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# **Outline Design Principles Document**

**April 2025**



# Helios Renewable Energy Project

## Outline Design Principles Document

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Prepared on behalf of Enso Green Holdings D Limited

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## 1. Introduction

- 1.1.1. This Outline Design Principles (ODP) document has been prepared on behalf of Enso Green Holdings D Limited (the 'Applicant') in relation to an application for a Development Consent Order (DCO) for the Helios Renewable Energy Project (the 'Proposed Development').
- 1.1.2. The purpose of the ODP document is to provide a summary of the parameters and design guidance for the Proposed Development sought for approval and secured by requirement in the draft DCO, and which will subsequently inform the detailed design of the Proposed Development. 6.1 Environmental Statement Chapter 3 - Site and Development Description [APP-023] includes Design Guidance which provides an indicative overview of the design principles for certain aspects of the Proposed Development. The Design Guidance does not form a parameter or limitation for the detailed design of the Proposed Development.
- 1.1.3. The detailed design of the Proposed Development will be approved through the discharge of Requirement 3 by North Yorkshire Council (NYC)
- 1.1.4. The Outline Design Principles were included within Section 4 of the Design and Access Statement within the original application **[APP-229]**, superseded by a subsequent issue at Deadline 2 **[REP2-013]**. This document is based upon those principles.

## 2. Outline Design Principles

### 2.1. Introduction

- 2.1.1. This section sets out the guiding principles for the Proposed Development. These principles will inform the subsequent detailed design. Assuming the application for development consent is granted, the detailed design for the Proposed Development will be submitted for approval to NYC as the relevant local planning authority. NYC will consider the detailed design having regard to the maximum parameters secured by the DCO and the principles set out in this document and the ES for the Proposed Development as certified by the SoS.

### 2.2. Use

- 2.2.1. The proposal comprises the installation of ground mounted solar arrays with an operational lifespan of 40 years, which would be linked to the first commercial export date from the Proposed Development.

### 2.3. Design Principles

- 2.3.1. In order to maintain flexibility to accommodate changes in technological advancements to the design and layout at this stage in the process, the application is seeking approval for maximum parameters for the Proposed Development. The assessment of the Proposed Development has been carried out in accordance with NPS EN-1 and has adopted the Rochdale Envelope approach, as described in the *PINS Advice Note Nine: Rochdale Envelope* (July 2018). Post consent, the Proposed Development will undergo detailed design following a successful competitive tender process. The detailed design of the Proposed Development must be within the parameters secured by the draft DCO and will be subject to approval from NYC through Discharge of Requirement Applications.

- 2.3.2. The draft DCO submitted with the application includes the following Requirement:

#### **Detailed design approval**

**3. - (1) No phase of the authorised development may commence until details of—**

- (a) the layout;*
- (b) scale;*
- (c) proposed finished ground levels;*

- (d) external appearance;*
- (e) hard surfacing materials;*
- (f) vehicular and pedestrian access, parking and circulation areas;*
- (g) refuse or other storage units, signs and lighting;*
- (h) drainage, water, power and communications cables and pipelines;*
- (i) programme for landscaping works; and*
- (j) fencing,*

*relating to that phase have been submitted to and approved in writing by the local planning authority.*

*(2) The details submitted must accord with—*

- (a) the location plan and order limits plan;*
- (b) the works plan;*
- (c) the principles and assessments set out in the environmental statement; and*
- (d) the outline design principles document.*

*(3) The authorised development must be carried out in accordance with the approved details.*

2.3.3. Therefore, the DCO secures that the final design details will be in accordance with this ODP document. The details will be tailored to the relevant phase of works and will be submitted in accordance with the relevant triggers in the above Requirement (i.e. prior to commencement of a “phase”). The number of phases will be determined by the undertaker prior to commencement of the DCO and notified to NYC under Requirement 2 of Schedule 2 of the DCO **[REP6-003]**. For each component of the Proposed Development outlined below, a set of design principles has been provided. The principles comprise parameters which together define the component in terms of its:

- a) Location – the location of the component within the Proposed Development as assessed in the ES;
- b) Scale – either a minimum of maximum parameter which has been assessed in the ES; and
- c) Design – relevant design parameter which has been assessed in the ES.

2.3.4. All heights defined in this section are Above Ground Level (AGL) unless otherwise specified.

**Table 2.1: Work No.1 Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 1 – A ground mounted solar photovoltaic generating station comprising:</b></p> <p>a) Solar panels fitted to mounting structures;</p> <p>b) Balance of solar plant.</p>		
<b>Solar PV Modules and Mounting Structures</b>	Location	All solar panels will be located within the Work No .1 area as defined on the <b>Works Plan [APP-015]</b> .
	Scale	The maximum top height of the arrays will be 3.0m AGL.
	Scale	The minimum height of the lowest part of the arrays will be 0.9m AGL.
	Scale	The rows of solar PV tables will have a minimum separation distance of 2m.
	Design	The panels will utilise a Single Access Tracker ('SAT') system, oriented north-south and will tilt east-west.
	Design	The maximum slope of PV modules from horizontal will be 60°.
	Design	Solar panels will be made of silicon glass and include an anti-reflective coating.

	Design	The solar PV modules will be ground mounted to a piled metal frame of anodized aluminium alloy or galvanized steel with rough matte finish.
	Design	The foundation types will be piling or concrete feet foundation. Ground footed mountings for solar PV modules, fence posts and CCTV posts where over an area of archaeological potential would be up to 0.15m.
	Scale	The framework posts will be pile driven, up to a maximum depth of 2.5m below ground level.
<b>Field Stations</b>	Design	Field stations comprise centralised inverters, transformers and switchgear with each component for each field station comprising either:  i) A 'field station' located outside, with a concrete foundation on a gravel sub-base for each of the inverters and transformers and switchgear; or  ii) housed together within a container sitting on a concrete foundation on a gravel sub-base.
	Scale	There will be up to 100 field stations.
	Scale	Each unit will measure up to 12.2m in length x 2.4m in width and 3.5m in height, including concrete supports from a minimum of 300mm to a maximum of 600mm in height, above a 300m deep gravel sub-base.
	Design	Indicative foundations: concrete feet on a gravel sub-base.



	Design	Indicative colour: In keeping with the prevailing surrounding environment, painted dark green,
<b>String Inverters</b>	Design	String inverters would be attached either to mounting structures or a ground mounted frame switchgear and transformers on a gravel sub-base.
	Scale	A string inverter will be required for every solar PV string.

**Table 2.2: Work No.2 Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<b>Work No. 2 – Battery Energy Storage System (BESS) comprising:</b> <ul style="list-style-type: none"> <li>a) Battery energy storage system units;</li> <li>b) Auxiliary transformers and associated bunding;</li> <li>c) Power conversion system units including inverters, switchgear, transformers and ancillary equipment;</li> <li>d) Containers or enclosures housing all or any of Work Nos. 2(b) and (c) and ancillary equipment sitting on a concrete foundation on a gravel sub-base;</li> <li>e) Monitoring and control systems;</li> <li>f) Heating, ventilation and air conditioning systems;</li> <li>g) Fire safety infrastructure including water storage in tanks or other containers, drainage and water containment features, bunding and associated infrastructure; and</li> <li>h) Containers or similar structures to house control room, office and welfare facilities, and storage.</li> </ul>		
<b>BESS compound</b>	Location	The BESS compound will be located within area designated for Works No.2 and No.3 as shown on the <b>Works Plan [APP-015]</b> .
	Design	The compound will be surrounded by a flood defence earth bund raised at least 600mm above the fluvial ‘credible maximum scenario sensitivity test’ flood level to protect the equipment from inundation.

<b>Battery energy storage system units</b>	Scale	The compound will include battery containers of up to 12.2m in length x 2.4m in width x 3.5m in height, including concrete supports 600mm in height.
	Design	<p>The design of BESS includes the following design elements to both prevent, detect and control a fire should one occur. Design elements:</p> <ul style="list-style-type: none"> <li>▪ Two separate points of vehicular access;</li> <li>▪ Circular service road providing unobstructed access to all BESS containers and designed to accommodate Fire and Rescue service vehicles;</li> <li>▪ All BESS containers are a minimum of 25m from the nearest occupied buildings and a minimum of 25m from Public Rights of Way and Site Boundaries;</li> <li>▪ Spacing between BESS units is a minimum of 2m;</li> <li>▪ The BESS and other installations will be positioned on concrete plinths / standing and the land between laid out to hardcore with a gravel cover. Surfacing will comprise a 150mm top layer of 20-32mm Clean Stone, laid over 450mm of Type 6F5 Hardcore;</li> <li>▪ Two sets of four Water Tanks;</li> <li>▪ The BESS compound will be lined with an impermeable liner, and will</li> </ul>

		<p>have a flood bund around the BESS compound which would contain any run-off within the bunded area in event of a fire.</p> <p>As set out in <b>ES Appendix 3.1: Outline BESS Safety Management Plan [REP4-013]</b> and the <b>Site Specific Risk Engagement Document (SSRED) [APP-231]</b>.</p>
<b>BESS Control Room</b>	Scale	The compound will include a control room (including a weather station, wifi antenna and satellite aerial) of up to 6m in length x 3m in width x 5.7m in height, as shown
<b>Inverter-Transformers</b>	Scale	The compound will include inverter-transformers of up to 6.1m in length x 2.4m in width x 3.5m in height, including supports 600mm in height,
<b>Water Tanks</b>	Scale	The maximum water tank dimensions are up to an elevation of 3.65m AGL and a diameter of up to 3.45m.
<b>BESS Switch Room</b>	Scale	The compound will include a switchroom no larger than 11.7m in length x 4m in length x 3.8m in height

**Table 2.3: Work No.3 Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 3 – Works in Connection with an on-site substation comprising:</b></p> <ul style="list-style-type: none"> <li>a) Substation, switch room buildings, concrete foundations and ancillary equipment including reactive power units;</li> <li>b) Power conversion system units including inverters, switchgear, transformers and ancillary equipment;</li> <li>c) Control building housing offices, storage containers and space, welfare facilities, waste storage within a fenced compound, car parking;</li> <li>d) Monitoring and control systems;</li> <li>e) 132 kilovolt harmonic filter compound;</li> <li>f) Electrical cables;</li> <li>g) Deluge system including water tanks and fire suppression, and drainage and water containment features and associated infrastructure; and</li> <li>h) Access gates and tracks, security palisade fencing and bunding.</li> </ul>		
<b>On-site Substation</b>	Location	The substation will be located within area designated for Works No.2 and No.3 as shown on the <b>Works Plan [APP-015]</b> .
	Design	The substation will comprise an earthing transformer, surge arresters, earth switch, circuit breaker, 33kV intake switch room and generator transformers.



<b>Generator Transformer</b>	Scale	The component of the greatest height within the substation is the generator transformer, standing approximately 6.5m high,
<b>Water Tank</b>	Scale	The maximum water tank dimensions are up to an elevation of 3.65m AGL and a diameter of up to 3.45m.

**Table 2.4: Work No.4 and 4a Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 4 – Works including:</b></p> <ul style="list-style-type: none"> <li>a) Electrical cables up to 33 kilovolt connecting Work No. 1 and Work No. 2 to Work No. 3;</li> <li>b) Electrical cables up to 132 kilovolt connecting Work No. 3 to Work No. 6;</li> <li>c) Fencing, gates, boundary treatment and other means of enclosure;</li> <li>d) Improvement, maintenance and use of existing private tracks;</li> <li>e) Laying down of internal access tracks, ramps, means of access, footpaths, permissive paths, roads, including the laying and construction of drainage infrastructure, signage and information boards;</li> <li>f) Works for the provision of security and monitoring measures such as closed circuit television security system (CCTV), columns, lighting, cameras, weather stations, communications infrastructure, and perimeter fencing;</li> <li>g) Landscaping and biodiversity mitigation and enhancement measures including planting; and</li> <li>h) Works required for crossing, moving, re-routing or over/undergrounding of existing utility assets (including water, gas, sewer pipes, electricity distribution/transmission cabling, telecommunications etc.).</li> </ul> <p><b>Work No. 4A – Works including:</b></p> <ul style="list-style-type: none"> <li>a) Electrical cables up to 33 kilovolt connecting Work No. 1 and Work No. 2 to Work No. 3;</li> <li>b) Fencing, gates, boundary treatment and other means of enclosure;</li> </ul>		

<p>c) Laying down of internal access tracks, ramps, means of access, footpaths, roads, including the laying and construction of drainage infrastructure, signage and information boards; and</p> <p>d) Works required for crossing, moving, re-routing or over/undergrounding of existing utility assets (including water, gas, sewer pipes, electricity distribution/transmission cabling, telecommunications etc.).</p>		
<b>Cabling</b>	Location	The cabling will be located within area designated for Works No.4 and No.4A as shown on the <b>Works Plan [APP-015]</b> .
	Scale	The 33kV cables will be buried underground
	Scale	The 132kV cables will be buried underground
	Design	Cables will cross existing below-ground utility infrastructure at 90 degrees (perpendicular) to the alignment of the utility infrastructure.
	Scale	Cable crossings will be at least 600mm above or below the existing below ground utility infrastructure.
	Scale	Trenchless drilling methods will have a maximum working width of 30m.
<b>Fencing</b>	Location	Fencing may be undertaken within the area designated for Works No.4 and No.4A as shown on the <b>Works Plan [APP-015]</b> .
<b>Fencing (Solar PV Site)</b>	Design	The fence type will be plain wire, deer fencing with mammal gates included.
	Scale	The maximum fence post height will be 2.1m.

	Scale	The maximum fence height will be 2m.
<b>Fencing (On-site substation and BESS compound)</b>	Design	The fence type will be welded steel wire mesh.
	Scale	The maximum fence post height will be 2.4m.
	Scale	The maximum fence height will be 2.4m.
<b>Internal Access Tracks</b>	Scale	Internal access tracks will cover a width of up to 6m.
	Design	Internal access tracks will be constructed of permeable aggregate to enable drainage.
	Scale	The maximum topsoil strip depth of access road where over an area of archaeological potential will be up to 0.3m.
<b>Means of Access</b>	General	The location, scale and design of the accesses are as set out in the oCTMP <b>[REP4-017]</b> and Access and Rights of Way Plan <b>[APP-016]</b> .
<b>Permissive Path</b>	Location	The location of the permissive footpaths will be as indicated on ES Figure 3.2 Parameter Plan <b>[APP-040]</b> and Access and Rights of Way Plan <b>[APP-016]</b> .
<b>Security measures including CCTV and lighting</b>	Location	CCTV and lighting will be located within the areas designated for Works No.4 and 4A as shown on the <b>Works Plan [APP-015]</b> .
	Design	CCTV type will be night-vision technology.
	Design	CCTV support column material will be a wooden

		pole
	Scale	Maximum CCTV support column height will 3m.
	Design	The lighting will be passive infrared (PIR), pole-mounted or building mounted internal facing.
<b>Weather Station</b>	Scale	The maximum dimensions of the weather station standard motor pier will be 3m height x 1.2m depth.
<b>Landscaping and biodiversity mitigation and enhancement measures including planting</b>	Design	Biodiversity would be promoted within and around the arrays. Planting and ecological works incorporating the biodiversity objectives and management prescriptions in accordance with the oLEMP <b>[REP4-019]</b> and ES Figure 3.16 Landscape Strategy Plan <b>[APP-054]</b> .



**Table 2.5: Work No.5 Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 5 – Works including:</b></p> <ul style="list-style-type: none"> <li>a) Electrical cables up to 132 kilovolt connecting Work No. 3 to Work No. 6;</li> <li>b) Fencing, gates, boundary treatment and other means of enclosure;</li> <li>c) Laying down of internal access tracks, ramps, means of access, footpaths, roads, including the laying and construction of drainage infrastructure, signage and information boards; and</li> <li>d) Works required for crossing, moving, re-routing or over/undergrounding of existing utility assets (including water, gas, sewer pipes, electricity distribution/transmission cabling, telecommunications etc.).</li> </ul>		
<b>Grid connection cable corridor</b>	Location	The grid connection cable corridor will be located within the area designated for Work No. 5 as shown on the <b>Works Plan [APP-015]</b> .
	Scale	The cables will be buried underground
<b>Cabling</b>	Location	The cabling will be located within area designated for Works No.5 as shown on the <b>Works Plan [APP-015]</b> .
	Scale	The 33kV cables will be buried underground
	Scale	The 132kV cables will be buried underground.
	Design	Cables will cross existing below-ground utility infrastructure at 90 degrees (perpendicular) to

		the alignment of the utility infrastructure.
	Scale	Cable crossings will be at least 600mm above or below the existing below ground utility infrastructure.
	Scale	Trenchless drilling methods will have a maximum working width of 30m.

**Table 2.6: Work No.6 and 6A Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 6 – Within the NGET substation construction of electrical substation infrastructure including:</b></p> <ul style="list-style-type: none"> <li>a) a compound for electrical works necessary for the onwards transmission of electricity containing, but not limited to, cable switchgear and electrical equipment including power transformers, reactive compensation equipment, filters, cooling equipment, control and welfare buildings, lightning rods, internal roads, security fencing, and other associated equipment, structures and buildings including noise-attenuation works;</li> <li>b) electrical cables; and</li> <li>c) 132 kilovolt connection bay located at the NGET Drax 132kV Substation including all associated electrical equipment and civil works necessary to enable the onward transmission of electricity.</li> </ul> <p><b>Works No. 6A –</b></p> <ul style="list-style-type: none"> <li>a) access to the NGET substation for the construction, operation, maintenance and decommissioning of Work No. 6.</li> </ul>		
<b>NGET Substation</b>	Location	The works to the NGET Substation will be located within the area designated for Works No. 6 and 6A as shown on the <b>Works Plan [APP-015]</b> .

**Table 2.7: Work No.7 Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 7 – Temporary construction compounds comprising:</b></p> <ul style="list-style-type: none"> <li>a) Works to excavate and store soil, clear vegetation and obstacles, level, shape and prepare surface for construction compounds to be installed, and civils investigations and works to reinforce ground with weight-bearing support infrastructure;</li> <li>b) Creation of temporary construction compounds, laydown and working areas;</li> <li>c) Storage of equipment and materials including waste skips;</li> <li>d) Areas of hardstanding, car parking, site and welfare offices, canteens and workshops, area for download and turning, security infrastructure, site drainage and waste management infrastructure, and electricity, water, waste-water and telecommunications connections; and</li> <li>e) Works required for crossing, moving, re-routing or over/undergrounding of existing utility assets (including water, gas, sewer pipes, electricity distribution/transmission cabling, telecommunications etc.).</li> </ul>		
<b>Temporary Primary Construction Compounds</b>	Location	The temporary primary construction compounds will be within the area designated for Work No. 7 as shown on the <b>Works Plan [APP-015]</b> .
	Design	The construction compounds will be located near to the Site's two access/ egress points, and the construction layout will be in accordance with the measures in the <b>Outline Construction Environmental Management Plan (oCEMP)</b>

		[REP6-006].
	Scale	There will be a maximum of two temporary construction compounds.
	Scale	The maximum primary construction compound footprint will be 4ha.
	Design	The base of the primary construction compound material will be crushed stone.



**Table 2.8: Work No.8 and 8A Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 8 – Works to facilitate access for all works, comprising:</b></p> <ul style="list-style-type: none"> <li>a) Creation of accesses from or across the public highway;</li> <li>b) Visibility splays;</li> <li>c) Works to widen and surface the public highway; and</li> <li>d) Installation of temporary traffic lights or facilities for manned traffic management.</li> </ul> <p><b>Work No. 8A – Works including:</b></p> <ul style="list-style-type: none"> <li>a) Electrical cables up to 132 kilovolt connecting Work No. 3 to Work No. 6;</li> <li>b) Works required for crossing the railway using trenchless installation techniques; and</li> <li>c) Works required for crossing, moving, re-routing or over/undergrounding of existing utility assets (including water, gas, sewer pipes, electricity distribution/transmission cabling, telecommunications etc.).</li> </ul>		
<b>Access</b>	Location	The access works will be located within the Work No. 8 as shown on the <b>Works Plan [APP-015]</b> .
	Design	The accesses points located on the A1041 and field connections will be designed as per the Construction Traffic Management Plan (CTMP) <b>[REP4-017]</b> .
	Location	Vehicular access to the Site during the construction and decommissioning phases of the

		Proposed Development will be taken from two points on the A1041 at the eastern boundary of the Site (Access 1 and 2), as shown on <b>ES Figure 3.2: Parameter Plan [APP-040]</b> and Access and Rights of Way Plan <b>[APP-016]</b> .
	Design	The constructed accesses on the A1041 (Access 1 and 2) will accord with standard details provided by NYC or set out in the Design Manual for Roads and Bridges (DMRB).
	Location	Hardenshaw Lane will be used to connect the northern parcels of land to the southern parcels of land (Access 3 and Access 4 on Figure 3.1 of the CTMP <b>[REP4-017]</b> ). This is shown in Drawing SK03 in Appendix C of the CTMP.
	Design	The construction of Access 3 and Access 4 will accord with NYC's standard details as set out in Drawing E30-A 'Rural Quarry and Major Industrial Concrete Access'.
	Location	Where the cable installation goes across the Drax Power Station railway line, works will be undertaken to the south of the A645. There will be two cable route accesses (Access 13 and 14 on Figure 3.1 of the CTMP <b>[REP4-017]</b> ). Access 13 and 14 are shown in Appendix D of the CTMP, and both utilise existing accesses.
	Location	During the operational phase, vehicular access will be limited to maintenance visits and is anticipated to remain from the M62/A645/A1041 via the access/egress points identified previously.

	Design	On narrower sections on the highway, such as Hardenshaw Lane, temporary pass-by bays will be created for the construction period only. These will be reinstated for the operational phase.
	Design	Access to existing PRow will be maintained through all phases of the Proposed Development. Should temporary diversion be required to ensure the safety of PRow users, these will be for a short period during construction and decommissioning.
	Design	Prior to carrying out any works in relation to Access 1, 2, 3 and 4, the detailed design of such works must be submitted to the highway authority for approval (either as part of the Final CTMP or separately).
<b>Railway Crossing</b>	Location	The railway crossing works will be located within the area designated for Work No. 8A as shown on the <b>Works Plan [APP-015]</b> .
	Scale	The cables will be installed underground using a trenchless drilling method under the railway near Drax Power Station, the trenchless drilling area is expected to be 1.2m wide and up to 10m deep.
	Scale	The contractor will establish a 50m x 50m working compound on each side of the working sections of the trenchless methods.

**Table 2.9: Work No.9 Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Work No. 9 – Works for areas of green infrastructure comprising:</b></p> <ul style="list-style-type: none"> <li>a) Soft landscaping and planting, including tree and hedgerow planting;</li> <li>b) Habitat creation management including earthworks, landscaping, means of enclosure and the laying and construction of drainage infrastructure; and</li> <li>▪ Laying down of permissive paths, signage and information boards.</li> </ul>		
<b>Green Infrastructure</b>	Location	The green infrastructure will be located within the areas designated for Work No. 9 as shown on the <b>Works Plan [APP-015]</b> .
	Design	The green infrastructure will be designed as per the oLEMP <b>[REP4-019]</b> and ES Figure 3.16 Landscape Strategy Plan <b>[APP-054]</b> .
	Scale	The minimum offset from woodland to solar infrastructure will be 15m.
	Scale	The minimum offset from Site boundary hedgerows (internal and external) to solar infrastructure will be 5m.
	Scale	The minimum offset from ponds to solar infrastructure will be 30m.
	Scale	The minimum offset from ditches to solar infrastructure will be 6m.

	Scale	The minimum offset from watercourse to solar infrastructure will be 7m.
	Design	The existing hedgerows, woodland, ditches and ponds within the Site will be retained, with the exception of small breaks for new access tracks, security fencing and cable routing.
	Design / Scale	Any hedgerow or watercourse crossings will be kept to a minimum width. Where a cable route crosses a hedgerow, the hedgerow will be reinstated after construction.
<b>Permissive Path</b>	Location	The location of the permissive footpaths will be as indicated on ES Figure 3.2 Parameter Plan [APP-040] and Access and Rights of Way Plan [APP-016].



**Table 2.10: Further Associated Development Design Principles**

Proposed Development Component	Parameter Type	Design Principles
<p><b>Further Associated Development</b></p> <p>In connection with the construction of Work Nos. 1 - 9 above and to the extent that they do not form any part of any such work, further associated development comprising such other works as may be necessary or expedient for the purpose of or in connection with the relevant part of the authorised development and which fall within the scope of work assessed by the environmental statement within the Order limits including:</p> <ul style="list-style-type: none"> <li>a) Roads, ramps, watercourse and other temporary crossings, vehicular and pedestrian means of access including creation of temporary accesses, new tracks and paths, widening upgrades alterations and improvements of existing roads tracks and paths (including the installation of temporary traffic lights, visibility splays, banksmen or other measures to manage traffic);</li> <li>b) Fencing, gates, boundary treatments and other means of enclosure;</li> <li>c) Bunds, embankments, trenching and swales;</li> <li>d) Provision of temporary and permanent ecological and environmental mitigation and compensation works, including landscaping works and habitat creation;</li> <li>e) Working sites in connection with the construction of the authorised development including construction lay down areas, compounds, and spoil storage and associated control measures;</li> <li>f) Works to the existing irrigation system and works to alter the position and extent of such irrigation system;</li> <li>g) Surface water drainage systems, storm water attenuation systems including storage basins, oil water separators, including channelling and culverting and works to existing drainage networks;</li> </ul>		

<p>h) Electrical, gas, water, foul water drainage and telecommunications infrastructure connections diversions and works to alter the position of such services and utilities connections;</p> <p>i) Works to alter the course of or otherwise interfere with non-navigable rivers, streams or watercourses, and the temporary stopping up of watercourses for installation of culverts, drainage and other features to cross watercourses;</p> <p>j) Site establishments and preparation works including site clearance (including vegetation removal, demolition of existing buildings and structure), earthworks (including soil stripping and storage and site levelling) and excavations, the alteration of the position of services and utilities and works for the protection of buildings and land;</p> <p>k) Works for the benefit or protection of land affected by authorised development;</p> <p>l) Works of restoration;</p> <p>m) Tunnelling, boring and drilling works; and</p> <p>n) Such other works as may be necessary or expedient for the purposes of or in connection with the relevant part of the authorised development.</p>		
<b>Fencing</b>	Location	Fencing will be located within the limits of deviation of Work No.1 to 9 as shown on the <b>Works Plan [APP-015]</b> .
<b>Fencing (Solar PV Site)</b>	Design	The fence type will be plain wire, deer fencing with mammal gates included.
	Scale	The maximum fence post height will be 2.1m.
	Scale	The maximum fence height will be 2m.
<b>Fencing (On-site)</b>	Design	The fence type will be welded steel wire mesh.

<b>substation and BESS compound)</b>	Scale	The maximum fence post height will be 2.4m.
	Scale	The maximum fence height will be 2.4m.
<b>Ecological and environmental mitigation and compensation works</b>	Design	Planting and ecological works incorporating the biodiversity objectives and management prescriptions in accordance with the oLEMP <b>[REP4-019]</b> and ES Figure 3.16 Landscape Strategy Plan <b>[APP-054]</b> .
<b>Drainage and attenuation systems</b>	Design	The design of the drainage will be as per the Flood Risk Assessment <b>[REP6-016 to REP6-031]</b> , ES Figure 4.3 BESS and Substation Preliminary Drainage Strategy Drawing <b>[APP-061]</b> and the Preliminary Flood Compensation Scheme <b>[REP6-036]</b> .