Riverside Energy Park

Environmental Statement

Chapter 9: Townscape and Visual Impact Assessment

VOLUME NUMBER:

06

PLANNING INSPECTORATE REFERENCE NUMBER:

EN010093

DOCUMENT REFERENCE:

6.1

May 2019 | Revision 1 (Deadline 2) | APFP Regulation 5(2)(a)

Planning Act 2008 | Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

CORY
RIVERSIDE ENERGY

Contents

Tables

Document Reference 6.2 – Figures

Document Reference 6.3 - Appendices

9 Townscape and Visual Impact Assessment

9.1 Introduction

9.1.1 This Chapter presents the assessment of likely significant effects of the Proposed Development on the townscape features and character of the Application Site, and the townscape character of the study area. It also provides an assessment of effects on people's views and visual amenity arising from the construction, operation and decommissioning of the Proposed Development. This Townscape and Visual Impact Assessment is hereafter referred to as the 'TVIA'.

9.1.2 The Proposed Development has the potential to affect townscape and visual receptors, due to the processes involved in construction (e.g. ground clearance, use of large cranes and construction plant) and decommissioning (e.g. dismantling structures, restoring land), as well as during operation through the introduction of new large structures into the townscape (e.g. the stack and the Main Riverside Energy Park (REP) Building).

9.1.3 This Chapter has been prepared by Peter Brett Associates LLP (PBA). In accordance with Regulation 14(4) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (the Infrastructure EIA Regulations 2017), a statement outlining the relevant expertise and qualifications of competent experts appointed to prepare the Environmental Statement (ES) is provided in **Appendix A.2**.

9.2 Legislation, Policy, Guidance and Standards

National Planning Policy and Strategies

National Policy Statements

9.2.1 As outlined in **Chapter 2**, the relevant National Policy Statements (NPSs) provide the primary basis for decisions by the Secretary of State on nationally significant infrastructure projects.

9.2.2 **Table 9.1** below identifies the relevant requirements of the NPSs:

Table 9.1: Relevant requirements of NPSs

Requirement of NPS EN-1, Overarching National Policy Statement for Energy	Response within this ES
NPS EN-1 refers to landscape and visual matters, and notes in paragraph 5.9.1 that "*… In this context, references to landscape should be taken as*	The TVIA is in accordance with the principles set out in GLVIA (3rd Edition). The methodology used for the TVIA is set out in detail at **Appendix E.1**.

covering seascape and townscape where appropriate." It is also noted that emission stacks and their plumes have potential for impact on landscape/townscape and visual amenity. Paragraph 5.9.5 requires applicants to carry out a landscape/townscape and visual assessment, with reference to the Guidelines for Landscape and Visual Impact Assessment [GLVIA] (Landscape Institute (LI)/Institute of Environmental Management and Assessment (IEMA) – note that the current edition is now 3rd Edition, 2013) and Landscape Character Assessment – Guidance for England and Scotland 2002 (now replaced by new guidance on https://www.gov.uk/guidance/landscape-and-seascape-character-assessments October 2014). Paragraph 5.9.5 of the NPS EN-1 (2011) states that the applicant's landscape and visual impact assessment is required to *"include reference to landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project*" and take account of relevant policies based on those assessments. Additionally, the NPS EN-1 (2011) notes that the assessment should consider the effects during construction, and on completion / operation, upon landscape components and landscape character, and potential impacts on views and visual amenity.	Other guidance referred to, as appropriate: ■ Transport Analysis Guidance (WebTAG) Chapter 7: Impacts on Townscape, TAG Unit A3 Environmental Impact Appraisal (December 2015); ■ LI Technical Information Note 05/2017: Townscape Character Assessment (LI, revised April 2018) *https://www.landscapeinstitute.org/wp-content/uploads/2018/04/tin-05-2017-townscape.pdf*; ■ Guidance: Landscape and Seascape Character Assessments (Natural England and DEFRA, October 2014) *https://www.gov.uk/guidance/landscape-and-seascape-character-assessments*; ■ LI Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment (LI, 2011) *https://www.landscapeinstitute.org/PDF/Contribute/LIPhotographyAdviceNote01-11.pdf* and its emerging update, Technical Guidance Note, Public Consultation Draft 2018-06-01 *https://www.landscapeinstitute.org/wp-content/uploads/2018/06/draft-tin-2018-XX-photography-photomontage-lvia.pdf*; ■ The following Landscape Character Assessments and associated studies have been used as a means of assessing the landscape impacts of REP: Countryside Agency National Character Area No. 81 Greater Thames Estuary; and No.112; London Natural Signatures Lower Thames Floodplain; and Crossness Conservation Area Appraisal; and ■ PINS Advice Note 17 (AN17) (Version 1, December 2015) which provides

	advice on a staged process that may be adopted in relation to cumulative effects assessment for NSIPs. The TVIA considers the construction, de-commissioning and operational effects of the Proposed Development on townscape features, townscape character and people's views and visual amenity, including understanding specific visual effects of the proposed stack, as well as the entire Proposed Development.
Requirement of NPS EN-3, Overarching National Policy Statement for Renewable Energy Infrastructure	**Response within the ES**
NPS EN-3, section 2.4 'Criteria for Good Design for Energy Infrastructure, paragraph 2.4.2', states that "*Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity…*". Biomass / Waste Impacts in relation to landscape and visual matters are set out in paragraphs 2.5.46 to 2.5.52 of NPS EN-3, which refers to assessment of landscape and visual effects of the proposed infrastructure being undertaken in accordance with NPS EN-1, policy 5.9. NPS EN-3 refers to design matters at paragraph 2.5.47, stating: "*The IPC should be satisfied that the design of the proposed generating station is of appropriate quality and minimises adverse effects on the landscape character and quality*". Paragraph 2.5.50 also states: *"Good design that contributes positively to the character and quality of the area will go some way to mitigate adverse landscape/visual effects. Development proposals should consider the design of the generating station, including the materials to be used in the context of the local landscape*." Paragraph 2.5.51 goes on to explain that: "*Mitigation is*	Embedded mitigation includes orientation of the Main REP Building to allow for visual permeability through REP site from Belvedere to the River Thames. The following Design Principles (**Document Reference 7.4**) have been considered: ■ To reduce the physical envelope of the Main REP Building and its perception of scale through the progression of a design that accords with a stepped building form; ■ A simplicity of architectural form, with form following function, resulting in a dynamic interplay of buildings along the riverscape, and an inter-connecting family of forms on the site; ■ Celebrating the historical industrial nature of the site, with glimpses of process operations through semi-solid screens which break down the solidity of the building masses; ■ Use of graded colour schemes, materials, and branding to reduce the perceived height of the Main REP building - with upper elements of buildings lighter and lower levels

achieved primarily through aesthetic aspects of site layout and building design, including size and external finish and colour of the generating station to minimise intrusive appearance in the landscape as far as engineering requirements permit. The precise architectural treatment will need to be site-specific."	darker; and variation of colour scheme to respond well to either river facing or land facing frontages; ■ The choice of colours will draw on the initial colour studies illustrated in the DAS and the context colour palettes, allowing the building and structures to respond to the surrounding landscape, townscape and riverscape and provide harmony to the building; and ■ Neutral and non-reflective colour palette for façade materials to avoid glare, with accent colours used to assist way orientation, intuitive wayfinding, enhance the REP identity and sense of place.
Requirement of NPS EN-5, Overarching National Policy Statement for Electricity Networks Infrastructure	**Response within this ES**
NPS EN-5, section 2.8 'Landscape and Visual', also makes reference back to Section 5.9 of NPS EN-1. NPS EN-5 notes in paragraph 2.8.2 that "*New substations, sealing end compounds and other above ground installations that form connection, switching and voltage transformation points on the electricity networks can also give rise to landscape and visual impacts*." Undergrounding is discussed at paragraphs 2.8.8 to 2.8.11, although in the context of being an alternative to overhead lines.	Operational townscape and visual impacts of the electrical connection have been scoped out as per the Secretary of State Scoping Opinion (see **Appendix A.1**); but construction stage effects are included in the assessment.

9.2.3 It is considered that, together with the Design Principles, this Chapter fully addresses the requirements of the NPSs as outlined above in **Table 9.1**.

9.2.4 A discussion on the following National, Regional and Local policy specific to this Chapter is located in **Appendix A.3.**

- Revised National Planning Policy Framework (NPPF) 2018; and
- National Planning Practice Guidance (PPG) (online resource).

Regional Planning Policy and Strategies

- The London Plan (2016);
- London Environment Strategy (2018); and
- London Plan Shaping Neighbourhoods: Character and Context SPG (2014).

Emerging Regional Planning Policy and Strategies

- Draft London Plan with Minor Suggested Changes (August 2018).

Local Planning Policy and Strategies

- Bexley Core Strategy (2012);
- Bexley Unitary Development Plan (UDP) (2004) Saved Policies (2012);
- Bexley Growth Strategy (2017);
- Crossness Conservation Area: Area Appraisal and Management Plan (2009);
- Dartford Core Strategy (2011);
- Dartford Development Policies Plan (2017); and
- Royal Borough of Greenwich (RBG) Core Strategy with Detailed Policies (2014).

TVIA Guidance and Standards

9.2.5 The methodology, including relevant guidance and standards for the TVIA is detailed in **Appendix E.1**.

9.3 Consultation

9.3.1 The following consultation responses, set out in **Table 9.2**, have been received during both the scoping and Section 42 stages, during which time stakeholders were consulted on the preliminary selection of representative viewpoints for the TVIA.

Table 9.2: Summary of Key Consultation Responses in Relation to Townscape and Visual Impact

Reference	Comment	Response
SoS Scoping Opinion		
Section 4.4 – ID 1 Electrical Connection	The Scoping Report does not explicitly request to scope out the operational effects of the electrical connection. However, it states that as the electrical connection would be located underground, the potential significant townscape or visual effects would be mitigated. For the avoidance of doubt, the Inspectorate considers that significant effects during operation from the electrical connection are unlikely and an assessment of impacts for this matter can be scoped out of the ES.	The operation of the Electrical Connection is scoped out of the EIA.
Section 4.4 – ID 2 Study Area	The Scoping Report refers to 'the study area'; however this has not been defined. The study area should be sufficient to capture the extent of the likely impacts and should be described and justified within the ES. The Inspectorate advises that the study area is agreed with relevant consultees.	The study area used in this assessment is defined and justified in Section 9.5. The study area remains the same as the area consulted on through the Preliminary Environmental Information Report, at which time it was not questioned by relevant consultees.
Section 4.4 – ID 3 Viewpoints	The Scoping Report proposes representative viewpoints and states that the exact location of viewpoints may be refined or further scoped out if no views are identified. Where viewpoints are screened out, it would be useful for	The list of view locations for the assessment has been agreed with the relevant Planning Authorities. VP7 is from Crossness Conservation Area, and the Conservation Area

Reference	Comment	Response
	the ES to clarify that there would be no view. The Inspectorate also advises that the final list of representative viewpoints and photomontages should be agreed with the relevant planning authorities. The Inspectorate is unclear whether views affecting Crossness Conservation Area and associated listed buildings will form part of the assessment, and considers these viewpoints should be included. Such an assessment has also been requested by Historic England in their scoping consultation response.	has also been added as a Townscape Receptor. No views have been scoped out.
Section 4.4 – ID 4 Guidance	The Scoping Report states that Transport Analysis Guidance (WebTag) Chapter 7: Impact on Townscape (2015) has been used to inform the proposed assessment methodology. The Inspectorate notes that this guidance is an 'appraisal methodology' intended for the development of business cases, applicable to highways and public transport interventions and not necessarily for the purposes of undertaking EIA. The Applicant should take care to ensure that the methodology applied is sufficient to identify and assess the likely significant effects from the Proposed Development.	This guidance is considered relevant as it contains a helpful definition of townscape and elements of townscape which form townscape character. The methodology used is considered sufficient and appropriate to assess the likely significant townscape and visual effects, and is based on the Guidelines for Landscape and Visual Impact Assessment (3rd Edition 2013) by LI/IEMA which is directly relevant to the assessment of effects for EIA.

Reference	Comment	Response
Section 4.4 – ID 5 Mitigation	It is noted that the future year scenario will provide assessment of the residual townscape and visual effects, once any necessary mitigation has been established and settled. The assessment should take into account the potential uncertainties in the establishment of planting.	This Chapter presents an assessment of a reasonable worst-case scenario which does not propose planting as further mitigation.
Section 4.4 – ID 6 Baseline Year	The Scoping Report identifies both 2017 and 2018 as the baseline year in paragraphs 7.5.14 and 7.5.16 respectively. The baseline year that has been used for the assessment should be clarified within the ES.	Photos representing people's views from selected locations were taken in 2018, and thus 2018 is used as the baseline year for the TVIA.
Section 4.4 – ID 7 ZTV	The ES should describe the model used, provide information on the area covered and the timing of any survey work and the methodology used to inform the ZTV.	Further information relating to these matters has been provided in Section 9.5 below.
Section 4.4 – ID 8 Method	To support a robust impact assessment, the Proposed Development should be illustrated using plans and visualisations which highlight those features which would result in changes to landscape character and visual amenity. Cross sections and photomontages are likely to be useful for this purpose.	This assessment is based on the parameters for assessment for REP as detailed in **Chapter 3.** A number of visualisations have been produced to inform the TVIA and are presented in **Appendix E.2**. **Figure 1.3** shows the Illustrative Site Layout.
Section 4.4 – ID 9 Conservation Area	The Scoping Report notes various components of the urban environment that will be assessed within the ES.	The Conservation Area and its setting are

Reference	Comment	Response
	The Inspectorate also requires that the setting of the conservation area is included in the assessment as an urban environment component. The Applicant's attention is drawn to Historic England's scoping consultation response in this regard, with particular reference to the London Borough of Bexley's conservation area appraisal and management plan to help establish significance and sensitivities of assets.	included as a townscape receptor in its own right. The TVIA makes reference to the London Borough of Bexley's Crossness Conservation Area Appraisal and Management Plan. **Chapter 10** considers effects on the Conservation Area in terms of heritage asset and setting.
Section 4.4 – ID 10 Mitigation Measures	The design and materials to be used in the construction of the Proposed Development should be given careful consideration to minimise the potential landscape and visual impacts.	The TVIA assesses relevant design principles as embedded mitigation for potential landscape and visual effects.
Section 4.4 – ID 11 Guidance	The Scoping Report states that the significance criteria has been developed with regard to GLVIA (2013). The Inspectorate considers that methodology for assessing the conservation area as a component of the townscape character should also be informed by Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets, as requested by Historic England in their consultation response.	The Conservation Area and its setting are included as a townscape receptor in its own right and is an important component of the townscape. This TVIA is informed by Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets, as referred to **Appendix E.1**. **Chapter 10** considers effects on the Conservation Area in terms of heritage asset and setting.

Reference	Comment	Response
Consultation on Preliminary Viewpoint Selection		
Kent County Council, Historic Environment	Approved Viewpoint Selection	N/A
Greater London Authority, Urban Design	No comments	N/A
London Borough of Bexley, Planning Urban Design & Conservation	Does Viewpoint Selection take account of the London View Management Plan? Urban Design Officer wanted to discuss the location for Viewpoint 8	It has been confirmed that the Proposed Development would not be visible from view locations in the London View Management Framework. Consultation was undertaken with the LBB Urban Design Officer via telephone. The Officer confirmed his agreement to the location of Viewpoint 8 and did not provide any further comments or alternative suggestions.
S42 Consultation		
Royal Borough of Greenwich	The location of the proposed REP is within the local view no. 4 Eaglesfield Recreation Ground towards Bexley and the Lower Thames in the Council's Core Strategy. The Townscape and Visual Impact Assessment chapter of the EIA should include justification for its omission from the assessment.	This view location is included as VP 16.
Royal Borough of Greenwich	Other notable developments which may warrant inclusion in the cumulative assessment include:	The cumulative assessment considers these developments, see IDs 371 and 372 in **Appendix A.4**. These schemes failed to meet

Reference	Comment	Response
	Woolwich Polytechnic School for Girls Ref: 17/3907/F which was approved 01/05/18 and is currently under construction. The Reach, Thames Reach/Battery Road Ref: 16/2163/F which was approved 09/05/17 and is currently under construction.	the TVIA threshold criteria outlined in **Chapter 4** for likely significant effect and thus are not assessed cumulatively within this Chapter.
Bexley Natural Environment Forum	Clearly there will be another large visual intrusion, blocking views out to the Thames, which Cory's own assessment accepts is of significant negative impact. The artist's impressions conveniently avoid illustrating the combined effect of these new proposals plus the four-storey data centre build already given outline permission by Bexley Council, in surrounding Crossness LNR by walls of very tall buildings on two sides. What matters to ordinary users of the area is the view from the Belvedere area of the Thames scarp slope, and ground-level from the marshes, whereas the Cory riverward view mock-up is an aerial one that minimises the apparent loss of sight of the river whilst being one that hardly anyone (other than a few helicopter pilots and passengers) will actually experience in practice. Yet	VP2 and VP3 are selected for the TVIA in order to consider the likely visual effects of REP on people's views from the Crossness Local Nature Reserve. The TVIA considers effects on people's visual links to the river, and on the landscape character of the area which includes the Nature Reserve, (see VP 2, 3, and 4). See also **Appendix E.5** in relation to the cumulative effects of the Data Centre. Lighting effects on human receptors were scoped out in the Secretary of State's Scoping Opinion. An Outline Lighting Strategy is included as **Appendix K.3** to **Chapter 15**. An assessment of lighting effects on biodiversity receptors is included in **Chapter 11**. The Design Principles (**Document Reference 7.3**) state that: "*DP 5.01 - Lighting will be appropriate to the local context and mitigate*

Reference	Comment	Response
	more night lighting will be introduced to the marsh and both the amount, directionality and spectra of that need to be taken into account. We understand that Cory has settled on the stepped roof option for the new incinerator building, for reasons of efficiency of the rooftop solar arrays and safety of access, though this will not blend so well as the curved roof option with the existing incinerator and sewage processing facilities adjacent to this site. Bexley Natural Environment Forum repeats its suggestion that Cory should look instead to put solar on the roof of the existing incinerator, and should look at leasing local warehouse roofs for the installation of significant additional solar capacity, rather than relying on an unsustainable extra incinerator to implement this feature of the scheme.	*lighting impacts upon identified habitats, neighbouring occupiers and the wider landscape"* Accurate Visual Representations (AVRs) as wireframes have been prepared and are included as part of the TVIA (see **Appendix E.2**). The stepped roof building form referred to in the Design Principles (**Document Reference 7.4**) will provide new roofline and skyline interest to the horizontal linear form and the creation of a varied and dynamic roofscape; as well as positive variation and simplicity of form. The Proposed Development comprises complementary energy generation equipment which seeks to maximise the generation of renewable energy. As RRRF is not included within the DCO Application, it is not considered appropriate to explore options for retrofitting solar panels at RRRF within the DCO. The RRRF stack being located at the south end of the plant casts a shadow over the facility making it unsuited to solar generation.

Reference	Comment	Response
Bexley Natural Environment Forum	Our preferred route for the electrical cabling out to Littlebrook Power Station is the one that would avoid digging up the footpath across the LNR.	Noted. The TVIA assesses all of the Electrical Connection Route options, however one route will be selected once further engineering investigations and associated assessments are complete.
London Borough of Bexley	The preliminary conclusions of 'Chapter 9 Townscape and Visual Impact Assessment', paragraph 9.12 confirm that there is potential for further mitigation by careful choice of building form; materials; massing; roofline etc. The appearance, height, scale and massing of the building and the stack will all need to be carefully considered. A design which proposes the minimum building mass and height required for the operations which will be carried out internally, together with a design that is able to maximise solar generation, is encouraged. It is understood that further details are to be set out within the Environmental Statement and the Design and Access Statement, which be submitted as part of the Development Consent Order.	Embedded mitigation is provided by the Design Principles (**Document Reference 7.4**) which detail the design process associated with the selection of material and Context Colour Pallettes, that will ensure the Proposed Development integrates into the context of its surroundings. The TVIA considers the Proposed Development against the relevant townscape and visual effects assessment requirements of the National Policy Statements (NPS EN-1, NPS EN-3 & NPS EN-5). The building form selected in the Design Principles **(Document Reference 7.4)** is intended to find a balance that reduces massing whilst maximising solar generation.
London Borough of Bexley	It is noted that viewpoints 2 (Public Right of Way between crossness Nature Reserve and Thames Path	VP2 & VP3 are included in the TVIA as the Public Right of Way (PRoW) was re-opened to public

Reference	Comment	Response
	National Trail) and 3 (Public Right of Way in Crossness Nature Reserve) were not able to be assessed for the purposes of the PEIR due to the path being closed. These should be assessed and included in the final report.	access prior to the TVIA preparation, see paragraph 9.6.2 and Section 9.9.
London Borough of Bexley	The final assessment should also provide images of the proposed development in the form of photomontages or wireline diagrams or both. Digital 3D modelling, which is useful in showing what the effects of a development are over a large area, should also be carried out.	The TVIA was informed by the AVRs (wireframes) which demonstrate the reasonable worst case assessment (see Section 9.4 below) of the Proposed Development and are included as part of the TVIA, see **Appendix E.2**. The 3D model produced for the Proposed Development was utilised by Rockhunter in order to prepare the visualisations and therefore is considered to have informed the TVIA.
Port of London Authority	Table 6.17 (Transport Sensitive Receptors) makes reference to the Thames Path, stating that the "*footpath to recreation space may be impacted by the construction phase of the development*" and further states under Table 6.1 (Consultation summary) that there will be no permanent closures or diversions of Public Rights of Way (PRoW) for the main Riverside Energy Park Site or the electrical connection, and that any closures or diversions	The townscape and visual effects of any proposed temporary footpath closures and diversions during the construction phases is considered in the TVIA.

Reference	Comment	Response
	would be temporary in nature.	
GLA	London Plan Policy 7.17 affords Metropolitan Open Land (MOL) the strongest possible protection, whilst Policy G3 of the draft London Plan states that MOL should be protected from inappropriate development and proposals that harm MOL should be refused. Both policies state that national Green Belt policies, set out within the NPPF, apply to MOL and therefore MOL is offered the same protection as Green Belt. Chapter 9 of the NPPF is entitled 'protecting Green Belt land' and applies equally to MOL Paragraph 79 states that the fundamental characteristic of the Green Belt is its openness and its permanence and a key purpose of the Green Belt is to prevent encroachment that would reduce green space, as per paragraph 80.	The TVIA considers likely effects of the Proposed Development upon Metropolitan Open Land (MOL) as designated land as shown in **Figure 9.2**.

9.4 Reasonable Worst-Case Parameters Used for Assessment

9.4.1 In respect of townscape and visual effects, the reasonable worst-case scenario for the Proposed Development is the assumption that REP would have a maximum stack height of 113 m Above Ordnance Datum (AOD), and a maximum building height of 65 m AOD (see **Chapter 3**). Maximum parameters of the building envelope have been assessed, taking account of the Design Principles (**Document Reference 7.4**). This document details materials and context colour palettes to integrate the development into its townscape and riverscape context. The assessment assumes there would be no planting. The TVIA methodology considers winter views as the worst-case scenario where for

part of the year REP would be more visible because there would be less screening from vegetation.

9.4.2 The reason that this represents the reasonable worst-case assessment scenario for the Proposed Development in relation to townscape and visual effects, is that assessment of the tallest stack height, and the tallest building height, considers the largest field of view, so that the assessment is robust and comprehensive. The tallest stack height and the tallest building height are separately processed through computer software to produce Zones of Theoretical Visibility (ZTV) plans, see **Figures 9.6 – 9.9**.

9.4.3 It is important to note that the ZTV plans illustrate the worst-case scenario, in that they are based on 2 m or 1 m resolution LIDAR data (Digital Terrain Model and Digital Surface Model based data) and, in reality, other built form or townscape features at a more detailed scale, such as street trees or tree groups in parks and open spaces, are likely to provide additional filtering of people's views.

9.4.4 The construction of the Electrical Connection as detailed in **Chapter 3** has been assessed, whilst operational effects from the Electrical Connection were scoped out (**Appendix A.1**).

9.5 Assessment Methodology and Significance Criteria

9.5.1 The methodology used for undertaking the TVIA is set out in detail at **Appendix E.1** and therefore, is not repeated here. This section instead sets out additional and project-specific information.

9.5.2 Cultural Heritage issues are addressed in **Chapter 10** along with Cultural Heritage assets and designations. 'Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets' is relevant guidance for consideration of the sensitivity of the Crossness Conservation Area. Accordingly, the townscape character of Crossness Conservation Area is considered in the TVIA as a separate townscape receptor.

9.5.3 The Electrical Connection cable would be located underground, (apart from locations where it may be attached under or alongside existing infrastructure (bridges) or in an adjacent cable trough). The connection at Littlebrook substation would be within an existing building, therefore removing the potential for significant townscape or visual effects during operation. As agreed via the Scoping Opinion this assessment considers townscape and visual effects arising from the construction of the Electrical Connection, but not during operation.

9.5.4 At this stage, there are various Electrical Connection route options under consideration (Options 1, 1A, 2A and 2B) - all predominantly within the public highway. The townscape and visual effects of the construction stage of these route options include the same main elements of road trenching, traffic management systems, and any tree works required, therefore impacts from the construction of the options have not been considered separately.

Study Area and Zones of Theoretical Visibility (ZTV)

9.5.5 The study area has been informed by the extent from which REP and the construction works for the Electrical Connection are anticipated to be visible. The selection of the study area is described in **Appendix E.1**.

9.5.6 The detailed study area for the TVIA extends to 2.5 km radius from the REP site for townscape features and townscape / landscape character, with a 0.5 km radius from the REP site as the detailed study area for local townscape character. Detailed ZTVs were prepared for a 2.5 km radius, to understand the worst case component visual effects arising from the 65 m maximum proposed building height, and the 113 m maximum proposed stack height.

9.5.7 The viewpoints were selected to include consideration of visual effects of the Proposed Development upon the Crossness Conservation Area, listed buildings and their settings. Local authority consultation with regards to the selection of viewpoints is set out above in **Table 9.2**.

9.5.8 Visits were made to the REP site and surrounding area during winter and summer 2018 by a chartered landscape architect, and a photographic record was undertaken by the AVR consultant to represent people's baseline views from the selected assessment view locations during winter months in early 2018. The winter period was selected for baseline photography because vegetation provides less screening during winter due to lack of leaves on trees, so taking account of the 'worst case' scenario in the assessment.

9.6 Assumptions and Limitations

9.6.1 The assumptions and limitations for undertaking this assessment are described in the Assessment Methodology, **Appendix E.1**. Specifically, in relation to TVIA they assume the maximum parameters for REP are as defined in **Chapter 3**.

9.6.2 At the time of the visits and winter photography, viewpoints 2 and 3 were not accessible due to a footpath closure across Crossness Nature Reserve. A site notice indicated this was because of a pollution incident (unrelated to the Applicant) that took place at the Crossness Sewage Treatment Works (STW) and affected a part of the adjacent Crossness Nature Reserve. These viewpoints were re-visited and photographs taken in May 2018 once the footpath was re-opened. Though the baseline views for viewpoints 2 & 3 were photographed during early summer, the assessor has used their professional judgement to interpret these visual receptors as at the baseline of Winter 2018, i.e. the baseline views without the benefit of summer leaf canopies, and in accordance with the baseline period for the other townscape and visual receptors.

9.7 Baseline Conditions and Receptors

Context

9.7.1 The REP site is located off Norman Road, Belvedere, London and is situated adjacent to the River Thames. REP would lie immediately west of the existing Riverside Resource Recovery Facility (RRRF).

9.7.2 The Electrical Connection route is defined in **Chapter 3**. The route options include a range of highway carriageways, with some short areas potentially required outside of the carriageway, and one small section, approximately 0.4 km, crossing part of Dartford Marsh.

9.7.3 The mixed age of buildings in the area provides historical evidence of the mix of industrial and marine engineering and transport infrastructure amidst the marshland riverside environment. For example, the Crossness Conservation Area contains public health engineering structures from the Victorian period, whilst there are also modern commercial and industrial buildings, together with the nearby sewage treatment plant.

9.7.4 The immediate environs of the REP site, on both the northern and southern banks of the River Thames, predominantly comprise established industrial areas with relatively tall structures, including wind turbines on the northern side of the River Thames and the south near Crossness. The skyline in this area is punctuated by large shed-like buildings, tall stacks and wind turbines.

9.7.5 Landform is generally flat and open alongside the River Thames corridor, with the long-distance Thames Path and National Cycle Route 1 following the edge of the River Thames.

9.7.6 The sensitivity of the visual receptors is assessed in the Visual Effects Table at **Appendix E.4**, including the determined value of the view and the receptor's susceptibility to change.

Relevant Townscape Designations

9.7.7 Relevant designations for the REP site and surrounding area are set out in **Table 9.3**:

Table 9.3: Relevant Townscape Designations

Typical Designation and Importance (Value)	Description	Designation Applicable to the Application Site
International (High)	Unique sites, features or areas of international	None on the Application Site. None within 5 km.

Typical Designation and Importance (Value)	Description	Designation Applicable to the Application Site
World Heritage Site	importance with settings of very high quality.	
National (High). Conservation Areas, curtilage of Grade I, II* and II Listed Buildings; Registered Parks and Gardens of Special Historic Interest (RHPG), Scheduled Monuments[1].	Sites, features or areas of national importance with settings of high quality.	The REP site does not lie in a Conservation Area. The nearest Conservation Area to the REP site is Crossness Conservation Area, approximately 650 m west. The Electrical Connection route option 2A runs through Erith Riverside Conservation Area. Other routes pass within 1 km of Lesney Park Road Conservation Area, Erith Riverside Conservation Area and Slade Green Conservation Area. There are no RHPGs within 5 km of the Application Site. There are no Scheduled Monuments within the Application Site. The nearest Scheduled Monument to the REP site is Lesnes Abbey, Bexley, approximately 1.5 km south west. Scheduled Monument Howbury Moated Site, approximately 0.9 km northeast offset from Thames Road, would be approximately 0.2 km to the Electrical Connection route. An assessment of Scheduled Monuments and Listed Buildings is provided in **Chapter 10**.
Regional (High/ Medium)	Sites, features or areas of regional importance with	National Cycle Network (NCN) Route 1 connecting Dover and the Shetland Islands (via the east coast

[1] Note – Heritage assets are not explicitly assessed within Chapter 9 as they are addressed within Chapter 10.

Typical Designation and Importance (Value)	Description	Designation Applicable to the Application Site
Long distance paths, London and National Cycle Routes	intact character.	of England and Scotland) passes through the REP site. NCN route 1 would follow the Electrical Connection route for approximately 300 m along Thames Road. A section of the Electrical Connection route at Bob Dunn Way crosses beneath NCN Route 125.
Local (Medium) or Regional (High or Medium) Designated Public Open Space	Public open spaces, parks, recreational spaces.	The REP site does not lie in any Designated Public Open Space. The River Thames, Site of Metropolitan Importance for Nature Conservation (M031), is immediately north of the REP site; and Erith Marshes, Site of Metropolitan Importance for Nature Conservation (M041), and Metropolitan Open Land, are to the west and south of REP. Belvedere Dykes, Site of Borough Importance for Nature Conservation (BxB102), is along the east boundary of the REP site. The Electrical Connection route options will be adjacent or close to SINCs BxB102, BxBII20, BxL10, BxBII14 and M106 (see definitions in paragraphs 9.7.10 to 9.7.12 below). Along the route of the Electrical Connection, Frank's Park is designated Public Open Space and is situated 0.1 km to the west. Other areas of Public Open Space within 1 km of the Electrical Connection route, include recreational fields south of Frank's Park, Dartford Marsh, and smaller pockets of open space east and west of Queen's Road and South Road. In the Borough of Dartford, the Electrical Connection route

Typical Designation and Importance (Value)	Description	Designation Applicable to the Application Site
		follows Bob Dunn Way.
Tree Preservation Orders (TPOs)	Protected trees within the REP site or on the REP Site boundaries	None within the Application Site or on its boundaries.

Townscape Elements (Features)

9.7.8 Townscape elements include the townscape appearance, scale, massing, grain, legibility, tree cover, marshland open spaces, National Trails / Long Distance Routes, National Cycle Routes and PRoW. The baseline descriptions of these elements are set out in detail at **Appendix E.3 Townscape Effects Table**, and are summarised below.

REP Site Tree Cover and TPOs

9.7.9 There are no TPOs within the REP site or protected trees that would be affected by the Proposed Development. There are scattered small trees and recent new tree planting in the REP site.

Public Open Space and Scrubland Habitats

9.7.10 The REP site does not lie in any Designated Public Open Space but does have scrubland areas within it. The River Thames Site of Metropolitan Importance for Nature Conservation (M031), is immediately north of the REP site.

9.7.11 Erith Marshes, Site of Metropolitan Importance for Nature Conservation (M041), forms the REP site boundaries to the west and south. Belvedere Dykes, Site of Borough Importance for Nature Conservation (BxB102), is along the east boundary of the REP site.

9.7.12 The marshland open spaces are characteristic of this riverside area, located within the wider industrial area, as is typical for National Character Area 81: Greater Thames Estuary (see 9.7.121 below). In this regard they are considered as a townscape feature. The marshlands role as a biodiversity feature is described in **Chapter 11**.

Scale, Grain and Massing of the REP site

9.7.13 The REP site is part of an open riverside location, situated amongst large scale mixed industrial buildings and uses. The existing RRRF building and stack, and

buildings in the area are large scale 'shed' style buildings, with sloping or curved roofs.

9.7.14 The site is part of the large-scale and open grain of the wider area with wide roads, carparks, and waste ground interspersed between large industrial buildings and marshland.

Appearance of the REP site

9.7.15 The REP site comprises a large mixed area adjacent to RRRF that includes car parking, waste ground, scrubland, roads, and ancillary features. The REP site is generally in fair condition but there is a disjointed appearance to the site, arising from the juxtaposition of large scale industrial buildings, vehicles, and workings, being adjacent to the more natural river and marshland features.

Legibility of the REP Site

9.7.16 The REP site currently has good legibility with industrial buildings dotted within the more open land made up of a gradually evolving mix of marshland, roads, carparking and waste ground. There is some visual connection between the marshland areas and the open river corridor beyond; and also between the various large industrial buildings. There is some tension between the legibility of the natural open environment and the legibility of the built up enclosed environment. The curved roof buildings form distinctive local landmarks.

Public Rights of Way and National Cycle Network

9.7.17 The Thames Path National Trail and the National Cycle Route 1 of the National Cycle Network run through the REP site.

9.7.18 There are also local PRoW across Crossness Nature Reserve and along Eastern Way.

Townscape / Landscape Character

9.7.19 The relevant published sources describing the townscape or landscape character of the area, at the National, Regional and District level, are:

- National Character Area 81: Greater Thames Estuary (Natural England, 2013);
- National Character Area 112: Inner London (Natural England, 2013);
- Landscape Type: 14: Lower Thames Floodplain: London Natural Signatures (Alex Baxter, 2011); and
- Crossness Conservation Area: Area Appraisal and Management Plan (London Borough of Bexley, 2009).

In addition, the Electrical Connection Route options would pass through:

- Landscape Type: 20: Cray River Valley: London Natural Signatures (Alex Baxter, 2011); and
- Dartford Character Area: Western Thames Marshes.

9.7.20 **Figures 9.4 & 9.5** illustrate townscape character areas applicable to the REP site, the Electrical Connection and surrounding area.

9.7.21 Townscape key characteristics, of relevance to the REP site and locality, are set out below and their sensitivity is assessed in the Townscape Effects Table at **Appendix E.3**.

National Landscape Character

National Character Area 81: Greater Thames Estuary (Natural England, 2013)

9.7.22 REP would be visible from parts of National Character Area 81: Greater Thames Estuary. Key characteristics include:

- Predominantly flat, low-lying landscape;
- Highly urbanised areas within London and on marsh edges are subject to chaotic activity of various major developments, including: ports, waste disposal, marine dredging, housing regeneration, mineral extraction and prominent power stations, plus numerous other industry-related activities;
- Increasing development pressures around major settlements and especially towards London, with urban, industrial and recreational sites often highly visible within the low-lying marshes; and
- Major historical and current transport link to Inner London provided by the River Thames, with an extensive network of road and rail bridges spanning its reaches within the city.

National Character Area 112: Inner London

9.7.23 REP would potentially also be visible from parts of National Character Area 112: Inner London. Key characteristics of National Character Area (NCA) 112 include:

- Inner London NCA lies at the centre of the Thames Basin on a broad flood plain which rises in gentle terraces;
- Panoramic views of London's skyline from the clay plateaux and ridges in the north at the border with the Northern Thames Basin;
- The NCA is steeped in both historical and contemporary culture; and
- People from the surrounding NCAs, the rest of the UK and Europe travel to Inner London every day for work and leisure.

Regional Landscape Character

9.7.24 The London Natural Signatures Landscape Type for the REP site is the Lower Thames Floodplain. Key characteristics, which are relevant to the REP site and its surrounding area, include:

- The Lower Thames Floodplain character area covers the tidal Thames and its associated floodplain from Battersea in the west, to Rainham Marshes and Crayford Marshes in the east. As the River Thames flows east from Battersea it takes on more of the character of an estuary as it reaches Rainham and Crayford Marshes;
- The general lack of human settlement, the flat ground (and the prevailing westerly wind) made these areas ideal for the development of large scale industry, such as the Ford Plant at Dagenham;
- Aside from the floodplain, the foreshore and areas of land away from the river are dotted with green features that continue to offer vital natural assets and views;
- Flat, expansive landscape, with low horizons;
- Perception of remoteness and wildness;
- Open grazed saltmarshes patterned by networks of medieval (meandering) and modern (rectilinear) reed-fringed drainage ditches;
- Extensive intertidal mudflats, divided by evolving winding creeks;
- Reed swamp;
- Industrial and military heritage – pill boxes, wharves, jetties, industrial archaeology;
- Embanked pathways; and
- Virtually no trees.

9.7.25 The Electrical Connection route options also cross two other published landscape character areas. Their key characteristics are:

- Cray River Valley (London Natural Signature): meandering river channel, willow and alder wet woodland, floodplain meadows backed by woodland, curving hedgerows to the outer margin of the floodplain, reedbeds and cress-beds alongside the river, riverside walks and bridges, and remnant parkland landscapes with specimen trees and composed views.
- Thames Gateway, Western Thames Marshes (Dartford Character Area): low-lying, flat open marshland, greatly fragmented by industrial and housing development, creating discordant fragments of the character area. Many large-scale visual detractors such as industrial parks and associated access

roads. Urban/estuarine context, river uses, a few remnant grazing marsh and arable farmland areas with some localised, but a weak network, of ditches, dykes, wetlands and scrub areas. Poor functional integrity of this area.

Local Townscape Character

9.7.26 The REP site is within an area of mixed townscape character. There are large industrial buildings, roads, and open industrial areas alongside the open River Thames corridor, and areas of marshland. There is some older development, for example Victorian terraces, as well as the Crossness Conservation Area.

9.7.27 The Crossness Conservation Area is described (in the Crossness Conservation Area Appraisal and Management Plan, February 2009) as follows:

"*This mid-Victorian example of public health engineering is a unique industrial complex set within a landscape/location selected by the then level of engineering technology. It is South East London's most important site for industrial archaeology*".

9.7.28 The Crossness Conservation Area Appraisal and Management Plan, February 2009 also lists key characteristics of the Conservation Area, of relevance to the REP site, including:

- Grade I Listed Crossness Pumping Station comprising the Beam Engine House, Boiler House and Triple Expansion House, the Grade II Listed workshops, and brick vaulted subterranean reservoir, and other heritage buildings;
- Use of the complex for over 140 years has resulted in layers of industrial development that represent the evolution of the site;
- Landmark building design and surviving machinery;
- Spaces within the Conservation Area, its River Thames location and the surrounding remnants of the original rural landscape recall the importance of the location; and
- The Conservation Area includes open spaces which have remained undisturbed for long periods, including mature trees, which contribute towards the biodiversity of the area.

Application Site Character

9.7.29 REP would be located within the REP site, which is situated to the south of the River Thames and to the west of the existing RRRF. It comprises land which is currently dominated by hard-standing and is used for car parking, storage, access, and compounds; and includes a habitat area. There are few trees within the site. The REP site has an industrial estuarine townscape/ landscape character, as does its surrounding environs. This is due to industrial buildings

and infrastructure such as cranes and gantries on the river's edge, glimpses of the openness of the River Thames corridor between buildings, marshland habitats, and signage to the Thames Path.

9.7.30 The Electrical Connection would be routed underground, under highways, footways and across a short section of Dartford Marsh as set out in **Chapter 3**.

People's Views and Visual Amenity

9.7.31 Potential visual receptors which may be affected by the Proposed Development are people who:

- are visiting, living or working within the study area;
- use the PRoW network, local streets and cycle routes;
- use open spaces, parks and the River Thames corridor, including the Thames Path long-distance route;
- use the road and rail network.

9.7.32 A plan showing the view locations which were selected for the TVIA is presented in **Figure 9.1.**

9.7.33 Visual receptors at a number of representative and sequential locations are considered to have potential to experience significant visual effects. These are set out in **Table 9.4** below and shown in **Appendix E.4.** The exact positions of the viewpoint locations were refined during the visit to the view locations in order to collect baseline photographs. Following comments on the PEIR from the Royal Borough of Greenwich, VP16 - Eaglesfield Recreation Ground (Designated Local View 4 in the Royal Borough of Greenwich Core Strategy) was included as an additional Viewpoint. No private views are assessed in the TVIA in accordance with best practice.

Table 9.4: Selection of Representative Viewpoints for Visual Impact Assessment

Viewpoint Reference	Location	Reasoning for Selection
Sequential Views (to represent effects on the sequence of views when travelling along the route)		
SA-1-East	Thames Path National Trail and National Cycle Network Route 1 travelling eastwards, within 1 km of REP Site	Thames Path National Trail; NCN 1
SA-1-West	Thames Path National Trail and National Cycle Network Route 1	Thames Path National Trail; NCN 1

Viewpoint Reference	Location	Reasoning for Selection
	travelling westwards, within 1 km of REP Site	
Representative Views (to represent specific views from a location)		
Viewpoint (VP)1	PRoW southeast of REP site boundary.	PRoW
VP2	PRoW between Crossness Nature Reserve and Thames Path National Trail, REP site boundary	PRoW
VP3	PRoW in Crossness Nature Reserve, REP site boundary.	PRoW
VP4	PRoW between Crossness Nature Reserve and Eastern Road, REP site boundary.	PRoW, road network
VP5	PRoW off Picardy Manorway, REP site boundary.	PRoW, road network
VP6	PRoW at South Mere, west of Erith Marshes, 1.6 km west of the REP site.	PRoW, part of public open space network
VP7	Edge of Crossness Conservation Area (requested by PINS), 1 km to the west of the site.	At edge of Crossness Conservation Area, from Thames Path National Trail
VP8	Lesnes Abbey, 2.3 km to the south west of the REP site.	Scheduled monument, PRoW, public open space network
VP9	Halt Robin Road at north western corner of Franks Park, near to Wood Side School, 1.8 km to the south of the REP site.	Road network, Green Chain Walk long distance route, access to / from public open space
VP10	Ferry Lane, between Frog Island and Jetty, 1.6 km to the west of the REP site.	London Loop long distance route, NCN 13
VP11	PRoW, west of Horse Shoe Corner, 2.5 km to the north-west of the REP site	PRoW

Viewpoint Reference	Location	Reasoning for Selection
VP12	Thameside Walk / Thames Path National Trail, northwest of Thamesmere Leisure Centre, 2.9 km to the west of the REP site at the nearest point	PRoW
VP13	Roundabout at junction of A202, A2016, Walnut Tree Road and Bexley Road, 2.9 km to the south east of the REP site at the nearest point	Road network access to London Loop footpath route
VP14	Barnes Clay, 6km to the south-east of the REP site at the nearest point.	NCN 1 and PRoW
VP15	Bridleway west of Littlebrook Nature Park, 7 km to the south-east of the REP site at the nearest point.	PRoW and public open space network
VP16	Eaglesfield Recreation Ground, looking towards Bexley and the Lower Thames	(Local Key View) Local View No. 4 Eaglesfield Recreation Ground towards Bexley and the Lower Thames (Core Strategy), as requested by the Royal Borough of Greenwich as part of the consultation on the PEIR

Baseline Evolution

9.7.34 The REP site consists mainly of hardstanding areas, road infrastructure, fencing, and ancillary storage which are in current use and which are not anticipated to change significantly from a townscape and visual perspective until construction works commence. There are some recently planted trees on the grass verges near the RRRF access road, which would mature over time, but these are not considered to provide effective screening in winter months.

9.7.35 **Appendix A.4** provides a full list of schemes which have been identified as being likely to be constructed prior to the construction of the Proposed Development. Where relevant, these schemes therefore form part of the 'future baseline' scenario and have been taken into account in the assessment of likely significant impacts resulting from the Proposed Development (construction and operation) presented in Section 9.9.

9.8 Embedded Mitigation

9.8.1 Types of mitigation are defined in **Appendix E.1**. The TVIA assumes that 'embedded mitigation' is incorporated within the proposed design as follows:

Construction stage

9.8.2 An outline Code of Construction Practice (CoCP) is submitted as part of the REP DCO application (**Document Reference 7.5**). The following mitigation and standard construction and operational management practices would be applied during the construction period, via the CoCP:

- Land / vegetation clearance and occupation would be limited to the minimum area necessary for the works;
- Temporary protection of vegetation and other vulnerable features to be retained would be undertaken in accordance with prevailing best practice;
- Temporary storage of soils and other material considered of value for retention would be undertaken in accordance with prevailing best practice. Where practical stockpiles would be sited to screen the construction works from sensitive receptors such as people using the PRoW network;
- Construction areas would be laid out to minimise adverse impacts arising from temporary structures, construction activities and lighting;
- Use of construction site lighting outside normal working hours would be restricted to the minimum necessary for workforce and public safety, and for security. Directional luminaries would be used to limit unwanted light spills;
- Maintenance of tidy and contained site compounds;
- Hoardings erected around the area of construction works, to create a temporary visual barrier to construction activities and also as a safety measure, to prevent access to the general public;
- Tree protection fencing;
- Temporal measures including the removal of all temporary structures and stockpiles when no longer required, and prompt reinstatement of construction areas; and
- Replacement of trees, shrubs and hedgerows which have been removed to accommodate the Electrical Connection, subject to underground constraints and as far as practicable. Replacement planting would be maintained for a minimum of 12 months to ensure full and successful establishment.

Operational stage

- Orientation of the Main REP Building to allow for visual permeability through the REP site from Belvedere to the River Thames.
- An Outline Biodiversity and Landscape Mitigation Strategy (secured as DCO requirement No. 4) is located in **Document Reference 7.6;**
- The following Design Principles (set out in **Document Reference 7.4**) have been included within this assessment:
    - To reduce the physical envelope of the Main REP building and its perception of scale through the progression of a design that accords with a stepped building form;
    - A simplicity of architectural form, with form following function, resulting in a dynamic interplay of buildings along the riverscape, and an inter-connecting family of building forms on the site;
    - Celebrating the historical industrial nature of the site, and its industrial nature with glimpses of process operations through semi-solid screens which break down the solidity of the building masses;
    - Use of graded colour schemes, materials, and branding to reduce the perceived height of the Main REP Building - with upper elements of buildings lighter and lower levels darker;
    - The choice of colours will draw on the initial colour studies illustrated in the DAS and the context colour palettes, allowing the building and structures to respond to the surrounding landscape, townscape and riverscape and provide harmony to the building; and
    - Neutral and non-reflective colour palette for façade materials to avoid glare, with accent colours used to assist way orientation, and intuitive wayfinding, and enhance the REP identity and sense of place.

9.9 Assessment of Likely Effects

REP Site and the Main Temporary Construction Compounds

Construction/Decommissioning

9.9.1 The main works associated with the construction / decommissioning phases of REP and the Main Temporary Construction Compounds would include the deep foundations work, civil and structural works, installation of the process mechanical plant, installation of the electrical and control systems and construction of the structures, buildings, storage facilities, carparks, fencing, and hardstandings. Potential adverse temporary townscape and visual effects have the potential to arise from the following activities during construction and decommissioning:

- Site clearance, removal of surfacing, vegetation and topsoil stripping from REP site and Main Temporary Construction Compounds;
- Earthworks to construct and excavate foundations and to create temporary stockpiles and bunds;
- Construction of internal roads for access to the buildings and Main Temporary Construction Compounds;
- Movement of traffic including delivery and removal of materials to and from the REP site and Main Temporary Construction Compounds, off-site road traffic including workers travelling to and from the REP site;
- General construction / decommissioning activities including the movement of large scale construction equipment, i.e. tower cranes, smaller cranes, batching plants, drilling rigs, and site compounds. Temporary buildings required for construction and parking, materials stockpiles, presence of temporary hoardings and protective fencing, temporary hoardings and protective fencing and signage; and
- Construction lighting, particularly during the winter months.

9.9.2 The construction phase would be of a limited duration, approximately three years, and the activities which are listed above, and therefore the potential temporary townscape and visual effects, would not necessarily all occur simultaneously. Furthermore, the REP site and Main Temporary Construction Compounds are in a diverse industrial and urban area, adjacent to existing large scale industrial buildings, so construction activity is not discordant with the character or activities of the existing urban area.

9.9.3 The decommissioning phase is assumed for the purposes of the assessment to be of a similar duration to construction. Therefore townscape and visual effects during decommissioning are considered to be of a similar level to those experienced during the construction phase.

9.9.4 **Table 9.5** summarises the assessment of townscape and visual effects arising from REP and the Main Temporary Construction Compounds during construction and decommissioning. **Appendices E.3** and **E.4** describe the baseline situation of each of the receptors, and a detailed assessment of their sensitivity, a description of change, the magnitude of that change, and the assessed level of significance for each of the receptors at the construction and decommissioning periods.

Table 9.5: Assessment of effects on townscape and visual receptors from construction and decommissioning of REP and Main Temporary Construction Compounds.

Receptor Description	Summary of Assessment of Effects (Magnitude)	Mitigation	Likely Residual Level of Significance of Effects
Townscape Receptors Landscape Character Areas 81: Greater Thames Estuary LCA 112: Inner London LA: Lower Thames Floodplain Tree Cover & TPOs	**Negligible** Construction activity and related elements relate to a small part of the LCAs and LA, and are in character with their large scale open and industrial riverside character. There are no TPOs and tree cover is limited and not part of the character of this area.	Embedded mitigation measures described above in Section 9.8.	**Negligible** (and Not Significant)
Townscape Receptors Crossness Conservation Area Designated Public Open Space and Landscapes; and scrubland habitats site Appearance Long distance paths, London and National Cycle Network, Public Rights of Way	Slight Industrial, engineering, and public health elements are consistent with the industrial character of Crossness Conservation Area Reduced connectivity between the designated marshland and the River Thames. Temporary change to the appearance of the REP site and recreational qualities of the long-distance paths, cycle way, and PRoW.	Embedded mitigation measures described above in Section 9.8.	Effects to identified townscape receptors are **Minor adverse** (and Not Significant)

Receptor Description	Summary of Assessment of Effects (Magnitude)	Mitigation	Likely Residual Level of Significance of Effects
Townscape Receptors Character	**Moderate** The distinctiveness of the curving RRRF building set in the open riverside topology would be affected by adjacent large scale cranes and construction elements and activity	Embedded mitigation measures described above in Section 9.8.	**Moderate adverse** (Significant)
Visual Receptors in **Table 9.12** 12, 13, 14, 15, 16	No Change or Negligible	No view of the site from these visual receptors and so no mitigation required.	No Change or Negligible
Visual Receptors in **Table 9.12** 1, 4, 5, 9	**Slight or Moderate** Cranes and construction activity within the REP site, would be seen in the distant view adjacent to the RRRF building and stack as part of the developed skyline. Cranes on the skyline would be seen as a small part of the wider view.	Embedded mitigation measures described above in Section 9.8.	Effects to identified receptors are **Minor adverse** (and Not Significant)
Visual Receptors in **Table 9.12** SA-1-East, SA-West, 2, 3, 6, 7, 8, 10, 11	**Moderate** Cranes and construction activity would be seen as large elements in the view, as the development is built.	Embedded mitigation measures described above in Section 9.8.	Effects to identified receptors are **Moderate adverse** (Significant)

Operation/Maintenance

9.9.5 The likely significant townscape and visual effects arising from REP during the operational phase would be in relation to the height and scale of the Main REP Building (maximum height 65 m AOD) and the stack, (maximum height 113m AOD). Although the REP site is situated between the existing large scale RRRF building and the Thames Water building, the maximum parameters of REP, as outlined in **Chapter 3,** are larger than the adjacent existing developments. There would therefore be a change to the skyline and to the scale of development. The REP site is within an existing industrial area, with a character of industrial development based around the river and so would be continuous with this, and embedded mitigation would take account of adjacent land uses and existing townscape character. The buildings and stack would be seen in the context of other industrial buildings, and other vertical elements of wind turbines and other stacks, and would be seen as a new feature from viewpoints within 1 km of the REP site, as well as being a small feature in views from further afield.

9.9.6 **Table 9.6** summarises the assessment of townscape and visual effects arising from REP during operation. **Appendices E.3** and **E.4** detail the baseline description of each of the receptors, their sensitivity, a description of change, the magnitude of that change, and the assessed level of significance for each of the receptors during operation.

Table 9.6: Assessment of effects on townscape and visual receptors from operation of the Main Site and Construction Areas.

Receptor Description	Summary of Assessment of Effects (Magnitude)	Mitigation	Likely level of significance of Residual Effects
Townscape Receptors LCA 81: Greater Thames Estuary LCA 112: Inner London LA: Lower Thames Floodplain Tree Cover & TPOs Long distance paths, London and National Cycle Network, Public Rights of Way	**Slight** The land use of a waste processing and energy park, using the transport opportunities of the River Thames is continuous, and in line with, the nature and heritage of this Thames Estuary Character Area. Trees retained where possible and new planting added. Riverside routes would be more shaded with less open views between river and marshland, but	Embedded mitigation measures described above in Section 9.8.	Effects to identified receptors are **Minor adverse** (and Not Significant)

Receptor Description	Summary of Assessment of Effects (Magnitude)	Mitigation	Likely level of significance of Residual Effects
	with interesting new industrial features		
Townscape Receptors Crossness Conservation Area Character Designated Public Open Space, Landscapes, and scrubland habitats Appearance Scale, grain and massing. Legibility	**Moderate or Major** Large scale industrial development on what is currently open land will reduce connectivity between marshland areas and the river, and change the character and views in the area. However this is within a wider industrial area with a character of such development.	Embedded mitigation measures described above in Section 9.8.	Effects to identified receptors are **Moderate adverse** (Significant)
Visual Receptors in **Table 9.12** 7, 8, 10, 12, 13, 14, 15, 16	**No Change or Negligible or Moderate**	No view of the site from these visual receptors and so not mitigation required.	**No Change or Negligible** A Negligible residual effect can be due to a Natural Nature of Effect
Visual Receptors in **Table 9.11** 1, Over 1km from the REP site, or within 1km and of low sensitivity	**Slight or Moderate** Moderate The higher sections of the Main REP Building and stack will be seen as part of the developed skyline. Lower sections will be screened by the existing urban development.	Embedded mitigation measures described above in Section 9.8.	**Minor adverse** (and Not Significant)
Visual Receptors in **Table 9.11** 4, 5, 9,	**Slight or Moderate** Moderate, slight (5)	Embedded mitigation measures described	**Minor beneficial**

Receptor Description	Summary of Assessment of Effects (Magnitude)	Mitigation	Likely level of significance of Residual Effects
Over 1km from the REP site, or within 1km and of low sensitivity	There will be the creation of a new roofline and distinctive landmark / focal point in the view	above in Section 9.8.	(and Not Significant)
Visual Receptors in **Table 9.12** SA-1-East, 2, 3	**Moderate** REP will be a large industrial element in views, creating more enclosed views, and new visual features on the skyline, in the context of existing RRRF and Thames Water industrial buildings. It will be a new industrial feature on the skyline in the distant view, alongside other vertical elements.	Embedded mitigation measures described above in Section 9.8.	**Moderate adverse** (Significant)
Visual Receptors in **Table 9.12** SA-1 West, 6, 11	**Moderate** Creation of a new focal point, and skyline interest to the view with positive variation to the elevational built form.	Embedded mitigation measures described above in Section 9.8.	**Moderate beneficial** (Significant)

The Electrical Connection and the Cable Route Temporary Construction Compounds

Construction/Decommissioning

9.9.7 Construction of the Electrical Connection and the Cable Route Temporary Construction Compounds will involve the temporary construction plant, traffic management infrastructure, possible footpath diversions, and associated work vans, site compounds, jointing pits and signage involved with excavating a 450 mm wide trench alongside or within the carriageway. The final route is not yet known, so likely townscape and visual impacts have been assessed against all possible routes being considered. They are summarised in **Table 9.7**.

9.9.8 Any decommissioning phase is assumed to be of a similar duration to the construction phase for the purpose of this assessment. It is assumed that the ducting for the Electrical Connection would remain in situ, but that the cables may be removed, such that there will be no likely decommissioning effects.

Table 9.7: Assessment of effects on townscape and visual receptors from construction of the Electrical Connection

Receptor Name and Description	Assessment of Effects	Mitigation	Potential Residual Effects
Townscape Receptors LCA 81: Greater Thames Estuary LCA 112: Inner London LA: Lower Thames Floodplain Crossness Conservation Area Tree Cover & TPOs	**Negligible or Slight**. Construction activity for the Electrical Connection will relate to a very small part of the LCAs and LA, and are not discordant with their large scale open and industrial character. The Electrical Connection will not have a significant effect on the appearance of the REP site. There may be some disturbance to street trees depending on the route chosen for the 450 mm wide trench, which could include pruning works or replacement of any trees requiring removal.	Embedded mitigation measures described above in Section 9.8.	**Negligible** (and Not Significant)

Receptor Name and Description	Assessment of Effects	Mitigation	Potential Residual Effects
Townscape Receptors Character Appearance Long distance paths, London and National Cycle Network, Public Rights of Way Designated Public Open Space, Landscapes, and scrubland habitats	**Slight** Road digging for the Electrical Connection would cause some temporary disturbance in the character of the road corridors.	Timing of the works to be considered if route 2A is to be adopted to reduce impact on peak use times of long distance routes. Embedded mitigation measures described above in Section 9.8.	**Minor adverse** (and Not Significant)
Visual Receptors in Table 9.11 6, 7, 8, 9, 10, 11, 12, 14, 15	**Negligible or Slight** No intervisibility with any of the electrical connection routes	Embedded mitigation measures described above in Section 9.8.	**Negligible** (and Not Significant)
Visual Receptors in Table 9.11 SA-1-East, SA-1-West, 1, 2, 3, 4, 5, 13	**Slight** The route of the Electrical Connection works has not been confirmed, but may go near these Viewpoints. Construction activities are expected to involve the construction plant, signage, and traffic management	Embedded mitigation measures described above in Section 9.8.	**Minor adverse** (and Not Significant)

Receptor Name and Description	Assessment of Effects	Mitigation	Potential Residual Effects
Located on or near at least one of the Electrical Connection routes	infrastructure involved in digging a 450 mm wide trench in the carriageway of the proposed route which will be a minor temporary change to the view.		

Operation/Maintenance

9.9.9 The Electrical Connection, except for the Electrical Connection point (where the connection would be made into an existing substation building), will predominantly be located underground (there may be discreet areas that are not located underground due to engineering difficulties) (see details in **Chapter 3**) therefore removing the potential for significant townscape or visual effects during operation. As agreed within the Scoping Opinion (**Appendix A.1**) the assessment therefore considers townscape and visual effects arising from the construction of the Electrical Connection but not during operation.

9.9.10 There are various Electrical Connection route options under consideration (Options 1, 1A, 2A and 2B) - all using mainly road corridors. The townscape and visual effects of the construction stage of these route options include the same main elements of road trenching, traffic management systems, and any tree works required, so impacts of the different route options have not been considered separately.

Summary of Assessment

Construction/Decommissioning

9.9.11 The Summary of Effects Table (**Table 9.8**) below includes a section on the effects of the Proposed Development (i.e. the combined effects of REP, the Temporary Construction Compounds and the Electrical Connection).

9.9.12 In summary, in views from the Thames Path; Crossness Nature Reserve; Green Chain Walk at Erith Marshes, Crossness Conservation Area; Lesnes Abbey; the London Loop, and PRoW near Horseshoe Corner (SA-1 East, SA-1 West 2, 3, 6, 7, 8, 10 and 11), there is the potential that the construction of the Proposed Development could give rise to **Adverse** visual effects with a **Moderate** level of significance.

9.9.13 The construction of the Proposed Development could give rise to adverse townscape effects on the Character of the REP Site with a **Moderate** level of significance of effect.

9.9.14 All townscape and visual effects from the construction of the Electrical Connection are of a **Negligible** or **Minor** level and therefore Not Significant.

Operation/Maintenance

9.9.15 In summary, from the majority of view locations of the REP Site will give rise to **Minor**, or **Negligible** levels of visual effects that are Not Significant. From views on the Thames path near Crossness Conservation Area, and near Crossness Nature Reserve, Erith Marshes, and PRoW west of Horseshoe Corner (SA-1 East, SA-1 West, 2,3,6,11), there is the potential that the operational phase of REP could give rise to visual effects with a **Moderate** level of significance of effect.

9.9.16 These visual effects of **Moderate** significance at SA-1 West, 6 and 11 are judged to be **Beneficial** due to the positive benefits of variation to the roofline and skyline interest, a new focal point, and the stepped roofline and graded colour in the design principles. **Moderate Adverse** effects are anticipated to SA-1 East, 2, 3.

9.9.17 The operational phase of REP could give rise to **Adverse** townscape effects with a **Moderate** level of significance on Crossness Conservation Area; the Character, and Appearance of the REP Site; and on the landscape of Crossness Nature reserve marshland adjacent to the REP site, and scrubland habitats on the REP site.

9.10 Cumulative Townscape and Visual Effects Assessment

9.10.1 'Other Developments' with potential for likely significant cumulative effects are identified in **Chapter 4** and their location is shown on **Figure 9.10** along with available information on their potential height. The methodology used for the Cumulative Townscape and Visual Effects Assessment (CTVEA) is set out in detail in **Appendix E.1.**

Cumulative Townscape Effects

9.10.2 In terms of cumulative townscape effects, the following townscape receptors in the TVIA have been scoped out of this cumulative assessment, as they have a geographic extent limited to the Application Site, and are unlikely to be subject to direct effects of significance as a result of the 'Other Developments':

- character of the site;
- tree cover and TPOs; and
- appearance.

9.10.3 The following townscape receptors are considered in turn:

LCA 81 Greater Thames Estuary; LCA 112 Inner London; and Landscape Type Thames Floodplain.

9.10.4 Completion of the 'Other Developments' situated within the LCA will increase the amount of built form within the urban area of this LCA, but will not alter its key natural and environmental assets. The LCA has a **Low** overall sensitivity to change arising from new urban, industrial, and residential / commercial development, and is located within an area with a context of current planning and design policies for regeneration and new development, for example Policy CS03 Belvedere Geographic Area, of the Bexley Core Strategy. It is therefore considered that there will be a **Slight adverse** cumulative townscape effect during construction and operation which has **a Minor** level of significance and is therefore Not Significant.

Crossness Conservation Area.

9.10.5 Nearby 'Other Developments' which may have intervisibility with Crossness Conservation Area are 008 (Data Centre), 0014 (Savills bus depot, ind. & offices); and 0012 (TRE Belvedere Industrial). The Data Centre will be another industrial unit nearby, which is also continuous in character with the industrial heritage of the Conservation Area though of a larger scale and varying texture and materials. 0012 and 01 will be hidden behind the Data Centre and REP so their townscape effects on the Conservation Area will be minimal. It is therefore considered that there will be a **Slight adverse** cumulative townscape effect during construction and operation which has a **Minor** level of significance and is therefore Not Significant.

Designated Public Open Space and Landscapes.

9.10.6 Due to their size, height, massing, and scale 008 (Data Centre), 0014 (Savills bus depot, ind. &offices); and 0012 (TRE Belvedere Industrial) are 'Other Developments' which could give rise to additional cumulative townscape effects to the open space and marshland around Crossness Nature Reserve. There will be an increased urban developed element nearby, with additional enclosure, potentially increased shading, and less open views due to increased height of buildings on the skyline. It is therefore considered that there will be a **Slight adverse** cumulative townscape effect during construction and operation which has a **Minor** level of significance and is therefore Not Significant.

Scale, Grain & Massing

9.10.7 Sites 008 (Data Centre), 0014 (Savills bus depot, ind. & offices); and 0012 (TRE Belvedere Industrial) are 'Other Developments' which would result in an intensification of existing land uses and increase in the scale and massing of the area. These developments are smaller than REP and therefore on balance it is considered that there will be a **Slight adverse** cumulative townscape effect during construction and operation which has a **Minor** level of significance and is therefore Not Significant.

Legibility

9.10.8 008 (Data Centre), 0014 (Savills bus depot, ind. & offices); and 0012 (TRE Belvedere Industrial) are 'Other Developments' which have potential for cumulative effects on legibility due to the additional large industrial units giving more enclosure; and further reducing the character of industrial buildings dotted within a matrix of more open land and marshland. However rooflines have the potential to form new landmarks and have a positive effect on legibility. It is therefore considered that there will be a **Slight adverse** cumulative townscape effect during construction and operation which has a **Minor** level of significance and is therefore Not Significant.

Long distance paths, National Cycle Routes, and PROW

9.10.9 0014 (Savills bus depot, ind. & offices) is a development nearby that will result in an intensification of the built up character of the area, with more enclosure. However it is unlikely to cause extra shading of the path, and will be in line with the existing land uses, and provide additional visual interest on the skyline. It is therefore considered that there will be a **Slight beneficial** cumulative townscape effect during construction and operation which has a **Minor** level of significance and is therefore Not Significant.

Cumulative Visual Effects

9.10.10 In terms of cumulative visual effects, visual receptors at the following TVIA viewpoints have been assessed with reference to baseline photographs in **Appendix E.4**. It is considered that likely significant cumulative visual effects would not occur beyond 2.5 km from REP's stack (for all types and sizes of development), or for development which is above 65 m in height beyond 5 km from REP's stack. The thresholds for cumulative visual assessment therefore include all schemes within 2.5 km from REP, and also energy infrastructure schemes of a minimum height of 65 m between 2.5 km to 5 km from REP's stack.

9.10.11 Further detail on the methodology of the two types of cumulative visual effects is presented in **Appendix E.1.** Combined cumulative visual effects are set out in **Appendix E.5**; and incremental cumulative visual effects are set out below. Due to variation, change, and extension in the construction periods, and start dates of the construction and operation of 'other developments'; and the nature of the incremental assessment methodology; cumulative visual effects are assessed for construction and operation together.

Viewpoints VPSA1-West, and East, Thames Path, and VP1, & 5 Site Boundary

9.10.12 Committed development at 0014 (Savills bus depot, ind. & offices), 0008 (Data Centre), and 0012 (TRE Belvedere Industrial) includes large scale industrial buildings / offices of between 20 and 30 m in height. These committed developments will intensify the existing land use and increase the size and scale of built form in this area. REP, between Manor Way and the Thames Path, will

be an additional development in this local area, larger in scale, mass, and height, but a more dramatic industrial building, with the distinctive focal point and interest of the high stack. In the context of these committed developments, and on balance, the addition of the Proposed Development will result in a **Beneficial** cumulative combined visual effect from these viewpoints which is of a **Minor** level of significance during construction and on operation and therefore Not Significant.

Viewpoints VP2,3,4 Public Rights of Way at Crossness Nature Reserve

9.10.13 Committed development at 0014 (Savills bus depot, ind. & offices), 0008 (Data Centre), and 0012 (TRE Belvedere Industrial) includes large scale industrial buildings / offices of between 20 and 30 m in height. These committed developments will intensify the existing land use and increase the size and scale of built form in this area. REP will be an additional development, close to the Crossness Nature Reserve, larger in scale, mass, and height, giving more enclosure and restriction of views; but with a more distinctive roofline of the tall stack bringing interest and a focal point to the skyline. In the context of these committed developments, the addition of the Proposed Development will result in an adverse cumulative combined visual effect which is a **Moderate** level of significance (which is significant) during construction and on operation.

Viewpoint VP6 PRoW at South Mere Open Space, Erith Marshes

9.10.14 Committed development at 0014 (Savills bus depot, ind. &offices), 0008 (Data Centre), and 0012 (TRE Belvedere Industrial) includes large scale industrial buildings / offices of between 20 and 30 m in height. The rooftops of these committed developments may be visible over the treetops from this viewpoint and will add additional large scale urban built form. REP will be an additional development, larger in scale, mass, and height, giving, but with a more distinctive roofline of the tall stack bringing interest and a new focal point to the skyline. In the context of these committed developments, the addition of the Proposed Development will result in a **neutral** cumulative combined visual effect which is a **Minor** level of significance during construction and on operation, and therefore Not Significant.

Viewpoint VP7 Crossness Conservation Area

9.10.15 Committed development at 0014 (Savills bus depot, ind. &offices), 0008 (Data Centre), and 0012 (TRE Belvedere Industrial) includes large scale industrial buildings / offices of between 20 and 30 m in height. These committed developments are likely to be partially visible in this view and may detract from the richness of the composition of mixed industrial buildings and vertical elements along the riverside frontage. REP will be an additional development, larger in scale, mass, and height, giving more enclosure and restriction of views; but with a more dominant roofline of the tall stack bringing interest and a focal point to the skyline. In the context of these committed developments, the addition of the Proposed Development will result in an **adverse** cumulative combined visual effect which is a **Minor** level of significance during construction and on operation and therefore Not Significant.

Viewpoint VP8 Lesnes Abbey

9.10.16 Committed development at Abbey Wood (Abbey Wood 087, 088, and Peabody Developments 029, 032, 033) include tall residential apartment blocks of up to 96 m which will be visible from this view in the middle distance skyline. REP will be an additional development further away, but also visible on the skyline above tree belts, and against an urban skyline. In the context of these committed developments, the addition of the Proposed Development will result in an **adverse** cumulative combined visual effect which is a **Moderate** level of significance (which is significant) during construction and on operation.

Viewpoint VP9 Halt Robin Rd

9.10.17 Committed development at 0014 (Savills bus depot, ind. &offices), 0008 (Data Centre), and 0012 (TRE Belvedere Industrial) includes large scale industrial buildings / offices of between 20 and 30m in height. Committed development at Abbey Wood (Abbey Wood 087, 088, and Peabody Developments 029, 032, 033) include tall residential apartment blocks of up to 96 m which will be visible from this view in the far distance skyline to the left of view. In the far distance, north of the River there are committed developments of between 5 and 9 storeys that may be visible including 0098 (Gill Aggregates resi. & hotel) and 0004 (Countryside residential). REP will be an additional development in this view, a more dramatic industrial building, with the distinctive focal point and interest of the high stack. In the context of these committed developments, and on balance, the addition of the Proposed Development will result in a **beneficial** cumulative combined visual effect from this viewpoint which is of a **Minor** level of significance during construction and on operation and therefore Not Significant.

Viewpoints VP10 Ferry Lane, and VP11 Horse Shoe Corner

9.10.18 Committed development at Abbey Wood (Abbey Wood 087, 088, and Peabody Developments 029, 032, 033) include tall residential apartment blocks of up to 96 m which will be visible from these views in the far distance skyline to the right of view. The rooftops of committed development at 0014 (Savills bus depot, ind. &offices), 0008 (Data Centre), and 0012 (TRE Belvedere Industrial) comprising large scale industrial buildings / offices of between 20 and 30 m in height may be visible next to REP, will be an additional development in these panoramic river views, larger in scale, mass, and height, but a more dramatic industrial building, continuous in character, and with the distinctive focal point and interest of the high stack. In the context of these committed developments, and on balance, the addition of the Proposed Development will result in a **beneficial** cumulative combined visual effect from these viewpoints, which is of a **Minor** level of significance during construction and on operation and therefore Not Significant.

Installation of REP's Future District Heat Network

9.10.19 REP has been designed to be CHP enabled, meaning that there is the ability to supply waste heat generated from the combustion process to a local heat off-

taker. It is acknowledged that any future supply of waste heat (e.g. a district heat network scheme for a local residential area) could result in impacts to the local environment. However, given the nature of any such scheme (likely to consist mainly of a network of buried pipes) any impacts would be limited to the temporary construction phase which is unlikely to overlap with the construction of REP. Given that the network would most likely serve the local Thamesmead/Peabody area, impacts would likely be restricted to existing brownfield urbanised land (e.g. burying pipes in roads). Such temporary impacts would be subject to a separate planning application which is anticipated to be bound by a CoCP or similar best practice working methods. It is therefore considered highly unlikely that there would be any significant cumulative townscape or visual effects.

9.11 Further Mitigation and Enhancement

9.11.1 No further mitigation or enhancement is considered necessary in addition to the design process that will be progressed in accordance with Design Principles (**Document Reference 7.4**). This will include design development of colours and materials in context to the surroundings and in line with Context Colour Palettes. Details of this are set out within the Design and Access Statement (DAS) (**Document Reference 7.3**) and in applying the criteria for good design in accordance with section 4.5 of the NPS EN-1 and paragraphs 2.5.46 to 2.5.52 of NPS EN-3.

9.12 Residual Effects and Monitoring

9.12.1 This assessment has identified likely residual significant effects to townscape and visual receptors as summarised in **Table 9.8** below. This provides a comparison against the preliminary assessment results as provided within the PEIR. Assessments within this Chapter have benefitted from further and more detailed survey analysis, as well as embedded mitigation (including Design Principles – **Document Reference 7.4**). For this reason, some effects identified in this ES differ from the preliminary effects previously identified.

9.12.2 At this stage, the only monitoring required would be on the maintenance of tree protection fencing and construction hoardings during the construction period (which would be included in the final CoCP and secured through DCO Requirement 10); monitoring of the visual impacts of the Proposed Development would not be appropriate.

Summary of Residual Effects

Table 9.8: Summary of Residual Effects

Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
REP Site during construction		
Townscape Receptors		
Character Area 81: Greater Thames Estuary	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Character Area 112: Inner London	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Thames Floodplain	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Lower Thames Floodplain	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Crossness Conservation Area	**Negligible** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Application Site	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
Tree Cover and TPOs	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Designated Open Space, Landscapes and scrubland habitats	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Appearance	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Long distance paths, London and National Cycle Routes, Public Rights of Way	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)

Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
Visual Receptors		
SA1-West	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
SA1-East	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
1 – Public Right of Way southeast of REP site	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
2 – PRoW between Crossness Nature Reserve and Thames Path	See para 9.6.2	**Moderate** Adverse (Significant)
3 – PRoW in Crossness Nature Reserve	See para 9.6.2	**Moderate** Adverse (Significant)
4 – PRoW between Crossness Nature Reserve and Eastern Road	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
5 – PRoW off Picardy Manorway	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
6 – PRoW at South Mere, west of Erith Marshes	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
7 – Edge of Crossness Conservation Area	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
8 – Lesnes Abbey	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
9 – Halt Robin Road and north western corner of Franks park near to Wood Side School	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
10 – Ferry Lane, between Frog island and Jetty	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)

Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
11 – PRoW west of Horse Shoe Corner	**Minor** Adverse (Not Significant)	**Moderate** Adverse (Significant)
12 – Thameside Walk / Thames Path National Trail, northwest of Thamesmere Leisure Centre	**Minor** Adverse (Not Significant)	No Change
13 – Roundabout at junction of A202, A2016, Walnut Tree Road and Bexley Road	**Minor** Adverse (Not Significant)	No Change
14 – Barnes Clay	**Minor** Adverse (Not Significant)	No Change
15 – Bridleway west of Littlebrook Nature Park	**Minor** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
16 – Eaglesfield Recreation Ground	N/A	No Change
REP Site during operation		
Townscape Receptors		
Character Area 81: Greater Thames Estuary	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Character Area 112: Inner London	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Thames Floodplain	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Lower Thames Floodplain	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Crossness Conservation Area	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)

Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
Application Site	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
Tree Cover and TPOs	**Minor** Benefit (Not Significant)	**Minor** Adverse (Not Significant)
Designated Open Space, Landscapes and scrubland habitats	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
Scale, Grain and Massing	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
Appearance	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
Legibility	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
Long distance paths, London and National Cycle Routes, Public Rights of Way	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Visual Receptors		
SA1-West	**Moderate** Adverse (Significant)	**Moderate** Beneficial (Significant)
SA1-East	**Moderate** Adverse (Significant)	**Moderate** Adverse (Significant)
1 – PRoW southeast of REP site	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
2 – PRoW between Crossness Nature Reserve and Thames Path	See para 9.6.2	**Moderate** Adverse (Significant)
3 – PRoW in Crossness Nature Reserve	See para 9.6.2	**Moderate** Adverse (Significant)
4 – PRoW between Crossness Nature Reserve and Eastern Road	**Minor** Adverse	**Minor** Beneficial

Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
	(Not Significant)	(Not Significant)
5 – PRoW off Picardy Manorway	**Minor** Adverse (Not Significant)	**Minor** Beneficial (Not Significant)
6 – PRoW at South Mere, west of Erith Marshes	**Moderate** Adverse (Significant)	**Moderate** Beneficial (Significant)
7 – Edge of Crossness Conservation Area	**Moderate** Adverse (Significant)	**Negligible** Neutral (Not Significant)
8 – Lesnes Abbey	**Moderate** Adverse (Significant)	**Negligible** Neutral (Not Significant)
9 – Halt Robin Road and north western corner of Franks park near to Wood Side School	**Minor** Adverse (Not Significant)	**Minor** Beneficial (Not Significant)
10 – Ferry Lane, between Frog island and Jetty	**Moderate** Adverse (Significant)	**Negligible** Neutral (Not Significant)
11 – PRoW west of Horse Shoe Corner	**Minor** Adverse (Not Significant)	**Moderate** Beneficial (Significant)
12 – Thameside Walk / Thames Path National Trail, northwest of Thamesmere Leisure Centre	**Minor** Adverse (Not Significant)	No Change
13 – Roundabout at junction of A202, A2016, Walnut Tree Road and Bexley Road	**Minor** Adverse (Not Significant)	No Change
14 – Barnes Clay	**Minor** Adverse (Not Significant)	No Change
15 – Bridleway west of Littlebrook Nature Park	**Minor** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)

Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
16 – Eaglesfield Recreation Ground	VP required after submission of the PEIR	No Change
Electrical Connection during construction		
Townscape Receptors		
Character Area 81: Greater Thames Estuary	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Character Area 112: Inner London	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Thames Floodplain	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Lower Thames Floodplain	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Cray River Valley	Not covered in PEIR	**Negligible** Adverse (Not Significant)
Western Thames Marshes	Not covered in PEIR	**Negligible** Adverse (Not Significant)
Crossness Conservation Area	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Application Site	**Moderate** Adverse (Significant)	**Minor** Adverse (Not Significant)
Tree Cover and TPOs	**Negligible** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
Designated Open Space, Landscapes and scrubland habitats	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
Appearance	Not covered in PEIR	**Minor** Adverse

Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
		(Not Significant)
Long distance paths, London and National Cycle Routes, Public Rights of Way	Not covered in PEIR	**Minor** Adverse (Not Significant)
Visual Receptors		
SA1-West	**Moderate** Adverse (Significant)	**Minor** Adverse (Not Significant)
SA1-East	**Moderate** Adverse (Significant)	**Minor** Adverse (Not Significant)
1 – PRoW southeast of REP site	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
2 – PRoW between Crossness Nature Reserve and Thames Path	See para 9.6.2	**Minor** Adverse (Not Significant)
3 – PRoW in Crossness Nature Reserve	See para 9.6.2	**Minor** Adverse (Not Significant)
4 – PRoW between Crossness Nature Reserve and Eastern Road	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
5 – PRoW off Picardy Manorway	**Minor** Adverse (Not Significant)	**Minor** Adverse (Not Significant)
6 – PRoW at South Mere, west of Erith Marshes	**Moderate** Adverse (Significant)	No Change
7 – Edge of Crossness Conservation Area	**Moderate** Adverse (Significant)	No Change
8 – Lesnes Abbey	**Moderate** Adverse (Significant)	No Change

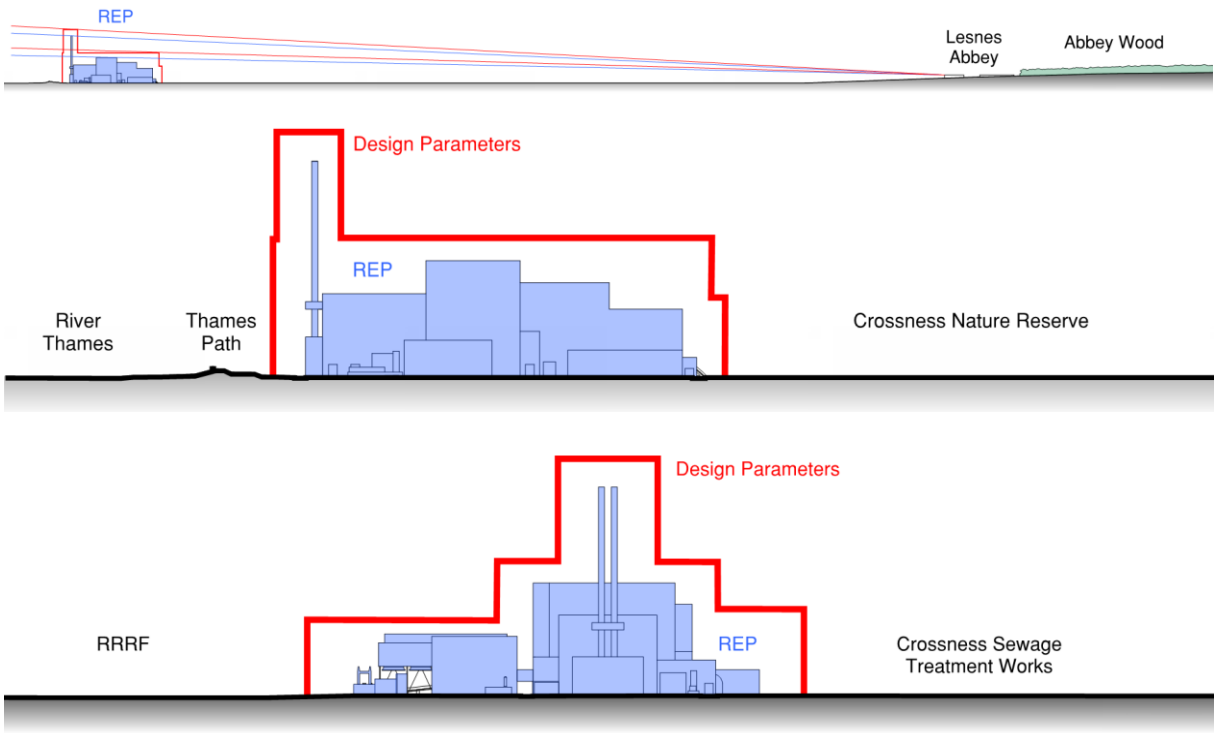
Receptor name	PEIR Assessment of Residual Effects (prior to adoption of Design Principles (Document Reference 7.4))	ES Assessment of Residual Effects (after adoption of Design Principles (Document Reference 7.4))
9 – Halt Robin Road and north western corner of Franks park near to Wood Side School	**Minor** Adverse (Not Significant)	No Change
10 – Ferry Lane, between Frog island and Jetty	**Moderate** Adverse (Significant)	No Change
11 – PRoW west of Horse Shoe Corner	**Minor** Adverse (Not Significant)	No Change
12 – Thameside Walk / Thames Path National Trail, northwest of Thamesmere Leisure Centre	**Minor** Adverse (Not Significant)	No Change
13 – Roundabout at junction of A202, A2016, Walnut Tree Road and Bexley Road	**Minor** Adverse (Not Significant)	No Change
14 – Barnes Clay	**Minor** Adverse (Not Significant)	No Change
15 – Bridleway west of Littlebrook Nature Park	**Minor** Adverse (Not Significant)	**Negligible** Adverse (Not Significant)
16 – Eaglesfield Recreation Ground	N/A	No Change

9.13 Summary and Conclusions

9.13.1 From the majority of view locations, the REP Site and Electrical Connection would give rise to **Minor** or **Negligible** levels of visual effects which are Not Significant. There is the potential that from certain view locations the REP Site, Main Temporary Construction Compounds and Electrical Connection could give rise to visual effects of **Moderate** levels of significance. The design process will be progressed in accordance with Design Principles (**Document Reference 7.4**), including design development of colours and materials in context to the surroundings and in line with Context Colour Palettes. Details of this are set out within the Design and Access Statement (**Document Reference 7.3**) and in applying the criteria for good design in accordance with section 4.5 of the NPS EN-1 and paragraphs 2.5.46 to 2.5.52 of NPS EN-3. This assessment has provided wireline views from key viewpoints and added in VP 16 as a result of consultation on the PEIR.

9.13.2 The following diagrams illustrate the Design Principle of the stepped roof and how it mitigates the maximum parameters.

Plate 9.1: Design Principle of the Stepped Roof



9.13.3 There will be a **Minor** level of townscape effects on National Landscape Character Areas 81, 112, and Lower Thames Floodplain, and Tree Cover from the operational phase of REP Main Site, Temporary Compounds and Electrical Connection. There will be townscape effects with a **Moderate** level of

significance on Crossness Conservation Area; the Character, and Appearance of the REP Site; Scale, Grain and Massing, and Legibility, and on the landscape of Crossness Nature reserve marshland adjacent to the REP site, and scrubland habitats on the REP site. The design process will be progressed in accordance with Design Principles (**Document Reference 7.4**), including design development of colours and materials in context to the surroundings and in line with Context Colour Palettes. Details of this are set out within the DAS and in applying the criteria for good design in accordance with section 4.5 of the NPS EN-1 and paragraphs 2.5.46 to 2.5.52 of NPS EN-3.

9.13.4 The construction phase of the Electrical Connection, (operational phase effects scoped out), does not give rise to any effects of significance. All townscape and visual effects are of a **Minor** or **Negligible** level of significance and therefore Not Significant.

9.13.5 Additional cumulative townscape effects from 'Other Developments' are of a **Negligible** or **Minor** magnitude, and are therefore not significant.

9.13.6 Additional combined or incremental cumulative visual effects from 'Other Developments' are mostly of a **Negligible**, or **Minor** magnitude, and are therefore not significant. However, there are adverse cumulative incremental visual effects of a **Moderate** level of significance close to the site from VP,2,3,4, and from VP 8 Lesnes Abbey. There are **adverse** cumulative combined visual effects which are of a **Moderate** levels of significance during construction and on operation from VP SA1-East, and VP6, and during construction only from VP7 Crossness Conservation Area and VP8 Lesnes Abbey.

9.13.7 Both the beneficial and adverse effects from the Proposed Development would need to be weighed against its wider benefits, such as delivering the urgent and substantial need for new renewable/low carbon electricity supply and storage as established in NPS EN-1. It is also relevant to consider that any development on the REP site would have an effect on townscape character due to the current absence of permanent buildings on this land. The Planning Statement (**Document Reference 7.1**) provides a conclusion on the wider planning balance of the Proposed Development.