



UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks
and adjoining land, Bedford

Environmental Statement Volume 3

Appendix 16.1 - Major Accidents and Disasters Long List

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APPENDIX 16.1: MAJOR ACCIDENTS AND DISASTERS LONG LIST

The review of the Major Accidents and Disaster (MA&D) groups, categories and types identified in the study area was undertaken to inform the Environmental Impact Assessment (EIA) and is summarised in Table 1. This table shows the potential vulnerability of the Proposed Development to the risk of a MA&D by type. A justification of the MA&D types to be scoped in or out of the MA&D assessment is provided, in accordance with the Construction and Operational Phases of the Proposed Development. The phases are indicated in the table as "C" for Construction and "O" for Operational. The Environmental Statement (ES) provides greater assessment and justification for the topic areas scoped in. For those that are scoped out, no further assessment is considered necessary in the ES.

Table 1 – Elements Scoped In or Out of Further Assessment

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Natural Hazards	Geophysical	Earthquakes	<p>Earthquakes do not occur in Britain of a sufficient intensity owing to the motion of the Earth's tectonic plates causing regional compression. In addition, uplift from the melting of the ice sheets that covered many parts of Britain thousands of years ago can also cause movement.</p> <p>The BGS acknowledges that on average, a magnitude 4 earthquake happens in Britain roughly every two years and a magnitude 5 earthquake occurs around every 10 to 20 years.</p> <p>As such the Cabinet Office National Risk Register states that <i>"Earthquakes in the UK are moderately frequent but rarely result in large amounts of damage. An earthquake of sufficient intensity (determined on the basis of the earthquake's local effect on people and the environment) to inflict severe damage is unlikely"</i>.</p> <p>The Proposed Development is not located in, or close to an active area. Therefore, further consideration of this risk is not required as part of the ES.</p>	No
Natural Hazards	Geophysical	Volcanic Activity	<p>The Proposed Development is not located in, or close to, an active area. It is highly unlikely that an ash cloud could significantly impact on any aspect of the Proposed Development. Therefore, further consideration of this risk is not required as part of the ES.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Natural Hazards	Geophysical	Landslides	The Proposed Development is surrounded by flat topography. There are no records of historical landslides in the area. However, there is evidence of instability along the eastern Site boundary between the Lake Zone and the Ibstock Concrete factory. Slope stabilisation works are to be undertaken in this area under general permitted development rights. No steep slopes or embankments are expected to be constructed as part of the Proposed Development. Therefore, further consideration of this risk is not required as part of the ES.	No
Natural Hazards	Geophysical	Sinkholes	There are no examples of sinkholes in the locality. The geotechnical design of the Proposed Development will take into consideration the underlying geology and any potential ground stability issues. Therefore, further consideration of this risk is not required as part of the ES.	No
Natural Hazards	Geophysical	Tsunamis	The Proposed Development is located inland, outside a tsunamis risk zone. Therefore, this MA&D type has been scoped out.	No
Natural Hazards	Hydrological	Coastal Flooding	The Proposed Development is located inland, outside a coastal area. Therefore, this MA&D type has been scoped out.	No
Natural Hazards	Hydrological	Fluvial Flooding	<p>The Site is located in the River Great Ouse catchment. In addition, two branches of the Elstow Brook run through the Site. One branch flows parallel to the western boundary of the Lake Zone and a second branch passes through the eastern sections of the Lake Zone and the Core Zone.</p> <p>The Site is identified on the Environment Agencies Flood Risk Maps for Planning as being in Flood Zones 1, 2 and 3. The majority of the Site lies within Flood Zone 1, with the lower lying areas around the Elstow Brook being in Flood Zones 2 and 3. The northern extent of the Lake Zone immediately adjacent to the A421 is also identified as being in Flood Zones 2 and 3.</p> <p>Therefore, there is the potential for fluvial flooding to cause damage to infrastructure, hastening the deterioration of materials. High levels of precipitation (i.e. in winter) not only can result in the flooding of the Site but may also damage infrastructure (through increased scour).</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			<p>The Construction, Design and Management (CDM) Risk Register maintained during construction will consider the potential impact of fluvial flooding during the Construction Phase and identify any appropriate mitigation measures to address the risk. Therefore, flooding associated with the Construction Phase can be scoped out.</p> <p>A flood risk assessment (Appendix 12.1: Flood Risk Assessment (Volume 3)) has been undertaken and a drainage strategy (Appendix 12.3: Drainage Strategy (Volume 3)) (including sustainable drainage system features, flow controls, source control measures and attenuation) has been developed during the detailed design of the Proposed Development. Therefore, it is considered that fluvial flooding associated with the Operational Phase can be scoped out from further assessment from a MA&D perspective in the ES.</p>	
Natural Hazards	Hydrological	Pluvial Flooding	<p>The Bedford Borough Council (Bedford BC) Level 2 Strategic Flood Risk Assessment indicates that the Site is predicted to be at risk of pluvial flooding. The Environment Agency Long Term Flood Risk Maps indicate that the Site is at low, medium and high risk from surface water flooding. These areas are associated with existing watercourses and low points within the Site.</p> <p>With regard to future projections, UKCP18 suggests that climate change is projected to lead to wetter winters and drier summers, with more extreme rainfall events. The UKCP18 projections for changes in extreme precipitation in winter under High emissions scenarios estimates that by the 2030s, average precipitation in winter is expected to increase by approximately 6.4%, by the 2050s by 10.5% and by the 2080s by 21.7%.</p> <p>In the event of pluvial flooding during the Construction Phase, a Flood Emergency Plan will be implemented which will consider plant machinery, site operatives and evacuation where appropriate, as detailed in the Outline Construction Environmental Management Plan (OCEMP) (Appendix 2.3: Outline Construction Environmental Management Plan (OCEMP) (Volume 3)).</p> <p>The increase in impermeable surfaces as a result of the Proposed Development along with the likely increase in rainfall as a result of climate change over the lifetime of the Proposed Development would increase flood risk if not mitigated, in addition to, a potential pollution threat to nearby water courses.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			A flood risk assessment (Appendix 12.1: Flood Risk Assessment (Volume 3)) has been undertaken and a drainage strategy (Appendix 12.3: Drainage Strategy (Volume 3)) (including sustainable drainage system features, flow controls, source control measures and attenuation) has been developed during the detailed design of the Proposed Development. Therefore, it is considered that pluvial flooding associated with the Operational Phase can be scoped out from further assessment from a MA&D perspective in the ES.	
Natural Hazards	Hydrological	Groundwater Flooding	<p>The Bedford BC Level 2 Strategic Flood Risk Assessment indicates that the Site is susceptible to groundwater flooding. The northern part of the Lake Zone has a susceptibility $\geq 75\%$ and the southern part $\geq 50\% - < 75\%$. The northern part of the Core Zone has a susceptibility $\geq 50\% - < 75\%$ and the southern part $\geq 25\% - < 50\%$. The susceptibility of the West Gateway Zone is mainly $< 25\%$ but there are some areas with a higher risk $\geq 25\% - < 75\%$.</p> <p>The CDM Risk Register will consider the potential impact of groundwater flooding during the Construction Phase, therefore flooding associated with the Construction Phase can be scoped out.</p> <p>A flood risk assessment (Appendix 12.1: Flood Risk Assessment (Volume 3)) has been undertaken and a drainage strategy (Appendix 12.3: Drainage Strategy (Volume 3)) (including sustainable drainage system features, flow controls, source control measures and attenuation) has been developed during the detailed design of the Proposed Development. Therefore, it is considered that groundwater flooding associated with the Operational Phase can be scoped out from further assessment from a MA&D perspective in the ES.</p>	No
Natural Hazards	Hydrological	Avalanches	The Proposed Development's topography is relatively flat and therefore an avalanche will not occur. Therefore, this MA&D type has been scoped out.	No
Natural Hazards	Climatological and Meteorological	Cyclones, hurricanes, typhoons, storms and gales	<p>Cyclones, hurricanes and typhoons do not occur in the UK.</p> <p>The local area is one of the more sheltered parts of the UK. In February 2022, Storm Eunice led to wind speeds reaching over 70mph in the area of the Proposed Development, causing travel disruption and flooding.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			Storms and gales could result in damage to new Site infrastructure, property and works on-Site. However, it is anticipated that the risk of vulnerability to a MA&D event for the Proposed Development would be comparable to that for other theme parks and resorts in the UK and design standards would take into account these weather conditions. Specific measures are therefore not considered to be required as part of the Proposed Development.	
Natural Hazards	Climatological and Meteorological	Thunderstorms	This type of event could result in lightning strikes to temporary elevated structures during construction (e.g. tower cranes) and new elevated structures (such as bridges and rides) introduced as part of the Proposed Development; however, the risk is no different to other theme parks and resorts in the UK. In addition, as required by <i>The Electricity At Work Regulations 1989</i> and <i>BS EN 62305</i> , the design standards would take into account these weather conditions. Specific measures are therefore not considered to be required as part of the Proposed Development.	No
Natural Hazards	Climatological and Meteorological	Wave surges	The Proposed Development is located sufficiently inland and as such is not vulnerable to wave surges. Therefore, this MA&D type has been scoped out.	No
Natural Hazards	Climatological and Meteorological	Extreme temperatures: Heatwaves Low (sub-zero) temperatures and heavy snow	<p>This type of event could give rise to changes in climatic conditions, with infrastructure exposed to greater heat intensity and exposure to sunlight. Heavy snow could cause workers and visitors to be trapped at the entertainment resort complex.</p> <p>On 3 August 1990, a record high of 37.1°C was reached in Cheltenham. This was broken in 2003, when 38.5°C was reached in Faversham, Kent, then again in 2019, when Cambridge reached 38.7°C, and most recently on 19 July 2022, when the current record of 40.3°C was recorded in Coningsby, Lincolnshire and the Met Office declared its first ever red alert for heat and declared a national emergency. Widespread transport disruption occurred, and the increased electricity demand almost led to a blackout in London, which was averted by the emergency purchase of electricity.</p> <p>The most widespread and prolonged low temperatures and heavy snow in recent years occurred from December 2009 to January 2010. Day-time temperatures were mostly sub-zero across the UK. At night, temperatures in England regularly fell to -5°C to -10°C.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			<p>Snowfall across the UK lasted for some time, allowing 20cm to 30cm of snow to build up, closing schools and making it very difficult to travel.</p> <p>The Proposed Development will be vulnerable to extreme temperatures. However, the Proposed Development is not expected to increase risks associated with extreme weather in the area.</p> <p>The CDM Risk Register will consider the potential risks associated with extreme temperatures during the Construction Phase as set out in the OCEMP (Appendix 2.3: OCEMP (Volume 3)). The design of the Proposed Development will take into consideration local climatic conditions and consider the potential impact of climate change as per Design Standards SW4.4 (Document Reference 6.3.0).</p> <p>The Operational Phase Security and Emergency Management Plan (Document Reference 6.4.2.0) will include measures to manage potential risks associated with extreme weather.</p> <p>Therefore, specific measures are not considered to be required as part of the Proposed Development during either Construction or Operational Phases.</p>	
Natural Hazards	Climatological and Meteorological	Droughts	<p>Over the past approximately 40 years, England has experienced five long-duration droughts and two shorter periods of drought. During the 2010 to 2012 drought, parts of eastern England recorded their lowest 18 month rainfall total in over 100 years. The Anglian region is the driest region of the UK with two thirds of the national average rainfall and is classed by the Environment Agency as seriously water stressed.</p> <p>Prolonged periods of drought can impact infrastructure as drying out and cracking of soils may affect structural stability, and prolonged dry periods can lead to cracking of surfaces and more rapid deterioration of materials. Decreased rainfall combined with an increase in the average temperature can also increase subsidence, affecting the stability of the foundations and structures. The design of the sub-structure will be resilient to ground shrinkage and will be considered in the design process as per Design Standards SW4.4 (Document Reference 6.3.0).</p> <p>There will be relatively low use of water during construction which could be addressed by tankering in supplies, if required. This risk will be addressed through the CDM risk register and therefore it is considered that this MA&D type can be scoped out from further</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			assessment during the Construction Phase. The Proposed Development would be vulnerable to drought during the Operational Phase as water will be used primarily for domestic purposes and also for some of the attractions. UDX will be maximising opportunities for re-use of water in the design of the Proposed Development as set out in Section 4 of the Water Strategy (Appendix 12.2: Water Strategy (Volume 3)). Therefore, further consideration is not required in the ES.	
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Solar Flares	Solar flare events are known to interrupt radio and other electronic communications. Records from solar storms in 1921 and 1960 describe widespread disruption of radio systems and satellites and impacts on railway signalling and switching systems. During the solar storm in May 2024, reportedly there were power grid irregularities and Global Positioning System (GPS) and high-frequency radio communications were impacted. Some aerial drone users flying during the storm experienced difficulty maintaining a stable hover, disruption of GPS signals, and in some cases a sudden loss of control. There were no reported significant impacts to the population. There is a reliance on technology however, it is anticipated that the risk of vulnerability to a MA&D event for the Proposed Development would be comparable to that for other theme parks and resorts in the UK. Specific measures are therefore not considered to be required as part of the Proposed Development.	No
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Solar Energetic Particles	Solar energetic particles which cause solar radiation storms, but only in outer space. Therefore, this MA&D type has been scoped out.	No
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Coronal Mass Ejections	Coronal mass ejections (CME) cause geomagnetic storms. The geomagnetic storm in 2003 caused the UK aviation sector to lose some GPS functions for a day, however there was no known significant impact on road users or infrastructure. The geomagnetic storm in 2024 caused some disruption however, there was no known significant impact on infrastructure in the UK. Therefore, this MA&D type has been scoped out.	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Natural Hazards	Climatological and Meteorological	Fog	Fog is one of the most common weather conditions in the UK, particularly throughout autumn and winter. Severe disruption to transport occurs when the visibility falls below 50m over a wide area. However, the Proposed Development, as a stationary development, will not be vulnerable to fog. The only risks would be to workers and visitors travelling to the Proposed Development, but this risk would not be significantly different from the baseline. Workers' health and safety is also managed by Occupational Health and Safety legislation.	No
Natural Hazards	Climatological and Meteorological	Wildfires: Forest fire, Bush/brush, pasture	In April and May 2011, numerous wildfires broke out across the UK after unusually hot and dry weather. England received only 21% of its usual rainfall for April 2011. The Proposed Development is located in a mixed rural and urban area. There is some vegetation in the surrounding area, but it does not have a potential high fuel load (e.g. gorse), and as such it is unlikely that a wildfire would occur. Urban fires are assessed under manmade hazards below.	No
Natural Hazards	Climatological and Meteorological	Poor Air Quality	In 2006 the UK experienced two periods of extended hot weather with associated elevated ozone and harmful airborne particles. In the spring of 2015, two particle pollution episodes caused widespread poor air quality throughout the UK, with multiple areas measuring 'High' on the Daily Air Quality Index and resulted in around 1,100 deaths due to exacerbation of pre-existing ill-health conditions. Summer 2015 also contained two elevated ozone episodes. Construction: Construction effects would be temporary for the duration of the Construction Phase. Increased dust emissions from construction activities and traffic could lead to potential loss of amenity at sensitive receptors. Traffic management measures may result in both positive and adverse changes to emissions from vehicle exhausts and roadside pollution concentrations. Operation: The Proposed Development is likely to affect road traffic movements and emissions to air on the public highway network which in turn would affect ambient pollutant levels in the surrounding areas and potentially result in adverse effects at nearby sensitive receptors. In addition, emissions of NO _x , PM ₁₀ and PM _{2.5} from the proposed energy centre may also impact nearby sensitive receptors.	No


MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			Although there is likely to be an increase in emissions, during both the Construction and Operational Phase, as a result of the Proposed Development, it is considered that following the implementation of appropriate mitigation measures, which have been identified in Chapter 8: Air Quality (Volume 1) , this MA&D type does not require further assessment in the MA&D chapter.	
Natural Hazards	Biological	Disease epidemics: <ul style="list-style-type: none"> ■ Viral; ■ Bacterial; ■ Parasitic; ■ Fungal; and ■ Prion. 	<p>The Proposed Development is located in a developed country where the population is in general good health. The most recent disease epidemic in England was COVID-19, the first cases of which were identified in February 2020. Although no longer considered a global health emergency by The World Health Organisation, the vulnerability of the Proposed Development to a MA&D event caused by COVID-19 during construction (including worker accommodation) and operation should be mitigated by the occupational health and safety processes that are implemented by both the relevant Undertaker¹ and government rules and guidelines on the control of spread of COVID-19.</p> <p>The construction and use of the Proposed Development will not give rise to any disease epidemics. The UK Health Security Agency, the executive agency of the Department of Health, is responsible for protecting the nation from public health hazards and preparing for and responding to public health emergencies. One of the UK Health Security Agency's functions is to protect the public from infectious disease outbreaks and the Agency has produced a document providing operational guidance for the management of outbreaks of communicable disease, 'Communicable Disease Outbreak management: Operational Guidance'.</p> <p>Risks from Weil's Disease (or leptospirosis) is considered to be of low likelihood, but not of high consequence as a low number of people contract this disease in the UK each year. It would be unlikely for any workers to contract Weil's as appropriate PPE will be worn and any risks managed in the OCEMP (Appendix 2.3: OCEMP (Volume 3)).</p> <p>UDX's Security and Emergency Management Plan (Document Reference 6.4.2.0) includes protocols for infectious disease.</p>	No

¹ Those parties carrying out works pursuant to which planning permission would be granted or through permitted development rights.

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Natural Hazards	Biological	Animal Diseases: <ul style="list-style-type: none"> ■ Avian influenza; ■ West Nile virus; ■ Rabies; ■ Foot and mouth; and ■ Swine fever. 	<p>Low and highly pathogenic avian influenza has been recorded in poultry in the UK several times in the last 10 years, most recently during the period between 2021 to 2023, although with no human cases reported.</p> <p>There was a devastating foot and mouth outbreak in 2001. There are no known foot and mouth burial pits in the area.</p> <p>The use of the Proposed Development is not going to be the source of any disease epidemics and spread would be controlled through containment of infected animals including prohibition of transportation.</p>	No
Natural Hazards	Biological	Plants	<p>Widespread terrestrial and aquatic invasive species have been recorded within the Site. These include Japanese Knotweed, Giant Knotweed, Hybrid Knotweed, Giant Hogweed, Himalayan Balsam and New Zealand Pygmyweed.</p> <p>Standard control measures will be implemented by the appointed contractor during construction and identified in the OCEMP (Appendix 2.3: OCEMP (Volume 3)) to handle and dispose of any diseased plants and/or injurious weeds and prevent their spread.</p> <p>It is therefore considered that further assessment in the ES is not required.</p>	No
Technological or Manmade Hazards	Societal	Extensive public demonstrations which could lead to violence and loss of life.	The Proposed Development is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. The Proposed Development is not considered to be highly controversial and should not lead to high profile public demonstrations.	No
Technological or Manmade Hazards	Societal	Widespread damage to societies and economies.	The Proposed Development is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts.	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Technological or Manmade Hazards	Societal	The need for large-scale multi-faceted humanitarian assistance.	The Proposed Development is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts.	No
Technological or Manmade Hazards	Societal	The hindrance or prevention of humanitarian assistance by political and military constraints.	The Proposed Development is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts.	No
Technological or Manmade Hazards	Societal	Significant security risks for humanitarian relief workers in some areas.	The Proposed Development is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts.	No
Technological or Manmade Hazards	Societal	Famine	The Proposed Development is located in a developed country that produces its own crops and imports food. It is politically stable and not subject to hyperinflation and therefore food is available, whether produced within the UK or imported. Famine is also not relevant to the use of the Proposed Development.	No
Technological or Manmade Hazards	Societal	Displaced population	There will be the requirement to demolish two residential dwellings due to the realignment of Manor Road. These properties have been acquired by UDX and are vacant. It is therefore considered that this does not represent a MA&D and as such does not require further assessment in the ES.	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Technological or Manmade Hazards	Industrial and Urban Accidents	Major Accident Hazard Chemical sites	<p>There is one lower tier Control of Major Accident Hazard (COMAH) facility within 5km of the Proposed Development, the Stewartby Waste Management Site operated by Veolia ES (UK) Ltd. It is located approximately 730m southeast of the closest point of the Site boundary along the A421 and approximately 1km southwest of the Core Zone. The consultation zones associated with this facility do not overlap the Site boundary. It is therefore considered that a major accident at the Stewartby Waste Management Site is unlikely to impact the Proposed Development. Therefore, the potential risks associated with the presence of this facility have not been further assessed.</p> <p>The Health and Safety Executive's (HSE) Land Use Planning tool also indicates that there is a consultation zone associated with the Asda chilled distribution centre which overlaps the Site boundary. The Asda Liquified Natural Gas (LNG) storage facility is regulated under a hazardous substances consent and is located adjacent to the west of the Lake Zone. The inner, middle and outer consultation zones associated with this facility overlap the Site boundary. UDX has undertaken a review of the HSE's land use planning methodology to understand the types of development that would be appropriate within this area. A discussion has also been held with the HSE to understand the potential risks associated with the presence of the LNG facility and the types of development which would be allowed within each of the consultation zones.</p>	Yes C, O

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			<p>Therefore, the potential risks associated with this MA&D type have been further assessed in this ES. The risk recorded presented in Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3) records the outcome of the assessment.</p> 	

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Technological or Manmade Hazards	Industrial and Urban Accidents	Major Accident Hazard Pipelines	<p>There are no major accident hazard pipelines within a 1km radius of the Proposed Development.</p> <p>The nearest pipeline identified by the HSE's Land Use Planning Tool is associated with the Millbrook Power Station which is approximately 2.4km south of the Proposed Development. Therefore, this MA&D type has been scoped out from further assessment.</p>	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Nuclear	<p>Nuclear sites are designed, built and operated so that the chance of accidental releases of radiological material in the UK is extremely low. Last historical major accident in the UK was Windscale in 1957.</p> <p>There are no nuclear sites within a 5km radius of the Proposed Development.</p>	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Fuel storage	<p>In December 2005 Europe's largest peacetime fire occurred at the Buncefield Oil Storage Terminal in Hemel Hempstead, England. The surrounding area was temporarily evacuated and some local businesses experienced long-term disruption to operations.</p> <p>It is proposed to install a 16 pump fuel retail station in the West Gateway Zone for use by members of the public. In addition, it is proposed to have a small fuelling station which will be used for refuelling maintenance vehicles. The installation and operation of these facilities will be managed through other regulatory drivers such as <i>The Health and Safety at Work etc. Act 1974</i>, <i>The Dangerous Substances and Explosive Atmospheres Regulations 2002</i> and <i>The Petroleum (Consolidation) Regulations 2014</i>. Therefore, it is considered that further assessment is not required in the ES.</p> <p>There are no fuel storage sites within the study area other than two fuel retail sites within 1km of the Proposed Development (BP approximately 400m east of the closest point of the Site boundary and Shell approximately 1km north of the closest point of the Site boundary). Further assessment of the fuel retail sites is not required in the ES as the inventory of fuel held at each facility is relatively small (i.e. below COMAH thresholds) and the hazardous area classification zones will not extend beyond the petrol station boundary.</p> <p>It is therefore considered that further assessment of fuel storage in the ES is not required.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Technological or Manmade Hazards	Industrial and Urban Accidents	Dam breaches	<p>Dam breaches in the UK are rare; the last major breach was at the Cwm Eigiau dam in 1925, which caused 17 fatalities and widespread flooding.</p> <p>The Environment Agency Flood Risk from Reservoirs map indicates that the Site is at risk from reservoir flooding. The Flood Risk Assessment (Appendix 12.1: Flood Risk Assessment (Volume 3)) considers flooding from reservoirs and identifies that although flooding from reservoirs is extremely unlikely, due to the proximity of the Site to the source of flooding and the possibility of rapid inundation, the risk of flooding from artificial sources is considered to be Possible. This risk has been assessed in the Flood Risk Assessment and appropriate mitigation measures identified. Therefore, it is considered that flooding associated with reservoir failure can be scoped out from further assessment from a MA&D perspective in the ES.</p>	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Mines and storage caverns	<p>Coal Authority records state that there are no areas of coal workings in the area of the Proposed Development. No active or historic mining activity has been identified in the area. The risk from coal mining related features is therefore considered to be negligible.</p>	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Fires	<p>Fires could be initiated by construction related activities which impact areas adjacent to the construction activities. The potential risk of fires during construction will be considered in the CDM Risk Register and any identified mitigation measures implemented. During construction, standard control measures would be implemented by the appointed contractor and identified in the OCEMP (Appendix 2.3: OCEMP (Volume 3)) to manage the risk of fire.</p> <p>During the Operational Phase there is the risk of fire associated with the proposed Battery Energy Storage System (BESS), to be located in the Utility Compound in the Lake Zone. The BESS will be designed and constructed in accordance with UK guidelines/requirements, including appropriate fire safety measures and defined exclusion zones.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			<p>Pyrotechnics will be stored in the Core Zone. In accordance with the requirements of the <i>Explosives Regulations 2014</i>, these will be stored in an appropriately designed building and separation distances will be defined depending on the quantity of explosives and the type of building in which they are stored. As the storage of pyrotechnics is managed via other regulatory drivers, it is considered that further assessment is not required in the ES.</p> <p>Firework displays will be undertaken occasionally, the fireworks will be delivered directly to the launch location in the Core Zone (where they will be temporarily stored before use). Once delivered, the fireworks will be stored and handled in accordance with developed safety protocols in accordance with applicable regulatory requirements. Therefore, it is considered that further assessment is not required in the ES.</p> <p>In accordance with the requirements of the <i>Health and Safety at Work etc. Act 1974</i>, an emergency evacuation plan will be developed for the Operational Phase in collaboration with the emergency services as set out in the Security and Emergency Management Plan (Document Reference 6.4.2.0). Initial engagement with the emergency services has already been undertaken by UDX.</p> <p>As identified above under MA&D type Fuel Storage, there are two fuel retail sites within 1km of the Proposed Development. It has been concluded above under Fuel Storage that further assessment is not required in the ES.</p> <p>Urban buildings in close proximity to the Proposed Development are predominantly industrial/commercial properties. As legally required, a fire risk assessment will have been prepared by the occupants of these industrial/commercial properties. This risk assessment will have identified appropriate mitigation measures, as required, to minimise the likelihood of spread of a fire to adjacent properties.</p> <p>Notwithstanding this, the risk of fires affecting the Proposed Development during operation is no greater than risks for existing developments in a mixed urban/rural environment. It is therefore considered that further assessment in the ES is not required.</p>	
Technological or Manmade Hazards	Transport accidents	Road	<p>Significant transport accidents occur across the UK on a daily basis, mainly on roads, and involving private and/or commercial vehicles.</p> <p>During construction there will be an increase in heavy construction plant and equipment on local road network which may increase the risk of accidents.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			<p>The Proposed Development includes the construction of a new junction off the A421 to enable vehicular access to the Proposed Development. UDX is currently engaging with National Highways to agree the approach to construction works associated with the new junction.</p> <p>The Proposed Development also includes the realignment and upgrade of Manor Road and the construction of a new dualled access road “<i>Public Road A</i>” within the Core Zone. A traffic assessment considering the potential impact of both the Construction and Operational Phases of the Proposed Development on the road network (in relation to severance, delay to all users, amenity, fear and intimidation and accidents and safety) has been undertaken and is presented in Chapter 5: Traffic and Transport (Volume 1). Therefore, it is considered that road transport accidents associated with both the Construction Phase and the Operational Phase can be scoped out from further assessment from a MA&D perspective in the ES.</p>	
Technological or Manmade Hazards	Transport accidents	Rail	<p>There are two railways within the study area, the Marston Vale Railway Line which crosses the Site from north to south and the Midland Main Railway Line is located to the east. The Proposed Development involves the construction of a new terminal at Wixams to allow visitor access to the Proposed Development. UDX is currently engaging with the relevant Undertaker to agree the approach to construction works associated with Wixams Rail Station.</p> <p>Construction work associated with Wixams Rail Station will be managed by the relevant Undertaker and risks identified and managed via a specific CDM risk register for the works associated with the railway.</p> <p>The operational railway and associated terminal will be managed by the relevant Undertaker in accordance statutory requirements and guidelines.</p> <p>The operational railways are located adjacent to the West Gateway Zone and the Lake Zone, and the eastern boundary of the East Gateway Zone. The risk of a rail accident impacting the Proposed Development is managed through the UK safety legislative framework for operational railways and safety features integrated into the design of rolling stock. The Security and Emergency Management Plan (Document Reference 6.4.2.0)</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			<p>will include response and management procedures in the event of a rail accident impacting the Proposed Development.</p> <p>It is therefore considered that this MA&D type can be scoped out from further assessment in both the Construction and Operational Phases.</p>	
Technological or Manmade Hazards	Transport accidents	Waterways	There are no waterways located in the study area used for significant transport by water. Therefore, this MA&D type can be scoped out from further assessment.	No
Technological or Manmade Hazards	Transport accidents	Aviation	<p>There have been no major air accidents in the UK since the Kegworth incident in 1989. The Proposed Development will involve the use of drones during both the Construction Phase and the Operation Phase. In addition, during the Construction Phase there will be the use of cranes. The Proposed Development also involves the construction of attractions up to a maximum height of 115m.</p> <p>There are four working aerodromes within the study area.</p> <p>Cranfield Airport (licenced aerodrome) is located approximately 5.7km west of the closest point of the Site boundary (distance taken from the aerodrome reference point to the nearest point of the Site boundary).</p> <p>Old Warden Aerodrome (licenced aerodrome) is located approximately 11.3km east of the closest point of the Site boundary (distance taken from the aerodrome reference point to the nearest point of the Site boundary).</p> <p>Meppershall Airfield (non-licensed airfield) is located approximately 11.4km southeast of the closest point of the Site boundary (distance taken from the central point of Runway 06/24 to the nearest point of the Site boundary).</p> <p>Sandy Airfield (non-licensed airfield) is located approximately 12km east of the closest point of the Site boundary (distance taken from the central point of Runway 17/35 to the nearest point of the Site boundary).</p> <p>During engagement with the Civil Aviation Authority (CAA) it was identified that there could potentially be impacts on two licenced aerodromes - Cranfield Airport and Old Warden Aerodrome. Therefore, further engagement has been undertaken with these two</p>	Yes C, O

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			aerodromes and the potential risks associated with their presence has been considered further in Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3) .	
Technological or Manmade Hazards	Pollution accidents	Air	<p>Construction activities may cause dust emissions which may contribute to poor air quality, albeit on a temporary basis. There will be the use of fossil fuelled mobile plant and equipment during the Construction Phase. However, emissions from mobile plant and equipment is covered under H&S and environmental legislation and therefore does not require further consideration from a MA&D perspective.</p> <p>Emissions associated with vehicles travelling to the Proposed Development and the proposed energy centre as part of the Proposed Development may contribute to events associated with poor air quality.</p> <p>The potential for this event has been considered in detail in the air quality assessment presented in Chapter 8: Air Quality (Volume 1) and it is therefore not considered a requirement to evaluate this further from a MA&D perspective.</p>	No
Technological or Manmade Hazards	Pollution accidents	Land	<p>During construction there may be an increase in the risk of leaks and spillages of hazardous materials associated with the construction activities. During construction, standard control measures would be implemented by the appointed contractor and identified in the OCEMP (Appendix 2.3: OCEMP (Volume 3)) to manage the risk of spillages and leaks.</p> <p>During operation any hazardous materials will be provided with appropriate secondary containment measures and inspected in accordance with a preventative maintenance programme and identified in the OCEMP (Appendix 2.3: OCEMP (Volume 3)).</p> <p>It is therefore considered that this MA&D type can be scoped out from further assessment.</p>	No
Technological or Manmade Hazards	Pollution accidents	Water	<p>Superficial deposits within the Site boundary include Alluvium and Head Deposits, which are classified as a Secondary A Aquifer and Secondary Undifferentiated Aquifer, respectively. Secondary A Aquifers are defined by the Environment Agency as being permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. Secondary Undifferentiated Aquifers are layers that were previously designated as both minor and non-aquifer in different locations due to the variable characteristics of the deposit. The</p>	No

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			<p>bedrock geology underlying the Site comprises of the Peterborough Member (part of the Oxford Clay Formation). This unit is classified as an Unproductive Aquifer.</p> <p>The Site is not situated within a Source Protection Zone (SPZ) and there are no SPZs within 1km of the Site.</p> <p>During construction there may be an increase in the risk of leaks and spillages of hazardous materials associated with the construction activities. During construction, standard control measures would be implemented by the appointed contractor and identified in the OCEMP (Appendix 2.3: OCEMP (Volume 3)) to manage the risk of spillages and leaks.</p> <p>During operation any hazardous materials will be provided with appropriate secondary containment measures and inspected in accordance with a preventative maintenance programme and identified in the OCEMP (Appendix 2.3: OCEMP (Volume 3)).</p> <p>It is therefore considered that this MA&D type can be scoped out from further assessment.</p>	
Technological or Manmade Hazards	Utilities failures	Electricity	<p>Instances of electricity failure (also referred to as power loss or blackout) can be caused by a number of things, such as severe weather (e.g. very strong winds, lightning and flooding) which damage the distribution network. These tend to be mainly a specific place, local (e.g. metropolitan area) and less frequently regional (e.g. Northeast) as a result of severe winter storms and consequent damage to the distribution overhead line network.</p> <p>Underground and above-ground electrical transmission lines are present across the Site, the responsibilities of which lie with the relevant Undertaker should this infrastructure fail.</p> <p>The responsibility for any diversion works and the installation of new electrical infrastructure will lie with the relevant Undertaker. Information regarding diversion works is presented in the Utilities Statement (Document Reference 6.10.0), however the potential risk of construction-related incidents when undertaking diversion works as part of the Proposed Development would be covered by existing legislation and as such does not require further consideration in the MA&D assessment.</p> <p>During the Operational Phase, there is the risk of electricity failure impacting the operation of the Proposed Development.</p>	Yes O

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			Therefore, the potential risks associated with this MA&D type have been further assessed in this ES. The risk record presented in Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3) records the outcome of the assessment.	
Technological or Manmade Hazards	Utilities failures	Gas	<p>Underground gas transmission pipelines are present across the Site, the responsibilities of which lie with the relevant Undertaker should this infrastructure fail.</p> <p>The potential risk of construction-related incidents when undertaking diversion works as part of the Proposed Development would be covered by existing legislation in addition to remaining in the design risk register and as such does not require further consideration in the MA&D assessment.</p> <p>During the Construction Phase, gas fired boilers will be used for heating and hot water. The potential risk associated with the presence and use of these boilers will be managed via the UK regulatory regime which includes the <i>Health and Safety at Work etc. Act 1974</i> and <i>The Gas Safety (Installation and Use) Regulations 1998</i>. The boilers may still be in operation when the Proposed Development enters the Operational Phase but will still be managed under the same regulatory regime. Therefore, further consideration is not required in the ES.</p>	No
Technological or Manmade Hazards	Utilities failures	Water supply	<p>The Environment Agency classifies the Anglian Water supply region as an area of serious water stress. The gap between demand and availability is expected to widen in the future, both as a result of the changing climate and continued planned growth. Anglian Water forecasts that the water supply zone which includes Bedford borough will be in deficit from 2026/27.</p> <p>There will be relatively low use of water during construction which could be addressed by tankering in supplies, if required. This risk will be addressed through the CDM risk register and therefore it is considered that this MA&D type can be scoped out from further assessment during the Construction Phase.</p> <p>During operation water use would be primarily domestic use (e.g. cooking, cleaning, washing) from the mains supply or from an abstraction borehole (which would be formally licensed). There will be a water processing and collection plant in the Utility Compound located in the southern area of the Lake Zone, where water will be treated to the appropriate standard. Some of the attractions will also include the use of water. UDX will</p>	No

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			be maximising opportunities for re-use of water in the design of the Proposed Development however, as set out in Section 4 of the Water Strategy (Appendix 12.2: Water Strategy (Volume 3)). Therefore, further consideration is not required in the ES.	
Technological or Manmade Hazards	Utilities failures	Sewage system	The Proposed Development includes a connection into the local sewage system. The relevant Undertaker will implement a preventative maintenance regime to prevent blockage and subsequent spills from the sewage system. During the Construction Phase temporary portable systems will be in place covered by H&S welfare requirements.	No
Technological or Manmade Hazards	Malicious Attacks	Unexploded Ordnance	The Zetica unexploded ordnance (UXO) risk maps indicate that the Proposed Development lies within an area with a low potential for encountering UXO. The OCEMP (Appendix 2.3: OCEMP (Volume 3)) outlines the actions to be taken should UXO be encountered during the Construction Phase. Therefore, this MA&D type can be scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Malicious Attacks	Attacks: <ul style="list-style-type: none"> Chemical; Biological; Radiological; and Nuclear. 	Extremists remain interested in Chemical, Biological, Radiological and Nuclear (CBRN) materials, however alternative methods of attack such as employing firearms or conventional explosive devices remain far more likely. Historical use has been in closed, densely occupied structures (underground, buildings) or targeted at specific individuals. The Proposed Development is unlikely to be a target for this type of event due to the low number of exposed targets.	No
Technological or Manmade Hazards	Malicious Attacks	Transport systems	Potential systems would include (but are not limited to) railways, buses, passenger ferries, cargo vessels and aircraft. The Proposed Development is unlikely to be a target for this type of event due to the low number of exposed targets.	No
Technological or Manmade Hazards	Malicious Attacks	Crowded places	Visitor attractions are classified by the UK Government as a crowded place and therefore the Proposed Development could be a target for this type of event. However, UDX has committed to designing and constructing the Proposed Development in accordance with relevant standards including consideration of the requirements of the Terrorism (Protection	Yes O

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
			<p>of Premises) Act 2025 (Martyn's Law), to make sure that the risk associated with malicious attacks is reduced to as low as is reasonably practicable. In addition, UDX will develop and implement a Security and Emergency Management Plan (Document Reference 6.4.2.0) that ensures a unified approach is taken to managing, mitigating and controlling potential hostile situations as required by Martyn's Law.</p> <p>The potential risks associated with this MA&D type have been further assessed in this ES. The risk record presented in Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3) records the outcome of the assessment.</p>	
Technological or Manmade Hazards	Malicious Attacks	Cyber	<p>Cyber-attacks occur almost constantly on key national and commercial electronic information, control systems and digital industries. The reliance on technology to control the attractions could render the Proposed Development more vulnerable to a cyber-attack. Notwithstanding this, it is not considered to be more vulnerable to attack than similar infrastructure installed and operating in the UK.</p> <p>In addition, the UDX will implement a Security and Emergency Management Plan (Document Reference 6.4.2.0) that will include a response plan for cyber-attacks should they occur.</p> <p>The potential risks associated with this MA&D type have been further assessed in this ES. The risk record presented in Appendix 16.2: Major Accidents and Disasters Risk Record (Volume 3) records the outcome of the assessment.</p>	Yes ○
Technological or Manmade Hazards	Malicious Attacks	Infrastructure	<p>Terrorists in the UK have previously attacked, or planned to attack, national infrastructure. Attempts were made to attack electricity substations in the 1990s. Bishopsgate, in the City of London, was attacked in 1993 and South Quay in London's Docklands in 1996. These attacks resulted in significant damage and disruption but relatively few casualties.</p> <p>The electricity network is critical infrastructure for the Proposed Development. However, the development plan includes a back-up energy supply in the event of electricity failure.</p> <p>The Proposed Development would have minimal impact on local infrastructure and would not be considered a high profile attack.</p> <p>Therefore, it is considered that this MA&D type can be scoped out from further assessment in the ES.</p>	No

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Technological or Manmade Hazards	Engineering accidents and failures	Bridge failure	<p>The Proposed Development includes the construction of an access road across the Marston Vale Railway Line and pedestrian footbridge(s) over the railway line. These structures will be designed and constructed to meet modern safety standards (e.g. Standards for Highways Design Manual for Roads and Bridges and Network Rail design standards), which reduces their likelihood of future failure.</p> <p>The risk of bridge failure associated with the Proposed Development is considered no greater than other road bridges and pedestrian bridges over railways designed to comparable standards. Therefore, it is considered that this MA&D type can be scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Engineering accidents and failures	Flood defence failure	<p>The study area associated with the Proposed Development does not benefit from flood defences or flood storage areas.</p> <p>The design of the Proposed Development has been developed to include allowances for future climate change predictions that could result in flooding. The potential risk of breach events is considered as part of the Flood Risk Assessment (Appendix 12.1: Flood Risk Assessment (Volume 3)).</p>	No
Technological or Manmade Hazards	Engineering accidents and failures	Mast and tower collapse	<p>There are no towers or masts in close proximity to the Proposed Development other than the EE telecommunications mast which is 20m high and located on Manor Road approximately 21m from the Core Zone. The telecommunications mast has been designed and constructed to meet modern safety standards which reduces its likelihood of future failure.</p> <p>The Proposed Development does involve the construction of attractions up to a maximum height of 115m. These attractions will be designed, constructed and maintained in accordance with modern safety standards which reduces their likelihood of future failure. Therefore, it is considered that this MA&D type can be scoped out from further assessment in the ES.</p>	No

MA&D Group	MA&D Category	MA&D Type	Basis of Decision to Scope In/Out	Scope In? Phase
Technological or Manmade Hazards	Engineering accidents and failures	Property or bridge demolition accidents	<p>The Proposed Development involves demolition works.</p> <p>The risks of accidents occurring during these works would be taken into account by the appointed contractor and considered as part of their detailed methodology and risk assessments in advance of these works, as required by the <i>Construction, Design and Management (CDM) Regulations 2015</i>.</p> <p>In addition, the Proposed Development involves the demolition of two bridge spans over the mainlines and the western infilled span associated with Overbridge SPC1/178 Hardwick. These works would be undertaken by Network Rail or their construction contractors.</p> <p>As required by the <i>CDM Regulations 2015</i>, surveys would be undertaken prior to the demolition of properties and structures to confirm whether any potentially harmful substances (e.g. asbestos) are present, and to determine the risk to workers and members of the public.</p> <p>It is therefore considered that this MA&D type can be scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Engineering accidents and failures	Tunnel failure/fire	There are no tunnel structures proposed as part of the Proposed Development or within the study area.	No



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