested on-Site to confirm their suitability for a commercial end use, as detailed below:
- One sample per 100 m³ for materials arising from a previously developed site regardless of the use and if sourced from within the development site itself; and
 - One sample per 500 m³ for natural materials arising from a site with no known previous contaminative use.

¹⁶ CL:AIRE (2011) *The Definition of Waste: Development Industry Code of Practice*. Available at: <https://claire.co.uk/projects-and-initiatives/dow-cop/28-framework-and-guidance/111-dow-cop-main-document> [Accessed: 23 June 2025].

- 4.3.7. Samples will be submitted to a UKAS and MCERTS accredited laboratory for suitable analysis. Imported fill shall comply with paragraphs detailed above in Section 4.3.5 and the UDX import standards - whichever are more stringent. In addition, any imported topsoil will be tested to demonstrate compliance with the specification detailed in BS 3882:2015¹⁷.

WASTE MANAGEMENT IN THE LANDFILL AREA

- 4.3.8. Excavated material will need disposal to a registered waste disposal facility. Alternatively, a separate mechanism such as a Deposit for Recovery Environmental Permit with an associated Waste Recovery Plan would be required for this material to be reused on Site.

SAMPLING AND TESTING FOR SUITABILITY OF USE

- 4.3.9. Sampling shall comply with Section 4.2.14 and the UDX import standards - whichever are more stringent. Sampling and testing of any backfill materials will be required in order to demonstrate suitability of use. Sampling frequency and strategy is detailed in **Table 4-2** below.

Table 4-2 – Proposed Sampling Strategy

Activity	Testing Frequency	Testing Suite
Stockpiled materials for disposal	Testing frequency as required by the receiver of the waste	Waste acceptable criteria (WAC) analysis if being taken to a landfill or a full testing suite for metals, inorganics and organics if being taken to another site or a Soil Treatment Facility (subject to the requirements of the receiver site).
Site won crushed concrete used to backfill excavations/piling mat construction	Frequency to be determined against risk at a later date	Asbestos and TPH – CWG
Site won soils for cut and fill associated with the enabling works platforms and associated structures and materials used to infill excavations and voids	Frequency to be determined against risk at a later date	Suite of testing as identified by the Environmental Engineer/Scientist
Imported materials	Frequency to be determined against risk at a later date*	Suite of testing as identified by the Environmental Engineer/Scientist Asbestos and TPH – CWG if crushed concrete.
Validation of clean cover materials for soft landscaped areas	Subsoil – Class 4 Frequency to be determined against risk at a later date Topsoil – Class 5 Frequency to be determined against risk at a later date	Suite including TPH – CWG, asbestos, metals and PAHs.

¹⁷ British Standards Institution (2015) *BS 3882:2015 – TC - Specification for topsoil*. UK: British Standards Institution.

Activity	Testing Frequency	Testing Suite
	Import only: Frequency to be determined against risk at a later date	BS3882:2015 ¹⁷ testing suite

* - Where imported material is a certified product or from a virgin source or the material has been demonstrated to have been produced in accordance with the WRAP Quality protocol and is used below the clean cover layer, the sampling and testing of the material would not be required. A visual/olfactory assessment of the material once imported onto Site would however be required.

- 4.3.10. All soils being excavated and re-deposited will be assessed for suitability by comparison to a suitable assessment criteria as identified by the Environmental Engineer/Scientist.
- 4.3.11. All soils being excavated and re-deposited for clean cover layer, landscaping and imported topsoil will be assessed for suitability by comparison to values identified by the Environmental Engineer/Scientist.

CONTROLLED WATERS

- 4.3.12. All soil leachate testing will be in accordance with UKAS/MCERTS accreditation and be in accordance with *BS EN 12547 (BSI 2002) Part 2*¹⁸ – one stage test using a liquid to solid ratio of 10:1 per kilogram.
- 4.3.13. In addition to leachability testing of earthwork materials, the Contractor will collect groundwater samples from excavations and undertake analysis if encountered and there becomes a requirement for pumping, treatment and/or disposal. The results of the groundwater testing will be screened against suitable assessment criteria as identified by the Environmental Engineer/Scientist for the protection of controlled water receptors.
- 4.3.14. No soils exhibiting visual or olfactory evidence of contamination will be used on-Site. Soils will also be visually inspected and rejected if there is evidence of visual or olfactory contamination.

HARDSTANDING, SUB BASE AND FOUNDATIONS

- 4.3.15. When breaking out the hard standing, arisings will be segregated by materials type (e.g. concrete, soils, wood, metals), and records will be kept of the volumes of recycled material, including volumes of concrete generated.
- 4.3.16. Locations of material stockpiles will also be recorded on a live Site plan, which will be revised during the course of the works in line with MMP requirements. Reinforcing bar and other recovered metals will also be logged prior to being conveyed to a licensed metal recycling facility.
- 4.3.17. As part of the hardstanding removal works, sub-base materials, where present, will be stockpiled separately for verification testing and potential re-use.

REMOVAL OF IN-GROUND OBSTRUCTIONS

- 4.3.18. Where required, the foundations will be carefully excavated to avoid excess soil generation.

¹⁸ British Standards Institution (2002) *BS EN 12457-2:2002 - Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges - One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 4 mm (without or with size reduction)*. UK: British Standards Institution.

- 4.3.19. If visual/olfactory evidence of contamination is noted during the works, this will be addressed in line with Section 4.3.14.

CONCRETE CRUSHING

- 4.3.20. Excavated structures that are determined to be potentially suitable for re-use (free of visual or olfactory signs of contamination) will be transferred to designated crushing areas on-Site. Steel reinforcement bar liberated during crushing will be stockpiled separately prior to off-Site disposal to a suitable recycling facility.
- 4.3.21. All crushed material will be sampled at the specified frequency outlined in **Table 4-2** – Proposed Sampling Strategy and given a unique sample reference linking them to a specific stockpile.
- 4.3.22. Areas designated for crushing will be segregated and subject to environmental compliance monitoring in accordance with the Mobile Plant Environmental Permit. Methods including damping materials prior to crushing will be employed.

STOCKPILING

- 4.3.23. Where material movement is required, stockpiles of excavated and imported materials will be stockpiled at pre-designated locations identified by the Contractor. Stockpiles will be located to avoid double-handling of materials, as far as reasonably practicable, potential for cross contamination of stockpiled material.
- 4.3.24. Stockpiles will be separated according to material types. Individual stockpiles, as far as is reasonably practicable, will be composed of materials displaying a high degree of homogeneity, both in terms of geotechnical and chemical characteristics.
- 4.3.25. Should any potentially contaminated materials be excavated, they will be stockpiled on a membrane or intact concrete slab to avoid potential contamination of the soils underneath prior to characterisation and/or disposal to landfill, as appropriate.
- 4.3.26. Stockpiles of materials arising from excavations and earthworks activities will be managed to prevent nuisance impacts and any spreading of contamination, including all necessary environmental controls, such as run off control and dust control. This will include consideration of the following:
- Preparation and maintenance of basal areas and perimeter bunds. Where required, basal areas are to be formed of low permeability material or a suitably protected geomembrane liner;
 - Construction of collection sumps to contain and control leachate and perched water run-off;
 - Limiting the height of stockpiles to not greater than 4 m and volume to 500 m³, unless agreed otherwise with relevant Planning Authority;
 - Shaping the stockpile and smoothing the upper surface of the stockpile to help limit rainwater ingress and dust generation;
 - Pumping collected water to on-Site holding tanks or IBCs prior to treatment and/or disposal; and
 - Use of dust suppression on stockpiles and excavations to minimise potential for windblown dusts and/or use of a tarpaulin to prevent rainwater ingress and release of odours/vapours and dust/fibres.

WATCHING BRIEF

- 4.3.27. Excavations will be undertaken with a suitably qualified Environmental Engineer overseeing excavation works. The Environmental Engineer shall be aware of the different types of material 'expected' and 'not expected' on this Site. In the event that unexpected contamination is encountered then refer to the procedure detailed in **Table 4-1**.
- 4.3.28. In addition to the above, a watching brief by a suitably qualified person will be carried out during all earthworks including slab removal. All Site personnel will be briefed on the potential areas of concern, contamination risks and observations to be made during the works. The engineer will ensure:
- Observations of all excavations during the works and any potential contamination is noted and addressed in accordance with **Table 4-1**;
 - A photographic record is kept during the key stages of the development and key occurrences of the works;
 - All contamination observations are addressed in accordance with the Land Remediation Controls; and
 - All of the findings will be reported within the Land Remediation Verification Report.

5 WATER CONTROLS

5.1 ELSTOW BROOK CLEAR SPAN BRIDGE

- 5.1.1. Where the proposed road crosses the existing Elstow Brook in the West Gateway Zone a clear span bridge structure will be delivered. The soffit level will be set 600mm higher than the 1 in 100 year plus climate change modelled river level to ensure that flow is maintained within the watercourse and flooding is not increased upstream. The bridge abutments will be set back 10m from the top of bank with detailed design informed by riparian habitat, bank stability and ecological importance to reduce impacts.

5.2 FLOOD RISK CONTROLS

DETAILED FLOOD MODELLING

- 5.2.1. Site specific detailed fluvial flood modelling will be developed post planning consent to inform the detailed design stage, including confirmation of the areas of flood compensation. Evidence of approval of the flood modelling by the Environment Agency (EA) and Bedford Group of IDB will be provided to the Secretary of State with any Compliance Package that includes detailed drainage design.

FLOOD COMPENSATION AREA

- 5.2.2. Flood compensation will be undertaken within the blue hatched area shown on **Appendix C: Flood Compensation Area**, on a level for level basis, re-profiling the ground to provide storage for flood water volumes up to and including the 1 in 100-year plus climate change event. Based on a high-level analysis the volume to be mitigated is approximately 60,000m³, providing this within the extents identified would result in a required storage depth of approximately 250mm, which can be accommodated on-Site. Levels will be engineered to ensure that the flows of flood waters to the north and east of the Site are not impeded.

RAISE IN ROAD LEVELS ABOVE FLOOD INUNDATION LEVEL

- 5.2.3. Where development is proposed within Flood Zone 3a in the north of the Lake Zone, ground levels will be raised and any floor levels will be set at least 600mm above the peak surface water flood levels to give protection. When peak flood levels are determined by detailed flood modelling, this could be reduced to 300mm above peak surface water flood levels. Peak flood levels will be confirmed by the detailed flood modelling.
- 5.2.4. Public Road B, proposed within the Lake Zone will be set 600mm above maximum flood levels within the Site boundary to ensure safe access and egress north to Ampthill Road or south to Manor Road. The maximum flood levels will be confirmed by the detailed flood modelling.

5.3 DRAINAGE CONTROLS

- 5.3.1. The Proposed Development will incorporate sustainable drainage systems (SuDS) features to adequately treat flows for quality in line with CIRIA guidance¹⁹. Surface water disposal for the Site will be managed in accordance with the following hierarchy: 1: Infiltration, 2: Existing Watercourse and 3: Existing Sewer. Based on the Site's geology and the presence of relatively shallow groundwater it is unlikely that the Site will be able to discharge via soakaway or adequate infiltration system. This will be confirmed by Site specific infiltration testing prior to detailed design. All existing surface water runoff flows drain to Elstow Brook or Harrowden Brook, via upstream ordinary watercourses. The Site's surface water will be attenuated and reduced to greenfield run-off rates in line with Bedford BC and IDB requirements before discharging into the nearby IDB maintained watercourses. There is no proposed surface water runoff discharged to the Anglian Water surface water sewer network. The Proposed Development surface water run-off management solutions will be designed to ensure that for the 100-year plus 40% climate change allowance event surface water will be accommodated within the Site and therefore prevent potential exceedance flows off-Site. Rainwater re-use will be included within the Proposed Development and is covered by the Water Conservation Controls.
- 5.3.2. The measures set out below provide controls in respect of quantity and quality of flows, and maintenance and management of sustainable drainage systems.
- 5.3.3. Detailed drainage system designs will be in accordance with the controls set out below.
- 5.3.4. Prior to submission of detailed drainage design proposals to the Secretary of State, approvals and consents required via separate regimes, such as Land Drainage Consent, Water Framework Directive (WFD), and Discharge Permits, will be secured from other bodies such as the Bedford Group of IDB and/or the EA.

SURFACE WATER DISCHARGE RATES

Table 5-1 – Proposed Surface Water Discharge Rates

Zone	Surface Water Discharge Rates (l/sha)
Core and Lake Zone	2.5
East Gateway Zone	3.13
West Gateway Zone	3.13

GREENFIELD RUN-OFF RATES

- 5.3.5. Proposed surface water run-off will be attenuated to greenfield Q_{Bar} rates on Site and then discharged to the existing watercourses within or near the Site. All catchments are designed to discharge to existing watercourses at a restricted flow rate to match greenfield Q_{Bar} run-off rates.

¹⁹ Construction Industry Research and Information Association (2015) *The SuDS Manual (C753)*. UK: Construction Industry Research and Information Association.

Table 5-2 – Core and Lake Zone –Greenfield Runoff Rates

Return Period (years)	Surface Water Discharge Rates [196ha total drained area of the Core and Lake Zones] (l/s)
Q _{Bar}	500.38
1 in 1	435.33
1 in 30	1225.93
1 in 100	1781.36

- 5.3.6. Based on the above, the total area of 196ha and calculated flow rate of 500.38 l/s, the Core and Lake Zone resultant Q_{Bar} Greenfield run-off rate per hectare is 2.5l/s/ha.

Table 5-3 – East Gateway Zone –Greenfield Run-off Rates

Return Period (years)	Surface Water Discharge Rates [per 50 ha] (l/s)
Q _{Bar}	156.46
1 in 1	136.12
1 in 30	383.34
1 in 100	557.01

- 5.3.7. Based on a 50ha catchment area (in accordance with EA guidance) and the calculated rate of 156.46 l/s, the East Gateway Zone resultant Q_{Bar} Greenfield run-off rate per hectare is 3.13l/s/ha.

Table 5-4 – West Gateway Zone –Greenfield Run-off Rates

Return Period (years)	Surface Water Discharge Rates [per 50 ha] (l/s)
Q _{Bar}	156.46
1 in 1	136.12
1 in 30	383.34
1 in 100	557.01

- 5.3.8. Based on a 50ha catchment area (in accordance with EA guidance) and the calculated rate of 156.46 l/s, the West Gateway Zone resultant Q_{Bar} Greenfield run-off rate per hectare is 3.13l/s/ha.

5.4 SURFACE WATER QUALITY CONTROLS

- 5.4.1. Surface water quality will be controlled in each Zone in accordance with the SuDS and associated mitigation indices set out in **Table 5-5**, **Table 5-6** and **Table 5-7** below.

Table 5-5 – SuDS Mitigation Indices for Core and Lake Zone

Type of SuDS Component	TSS	Metals	Hydrocarbons
Wetland	0.8	0.8	0.8
Total SuDS Mitigation Index	0.8	0.8	0.8

Table 5-6 – SuDS Mitigation Indices for West Gateway Zone

Type of SuDS Component	TSS	Metals	Hydrocarbons
Detention Basin	0.5	0.5	0.6
Pond	0.7	0.7	0.5
Total SuDS Mitigation Index	0.85	0.85	0.85

Table 5-7 – SuDS Mitigation Indices for East Gateway Zone

Type of SuDS Component	TSS	Metals	Hydrocarbons
Proprietary System: Up-Flo Filter Sand by Hydro International or similar	0.8	0.6	0.7
Total SuDS Mitigation Index	0.8	0.6	0.7

5.5 SUDS MAINTENANCE AND MANAGEMENT CONTROLS

- 5.5.1. Sustainable drainage systems will be subject to regular maintenance.
- 5.5.2. During the routine inspections of any drainage components, it may become apparent that they have reached the end of their functional lifetime. In the interest of sustainability repairs will be the first-choice solution where practicable. If repair is not possible then the component in question will be replaced.
- 5.5.3. Maintenance of drainage features within the Core and Lake Zones will be the responsibility of UDX, drainage features within the West and East Gateway Zones will be the responsibility of the relevant Undertaker.
- 5.5.4. For watercourses that fall within the jurisdiction of the IDB, access will be given to the IDB to allow the IDB to maintain these features if they fall into a state of disrepair in line with the requirements of the Land Drainage Act²⁰.

²⁰ HM Government (1991) *Land Drainage Act 1991*. Available at <https://www.legislation.gov.uk/ukpga/1991/59/contents> [Accessed: 23 June 2025].

5.6 WATER CONSERVATION CONTROLS

- 5.6.1. The Controls below set out the requirements for water efficiency, water reuse and water recycling interventions to minimise the Site's water footprint.

NON-POTABLE WATER RECYCLING

- 5.6.2. A non-potable water supply will be sourced from storage and treatment of rainwater harvested from the Site drainage water ponds' catchment, including water run-off generated by washdown activities on the Site. The non-potable water supply will be sufficient to meet all non-domestic use water demand including irrigation, park washdown and supply to water features and attractions for the Opening Year and Full Buildout Phases. A localised closed-loop system will be installed to minimise water demand from the water features and attractions as shown in **Image 5-1** below:

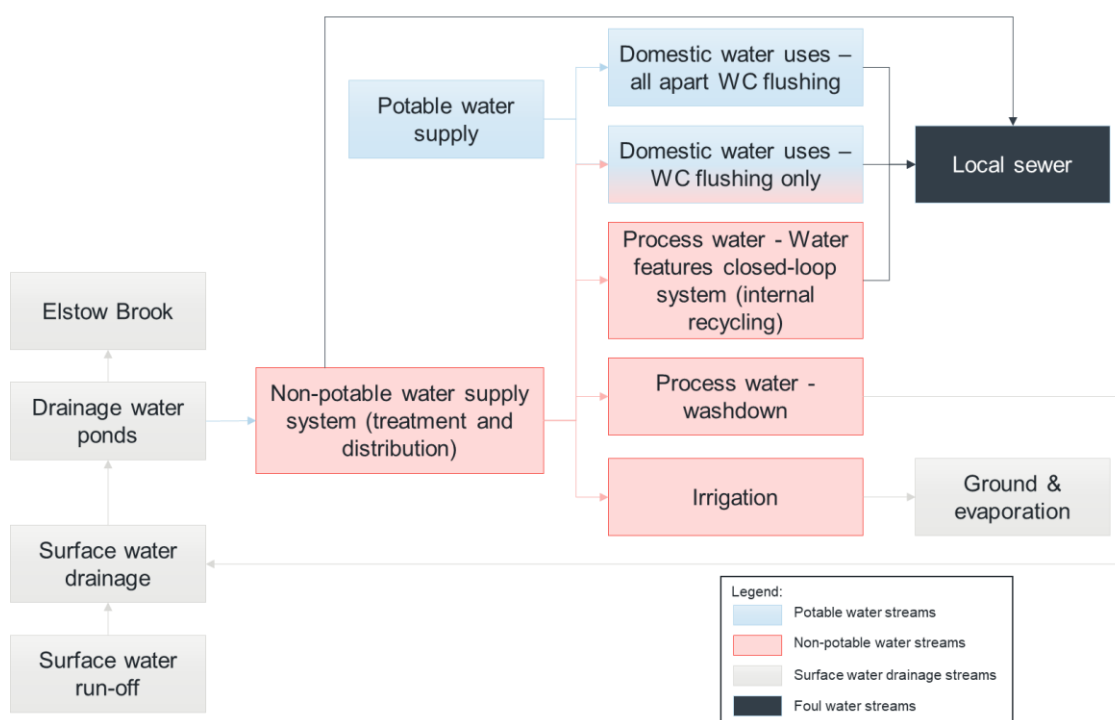


Image 5-1 – Water Strategy

MAINTENANCE OF MINIMUM WATER LEVEL IN THE STRATEGIC SURFACE WATER ATTENUATION AND RAINWATER HARVESTING PONDS

- 5.6.3. The non-potable, process water supply will be stored within the strategic surface water attenuation and rainwater harvesting ponds in the Lake Zone (see location in **Image 5-1**) and rely solely on rainwater harvesting. The minimum water level in the strategic surface water attenuation and rainwater harvesting ponds of 20.50 metres above ordnance datum will always be maintained to support the aquatic life in the pits. Should the water in the pits drop to this level then all non-domestic or process water use will be suspended, such as irrigation and washdown. Toilet flushing will be fed from the potable, domestic, water supply by Anglian Water. Steps must be taken to conserve water prior to the minimum water level being reached, such as switching toilet flushing to the potable water supply and reducing frequency of irrigation.

PROCESS WATER RECYCLING – LOCAL CLOSED-LOOP SYSTEMS IN THE CORE ZONE

- 5.6.4. Process water will be used for irrigation, park washdown and to provide a water supply to water features (other than water fountains) and attractions.
- 5.6.5. Water consumption from the water features and the attractions will be minimised by implementing local closed-loop systems in the Core Zone, with the non-potable water supply used as a top-up facility to mitigate losses occurred through the closed-loop system.
- 5.6.6. Park washdown activities will include mainly footpath and street cleaning. As such, water used during this activity will be captured through the drainage system feeding into the drainage water ponds for recycling.

NON-POTABLE WATER TREATMENT

- 5.6.7. Water will be abstracted from the drainage ponds and pumped to the non-potable Water Processing and Collection Plant. Screening will be provided at the intake pumping station to protect the pumps and downstream treatment from large items such as sticks, leaves and other debris. The abstracted water will be treated. Treatment will consist of the following process:
 - Coagulation, flocculation, and clarification;
 - Dual media filtration (sand/charcoal); and
 - Conditioning and disinfection.
- 5.6.8. Sludge from the clarification steps will be stored before being tankered to an Anglian Water site.
- 5.6.9. Backwash water from the filtration process will be discharged into the on-Site sewerage system.
- 5.6.10. The non-potable water will be supplied through two circular distribution networks reducing the risk of water stagnation.

6 CARBON MANAGEMENT CONTROLS

- 6.1.1. A Carbon Management Report must be prepared at the end of RIBA (Royal Institute of British Architects) Stage 3 and Stage 4 (as defined in the RIBA Plan of Work 2020²¹) and submitted to the Secretary of State.
- 6.1.2. The key elements for RIBA Stage 3 and 4 are outlined below:
 - **Stage 3 – Spatial Coordination:** A detailed Whole Life Carbon (WLC) analysis will be undertaken, for both embodied and operational emissions. Review of carbon budget, benchmarks, and targets. Options to be compared against baseline budget. Carbon Lead to be working closely with the design team to support decision-making.
 - **Stage 4 – Technical Design:** Low-carbon design choices made at RIBA 3 integrated into design and tender documentation. Carbon budget will be included in tender. Design team to ensure contractor is aware and comfortable with WLC targets. An end-of-design stage WLC model will be provided capturing pre-construction.
- 6.1.3. The Carbon Management Reports must provide:
 - An overview of the Proposed Development, and scope and boundary of assessment;
 - Detail of the methodology followed to quantify WLC;
 - A presentation of the results of the assessment at that work stage and identify carbon hotspots – linked to the lifecycle modules scoped into the assessment as described above, and have a comparison of results to previous work stages;
 - List of Environmental Product Declarations that have been used in the assessment;
 - Detail of how the measures in **Table 6-1** have been considered; and
 - A link to the Carbon Opportunities Register (see **Image 6-1** - Carbon Opportunities Register and highlight of areas that will be explored and reviewed at the workshop early in the next project stage. The Carbon Opportunities Register provided for information will include the details of the opportunity, potential carbon saving, feasibility, ownership of the opportunity and any follow up actions required.

Table 6-1 – Carbon Reduction Measures

Item	Measure	Responsibility	Stage
1	<ul style="list-style-type: none">■ Detailed design optimisation to reflect the PAS 2080:2023 carbon reduction hierarchy, covering:■ Avoid: align the outcomes of the project and/or programme of work with the UK’s trajectory towards net zero at the system level and evaluate the basic need at the asset and/or network level;	Asset Owner Designer Contractors Suppliers	Incorporate at the detailed design stage and to be confirmed prior to construction.

²¹ Royal Institute of British Architects (2020) *RIBA Plan of Work 2020 Overview*. Available at: <https://www.architecture.com/knowledge-and-resources/resources-landing-page/riba-plan-of-work> [Accessed: 23 June 2025].

Item	Measure	Responsibility	Stage
	<ul style="list-style-type: none"> Switch: assess alternative solutions and then adopt one that reduces whole life emissions through alternative scope, design approach, materials, technologies for operational carbon reduction, among others, while satisfying the whole life performance requirements; and Improve: identify and adopt solutions and techniques that improve the use of resources and design life of an asset/network, including applying circular economy principles to assess materials/products in terms of their potential for reuse or recycling after end of life. 		Also to be considered along the entire project life cycle.
2	<p>Confirm how carbon management has been integrated into the vision, mission, goals, and objectives as part of the planning and design process for the Proposed Development.</p> <p>Develop processes and policies to integrate whole life carbon management into day-to-day systems for operation of the Proposed Development, including identifying responsibilities for carbon management.</p>	Asset Owner Designer	<p>Incorporate at the detailed design stage and to be confirmed prior to construction.</p> <p>Also to be considered along the entire project life cycle.</p>
3	<p>Establish carbon related metrics and targets for relevant aspects of the Proposed Development, including a Greenhouse Gases (GHG) per capita metric, an annual Municipal Solid Waste (MSW) metric, targets for recycling of construction and operational waste, and provision for electric vehicle charging infrastructure.</p> <p>Establish additional carbon metrics and targets linked to specific aspects of the Proposed Development (e.g. visitor travel, heating and cooling, procurement of goods and services, and the various buildings/use areas), to enable targeted carbon management, considering relevant industry benchmarks and national and sector-level targets/budgets.</p>	Asset Owner Designer Contractors Suppliers	<p>Incorporate at the detailed design stage and to be confirmed prior to construction.</p> <p>Also to be considered along the entire project life cycle.</p>
4	Continuously assess and monitor emission hotspots to gather information on the key areas for carbon management, and to track progress in carbon reduction throughout development of the Proposed Development and its operation. This may include use of a central Building Management System (BMS) for monitoring.	Asset Owner Contractors Suppliers	To be completed along project lifecycle.
5	Adopt continuous improvement processes by feeding back data to inform future baselines, which, in turn, will inform future decision-making. This could be undertaken by publishing an updated set of operational benchmarks focused on various aspects of the Proposed Development (noted under Item 3).	Asset Owner Contractors Suppliers	To be completed along project lifecycle.
6	Review the feasibility and confirm how the design of relevant aspects of the Proposed Development will reduce GHG emissions associated with the use of fossil	Asset Owner Designer	Incorporate at the detailed design stage

Item	Measure	Responsibility	Stage
	fuel energy and improve the operational efficiency of the energy system, such as for heating and cooling requirements. Make use of a central BMS for monitoring and for optimisation of conditions to improve energy efficiency.		and to be confirmed prior to construction. Also to be considered along the entire project life cycle.
7	Use procurement mechanisms to include carbon management as a differentiating factor for the supply chain. Consider specifying requirements for potential suppliers and contractors to identify carbon reduction plans and commitments to specific measures that contribute towards the UK's trajectory towards Net Zero in the procurement bidding process.	Asset Owner Contractor Suppliers	Prior to construction and throughout operation.
8	Consider opportunities to encourage the use of products and materials for which life cycle information is available and that have been extracted and sourced in a responsible manner. Minimise embodied carbon in the supply chain by considering opportunities to specify materials and products with reduced embodied GHG emissions. This would include using material substitution, recycled or secondary content, and renewable sources.	Asset Owner Designer Contractor Suppliers	Incorporate at the detailed design stage. and to be confirmed prior to construction.
9	Selection and engagement of materials suppliers and construction contractors considering their proximity to the Proposed Development, as well as policies and commitments to reduction of GHG emissions, including embodied emission in materials.	Asset Owner Contractor Suppliers	Incorporate at the detailed design stage and to be confirmed prior to construction.
10	Confirm how relevant aspects of the Proposed Development will encourage the use of diverse transportation modes in order to reduce the reliance on personal vehicles and promotes alternatives to fossil fuel vehicles. Consider opportunities to introduce incentives for staff and visitors to use public transport or electric vehicles for visits to the Proposed Development and maximise use of electric/low carbon fuel fleet vehicles.	Asset Owner Designer	Incorporate at the detailed design stage and to be confirmed prior to construction. Also to be considered along the entire project life cycle.
11	Recycle or reuse construction and operational waste where practicable to avoid disposal to landfill, including the reuse of excavated arisings during the construction where suitable.	Asset Owner Designer Contractor	Incorporate at the detailed design stage and to be confirmed prior to construction. Also to be considered along the entire project life cycle
12	Design, specify and construct the Proposed Development to maximise the operational lifespan of equipment, minimise the need for maintenance and repair/refurbishment, and consider options for reuse of components being replaced in other applications (in the Proposed Development or alternative developments	Designer Contractor	Incorporate at the detailed design stage and to be confirmed prior to construction.

Item	Measure	Responsibility	Stage
	where appropriate), to avoid loss of material resources and embodied carbon.		
13	Consider how the provision of greenspace and conservation of natural resources could be used to enhance environmental quality. Consider the potential for minimising and offsetting carbon emissions within the design of the Proposed Development through optimisation of greenspace and natural habitats for carbon sequestration.	Asset Owner Designer Contractor	Incorporate at the detailed design stage and to be confirmed prior to construction. Also to be considered along the entire project life cycle.
14	Develop and implement a planned and preventative maintenance and replacement regime to make sure of efficient operation of the Proposed Development and reduced associated GHG emissions.	Asset Owner Designer	Incorporate at the detailed design stage. Also to be completed along project lifecycle.
15	Consider where use of refrigerants is required for the applicable components of the Proposed Development for which UDX is the relevant Undertaker, specify equipment using low global warming potential (GWP) refrigerants when available.	Asset Owner Designer	Incorporate at the detailed design stage.
16	Identify in procurement documentation, that operational consumables for the applicable components of the Proposed Development for which UDX is the relevant Undertaker (i.e. food, chemicals, hospitality/office supplies etc) with reduced embodied carbon emissions and recycled content are preferred where practicable.	Asset Owner	Incorporate at the detailed design stage.

Image 6-1 - Carbon Opportunities Register

High (>1,000 tCO ₂)	Not Challenging	Cost Saving	Going Ahead
Med (500-1,000 tCO ₂)	Challenging	Cost Neutral	Further Investigation
Low (<500tCO ₂)	Very Challenging	Increase Cost	Not Feasible

<SCHEME_NAME>														
Reference	Date	Source	Lifestyle Stage	Discipline	Discipline Lead / Responsible for Inclusion	Opportunity	Carbon Reduction Hierarchy	Carbon Saving Estimate	Feasibility to Implement	Cost Effectiveness	RAG	Comments	Actions	Carbon Lead Actions
xx	xx/yy/zz	Meeting, workshop, report etc.	Design/Construction/Operation	Design Discipline Name	In Charge of the Action	Details of Opportunity	Avoid/Switch/Improve	H/M/L	See Above	See Above	See Above	Notes on Implementation	Actions to be Taken	Actions for the Carbon Lead

7 EMPLOYMENT AND SKILLS CONTROLS

7.1 EMPLOYMENT AND SKILLS COMMITMENTS

Table 7-1 – Employment and Skills Commitments

Employment and Skills Area	Commitment
National Living Wage	UDX will pay all employees at least the National Living Wage throughout construction and operation.
Apprenticeships	<p>UDX will provide a minimum of 55 apprenticeships annually from the second full year of operation, rising to 70 by the fifth full year of operation. A portion will be offered to care leavers. UDX will sign the Care Leavers Covenant and develop a bespoke support programme.</p> <p>This will run for at least 5 years after grand opening.</p>
Internships	<p>UDX will provide a minimum of 15 paid internships annually from the second full year of operation, rising to 35 from the fifth full year of operation. Internships will be delivered for at least five years from the opening year.</p> <p>This will run for at least 5 years after grand opening.</p>
Earn-and-Learn Commitment	UDX will achieve 5% of employee headcount in earn-and-learn positions. This will be achieved in the construction phase by requiring the Principal Contractor(s) for construction to have 'The 5% Club' accreditation (or equivalent at the time of contracting services).
Construction skills	<p>During the Primary Phase of construction, UDX will make sure that Principal Contractors actively engage with local students within Bedford and Central Bedfordshire and give priority access to qualified local students in the hiring process. Measures that the Principal Contractor(s) will be required to commit to include:</p> <ul style="list-style-type: none"> ■ Partnering with local schools, colleges, and/or universities to create awareness about career opportunities in construction; ■ Organise or participate in local careers fairs and workshops at these institutions; ■ Advertise job openings through local media, educational institutions, and community centres to make sure local students are aware of the opportunities; and ■ Arrange site visits for interested local students to provide them with a real-world understanding of construction processes and careers. <p>UDX will make sure that these occur by explicitly including these requirements within the contracting process.</p>
Job creation	During the Primary Phase of construction, Universal will make sure that local skilled workers within Bedford and Central Bedfordshire receive access to employment opportunities.

Employment and Skills Area	Commitment
	<p>Principal Contractors will be required to actively promote these opportunities, emphasising the importance of hiring qualified people locally within Bedford and Central Bedfordshire. Mechanisms to make sure of this will include:</p> <ul style="list-style-type: none"> ■ Advertising job openings through local media and community centres to make sure local skilled workers are made aware of job opportunities; ■ Providing job requirements and advertisements to the local authorities for them to disseminate through any of their local priority channels, or publicising directly to these groups as advised by the local authorities; and ■ Collaborating with local job centres and employment agencies to identify and recruit skilled workers from the area.
Operational skills	<p>Universal will commit to providing employee encounters and workplace experiences annually to local students in line with agreed benchmarks. Based on the expected level of employment at the proposed development this would equate to one thousand four hundred and thirty (1,430) students receiving employee encounters and four hundred (400) students receiving workplace experiences at the Theme Park year of maturity (2051).</p> <p>UDX will assign a designated representative with responsibility to deliver this (and other related) commitments.</p>
Educational and Community Partnerships	<p>Throughout the Primary Phase of construction and the ongoing operations, UDX will commit to forming partnerships with local educational institutions and community groups, such as University of Bedfordshire, Cranfield University and Bedford College.</p>
Education Engagement	<p>UDX will partner with schools, colleges, and universities to promote awareness of creative industry and visitor economy careers and assign a dedicated representative to deliver on these commitments.</p>
Disadvantaged Students Support	<p>UDX will support 40 high-risk or socio-economically disadvantaged students annually by the second full year of operation.</p> <p>This will run for at least 5 years after grand opening.</p>
Leadership Representation	<p>UDX will run executive mentorship programmes for 15 participants annually.</p> <p>This will run for at least 5 years after grand opening.</p>
Accessibility and Disability Inclusion	<p>UDX will make sure accessible job adverts, inclusive job descriptions, and interview accommodations are provided.</p>
Employee DEI Programming	<p>UDX will establish Employee Resource Groups and provide programming to foster an inclusive workforce and guest experience.</p>
Equal Opportunities Compliance	<p>UDX will act as an equal opportunities employer, adhere to the Equality Act 2010, and provide regular Respect in the Workplace training.</p>

7.2 IMPLEMENTATION OF THE EMPLOYMENT AND SKILLS COMMITMENTS

- 7.2.1. The details of the implementation approach for the Employment and Skills Commitments (outlined in **Table 7-1**) will be developed on an ongoing basis, as new information and advice is received from ongoing engagement with local authorities and other stakeholders via the Socio-Economic Taskforce.
- 7.2.2. Throughout construction and operation, UDX will provide a designated representative to engage with local authorities, community partners, working groups, and educational institutions quarterly, or as mutually designated. UDX will commit to consult with local authorities and community partners (such as training institutions or charitable partners as identified by UDX or through identification by and agreement with the local authorities) to understand essential workforce training and engagement to meet business needs.
- 7.2.3. The designated representative will be responsible for the monitoring and achievement of the commitments outlined in **Table 7-1**. The way this would take place is slightly different during the construction and operation:
- Construction – Managing construction commitments and passing them on to sub-contractors will be the responsibility of the Principal Contractor(s). UDX will ensure that these occur by explicitly including these requirements within the contracting process.
 - Operation – The responsibility for achieving operational commitments will be a responsibility of the designated representative assigned by UDX.

7.3 ENSURING COMPLIANCE

- 7.3.1. To ensure the delivery of the employment and skills commitments, UDX will implement a formal compliance and governance framework consisting of quarterly oversight and monitoring, and remedial measures for non-compliance as set out below.

QUARTERLY OVERSIGHT AND MONITORING

- 7.3.2. A Socio-Economic Taskforce will be established and hold quarterly meetings. These meetings will be attended by a representative from UDX, Ministry of Housing, Communities & Local Government (MHCLG) (unless and until MHCLG determines a representative on its behalf no longer needs to attend such meeting), Bedford and Central Bedfordshire local authorities, and other relevant stakeholders and will focus on delivery performance, risks, and corrective actions.
- 7.3.3. A designated representative from UDX will be responsible for coordinating and reporting on all employment and skills commitments.
- 7.3.4. UDX will maintain a live compliance tracker, updated regularly and reviewed at each Socio-Economic Taskforce meeting. This will log the status of each commitment, supporting evidence, and any identified issues.

Meetings will be quarterly from receipt of planning approval through construction and the early years of operation.

REMEDIAL MEASURES FOR NON-COMPLIANCE

- 7.3.5. If adequate progress on one or more commitments are not met within a given year, the following steps will apply:

- **Root cause review** - Within four weeks of identifying a missed target, UDX will undertake a root cause analysis and submit a brief findings note to the Secretary of State.
- **Corrective action plan** - UDX will develop a Corrective Action Plan in consultation with the Secretary of State (or his or her delegated representatives). This plan will:
 - Identify short-term remedial actions (to be initiated within three months);
 - Propose a revised delivery timeline (if necessary); and
 - Outline any required corporate or delivery partner support.
- **Review and sign off** - The Plan will be reviewed at the next quarterly meeting and signed off by the Secretary of State or his or her delegated representatives.
- **Potential escalation** - Where underperformance continues for two consecutive years on a commitment, UDX will agree proportionate mitigation measures with the Secretary of State, such as enhanced future delivery or a financial contribution to alternative initiatives.

8 ARBORICULTURAL CONTROLS

8.1 OVERVIEW

- 8.1.1. Trees within the Site boundary shall be removed and protected as shown on the **Tree Removal and Protection Plan, Appendix D** and in accordance with the measures set out below.

8.2 ARBORICULTURAL SITE SUPERVISION

- 8.2.1. An Arboricultural Clerk of Works shall be appointed to oversee the tree protection during the construction phase.
- 8.2.2. The Arboricultural Clerk of Works must be on-Site:
- Prior to commencement of construction work within the vicinity of a tree identified for protection on the **Tree Removal and Protection Plan, Appendix D**, to ensure tree protection fencing is in place; and
 - Periodically, with dependency of what tasks are being undertaken during construction.

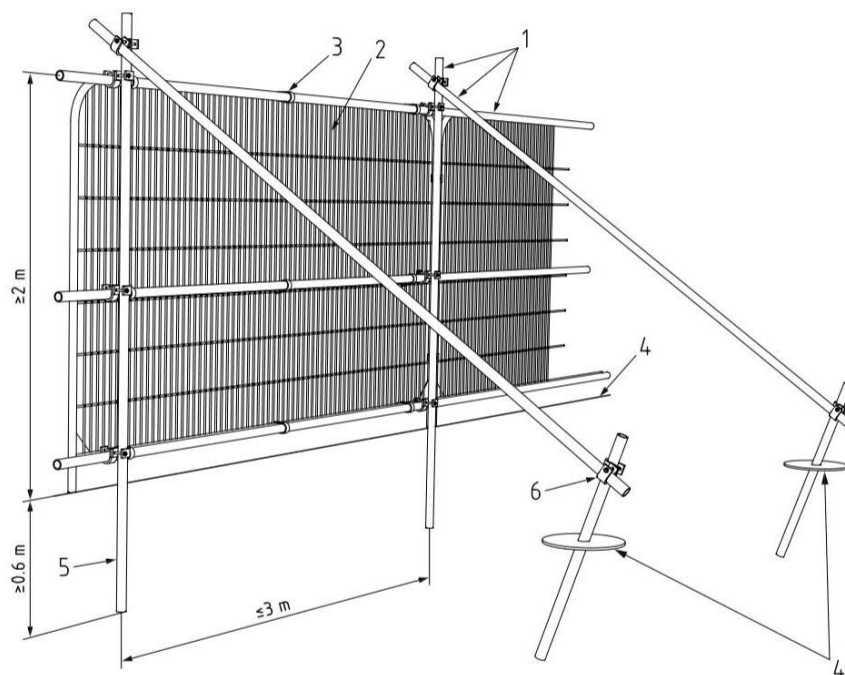
TREE WORKS

- All tree works shall adhere to British Standard BS 3998:2010 *Tree work – Recommendations*²²;
 - All operations shall be carefully carried out to avoid damage to the trees being retained; and
 - No trees to be retained shall be used for anchorage or winching purposes.
- 8.2.3. Should the requirement for a tree felling or pruning arise which is additional to that identified in the **Tree Removal and Protection Plan, Appendix D** then the following process shall be applied:
- Any specification shall be technically approved by the Arboricultural Clerk of Works; and
 - Written approval shall be obtained from the relevant Planning Authority prior to implementation of the work.

TREE PROTECTION FENCING

- 8.2.4. Tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place. An example of the type of tree protection fencing which may be required is included in **Image 8-1**.

²² British Standards Institution (2010) *BS 3998:2010 Tree work – Recommendations*. UK: British Standards Institution.



Key:

1. Standard scaffold poles
2. Heavy gauge 2m tall, galvanised tube and welded mesh infill panels
3. Panels secured to uprights and cross-members with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6m)
6. Standard scaffold clamps

Image 8-1 - Example of Appropriate Tree Protection Fencing

- 8.2.5. Tree protection fencing will be used to prevent access to the root protection areas (RPAs) of retained trees and this will form the Construction Exclusion Zone. In all instances the following shall be adhered to:
- Tree protection fencing shall be erected prior to any works in the vicinity of that area of the Site where construction works are to occur including site clearance, groundwork or the importation of plant and materials;
 - Tree protection fencing to protect retained trees during the phases of demolition and construction;
 - All weather notices will be attached (at eye level) to the tree protection fencing at suitable intervals and shall include suitably sized informative text stating "Tree Protection Fencing, Construction Exclusion Zone – No Access";
 - Once erected tree protection fencing shall remain in-situ until construction activities in the vicinity of that area of the Site are complete;

- No construction activities, storage of materials or pedestrian or vehicular access shall take place within the Construction Exclusion Zone; and
- Regular daily checks will be carried out by an appointed person to ensure that all tree protection fencing is still in place and functioning; any damage will be rectified without delay.

8.2.6. Tree protection measures can be removed when construction works in the vicinity of that area of the Site are completed.

GROUND PROTECTION

8.2.7. Ground protection shall be used within any area where construction access is required within the RPAs of any retained tree. Its suitability shall be reviewed by the Arboricultural Clerk of Works prior to implementation on-Site and shall adhere to:

- Ground protection shall be sufficiently robust to prevent damage or disturbance of the underlying soil and adhere to section 6.2.3 of British Standard BS5837:2012²³;
- It shall be in-situ prior to any works in the vicinity of that area of the Site including site clearance, groundwork or the importation of plant and materials;
- Ground protection shall remain in-situ until all construction activities in the vicinity of that area of the Site are complete; and
- Regular daily checks will be carried out by an appointed person to ensure that ground protection is still in place and functioning; any damage will be rectified without delay.

8.2.8. Ground protection measures will be removed when access is no longer required within the effected RPAs.

ADDITIONAL PRECAUTIONS OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

8.2.9. Site huts, welfare facilities, parking, material/spoil storage, mixing and vehicle cleaning facilities will be located outside of RPAs.

8.2.10. Care will be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times.

8.2.11. Notice boards, telephone cables or any other services shall not be attached to any part of a retained tree.

INSTALLATION OF UNDERGROUND APPARATUS AND SERVICE RUNS

8.2.12. Wherever possible any underground services (cabling and pipes) shall be located outside the RPA of any retained tree. Soakaways must not be located within RPAs.

8.2.13. Wherever possible services shall be grouped together utilising common ducts and have all inspection chambers located outside of the RPA.

²³ British Standards Institution (2012) *BS 5837: 2012 – Trees in relation to design, demolition and construction – Recommendations*. UK: British Standards Institution.

- 8.2.14. In situations where services must pass through the RPAs of a retained tree then trenchless techniques shall be used wherever possible with launch and receptor pits being located outside the RPAs.
- 8.2.15. Guidance within Volume 4: National Joint Utilities Group Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2:16 November 2007) shall be followed.

9 SUSTAINABILITY CONTROLS

9.1 LEED FOR COMMUNITIES: PLAN AND DESIGN

- 9.1.1. UDX will obtain the LEED Gold certification under the U.S. Green Building Council's ("USGBC") Leadership in Energy and Environmental Design ("LEED") for Communities: Plan and Design rating system for the design of the ERC ("LEED Gold C&C Certification").
- 9.1.2. Once the LEED Gold C&C Certification is obtained, the ERC shall be constructed in accordance with the relevant design principles and standards underpinning the LEED Gold C&C Certification.

9.2 LEED BD&C FOR FLAGSHIP BUILDINGS

- 9.2.1. In respect of all Flagship Buildings within the Proposed Development for which UDX is the relevant Undertaker, the first building of each of the following categories of use will be designed and constructed so as to achieve LEED Gold certification under the USGBC's LEED for Building Design and Construction ("LEED BD&C") rating system (or comparable certification system as approved by the Secretary of State):
 - i. restaurant;
 - ii. retail venue;
 - iii. office or administration facility;
 - iv. server centre;
 - v. warehouse or storage facility; and
 - vi. hotel.
- 9.2.2. Thereafter, each Flagship Building of the same building and use type within the ERC for which UDX is the relevant Undertaker will be designed to incorporate the same design principles and standards underpinning the applicable application for LEED Gold certification.
- 9.2.3. For purposes of this control, a Flagship Building is one that satisfies all of the following criteria (the "Flagship Criteria") in addition to being one of the building types listed in **9.2.1** above:
 - i. meets the minimum programme requirements for LEEDv4:
 - a. Must be in a permanent location on existing land (i.e. not movable and not on an artificial land mass);
 - b. Must use reasonable LEED boundaries that include all contiguous land that is associated with the project and supports its typical operations; and
 - c. Must comply with project size requirements (for LEED BD&C the project must include a minimum of 93 square metres of gross floor area).
 - ii. is a standalone facility with singular programming (i.e. not within a single building containing multiple uses);
 - iii. has a total project footprint greater than 2,500 square metres; and
 - iv. is designed to be occupied by at least 50 people for its normal use.

10 ENVIRONMENTAL CONTROLS – GLOSSARY OF TERMINOLOGY

Term	Definition
Accessibility	One of the five Guidance on the Methodology for Multi-Modal Studies (GOMMMS) objectives: to improve access to facilities for those without a car and to reduce severance by increasing the ease by which people can access locations and services.
Archaeological Clerk of Works	Responsible for managing the scope and for monitoring and assuring archaeological work on site on behalf of a client.
Archaeological Contractor	Responsible for carrying out archaeological fieldwork, post-excavation reporting, deposition of the archive and dissemination.
Archaeological Works	Full archaeological excavation.
Assessment	A process by which information about effects of a proposed plan, project or intervention is collected, assessed and used to inform decision-making.
Carbon Opportunities Register	A carbon opportunities register is a strategic database used by on projects to identify, evaluate, and prioritise opportunities for reducing carbon emissions across the life cycle of the project. It typically includes potential initiatives such as design updates, material substitution, energy efficiency upgrades, or renewable energy adoption along with estimated carbon savings, costs, and implementation timelines. This register supports informed decision-making and helps align sustainability goals with actionable carbon reduction strategies.
Construction Exclusion Zone	A designated area on or around a construction site where access is restricted or prohibited to ensure safety and prevent accidents.
Construction Phase	The period during which the Proposed Development will be constructed, including the Primary Phase and the Full Buildout. The term has been used within the technical assessments to refer to the construction works that have been assessed during the phase years in Chapter 3: Approach to EIA (Volume 1) to identify the likely significant effects of the construction of the Proposed Development.
Construction Work	(a)The erection, installation, provision, extension, maintenance, repair, improvement, alteration, decommissioning, removal or demolition of a building, structure, plant, equipment, machinery, sewer, main, pipe, cable or other apparatus; (b)Engineering or other operations, including any: (i) excavation, other than archaeological works; (ii) building, engineering or other operation, including construction, maintenance or repair of a road that facilitates the carrying out of other operations, or access to a building or structure.
Consultation	An engagement process undertaken after the grant of planning permission for the Proposed Development with any relevant regulatory authorities, statutory and/or non-statutory bodies regarding licencing, information or guidance on a particular regulatory scheme to help inform the design evolution and/or carrying out of any element of the Proposed Development in a manner consistent with any planning permission for the Proposed Development (or the avoidance of doubt this term excludes any consultation undertaken by the Secretary of State in determining this planning proposal).
Controlled waters	Taken from the meaning of “controlled waters” in the Water Resources Act 1991 Section 104 (1), for the Proposed Development controlled waters are:

Term	Definition
	<p>(c)inland freshwaters, that is to say, the waters of any relevant lake or pond or of so much of any relevant river or watercourse as is above the fresh-water limit;</p> <p>(d)ground waters, that is to say, any waters contained in underground strata.</p> <p>References to controlled waters include the bed of the river, dry watercourses and waters that have overflowed.</p>
Decibel (dB)	The decibel scale is used in relation to sound because it is a logarithmic rather than a linear scale. The decibel scale compares the level of a sound relative to another. The human ear can detect a wide range of sound pressures, typically between 2×10^{-5} and 200 Pascal so the logarithmic scale is used to quantify these levels using a more manageable range of values.
Demolition	The act of dismantling, destroying, or removing buildings, structures, or other infrastructure.
Ecological Enhancement Area	A designated area(s) to preserve or improve the ecological condition of a site on completion of a development project.
Environment	Our physical surroundings, including land, air and water.
Environmental Engineer/Scientist	The Environmental Engineer/Scientist will be responsible for the supervision of site remediation work including verification sampling, controlling sample quality and chain of custody. Additionally, they will be responsible for undertaking field measurements, recording observations and determining compliance with the remediation strategy. Post remediation reporting will include the drafting of factual and interpretative reports including verification.
Environmental Product Declarations (EPDs)	EPDs are standardised documents that provide transparent, verified data about the environmental impacts of a product throughout its life cycle. Typically following ISO 14025:2006 - Environmental labels and declarations, EPDs quantify aspects such as greenhouse gas emissions, energy use, and resource consumption, helping manufacturers, designers, and policymakers assess and compare the sustainability of products. They are increasingly required in public and private procurement to support low-carbon construction and manufacturing practices.
Equivalent Continuous Level ($L_{eq,T}$)	<p>The Equivalent Continuous Level represents a theoretical continuous sound, over a stated time period, T, which contains the same amount of energy as a number of sound events occurring within that time, or a source that fluctuates in level.</p> <p>For example, a noise source with a sound pressure level of 80 dB(A) operating for two hours during an eight-hour working day, has an equivalent A-weighted continuous level over eight hours of 74 dB, or $L_{Aeq,8hrs} = 74$ dB.</p> <p>The time period over which the L_{eq} is calculated should always be stated.</p>
Grand Opening	The date on which the Theme Park within the Entertainment Resort Complex officially opens to the general public (excluding its Soft Opening Period, if applicable) with a majority of its attractions operational.
Hazard	Anything with the potential to cause harm, including ill-health and injury, damage to property or the environment; or a combination of these.
Hazardous Waste	Waste that could pose a risk to human health or the environment due to its properties, such as being toxic, corrosive, flammable, or infectious
Impact	Change that is caused by an action; for example, land clearing (action) during construction which results in habitat loss (impact).
Injurious Weed	Plants recognised as posing a significant threat to agricultural land in the UK, as prescribed in the Weeds Act 1959 and the Ragwort Control Act 2003.

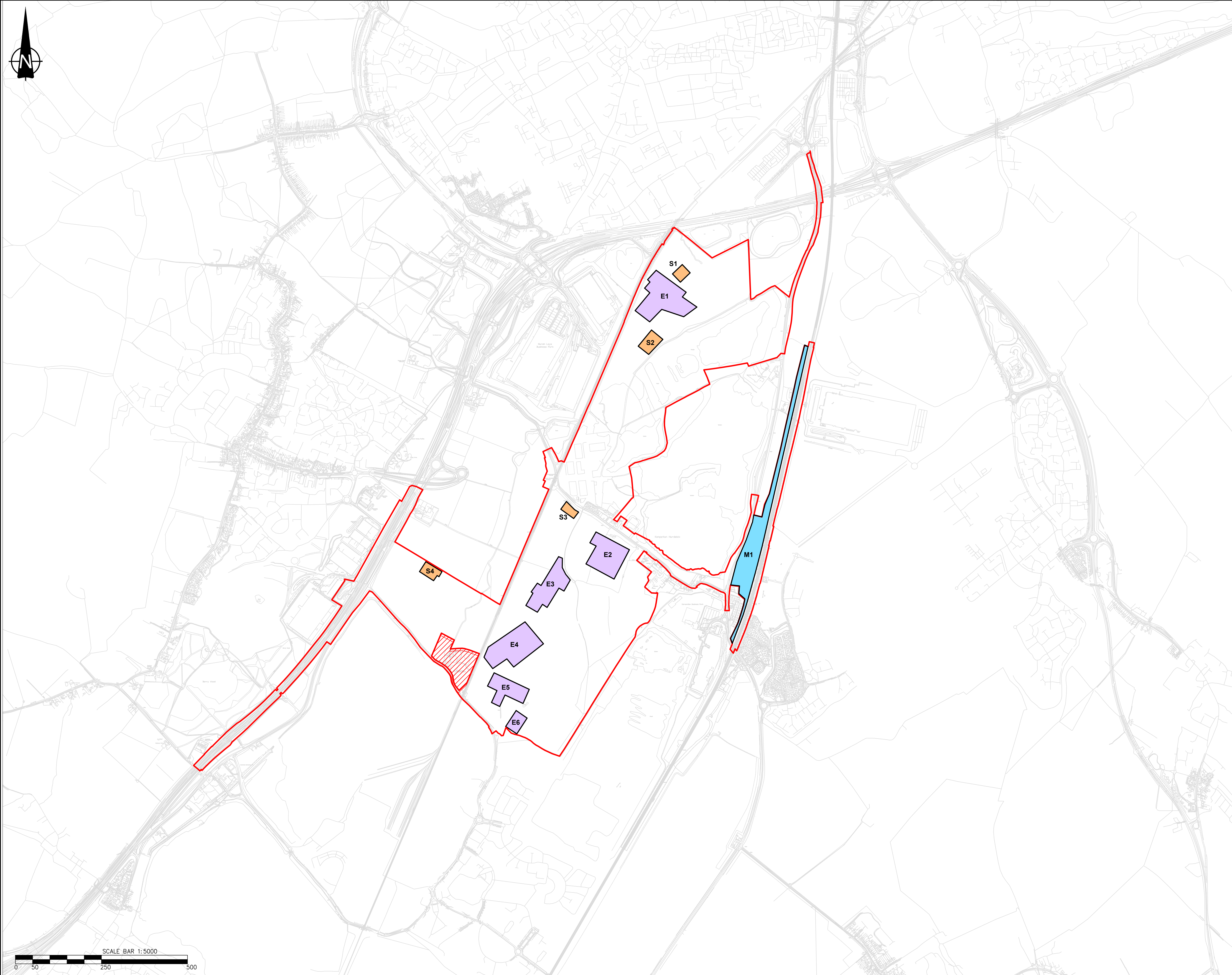
Term	Definition
Invasive Species	Non-native plants and animals that have been introduced (either deliberately or accidentally) into the UK and are able to spread, causing damage to the environment, economy or human health.
Land Drainage Consent	Land drainage consent is required for any works carried out in, on, or near a watercourse, including both main rivers and ordinary watercourses, under the Land Drainage Act 1991.
Leadership in Energy and Environmental Design (LEED)	LEED certification, which stands for Leadership in Energy and Environmental Design, is a globally recognized green building rating system developed by the U.S. Green Building Council (USGBC). It provides a framework for designing, constructing, operating, and maintaining green buildings, homes, and neighbourhoods. LEED certification signifies that a building or community meets certain standards for sustainability, energy efficiency, and environmental performance. LEED certification is a globally recognized symbol of sustainability achievement and leadership.
Methodology	The specific approach and techniques used for a given study.
Mitigation	Measures intended to avoid, reduce and, where possible, remedy significant adverse environmental effects.
National Planning Policy Framework	Framework that sets out the UK government's planning policies for England.
Noise	A noise can be described as an unwanted sound. Noise can cause nuisance.
Noise Sensitive Receptors	Any identified receptor likely to be affected by noise. These are generally human receptors, and may include residential dwellings, work places, schools, hospitals, community facilities, places of worship and recreational spaces.
OASIS	An online reporting form enabling heritage practitioners to provide information about their investigations to regional Historic Environment Records (HERs) and respective national heritage organisations.
Octave Band/Third Octave Bands	A sound made up of more than one frequency can be described using a frequency spectrum, which shows the relative magnitude of the different frequencies within it. The possible range of frequencies is continuous, but can be split up into discrete bands, often an octave or third-octave in width. Each octave band is referred to by its centre frequency, generally 63Hz, 125Hz, 250Hz, 500Hz, 1kHz etc.
Operational Phase	The operation of the Proposed Development, entailing the operation of the Primary Phase from 2031 and the operation of the Full Buildout from completion onwards. The term has been used within the technical assessments to refer to the Proposed Development's operation during the phase years in Table 3-2 of the ES and which has been assessed to identify the likely significant effects of the operation of the Proposed Development.
PAS 2080:2023	A British Standard that provides a framework for managing carbon within the built environment, including buildings and infrastructure.
Permitted Preliminary Works	Works consisting of environmental surveys and monitoring, ecological habitat creation, geotechnical surveys, surveys of existing infrastructure, and other investigations for the purpose of assessing and monitoring ground conditions and levels, the preparation of facilities for the use of contractors, the provision of temporary means of enclosure and site security for construction, vegetation clearance, the temporary display of site notices or advertisements, and any nominal compounds related to such works.

Term	Definition
Principal Contractor	The principal contractor(s) for one or more portions of the Proposed Development appointed in accordance with applicable CDM regulations.
Proposed Development	All elements of the proposed built development as described in Appendix 2.4: Description of Development for EIA and Examples (Volume 3) .
Protected Species	A plant or animal species that is legally safeguarded due to its rarity, vulnerability, or ecological importance.
Rating Level (L _{ARTR})	The specific sound level with penalties for characteristic features of the noise (i.e. tonality, intermittency or impulsivity).
Receptor	A component of the natural or built environment (such as a human being, water, air, a building or a plant) that is affected by an impact of construction works and/or the operation of a proposed development.
Relevant pollutant linkage (RPL)	A pollutant linkage is the term used to describe the relationship between a contaminant, a pathway, and a receptor, where the contaminant has the potential to cause harm. For a site to be considered contaminated land, a pollutant linkage must be present, meaning all three elements (source, pathway, and receptor) are linked.
Risk	The likelihood of an impact occurring, combined with effect or consequence(s) of the impact on a receptor if it does occur.
Safety	One of the five Guidance on the Methodology for Multi-Modal Studies (GOMMMS) objectives: to reduce the loss of life, injuries and damage to property resulting from transport accidents and crime, the latter by improving the personal security of travellers.
Site	All land within the Red Line Boundary.
Soft Opening	Means any period prior to the Grand Opening when some or all of the Theme Park on the Site is open for technical rehearsal to allow employees an opportunity to deliver guest services in a real-time operating mode, but in a controlled environment for training purposes (e.g., limited attendance, limited hours, and/or limited attraction availability)
Theme Park	Buildings, structures and facilities for tourism and leisure uses comprising theme parks, amusement parks and/or water parks uses, including: <ul style="list-style-type: none"> j) events spaces, rides, attractions, pools, shows, entertainment venues, art and creative imagery, theatres, and cinemas, all or some of which may involve water, special effects (including fire), and/or be enclosed; k) retail, dining and entertainment facilities comprising venues for the sale of food and drink (including indoor and outdoor alcoholic beverage venues), retail venues, music and entertainment venues, dance clubs, nightlife entertainment and related ancillary facilities, support facilities, kitchens, storage, loading, security, servicing and laundry services to support these uses; l) permanent and/or temporary exhibition or multi-use spaces, including seasonal event venues and spaces; m) visitor facilities; n) visitor entrance areas, including ticketing points, turnstile structures, and ancillary commercial uses; o) security plaza, including screening facilities (such as metal detectors and x-ray machines); p) ticketing facilities;

Term	Definition
	<p>q) parades, shows and displays, including use of drones, indoor and outdoor concerts, fireworks, pyrotechnics, laser, light or projection shows, and seasonal events;</p> <p>r) any other similar, related or ancillary use;</p>
UDX or Universal Destinations & Experiences	Universal City Studios LLC, Kempston Hardwick Developments Limited, SC Collection Limited and/or any of their group companies involved with the ownership of the Site or the ownership or operation of the Theme Park.
Underground Work	Means any excavation, tunnelling or boring below the surface of the ground, piling, or other construction work carried out underground and comprised in the Authorised Development, and includes work undertaken in connection with the installation of any sewer, main, pipe, cable or other utility apparatus, or for the purposes of water management.
Relevant Undertaker(s)	The persons (corporate or otherwise) who are permitted to carry out the Proposed Development (including their contractors and other persons appointed by them in connection with the carrying out of the Proposed Development).
Waste Acceptable Criteria	Specific criteria that a waste material must meet to be accepted at a particular waste management facility.
Whole Life Carbon Analysis	Analysis of the greenhouse gas emissions associated with a development through its entire lifespan from.

Appendix A

ARCHAEOLOGICAL MITIGATION AREAS



ARCHITECT/ENGINEER STAMP:

Approved by: *AC*

Drawn by: *AB*

Latest Revision Date: 18/06/2025

Issuance and Revision History

Rev.	Date	Issuance and Revision Description
00	18/06/2025	First Issue

Legend

Site boundary

Excluded from Site boundary

Proposed Archaeological Excavation Areas

Proposed Archaeological Strip Map and Sample Areas

Proposed Area of Archaeological Monitoring and Potential Strip, Map and Sample areas

Project Name: Universal Destinations & Experiences UK Project

Site Address: Former Kempston Hardwick Brickworks and adjoining land, Bedford

Scale: 1:10000 @ A1

Project Locator:

320 – 100 – SD0

Sheet Name:

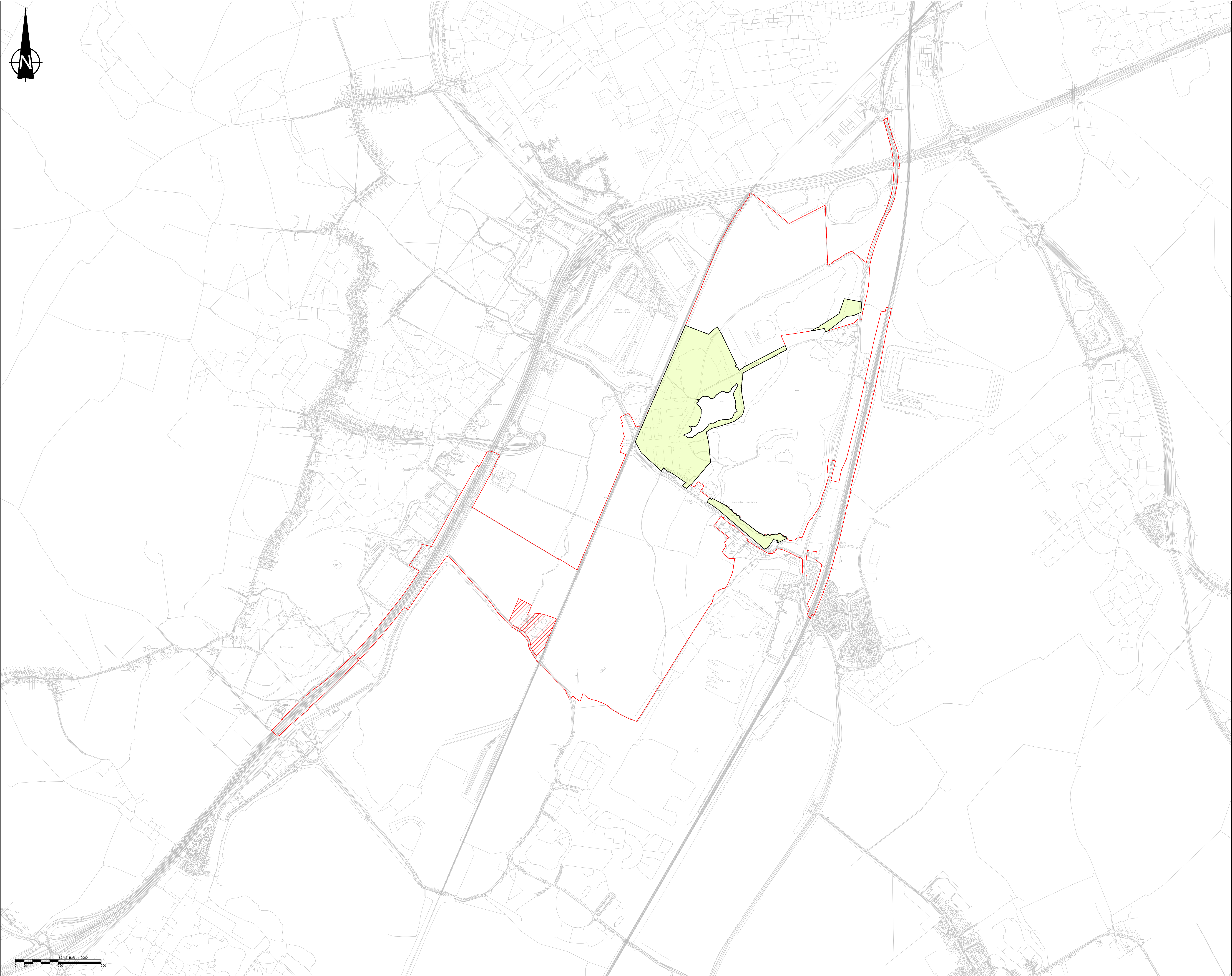
Archaeological Mitigation Areas

Sheet No.: 320-1000-P-DE30

Rev. #: 00

Appendix B

AREAS OF POTENTIAL CONTAMINATION



ARCHITECT/ENGINEER STAMP:

Approved by: ca

Drawn by: oc

Latest Revision Date: 17/06/2025

Issuance and Revision History

Rev.	Date	Issuance and Revision Description
00	17/06/2025	First Issue

Notes

1. All measurements are in metres unless otherwise stated

Legend

— Site boundary

▨ Excluded from Site boundary

■ Areas of Potential Contamination

Project Name: Universal Destinations & Experiences UK Project

Site Address: Former Kempston Hardwick Brickworks and adjoining land, Bedford

Scale: 1:10,000 @ A1

Project Locator:

320 — 100 — SDO

Sheet Name:

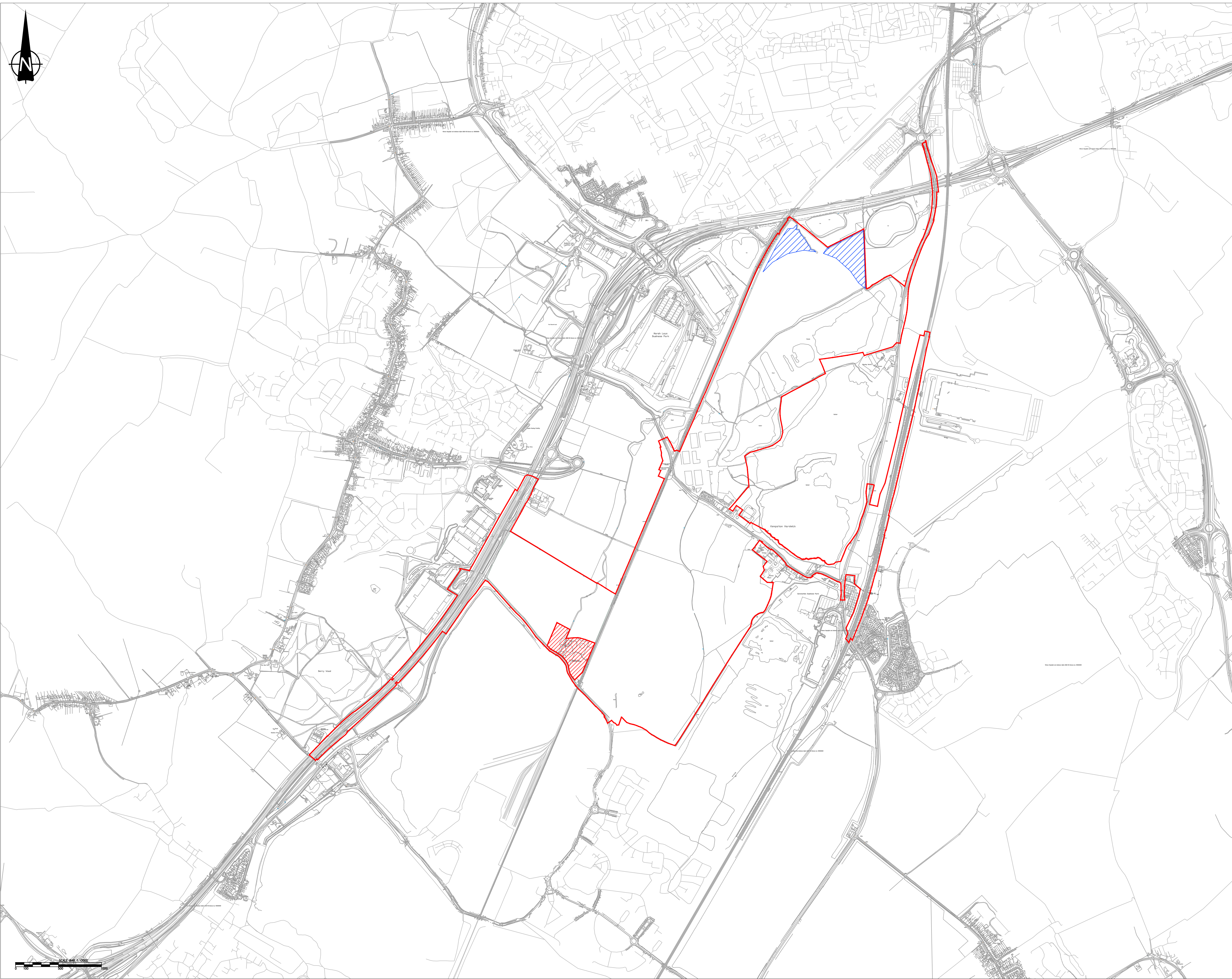
Areas of Potential Contamination

Sheet No.: 320-1000-P-DE26


Rev #: 00

Appendix C

FLOOD COMPENSATION AREA





VENDOR



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T+ 44 (0) 207 314 5000, F+ 44 (0) 207 314 5111
wsp.com

ARCHITECT/ENGINEER STAMP:

Approved by: Drawn by: 

Latest Revision Date: 17/06/2025

Issuance and Revision History

Rev.	Date	Issuance and Revision Description
—	17/06/2025	First Issue

Key

- Site boundary
- Excluded from Site boundary
- Flood Compensation Area

Drawing Status:

Project Name: Universal Destinations & Experiences UK Project

Site Address: Former Kempston Hardwick Brickworks and adjoining land, Bedford

Project Locator:
320 — 100 — SDO

Sheet Name:
Flood Compensation Area

Sheet No.: 320-1000-P-DE29

Rev #: 