



UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks
and adjoining land, Bedford

Environmental Statement Volume 3

Appendix 2.1 - Environmental Statement Basis of Assessment

Report reference: 4.2.1.0

Revision number: 00

Date: June 2025



TECHNICAL NOTE 1

DATE: 01 June 2025 **CONFIDENTIALITY:** Public

SUBJECT: Universal Destinations & Experiences UK Project

DOCUMENT: Environmental Statement Basis of Assessment

THEME PARK

Table 1-1 – Hours that Theme Park ticketed area is open to the public

Relevant Operations	Hours
Normal hours Theme Park ticketed area is open to the public	07:00 – 23:00
Seasonal events such as Halloween Horror Nights	Open up to 02:00 up to 60 days/year
Holidays	Open up to 01:00 up to 5 days/year
Special Events (including private events)	Open up to 01:00 up to 30 times/year
Outdoor amplified music	Up to 23:00, except during the Halloween Horror Nights, Holidays, and Special Events referenced above, such music may extend up to 00:30

Table 1-2 – Theme Park Assumed Visitor Numbers per annum

Year	Domestic Visitors	International Visitors	Total
2031	5,950,000 (70%)	2,550,000 (30%)	8,500,000
2051*	6,240,000 (52%)	5,760,000 (48%)	12,000,000

* The cautious worst case¹ for the purpose of the Transport Assessment (**Appendix 5.1: Transport Assessment (Volume 3)**) has a higher number of Theme Park visitor numbers (both domestic and international) than shown in **Table 1-2** above in order to form the basis for the derivation of trip forecasts for assessment of the Theme Park in the Future Year. This ensures that the cautious worst case assessment presented in the Transport Assessment is robust.

Table 1-3 – Daily Visitor Numbers

Levels of attendance	2031	2051
Low attendance	10,000 (80 days/year)	18,750 (50 days/year)
Average attendance	23,000 (230 days/year)	31,250 (265 days/year)
Busy attendance	40,000 (40 days/year)	60,417 (35 days/year)
Peak attendance	55,000 (15 days/year)	81,250 (15 days/year)

¹ A cautious worst case provides a robust assessment of likely significant effects.

Table 1-4 – Domestic Visitors per annum

Levels of attendance	2031	2051
Low attendance	7,000 (80 days/year)	9,750 (50 days/year)
Average attendance	16,100 (230 days/year)	16,250 (265 days/year)
Busy attendance	28,000 (40 days/year)	31,417 (35 days/year)
Peak attendance	38,500 (15 days/year)	42,250 (15 days/year)

Table 1-5 – International Visitors per annum

Levels of attendance	2031	2051
Low attendance	3,000 (80 days/year)	9,000 (50 days/year)
Average attendance	6,900 (230 days/year)	15,000 (265 days/year)
Busy attendance	12,000 (40 days/year)	29,000 (35 days/year)
Peak attendance	16,500 (15 days/year)	39,000 (15 days/year)

Table 1-6 – Theme Park Shift Patterns

Shift	Arrivals	Departures	% of Daily Team Members Number
Shift 1	04:00 – 12:00	10:00 – 18:00	48%
Shift 2	09:00 – 17:00	18:00 – 00:00	42%
Shift 3	19:00 – 22:00	05:00 – 08:00	10%

HOTEL BEDROOMS

Table 2-1 – Maximum Number of Hotel Bedrooms

Assessment Year	Number of Bedrooms
Opening Year (2031)	500
Future Year (2051)	6,070 in total – with 4,720 assumed to be used by Theme Park visitors

MAXIMUM AMOUNTS

Table 3-1 – Maximum amounts by certain land use classifications and the amount of fuel and pumps

Zone	Use	Maximum Amount
Lake Zone	Retail within Class E(a) of <i>The Town and Country Planning (Use Classes) Order 1987 (as amended)</i> (excluding concessions in visitor accommodation, indoor and outdoor entertainment venues, indoor and outdoor sport and recreation, leisure and spa facilities, venues with conference and/or convention spaces and indoor and outdoor cultural facilities)	11,000 sqm Gross External Area (GEA)
	Venues with conference and/or convention spaces (not located in any visitor accommodation)	55,000 sqm GEA
	Individual retail unit size within Class E(a) of <i>The Town and Country Planning (Use Classes) Order 1987 (as amended)</i>	1,100 sqm GEA
West Gateway Zone	Retail within Class E(a) of <i>The Town and Country Planning (Use Classes) Order 1987 (as amended)</i> (excluding concessions in visitor accommodation, indoor and outdoor entertainment venues, indoor and outdoor sport and recreation, leisure and spa facilities, venues with conference and/or convention spaces and indoor and outdoor cultural facilities, and Highway Service Area)	7,700 sqm GEA
	Highway Service Area	16 petrol and/or diesel pumps with associated retail Hydrogen refuelling: below 2 tonnes Liquefied petroleum gas storage: below 25 tonnes Trips associated with any Electric Vehicle (EV) charging stations to be controlled through the Monitor and Manage Plan.
	Individual retail unit size within Class E(a) of <i>The Town and Country Planning (Use Classes) Order 1987 (as amended)</i>	1,100 sqm GEA

PARKING

Table 4-1 – Car and Coach Parking

Location/Element	Minimum Spaces at Grand Opening	Maximum Spaces at Full Buildout
Site-wide Non-Rail Car Parking	7,106	16,661
Coach Parking	100 bays	200 bays

The minimum number of spaces at Grand Opening includes the requirements for the Theme Park, Entry Plaza, Entertainment Resort Complex (ERC) Support, and 500 hotel bedrooms. The Maximum Spaces at Full Buildout reflects the allowance for Theme Park growth between Primary Opening Year development and Future Year development, along with the use of likely parking demand figures for non-Theme Park uses derived from the Transport Assessment (**Appendix 5.1: Transport Assessment (Volume 3)**) compared with maximum parking spaces derived from Bedford Borough Council (BC) local parking standards.

Table 4-2 – EV Parking Provision**

Location/Element	Minimum Active Provision	Minimum Passive Provision
Car parks exceeding 10 car parking spaces	3% of total car parking spaces	See line below
All car parking in the ERC at any given time (taken cumulatively and not to be applied to each individual car park)	5% of total car parking spaces	An additional 5% of total car parking spaces

**Should the technology for EVs fall out of use, EV charging dedicated parking spaces would no longer be provided.

Table 4-3 – Cycle Parking

	Short Stay	Long Stay
Minimum spaces at Grand Opening to serve the Theme Park, Entry Plaza, ERC Support and 500 hotel bedrooms	50 spaces	200 spaces

RAIL SERVICES

Table 5-1 – Rail Services

Rail Line and Station	Assumed services for the purposes of assessment
Midland Main Railway Line – Wixams Rail Station	Serviced by between four and eight East Midlands Railway and Thameslink trains currently operating on the line, which will in the future be able to stop at the new station.
Marston Vale Railway Line – East West Rail Station	If constructed, it is assumed that the station would be serviced by three trains per hour in each direction as per the existing <i>Transport Works Order Act (The Network Rail (East West Rail) (Bicester to Bedford Improvements) Order 2020</i> the information provided in the East West Rail non-statutory consultation materials.

DIRECT EMPLOYMENT

Table 6-1 – Theme Park Staff

Year	Theme Park
2031	Directly employ total 8,050 (Full-Time Equivalent (FTE) 5,950)
2051	Directly employ total 10,000 (FTE 7,395)

Table 6-2 Full Buildout Staff

Year	Full Buildout
2051	<p>Directly employ total 12,465 (FTE 9,195)</p> <p>This is split between the following:</p> <ul style="list-style-type: none"> - 10,000 (7,395 FTEs) on the Theme Park; - 2,415 (1,765 FTEs) across the hotels (excluding the jobs at the 500 hotel bedrooms located on the Theme Park); and - 50 (35 FTEs) supported at the convention centre (there would be more temporary employment opportunities when large events are held, however these are excluded from this assessment in order to assess a cautious worst case scenario of employment).

NET ADDITIONAL EMPLOYMENT²

Table 7-1 – Net additional employment, 2031, socio-economic study areas

Study area	Core Study Area	Sub Regional Context Area	Labour Catchment Area	National Area
Gross direct jobs	8,050	8,050	8,050	8,050
Net direct jobs	7,650	7,245	6,845	6,040
Indirect & worker spending induced jobs	765	1,085	3,420	7,245
Net additional visitor induced jobs	2,635	3,320	5,280	11,910
Total not additional jobs	11,045	11,650	15,545	25,195

² See **Chapter 13: Socio-Economics (Volume 1)** of the Environmental Statement (ES) for a full description of study areas used in this section.

Table 7-2 – Net additional employment, 2051, socio-economic study areas

Study area	Core Study Area	Sub Regional Context Area	Labour Catchment Area	National Area
Gross direct jobs	12,465	12,465	12,465	12,465
Net direct jobs	11,840	11,220	10,595	9,350
Indirect & worker spending induced jobs	1,185	1,685	5,295	11,220
Net additional visitor induced jobs	3,660	4,880	8,200	21,290
Total not additional jobs	16,685	17,780	24,095	42,485

VISITOR EXPENDITURE³

Table 8-1 – Annual net additional visitor expenditure, socio-economic study areas

Study area	2031	2051
Core Study Area	£255m	£350m
Sub Regional Context Area	£430m	£635m
Labour Catchment Area	£560m	£865m
National Area	£1.3bn	£2.3bn

Table 8-2 – Annual net additional visitor expenditure by socio-economic study area, excluding spending on hotels

Study area	2031	2051
Core Study Area	£175m	£265m
Sub Regional Context Area	£305m	£485m
Labour Catchment Area	£400m	£665m
National Area	£930m	£1.8bn

³ See ES Chapter 13: Socio-Economics (Volume 1) for a full description of study areas used in this section.

ECONOMIC OUTPUT⁴

Table 9-1 – Annual net additional Gross Value Added across socio-economic study areas

Study area	2031	2051
Core Study Area	£450m	£680m
Sub Regional Context Area	£640m	£975m
Labour Catchment Area	£745m	£1.2bn
National Area	£1.3bn	£2.1bn

HIGHWAY SERVICE AREA

In the Future Year (2051) assessments of the ES, it is assumed that a 16 pump petrol/diesel/sustainable charging station will be in the West Gateway Zone.

UTILITIES

Table 10-1 – Energy Requirements

Energy Requirements	
Temporary/Construction Phase Measures	<p>Gas boilers maybe used for heating and hot-water generation during Primary Phase Construction Phase.</p> <p>Use of gas boilers will be permitted for a maximum of up to one year after Grand Opening.</p> <p>Gas boilers will have a rated thermal input of less than 20MW and require a Medium Combustion Plant permit from the Environment Agency as per the <i>Environmental Permitting (England and Wales) (Amendment) Regulations 2018</i>.</p> <p>In case of delays in provision of an electrical connection with adequate power for electricity, heating and hot water needs, it is assumed that heating and hot water demand would continue to be provided by gas boilers at opening.</p> <p>For a cautious worst case to inform a robust assessment, this is estimated at a demand of 22,027kW.</p>
Operational Phase Measures	<p>A new 132kV/33kV or 32kV/11kV primary substation located in the Lake Zone.</p> <p>An all-electric energy centre located in the Lake Zone comprising:</p> <ul style="list-style-type: none"> ▪ Heat-pumps for heating and cooling; ▪ Electric boilers; ▪ High efficiency chilled water plant; and/or ▪ Heating and cooling thermal store.

⁴ See ES Chapter 13: Socio-Economics (Volume 1) for a full description of study areas used in this section.

Energy Requirements

<p>A small gas supply will be needed for special effects loads.</p> <p>Should the main gas supply for the energy centre not be required, a connection to the existing Indigo Pipeline or Cadent assets located in Manor Road will be made.</p> <p>Should this connection not be available, gas for special effects will be provided by other sources such as separately charged local propane tank, which would be installed in line with required guidance and regulations.</p>
<p>A Battery Energy Storage System (BESS) of no more than 10 MVA is being considered to provide emergency response power. The BESS will be sized for some limited emergency power but is not intended to sustain park operations during a total long-term power failure.</p> <p>The BESS will be installed in a dedicated compound, co-located with the primary substation and energy centre within the dedicated Utility Compound.</p>
<p>BESS exclusion zone to comply with the relevant National Fire Protection Association (NFPA) standard such as <i>NFPA 885: Standard for the Installation of Stationary Energy Storage Systems</i> which requires 30.5m from other buildings not associated with electrical infrastructure.</p> <p>10m clearance is required for vegetation.</p>
<p>Back-up diesel generators to provide additional back-up power to critical systems and facilities within the Site in case of power failure will be co-located with the facilities they intend to power and not centralised within the dedicated Utility Compound.</p> <p>Critical systems and facilities will include:</p> <ul style="list-style-type: none"> ▪ Theme park shows/rides; ▪ Foul water pump stations; ▪ Fire water pump stations; ▪ Visitor accommodation emergency power to support minimum services; ▪ Train stations; ▪ Data and communication facilities; ▪ Emergency services support facilities; and ▪ Other critical facilities that may be necessary during power failure. <p>Generators will routinely be tested for approximately one hour per month and no more than 50 hours annually. Generators will not be operated without the necessary permit as a Medium Combustion Plant from the Environment Agency, as per the per the <i>Environmental Permitting (England and Wales) Regulations 2016 (as amended 2018)</i>.</p>

Table 10-2 – Water Supply

Water Supply	
Potable Water Supply	Potable supply to be provided by Anglian Water
Sustainable Approach	<p>Process water and irrigation needs to be met by sustainable approach using strategic rainwater harvesting in the Lake Zone Clay Pits, which will be stored and pumped to an on-Site process non-potable Water Processing and Collection Plant and distributed through a non-potable network to the Core Zone park activities. Design of the non-potable water system, including the capture of rainwater, the treatment and the distribution system follows the requirements specified in the British Standard BS EN 16941-1:2024.</p> <p>Sludge from the clarification steps will be stored before being tankered to an Anglian Water site. It is estimated that up to three tankers per week would be required.</p>
Non-Potable Water Supply	<p>The non-potable water supply is sufficient to meet all non-domestic uses' water demand for process water (irrigation, park washdown and water feature supply).</p> <p>Furthermore, the non-potable water supply can partially meet the demand from water closet flushing (28% to 71% depending on the development stage).</p>

Table 10-3 – Foul Water Drainage

Foul Water Discharge	
Sewer Network	<p>Domestic foul water will be discharged to Anglian Water's sewer network. The water strategy assumes, pending trade effluent consent from Anglian Water, that wastewater generated by the non-potable water processing and collecting works and closed-loop systems will also be discharged to Anglian Water's sewer network.</p>
Sewer Requirements	<p>Based on the anticipated foul flows from the Core, Lake and West Gateway Zones a 525mm diameter sewer is required to drain the development.</p> <p>Anglian Water have confirmed the nearest suitable connection point is at manhole 1301, northwest of the Site (grid reference TL 03128 46311).</p>
Private Foul Drainage Network	<p>A preliminary strategy for each Zone has been developed: West Gateway Zone will have a gravity network draining to a pumping station at the zone low point. A rising main will then connect into the Core Zone gravity network, which will drain to a pumping station at the northern part of Core Zone low point.</p> <p>East Gateway will drain to a local pumping station and then route along the proposed Manor Road alignment and connect to the northern part of Core Zone network via a rising main.</p> <p>Flows from the Core Zone pumping station will be pumped into a gravity system within Lake Zone which falls towards the northwest of Lake Zone to the Site terminal pumping station. It is anticipated that the local water authority will deliver the terminal pumping station and rising main route which will connect into Anglian Water manhole 1301, via a Sewer Requisition, Section 98 of the <i>Water Industry Act 1991</i>. The private foul drainage network will be further developed during detailed design stages.</p>

FIREWORKS, PYROTECHNICS AND DRONE SHOWS

Table 11-1 – Fireworks, Pyrotechnics and Drone Shows

	Anticipated use	Restrictions
Fireworks	<p>No regular firework displays are anticipated as part of the day-to-day operation of the Proposed Development. No more than 10 Fireworks shows are permitted each year, at least five of which would take place on or around the events of Chinese New Year, 5 November, Diwali and New Year's Eve.</p> <p>Use of Fireworks will be subject to the requirements and restrictions of the <i>Fireworks Regulations 2004</i>.</p>	<p>Fireworks shall mean those articles within UN 0335 1.3G, as the same may be modified or replaced from time to time and shall not otherwise include pyrotechnics within UN 0431 1.4G.</p> <p>Firework locations will have a minimum horizontal clearance of 50m from any Ecological Enhancement Areas within which no Fireworks would be launched/detonated. Fireworks launch locations will be positioned so that the fallout zone does not overlap with Ecological Enhancement Areas and is positioned on UDX owned property.</p>
Pyrotechnics	<p>Day-to-day pyrotechnics, including special effects used in attractions and shows, are expected to operate in short bursts.</p>	<p>Storage of pyrotechnics will comply with the <i>Explosives Regulations 2014</i> and the relevant Health and Safety Executive (HSE) guidance, <i>Explosive Regulations 2014: Guidance on Regulations – Safety provisions L150</i> and any relevant updates thereof. The pyrotechnics stored on Site will be of Hazard Type 4 and meet approximately one month's requirement for typical daily use of the products within the Theme Park. The quantity of explosives stored will be between no more than 3000 – 4000kg (though may be less from time to time) and will be subject to an HSE licence. Separation distances between the storage location and other buildings will be as per Schedule 5 of the <i>Explosives Regulations 2014</i> and Table 11 of <i>Explosive Regulations 2014: Guidance on Regulations – Safety provisions L150</i> (each as may be updated from time to time).</p>
Drone Shows	<p>Drone shows will be a regular part of the day-to-day operation of the Proposed Development.</p>	<p>Drone show locations will have a minimum horizontal clearance of 50m from any Ecological Enhancement Areas within which no drone shows would take place.</p> <p>Drone shows will only take place above UDX owned property.</p>

CONSTRUCTION

Table 12-1 – Construction Jobs

Peak On-Site Daily Workforce	Worker numbers
Occurs during Q4 of fourth year of construction, which for the purposes of this assessment is assumed to be 2029	5,380

Table 12-2 Core Construction Hours

The following hours will be adhered to during the construction of the Proposed Development:

Day	Hours
Monday to Friday	07:00 – 19:00
Saturday	07:00 – 13:00
Sunday, Public Holidays, Bank Holidays	No working unless by prior approval for specific works.

OUT OF HOURS WORKING

Certain construction activities may require extended working hours for reasons of engineering practicability, weather and safety such as major concrete pours and piling, surveys, lifting/fitting of infrastructure and equipment, and abnormal deliveries. The nature and timing of these works and the associated extended working hours will be provided in the detailed Construction and Environment Management Plans (CEMPs), and the agreed schedule shared with Bedford BC and notified to relevant stakeholders.

UDX will compel the Principal Contractor(s) to issue “look-ahead” bulletins detailing the location, nature, timing and expected duration of any works scheduled outside standard hours, together with the noise-control measures to be employed. Information will be distributed at least five working days in advance through real-time updates via a project website and/or SMS alert system.

Works to be undertaken during extended construction hours:

- Concrete placement where the expected length of time to complete the placement cannot be accommodated within the normal day-time working hours and/or that would be unduly disruptive of other construction activities, including normal traffic operations;
- Installation of complicated structural systems or critical equipment that do not become stable until all the pieces are in place and require longer than one working day to install;
- Daytime closures for bridge demolition and installation or other works requiring the full or partial closure of, or otherwise adversely affecting the operation of existing carriageways or railway lines;
- Any oversize deliveries or deliveries where day-time working would be excessively disruptive to normal traffic operation;
- The provision of services at compounds, including CCTV and vehicle recovery;
- Works associated with the diversion of and tie-ins to existing utilities;
- Junction tie-in works;
- Works associated with traffic management and signal changes;
- Testing and/or cycling of rides/shows; and
- As otherwise agreed by the local authorities in advance.

Some activities may require 24-hour working and where this is the case, the detailed CEMP(s) schedule will make this clear, and include an obligation to notify Bedford BC, local residents and relevant stakeholders in advance, including details of any applicable noise control measures.

Amendments to the programme of extended construction hours of an approved detailed CEMP(s) will be agreed with Ministry of Housing, Communities and Local Government and notified to relevant stakeholders.

In the case of work required in an emergency, or which if not completed would be unsafe or harmful to workers, the public or local environment, Bedford BC will be informed as soon as reasonably practicable of

the reasons and likely duration. Examples may include concrete pouring taking longer than anticipated due to unfavourable conditions or equipment failure.

In addition to the other specified works to be undertaken during extended construction hours listed above, in the final 18 months of the Primary Phase construction programme there will be a requirement for out of hours working within the Core Zone for Theme Park ride and show fit-out activities, which will be carried out after heavy construction activities cease. Up to approximately 300 staff would be on-Site during this time.

PUBLIC RIGHTS OF WAY TO BE PERMANENTLY STOPPED UP

The following permanent stopping up is proposed:

- 1.6km length of Public Right of Way Footpath 1 is to be stopped up between Woburn Road on the western extent to the wooded area to the rear of the BCA Bedford site on the eastern extent; and
- 1km length of Public Right of Way Footpath 2 is to be stopped up from off Broadmead Farm on the southern extent to the connection to Public Right of Way Footpath 1 on the northern extent.

RESTRICTIONS ADJACENT TO WATERCOURSES

Table 12-1 Core Construction Hours

Zone of Interest	Area applicable	Objectives/Benefits	Restrictions and Commitments
Riparian Zone	10m from top of bank (both sides) during Construction Phase (Elstow Brook and tributaries) and Operational Phase (Elstow Brook and tributaries and Core Zone diverted watercourse once established)***.	Supports habitat, habitat connectivity, strengthens river banks, provides diffuse pollution mitigation, reduces risk of flooding. Can support amenity.	Existing Habitat should be protected (required as per Water Framework Directive (WFD)) and if disturbed (for example, during construction) must be replaced with similar or improved vegetation and habitat conditions to meet objectives and planning proposal mitigation requirements. Man made structures generally prohibited from the 10m riparian zone unless they are compliant with WFD objectives. Can support certain recreational uses (i.e. walking, cycling) if necessary infrastructure is assessed and designed in compliance with WFD.
9m Internal Drainage Board (IDB) Byelaw	9m set back from top of bank (both sides) on all watercourses within IDB jurisdiction (Elstow Brook, tributaries and diverted watercourse in Core Zone).	Protected zone under the <i>Land Drainage Act 1991</i> . Permits IDB as asset manager to undertake operation, maintenance and improvement of any watercourse within its area.	The IDB may permit certain works or structures within 9m byelaw zone subject to a Land Drainage Consent from the IDB and such structures must not cause an obstruction to flow or prohibit access to the watercourse as defined in the objectives.

*** Environmental Impact Assessment assesses impacts of localised infringements to the Riparian Zone during construction of the clear span bridge crossing between West Gateway and Core Zone.