

CHAPTER 1 – INTRODUCTION TO THE DEVELOPMENT

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List of Acronyms

Applicant	Broad Energy (Wales) Limited
BAT	Best available Techniques
B&A	Bright and Associates
Broad Energy	Broad Energy (Wales) Limited
CCTV	Closed circuit television
C&I	Commercial and industrial
CHP	Combined heat and power
CMS	Cronin Management Services
Development	All activities within the red line planning boundary (see Drawing ECL-BQ-000 in Technical Appendix TA1-1)

List of Acronyms (cont)

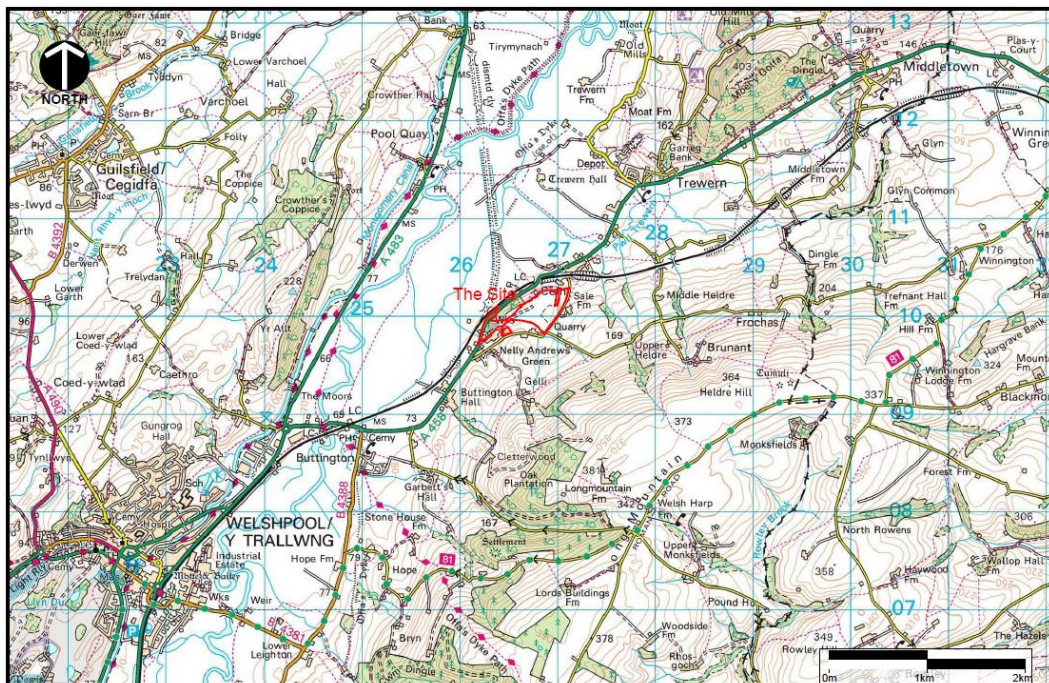
Development Site/Area	The physical site on which the Development is to be located as defined by the red line planning boundary (see Drawing ECL-BQ-000 in Technical Appendix TA1-1)
ECL	Environmental Compliance Limited
EPR	Environmental Permitting Regulations
ERF	Energy Recovery Facility
EIA	Environmental Impact Assessment
EIA Directive	Environmental Impact Assessment Directive (85/337/EEC)
EIA Regulations	Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017
EPC	Engineer Procurement and Construction
ES	Environmental Statement
EU	European Union
GW	Gigawatt
HZC	Hitachi Zosen Corporation
HZI	Hitachi Zosen Inova
The Installation	Refers only to the ERF buildings and ancillary plant and buildings (forming part of the Development).
IDL	Illume Design Limited
ITL	Intermodal Transportation Limited
KEA	Key Environmental Aspect
LDP	Local Development Plan
NVC	Noise and Vibration Consultants Limited
m	metres
MW	Megawatts
MWe	Megawatts electrical
MSW	Municipal Solid Waste
NRW	Natural Resources Wales
O&M	Operations and Maintenance
PINS	Planning Inspectorate for Wales
PCC	Powys County Council
ROMP	Review of Minerals Permissions
SUDS	Sustainable Urban Drainage Scheme
UK	United Kingdom

1. INTRODUCTION

1.1. Overview

- 1.1.1. Broad Energy (Wales) Limited (“Broad Energy” or the “Applicant”) is submitting an application for Planning Permission to Welsh Ministers, under Part 5 of the Planning (Wales) Act 2015, for the construction and operation of an Energy Recovery Facility (“ERF”) and ancillary infrastructure (“the Development”).
- 1.1.2. This document is the Environmental Statement (“ES”) submitted in support of the planning application. The ES is a document which describes the Development and provides an assessment of the likely significant effects that may arise from the construction and operations of the Development.
- 1.1.3. This introductory chapter describes the background to the Development, an overview of the proposal and history to date; the Development team and the structure of the ES.
- 1.1.4. The ERF would be capable of generating around 13MWe of low carbon and renewable energy through the thermal treatment of up to 167,000 tonnes per annum of residual and commercial and industrial wastes. The Development would be located at Buttington Quarry, Buttington, Welshpool, Powys, SY21 8SZ. The location of the Quarry is shown in Figure 1-1. The planning boundary is shown on Drawing ECL-BQ-000 Rev 3 in Technical Appendix 1-1.

Figure 1-1: Site Location



1.2. Development Summary

- 1.2.1. A detailed description of the Development upon which the assessment within this ES is based is set out in Chapter 4, together with a description of the construction and operational phases.
- 1.2.2. The proposal is for the construction and operation of an energy recovery facility for the importation, storage and treatment of municipal, commercial and industrial waste and generation of heat and electricity, involving partial re-profiling of quarry void, earth works, alteration to existing residential access and provision of new vehicular site access from the A458, ancillary buildings, structures, sub-station and grid connection, parking, hardstanding including laydown areas for materials storage and plant, fencing, gates and CCTV, weighbridge and office, sustainable drainage measures, landscape works and ecological enhancements on land at Buttington Quarry, Welshpool, Powys, SY21 8SZ.
- 1.2.3. By way of introduction and in summary form, the Development would comprise the following elements:
- a waste reception hall and bunker;
 - an energy recovery facility (ERF) to recover the energy and heat from the residual waste;
 - facilities to manage the products and outputs from the ERF; and
 - ancillary infrastructure described below.
- 1.2.4. The main building would comprise the waste reception hall and bunker and the ERF. Additional buildings include an administration building and maintenance building.
- 1.2.5. Ancillary infrastructure would include:
- a weighbridge and associated offices;
 - transformer and energy generation buildings;
 - storage tanks and silos;
 - access road and site haul roads;
 - utilities and services (including lighting);
 - security, CCTV and fencing;
 - grid connection and sub-station;
 - parking and laydown areas;
 - air cooled condensers;
 - 70m high discharge stack;
 - landscaping scheme and ecological enhancement works; and
 - a sustainable urban drainage scheme (SUDS) and associated balancing ponds.
- 1.2.6. The Development would receive up to 167,000 tonnes per annum of residual waste. The residual waste to be processed would comprise non-hazardous commercial and industrial waste (“C&I waste”) and residual municipal solid waste (“MSW”).
- 1.2.7. The wastes to be accepted would already have been treated in materials recovery facilities, consequently, would have little, if any, recyclates to be recovered.
- 1.2.8. Through the combustion of residual waste, it would generate energy in the form of steam. The steam would then drive a steam turbine to generate electricity. A small proportion of

the energy generated would be the parasitic load required for the ERF, with the remaining exported to the local electricity grid. Based on the maximum electrical output and approximately 7,900 operational hours per year, the Development would export circa 101,120MWe hours per annum.

- 1.2.9. The ERF is CHP ready. Should there be a future demand and an end user identified in the future, it is anticipated that heat generated by the Development could, in principle, be exported by underground pipework to local agricultural or commercial uses. Potential opportunities for heat export are discussed in Chapter 3 of this ES. However, it should be noted there is no end user currently identified for the exportation of heat, no terms have been agreed with any such user and consequently any such connection to a future end user does not form part of the Development applied for or project to be assessed within this ES.
- 1.2.10. The Development would be fully compliant with all relevant European Union (“EU”), United Kingdom (“UK”) and Welsh Government legislation and will be required to operate under the conditions of an Environmental Permit to be issued by Natural Resources Wales (“NRW”).
- 1.2.11. Following the grant of planning permission, construction is anticipated to commence on site in 2022 and take approximately 36 months. Commencement of operations would therefore be around 2025. The ERF would have a design life of approximately 25-30 years, however, in reality the ERF would last well beyond this, with the ability for the equipment within the building to be upgraded/replaced as required in the future. The building itself will last well over 30 years. This planning application is therefore for a permanent development.

1.3. Environmental Impact Assessment

- 1.3.1. The Environmental Impact Assessment Directive (85/337/EEC) (“EIA Directive”), and subsequent amendments requires that, before granting ‘development consent’ for projects, including development proposals, a procedure known as environmental impact assessment should be undertaken in respect of any project which is likely to have significant effects on the environment.
- 1.3.2. The EIA Directive has been transposed into UK law by regulations. The current regulations in Wales which are applicable to the Development and must be complied with are the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (“EIA Regulations”).
- 1.3.3. The EIA Regulations specify certain types of development for which ES is mandatory (Schedule 1 projects), and categories of development where an ES may be required (Schedule 2 projects) dependent upon the likely significance of the impacts. In connection with the proposals at Buttington Quarry it is considered that they are Schedule 1 development:
“waste disposal installations for the incineration...of non-hazardous waste with a capacity exceeding 100 tonnes per day”. (Category 10)”
- 1.3.4. As such, the proposed Development is “EIA Development” for which an ES is mandatory and consequently this ES has been prepared following a detailed scoping exercise (as

detailed in ECL Report ECL.001.01.02/RFS and DNS: EIA Scoping Direction 3201953).

1.4. The Site

- 1.4.1. A detailed description of the Development Site and surrounding area may be found in Chapter 5 – The Existing Development. The planning boundary is shown on ECL Drawing ECL-BQ-000 in Technical Appendix 1-1. For ease of reference, an aerial view of the planning boundary is shown as Figure 1-2.

Figure 1-2: Planning Boundary



- 1.4.2. Where there are any specific receptors or other important considerations, these are discussed in each Key Environmental Aspect (“KEA”) chapter.
- 1.4.3. In summary, Buttington Quarry is located on the A458 Shrewsbury to Welshpool road (at NGR: 326690, 310106) located approximately 1.5km to the south of the village of Trewern, as shown in Figure 1-1.
- 1.4.4. Buttington Quarry occupies a total land area of 18 hectares and is bounded by the A458 to the northwest, Sale Lane to the east and Heldre Lane to the south (both being unclassified roads). The Welshpool-Shrewsbury railway line runs immediately northwest of the A458, towards the northernmost point of the quarry crossing under the A458 and for a short section runs between the A458 and the Site boundary. The quarry is accessed from the A458 and the existing access road is located within the landownership of the quarry.

- 1.4.5. The quarry is surrounded by open countryside with the village of Buttington located approximately 2km to the south-west and Trewern approximately 1.5km to the north-east. Directly to the north-east of the Site is an outlying area of Trewern known as Cefn. This comprises an additional area of sporadic isolated houses and a larger area of residential development, including a school.
- 1.4.6. The quarry operated from the late 19th Century and included a brickworks with permissions approved in 1961 and 1997 for extensions to the original quarry workings (Planning Consent 379 dated 2nd August 1948). The quarry now operates in accordance with the requirements of planning permission granted in 2010 in accordance with a Review of Mineral Permissions (“ROMP”) under the Environment Act 1995 (Planning Permission ref: P/2010/0165). In addition, planning permissions have been granted for an improved access approximately 155m north east of the existing quarry access - Planning Permission Ref. P/2015/0439). A Section 73 application (Planning Permission Reference 20/0575/REM) was submitted in April 2020 to request an extension of time for implementation of this permission which granted in September 2020.
- 1.4.7. Buttington Quarry is a working claypit which previously supplied clay to the adjoining Buttington Brickworks and since the closure of the brickworks in 1990, has continued to of clay for low grade construction purposes. Buttington Quarry is home to a number of commercial operations – quarrying, logistics etc. During 1999-2008 there was a considerable output of clay (circa 75,000 to 95,000 tonnes per annum) and decorative stone outputs of around 40,000 -50,000 tonnes per annum. When considering the that the decorative stone sales also involved an equal tonnage of bulk material being imported to site, both operations involved around 150,000 – 195,000 tonnes per annum of material being imported/exported from the site.
- 1.4.8. The former brickworks buildings are now occupied and used for third party commercial uses including storage and distribution.
- 1.4.9. Six hectares of the Quarry, including the existing quarry void and the former brickworks site, has been allocated for B1, B2 and B8 employment development under Policy E1 - Employment Proposals on Allocated Employment Sites, in the adopted Powys Local Development Plan (“LDP”) 2011-2026. The supporting text in the Plan also suggests that it may also be an appropriate location for the storage and processing of wastes arising from construction and demolition.

1.5. The Applicant

- 1.5.1. The Broad Group is a multi-disciplinary group of companies providing, Environmental Waste Management Services, Renewable Energy Infrastructure Development and Alternative Fuel Supply Chain Services to the renewable energy sector.
- 1.5.2. Established in 2013 with offices in Shrewsbury, Manchester and London, Broad has grown into one of the industry’s leading waste management businesses with a multi-million-pound turnover and an ever-growing client base of some of the UK’s largest private and public businesses.

- 1.5.3. Broad Energy (Wales) Limited is a special purpose company that has been established by Broad Group (UK) Limited to develop the proposed ERF. This independently owned and operated company will form the key anchor delivering long term cost effective and efficient energy and heat services as part of the wider aspirations of the owners of Buttington Quarry to create a sustainable eco-business park.
- 1.5.4. The management team at Broad Energy has forged close working relationships with industry leaders in the renewable energy market sector, enabling the company to deliver a “one-stop-shop” for businesses wanting to maximise land value through the development of a sustainable energy infrastructure solutions.
- 1.5.5. The proposed ERF within Buttington Quarry will support and act as a catalyst for the wider aspirations for the quarry to create a sustainable eco-business park.
- 1.5.6. Broad Energy has formed a strategic partnership with global leader Hitachi Zosen AG (“HZI”) to design, build and operate a facility that will support the generation of renewable energy and heat through the use of non-recyclable waste.
- 1.5.7. This partnership is keen to ensure that all future developments at the site contribute to the local economy and offers new job opportunities to the local community and is keen to assist Powys County Council (“PCC”) with local recycling initiatives.

1.6. The Operator

- 1.6.1. HZI Zosen AG (“HZI”) is a wholly owned subsidiary of Hitachi Zosen Corporation (“HZC”), a Japanese industrial services business with an average annual turnover of circa £2.65 Billion and a current net asset value of circa £800 Million. HZI would be both the main technology supplier and operator of the ERF.
- 1.6.2. HZI is a global technology leader for energy and material recovery from MSW, refuse derived fuel (“RDF”) and organic waste. HZI acts as an engineering, procurement, and construction (“EPC”) contractor delivering complete turnkey plants. HZI solutions are based on efficient and environmentally sound in-house technology, are thoroughly tested, can be flexibly adapted to user requirements, and cover the entire plant life cycle. HZI’s portfolio is rounded off with strong operation and maintenance (“O&M”) capabilities.
- 1.6.3. HZI’s customers range from experienced waste management companies and municipalities to up-and-coming partners in new markets worldwide. HZI has developed innovative and reliable solutions for grate combustion, anaerobic digestion, flue gas treatment, and material and energy recovery.
- 1.6.4. HZI is the global leader in the design, procurement and construction of moving grate Energy from Waste facilities, with over 250 Energy from Waste references worldwide including 11 in the UK and Ireland.
- 1.6.5. HZI has an experienced and knowledgeable team of engineers and technicians of more than 300 based in Zurich. HZI adopt an integrated approach from first concept design, through to commissioning and operation, including long term major maintenance and overhaul services. For all the key components, HZI have developed in house proprietary

technologies that are tried and tested in design, manufacturing, supply, installation and operation over many years and many projects.

- 1.6.6. Specific UK and Ireland experience includes the facilities shown in Table 1-1. These were completed or are under construction over the last 10 years providing a total waste processing capacity of circa 3.8 million tonnes per year.

Table 1-1: HZI Reference Plants

Project	Status	Client	Start Up Date	No of Lines	Nominal Capacity (tonnes/per annum)
Ferrybridge Multifuel 2	In construction	Multifuel Ltd	01.01.2019	2	550,000
Edinburgh	In construction	FCC	06.12.2018	1	154,000
Dublin	Under warranty	Covanta	01.06.2017	2	600,000
Herefordshire & Worcestershire	In operation	FCC/ Urbaser (Mercia)	01.01.2017	1	200,000
Sevenside L1, L2	In operation	Suez	01.05.2016	1	150,000
Buckinghamshire	In operation	FCC	03.09.2015	1	300,000
Ferrybridge Multifuel 1	In operation	MEL	02.06.2015	2	500,000
Cleveland L4, L5	In operation	Suez	01.01.2013	2	250,000
Newhaven	In operation	Veolia	06.08.2011		300,000
Riverside, London	In operation	Cory	02.02.2011		650,000
Cleveland L3	In operation	Suez	01.01.2009		150,000
Total Capacity					3,804,000

1.7. Project Funding

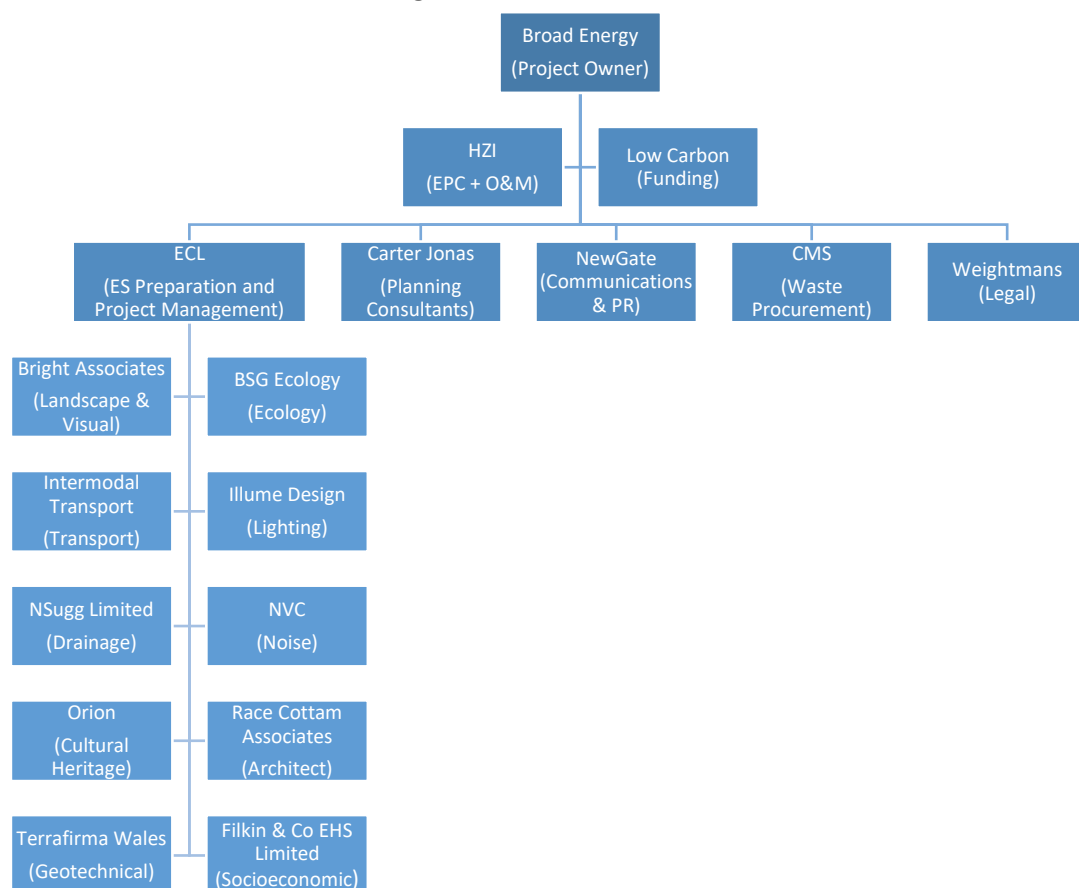
1.7.1. Low Carbon Limited is a privately-owned UK investment and asset management company focused on renewable energy investments. To date, Low Carbon have invested in and developed more than 700MW of renewable energy projects and has a renewable energy development pipeline of around 4GW. Low Carbon currently owns five waste to energy projects and the team has reached financial close on more 175MW of waste to energy with a total expected value of around £1.5 billion over the last 10 years. Low Carbon’s dedicated Asset Management team also manages around 1GW of operating renewable energy assets for Low Carbon and other third parties.

1.8. The Environmental Impact Assessment Team

1.8.1. To deliver this project, Broad Energy has put together a team of consultants with the necessary expertise and experience to complete this project.

1.8.2. The planning application and ES preparation has been co-ordinated and managed by ECL who have overall responsibility for the preparation of the ES. A detailed consultant list may be found in Technical Appendix 1-2. This section and the annexed detailed consultant list together describe the expertise of the person who prepared the relevant ES Chapters and EIA team as required by Regulation 17 of the EIA Regulations.

Figure 1-3: The EIA Team



- 1.8.3. **Bright and Associates** undertook the landscape and visual assessment and were responsible for the production of Chapter 9: Landscape. The firm employs a total of three landscape architects, one CAD/illustrator and one administrative staff member and are led by Rick Bright. Given the specialism in landscape assessment B&A very often work as a sub consultant to a lead planner or larger environmental consultancy, or indeed as part of a bespoke team selected for a given project.
- 1.8.4. **BSG Ecology** undertook various ecological assessments including the provision of advice with respect to the ecological requirements of UK planning applications and appropriate ecological survey and mitigation measures. BSG were responsible for the production of Chapter 10 – Ecology. BSG Ecology was formed in 1997 and is one of the largest independent ecological consultancies in the UK, employing almost forty ecologists. The company provides a complete ecology service from baseline survey for habitats and protected species to impact assessment, biodiversity management planning, project design and expert witness advice. In 2019 BSG won the Chartered Institute of Ecology and Environmental Management (CIEEM) Award for Outstanding Best Practice, and in 2018 the company was CIEEM’s Medium (sized) Consultancy of the Year. BSG have provided planning support to a number of energy from waste plants including Rookery Pits (Bedfordshire), which was the subject of the first Development Consent Order, and the Riverside Resource Recovery Facility (Greater London). BSG undertakes considerable wider energy sector work, and has been involved in numerous Welsh (and wider-UK) wind farms and solar parks, the decommissioning of nuclear plant and both conventional and new nuclear power stations. The company has worked on protected species issues in relation to the conservation and restoration of many of Wales’s built heritage assets, as is also active in the infrastructure, public, minerals, residential and commercial sectors
- 1.8.5. **Carter Jonas** was founded in 1855, when Carter Jonas set himself up as an auctioneer in Cambridge. Today, Carter Jonas has over 800 people working in 33 offices, strategically placed across the UK. Carter Jonas are a multi-disciplinary property partnership. The specialist team of Chartered Surveyors and Chartered Planners is recognised as a leading provider of specialist estate management, valuation and development advice relating to all mineral properties and waste management matters and infrastructure. The team advises landowners, operators, financial institutions and infrastructure providers throughout the UK and has considerable experience of projects involving aggregates, industrial and energy minerals, construction materials manufacturing plants and all types of waste management facilities.
- 1.8.6. **CMS** is an independent consulting business operating within the environmental services sector. The business focuses on the UK waste sector specifically linked to investment and business development linked to infrastructure. The Company is led by Nigel Cronin who spent over 12 years as a Technical Director within SLR Consulting, a leading global environmental consulting group. During that period, Nigel was involved with many of the UK’s largest due diligence exercises and was highly involved in commercial market assessments relating, amongst others, to the Montagu acquisition of Biffa, the FCC acquisition of Waste Recycling Group and Viridor acquisition of Brett Waste Management. The business continues to be invited to support market assessments in support of waste management companies, feedstock supply arrangements and sale processes across the UK, either working independently or within associate arrangements.

- 1.8.7. **Environmental Compliance Limited (“ECL”)** was established in 2001 and are one of the largest providers of environmental consultancy and monitoring services in the UK, and is the largest emissions monitoring test house in Wales and among the top 5 in the UK. ECL is a privately owned company and is dedicated to offering clients a professional service with a personal touch. ECL project managed the planning application (including ES preparation) and environmental permit variation application process. This included:
- scoping and preparation of Environmental Statement;
 - on-going liaison with the Planning Authority and relevant Statutory Consultees;
 - on-going liaison with the Local Community and attendance at public consultations;
 - on-going liaison and management of the EIA Team;
 - production of the following chapters of the ES:
 - Chapter 1: Introduction;
 - Chapter 2: The Approach to the EIA;
 - Chapter 3: Needs and Alternatives – alternative technology only;
 - Chapter 4: The Proposed Development;
 - Chapter 5: The Existing Environment;
 - Chapter 6: Air Quality;
 - Chapter 15: Overall Health Impact: and
 - Chapter 16: Cumulative Impact and Summary of Mitigation.
 - Oversight and coordination of preparation of the whole ES;
 - provision of advice on regulatory compliance (Best Available Techniques (“BAT”) assessment and Environmental Permitting Regulations (“EPR”) Applications);
 - preparation of supporting specialist modelling studies; and
 - completion of the application documentation.
- 1.8.8. **Filkin and Co EHS Limited** prepared Chapter 7 – Socioeconomic. Filkin and Co was started in 2012 to offer a specialist waste, environmental management and socio-economic assessment practice offering a valuable combination of knowledge, ingenuity and versatility. Their experience encompasses a broad range of technical and regulatory aspects of waste, resource and manufacturing management. Core specialisms centre on strategic development and the practical aspects of implementation, operation and monitoring / verification. They have provided waste management solutions for a range of industrial processes and have a track record of managing complex and challenging waste projects from inception through to build and operation. Filkin and Co EHS are a member of the Waste Facilities Audit Association and have been extensively involved with permitting and planning associated with waste and manufacturing facilities.
- 1.8.9. **Intermodal Transport Limited (“ITL”)** prepared the ES Highways and Transport Chapter 8, and the standalone Transport Assessment. Intermodal Transportation Ltd (ITL) is a dynamic established transportation / highway and drainage consultancy. ITL operates nationally in the UK, with expertise covering all modes of land transport, highway design, flood risk and drainage associated with new and existing developments. The company has been trading since September 2000 and has undertaken commissions in the following sectors since its inception; waste management, mineral extraction, residential, retail, leisure, industrial and education. ITL has undertaken commissions for many public and private sector Clients including; Essex County Council, the Department for Education, Braintree District Council, Epping Forest District Council, Uttlesford District Council, DSGI Retail, Phase 2 Planning, Blue Sky Design Services, Jones Lang LaSalle, Kier Construction, Heyhill Land, Stonebond Properties, McAvoy Group, Andrew Martin Planning, Granville Developments, Mersea

Homes, Broad Environmental, Ingrebourne Valley, Encora Energy, in addition to many other Architects, Planning Consultants, Educational Establishments, Counties, Districts and London Boroughs.

- 1.8.10. **Illume Design Ltd** (“IDL”) is a specialist lighting design consultancy with experience and knowledge in lighting impact assessments, mitigation and lighting design. Illume Design have experience of producing standalone Lighting Impact Assessments and ES Lighting chapters. Illume Design is experienced in dealing with ecological and environmental constraints. Each of Illume Design’s team have suitable academic and professional qualifications and experience, with professional qualifications including Chartered Electrical Engineer, full member of the Institute of Lighting Professionals (ILP), full member Society of Light and Lighting (SLL), and full member of the Chartered Institute of Building Services Engineers (CIBSE). IDL designed the lighting scheme and provided input into the Ecology Chapter of the EIA.
- 1.8.11. **NewGate Communications’** Newgate is a market leader in providing communications support on DNS applications. We have worked on 19 Nationally Significant Infrastructure Projects (“NSIPs”) to date, including solar, battery storage, airport expansion, energy from waste, rail freight, commercial, road, nuclear power, Combined Cycle Gas Turbines (“CCGT”), biomass and offshore wind developments. We are experienced in every area of communications through the DNS process - from devising and delivering robust consultation programmes to ensure compliance with statutory guidelines, to managing the reputational risks of bringing forward a major infrastructure project. Newgate is uniquely placed to support developers across the region, applying our experience and expertise to deliver successful projects on their behalf. We have a vast portfolio of successful DNS projects and are currently working on several proposals. As an agency, we provide a full understanding and unique insight into the political landscape, which is essential when carrying out a comprehensive stakeholder engagement programme.
- 1.8.12. **NSugg Limited** undertook a detailed drainage assessment of the proposed project together with developing the drainage strategy for the site and was responsible for the production of Chapter 11 – Water Environment. Nicola Sugg formed NSugg Limited in 2012 to provide hydrogeological and hydrological consultancy support to the waste and mineral industries and to developers. Nicola has a total of over 17 years’ experience as an environmental consultant in the UK, undertaking hydrogeological and flood risk assessments to support all development types.
- 1.8.13. **Noise & Vibration Consultants Ltd** (“NVC”) is an independent consultancy providing expert technical support over a wide range of acoustic services in environmental, industrial and commercial noise and vibration issues, spanning over 35 years. The company is a Member of the Association of Noise Consultants and the Consultant dealing with the EIA has significant experience in dealing with the assessment, design and testing of Energy Recovery Facilities over the last 15 years and over 800 waste related facilities over the last 20 years. NVC were responsible for the production of Chapter 14 – Noise.
- 1.8.14. **Orion Heritage** is an archaeological and heritage consultancy. The company provides independent advice to the private sector aimed at resolving the often conflicting demands of heritage conservation while also achieving profitable and sustainable development. Orion provides advice on all stages of the promotion and construction of proposed developments. This ranges from land acquisition/due diligence, through the design and

planning application (both outline and detailed) process, to the eventual discharge of archaeological and historic building conditions. This work routinely involves the production of desk-based assessments and historic environment ES chapters for TCP and NSIP schemes, negotiations with local planning authorities, the costing and management of archaeological investigations, and expert witness at public inquiry. Orion prepared Chapter 12 – The Historic Environment.

- 1.8.15. **Race Cottam Associates** are the architect appointed for the Development and were responsible for the design of the Installation and produced all associated drawings and images. Race Cottam Associates have been involved with the design and delivery of some of the key energy, recycling, waste, energy from waste, sewerage treatment schemes in the UK over the last 25 years. Race Cottam have achieved award winning schemes such as Creed Park Integrated Waste Management Facility Stornoway, in the Western Isle and the Integrated Waste Management Facility for RE3 at Smallmead and Longshot Lane Reading. More recently Race Cottam are a leading member of the successful team for the Design, Consenting and Construction phases of Allerton Waste Recovery Park North Yorkshire & City of York, Milton Keynes Waste Recovery Park for AmeyCespa, Protos EFW Ince Marches for Covanta/Peel and Ferrybridge 1 MFEF with HZI & SSE.
- 1.8.16. **Terrafirma Wales Limited** is a privately owned, professional Geotechnical and Geo-Environmental Engineering and Site Investigation Consultancy, established in 2000. Operating from Cardiff throughout the UK providing environmental and geotechnical advice and solutions to a range of clientele from individuals to national companies. Terrafirma prepared Chapter 16 – Geotechnical and Materials Management, this chapter considers the potential environmental impact construction and operation of Buttington ERF might have on the soil, surface water and groundwater environments and the health of future site users. It also addresses how the integrity of the newly formed slopes bordering the development area will be maintained to ensure long term stability.
- 1.8.17. **Weightmans** is a full service national law firm, with its head office in Liverpool and offices throughout the UK. Weightmans has a highly regarded Planning & Infrastructure Consents team, which advised both private and public sector clients on some of the most complex projects in the country. For this project, the Weightmans team, led by Lee Gordon, has amongst other things been responsible for a legal compliance review of the ES to ensure EIA regulatory requirements are met.

1.9. The Environmental Statement

- 1.9.1. This document is the Environmental Statement (ES) which has been prepared in accordance with the requirements of the EIA Regulations in respect of the proposed Development. It describes the potential environmental effects of the Development during the construction, operational and decommissioning phases.
- 1.9.2. Following this introductory chapter, the remainder of the ES is structured as follows:
- **Chapter 2 – The Approach to the EIA:** This chapter details the scoping process, the public consultation process and details why each aspect of the environment has been selected for assessment. This chapter will explain the EIA methodology and describes the structure and content of the ES. In particular, it will detail the process of identifying the potential likely significant environmental effects of the

Development to be assessed and the method of assessing the significance of the effects;

- **Chapter 3 - Needs and Alternatives:** This chapter will outline why the Development is required and discusses any alternatives in respect of other sites, and technologies, that have been considered by the applicant and why they have been dismissed in favour of the Development;
- **Chapter 4 - The Proposed Development:** This chapter will detail the construction and operational activities associated with the Development;
- **Chapter 5 - The Existing Environment:** This chapter will provide the historical context of the Development and will include information relating to the location and character of the Site and its surroundings, its planning history and historical land use. It will identify significant consents and licenses issued on land within or adjacent to the Site, geological, hydrogeological and hydrological data as well as access and infrastructure data. This chapter will set the baseline which will be used to inform the assessment of effects of the Development in subsequent chapters.
- **Chapters 6-17 - Key Environmental Aspects (KEA) Chapters:** these are based on the response to this Request for Scoping Direction obtained from the Planning Inspectorate for Wales (“PINS”). The following KEAs (or EIA topics) are covered within separate chapters within the ES:
 - Air Quality;
 - Health Impact;
 - Transport;
 - Landscape;
 - Ecology;
 - Water Environment;
 - Historic Environment;
 - Socio-Economic;
 - Noise;
 - Geotechnical and Materials Management;
 - Cumulative and Interactive Impact; and
 - Summary of Mitigation.

1.10. Other Documentation

- 1.10.1. The ES comprises the main ES (ECL Document ECL.001.01.02/ES) and associated Technical Appendices, together with the Non-Technical Summary of the ES (ECL Document Reference: ECL.001.01.02/NTS).
- 1.10.2. In addition to this ES the following documents are submitted with the DNS application:
- Application Forms and Notices;
 - Drawings which describe the Development;
 - Waste Planning Statement;
 - Preapplication Consultation report; and
 - Design and Access Statement.

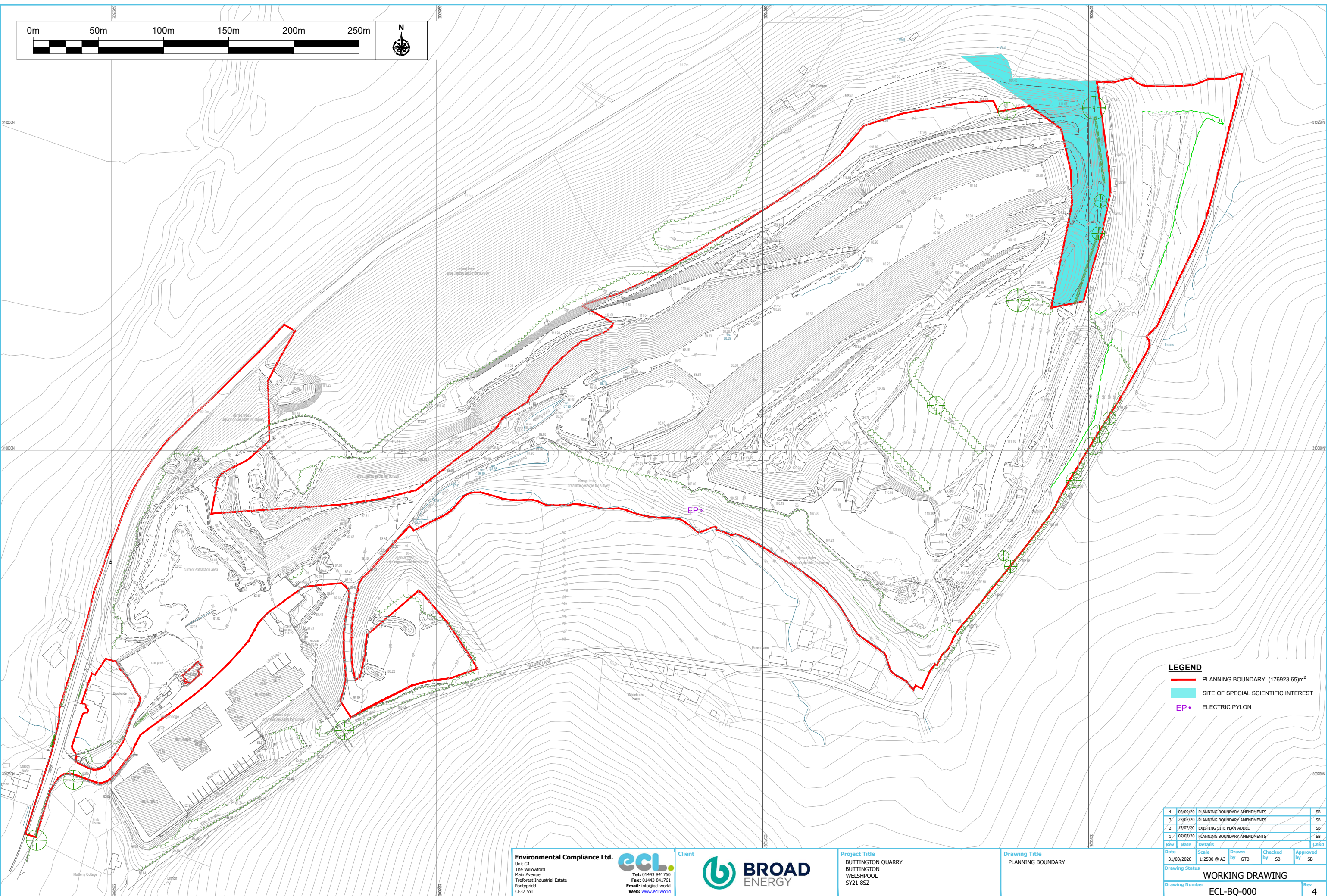
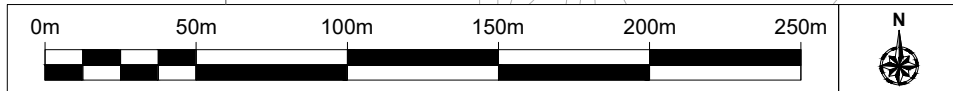
1.11. ES Availability

- 1.11.1. Due to current COVID-19 restrictions hardcopies cannot be placed within local council offices or libraries. Broad will continually review this position and will make any announcements regarding the placement of hardcopies on the project website – www.broadenergywales.co.uk.

Technical Appendix 1-1

Drawings

- **ECL-BQ-000: Planning Boundary**
- **ECL-BQ-001: Proposed Site Plan**



LEGEND

- PLANNING BOUNDARY (176923.65)m²
- SITE OF SPECIAL SCIENTIFIC INTEREST
- ELECTRIC PYLON

Rev	Date	Details	Drawn by	Checked by	Approved by	Chkd
4	03/09/20	PLANNING BOUNDARY AMENDMENTS				SB
3	23/07/20	PLANNING BOUNDARY AMENDMENTS				SB
2	15/07/20	EXISTING SITE PLAN ADDED				SB
1	07/07/20	PLANNING BOUNDARY AMENDMENTS				SB

Date	Scale	Drawn by	Checked by	Approved by
31/03/2020	1:2500 @ A3	GTB	SB	SB

Drawing Status: **WORKING DRAWING**

Drawing Number: **ECL-BQ-000** Rev: **4**

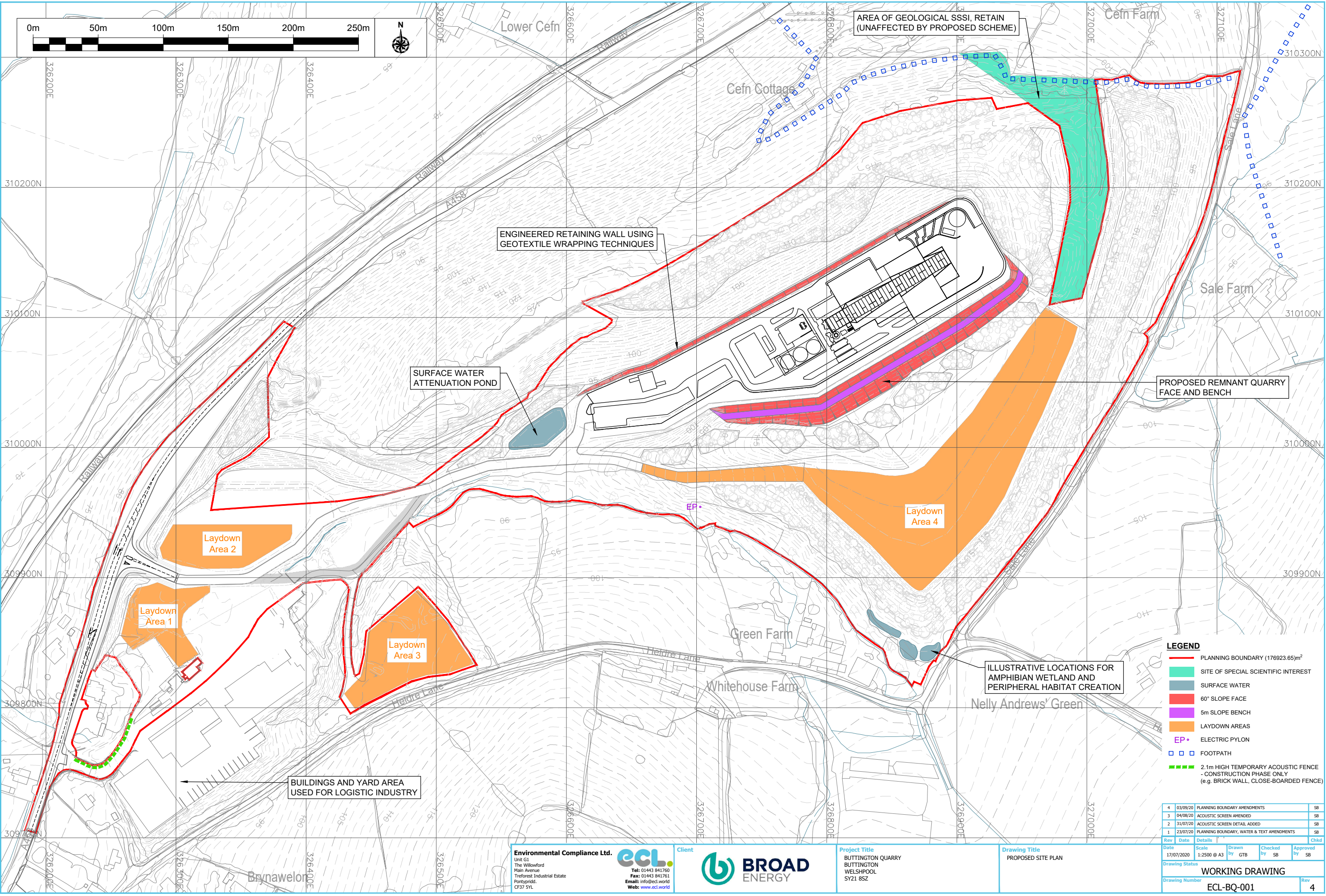
Environmental Compliance Ltd.
 Unit G1
 The Willowford
 Main Avenue
 Treforest Industrial Estate
 Pontypridd,
 CF37 5YL



BROAD ENERGY

Project Title
 BUTTINGTON QUARRY
 BUTTINGTON
 WELSHPOOL
 SY21 8SZ

Drawing Title
 PLANNING BOUNDARY



LEGEND

- PLANNING BOUNDARY (176923.65m²)
- SITE OF SPECIAL SCIENTIFIC INTEREST
- SURFACE WATER
- 60° SLOPE FACE
- 5m SLOPE BENCH
- LAYDOWN AREAS
- ELECTRIC PYLON
- FOOTPATH
- 2.1m HIGH TEMPORARY ACOUSTIC FENCE - CONSTRUCTION PHASE ONLY (e.g. BRICK WALL, CLOSE-BOARDED FENCE)

Rev	Date	Details	Drawn by	Checked by	Approved by
4	03/09/20	PLANNING BOUNDARY AMENDMENTS			SB
3	04/08/20	ACOUSTIC SCREEN AMENDED			SB
2	31/07/20	ACOUSTIC SCREEN DETAIL ADDED			SB
1	23/07/20	PLANNING BOUNDARY, WATER & TEXT AMENDMENTS			SB

Date	Scale	Drawn by	Checked by	Approved by
17/07/2020	1:2500 @ A3	GTB	SB	SB

Drawing Status: **WORKING DRAWING**

Drawing Number: **ECL-BQ-001** Rev: **4**

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 Main Avenue
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BROAD ENERGY

Project Title
 BUTTINGTON QUARRY
 BUTTINGTON
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Drawing Title
 PROPOSED SITE PLAN

Technical Appendix 1-2 Consultant Expertise and Qualifications

CONSULTANT EXPERTISE AND QUALIFICATIONS

KEA/Area	Personnel	Qualifications	Experience
Air Quality	Sarah Burley	BSc MSc MRSC	Sarah is Technical Director of ECL and has over 18 years experience in environmental consultancy. She is highly skilled in the preparation of Environmental Permit Applications, Variations and Surrenders, and as both an EIA practitioner and Project Director. Sarah has undertaken numerous air quality assessments for both planning and permitting applications across a wide range of sectors. She has also been involved in the preparation of numerous EIA's for waste and energy developments.
Architectural	David Speddings	BA(Hons) DipArch(Dist) RIBA	David is a Director and registered Architect of Race Cottam Associates. He is the practice lead for all waste, energy and recycling schemes. David has 25 years of experience of designing and achieving Planning Approvals for projects that have 'special' planning issues whether it is a sensitive site location or have high levels of public interest. His experience in working with a wide range of waste technologies enables David to rapidly assimilate information and generate designs and layouts.
Communications	Zoe Ensor	BA (Hons) Journalism	Zoe is a Partner at Newgate. Since joining the company in 2016 she has worked on over a hundred planning applications. She has specialised in energy and infrastructure projects, with her clients including EDF, EON, Inovyn, National Grid, Centrica, Suez, Viridor and FCC Environment.
	Joshua Bell	BA Politics MA Global Justice	Joshua joined Newgate Communications in September 2018, after working in the National Assembly for Wales for several senior politicians. He worked for the Minister for Environment (Wales), Hannah Blythyn, in her Assembly Member capacity, as a speech writer, researcher, and communications assistant. Joshua has almost five years political experience, having delivered successful election campaigns in North Wales and managed large political conferences. Since joining Newgate, he has developed a vast working knowledge and experience of the DCO process in England, and DNS process in Wales.
Developer	Alistair Hilditch-Brown	CEO	CEO leading the charge against waste crime and driving innovation in renewable energy. Strategic thinker running an industry-leading service provider with offices in London, Manchester and Shrewsbury. Founder of The Broad Group, which encompasses Broad Environmental, Broad Fuels, Broad Energy and Broad Consulting, advising some of the world's largest commercial estate agents and private landlords on addressing challenges in the waste and energy sectors. An experienced C-suite executive with a proven background in business development and infrastructure, combining strong sales with managerial acumen to deliver sustained growth.
Ecology	Owain Gabb Director, BSG Ecology	MCIEEM, CEnv, MSc, BSc (Hons)	Owain has worked as a professional ecologist 1999, and in consultancy since 2003. He is a specialist ornithologist and experienced all round ecologist with particular experience working in the energy sector. He has managed all aspects of the ecological inputs to significant infrastructure projects, including various Welsh wind farms, large-scale solar sites and, in a former role, new nuclear facilities.

KEA/Area	Personnel	Qualifications	Experience
Ecology	Caroline O'Rourke Senior Ecologist, BSG Ecology	ACIEEM, PGdip, BA.	Caroline has worked in consultancy since 2009. She has particular expertise in botany and is also experienced in protected species survey (holding survey licences for Great Crested Newts and Dormice in England and Wales). Caroline has worked on Ecological Impact Assessments for minerals and residential developments, and has experience working in a range of other sectors, particularly energy and heritage.
Environmental Permitting	Clare Boles	BSc MCIWM	Clare is co-Director of ECL, and has twenty seven years of experience in waste management, providing technical and environmental expertise within both the public and consulting sector. Clare has specialised primarily in waste management licensing and permitting, pollution prevention and control, environmental monitoring and assessment and regulatory compliance. Clare has been Project Manager of over two hundred Environmental Permit applications for a wide variety of waste management facilities including Energy Recovery Facilities, landfills, anaerobic digestion plant, materials recycling facilities and transfer station, and hazardous waste recycling facilities. Clare has eight years in waste regulation, licensing and environmental protection having formerly worked in Environment Agency Wales, the Environment Agency, and previously the Waste Regulation Authority.
Existing Environment	Sara Jones	BSc PIEMA	Sara is a Senior Environmental Consultant at ECL possessing 6 years' of experience in the Environmental Sector within both heavy industry and environmental consultancy. Sara has prepared a number of technical assessments, including Existing Environment Chapters and Phase I Environmental Assessments for planning applications and Site Condition Reports for permitting applications.
Funding	Dominic Noel-Johnson	BA (Hons) MBA	Dominic has 15 years of investment experience in renewable energy and infrastructure and leads Low Carbon's investments in the waste to energy and energy efficiency sectors. Prior to joining Low Carbon, Dominic was an Investment Principal at the UK Green Investment Bank (now GIG) which invested in projects worth >£10bn over 5 years and led the firm's first development business. Prior to GIG, Dominic worked at Hudson Clean Energy Private Equity, one of the world's first large scale and dedicated renewable energy investment businesses, and Citigroup Equity Research where he covered Industrial Conglomerates based in Hong Kong where he was a named analyst in their #1 ranked research team. Dominic has an MBA from INSEAD and a BA from Trinity College Dublin.
Geotechnical	Ruth Howells	M.Geol	Ruth is a geotechnical and geo-environmental engineer at Terra Firma (Wales) Limited with over 15 years experience in ground investigation for geotechnical design and contaminated land assessment. Her roles cover site investigation design, supervision, interpretation and reporting including quantitative human health and environmental soil and groundwater risk assessments, ground remediation and validation, soil waste classification, foundation options appraisal, earthworks design and mine stabilisation. Investigations are tailored to satisfy contaminated land and ground stability planning conditions and to provide the required geotechnical guidance for design and construction.

KEA/Area	Personnel	Qualifications	Experience
Health Impact Assessment	Oliver Matthews	MSc AMIOA, ACIEH Rapid Health Impact Assessment (HIA) Competency	Oliver is Principal Consultant for ECL, he has over 30 years' experience working in both the private and public sectors working across many environmental health disciplines. He has extensive experience and qualifications in many subjects, and also provided training for most of his career, including University Lecturing. Air quality and environmental permitting have been the core disciplines. Oliver has worked for five local authorities in Wales as a regulatory officer involved with permitted activities. He served as Chair of the All-Wales EPR Group for a decade, and member for two decades. He has sat on various Defra panels, Welsh Air Quality Forum, Welsh Government panels and work groups, LACORs policy advisor, and has assisting writing and reviewing Process Guidance and Sector Guidance Notes. He has been involved in numerous multi-million pound projects assessing them for both environmental and public health issues, from the perspectives of project delivery in the private sector and as a consultee through the planning process in the public sector.
Historic Environment	Rob Smith	BA (Hons), MSc, PhD CEnv, CGeog, CSci, C.WEM, FRGS, MCIfA.	The assessment and Archaeology/Heritage ES Chapter has been prepared by Dr Robert Smith of Orion Heritage Limited. Dr Smith has a BA(Hons) in Geography, an MSc in Wetland Archaeological Science and Management, and a PhD in Archaeological and Environmental Science. He is a Chartered Environmentalist, Chartered Geographer, Chartered Scientist, Chartered Water and Environmental Manager, Fellow of the Royal Geographical Society, a Member of the Chartered Institute for Archaeologists and Member of the Chartered Institute of Water and Environmental Management.
	Rob Bourne	BA (Hons) MA	Robert is a Director and co-founder of Orion Heritage Limited. He has dealt with a broad spectrum of work, providing archaeological and heritage planning related advice and support to Nationally Significant Infrastructure Projects and large-scale mixed-use urban extensions, renewable energy projects, leisure parks and villages, retail developments and residential schemes, through to small-scale sensitive developments. Robert has an in depth understanding of historic environment planning policy and guidance across all parts of the UK, and acts as an expert witness at planning inquiries and hearings.
Landscape and Visual	Rick Bright	BA (Hons) Dip LA, CMLI.	Rick has some 30 years of professional practice as a Landscape Architect (he passed his professional exams and became Chartered in 1989), working as a Landscape Architect since that time. He has presented evidence at numerous Public Inquiries concerning landscape and visual impact evidence for schemes/developments for quarries, opencast mining, residential development, industrial and commercial development and wind power.

KEA/Area	Personnel	Qualifications	Experience
Legal	Lee Gordon	LLB (Hons), LPC, Qualified Solicitor	<p>Lee is a solicitor with over 15 years specialist experience in planning and related law. Considerable experience of advising both applicants and planning authorities in respect of major infrastructure projects, including energy recovery facilities. Lee has particular experience in respect of EIA matters and regularly reviews environmental statements from an EIA compliance perspective.</p> <p>Lee also has significant relevant experience in respect of DCO's, minerals schemes, EIA law, Habitats Regulations, judicial review, section 106 and planning conditions, highways and rights of way matters, heritage and enforcement matters.</p>
Lighting	Bonnie Brooks	BA(Hons), BEng(Hons), MSc CEng MCIBSE, MSL, MILP	<p>Bonnie Brooks is a Chartered Electrical Engineer and Lighting Specialist with over fifteen years' experience working within the industry. Covering interior / exterior lighting design and daylighting design. Developing concept to detailed designs, producing detailed surveys, reports and 3D modelling. She specialises in producing Lighting Impact Assessments to accompany planning applications across a wide range of sectors. Assessing and advising on mitigation of the effects from both internal and external lighting on the environment and ecological sensitivities.</p> <p>Bonnie is a full member of the Chartered Institute of Building Services Engineering (MCIBSE), The Institute of Lighting Professionals (MILP) and the Society of Light and lighting (MSLL). She is actively involved in the industry, including acting as regional representative for the SLL, presenting at various events and symposiums, providing input to BCT/ILP Guidance Note on Lighting and Bats, and an update to the ILP PLG04: Guidance On Undertaking Environmental Lighting Impact Assessments. She also won a number of awards for her work associated with her BEng (Hons) Building Services Engineering degree at London South Bank University, and for her MSc in Light and Lighting at UCL.</p>
Market Assessment	Nigel Cronin	MBA	<p>Nigel has over 25 years of experience in the UK and global waste management and construction materials sector. He has held senior management within the UK private waste sector and environmental consulting sector. He has led a significant number of due diligence processes on behalf of investors, waste management and renewable energy companies specifically considering the demand and supply side of feedstock security to underpin medium to large scale waste treatment facilities. Whilst a Technical Director at SLR Consulting, he was involved at a senior level with the market assessments relating to the Montagu acquisition of Biffa, FCC's acquisition of WRG and has developed specific understanding of the UK waste sector for merchant and fully contracted projects.</p>
Noise	Dean Kettlewell	MSc MIOA MAE I.Eng	<p>Dean is the Managing Director of NVC Ltd with over 35 years' experience in the field of industrial and environmental acoustics with a Masters' Degree in Acoustics and is a Member of the Institute of Acoustics, Member of the Association of Noise Consultants, Member of the Academy of Experts and an Incorporated Engineer. Dean has significant experience in dealing with industrial noise and it is estimated that he has been involved in the assessment, design or testing of over 6000 noise related projects and approximately 800 waste related sites and 30-40 energy from waste facilities over the last 35 years.</p>

KEA/Area	Personnel	Qualifications	Experience
Operator	Richard Belfield	BSc (Hons); CEng	<p>Richard is responsible for HZI's global project development in both its Energy from Waste and Renewable Gas concession and build own operate businesses.</p> <p>He is a chartered engineer and has over 20 years of experience in the development of municipal and utility PPP/Concession/BOO contracts, including water supply, wastewater and solid waste treatment projects in the UK, Europe, Asia, Middle East and Australia, where he recently closed HZI's first 20 year EFW concession in Perth, WA.</p> <p>Richard has also previously lead the development and closure of several UK Energy from Waste facilities; Lincolnshire, Buckinghamshire, Hereford & Worcestershire and Edinburgh.</p>
Planning	Karen Hearnshaw	BSc (Hons), Dip LA, MCD, MRTPI	<p>Karen heads up the UK minerals and waste planning services on behalf of Carter Jonas. She is a chartered planner with over 20 years' experience in local government, consultancy and industry with a particular focus on minerals and waste planning.</p> <p>She is experienced in strategic planning as well as preparing complex planning applications; EIA co-ordination for waste and mineral development including quarries, inert restoration and waste management facilities. She has input into every aspect of a project from operational matters to protected species licensing, minerals safeguarding, environmental permitting, public exhibitions and legal agreements and has acted as an Expert Witness at Public Inquiry and presented evidence at local plan examination hearings.</p>
Socio Economic	Bryony Turner	BSc (Hons) MSc, EngD, PIEMA	<p>Bryony is an experienced project manager specialising in environmental impact assessment (EIA) with technical expertise in socio-economics and sustainability. She has over 20 years of experience working on a range of project types from town centre regeneration, wind farms, road infrastructure, waste facilities through to power infrastructure including nationally significant infrastructure projects. Her experience includes completing the socio-economic assessment for Scottish Power's upgrade for the Oswestry to Wem electricity network that recently received permission (March 2020).</p>
Transport	Justin Bass	MSc MCIHT, MCMILT	<p>Justin Bass is a Director who has been dedicated to road safety engineering, traffic engineering and highway design for the past 20 years and has been responsible for the preparation of transport assessments and travel plans related to a number of high traffic generating land-use proposals as well as town centre and route / corridor studies. In addition, Justin has experience of auditing transport assessments and other transportation submissions for Local Government and has appeared as an expert witness at Public Inquiry.</p>
Water Environment	Nicola Sugg	BSc MSc MCIWEM	<p>Nicola is a Director of NSugg Ltd, with over 17 years' experience as an environmental consultant in the fields of hydrogeology and hydrology. Nicola has prepared a wide range of hydrogeological risk assessments, flood risk assessments and surface water management plans for planning and permitting applications across the UK.</p>