

## 10 SUMMARY AND RESIDUAL EFFECTS

### Introduction

- 10.1 This chapter summarises the mitigation measures and residual effects identified in each of the technical assessments included in the ES.
- 10.2 The Development has been subject to an iterative design process. As this process progressed measures have been incorporated into the Development in order to avoid, reduce or offset significant environmental effects. These include:
- Avoiding and reducing the positioning of solar panels and built development on BMV land, where possible;
  - Retention and enhancement of the existing vegetation within the Site to provide biodiversity and landscape benefits, including the delivery of Net Benefit for Biodiversity (NBB) / Biodiversity Net Gain (BNG) and landscape buffers to minimise visual effects from residential properties;
  - Protecting and enhancing 'Alleston Wood', an area of Ancient Woodland within the Site; and
  - The preservation and enhancement of the key and immediate farmyard setting of Alleston through orchard planting, and the removal of those solar panels to the north of the house which would otherwise have obscured a key view of the listed building from Lower Lamphey Road.
- 10.3 Following assessment of the Development, additional mitigation measures have been proposed to be secured and implemented. These are set out in Table 11.1 below along with the residual effects of the Development following mitigation.

**Table 11.1: Significance Table**

Phase	Effect/ Receptor	Mitigation	Residual Significance (Significant Effects in Bold)
<b>HISTORIC LANDSCAPE (CHAPTER 6)</b>			
Construction	Localised truncation of known and potential archaeological remains which are of not of commensurate value with designated archaeological remains	Avoiding more significant intrusive works in the location of areas of highest archaeological potential. Construction method minimally intrusive.	Slight Adverse
	Changes to the setting of the Grade II listed Alleston during construction associated with increased noise and movement associated with construction vehicles	None	Slight Adverse
	Localised truncation of 'important' (based on Hedgerow Regulations (1997)) historic hedgerows to facilitate access to and across the Site	None	Slight Adverse
Operation	Changes to the Archaeological resource within the Site	None	Neutral
	Changes to the setting of the Grade II listed Alleston house and its associated ancillary buildings and structures associated with the insertion of solar panels within the Site	None	Slight Adverse
	Changes to the setting of the Grade II listed Alleston house and its associated buildings and structures associated with the insertion of orchard planting	None	Slight Beneficial
	Changes to 'important' (based on Hedgerow Regulations (1997)) historic hedgerows to facilitate access to and across the Site	None	Neutral
<b>LANDSCAPE AND VISUAL EFFECTS (CHAPTER 7)</b>			
Construction	The Site and its immediate context	Implementation of the Construction Environmental Management Plan will control lighting, location of compounds and stockpiles away from higher sensitivity receptors, and limiting movement of material between stockpiles.	<b>Moderate Adverse</b>
	Fields		<b>Moderate Adverse</b>
	Users of PRoW 32/51/1		<b>Moderate Adverse</b>
	Users of PRoW 32/51/2		<b>Moderate Adverse</b>
	Users of PRoW 32/52		<b>Moderate Adverse</b>
	Residents of Lower Lamphey Road		<b>Moderate Adverse</b>
	Residents of Upper Longstone		<b>Moderate Adverse</b>
Operation	The Site and its immediate context	Planting and management and maintenance of vegetation and features as appropriate.	Minor Adverse
	Fields		<b>Moderate Adverse</b>
	Trees and Woodland		<b>Moderate Beneficial</b>
	Hedgerows		<b>Moderate Beneficial</b>

Phase	Effect/ Receptor	Mitigation	Residual Significance (Significant Effects in Bold)
	Users of PRoW 32/51/1		Minor Adverse
	Users of PRoW 32/51/2		Minor Adverse
	Users of PRoW 32/52		Minor Adverse
<b>AGRICULTURAL LAND (CHAPTER 8)</b>			
Construction	Temporary loss of circa 1.3 ha of BMV land for tracks, etc	Implementation of the Soil Resource Management Plan for the future restoration of BMV land.	Minor Adverse
	Temporary loss of <1ha of non-BMV land for tracks, etc.		Minor Adverse
	Installation of solar PV arrays over BMV and non-BMV land		Negligible
	Construction effects on low-resilience clayey soils		Minor Adverse
	Effects on farm business		Minor Adverse
Operation	Operational effects on soils	Implementation of the Soil Resource Management Plan for the future restoration of BMV land.	Minor Adverse
	Soil structure form long-term grassland		Minor Beneficial
	Effect on farm business	No mitigation measures proposed.	Negligible
<b>BIODIVERSITY (CHAPTER 9)</b>			
Construction	Designated Sites	None	No Significant Effects
	Woodland & Scrub	Planting of 1.77ha of new woodland and 0.08ha of orchard. Secured by LEMP.	<b>Beneficial, significant at Local level</b>
	Hedgerows and Trees	Planting of 1.44km of new hedgerow. Secured by LEMP	<b>Beneficial, significant at Local level.</b>
	Watercourses & Ditches	None	No Significant Effects
	Bats	Planting of 1.44km of new hedgerow. Secured by LEMP.	No Significant Effects
	Breeding Birds	None	No Significant Effects
	Overwintering Birds	Ecological Clerk of Works provision during winter months. Secured by CEMP.	No Significant Effects
	Dormouse	Ecological Clerk of Works provision. Secured by CEMP.	No Significant Effects
	Otter and Water Vole	Ecological Clerk of Works provision. Secured by CEMP.	No Significant Effects
	Hedgehog & Polecat	Ecological Clerk of Works provision. Secured by CEMP.	No Significant Effects
	Badger	None	No Significant Effects

Phase	Effect/ Receptor	Mitigation	Residual Significance (Significant Effects in Bold)
	Widespread Reptiles & Amphibians	None	No Significant Effects
	Invasive Non-native Species	None	No Significant Effects
Operation	Designated Sites	None	No Significant Effects
	Woodland & Scrub	None	<b>Beneficial, significant at Site level</b>
	Hedgerows and Trees	Implementation of LEMP – habitat creation and management.	<b>Beneficial, significant at Site level</b>
	Watercourses & Ditches	Implementation of LEMP – habitat management.	<b>Beneficial, significant at Local level.</b>
	Bats	Implementation of LEMP – habitat creation.	<b>Beneficial, significant at Site level.</b>
	Breeding Birds	Implementation of LEMP to provide optimal grassland foraging habitat for ground nesting birds.	No significant effects.
	Overwintering Birds	None	<b>Adverse, significant at Site level.</b>
	Dormouse	None	No significant effects.
	Otter and Water Vole	None	No significant effects.
	Hedgehog & Polecat	None	No significant effects.
	Badger	Implementation of LEMP – habitat creation.	<b>Beneficial, significant at Site level.</b>
	Widespread Reptiles & Amphibians	Implementation of LEMP -habitat creation and species enhancements.	<b>Beneficial, significant at Local level.</b>
	Invasive Non-native Species	Implementation of LEMP – monitoring programme.	No significant effects.

### **Decommissioning Effects**

- 10.4 As set out in Chapter 3 of the ES, following the operational period of 40 years, the Development will be decommissioned, and the Site could be returned to its current agricultural use. All solar array infrastructure including modules, mounting structures, cabling, inverters and transformers would be removed and recycled or disposed of in accordance with good practice available at the time. Additional measures of the decommissioning phases have been recommended and detailed within Chapter 5 and the oDEMP (Appendix 5.2). The technical chapters 6-9 have found that the effects of decommissioning are likely to be very similar to those during construction.

### **Interactive Effects**

- 10.5 Regulation 4 (2) states that an ES must include a description of the aspects of the environment likely to be significantly affected by the Development and the interrelationship between these effects. There is no published methodology for determining the significance of interactive or synergistic effects. Combining effects with respect to one environmental discipline with another has to be qualitative and is necessarily based on judgment.
- 10.6 This has been informed by the residual effects of the Development (as identified above in Table 11.1) and professional judgment.
- 10.7 Appropriate mitigation during the construction phase has been identified in the ES as necessary, such as best practice measures to reduce or eliminate potential adverse environmental effects of construction as far as possible. Furthermore, the Construction Methodology Chapter (Chapter 5) proposes a programme and approach to works which will ensure that the Development would be implemented in the most efficient and least intrusive manner. This includes measures set out within the oCEMP and oDEMP which will be implemented through the future CEMP and DEMP, to be secured via a planning condition for the Development (see Chapter 5 and Appendices 5.1 and 5.2 for further details). Relevant legislative requirements would also be adhered to.
- 10.8 During the construction and operational phases of the Development, it is considered that interactions could potentially occur between landscape and views, biodiversity and built heritage. Given that these interactive effects have been inherently considered within the technical assessments no further consideration of interactive effects is required.

### **Cumulative Effects Summary**

- 10.9 Each of the technical chapters have considered the likely significant cumulative effects of the Development with the cumulative schemes set out in Chapter 2. Significant beneficial cumulative effects have been identified for habitats following construction, and for badgers, bats, reptiles and amphibians during operation.

### **Summary/Conclusions**

- 10.10 The Development will result in the following significant residual effects only:
- Construction:
    - The Site and its immediate context will experience a moderate adverse effect as a result of construction activities and compounds being introduced to the arable/pasture fields;
    - The landscape feature, Fields, will be subject to a Moderate Adverse Effect as a result of the construction plant, machinery and activity introducing uncharacteristic components to the fields;
    - The users of PRoW 32/51/1 will experience a Moderate Adverse effect as a result of construction activities dominating a large part of the footpath's view;

- The users of PRow 32/51/2 will experience a Moderate Adverse effect as a result of construction activities dominating a large part of the footpath's view;
- The users of PRow 32/52 will experience a Moderate Adverse effect as a result of construction activities dominating a large part of the footpath's view;
- Residents of Lower Lamphey Road will be subject to a moderate adverse effect due to the visibility of construction activities and incoming and outgoing vehicle traffic;
- Residents of Upper Longstone will experience a moderate adverse effect due to the visibility of construction activities;
- Beneficial effects, significant at the Local Level for Woodland and Scrub; and
- Beneficial effects, significant at the Local Level for Hedgerow and Trees.

### **Operation:**

- The landscape feature, Fields will be subject to a Moderate Adverse effect as a result of the change in land use;
- The landscape feature, Trees and Woodland will be subject to a Moderate Beneficial effect as a result of 2.5ha of native woodland planting to increase woodland and tree groups;
- The landscape feature Hedgerows will be subject to a Moderate Beneficial effect because existing hedgerows will be retained and enhanced;
- The users of PRow 32/51/1 will experience a Moderate Adverse effect as a result of the landscape in which the footpath crosses changing from open grassland to the Development;
- The users of PRow 32/51/2 will experience a Moderate Adverse effect as a result of the landscape in which the footpath crosses changing from open grassland to the Development;
- The users of PRow 32/52 will experience a Moderate Adverse effect as a result of the landscape in which the footpath crosses changing from open grassland to the Development;
- Adverse effects at the Site level for overwintering birds;
- Beneficial effects at the Site Level for bats;
- Beneficial effects at the Local Level for Woodland and Scrub;
- Beneficial effects at the Local Level for Trees and Hedgerow;
- Beneficial effects at the Local Level for Watercourses and Ditches;
- Beneficial effect at the Site Level for badgers; and
- Beneficial effect at the Site Level for reptiles and amphibians.