

**United Kingdom Holocaust Memorial  
and Learning Centre**

Environmental Statement (Volume 5)  
Appendix B Vulnerability to major accidents  
and disasters  
December 2018

The Secretary of State for Housing Communities and Local Government

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# Appendix B. Long list of major accidents and/or disasters

**Table B-1 Long list Long list of major accidents and/or disasters**

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
<b>Geological disasters</b>								
Avalanches and landslides	No	Due to the topography of the Scheme and the surrounding area, large scale landslide/avalanche disasters are considered an unlikely risk to the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Earthquakes	No	The Scheme is not in a geologically active area and as such earthquakes are not considered to be a risk or serious possibility.	N/A	N/A	N/A	N/A	N/A	N/A
Volcanic eruptions	No	The Scheme is not in a geologically active area and as such volcanic eruptions are not considered to be a risk or serious possibility.	N/A	N/A	N/A	N/A	N/A	N/A
Sinkholes	No	The geological units beneath the Scheme are not considered prone to dissolution and there are no identified historical underground mining therefore sinkholes are not considered a likely risk to the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Ground instability	Yes	Works being undertaken underground may cause instability of the ground surrounding the Scheme.	Park users, infrastructure and property, surrounding environment and road users.	Causalities, damage to infrastructure and property, disruption to services.	Yes	No	Yes – within the Ground Investigation and Scheme design. The risk can be mitigated through design. There is a risk that the cost of construction may increase due to additional mitigation.	No

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
<b>Hydrological disasters</b>								
Floods	Yes	<p>Both the vulnerability of the Scheme to flooding, and its potential to exacerbate flooding, are covered in the Flood Risk Assessment and are also reported in EIA terms in the Water Quality and Flood Risk Chapter in the ES (Chapter 12). Both assessments address the risk to the Scheme and any increased risk due to the Scheme.</p> <p>A Flood Risk Assessment has concluded that although the site is in Flood Risk Zone 3 the site is heavily protected by flood defences that can cope with climate change and sea level rise and there is scope for the existing defence system to be improved to manage flood risk on the Thames. The timing of the defence raising will depend on the rate of sea level rise. Mitigation included in the Scheme design will ensure the risk is acceptable.</p>	Park users, infrastructure and property, surrounding environment.	Causalities, damage to infrastructure and property, disruption to services.	Yes	Yes -Flood Risk Assessment	<p>However, the Environment Agency states that they are confident the TE2100 plan can cope with the changing climate and sea level rise and can improve the existing defence system to manage flood risk on the Thames. The timing of defence raising will depend on the rate of sea level rise.</p>	<p>SuD schemes will be implemented to ensure surface water is drained in line with the surface water hierarchy and not increase the risk of flooding from surface water.</p>
Tsunami/Storm surge	Yes	<p>The Scheme is located adjacent to the River Thames which is tidal. An increase in tidal level above the design level of the existing defences may result in flooding.</p>	Park users, infrastructure and property, surrounding environment.	Causalities, damage to infrastructure and property, disruption to services.	Yes	Yes -Flood Risk Assessment	<p>The Environment Agency states that they are confident the TE2100 plan can cope with the changing climate and sea level rise and can improve the existing defence system to manage flood risk on the Thames. The timing of defence raising will</p>	No

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
							depend on the rate of sea level rise.	
Limnic eruptions	No	The Scheme is not located in the vicinity of a lake and as such effects from limnic eruptions are considered an unlikely risk to the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Major change to groundwater levels	Yes	<p>The vulnerability of the Scheme to flooding and its potential to exacerbate flooding, are covered in the Flood Risk Assessment. The Flood Risk Assessment has concluded the Scheme will be at a low level of groundwater flood risk. Mitigation included in the Scheme design will ensure the risk is acceptable.</p> <p>The vulnerability of the Scheme to groundwater flooding and its potential to exacerbate groundwater flooding is therefore considered not at risk</p> <p>Given very low levels of groundwater at the site, climate change is not anticipated to have any effect on the risk of groundwater flooding.</p>	N/A	N/A	N/A	Yes -Flood Risk Assessment	N/A	N/A
<b>Meteorological disasters</b>								
Blizzards	Yes	Blizzard conditions could cause users of the park to become exposed in this area however the risk is no different from current outdoor recreational areas in the UK and as such is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Cold waves	Yes	The Scheme is not considered to be at any greater risk of a cold wave than current outdoor recreation areas and	N/A	N/A	N/A	N/A	N/A	N/A

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
		other users of outdoor recreational areas and is not considered further.						
Cyclonic storms	Yes	Cyclonic storms could cause high winds and heavy rain causing damage to infrastructure and property. Mitigation measures including robust building design will aim to reduce impacts from cyclonic storms. However, the risk is no different from other outdoor recreational areas and buildings in the UK, and as such is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Droughts	No	Droughts are only considered as a disaster due to water shortages for essential services and where there are indirect impacts on food production, loss of soils etc. The Scheme is not considered to be vulnerable to drought.	N/A	N/A	N/A	N/A	N/A	N/A
Thunderstorms	No	The Scheme is at ground level, and lower than surrounding infrastructure, as such the risk of lightning is no more than other outdoor recreational areas. The Scheme is not considered to be any greater than any other park areas or nearby buildings.	N/A	N/A	N/A	N/A	N/A	N/A
Hailstorms	Yes	The risk of hailstorms is no different from other outdoor recreational areas in the UK and as such is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Heat waves	Yes	Extreme heat for a prolonged period can cause a higher risk of fires to the surrounding vegetation and outdoor recreation users to dehydrate. The Scheme is not considered to be at any	N/A	N/A	N/A	N/A	N/A	N/A

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
		greater risk of a heat wave than other outdoor recreational areas.						
Tornadoes	No	Although there are tornadoes in the UK, their destructive force tends to be much less than in other parts of the world and the Scheme is not particularly vulnerable to any potential effects.	N/A	N/A	N/A	N/A	N/A	N/A
Wildfires	Yes	There may be some potential for bush, scrub, grassland or tree fires, though the risk is no greater than the existing outdoor recreational areas and buildings nearby and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Poor air quality episode	Yes	Although relevant, as construction vehicle emissions can contribute to poor air quality, it is not considered necessary to undertake any more assessment than is already being undertaken for the Air quality assessment of the EIA, in the Air quality chapter of the ES (Chapter 6).	N/A	N/A	N/A	N/A	N/A	N/A
High wind events	Yes	High wind events are usually linked to storm events that have been considered above. The risk of the Scheme to high wind events is no greater than other outdoor recreational areas and nearby buildings and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
<b>Space disasters</b>								
Geomagnetic storms	Yes	Solar wind shock waves can interact with the earth's magnetic field causing disruption to electrical systems, communications and GPS. The Scheme is considered to be no more vulnerable than any other development and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
Solar flare	Yes	Solar flares can interrupt radio and other electronic communications. The Scheme is considered to be no more vulnerable than any other development and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Astronomical object collision	Yes	An impact from an astronomical object can cause effects such as shock waves, heat radiation and craters. The Scheme is considered to be no more vulnerable than any other development and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A

#### Transport

Road accidents	No	There is not considered to be any increased risk to the Scheme and users of the Scheme than currently exists and is not considered further.						
Rail accidents	No	No railways are located in close vicinity to the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Aircraft disasters	No	No airports are located in close vicinity to the Scheme. There is not considered to be any increased risk to the Scheme and users of the Scheme than currently exists and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Maritime disasters	No	The River Thames, located adjacent to the Scheme. However, there is not considered to be any increased risk to the Scheme and users of the Scheme than currently exists and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
<b>Engineering Accidents/Failures</b>								
Bridge failure	No	The Scheme design does not include any bridges and no bridges are located in the vicinity of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Flood defence/reservoirs	Yes	The Flood Risk Assessment considers the risk of flooding should a designated reservoir or flood defence fail. The Scheme is in close proximity to the River Thames flood and tidal defences. There is not considered to be any increased risk to the Scheme as a result of the defences and reservoirs.	Park users, infrastructure and property, surrounding environment.	Causalities, damage to infrastructure and property, disruption to services.	N/A	N/A	The Environment Agency states that they are confident the TE2100 plan can cope with the changing climate and sea level rise and can improve the existing defence system to manage flood risk on the Thames. The timing of defence raising will depend on the rate of sea level rise.	N/A
Mast and tower collapse	No	The Scheme is not in close proximity to any masts or towers.	N/A	N/A	N/A	N/A	N/A	N/A
Building failure or fire	Yes	The Scheme is in close proximity to multiple buildings. There is not considered to be any increased risk to the Scheme than currently exists and is not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Utilities failure (gas, electricity, water,	Yes	Numerous utility routes run adjacent to the Scheme that could fail and cause damage to the Scheme.	Park users, infrastructure and property,	Potential for fire/explosion,	Yes in the Material Assets Chapter in the	No	No	All utilities companies have plans and

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sewage, oil, communications)			surrounding environment.	pollution incident, injury.	ES (Chapter 14)			arrangements in place to deal with supply disruptions and failures

#### Industrial Accidents

Defence industry	No	No defence industries are located within 2 km of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Energy industry (fossil fuel)	No	No energy industries are located within 2 km of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Nuclear power	No	No nuclear power plants are located within 2 km of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Oil and gas refinery/storage	No	No oil and gas refinery/storage facilities are located within 2 km of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Food industry	No	No food industries are located within 2 km of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Chemical industry	No	No chemical industries are located within 2 km of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Manufacturing industry	No	No manufacturing industries are located within 2 km of the Scheme.	N/A	N/A	N/A	N/A	N/A	N/A
Mining industry	No	No historical mining activities have been identified within 2 km of the Scheme	N/A	N/A	N/A	N/A	N/A	N/A

#### Terrorism/Crime/Civil unrest

Bomb/vehicle attack on people	Yes	The Scheme is unlikely to be any more of a target for this attack than currently	N/A	N/A	N/A	N/A	N/A	N/A
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		exists and is therefore not considered further.						
Bomb/vehicle attack on infrastructure	Yes	The new Holocaust Memorial and Learning Centre may become a target for a terrorism or attack. A Security Statement has been prepared for the Scheme which details the security solutions which have taken account both criminal and terrorism concerns. is unlikely to be any more of a target for this attack than currently exists and is therefore not considered further.	Park users, infrastructure and property, surrounding environment.	Causalities, damage to infrastructure and property, disruption to services.	N	Yes – Security Statement	Yes – Within the Security Statement and design. A security area will be built to process all visitors through, limits on bag sizes, searching and screening regimes and other security regimes.	N/A
Mass shooting	Yes	The Scheme is unlikely to be any more of a target for this attack than currently exists and is therefore not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Chemical / gas attack	Yes	The Scheme is unlikely to be a y more of a target for this attack than currently exists and is therefore not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Rioting	Yes	The Scheme unlikely to be any more of a target for this attack than currently exists and is therefore not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
Cyber attack	Yes	The Scheme is unlikely to be any more of a target for this attack than currently exists and is therefore not considered further.	N/A	N/A	N/A	N/A	N/A	N/A
<b>War</b>								
Conventional	No	The Scheme is no more vulnerable than any other infrastructure.	N/A	N/A	N/A	N/A	N/A	N/A

Disaster Type	Relevant to the Scheme	Source of disaster	Potential receptors	Consequence	Addressed in ES (Yes/No and where)	Covered outside of ES (Yes/No and where)	Embedded mitigation	Additional mitigation to reduce risk
Chemical	No	The Scheme is no more vulnerable than any other infrastructure.	N/A	N/A	N/A	N/A	N/A	N/A
Nuclear	No	The Scheme is no more vulnerable than any other infrastructure.	N/A	N/A	N/A	N/A	N/A	N/A
<b>Disease</b>								
Human disease	No	The Scheme is no more vulnerable than any other infrastructure.	N/A	N/A	N/A	N/A	N/A	N/A
Animal disease	No	The Scheme is no more vulnerable than any other infrastructure.	N/A	N/A	N/A	N/A	N/A	N/A
Plant disease	No	The Scheme is no more vulnerable than any other infrastructure.	N/A	N/A	N/A	N/A	N/A	N/A
Animal infestation	NO	The Scheme is no more vulnerable than any other infrastructure.	N/A	N/A	N/A	N/A	N/A	N/A

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