

## 13 Summary

### 13.1 Introduction

- 13.1.1 A comprehensive assessment of the potential significant environmental effects arising from the Proposed Development has been undertaken. Where possible, measures have been incorporated into the design of the proposals to avoid / reduce the potential for significant environmental effects to arise known as 'primary mitigation' (see Chapter 2 of this ES).
- 13.1.2 Measures that have been proposed to help mitigate effects identified during the assessment process have also been proposed for some of the environmental topics ('secondary mitigation'). These largely, but not exclusively, cover potential effects arising during construction activity and are summarised in Table 13.1 below.
- 13.1.3 The residual effects, i.e. those significant effects remaining after mitigation, represent the likely significant effects of the Proposed Development and these are summarised in Table 13.2.
- 13.1.4 Table 13.3 provides a summary of the likely significant cumulative effects predicted to result from the Proposed Development in combination with other committed/proposed developments as set out in Chapter 3 of this ES.

Table 13.1 Proposed measures to mitigate potentially significant adverse effects		
Potential significant adverse effects	Mitigation measure proposed	Mitigation secured through
<b>Traffic and Transport</b>		
Effects on the local road network (including traffic flows, disruption and driver delay) from construction vehicles including HGV's during the two year construction period	<p>A Construction Traffic Management Plan (CTMP) will be prepared and agreed with Highway Officers prior to construction commencing and the works will be undertaken in accordance with this. The CTMP will be a management tool that contractors will follow to minimise the impact of construction vehicles. It will be regularly monitored and reviewed on an ongoing basis to seek to further reduce impacts where possible. The CTMP will include amongst other provisions:</p> <ul style="list-style-type: none"> <li>• Programme and total timescale for the project, each major phase of the construction and the anticipated start date;</li> <li>• Days and hours of site construction works;</li> <li>• Vehicular access routes to and from the site;</li> <li>• Details on the number, type, size and weight of vehicles accessing the site;</li> <li>• Details of how contractors, delivery companies and visitors will be made aware of the access route;</li> <li>• Measures to ensure route compliance;</li> <li>• Site plan showing compound locations where materials, skips and plant will be stored along with loading / unloading / laydown areas;</li> <li>• Demonstration that vehicles can access the site and turn to exit in a forward direction;</li> <li>• Contingency details on where delivery vehicles will wait to</li> </ul>	Requirement 8 Construction Traffic Management Plan

	<p>load/unload in the event they are unable to access the site;</p> <ul style="list-style-type: none"> <li>• Details on vehicle wheel wash facilities be provided;</li> <li>• Details on the arrangements for co-ordinating and controlling delivery vehicles;</li> <li>• Details on the arrangements for supervising, controlling and monitoring vehicle movements to/from the site;</li> <li>• Details on the arrangements to ensure that the loading/collection areas are clear of vehicles and materials before the next HGV arrives;</li> <li>• Details on any specific arrangements for contractor car sharing / minibus / collection / drop-off arrangements to and from the site;</li> <li>• Details on the arrangements for contractor parking on site;</li> <li>• Details on monitoring and review;</li> <li>• Details on how complaints from local residents and businesses, etc. will be dealt with, reported and acted upon;</li> <li>• Details on the transport requirements for abnormal indivisible loads;</li> <li>• A detailed swept path analysis of abnormal indivisible loads;</li> <li>• Details of any measures to accommodate abnormal indivisible loads along the access route along with the management measures to be adopted; and</li> <li>• Details of any road condition surveys.</li> </ul>	
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<b>Air Quality</b>		
<p>Generation of dust during construction</p>	<p>A Construction Environmental Management Plan (CEMP) will be prepared and agreed with the local planning authority prior to construction commencing and the works will be undertaken in accordance with this. The CEMP will include but not limited to the following measures:</p> <ul style="list-style-type: none"> <li>• Planning the site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.</li> <li>• Ensuring all vehicles switch off engines when stationary – no idling vehicles.</li> <li>• Use enclosed chutes and conveyors and covered skips.</li> <li>• Avoid bonfires and burning of waste materials.</li> <li>• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.</li> <li>• Production of a site specific Dust Management Plan</li> <li>• Carry out regular site inspections to monitor compliance with a Dust Management Plan, record inspection results, and make an inspection log available to the local authority when asked.</li> </ul>	<p>Section 4.1.2 of the dCEMP.</p>

<b>Climate Change</b>		
<p>Generation of GHG emissions during construction</p>	<p>Construction-stage effects are not considered likely to be material to the total life-cycle effect of the Proposed Development. Nevertheless, in consideration of IEMA guidance that all GHG emissions are potentially significant, and government policy seeking GHG emissions reductions across all economic sectors including construction, the following additional mitigation measures should be considered during detailed design:</p> <ul style="list-style-type: none"> <li>• Seek a reduction in total materials required and hence embodied carbon through lean/efficient design;</li> <li>• Maximise re-use of materials and components from K1, insofar as feasible;</li> <li>• Specify materials with low embodied carbon (e.g. based on data in the BRE Green Guide to Specification or product EPDs);</li> <li>• Source materials locally where possible to reduce transport GHG emissions;</li> <li>• Consider use of an established methodology, such as BREEAM New Infrastructure PAS2080 and/or life-cycle analysis to guide low-carbon design and construction, set a feasible reduction target and quantify its achievement.</li> </ul>	<p>Requirement 5 Detailed design.</p>

<b>Noise and vibration</b>		
Construction noise levels on sensitive receptors	<p>No specific mitigation is identified as being required to reduce construction noise or vibration adverse effects.</p> <p>Notwithstanding this, best practicable means will be adopted to minimise noise emissions as far as is reasonably practicable. This will include minimising noisy night-time and weekend working, and adherence to a Construction Environmental Management Plan (CEMP) which will demonstrate how the construction works will meet best practicable means. Examples of appropriate construction mitigation are provided in BS 5228-1:2009+A1:2014. The CEMP will be agreed in writing with the local planning authority prior to commencement of development.</p> <p>The Project will be constructed during standard working hours except by prior written agreement of SBC.</p>	Section 4.7.2 of the dCEMP.
<b>Ground Conditions</b>		
Effects on human health and ground water during construction	<p>Although the assessment did not identified any significant effects to human health and the environment as a consequence of the construction phase of the Proposed Development, there are a number of measures that should be implemented during construction to minimise potential impacts associated with the Proposed Development. These measures are standard in construction projects and are in line with current industry good practice for construction on brownfield sites (see Chapter 8 for details). A Construction Environmental Management Plan (CEMP) will be prepared and agreed with the local planning authority prior</p>	Section 4.5.2 of the dCEMP.

	<p>to construction commencing setting out these measures, who will implement and the relevant legislative requirements.</p> <p>A piling risk assessment is required to be undertaken prior to commencement of development to determine the most suitable piling technique to be implemented, to minimise the potential for the downward migration of contamination within the Made Ground into the Secondary A aquifers (Lambeth Group and Thanet Formation). The proposed development will be required to be implemented in accordance with the recommendations of the piling risk assessment.</p>	
Effects on human health from the presence of potential ground gas post construction	<p>To mitigate completed development effects to human health from the presence of ground gas, ground gas protection measures will be implemented within new structures to minimise the potential for the migration into and accumulation of ground gas within these structures.</p> <p>The design of ground gas protection measures will be undertaken in accordance with CIRIA C665 and BS8485 (see Chapter 8).</p>	Requirement 12 Contaminated land and groundwater.
<b>Water Environment</b>		
Water quality and flood risk impacts during construction and decommissioning	<p><b>Surface Water Management Strategy</b></p> <p>The Proposed Developments would result in the construction of low permeability surfacing, increasing the rate of surface water run-off from the Site. A surface water management plan produced which will ensure that any increase in surface water run-off would be handled on-site and a run-off rate to the surrounding water environment (Swale Estuary) is maintained at the agreed upon rate with the appropriate authority. This would highlight potential contaminants and suspended sediment originating from the Site, which may affect the receiving watercourse.</p>	Section 4.4.2 of the dCEMP.

	<p><b>Flood Management Plan</b></p> <p>A flood management plan will be produced and adhered to throughout the construction phase, and will include flood-warning measures for safe site evacuation.</p>	
<p>Water quality and flood risk impacts during operation of K4</p>	<p><b>Drainage maintenance plan</b></p> <p>A drainage maintenance plan will be produced and adhered to for the lifetime of the development for the drainage of the Site and any connections to the surface water, or foul sewer.</p> <p><b>Flood management plan</b></p> <p>A flood management plan will be produced and adhered to throughout the operational life of K4, and will include flood-warning measures for safe site evacuation.</p> <p><b>Emergency spillage management plan</b></p> <p>An emergency spillage management plan will be produced and adhered to throughout the lifetime of the development, and will include emergency measures.</p> <p><b>Water quality monitoring strategy</b></p> <p>A water quality monitoring strategy will be produced for the Proposed Development and adhered to throughout the lifetime of the development. This will apply to the drainage ditches within and surrounding the Site.</p> <p><b>Flood Evacuation Plan</b></p> <p>A flood evacuation plan will be developed for the construction and operational phases of the Proposed Development, with staff training provided, to ensure in the event of the plan be activated staff are aware of the procedures upon receipt of the flood</p>	<p>Requirement 11 Surface and foul water drainage.</p>



	warning, together with evacuation routes. The flood evacuation plan should be practiced regularly.	
<b>Biodiversity</b>		
Dust impacts on designated sites	Subject to the implementation of the dust mitigation measures set out above under 'Air quality' no further mitigation measures are required.	Section 4.1.2 of the dCEMP.
<b>Landscape and Visual Impact</b>		
No mitigation proposed and/or feasible.		
<b>Cultural Heritage</b>		
Impact on the archaeological resource of the site	Whilst the archaeological resource of the Site is likely to be low and the unmitigated effect of the development on the buried archaeology therefore not significant, in light of the fact the archaeological resource of the Site is technically unknown a programme of archaeological fieldwork in the form of trial trenching (in the first instance) will be undertaken at a suitable time following consent.	Requirement 13 Archaeology.



Table 13.2 Identified significant residual effects		
Impact Type	Stage of Development	Significant Residual Effects (beneficial or adverse)
Traffic and Transport	Demolition and Construction Completed Development Decommissioning	There are no predicted significant traffic and transport effects envisaged as a result of the Proposed Development subsequent to the mitigation measures set out in Table 13.1 above.
Air Quality	Demolition and Construction and Completed Development Decommissioning	There are no predicted significant effects on air quality envisaged as a result of the Proposed Development post mitigation.
Climate Change	Demolition and Construction and Completed Development Decommissioning	There are no predicted significant effects on Green House Gas emissions and subsequently climate change envisaged as a result of the Proposed Development.
Noise and Vibration	Demolition and Construction Completed Development Decommissioning	There are no predicted significant effects on the noise environment envisaged as a result of the Proposed Development post mitigation.
Ground Conditions	Demolition and Construction Completed Development Decommissioning	There are no predicted significant ground condition related effects envisaged as a result of the Proposed Development post implementation of the mitigation measures set out in Table 13.1 above.

Water Environment	Demolition and Construction	There are no predicted significant effects on the water environment envisaged as a result of the Proposed Development post mitigation.
	Completed Development	
	Decommissioning	
Biodiversity	Demolition and Construction	There are no predicted significant effects on biodiversity envisaged as a result of the Proposed Development.
	Completed Development	
Landscape & Visual Impact	Demolition and Construction	There are no predicted significant landscape and visual effects envisaged as a result of the Proposed Development during construction
	Completed Development	The Proposed Development will result in a significant adverse effect on sequential views from the Saxon Shore Way/public right of way ZU1/2.
	Decommissioning	There are no predicted significant landscape and visual effects envisaged as a result of the Proposed Development during decommissioning.
Archaeology & Cultural Heritage	Demolition and Construction	There are no predicted significant archaeological or cultural heritage related effects envisaged as a result of the Proposed Development.
	Completed Development	
	Decommissioning	

Table 13.3 Identified significant residual cumulative effects		
Impact Type	Stage of Development	Significant Residual Effects (beneficial or adverse)
Traffic and Transport	Demolition and Construction Completed Development Decommissioning	There are no predicted significant cumulative effects on traffic or transport envisaged as a result of the Proposed Development post mitigation.
Air Quality	Demolition and Construction and Completed Development stages Decommissioning	There are no predicted significant cumulative effects on air quality envisaged as a result of the Proposed Development post mitigation.
Climate Change	Demolition and Construction and Completed Development stages Decommissioning	There are no predicted significant cumulative effects on Green House Gas emissions and climate change envisaged as a result of the Proposed Development.
Noise and Vibration	Demolition and Construction Completed Development Decommissioning	There are no predicted significant cumulative effects on the existing noise environment envisaged as a result of the Proposed Development.
Ground Conditions	Demolition and Construction Completed Development	There are no predicted significant cumulative ground condition related effects envisaged as a result of the Proposed Development post implementation of the mitigation measures set out in Table 13.1 above.

Decommissioning		
Water Environment	Demolition and Construction Completed Development Decommissioning	There are no predicted significant cumulative effects on the water environment envisaged as a result of the Proposed Development.
Biodiversity	Demolition and Construction Completed Development Decommissioning	There are no predicted significant cumulative effects on biodiversity envisaged as a result of the Proposed Development.
Landscape & Visual Impact	Demolition and Construction Completed Development	The Proposed Development in combination with the other cumulative developments identified would result in a significant adverse effect on the landscape character of the area and sequential views along the Saxon Shore Way public right of way. This is an inevitable effect of the quantum of development permitted or proposed in this locality reflective of its industrial context.  However, K4 on its own is considered to make a negligible contribution to the cumulative effect on landscape character which would occur even in the absence of K4.
	Decommissioning	There are no predicted significant cumulative effects on landscape character and visual impact envisaged as a result of decommissioning the Proposed Development.
Archaeology & Cultural Heritage	Demolition and Construction Completed Development Decommissioning	There are no predicted significant cumulative archaeological or heritage effects envisaged as a result of the Proposed Development.