



EIA Scoping Report

Reading Quarry Energy Recovery Centre and Data Centre

Land at Reading Quarry
For:

Jay Mould (Reading) Ltd

CRM.1144.010.PL.R.004



Contact Details:

Enzygo Ltd.
The Byre
Woodend Lane
Cromhall
Gloucestershire
GL12 8AA

tel: 01454 269237
fax: 01454 269760
email: lee.searles@enzygo.com
www: enzygo.com

EIA Scoping Opinion Request

Project:	Reading Quarry Energy Recovery Centre and Data Centre
For:	Jay Mould
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Date:	August 2020
Author:	James Whatton Planning Consultant
Reviewer:	Lee Searles Director of Planning/Kevin Parr Director

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Enzygo Limited Registered in England No. 6525159
Registered Office Stag House Chipping Wotton-Under-Edge Gloucestershire GL12 7AD

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Plans and Drawings	Reference
Site Location Plan	CRM.1144.010.PL.D.001 Location Plan
Site Boundary Plan	CRM.1144.010.PL.D.002 Site Boundary
Site Layout	P4009 - J Mould - Sheet - 2000 - Proposed Site Plan
Internal Access Route	CRM.1144.010.PL.D.004 HGV Access Route
Elevations	Reference
P4009 - J Mould - Sheet - 2010 - ERC Floor Plan	
P4009 - J Mould - Sheet - 2020 - Roof Plan	
P4009 - J Mould - Sheet - 2030 - ERC Elevations	
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EXECUTIVE SUMMARY

- i. J Mould (Reading) propose to develop an Energy Recovery Centre (ERC) utilising up to 150,000 tonnes per annum of Refuse Derived Fuel (RDF) from non-hazardous municipal, commercial and industrial waste sources, at Reading Quarry. The ERC will be modelled on HoSt technology.
- ii. Adjacent to the proposed Energy Recovery Centre would be a proposed data centre that will utilise the power generated and residual heat with associated infrastructure including, ancillary offices, access and egress, parking facilities, back-up generators and air chillers.
- iii. The proposed development consisting of the Energy Recovery Centre and data centre is located at the existing Reading Quarry site, accessed off Berrys Lane. The site is approximately 5km south west of Reading centre.
- i. The development site is within an existing wider consented waste management facility at the J Mould site. Reading Quarry consists of a comprehensive waste management facility where a wide range of materials are currently being processed to produce recycled products.
- ii. The proposed development will enable a complete waste management service to be provided at the Reading Quarry site. The current operations at J Mould involves the importation of waste, which is then processed, and recyclables are removed via a Waste Recycling Transfer Facility (WRTF). The proposed development will allow currently exported residual waste from the WRTF to be transferred between the two facilities and energy recovered from this material within the proposed ERC.
- iii. The RDF will be delivered into the site where it will be conditioned to ensure it is of the correct size to be fed into the ERC. J Mould will utilise RDF from both the wider J Mould waste site and from other surrounding waste management facilities.
- iv. The net rated thermal input of the proposed plant is 40MWth, generating a thermal output of 28MW and an electrical output of 11MW at full load. The electrical output from the ERC will be used to supply the proposed data centre with the remaining electrical output exported into the National Grid. There is flexibility to export some of the heat to the proposed data centre, which will be utilised within the Data Centre air conditioning cooling system.
- v. The proposed ERC will consist of a building which will be approximately 78.15 metres in length and 57.5m in width along the rear of the building (southern boundary wall), and 63.5m in width along the front of the building (northern boundary wall). The highest part of the centre of the roof will be 24.4m high, with the highest part of the roof on the eastern side of the

building measuring 18.8m and 21.8m on the western side. There is also a bay (which is where the material is unloaded into the ERC), which measures 10.4m to the eaves and connects to the ERC's main building at 11m. There will be two stacks, the height of which is determined by dispersion modelling to be 50 metres high. Overall, the footprint of the ERC facility is approximately 4,661m².

- vi. The proposed Data Centre development will consist of the main data centre building, external plant area (containing coolers) and an ancillary office. The data centre is approximately 65.85m in length (North to South) and 115.95m in width (East to West). The Office will be positioned along the northern wall of the development and is 13.98m in width and approximately 21m metres in length. The external plant area is 65.52m width and 35.73m in length. The height of the external plant area measures 10m high and the height of the main building is 17.1m. Overall, the footprint of the data Centre, including the office, main building and external plant area containing back-up generators is approximately 9,992m² and is comprised of three floors.
- vii. A substation has also been proposed within the site boundary.
- viii. The emissions from the proposed development will be fully compliant with Environment Agency requirements under the Environmental Permitting Regulations.
- ix. The ERC development falls within Schedule 1, paragraph 10 of the 2017 EIA regulations. This section covers; *'Waste disposal installations for the incineration, chemical treatment (as defined in Annex I to Directive 2008/98/EC under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day'*.
- x. The Data Centre falls within Schedule 2, column *'3 Energy Industry (a) Industrial installations for the production of electricity, steam and hot water'* and the area of development exceeds 0.5 hectare. The proposal also relates to column *'3 (c) the surface storage of natural gas and (i) the area of any new building, deposit or structure exceeds 500 square meters; or (ii) a new building, deposit or structure is to be sited within 100 metres of any controlled waters'*.
- xi. This report sets out the formal EIA Scoping Opinion Request under Section 15 of the 2017 EIA Regulations. The purpose of this report is to highlight the area and approach considered appropriate for inclusion within the EIA. To assist with the formal scoping process this report sets out:
 - A description of the proposed development;

- A plan to show the location of the development;
 - A description of its possible effects on the environment; and
 - A proposed methodology for undertaking an EIA of the proposed development.
- xii. As detailed within this report, we seek to agree that traffic & transport, air quality, landscaping, hydrology, noise and vibration and climate change all need to be presented within the ES accompanying the planning application. All other topics would be addressed within non-EIA technical assessments.

1 INTRODUCTION

1.1 Introduction

- 1.1.1 J Mould propose to develop an Energy Recovery Centre and adjacent Data Centre under one full-planning application.
- 1.1.2 The Energy Recovery Centre will import up to 150,000 tonnes per annum, utilising Refuse Derived Fuel (RDF) from non-hazardous municipal, Commercial and Industrial Waste sources. The development will be developed by HoSt, a company specialising in Bio-energy Installations.
- 1.1.3 The RDF will be delivered to the site where it will be conditioned to ensure it is of the correct size to be fed into the thermal plant. The ERC will import RDF that is produced both within the J Mould waste site, and beyond.
- 1.1.4 The data centre, ancillary office and car park is located east of the ERC. The roof of the centre will have solar panels installed to ensure the development is operated in a sustainable manner.
- 1.1.5 The development utilises an existing internal access route off Berrys Lane which will be widened to accommodate two-way HGV movements and vehicle movements associated with the data centre. The development also utilises part of the route of the former Pingewood Road North, for pedestrian and cyclist access which was severed and stopped up as part of the M4 construction over 50 years ago. By separating HGVs and pedestrians (and cyclists), the development ensures safe access and egress for staff and visitors attending both developments.
- 1.1.6 A security fence divides the ERC and data centre and perimeter fencing encloses the whole development.
- 1.1.7 A substation has also been proposed within the site boundary and an indicative location is shown within the site layout (CRM.1144.010.PL.D.003).
- 1.1.8 The proposed site of the ERC is allocated within West Berkshire Council's Waste Local Plan (1998) as a permanent waste management facility. West Berkshire is currently in the process of developing a new Minerals and Waste Local Plan (MWLP), which will set out the planning policies for minerals and waste development within West Berkshire. As part of the development of the new Minerals and Waste Local Plan the Council published its Preferred Options Plan in May 2017. *Policy 5 Location of Development – Waste Management Facilities*

stated there will be a presumption in favour of permanent waste management development within existing sites with permanent planning permission for waste management development. *Policy 9 Waste Safeguarding* states permanent waste management facilities should be safeguarded from encroachment. The Preferred Options Consultation Response Report (2018) highlights that it is requested that the site is covered entirely by Policy 5 and Policy 9. The proposed ERC would be entirely consistent with this allocation and allow an efficient use of the allocated site.

- 1.1.9 Considering that the proposed data centre is a non-waste management use within a safeguarded strategic waste management site, an Alternative Site Assessment will be submitted in support of the planning application to justify the need for locating the data centre in the proposed location. An Alternative Site Assessment criteria search has been agreed with West Berkshire Council prior to the submission of this scoping opinion request.
- 1.1.10 The proposed development will complement the existing J Mould waste management uses within the wider Reading Quarry site. Together the existing and proposed operations will provide a comprehensive waste management facility where a wide range of materials can be processed to produce valuable outputs, thus ensuring the waste from the existing waste management site can be internally transported to the proposed ERC efficiently and sustainably.
- 1.1.11 Data centres require a large amount of electricity to operate and cool, in order to prevent servers and equipment from overheating. UK data centres use ~1.5 nuclear power stations' worth of electricity, enough to power ~3.8m UK homes or 14% of all UK households. For both environmental and cost reasons, reducing this energy consumption is essential. As such, the proposed data centre has been strategically located adjacent to the proposed ERC to enable electrical and thermal output from the Energy Recovery Centre to be potentially utilised to generate and maintain the data centre. The close proximity of the two developments ensures that excess thermal output from the ERC can be used efficiently and sustainably. Not only will the data centre utilise power and excess heat output from the ERC, but it will also be supported by roof solar panel installations and back-up generators.
- 1.1.12 It is our view that the proposed ERC development falls within Schedule 1, paragraph 10 of the 2017 EIA Regulations. This section covers; '*Waste disposal installations for the incineration, chemical treatment (as defined in Annex I to Directive 2008/98/EC under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day*'.

- 1.1.13 The data centre falls within Schedule 2, column '3 *Energy Industry (a) Industrial installations for the production of electricity, steam and hot water*' and the area of development exceeds 0.5 hectare. The proposal also relates to column '3 (c) *the surface storage of natural gas and (i) the area of any new building, deposit or structure exceeds 500 square meters; or (ii) a new building, deposit or structure is to be sited within 100 metres of any controlled waters*'.
- 1.1.14 This scoping report has been prepared to provide background information on the proposed ERC and data centre in order to identify the scope of environmental issues that need to be addressed in the ES. This report is a formal request to West Berkshire Council for an EIA Scoping Opinion under Section 15 of the 2017 EIA Regulations; '*scoping opinions of the local planning authority*'.

2 SITE DESCRIPTION AND PLANNING HISTORY

2.1 Application site

- 2.1.1 The application site is located approximately 5km south west of Reading. The application site is centred at National Grid Reference SU685697 (nearest postal code RG30 3XD), within the administrative boundary of West Berkshire Council.

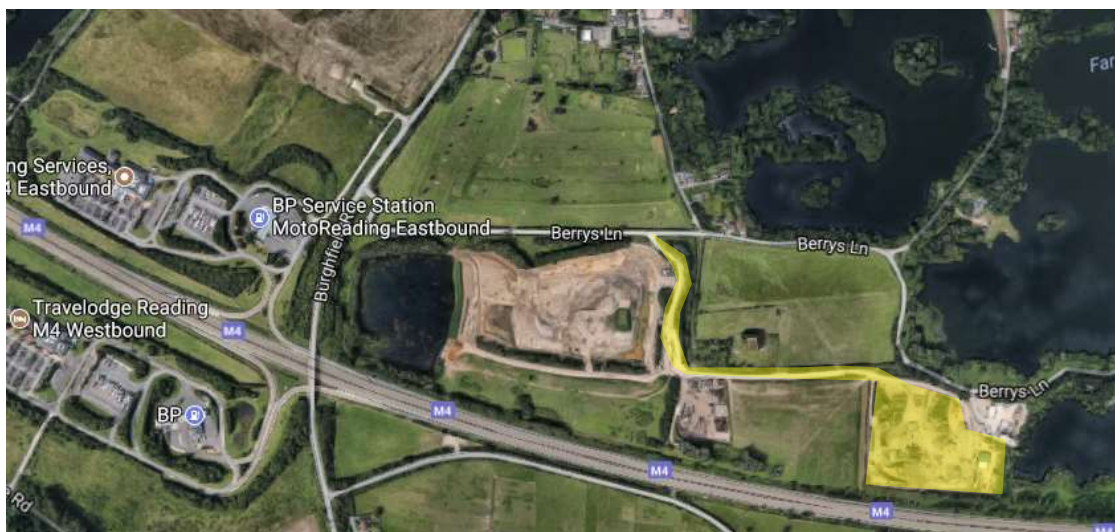


Figure 1 Site Location (approximate location highlighted)

- 2.1.2 The M4 motorway borders the southern boundary of the site, with existing bund and vegetation screening the proposed site.
- 2.1.3 The application site currently consists of aggregate stockpiles and a recycling facility. This facility has planning permission to be relocated to a different location within the Reading Quarry site.
- 2.1.4 The application site is an allocated waste management facility, as set out within appendix 5 of the Waste Local Plan for Berkshire.

2.2 Flood risk

- 2.2.1 The Environment Agency Flood Zone maps shows the site and surrounding area to be located predominantly within Flood Zone 1 and the area considered to be at low risk of river flooding and outside a floodplain location with less than a 0.1% annual exceedance probability (AEP). There is an area in the north-east corner of the site which resides in Flood Zone 2; land between the 1 in 100-year (1% AEP) and 1 in 1000-year (0.1% AEP) probability of fluvial flooding, at 'medium' risk. The site in the most part lies outside areas at risk of surface water

flooding. A Flood Risk Assessment is being prepared to accompany the planning application - demonstrating that the proposed development will not increase flood risk elsewhere and is not vulnerable to flooding. The assessment will take account of climate change and extreme rainfall events.



Figure 2: Flood risk map

2.3 Planning History

- 2.3.1 A review of West Berkshire Council's Planning History tool identifies previous planning applications within the vicinity of Reading Quarry.
- 2.3.2 Detailed planning history for the Reading Quarry site is provided within table 1 below.
- 2.3.3 The planning applications which are highlighted below in yellow (table 1), are historic planning applications within the redline boundary of the application site itself.

Reference Number	Description of Development	Decision Date	Decision
10/00145/FUL	Retrospective – Extension to workshop	April 2010	Approved
06/01795/OUTMAJ	7,500 dwellings; social infrastructure including schools, health centres and indoor recreation facilities; utilities and infrastructure, including an Energy Centre incorporating a combined heat and power plant and wind turbine; clubhouses and facilities for angling, sailing and water skiing uses; excavation of bulk fill material; creation of a development platform through infilling; the stripping and movement of soil to	November 2006	Withdrawn

	form a Country Park; use of land for soil blending; construction of new access points to the A4 and A33, including bridges; the formation of a reservoir and associated intake and outfall arrangements.		
02/02267/COMIND	Recycling facility for inert wastes and ancillary buildings.	July 2003	Approved.
17/01943/FUL	Section 73A: Variation of Condition 1: Approved plans, Removal of Condition 9: Schedule of Materials of planning permission 13/01466/FUL.	Sept 2017	Approved
16/03253/COMIND	The development of waste recycling facility and 1MW biomass boiler located within an existing waste management site. The development will comprise a waste reception building, a picking station, a biomass boiler, skips and metal shredding area. The site will process up to 50,000 tonnes per annum of material.	March 2017	Approved
16/03152/SCREEN	EIA Screening Opinion request.	Dec 2016	n/a
16/03110/NONMAT	Non-material amendment to planning permission 15/02082/FULC: Erection of recycled offices for J Mould (Reading). AMENDMENT: Substitution of external materials already approved.	Jan 2016	Approved
16/02085/FULC	Section 73: Variation of Condition 4 – BREEAM of approved application 15/02082/FULC – Erection of recycled offices for J Mould (Reading).	Oct 2016	Approved
16/01737/COND1	Application for approval of details reserved by Condition 3 – CMS, Condition 5 -Materials and Condition 7 – Landscape, of approved application 15/02082/FULC -Erection of recycled offices for J Mould (Reading).	Aug 2016	Approved
15/02082/FULC	Erection of recycled offices for J Mould (Reading).	Oct 2015	Approved
14/01932/MINMAJ	Proposed sand washing and recycling plant.	Nov 2014	Approved
14/01698/SCREEN	EIA Screening Opinion Request	Jul 2014	n/a

13/01466/FUL	Section 73 – Variation of Condition 2 – amendment of drawing 2d (Phase 4) dated September 2009 and consequential amendments to other drawings of approved reference 08/02401/FUL – Part Retrospective – Extension of recycling facility for construction, demolition and excavation materials including the partial infilling of former quarry with inert waste, erection of workshop and office/weighbridge and retention of open storage area.	Aug 2013	Approved
10/02521/COND1	Application for approval of details reserved by conditions 8, 10, 11, 13, 20, 21, 22, 25, 26, 27, 30, 31 and 32 of planning permission reference 08/02401/FUL.	June 2011	Approved
08/02401/FUL	Part Retrospective – Extension of recycling facility for construction, demolition and excavation materials including the partial infilling of former quarry with inert waste, erection of workshop and office/weighbridge and retention of open storage area.	Dec 2009	Approved

Table 1: Previous planning applications within the land ownership boundary

2.4 Sensitive Receptors in the vicinity of the site

- 2.4.1 The site is located away from sensitive receptors, the nearest residential properties are located approximately 400m to the north west of the site, along Berrys Lane. The closest commercial receptor is Tarmac concrete batching plant which lies adjacent to the proposed site boundary, east of the data centre. Burfield golf course is located approximately 550m to the north west of the application site. Reading M4 service station lies approximately 900m to the west of the site. Numerous commercial receptors are located approximately 2.5km to the east of the site including: Green Park Business Park, Reading Gate Retail Park, Madjski Stadium and Costco Wholesalers.
- 2.4.2 The nearest surface watercourse is the River Kennet located approximately 1km to the north of the site.

- 2.4.3 A review of the Multi Agency Geographical Information for the Countryside (MAGIC) database demonstrated that the following receptors are within the vicinity of the application site (table 3).

Location	Site of interest
Statutory designations within the site	n/a
Statutory designations within 1km	Listed buildings Nitrate Vulnerable Zones 2017 Designations (England)
Statutory designations within 3km	Listed buildings
Non-statutory designations within the site	n/a
Non-statutory designations within 1km	n/a
Non-statutory designations within 3km	Registered Parks and Gardens (England)

Table 2: Statutory and non-statutory designations within the vicinity of the application site

3 PROPOSED DEVELOPMENT

3.1 Proposed development

- 3.1.1 J Mould propose to develop an ERC and adjacent data centre at Reading Quarry.
- 3.1.2 The proposed facility is designed to process up to a maximum of 150,000 tonnes of loose RDF per annum. The net rated thermal input of the proposed plant is 40MWth, generating a thermal output of 28MW and an electrical output of 11MW at full load.
- 3.1.3 Power will be generated by a conventional steam turbine; the emissions will be fully compliant with Environment Agency requirements under the Environmental Permitting Regulations limits. A proportion of the 150,000 tpa capacity will come from material already imported into the site as part of the current WRTF waste management activities. Currently, the residual waste proportion of this material is sent to landfill.
- 3.1.4 In summary, the proposed development is for a Refused Derived Fuel (RDF) fired ERC power plant. The RDF fuel will be sorted, shredded and any metals, glass and stones removed the produced steam will drive a steam turbine with a generator, which produces electricity. The expended steam from the turbine will be led to a steam condenser, where the processed water will be heated. The flue gas will then be cleaned. Additional details of the onsite processes proposed are outlined in section 3.2.
- 3.1.5 Data centres are large warehouse style developments with redundant and dual-powered servers, storage, network links and other IT components. The IT components are powered with multiple, active and independent sources of power and cooling resources.
- 3.1.6 This proposal (due to the close proximity of the two facilities) offers a real potential of converting excess thermal output to a valuable resource. Thus, not only is the ERC harnessing energy from waste, but the data centre also has the potential to convert excess thermal output to a useful cooling resource.

3.2 Energy Recovery Centre

- 3.2.1 The ERC will import 150,000 tonnes per annum, utilising Refuse Derived Fuel (RDF) from non-hazardous municipal, Commercial and Industrial Waste sources. The RDF will be delivered into the site via the fuel reception area, where it will be conditioned to ensure it is of the correct size to be fed into the thermal plant.

3.2.2 The proposed ERC will consist of a building which will be approximately 78.15 metres in length and 57.5m in width along the rear of the building (southern boundary wall), and 63.5m in width along the front of the building (northern boundary wall). The highest part of the centre of the roof will be 24.4m high, with the highest part of the roof on the eastern side of the building measuring 18.8m and 21.8m on the western side. There is also a bay (which is where the material is unloaded into the ERC), which measures 10.4m to the eaves and connects to the ERC's main building at 11m. There will be two stacks, the height of which is determined by dispersion modelling and is expected to be 50 metres high. Overall, the footprint of the ERC facility is approximately 4,661m².

3.2.3 The main proposed onsite activities are as follows:

Storage and transportation of RDF

3.2.4 The RDF will enter the site in articulated walking floor lorries carrying circa. 23 tonnes per load.

3.2.5 The RDF will be pushed via a conveyor into an 'infeeding unit', which will feed the RDF into the furnace.

Furnace

3.2.6 The RDF will be transported through the furnace by a hydraulically driven moving grate and will be dried, gasified and combusted.

3.2.7 Ash generated during the process will fall into a wet ash conveyor and will be transported to an ash container. This will prevent dust and ash from spreading around the site and will result in a very low dust content within the boiler house.

Steam Cycle

3.2.8 Steam will be produced in a vertical water tube boiler. The steam produced drives a steam turbine coupled with a generator which produces electricity.

3.2.9 The steam from the turbine goes to the vacuum steam condenser where the steam will be condensed by the cooling water. Following this the condensate from the steam condenser will have the O₂ and CO₂ removed. The water will be pumped to the high-pressure steam boiler by the feedwater pumps.

3.2.10 Maximum electrical output will be generated by the combustion of high-pressure steam, an efficient steam turbine and process integration.

Flue gas cleaning

- 3.2.11 The cooled flue gas from the boiler will go into a cyclone where dust is removed. Bicar and active Carbon will be injected in the flue gas to reduce HCl, Sox, dioxins and heavy metals.
- 3.2.12 A flue gas fan transports the flue gas through the boiler, cyclone and bag filter and will discharge into the stack.
- 3.2.13 The ash from the boiler and the cyclone will be transported to the wet ash system.
- 3.2.14 During the process outlined above, a continuous emissions monitoring system will monitor the emissions in the stack.

3.3 Data Centre Benefits

- 3.3.1 The proposed data centre development will consist of the main data centre building, external plant area (containing coolers) and an ancillary office. Overall, the footprint of the data Centre, including the office, main building and external plant area containing back-up generators is approximately 9,992m².
- 3.3.2 Data centres are where computing facilities and networking equipment are stored, located and centralized. They are tasked to collect, store, process and distribute large amounts of data. The centres connect communication networks so end-users can access information remotely. With the ever increasing technologization of society comes an exponential growth of data.
- 3.3.3 International Data Corporation (IDC)¹ state that the exponential growth of data will mean from 2018, the world's data will grow from 33 zettabytes to 175ZB by 2025. With over half the world's population online with 3.9bn internet users, this connected world is generating an enormous digital economy covering all spheres of society.
- 3.3.4 According to Knowledge Transfer Network², data is at the core of the modern economy and the growth of the digital economy depends 100% on accessing, processing and storing data. This generates a £40bn market in the UK for data centres and the networking, storage, processing, cooling and power equipment they contain. In 2019 there was approximately two zettabytes of data traffic annually, which is equivalent to transmitting 250bn DVDs. Making

¹ <https://www.networkworld.com/article/3325397/idc-expect-175-zettabytes-of-data-worldwide-by-2025.html>

² https://photonicsuk.org/wp-content/uploads/2016/12/ktn_a4_big-data_v9_released.pdf

just three pence on every gigabyte of that data would generate more income than the entire global GDP in 2014.

3.3.5 Another key advantage for data centres is the increased cybersecurity. A multitude of different institutions store personal and confidential information within data centres, and whilst many financial institutions operate their own data centres (co-located facilities), cloud-based strategies across all sectors continue to blur the lines between dedicated and co-located facilities. For UK companies that store and collect data that is especially sensitive, it is crucial that the UK has the capacity to store such information, as opposed to storing overseas. The proposed data centre therefore helps increase the UK's cyber-security, something of which is imperative in the 21st century and the ever-growing cyber warfare.

3.3.6 Data centres demand significant intakes of energy consumption, with such facilities accounting for about 1% of global electricity in order to operate and maintain. The proposed data centre will potentially utilize the electrical output from the ERC, thus ensuring the data centre will not be fully reliant on energy from the national grid. The thermal output will also be used within the cooling system at the data centre, in order to avoid hotspots and prevent equipment (such as servers) from overheating.

3.4 Justification for the development

3.4.1 The ERC will complement the existing J Mould waste management operations at Reading Quarry as material that cannot be currently processed on-site at the WRTF will be able to be transferred internally to the proposed ERC, thus reducing the number of HGV movements that currently take residual waste material off site..

3.4.2 The electrical output from the proposed ERC will potentially feed into the proposed data centre with the remaining energy being exported to the National Grid, thus reducing the dependency on fossil fuels for our energy requirements.

3.4.3 Generating energy from this residual waste will also positively contribute to reducing the amount of material currently sent to landfill.

3.4.4 Along with the consented adjoining development the site will provide a comprehensive waste material processing facility.

3.4.5 The choice of site location can be justified for the following reasons:

- The application site is allocated in within Appendix 5 of the Waste Local Plan for Berkshire as an inert landfill.

- As detailed within Chapter 1, the site is located away from sensitive receptors and relevant designations.
- A review of local planning policy has demonstrated that the application site is an existing waste management site and has been for some time. The proposed ERC Facility is therefore consistent with the existing use of the site.

3.4.6 With the ever increasing technologization of society, comes an exponential growth of data. This development positively contributes to help meet the existing and future demand for data storage. The proposed development will also reinforce the UK's cyber security. The importance of cyber security can't be understated enough, it encompasses everything that pertains to protecting sensitive data, personally identifiable information, protected health information, personal information, data and governmental and industry systems from theft and damage by criminals and adversaries. With cybersecurity risk increasing, driven by global connectivity, it is essential the UK has sufficient capacity to store such information. The proposed development will make a positive contribution to ensuring the UK meets these increasing capacity requirements.

3.4.7 The location of the proposed development will allow the Data Centre to potentially utilise electrical and thermal output from the proposed ERC site. The centre will also incorporate roof-mounted solar panels to increase the energy mix from renewable sources and ensure the development is zero carbon. The proposed data centre has therefore been strategically located next to the ERC in order to utilise the electrical output from a nearby source, as opposed to other potential data centres which are fully reliant on the national grid and fossil fuels.

3.4.8 The ERC will utilise residual waste from the existing J Mould waste management site operations and beyond, whilst the proposed data centre will utilise electrical and thermal output from the ERC. The development is therefore innovative and sustainable.

3.5 Potential Environmental Impacts

3.5.1 Schedule 3, paragraph 3 of the 2017 EIA regulations outlines the selection criteria that should be considered when establishing if a development comprises EIA. These criteria are also useful when considering which aspects of the development could result in potential significant environmental impacts, and therefore which assessments should be considered within the Environmental Statement.

3.5.2 The below factors need to be considered;

- The magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
- The nature of the impact;
- The transboundary nature of the impact;
- The intensity and complexity of the impact;
- The probability of the impact;
- The expected onset, duration, frequency and reversibility of the impact;
- The cumulation of the impact with the impact of other existing and/or approved development;
- The possibility of effectively reducing the impact.

3.5.3 The application site is allocated as a waste management facility, as set out within appendix 5 of the Waste Local Plan for Berkshire.

4 PLANNING POLICY CONTEXT

4.1 Relevant Planning Policy

- 4.1.1 An initial review of the planning context and guidance at the national, regional, and local level relating to waste management and the specific site has been undertaken. This demonstrates that the proposed development is entirely consistent with local and national planning policy.

4.2 The National Planning Policy Framework (NPPF) (2019)

- 4.2.1 The NPPF sets out the National Planning Policy for England and introduces a presumption in favour of sustainable development. Sustainable development must take into account the environmental, economic and social aspects of development.
- 4.2.2 The proposed development will provide a number of environmental, economic and social benefits, as detailed below.
- 4.2.3 In terms of environmental benefits, the ERC Facility, along with the existing waste facility will provide a comprehensive waste management site where a wide range of materials could be accepted and processed to produce usable materials. The RDF building will allow residual waste to generate energy, and also reduce the amount of RDF exported, thus reducing transport miles.
- 4.2.4 The proposed data centre at this location offers two key environmental benefits. Firstly, the close proximity to the ERC facility means that the data centre can operate from the energy and excess thermal output generated by the ERC. Data centres in other locations would require huge amounts of energy from the National Grid and are therefore less self-reliant. Secondly, the proposed centre will also rely on roof mounted solar panels, thus the site is less reliant on fossil fuels.
- 4.2.5 Both facilities are located away from sensitive environmental receptors, this contributes to reducing the environmental impacts.
- 4.2.6 In terms of economic benefits, the ERC Facility and data centre will create additional jobs, which itself contributes to direct and indirect economic benefits. The data centre will also store data for businesses and individuals. It is therefore vital for allowing companies to continue to use information and technology so that they can capitalise on their performance and potential.

- 4.2.7 In terms of social benefits, the creation of new jobs from both the ERC and data centre contributes to wider social benefits. The location of the site away from residential receptors reduces the social impacts associated with such sites.
- 4.2.8 Chapter 8 of the NPPF relates to promoting healthy and safe communities. Neither facilities are accessible to the public, thus this is not relevant to the proposal.
- 4.2.9 Chapter 9 considers promoting sustainable transport. Transport associated with both facilities will be considered within the Environment Statement and a stand-alone Transport Assessment technical assessment will be submitted, demonstrating that the two facilities are in accordance with the NPPF in relation to transport matters.
- 4.2.10 Chapter 10 relates to supporting high quality communications. The NPPF states '*advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being*'. Data centres are critical infrastructures that are required to ensure information and technology can continue to operate.
- 4.2.11 Chapter 11 relates to making effective use of land. The NPPF encourages the effective use of land by reusing land that has been previously developed (brownfield land), provided it is not of high environmental value, as opposed to development within Greenfield sites. This application will involve development entirely within the curtilage of a previously developed site and is thus consistent with this aspect of the NPPF.
- 4.2.12 Chapter 12 relates to achieving well designed places. The proposed development (both facilities) will be designed to be of a high quality, thus reducing visual impacts associated with the development. Situating the development away from visual receptors, and retaining screening around the site, will further contribute to reducing visual impacts.
- 4.2.13 Chapter 13 – 16 of the NPPF considers environmental aspects of development, including protecting Green Belt land, meeting the challenges of climate change and flooding; conserving and enhancing the natural environment; and conserving and enhancing the historic environment.
- 4.2.14 The proposed development will be located within a previously developed site, situated away from sensitive receptors. The technical assessments (detailed within this scoping report) will demonstrate the environmental impacts associated with the development, and how these can be mitigated.

4.3 National Planning Policy for Waste

- 4.3.1 The Waste Management Plan for England sets out the Government's ambitions to work towards a more sustainable and efficient approach to resource use and management. This includes ensuring the delivery of sustainable development and resource efficiency; and allowing the provision of modern infrastructure.
- 4.3.2 The report identifies the importance of identifying suitable sites and areas for waste management facilities. The proposed development is located away from designated sites and sensitive receptors. Locating the site within an existing waste management site will allow both developments to operate in a more efficient way compared to if they were developed in isolation.
- 4.3.3 As detailed previously, the development will have economic, social and environmental benefits, and thus contribute to sustainable development.

4.4 Local Policy: The West Berkshire Core Strategy

- 4.4.1 The West Berkshire Core Strategy sets out the overall planning strategy and long-term vision for West Berkshire until 2026. The Core Strategy sets out how this will be achieved through a number of strategic policies.
- 4.4.2 Strategic objectives within the core strategy relevant to this application (both facilities) include tackling climate change, supporting the economy, assessing infrastructure requirements and supporting the transport network.
- 4.4.3 Policy CS9 relates to employment and the economy. This policy states that the Council seek to facilitate and promote the growth and forecasted change of business development in the plan period in order to manage appropriate land use. This will be achieved by ensuring proposals for industry uses are directed to the District's defined Protected Employment Areas and existing suitably located employment sites and premises. The proposed development (both ERC and data centre) will contribute to the economy and create employment opportunities and is thus consistent with this policy.
- 4.4.4 The proposed data centre falls under B1 (b), B1 (c), B2, B8 and Colocation uses. The Core Strategy states '*proposals for industry, distribution and storage uses will be directed to the District's defined Protected Employment Areas and existing suitably located employment sites and premises*'. Given that the proposed application seeks to develop a non-waste management use onto the safeguarded strategic waste management site, the application will justify the context of available alternative waste sites related to employment sites by

preparing an alternative site assessment. The proposed data centre has been located outside of the existing employment sites as the facility will draw upon the energy generated by the ERC.

Policy CS13 relates to transport, with the key aims including reducing the need to travel, minimising the impact of all forms of travel on the existing network, minimising the impact of new development on the environment, and helping to tackle climate change. A Transport Assessment will be prepared as part of this application, and this will demonstrate how significant transport impacts can be reduced to an acceptable level. By situating the ERC within an existing waste management site, the development will reduce highway impacts compared to two sites being developed in isolation, by allowing waste producers to deliver waste into one comprehensive material processing site rather than having to transport it to numerous sites. The proposed data centre will be operated by very limited number of employees. As such, the development will have insignificant impact on the strategic route network, once the site is fully operational.

- 4.4.5 Given the very limited number of employees at the ERC and data centre, it is our understanding that a stand-alone Travel Plan (TP) is not required in this instance. Instead, the TA will include a section on TP matters, rather than the provision of a stand-alone document. The data centre includes an office which covers approximately 570sqm. Whilst the national guidance has been withdrawn, based on this B1 floor space only, the previous guidance indicates that no TP would be required.
- 4.4.6 Policy CS14 considers Design Principals and requires developments to demonstrate high quality and sustainable design, which create a safe environment, make good provision for access by all traffic modes and make efficient use of land. The proposed buildings will be designed to be in keeping with the buildings at the surrounding the application site. Situating the site adjacent to a waste management site allows a more efficient use of land (i.e. shared access) compared to if the sites were developed in isolation. The ERC facility and data centre will have their own access and egress, thus providing safe access for visitors and employees.
- 4.4.7 Policy CS15 relates to Sustainable Construction and Energy Efficiency. This policy highlights that carbon reduction is a key issue for the Council. This policy requires new development proposals to consider energy efficiency and sustainable design from the outset. The proposed development will have a positive impact on energy efficiency by enabling energy to be generated from waste material.

- 4.4.8 West Berkshire Council state that all new non-residential buildings should achieve BREEAM Excellent and ensure the status of Carbon neutral development. As such, an Energy Statement and BREEAM submission will be prepared and this will be integrated into the design. Roof mounted solar panels will also be installed on top of the data centre.
- 4.4.9 Policy CS16 considers Flooding. This policy identifies that for developments within areas of flood risk, it will be required to demonstrate that they are in appropriate locations. The application site is located within Flood Zone 1. A Flood Risk Assessment will be undertaken at the site, and this will ensure the development is acceptable from a flood risk perspective. This will include a detailed drainage strategy.
- 4.4.10 Policy CS17 considers Biodiversity and Geodiversity. This requires designated habitats and species to be protected and where possible enhanced. The proposed development is located away from most designated sites. An ecological assessment will be undertaken to consider the ecological value of the existing site and the ecological impact associated with developing the site.
- 4.4.11 Policy CS19 considers the Historic Environment and Landscape Character. This requires the landscape character of the district to be conserved and enhanced. Particular regard must be given to the sensitivity of the area; and ensuring that the new development is appropriate in terms of location, scale and design. A Landscape and Visual Impacts Assessment will be undertaken to assess the existing landscape character of the site and consider the impact of the proposed development on visual and landscape impacts.

4.5 West Berkshire Waste Emerging Local Plan

- 4.5.1 West Berkshire Council are currently in the process of creating a new Local Plan for minerals and waste planning policy. The emerging Local Plan will be considered alongside currently adopted policy in the Waste Local Plan for Berkshire (1998). The emerging Minerals and Waste Local Plan is currently being prepared and a preferred Options and Preferred Options Consultation Response Report was published in 2018.
- 4.5.2 Policy WLP1 of the Waste Local Plan sets out guiding policy principles, and states that ‘...*Local Planning Authorities will have regard to the extent to which the development is sustainable in form and location and helps to conserve natural resources and the human and natural environment, and minimise traffic congestion, travel distances, waste generation and pollution, and adverse impacts on humans and the natural environment...*’

- 4.5.3 The proposed development will contribute to enhancing the natural environment by minimising the amount of material sent to landfill, and by producing energy from waste, thus reducing dependency on natural resources and fossil fuels. In addition, the location of the site is away from residents and sensitive receptors reduces impacts associated with the proposed development.
- 4.5.4 WLP27 states that planning applications for waste management development will only be permitted if the LPA are satisfied that *'...there are wider environmental benefits resulting from the development...the development and its associated traffic would not give rise to any unacceptable environmental impacts...'*
- 4.5.5 The proposed development would have wider environmental benefits by accepting material which might otherwise have been sent to landfill. A Transport Assessment will be undertaken as part of the application and this will ensure any significant transport impacts are mitigated.
- 4.5.6 Policy WLP30 states that the merits of waste management development proposals will be assessed having regard to all relevant considerations, and in particular *'...the likely effects of the traffic and traffic-related impacts...the need to safeguard health and living conditions...the likely effects of the proposal on the surrounding population and environment...the visual impacts...the need to safeguard the character, setting and amenity....'*
- 4.5.7 A range of assessments will be undertaken in support of the application to ensure significant impacts from the proposed ERC are mitigated to an acceptable level.

4.6 West Berkshire District Local Plan 1991-2006 (saved policies)

- 4.6.1 Policy OVS5 considers Environmental Nuisance and Pollution Control. The policy states that the Council will only permit development proposals that do not give rise to an unacceptable pollution of the environment. The Council will consider *'...a) the need to ensure the adequate storage and disposal of waste materials; and (b) the installation of equipment to minimise the harmful effects of emissions; and (c) the hours, days or seasons of operations; and (d) locating potential nuisance or pollution activities onto the least sensitive parts of the site....'*
- 4.6.2 Technical assessments will be undertaken to assess nuisance and pollution, including a noise impact assessment, and an air quality and odour assessment. These assessments will demonstrate that impacts can be reduced to an acceptable level.
- 4.6.3 Policy OVS6 considers Noise Pollution, and states that the council will require appropriate measures to be taken in the location, design, layout and operation of proposals to minimise

adverse impacts as a result of noise generated. A Noise Assessment covering both the ERC and data centre will be prepared to assess the noise impacts of the equipment associated with this assessment.

- 4.6.4 Policy TRANS1 considers Meeting the Transport Needs of New Development, and states that *'The transport needs of new development should be met through the provision of a range of facilities associated with different transport modes.... The level of parking provision will depend on the availability of alternative modes...'* The Transport Assessment and Travel Plan will ensure this policy is complied with.

4.7 West Berkshire New Waste Local Plan

- 4.7.1 West Berkshire is currently in the process of developing a new Minerals and Waste Local Plan (MWLP), which will set out the planning policies for minerals and waste development within West Berkshire. As part of the development of the new Minerals and Waste Local Plan the Council published its Preferred Options Plan in May 2017. *Policy 5 Location of Development – Waste Management Facilities* stated there will be a presumption in favour of permanent waste management development within existing sites with permanent planning permission for waste management development. *Policy 9 Waste Safeguarding* states permanent waste management facilities should be safeguarded from encroachment. The Preferred Options Consultation Response Report (2018) highlights that it is requested that the site is covered entirely by Policy 5 and Policy 9. The proposed ERC would be entirely consistent with this allocation and allow an efficient use of the allocated site.

5 PROPOSED CONTENT OF THE ENVIRONMENTAL STATEMENT (ES)

5.1 Background

- 5.1.1 The EIA Regulations require an EIA to be carried out in support of a specified range of major development proposals. Within Planning Practice Guidance, the purpose of EIA is set out:

‘The aim of Environmental Impact Assessment is to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes into account in the decision making process...The aim of Environmental Impact Assessment is also to ensure that the public are given early and effective opportunities to participate in the decision making procedures’.

5.2 Need for an EIA

- 5.2.1 The proposed scheme has been assessed against the criteria set out in the EIA Regulations to determine the requirement for an EIA.
- 5.2.2 The EIA Regulations specify certain types of development for which EIA is mandatory (Schedule 1 Developments) and categories of development where an EIA may be required (Schedule 2 Developments) *“If it is likely to have significant effects on the environment by virtue of factors such as its size, nature or location”.*
- 5.2.3 It is our view that the ERC development falls within Schedule 1, section 10 of the 2017 EIA Regulations, which covers *‘Waste disposal installations for the incineration, chemical treatment (as defined in Annex I to Directive 2008/98/EC under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day’.*
- 5.2.4 It is also our view that the proposed Data Centre falls within Schedule 2, column *‘3 Energy Industry (a) Industrial installations for the production of electricity, steam and hot water’* and the area of development exceeds 0.5 hectare. The proposal also relates to column *‘3 (c) the surface storage of natural gas and (i) the area of any new building, deposit or structure exceeds 500 square meters; or (ii) a new building, deposit or structure is to be sited within 100 metres of any controlled waters’.*

5.3 Scope of the Environmental Statement

5.3.1 As set out within Part 4 of the Town and Country Planning (EIA) Regulations 2017, ‘A person who is minded to make an EIA application may ask the relevant planning authority to state in writing their opinion as to the scope and level of detail of the information to be provided in the environmental statement (a “scoping opinion”).’

5.3.2 This formal scoping opinion request has been prepared to agree the scope of the ES with the Local Planning Authority.

5.3.3 request has been prepared to agree the scope of the ES with the Planning Authority.

5.3.4 The following topics are considered to form part of the ES:

- Highways (traffic and transport)
- Air quality, dust and odour
- Landscape and Visual Impact
- Hydrology
- Climate change
- Noise and vibration
- Needs and Alternatives
- Cumulative Impacts

5.3.5 As detailed later within this scoping report, other aspects of the development will be covered within stand-alone, non-EIA assessments.

5.4 Proposed structure of the ES

5.4.1 As detailed within the Planning Practice Guidance, the Environmental Statement must contain the information specified in regulation 18 (3) and must meet the requirements of regulation 18 (4). *“It must also include any additional information specified in Schedule 4 to the 2017 Regulations which is relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected”.*

5.4.2 Based on Schedule 4, we propose the following structure:

5.4.3 **Volume one** will be structured as following:

- **Chapter 1: Background, Introduction and Context** – This section will include narrative on the format and content of the ES and the statutory background to the EIA process. It will also include information regarding the application, the assessment team and the organisation of the ES.
- **Chapter 2: Site Description** – This chapter will describe the general physical and environmental characteristics of the application site and its surrounding environs. Other chapters of the ES will provide detailed descriptions of the application site in relation to particular environmental topics, providing baseline surveys against which the effects of the proposals may be evaluated.
- **Chapter 3: Proposed Development** – This chapter will describe the development for which planning permission is sought including the layout of the proposed facility together with the description of the processes to be undertaken on site and will set out the basis against which the EIA will be conducted.
- **Chapter 4: Planning History and Policy Context** – This chapter will include information regarding the planning history of the site and a summary of the policy context at the national, regional and local level. The relevant policies will be reviewed, and key points of relevance summarised. This will set the context for more detailed topic analysis that will be included in the specific chapters of the ES.
- **Chapter 5: Need and Alternatives** – Regulation 18 (3)(d) of the EIA Regulations 2017 state the applicant must include within an ES a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the chosen option. This will be assessed for both the ERC and data centre.

5.4.4 Technical ES Topics

- **Chapter 6: Traffic and Transport**
- **Chapter 7: Air Quality, Dust and Odour**
- **Chapter 8: Landscape and Visual Impact**
- **Chapter 9: Hydrology**
- **Chapter 10: Climate change**
- **Chapter 11: Noise and vibration**
- **Chapter 12: Cumulative impacts**
- **Chapter 13: Summary**

5.4.5 **Volume two** will provide a non-technical summary, as required within the EIA Regulations. This will provide a summary of the Environmental Statement in non-technical language. This is aimed at a wide audience and will be available as a separate document to ensure a widespread circulation.

5.4.6 **Volume three** will provide individual technical assessments for all topics. This will also include the Planning Statement, Design and Access Statement, Alternative Site Assessment, forms and certificates. The following stand-alone technical reports will be submitted within Volume 3: Air Quality and Odour Assessment, Noise Assessment, Transport Assessment, Phase 1 Ecological Assessment, Phase 1 Risk Assessment, Flood Risk Assessment, Detailed Drainage, Socio-economic Report, Landscape and Visual Impacts Assessment, Landscape Strategy Plan, Tree Survey/Arboricultural Impacts Appraisal, BREEAM and Energy Statement, Human Health Impact Assessment.

5.4.7 The ES will also include a non-technical summary (NTS), which will provide a summary of the ES in non-specialist language.

5.5 Non-ES topics

5.5.1 We seek to scope the following topics out of the EA, and instead address these within standalone reports. Justification for this will be set out within the Scoping Report:

- Socio-economic impacts
- Human health impact assessment
- Ecology
- Geo-environmental
- Heritage

5.6 EIA Methodology

5.6.1 The ES will follow established EIA procedures, in accordance with the Town and Country Planning (EIA) Regulations 2017 and Planning Practice Guidance.

5.6.2 The assessment will examine the construction and operational effects of the proposals for necessary topic area. The guidelines and methods used in determining the scale and significance of any impacts, together with the basis on which predictions have been made, will be identified within the ES.

- 5.6.3 Evaluation of the significance of an environmental effect is an essential part of the EIA process. The level of significance determines the resources that should be deployed in avoiding or mitigating an adverse effect or identifying the actual value of a positive effect. It is the combined significance of the mitigated effects that determine the overall environmental acceptability of a proposal.
- 5.6.4 The significance of an effect will be determined by the interaction of two factors: first being the value, importance or sensitivity of the environmental receptor or resource being affected; and second, the scale of magnitude, or severity of the impact or change. Criteria will be developed to determine the sensitivity of a receptor and the magnitude of change for each environmental topic.
- 5.6.5 Account will be taken of timescale, permanence and whether the effects are adverse or beneficial. Where significant adverse environmental effects are identified, mitigation measures will be proposed where possible, which aim to either alleviate the adverse effects, or reduce their significance. The residual effects remaining after mitigation will also be assessed and summarised in the ES.

5.7 Need and Alternatives

- 5.7.1 The EIA Regulations provide detailed guidance on the need for and consent of EIA. With regards to alternatives, Schedule 4 (Part II) of the Regulations states that ES should include:

“A description of the reasonable alternatives (for example in terms of development design, technology, location size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.”

- 5.7.2 As such, where alternatives have been considered, this will be detailed within an ES chapter illustrating the reasonable alternatives studied (for example development design, technology, location, size and scale) and an indication of the main reasons for selecting the chosen option, including a comparison of environmental effects. This will be carried out for both the ERC Facility and data centre.
- 5.7.3 The application site is allocated as a permanent waste management facility, as set out within the Waste Local Plan for Berkshire (Appendix 5).

5.7.4 West Berkshire is currently in the process of developing a new Minerals and Waste Local Plan (MWLP), which will set out the planning policies for minerals and waste development within West Berkshire. The West Berkshire MWLP Preferred Options Consultation Response Report (2018) highlights that it is requested that the application site is covered entirely by Policy 5 and Policy 9 and is therefore safeguarded as a waste management site.

5.7.5 The proposed ERC would be entirely consistent with this allocation and allow an efficient use of the allocated site. Therefore, there will not be an assessment of alternative sites for the ERC.

5.7.6 A detailed review of alternative sites for the data centre will be carried out, in order to justify the location of a data centre outside an allocated employment site. Further justification for this will be provided as part of the planning submission.

5.8 Cumulative Effects

5.8.1 The EIA will also consider the cumulative effects of the proposed development and other proposed developments in the surrounding area, during both the construction and operational phases of the project. The potential cumulative effect of traffic is considered by West Berkshire Council to be of particular importance. Existing developments we propose to consider include:

- Permitted facilities on Dean's Copse Road which include:
 - Concrete batching plant
 - Theale WRTF
 - Waste development permitted under 17/02241/MINMAJ
 - Heron's Nest landfill
- Worst case vehicle movements associated with the operations already permitted at Reading Quarry will also be taken into account.
- Housing Site Allocation (HAS) 15 Pondhouse Farm
- HAS 16 Hollies Care Home (Primrose Croft) – permitted under 19/00772/RESMAJ for 28 dwellings in 2019.

6 EIA CHAPTERS

6.1 Introduction

6.1.1 The following chapters set out our approach to the chapters that we consider fall within the scope of the ES. We consider these to be the following:

- Air quality, dust and odour
- Highways (traffic and transport)
- Landscape and Visual Impacts
- Hydrology
- Noise and vibration
- Climate Change

7 TRAFFIC AND TRANSPORT

7.1 Output Documents

- 7.1.1 Enzygo understands that the required traffic and highway issues in relation to the site outline the requirement for preparing a Transport Assessment (TA) which includes a chapter on Travel Plan (TP) as advocated by Development Plan policy and paragraph 111 of the NPPF.

7.2 Methodology

- 7.2.1 With the application Enzygo provides a supporting TA that includes an assessment of the local highway network, site sustainability, accident data analysis and an examination of the additional traffic forecast to be added to the local road network. The methodology has been based on the following:

Scoping Assessment

- 7.2.2 Enzygo have endeavoured to contact the West Berkshire Council BC Highway Development Control officer by telephone, to discuss the scope of the TA, but this has not been successful. Given the low level of traffic forecast to be generated by the proposed development in the morning and evening peak hours, and over the day, the lack of discussion with the Highway Development Control officer has not been a restriction on undertaking the TA.
- 7.2.3 The assessment will be carried out in accordance with the appropriate guidance, and primarily the Guidelines on the Environmental Assessment of Road Traffic, Guidance Notes No. 1 published in 1993 by the Institute of Environmental Management (IEM), now known as the Institute of Environmental Management and Assessment (IEMA).
- 7.2.4 Potential traffic and transport impacts during construction and operation of the proposed development are likely to include:
- the impacts of construction traffic (in particular HGVs) on existing traffic flows and the local road network during the construction of the proposed facilities;
 - and the impacts of operational traffic on existing traffic flows and the local road network as a result of the movements of waste vehicles, staff, and service vehicles to and from the proposed facilities.

Transport Assessment

- 7.2.5 The scope of works undertaken for the TA is as outlined below:

- A detailed site visit was not considered to be possible during much of the period spent preparing the TA because of the COVID-19 pandemic and the work was undertaken via a desk exercise. Latterly it was considered that, with the available information including traffic flows surveyed prior to the pandemic, on-line aerial and street view images, topographic survey and other background information, a site visit was not required;
- Information relating to site sustainability including bus stops/facilities, footways, and cycleways has been identified via a desk based exercise;
- The scope of the TA has been based on our previous experience of this type of work, and has been informed by the previous West Berkshire Council scoping opinion including the GOV.UK 2014 guidance on Travel Plans, Transport Assessments and Statements;
- The TA provides a detailed description of the site proposal including scale, site composition, main features, points of access, travel characteristics, parking provision, servicing arrangements and a brief description of the local highway network;
- The TA has used information provided by the operator on the waste and staff movements associated with the proposed developments;
- The assignment of the HGV traffic generated by the proposed development has been based on details provided by the operator. Assumptions have been made on assignment of staff cars based on the potential home locations of staff and the proposed shift working pattern;
- Based on the above, the TA provides traffic flow diagrams demonstrating what the potential level of traffic could be at nearby junctions and on the local highway network. The TA has also allowed for known consented traffic, generated by two housing permissions location to the south of the site (HSA15 Pondhouse Farm and HSA16 Hollies Care Home);
- On-line details of personal injury accident records have been examined for the most recent five year period available. The last five years of records are not considered to indicate a significant injury accident history on roads local to the site;

- The proposed level of car and cycle parking and proposed parking facilities has been based on the low number of staff, the proposed shift pattern and with reference to the West Berkshire Council standards where provided;
- Potential staff use of means of travel other than the private car have been considered and a pedestrian/cycle improvement from Berrys Lane to the site is proposed. The TA includes a TP Statement which outlines measures to encourage staff car sharing, cycling and use of public transport.

8 AIR QUALITY, DUST AND ODOUR

8.1 Air Quality Impacts

- 8.1.1 The proposed ERC at Reading Quarry in West Berkshire will thermally treat 150,000 tonnes per year of non-hazardous, refuse-derived fuel (RDF).
- 8.1.2 ERC facilities are potentially significant sources of pollutant emissions to air, which could impact upon air quality at both human and ecological receptors, thus a detailed air quality assessment will be required.
- 8.1.3 The development will also generate additional traffic on the local road network, which could further impact upon air quality at existing properties.
- 8.1.4 The facility will also represent a potential source of odours, which could impact upon amenity in the local area.

8.2 Air Quality Chapter of ES

Construction Dust Risk Assessment

- 8.2.1 The risk of soiling, and effect on health and the natural environment arising from demolition, earthworks, construction activities and trackout have been summarised, and recommendations made as to emission control measures have been implemented as part of the scheme.
- 8.2.2 The assessment has been carried out following the methodology set out in the IAQM's guidance documents on assessing the significance of impacts from construction dust, and mitigation measures have been proposed that are appropriate to the level of risk. A Dust Management Plan will be provided prior to works commencing on site, based on a suitably worded Condition.

Operational Air Quality Assessment

- 8.2.3 The operational air quality assessment relating to emissions from the ERC stack emissions has assessed concentrations of all of the pollutants for which emission limits are set out in the Industrial Emissions Directive (IED). This has been completed using the AERMOD detailed dispersion model using 5 years of meteorological data from the recording station at RAF Benson. Receptors include residences, commercial / industrial sites and recreational areas where members of the public may be expected to spend one hour or more. Ecological

receptors include the Thames Basin Heaths SPA, which lie within 10km of the site, SSSI within 5km and local sites and ancient woodland within 2km.

- 8.2.4 Emissions of traffic pollutants have been assessed through initial screening in accordance with IAQM / EPUK Guidance. Where screening indicates that detailed assessment is required, this has been undertaken using the BREEZE Roads or ADMS-Roads model, with model verification using Reading Council data and meteorological data from RAF Benson.

Odour Risk Assessment

- 8.2.5 The odour risk assessment has been undertaken using the screening methodology set out in the Institute of Air Quality Management's *Guidance on the assessment of odour for planning*. The risk assessment follows a Source-Pathway-Receptor approach and is designed to identify the potential odour impacts associated with and odour based on the "FIDOL" factors for describing odour releases (Frequency, Intensity, Duration, Offensiveness and Location).
- 8.2.6 The odour risk assessment examines the odour generating potential of the ERC and estimates the risk of odour impacts at nearby sensitive receptor locations based on the magnitude of odours released, the effectiveness of the pathway between the source and the receptors, and the perceived sensitivity of the receptors themselves.
- 8.2.7 Where the odour risk screening assessment indicates a requirement for more detailed assessment, this has been completed using the AERMOD detailed dispersion model (i.e. consistent with the stack modelling).
- 8.2.8 The findings of the odour risk assessment have been included within a technical appendix with a summary of the results drafted into the main air quality chapter.

In-combination Impacts

- 8.2.9 Consideration has been given to any in-combination impacts that may arise during both the construction and operational periods for pollutants that are not 'screened out' and are not already included within background data.

Reporting

- 8.2.10 The findings of the air quality assessment are set out as a Chapter of the ES, together with technical appendices for detailed assessments as necessary.

9 LANDSCAPE AND VISUAL IMPACTS

9.1 Introduction to Proposed Method

9.1.1 The process of Landscape and Visual Impact Assessment considers the potential effects of the proposed ERC development on defined landscape and visual receptors. This includes:

- Individual landscape features and elements;
- Landscape character and quality [condition]; and
- Visual amenity and the people who view the landscape.

9.1.2 A detailed description of the proposed methods of assessment has been included in the ES chapter. Consultation about method has been undertaken with the LPA and feedback has been taken into account in the final outputs as appropriate.

9.1.3 The site has been the subject of previous planning applications for other developments as noted at Section 2 of this report and which has included EIA. A review has been undertaken of any relevant previous applications and supporting information in order to formulate the site-specific method and scope for this current ERC project.

9.2 Distinction between Landscape and Visual Effects

9.2.1 The assessment includes consideration of both effects on landscape character and on visual amenity. Landscape and visual effects are two distinct but related areas, which are assessed separately in accordance with the approach outlined below. Landscape and visual effects do not necessarily coincide and can be beneficial or adverse. A distinction has been drawn between landscape and visual effects:

Landscape - relates to the effects of the proposals on the physical and other characteristics of the landscape and its resulting character and quality.

Visual - relates to the effects on views experienced by visual receptors e.g. people including residents, footpath users, tourists.

9.3 Published Guidance

9.3.1 The LVIA has been undertaken by qualified Landscape Architects who are experienced in undertaking such assessments following relevant best practice outlined in published industry guidance:

- *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition [3663] Landscape Institute and the Institute for Environmental Management and Assessment;
- *Landscape Character Assessment Guidance for England and Scotland* [2002]; The Countryside Agency and Scottish Natural Heritage; and
- *Guidelines for Environmental Impact Assessment* [2004]; Institute for Environmental Management and Assessment.

9.4 Approach to the LVIA

9.4.1 The LVIA has been undertaken in stages which generally include:

- Baseline data collection via desk-top study, consultation and fieldwork;
- Description of the baseline landscape character and visual amenity of the site and surrounding area which identify the relevant landscape and visual receptors [including representative viewpoints] determining their sensitivity to change, determining the extent of visibility;
- Description of the magnitude of change in the landscape and visual amenity as a consequence of the proposals;
- Description of the potential landscape and visual effects arising; and
- Development of strategic mitigation proposals to assist in reducing adverse landscape and visual effects or provide compensation where this is unavoidable and where possible provide enhancements.

9.4.2 Baseline information regarding landscape features and sensitive visual receptors and the likely change in the landscape character and visual amenity of the site and its surroundings has been used to identify potential effects and inform the final scheme as appropriate.

9.4.3 Strategic mitigation measures have been developed in tandem with the proposed layout to minimise adverse effects as part of an iterative design process. Options for mitigation measures such as screening components have been investigated and included as appropriate.

9.4.4 Criteria thresholds for assessing the degree of change as a result of the development have been established and reviewed to ascertain the magnitude of change in the landscape and in views.

9.5 Sensitivity of Receptors, Magnitude of Change and Significance of Effects

9.5.1 The significance of effects on both the landscape and visual receptors within the study area have been ascertained by cross-referencing the sensitivity of the baseline landscape and or visual receptor the magnitude or amount/scale of change that is expected as a result of the proposed development and in relation to any other influencing factors.

9.5.2 A description of how judgements are made criteria used and outcomes have been provided and described in the ES chapter.

9.6 Output

9.6.1 The LVIA has been prepared in a written suitable agreed format for incorporation in an Environmental Statement which will accompany the planning application for the proposed development. The chapter summarises the findings of the LVIA and typically comprises descriptive text and supporting tables, maps/plans and photographs.

9.6.2 The components include:

- Presentation of baseline conditions desk-based and field-based study.
 - description of site-specific methods in line with industry guidance
 - Defined study area and potential constraints.
 - Review of relevant background information such as published landscape character assessment and relevant planning policy
 - Evidence of baseline visual amenity and landscape character, e.g. representative viewpoints/views and photographs of the study area.
- Assessment of landscape and visual impacts in relation to the proposed development with judgements, identification/evaluation of significant effects. Written commentary supported by summary tables maps and plans as necessary.
- Consideration of the need for and identification of suitable mitigation proposals, in collaboration with the design team and which seek to avoid or reduce adverse landscape and visual effects or provide compensation where unavoidable and where possible enhancements.;
- Identification of residual impacts on the landscape and visual resource [nominally Year 15];
- Identification and consideration of the cumulative effects on the landscape visual resources for identified projects ; and
- Supporting illustrative material which may comprise plans figures and plates identifying aspects such as (not restricted to) topography, drainage, Zone of Theoretical Visibility [ZTV], viewpoint locations, landscape constraints, landscape character and strategic mitigation measures.

10 HYDROLOGY

10.1 Flood Risk

10.1.1 The site is shown to be located partially within Flood Zone 2 on the EA Flood Map for Planning, which is the area considered to be at medium risk of river flooding (0.1%-1% annual event probability) from the River Kennet.

10.1.2 In accordance with the National Planning Policy Framework (NPPF) and local planning policy guidelines a Flood Risk Assessment (FRA) has been submitted to accompany the planning application because of the flood zone designation.

10.1.3 The subsequent FRA assesses flood risk posed to the site from all sources and demonstrates that the development will have no detrimental effect on flood risk in the wider catchment.

10.1.4 As part of the FRA we have undertaken the following works:

- Site walkover.
- Undertake a desktop study of OS mapping, soils and geology map, borehole records and flood/catchment mapping etc.
- Review online policy and guidance documents (including West Berkshire Council Strategic Flood Risk Assessment).
- Consult with the water regulators (i.e. EA and LLFA) to obtain flood data.
- Obtain detailed fluvial, surface water and groundwater flood mapping.
- Obtain Thames Water asset plans.
- Assessment of existing and future flood risks to the Site from all sources (i.e. fluvial, tidal, surface water, groundwater, infrastructure and reservoirs). The effects of climate change will be accounted for using the industry standard advice given in the NPPG ID:7.
- Identify potential constraints on development including site and access/egress routes.
- Consider potential flood risk mitigation measures and provide preliminary guidance on feasibility.

10.2 Drainage

10.2.1 The Lead Local Flood Authority (LLFA) (West Berkshire Council) as statutory consultees have a duty to ensure that surface water flood risk is not increased as a result of development. An appropriate discharge rate and point of discharge has been provided together with storage

requirements in accordance with local LLFA drainage guidance for surface water disposal as part of production of a drainage strategy.

10.2.2 Prime consideration has been given to soakaway/infiltration methods for disposal of surface water in accordance with the requirements of H3 of the Building Regulations 2010. We have undertaken a desktop study of OS mapping, soils and geology mapping and British Geological Survey (BGS) borehole records.

10.3 ES Chapter

10.3.1 The ES chapter considers water resources, flood risk and drainage to assess the potential severity of impacts of the development and mitigation measures have been suggested, where required for both the construction and operational phases.

10.3.2 The Environmental Statement (ES) Chapter refers to the information obtained for the Flood Risk Assessment. The chapter is comprised of:

- Present the environmental baseline for the Site from desk studies, dedicated surveys and consultation;
- Assess the potential environmental effects arising from the development on hydrology and flood risk, surface and groundwater resources, and ground conditions; the mitigation measures required to prevent, reduce, or offset potential environmental impacts; the residual impacts following mitigation, and the potential cumulative impacts with other developments based on the information gathered and the analysis and assessments undertaken to date;
- Identify any assumptions and limitations encountered in compiling the environmental information;
- Highlight any necessary monitoring and/or mitigation measures which could prevent, minimize, reduce or offset the possible environmental effects identified at the relevant stage in the ES process; and

10.4 Cumulative Impacts

10.4.1 In regard to the water environment, all sites and proposed development should provide appropriate flood mitigation, drainage attenuation volumes and run-off rates that do not pose a flood risk to the Proposed Development site or the wider area. With this in mind, there are no cumulative effects with regards to the Proposed Development in terms of flood risk or surface water drainage.

11 NOISE AND VIBRATION

11.1 Introduction

11.1.1 The proposed development, comprising an ERC and data centre, would be located within an already consented waste management facility to the south of Berrys Lane and north of the M4 Motorway in Reading. The site is relatively remote for the nearest residential receptors which may potentially be affected by noise from the proposed development.

11.1.2 Due to the nature of the proposed development, particularly the import of waste to the ERC, the combustion process plant and equipment of the ERC and the cooling plant for the ERC and data centre, there is the potential for noise impacts beyond the site boundary. A full noise assessment has been undertaken to quantify these potential impacts and ensure that, where necessary, mitigation measures have been incorporated into the design of the scheme to protect the amenity of local residents.

11.2 Noise Assessment Methodology

Baseline Noise Surveys

11.2.1 Baseline noise monitoring at nearby noise-sensitive residential receptors was undertaken in August 2019. It is considered that this data would still be valid and there would be no need to undertake a more up to date survey as the noise climate in the area is unlikely to have changed considerably in the intervening time period.

Construction Noise and Vibration

11.2.2 A noise model has been constructed to evaluate the potential noise levels at the nearby noise-sensitive receptors due to noise generated by construction works at the site. The predictions have been based on the calculation methodology outlined in BS5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites*.

11.2.3 The resulting predicted construction noise levels have been assessed in accordance with the ABC methodology contained in BS5228-1:2009+A1:2014. The assessment has shown that the predicted construction noise levels would easily meet the adopted noise limits based on the prevailing ambient noise levels.

11.2.4 Vibration levels generated by construction piling works have been predicted using the calculation methodology outlined in BS5228-2:2009+A1:2014. The assessment has shown that

vibration levels from piling operations might just be perceptible in the most sensitive situations.

Operational Noise

- 11.2.5 Further noise models have been constructed to predict the potential noise levels at the nearby noise-sensitive receptors due to the normal operation of the ERC and the data centre. The predictions have been made using the calculation methodology outlined in ISO9613-2 *Acoustics – Attenuation of sound during propagation outdoors*.
- 11.2.6 The resulting predicted noise levels have been assessed in accordance with the guidance contained in BS4142:2014+A1:2019 *Methods for rating assessing industrial and commercial sound*, BS8233:2014 *Guidance on sound insulation and noise reduction for buildings* and World Health Organisation guidance contained in their *Guidelines for Community Noise* and *Night Noise Guidelines for Europe* documents where applicable.
- 11.2.7 Traffic movements associated with the proposed development will be predicted in accordance with the calculation methodology outlined in the *Calculation of Road Traffic Noise* (CRTN) and assessed in accordance with the guidance contained in the *Design Manual for Roads and Bridges* (DMRB).
- 11.2.8 Mitigation, in the form of an enhanced stack silencer has been suggested to ensure that night-time sound rating levels remain below the quietest prevailing background noise levels at all receptors.

12 CLIMATE CHANGE

- 12.1.1 The EIA Regulations require the applicant to “...Identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors - ... climate”. This could include, “...for example the nature and magnitude of greenhouse gas emissions and the vulnerability of the project to climate change...”.
- 12.1.2 There is limited guidance on the scope and methodology of assessing climate change within the ES, and therefore we have undertaken a detailed view on relevant policy and guidance relating to climate change, and have assessed the potential climate change impacts associated with the scheme.

13 ALTERNATIVES

- 13.1.1 Although the EIA 2017 Regulations do not require an applicant to consider alternatives, where alternatives have been considered, paragraph 2 of Schedule 4 requires the applicant to in their Environmental Statement a description of the reasonable alternatives studied. This includes development design, technology, location, size and scale and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.
- 13.1.2 Given the proposed data centre is located outside an existing employment area, a stand-alone alternative site assessment has been prepared, demonstrating a justification as to why the development should be located adjacent to the proposed ERC.

14 CUMULATIVE IMPACTS

- 14.1.1 This chapter provides a summary of cumulative impacts, which have been considered (where relevant) within each technical chapter. In accordance with the EIA Regulations, we have reviewed the impacts of the proposed development in cumulation with existing and approved / likely developments.
- 14.1.2 The previous chapters within this report set out our proposed approach to cumulative impacts. These will vary for each technical assessment due to the variation in spatial impacts relevant to different disciplines.

15 NON-ES CHAPTERS

15.1 Introduction

15.1.1 Within the following chapters we have screened out all other technical assessments and demonstrate that an ES chapter is not required for these aspects of the development.

15.1.2 Instead, these topics have been covered as standalone planning application documents following the normal non-ES format. The proposed scope of each assessment will be detailed within the following Chapters, and we seek to agree that this approach is acceptable.

15.1.3 The following chapters are considered to be non-ES;

- Socio-economic impacts
- Human health impacts
- Ecology

15.1.4 The remaining stand-alone technical assessments include (as well as included within the ES):

- Air Quality Assessment
- Noise Assessment
- Transport Assessment
- Phase 1 Ecological Assessment
- Phase 1 Risk Assessment
- Flood Risk Assessment
- Detailed Drainage
- Socio-economic Report
- Landscape and Visual Impacts Assessment
- Landscape Strategy Plan
- Tree Survey/Arboricultural Impacts Appraisal
- BREEAM and Energy Statement
- Human Health Risk Assessment

15.1.5 The supporting planning documents include:

- Planning Statement
- Design and Access Statement
- Alternative Site Assessment
- Forms and certificates.

16 SOCIO-ECONOMIC IMPACTS

16.1 Introduction

- 16.1.1 The assessment of Socio-Economic Impacts considers the potential impacts of development in terms of employment, economic impact and community.
- 16.1.2 These include consideration of employment, business, tourism and land-use issues in and around the development and provide comment where these are likely to be affected by the proposal.
- 16.1.3 The site has been allocated as a waste management site in West Berkshire's Waste Local Plan. This has determined the acceptability of the site in principle in socio-economic terms. Enzygo have therefore screened out of the ES the socio-economic impacts of the proposed development.
- 16.1.4 A stand-alone desk-based is provided, detailing information on the local population and economy. It examines the potential impacts of the proposed development on present and future businesses and residential development locally and considers future employment and socio-economic impacts for the local and wider community.

17 HUMAN HEALTH IMPACT ASSESSMENT

17.1 Introduction

17.1.1 Human Health Impact Assessments (HHIA) can be undertaken to consider the effects of development on human health, for example the impacts of emissions via direct inhalation, via uptake through the food chain and drinking water, and via dermal contact with soil and water.

17.1.2 In this instance a standalone HHIA has been provided. Consideration of impacts on human health has also been considered within the relevant technical assessments including noise assessment, air quality assessment and Preliminary Risk Assessment. The Transport Assessment considers safety aspects associated with vehicle movements.

18 ECOLOGY

18.1 Introduction

18.1.1 A non-EIA Ecology Assessment has been submitted in support of the application, based on the following methodology.

18.2 Methodology

18.2.1 A Preliminary Ecological Appraisal of whole site, including engagement with the County Ecologist at the earliest opportunity to determine specific requirements and any immediate concerns/objections they may have to any scheme;

18.2.2 Clarification on requirements to protect the local designation covering the site and Local BAP habitats;

18.2.3 Requirement to retain any existing biodiversity improvements implemented under previous planning conditions, or what is required to mitigate their loss;

18.2.4 Update historical surveys undertaken across the site and revise mitigation accordingly i.e. GCN, Reptile, Badger, Bat) (note GCN eDNA analysis of waterbody already undertaken by Enzygo, 2017).

19 CONCLUSIONS

- 19.1.1 J Mould propose the development of a strategic Energy Recovery Centre and Data Centre at Reading Quarry, Berrys Lane, Reading. The proposed ERC will import 150,000 tonnes per annum Refuse Derived Fuel (RDF) from non-hazardous municipal, Commercial and Industrial Waste sources. The proposed data centre includes ancillary office space, main storage warehouse and external plant area containing back-up generators.
- 19.1.2 The proposed ERC falls within Schedule 1 of the EIA Regulations (2017), and the development constitutes EIA due to the scale of the development. The data centre falls within Schedule 2 of the EIA Regulations (2017).
- 19.1.3 Ecology, human health impacts, socio-economic impacts and geotechnical have been screened out of the ES. Air quality, transport, landscape, hydrology, noise and vibration and climate change has been included within the ES.



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BRISTOL OFFICE

The Byre
Woodend Lane
Cromhall
Gloucestershire GL12 8AA
Tel: 01454 269 237

SHEFFIELD OFFICE

Samuel House
5 Fox Valley Way
Stocksbridge
Sheffield S36 2AA
Tel: 0114 321 5151

MANCHESTER OFFICE

Ducie House
Ducie Street
Manchester
M1 2JW
Tel: 0161 413 6444

Please visit our website for more information.

enzygo.com