

Wealden Recycling, Recovery and Renewable Energy Facility: Environmental Statement Non-technical Summary

March 2018

On behalf of Britaniacrest Recycling Ltd

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1 Introduction

- 1.1.1 Britaniacrest Recycling Ltd (The Applicant) proposes the development of a Recycling, Resource and Renewable Energy (3Rs) Facility to sort, separate and process up to 230,000 tonnes per annum of residual commercial and industrial waste and/or residual municipal solid waste.
- 1.1.2 The site is located at the Wealden Brickworks Site, Langhurstwood Road, Horsham, West Sussex (Figure 1).

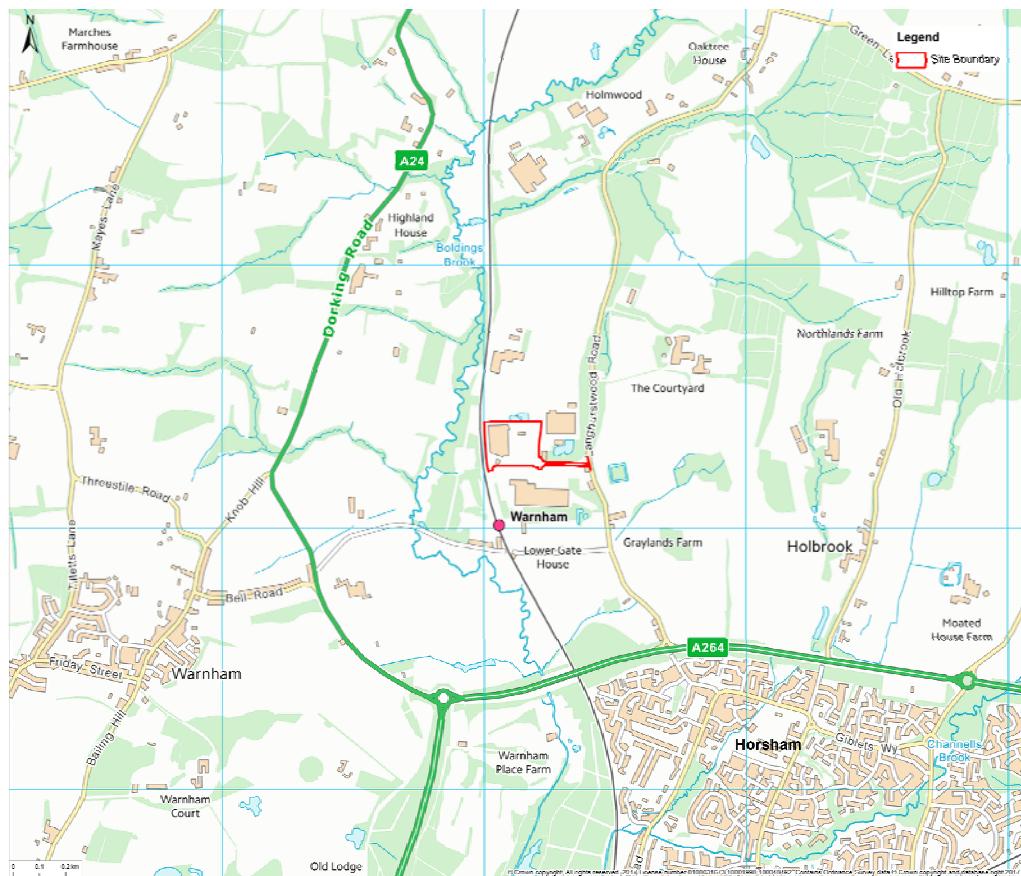


Figure 1: Site Location Plan

- 1.1.3 Taking into account the nature and scale of the development proposed, a process of Environmental Impact Assessment has been undertaken in accordance with UK legal requirements to identify the likely significant environmental effects of the proposed development. An Environmental Statement has been produced, setting out the findings of the assessment process. The Environmental Statement accompanies a planning application submitted to West Sussex County Council.
- 1.1.4 This document is the Non-Technical Summary of the Environmental Statement, which provides an overview of the assessment findings. Details of how to view the full Environmental Statement or to obtain further copies of this Non-Technical Summary are provided at the end of this document.

2 Site Description and Description of Development

The Site and Surrounding Area

Location

- 2.1.1 The site is located at the former Wealden Brickworks site off Langhurstwood Road, approximately 900 metres to the north west of Horsham and 1.3 km to the north east of the centre of Warnham. The site lies within the administrative areas of West Sussex County Council and Horsham District Council.
- 2.1.2 The site location is shown on Figure 1, with the existing site shown on Figure 2.

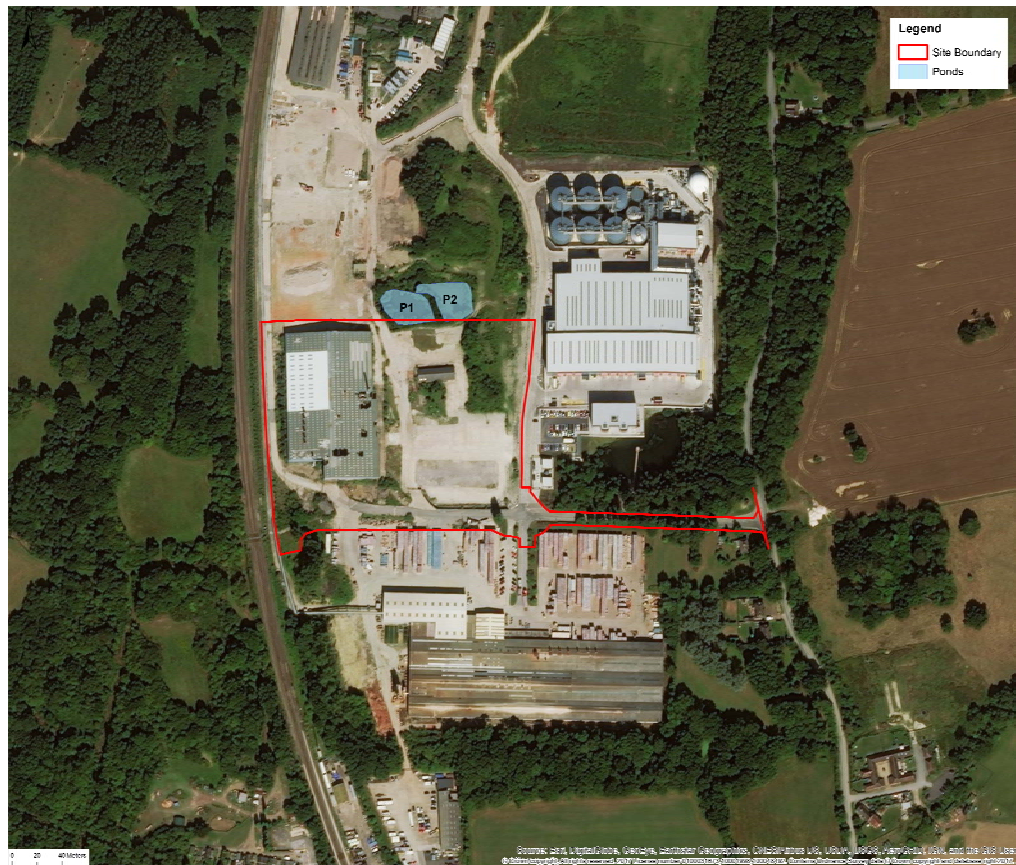


Figure 2: Existing Site Plan

Site Description

- 2.1.3 The site comprises approximately 3.8 hectares of land within the former Warnham and Wealden Brickworks site, a 24.4 hectare site. The planning application boundary includes the proposed access route up to the adopted highway. The site includes a large warehouse building currently in use as a Waste Transfer Station/Materials Recycling Facility, surrounded by hardstanding and several smaller buildings.

- 2.1.4 The site, based upon its former use as a brickworks, is classified as a brownfield site in the West Sussex Waste Local Plan and is one of five sites allocated for strategic waste management uses in West Sussex.
- 2.1.5 Access to the site is via a private shared estate road, which connects to the public highway at Langhurstwood Road. Langhurstwood Road links directly to the A264 some 750 metres to the south, which links to the A24 and the M23.
- 2.1.6 The southern boundary of the site is defined by the internal access road, beyond which lies the Weinerberger brickworks factory (also known as Warnham Brickworks). The London-Horsham railway line lies immediately to the west of the site, beyond which there are mature tree belts and open countryside.
- 2.1.7 The eastern boundary of the site is defined by an internal access road, beyond which lies the Brookhurst Wood Mechanical and Biological Treatment Facility, which is operated by Biffa in partnership with West Sussex County Council.
- 2.1.8 Two ponds are located within dense scrub to the immediate north of the site, including grey willow, hawthorn and blackthorn. The land to the immediate north beyond the ponds is currently vacant and comprises several derelict former brickworks buildings. A planning application was submitted in 2013 for the construction of a new facility for the compaction and baling of Refuse Derived Fuel.
- 2.1.9 An Aggregate Treatment and Recycling Facility is located north of the site boundary. Further north and east is the active Brookhurst Wood Landfill Site, which covers an area of approximately 34 hectares.
- 2.1.10 Environmental features surrounding the site are shown on Figure 3a and Figure 3b.

Description of Development

- 2.1.11 The proposed development would comprise a Recycling, Recovery and Renewable Energy (3Rs) Facility to sort, separate and process up to 230,000 tonnes per annum of residual commercial and industrial waste and/or residual municipal solid waste.
- 2.1.12 The processing of waste by the proposed development would generate an estimated 21 megawatts of electricity per annum. Of this, approximately 18 megawatts would be available for export to the national grid, with the remainder used by the facility itself. The proposed development would also be capable of supplying heat to suitable external users, subject to a heating network becoming available. The quantity of heat available would depend on the network configuration and the demand.

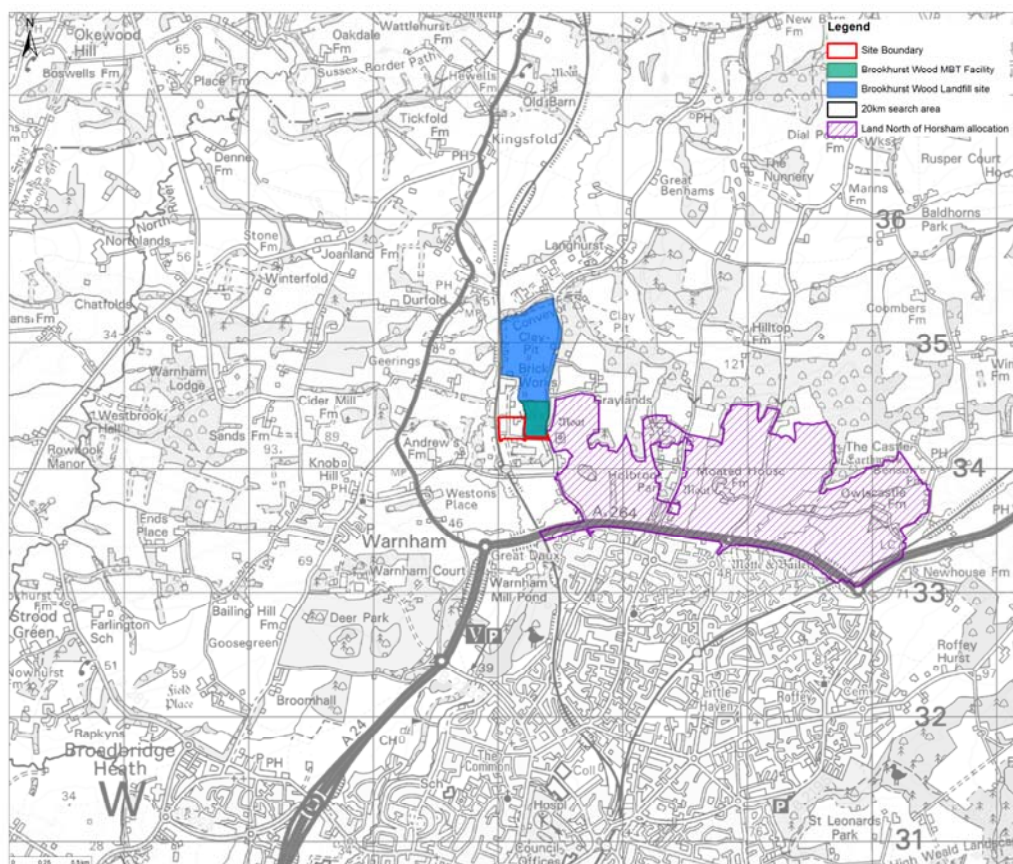


Figure 3a: Environmental Features

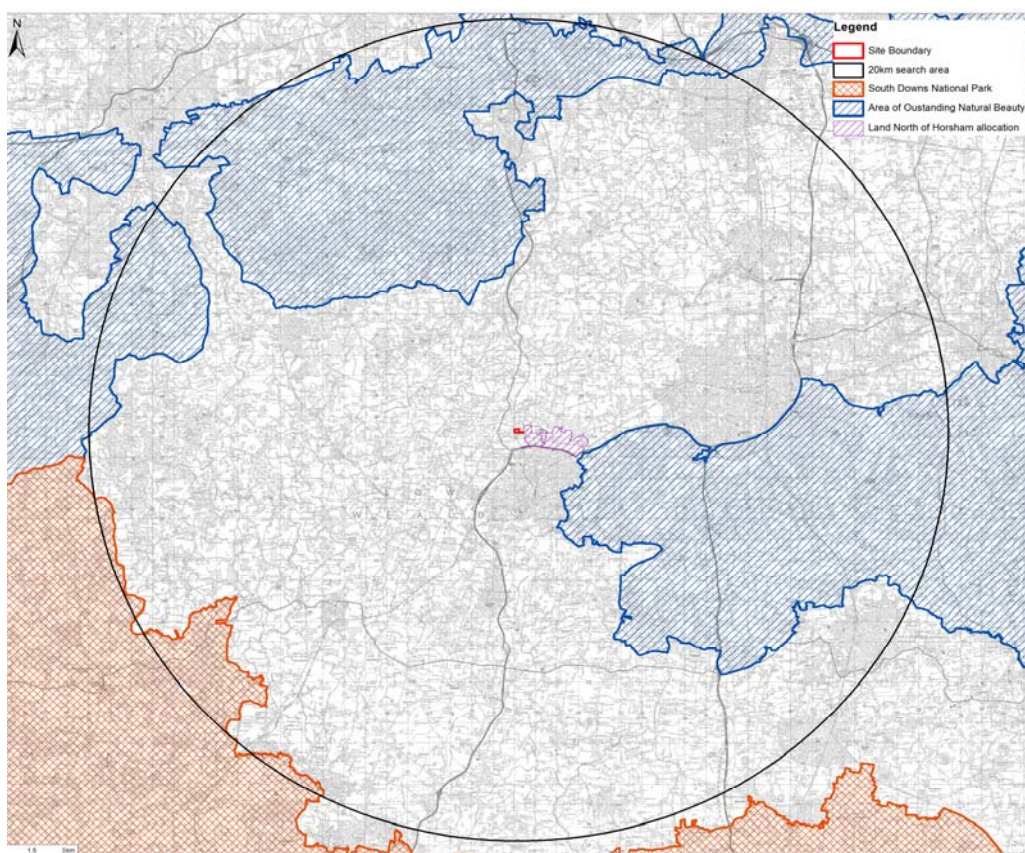


Figure 3b: Environmental Features (wider area)

Summary of Process and Operations

Waste Delivery

- 2.1.13 Acceptable waste would arrive at the facility and be delivered to the reception hall and materials pre-treatment area for sorting and recovery of the fractions that can be recovered and recycled. These would be inert materials, wood, selected plastics, ferrous metals and non-ferrous metals.
- 2.1.14 Waste deliveries would only be accepted from authorised carriers and all heavy goods vehicles entering the site would report to the weighbridge gatehouse before being allowed to enter the site. Details of all waste entering the facility would be recorded in a tracking system. In addition, frequent inspections of waste would be undertaken in the reception hall and any non-compliant waste would be quarantined in a contained service area where it would remain until alternative disposal arrangements are in place.
- 2.1.15 In order to limit environmental nuisances such as vermin, dust, litter and odour all deliveries, handling and storage would be undertaken in a fully closed environment inside the building. Access to and from the reception hall and bunker for waste delivery would be via an entrance fitted with a fast acting door which would remain closed during non-delivery periods.

Waste Processing

- 2.1.16 The waste processing/mechanical pre-treatment plant would consist of a series of one or more shredders, screens, separators, magnets and sorting machines designed to extract recyclable materials for recovery and other materials not required for the thermal treatment step, and prepare a feedstock as a fuel for the energy recovery facility.
- 2.1.17 The residual waste stored within the bunker would then be removed by crane and loaded into the feed hopper of the energy recovery facility, which would extract the energy from the feedstock, generating steam to drive a steam turbine-generator and produce electricity. The energy recovery facility would utilise proven and reliable mass burn technology. Wastes would be burnt on a moving grate, which would mix them to ensure optimum combustion.
- 2.1.18 Air would be fed through the grate from the underside to maintain the combustion process. The furnace would be designed to ensure a minimum flue gas temperature of at least 850°C to ensure the destruction of pollutants.
- 2.1.19 Ash (known as Incinerator Bottom Ash) would fall through the grate and be recovered through a water bath (for cooling) and removed to a storage area. The ash would then be moved off site for conversion into an aggregate substitute and recycled.
- 2.1.20 Hot gases (known as flue gas) from the combustion process contain considerable energy which would be converted to high pressure superheated steam through a series of heat exchangers. The steam from the boiler would then feed a steam turbine, which would generate electricity. The electricity would be provided to the local grid. Exhaust steam from the turbine would be condensed by air cooled condensers and then returned to the boiler.

- 2.1.21 The facility would have a single flue stack with a proposed height of 95 metres. The height has been determined through extensive computer modelling of emissions and evaluation to ensure appropriate dispersion of the plume.
- 2.1.22 The turbine-generator would produce approximately 21 MW of electricity. A proportion of this electricity generated would be used by the facility itself. The remainder would be exported to the distribution network.
- 2.1.23 Figure 4, below, illustrates the process.

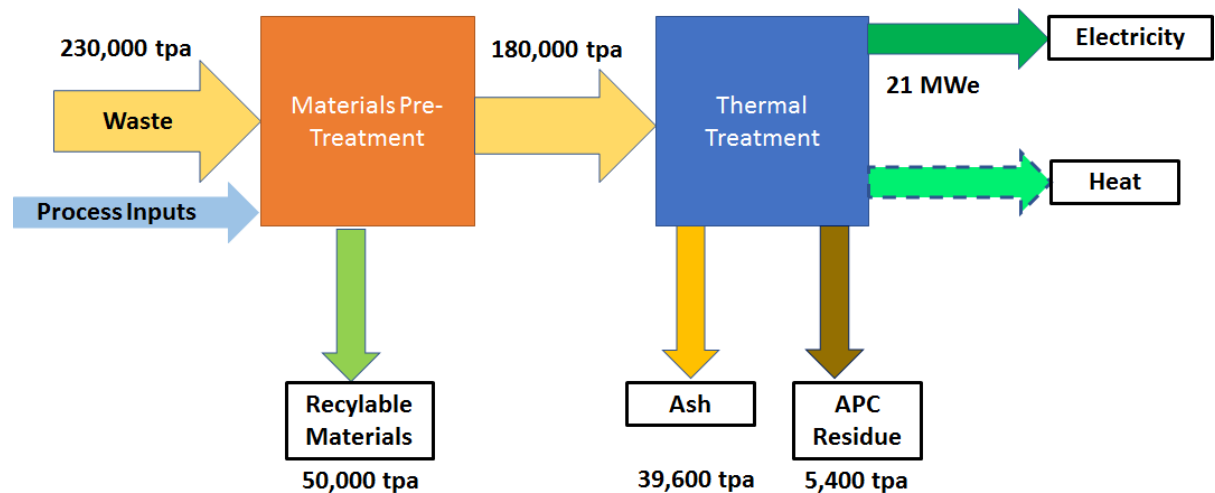


Figure 4: Materials Flow Diagram

- 2.1.24 The overall layout of the proposed development is shown on Figure 5, with key dimensions shown in Table 1.

Table 1: Approximate Dimensions of Buildings and Structures

Building	Maximum Height (m)	Area (Gross Internal Area) (m ²)
Waste Processing Hall	12.85	1,821
Tipping Hall	12.85	1,873
Workshop	13.20	348
Bunker	32.43	1,432
Offices	13.20	448 (per floor x 3)
Control Room	18.69	272
Boiler Hall	35.92	1,757
Bottom Ash	17.00	174
Water Treatment Hall	9.45	296
Compressed Air and Electrical	9.45	239
Turbine Hall	25.90	916
Flue Gas Cleaning	23.00	258
Air Cooled Condenser	25.90	753
Transformer Enclosure	6.15	187
Storage/Recycling Area	8.60	822
Gatehouse	4.90	44
Flue Stack	95.00	n/a
Security Fencing	1.80	n/a
Total Gross Internal Area (GIA)		12,536
Total Gross External Area (GEA)		13,160



Figure 5: Proposed Site Plan

Access

- 2.1.25 Access to the facility would be taken from the existing entrance point to the site. The capacity of the proposed facility would match the capacity of waste already permitted to be managed at the site, i.e. 230,000 tonnes per annum. The facility would not therefore result in any increase in vehicles coming to the site above those already permitted.

Drainage

- 2.1.26 A drainage strategy has been prepared for the proposed development, which seeks to replicate the existing catchment areas as far as practically possible and to maintain surface discharge rates and volumes.

External Lighting

- 2.1.27 The lighting design has been based on the use of appropriate lighting to provide safe working conditions in all areas of the site, whilst minimising light pollution and the visual effect on the local environment. This would be achieved by the use of luminaries that eliminate the upward escape of light and would be directed downward.
- 2.1.28 A dimmable lighting scheme is proposed to facilitate lower levels of lighting in the evening to suit low level site activity.

- 2.1.29 It is necessary to fit aviation warning lights to the stack and the boiler building. They would be medium intensity red steady obstacle lights and would be positioned to be visible from the air. These are visible but do not spoil light.

Appearance and Materials

- 2.1.30 The facility would include a curved roof, referred to as 'curvilinear', incorporating a large sweeping curve across the facility. The curve would start at the bunker hall, cross the bunker and boiler halls and then cover the air cooled condensers and flue gas treatment area. The purpose of the curve is to visually bring all of the separate elements of the facility together as one structure and to visually reduce the building's height. The design builds on the reduction in height achieved from sinking the building into the ground.
- 2.1.31 The external colours would also aid the visual reduction in height by having the higher elements in lighter greys with a darker grey plinth at a lower level.
- 2.1.32 The design has taken into account the guidance on the selection and use of colour in development for the High Weald Area of Outstanding Natural Beauty. The Western High Weald Woodland and Heath Sub Palette has been selected as the most appropriate for the proposed development. Muted greys, greens and browns are proposed. This would enable the building to be more readily absorbed, in visual terms, into the landscape.

Landscape Strategy

- 2.1.33 The landscape proposals are designed to assist in screening low level clutter, such as vehicles in the car park, giving a simplicity to the front of the facility and providing as much screening of as much 'human-scale' activity as possible.
- 2.1.34 The planting at the front of the building would be a simple palette of predominantly evergreen trees in hedgerows or ground cover. At the internal roundabout, a line of trees within a curved hedgerow would help to screen direct views along the access road from Langhurstwood Road. Trees and hedgerows would provide a softening element to the building in views from the Biffa waste management facility and the Weinerberger Brickworks. To the north of the facility areas of native woodland containing both evergreen and deciduous species would complement the existing, retained woodland.
- 2.1.35 The use of a simple wildflower mix would provide an additional ecological habitat within the site.

Hours of Operation

- 2.1.36 The proposed development would operate 24 hours per day, 7 days a week except during shutdowns for maintenance activities.
- 2.1.37 The hours for waste delivery would remain the same as those currently approved for the Waste Transfer Station operations i.e. 07:00 to 18:00 on Monday to Saturday.
- 2.1.38 Deliveries/collections would be scheduled to avoid movements on Sundays, Bank Holidays or Public Holidays. With the prior approval of the local planning authority, occasional waste deliveries and/or collections may take place outside these hours to avoid peak hour traffic flows or to prevent waste being stored within vehicles overnight, at weekends or during holiday periods.

Staffing

- 2.1.39 It is estimated that the operation of the site would be undertaken by up to 50 people. Operational staff would include one site manager, six support staff (weighbridge, administration and security), five shift teams for the energy plant of four persons per team, together with a waste operational team of 14 persons.
- 2.1.40 Maintenance would be covered by two shifts of 12 hours per day with a total complement of six persons.

Construction

- 2.1.41 It is anticipated that construction of the proposed facility would commence within three years of being granted planning permission, depending upon financing and procurement lead times. The construction of the proposed development is estimated to take approximately 34 months, including commissioning and testing. A provisional schedule is outlined below:

Phase 1 – Site Preparation

- 2.1.42 The first phase would comprise site preparation and construction of the site roads to sub-base level, main drainage runs, temporary car parking and staff facilities. Site preparation works would include site clearance, fencing, bulk excavation, regrading, advance landscape works and planting. It is estimated that Phase 1 would take approximately 2 to 3 months.

Phase 2 – Construction Works

- 2.1.43 The second phase would comprise the construction works and installation of major process plant. Construction works would include the construction of buildings, roads completion, drainage and infrastructural works completion. Subject to lead times for plant delivery, the duration of Phase 2 is estimated at approximately 23 months.

Phase 3 – Mechanical/Electrical and Final Works

- 2.1.44 The third phase would comprise ongoing installation and testing of mechanical and electrical equipment and any final completion and finishing works. The duration of Phase 3 is estimated at approximately 8 months.

Commissioning and Testing

- 2.1.45 Commissioning and testing activities would comprise the certification of various components of the facility by a number of work groups. The commissioning of the facility would be scheduled to begin at least 12 weeks prior to start-up of operations.

Construction Working Hours

- 2.1.46 Normal hours of working during construction would be:
- Monday to Friday 07.30 to 19.00 hours; and
 - Saturday 08.00 to 16.00 hours.

- 2.1.47 No construction works would take place on Sundays or Public Holidays. In the event that construction would be required outside of these hours consent would be agreed in advance with the local planning authority. Non-intrusive activities (such as electrical installations and commissioning operations etc) would be undertaken outside of these hours in order to minimise overall construction time. HGV movements associated with such activities would be minimal.

Employment

- 2.1.48 The level of staff employed during the construction phase would vary throughout the construction period but it is estimated that there would be an average of 50 workers on site at any one time.
- 2.1.49 The level of work is anticipated to fluctuate over the course of the construction programme but the peak level of workers is likely to be in months 7 to 9 and would peak at around 182 people.

Construction Access

- 2.1.50 Access during the construction phase would be via the existing site access.

Environmental Management

- 2.1.51 A site-specific Construction Environmental Management Plan (CEMP) will be prepared for the proposed development in consultation with the local planning authority.
- 2.1.52 The purpose of the CEMP will be to:
- Provide a mechanism to ensure that measures to prevent, reduce and where possible offset potentially adverse construction phase environmental effects identified in the ES are implemented.
 - Ensure that good construction practices are adopted and maintained throughout the construction of the proposed development.
 - Provide a framework for mitigating unexpected impacts during construction of the proposed development.
 - Provide the necessary assurances to third parties that their requirements with respect to environmental performance will be met.
 - Provide a mechanism for ensuring compliance with environmental legislation and statutory consents.
 - Provide a framework against which to monitor and audit environmental performance.

Decommissioning

- 2.1.53 In the event decommissioning becomes necessary, the techniques followed would be controlled having regard to the legislation and good practice in place at that time and are expected to result in effects that are similar to or less than the effects that could occur during the construction phase.

3 Need and Alternatives Considered

Need for the Proposed Facility and Site Suitability

- 3.1.1 It has been the objective of the UK and Europe for many years to reduce the quantity of waste being sent to landfill. This can only be achieved if there is infrastructure available to allow the waste to be recycled or recovered. Whilst the UK has made major strides in reducing the landfilling of waste, and the UK Government and local authorities have spent over £2 billion in recent years, investing in such infrastructure, this has been almost exclusively for municipal wastes. Yet the Waste Framework Directive sets the same objectives for commercial and industrial wastes as it does for municipal waste. Whilst there is around twice the quantity of this waste compared to municipal waste, there are few facilities available that enable the waste from shops and businesses to be properly recycled and recovered. As a result, up to 9 million tonnes of commercial and industrial waste is landfilled in or exported from the UK, and the waste is travelling further afield as landfill sites are being closed.
- 3.1.2 Department for Environment Food and Rural Affairs (Defra) "Statistics on UK Waste", published 27 February 2018 states that the estimated annual commercial and industrial waste production in the UK in 2016 was circa 32.2 million tonnes (Defra, 2018). In Kent, East Sussex and Hampshire there are now no landfill sites at all for active non-hazardous waste. In West Sussex, the landfill capacity available is primarily designated for use for municipal waste and the landfill will be full within the next year. Even household waste arising in West Sussex requiring to be landfilled may need to be transported to Redhill in Surrey.
- 3.1.3 There is a clear need for state-of-the-art facilities to allow commercial and industrial waste to be treated, recycled and energy to be recovered in the UK. This would avoid long distance waste travel and export of materials, such as refuse derived fuel, to Europe for energy recovery.
- 3.1.4 In order to meet the challenges facing the UK in terms of lack of landfill capacity and the need for waste treatment, new facilities are required that can treat, recycle and recover energy from commercial and industrial waste.
- 3.1.5 The existing Britaniacrest site is confined to receiving wastes, including deliveries from skip collections from local businesses, separating what is viable to separate and bulking up for processing and recovery elsewhere. With the current facilities at the site, it is not possible to extend the recycling activity significantly without investment in infrastructure, and the amount of waste other than wood and demolition waste the site can receive is limited.
- 3.1.6 Development of the site to provide the proposed 3Rs Facility would provide a modern facility suitable for waste treatment, recycling and energy recovery. The site already operates as a waste handling facility and is large enough to accommodate the required functions within the existing site boundary.

3.1.7 The site provides an opportunity to create a facility positioned in an area where there is currently a lack of suitable landfill capacity for such wastes. The main reasons for the selection of the site for the proposed use include:

- Existing use as a waste transfer station, with planning permission to handle up to 230,000 tonnes per annum of industrial and commercial waste;
- Allocation of the site within the Waste Local Plan for waste transfer/recycling/recovery use;
- Location within an area with limited landfill capacity, resulting in long distances travelled for waste treatment or energy recovery (including export of RDF overseas);
- Ability to accommodate the new use within the existing site boundary;
- Site ownership by family business with over 40 years' experience in energy recovery, recycling and haulage;
- Location in an area of existing built development, on a former brickworks site, adjacent to the railway and Brookhurst Wood landfill site;
- The site is not subject to any statutory environmental designations and is at low risk of flooding;
- The site provides good public transport links, including access to the A24 and A264; and
- Ability to accommodate proposed use without any increase in traffic flows during the operational phase.

Alternatives Considered

3.1.8 The applicant considered a number of different technology options before deciding on the final scheme to take forward.

3.1.9 Mechanical pre-treatment followed by thermal treatment was assessed to be the best technology choice primarily based on technical performance, reliability, and environmental performance including emissions. Gasification was felt to be a possible thermal treatment option, but it was dismissed primarily due to its significantly smaller operational experience base. Pyrolysis does not currently demonstrate any environmental benefit and has a significantly weaker business case.

3.1.10 In view of the type of material to be treated at the site, alternative treatment technologies, such as composting, anaerobic digester or mechanical biological treatment (with either of the latter processes) were not viable.

3.1.11 Mechanical pre-treatment and energy recovery using modern, state of the art technology is flexible and robust and was consequently selected as the technology proposed for the proposed 3Rs Facility. The facility would achieve "Recovery" status in accordance with the Waste Framework Directive and provide an alternative to landfill in addition to much needed renewable energy.

- 3.1.12 The design of the buildings and the site layout has evolved throughout the design development process and has been influenced and shaped by technical and environmental impact considerations as well as stakeholder consultation.
- 3.1.13 Following submission of the previous application in 2016, feedback on the design was received from West Sussex County Council and its consultees. The design has been amended to respond to the feedback, with amendments to three key aspects, as described below:
- Height of built structures;
 - Roof design; and
 - Colour options.

Height

- 3.1.14 Throughout the design process, a key aim was to minimise the height of the building through:
- Lowering the ground level as much as possible, whilst maintaining the functional operation and sustainable characteristics of the facility; and
 - Lowering the roof height of the tallest elements of the facility to the minimum requirement of the technology providers. This resulted in a stepped roof design for the boiler hall.
- 3.1.15 The current design is much lower in height than the previous design options considered. This has been achieved through space efficiency in terms of the internal process technology and through sinking the design into the ground.

Roof Design

- 3.1.16 The design solutions considered consisted of two new distinct options. These were a curved roof solution, known as the 'curvilinear' option, and a rectangular solution, known as the 'rectilinear' option. Both the curvilinear and rectilinear options had the benefit over previous proposed design schemes of significantly reduced external height (as set out above).
- 3.1.17 The curvilinear solution incorporates a large sweeping curve across the facility. The purpose of the curve is to visually bring all of the separate elements of the facility together and to visually reduce the building's height. The reduction in building height is helped by allowing the higher elements of the facility to protrude through the curve rather than taking the roof above all elements. This would have generated additional unnecessary volume and accentuated external visual mass.
- 3.1.18 The rectilinear solution was considered as an alternative approach to the facility design. This option kept the building form as a simple reflection of the necessary required internal process elements. Rather than using a sweeping curve to harmonise all of the different elements together, the use of colour and materials was intended to visually declutter and rationalise the design as one coherent entity.
- 3.1.19 For both options the flue gas treatment elements and silos would be housed within mesh screens to rationalise their visual appearance.

- 3.1.20 Both design options were presented at a public exhibition. The curvilinear option was favoured by the majority of residents as they considered that this would lessen the visual impact of the building.

Colour

- 3.1.21 The design process further considered visual effects through the placement of colour and the proposed façade treatment.
- 3.1.22 The guidance on the selection and use of colour in development prepared for the High Weald Area of Outstanding Beauty has been adopted. It is aimed at integrating new buildings into the landscape in a way that benefits both the landscape and the built form. This can range from effectively camouflaging or minimizing the visual appearance of a utilitarian building to emphasizing the specific qualities of a place through the architecture, expressed in colour, form and massing. Good colour choices depend upon a good understanding of the proposed development in relation to its landscape setting.
- 3.1.23 The final colours chosen for the elevational treatment of the design reflect the darker, autumnal nature of the High Weald colour palette, and the desire to minimise the visual impact of the proposed facility within the landscape.

Summary

- 3.1.24 The design of the facility was achieved following a number of iterations. The design for the application was selected as the preferred option as it provided both the most operationally efficient design for the site and also the most beneficial in environmental terms. Grouping the buildings together and lowering the facility into the ground assisted in reducing the visual effect of the facility, making the most efficient use of the land.

4 Environmental Assessment Methodology

Scoping and Consultation

- 4.1.1 Scoping is the process of identifying the issues to be addressed in the Environmental Impact Assessment process. This process sets the context for the assessment process.
- 4.1.2 In addition to a stakeholder engagement exercise, including public exhibitions, a formal scoping request was submitted to West Sussex County Council and informal consultations were undertaken on a topic specific basis.
- 4.1.3 Responses were received from a range of consultees contacted by West Sussex County Council. Taking into account the nature, size and location of the proposed development, the information provided with the scoping opinion and other consultation responses provided throughout the assessment process, the following topics have been covered within the Environmental Statement:

Table 2: Information Provided within the Environmental Statement

Structure of ES	
Non-Technical Summary	Summary of the ES using non-technical terminology
Volume 1: Text	
	Glossary
Chapter 1	Introduction
Chapter 2	Site Description and Description of Development
Chapter 3	Need and Alternatives Considered
Chapter 4	Environmental Assessment Methodology
Chapter 5	Landscape and Visual Assessment
Chapter 6	Traffic and Transport
Chapter 7	Air Quality and Odour
Chapter 8	Noise and Vibration
Chapter 9	Archaeology and Cultural Heritage
Chapter 10	Hydrology and Flood Risk
Chapter 11	Hydrogeology and Ground Conditions
Chapter 12	Ecology and Nature Conservation
Chapter 13	Population and Health
Chapter 14	Summary of Mitigation and Monitoring
Volume 2: Figures	
Including all figures and drawings to accompany the text.	
Volume 3: Appendices	
Including specialist reports forming technical appendices to the main text.	

Environmental Assessment Methodology

4.1.4 Environmental Impact Assessment is a means of identifying and collating information to inform an assessment of the likely significant environmental effects of a development. For each of the key environmental topics in the Environmental Statement, the following have been addressed:

- Methodology;
- Description of the existing environmental (baseline) conditions;
- Identification of and assessment of the significance of likely effects arising from the proposed development;
- Identification of any mitigation measures proposed to avoid, reduce and, if possible, remedy adverse effects; and
- Assessment of any cumulative effects with other proposed developments planned in the area.

4.1.5 In terms of significance, effects are described using the following scale:

- Substantial: Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process with regard to planning consent. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer the most damaging impact and loss of resource integrity;
- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process;
- Moderate: These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision making if they lead to an increase in the overall adverse effect on a particular resource or receptor;
- Minor: These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project; and
- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

4.1.6 Such effects may be beneficial or adverse.

5 Summary of Environmental Effects

- 5.1.1 This section provides a summary of the findings of the environmental assessment process. For full details of the assessments, please refer to the Environmental Statement.

Landscape and Visual Resources

- 5.1.2 An assessment has been carried out to identify the significance of the effect of the proposed 3Rs Facility on:
- The character of the landscape and its component elements and features; and
 - Visual resources and the views that people experience.
- 5.1.3 The assessment has been carried out in accordance with accepted best practice guidance and its scope and focus has been guided by consultation with the relevant planning authority. Its findings are summarised below.
- 5.1.4 The site is situated within the context of the existing Brookhurst Wood landfill site and existing industrial development to the north, south and east. The site is afforded a high level of enclosure by the mature vegetation and woodland that surrounds it and by the local topography, including that of the landfill site.
- 5.1.5 The proposed development would not encroach on any farmland or woodland in the surrounding area. The proposed development would not give rise to any significant landscape effects at the local or wider scale and would not cause any significant effects upon the designated landscapes of the South Downs National Park, the High Weald Area of Outstanding Natural Beauty or the Surrey Hills Area of Outstanding Natural Beauty or Warnham Court Registered Park and Garden.
- 5.1.6 The proposed development would comprise a number of large elements but the scale and form of existing development such as the Brookhurst Wood landfill site and other industrial operations in the immediate vicinity of the site means that the landscape character area within which the site sits and adjacent character areas would be able to absorb the 3Rs Facility without compromising its key characteristics. The gently undulating landscape and high level of mature woodland that is present amongst the surrounding rural farmland provides a simple landscape when seen from more distant and elevated viewpoints that remains significantly changed uncompromised by the addition of the proposed development. The proposed development would not result in any significant effects upon the receiving and surrounding landscapes.
- 5.1.7 The main building of the facility would be of a large scale and the stack would be tall, but the building would be enclosed by a significant amount of existing screening when viewed from most close range visual receptors. The surrounding landform and the substantial existing hedgerow vegetation, tree-belts and woodland in the local area mean that the proposed building would be well screened from the majority of locations. From Station Road to the west and from a viewpoint on the A24 to the south more of the building would be visible. Having lowered the building, reduced the height of the technology and changed the design of the building to break up its massing and using muted colours from the

approved High Weald Area of Outstanding Natural Beauty colour palette, the visibility of the proposed development has been minimised. Planting within the site would assist in screening low level elements from views within the Wealden Brickworks site and the planting to the north and west would create additional ecological habitats. Significant visual effects would be limited to a small number of local views.

- 5.1.8 In longer range views, the proposed development would be barely visible from some of the more elevated parts of the study area such as from the edge of the South Downs National Park, the Surrey Hills Area of Outstanding Natural Beauty and the High Weald Area of Outstanding Natural Beauty. If noticed it would be seen as a small part of expansive views that are predominantly of an undulating, wooded and farmland landscape and it would not compromise the special qualities of these designated landscapes or the purpose of the designations.
- 5.1.9 Under certain meteorological conditions, representing less than 5% of the hours in the year, a visible plume of water vapour would be seen as an extension to the stack, which is typical of combustion processes. Where the visible plume forms, typically during cooler weather conditions, it would sometimes be seen against the backdrop of a clear sky or high cloud and sometimes it would be seen against the backdrop of cloud, when it would be less discernible. When the plume is visible, it would increase the perception of the development for visual receptors within the study area but would not make any of the effects that are likely to arise significant.
- 5.1.10 Since the original application for the 3Rs Facility was submitted, the Land North of Horsham development has been subject to a resolution to grant outline consent. When considered together with the Land North of Horsham site, the proposed 3Rs Facility would sit to the west of the urban extension of what is currently a rural landscape north of Horsham. It would have less effect on the rural character than the urban extension and the building would be well screened from it. Within the urban extension, elements of that development would dominate the local context and would further screen views of the proposed 3Rs Facility.

Traffic and Transport

- 5.1.11 The potential impacts of the traffic generated by the proposed development have been assessed. The assessment has considered the impacts of the traffic generated during its construction phase, when it is fully operational, and considered the cumulative effects with other known developments in the area.
- 5.1.12 The local roads have been characterised within and around the site through the evaluation of traffic survey data and studies. The assessment has examined the potential impacts of the development related traffic on noise and vibration, visual effects, severance, driver delay, pedestrian delay, pedestrian amenity, accidents and safety, hazardous loads and dust and dirt.
- 5.1.13 Construction effects would be managed through a Construction Environmental Management Plan and Construction Traffic Management Plan. With such measures in place, no significant construction effects have been identified. Consideration of other proposed developments in the area has not identified the potential for the construction of the 3Rs Facility to contribute to any significant cumulative effect.

- 5.1.14 During its operational phase, the proposed facility would be accessed from the A264 via Langurstwood Road and its capacity would match the capacity of waste already permitted to be managed at the site, i.e. 230,000 tonnes per annum. The proposed development would therefore not result in any increase in operational traffic over and above that already permitted. No significant effects are predicted to arise.

Air Quality and Odour

- 5.1.15 The potential air quality impacts of the proposed development have been assessed. The potential air quality effects from the construction and operation of the proposed facility that have been considered include:
- Construction effects - potential dust effects from construction activities; emissions from plant associated with on site construction and potential effects associated with emissions from construction vehicles on the local road network;
 - Operational effects (from the proposed facility) - potential air quality effects from the thermal treatment plant stack; potential fugitive dust, odour and bio-aerosol effects; and
 - Operational effects (from traffic): potential air quality effects from changes in traffic flow characteristics on the local road network associated with the operation of the proposed facility.
- 5.1.16 Impacts during the construction, such as dust generation and plant vehicle emissions, are predicted to be of short duration. Implementation of the 'highly-recommended' mitigation measures described in the Institute of Air Quality Management guidance would reduce the residual dust effects to a level that would not be significant. This would be controlled through the Construction Environmental Management Plan.
- 5.1.17 The number of vehicle movements that would be generated by construction activities is below the threshold criteria for requiring an assessment. The impacts due to emissions from construction-related vehicle emissions would not be significant.
- 5.1.18 Emissions from the proposed thermal treatment of waste have been assessed through detailed dispersion modelling using best practice approaches. The assessment has been undertaken based on a number of conservative (worst case) assumptions. This is likely to result in an over-estimate of the contributions that would arise in practice from the facility. The results of dispersion modelling indicate that predicted contributions and resultant environmental concentrations of all pollutants considered would be of negligible significance.
- 5.1.19 A plume is predicted to be visible outside the site boundary less than 5% of daylight hours in each of the five years modelled. The impact is considered low.
- 5.1.20 There would be no change in HGV movements during the operational phase over and above the site's existing consent. On that basis, vehicle-related emissions would not be significant.

- 5.1.21 Taking into account the fact that the process is contained and the relative proximity of sensitive receptors, the risk of dust impacts during operation is predicted to be very low and no significant effects are anticipated.
- 5.1.22 The risk of odour impacts has been assessed qualitatively using a source-pathway-receptor conceptual model. The likely odour effect is considered to be negligible.
- 5.1.23 Overall the effects of the facility are not considered to be significant.

Noise and Vibration

- 5.1.24 A qualitative assessment of construction noise and vibration effects has been carried out. The assessment indicates that, with suitable mitigation measures, noise is unlikely to cause a perceived change in the quality of life. Vibration is likely to be imperceptible.
- 5.1.25 The effects of change in noise levels due to road traffic on the local road network during the construction period have also been considered. The assessment indicates that changes would be negligible.
- 5.1.26 An assessment of the operational noise effects from plant and equipment operating on site has been carried out. The assessment indicates that during the daytime and evening the level of noise would be sufficiently below baseline levels of sound that it is unlikely to be audible, and would not be intrusive. During the night-time there is potential that noise from the site would be audible at some locations, but it is unlikely to cause any change in behaviour or attitude or a perceived change in the quality of life.
- 5.1.27 The effects of change in noise levels due to road traffic on the local road network during the operational period have also been considered. The assessment indicates that changes would be negligible.
- 5.1.28 In summary, there is a limited potential for noise to be audible from the site during the construction phase and during the operational phase in the night-time at a few locations only. However, it is unlikely to cause a perceived change in the quality of life. Vibration is unlikely to be perceptible.

Archaeology and Cultural Heritage

- 5.1.29 The likely significant effects of the proposed development on heritage assets in terms of archaeology, built heritage and the historic landscape have been assessed. The likely impacts have been assessed during both the construction and operational phases of the proposed development.
- 5.1.30 There are a number of designated assets in the wider area and the effect of the proposed development on these has been assessed.
- 5.1.31 There is limited evidence for prehistoric and Roman activity in the area. The site itself seems to have been woodland and then agricultural land from antiquity onwards. There is no recorded evidence for activity, other than use as agricultural land over the site until the development of the brickworks.

- 5.1.32 Most of the structures associated with the brickworks have been cleared. Those remaining within the site are part of the materials recycling facility building, which incorporates elements of an earlier steel portal type building associated with the brickworks, small brick built gatehouse or similar surviving in the south western part of the site and a single storey brick structure surviving in the centre of the site. Cartographic and architectural evidence indicates that all these structures are of post-war origin. Although no above ground remains are visible, there may be below ground remains of the southernmost Hoffman kiln formerly standing in the brickworks in the north western part of the site. Although there are several examples of Hoffman kilns which have received statutory protection, these are, apparently without exception, standing structures. Below ground remains in this location are likely to be of local significance.
- 5.1.33 The effect of the proposed development on identified on site assets is assessed as being minor adverse, which is not considered to be significant.
- 5.1.34 Appropriate mitigation measures for the proposed development have been incorporated into the assessment of residual effects. They comprise mitigation of the effect of the development on the Hoffman kiln within the site through a programme of excavation and recording of the asset prior to construction of proposed development.
- 5.1.35 There are predicted to be no significant effects on buried archaeological remains, the historic landscape, or any designated heritage assets.

Hydrology and Flood Risk

- 5.1.36 The impacts on hydrology and flood risk for the proposed development have been assessed in line with the relevant legislation, guidance, planning policy and technical documentation. In addition, the water quality of the adjacent watercourses and the potential water quality impacts of the development have been considered.
- 5.1.37 The baseline hydrology and flood risk of the development has been characterised by a desk study of published sources of information, surveys and through consultation.
- 5.1.38 Environment Agency mapping indicates that the whole of the proposed development site is located within Flood Zone 1, defined as having a less than 1 in 1,000 annual probability of river or sea flooding. This is the lowest risk category defined by the Environment Agency.
- 5.1.39 Noting the presence of significant drainage systems within the site and the relatively flat lying land, it has been assessed that the risk of overland flooding is low.
- 5.1.40 Information from the Environment Agency indicates that historical flooding has not occurred within the site boundary.
- 5.1.41 The proposed development is located within the Upper Arun operational catchment with the Boldings Brook located west of the site.
- 5.1.42 Potential impacts on hydrology and flood risk associated with the construction and operation have been considered. These include the permanent flood risk and the impact on drainage pipelines and surface water quality from potential spillages / increase in soil disturbance during the construction and operational phases. With the proposed mitigation

measures in place, including pollution control measures implemented through the Construction Environmental Management Plan, no significant effects are predicted.

- 5.1.43 The development would result in a slight increase in the impermeable area of the site. However, this would be managed through the proposed drainage strategy. The drainage strategy demonstrates that surface water run off can be practicably managed, mimicking existing flows rates and, where possible, providing an improvement. Attenuation would comprise a mix of techniques including permeable paving and underground storage in line with sustainable drainage guidance.
- 5.1.44 With the proposed measures in place, no significant effects are predicted to occur.

Hydrogeology and Ground Conditions

- 5.1.45 An assessment of hydrogeology and ground conditions has been undertaken to consider the effects of the construction and operation of the proposed facility.
- 5.1.46 The baseline conditions for the site were established through a desk based review of records and databases, together with historical reports relating to the site. Additionally, a site reconnaissance visit was undertaken. This assessment identified that ground contamination at the site was limited, with an absence of notable ground stability issues.
- 5.1.47 An assessment of impacts has been undertaken. A range of mitigation measures have been identified that address the identified impacts. The identified mitigation measures are well established and accepted methods of mitigating the identified impacts, including implementation of the Construction Environmental Management Plan.
- 5.1.48 With appropriate mitigation, the effects associated with redevelopment and operation of the site relating to hydrogeology and ground conditions have been assessed as low and the significance of effect as minor. No significant effects have been identified.

Ecology and Nature Conservation

- 5.1.49 An assessment of ecological effects has been undertaken to determine the ecological value of the site and the scale of potential impacts on the site itself and the surrounding area.
- 5.1.50 The appraisal has been informed by a range of surveys undertaken to assess the ecological value of the site including:
- A Preliminary Ecological Appraisal;
 - Great crested newt environmental DNA (eDNA) analysis; and
 - Bat emergence surveys.
- 5.1.51 These surveys found that the site has generally very low ecological value comprising mostly hardstanding and industrial buildings associated with Britaniacrest's existing operations. No bat roosts were identified on site and only very limited bat foraging/commuting activity was noted.

- 5.1.52 Ecological features of interest in the context of the site include two off site ponds supporting a population of great crested newts and areas of dense scrub/tall ruderal vegetation forming part of the terrestrial habitat for this species.
- 5.1.53 Impacts on the following habitats and species / species groups identified as ecological features have been assessed:
- Ruderal vegetation;
 - Dense scrub/small trees;
 - Off site ponds;
 - Bats (foraging and commuting);
 - Nesting birds; and
 - Great crested newt.
- 5.1.54 Effects from construction would be managed and implemented through good-practice measures and a Construction Environmental Management Plan. The loss of terrestrial habitat is likely to lead to a minor or moderate effect which may give rise to a temporary significant effect.
- 5.1.55 The loss of this habitat would be mitigated through new landscape planting in the form of wildflower grassland and areas of scrub.
- 5.1.56 There would be some minor loss of breeding bird habitat (dense scrub) that would be mitigated in the short term through the provision of a range of bird nest boxes and in the long term through the planting of new scrub areas as part of the landscape scheme.
- 5.1.57 Species protection measures would be implemented as best practice to minimise the risk of harm to great crested newts and nesting birds during site preparation and removal of very small areas of dense scrub.
- 5.1.58 Taking into account the overall low ecological value of the majority of the site, the species protection measures to be implemented and the proposed habitat creation and enhancement, there would be no significant adverse effects beyond the level of the site and its surrounds.
- 5.1.59 In the context of the low value of site, the creation of new ecologically-valuable habitats could be of minor beneficial significance for the following habitats, species and species groups:
- Bats (foraging and commuting);
 - Nesting birds (not ground nesting species); and
 - Great crested newts.

Population and Health

- 5.1.60 An assessment has been undertaken to consider the construction and operational activities associated with the proposed development that have the potential to influence health within the local population.

- 5.1.61 The scope of the population and health assessment covered the following;
- Potential health outcome from changes in exposure to construction and operational emissions to air;
 - Potential health outcome from changes in exposure to construction and operational noise emissions; and
 - Potential health outcome from changes in local transport movements during construction and operation.
- 5.1.62 Construction related emissions would not materially differ to the site's current use and would not present a level of community exposure sufficient to result in any measurable adverse health outcome. Mitigation measures implemented through the Construction Environmental Management Plan would be sufficient to control the potential dust nuisance and manage any respiratory risk to staff or neighbouring communities. This would result in a minor adverse effect, which is not significant.
- 5.1.63 Any noise generated during the construction phase of the proposed development would be temporary and controlled by good construction practices as detailed in the Construction Environmental Management Plan. The predicted effect would be minor adverse, which is not significant.
- 5.1.64 Potential health pathways associated with changes in road traffic movements include the risk of road traffic accident and injury, community severance and exposure to vehicle exhaust emissions and noise. The assessment concluded that the relative change in vehicle movements would not be of a magnitude, timing or duration sufficient to establish a significant effect, and any residual temporary disruption is to be managed through a Construction Traffic Management Plan.
- 5.1.65 Given operational emissions are not of a concentration or exposure to quantify any measurable impact to health, and would remain within air quality objectives set to be protective of health, it is considered that the impact would be low and effect on health from changes in operational emissions would be minor adverse, which is not significant.
- 5.1.66 During operation, transport movements would remain the same as currently permitted at the site and air quality and noise emissions would remain within objective thresholds set to be protective of the environment and human health. Therefore, it is concluded that the potential effects of operational noise on population and health during operation would not be significant.

Cumulative Effects

- 5.1.67 Each topic chapter of the Environmental Statement has considered the potential for significant cumulative effects to arise with other proposed development in the area, including other development in the immediate vicinity of the site as well as the proposed Land North of Horsham development. Where relevant, the effects of the proposed 3Rs Facility on future residents at the Land North of Horsham have been considered. The proposed 3Rs Facility is not considered to make any material contribution to any significant cumulative effects and no significant effects on future residents have been identified.

6 Further Information

- 6.1.1 This Non-Technical Summary provides a summary of the Environmental Statement accompanying the application for the 3Rs Facility.
- 6.1.2 Copies of the full Environmental Statement, including this Non-Technical Summary can be viewed at:
County Hall
West Street
Chichester
PO19 1EQ.
- 6.1.3 Copies of the Environmental Statement and planning application documents can be viewed on the West Sussex County Council website:
<https://www.westsussex.gov.uk/planning/find-a-planning-application/>
- 6.1.4 Further copies of the Environmental Statement can be obtained from:
RPS
20 Western Avenue
Milton Park, Abingdon
Oxfordshire
OX14 4SH
- 6.1.5 Electronic copies of the Environmental Statement (on CD) can be purchased from the above address at a cost of £10 (including postage and packaging). Paper copies of the Environmental Statement are also available from the above address, although an administrative charge will be made to cover the cost of copying.