

MAY 2016

ENVIRONMENTAL STATEMENT
NON TECHNICAL SUMMARY

ROTHERHAM ENERGY SCHEME | RENEWABLE ENERGY CENTRE

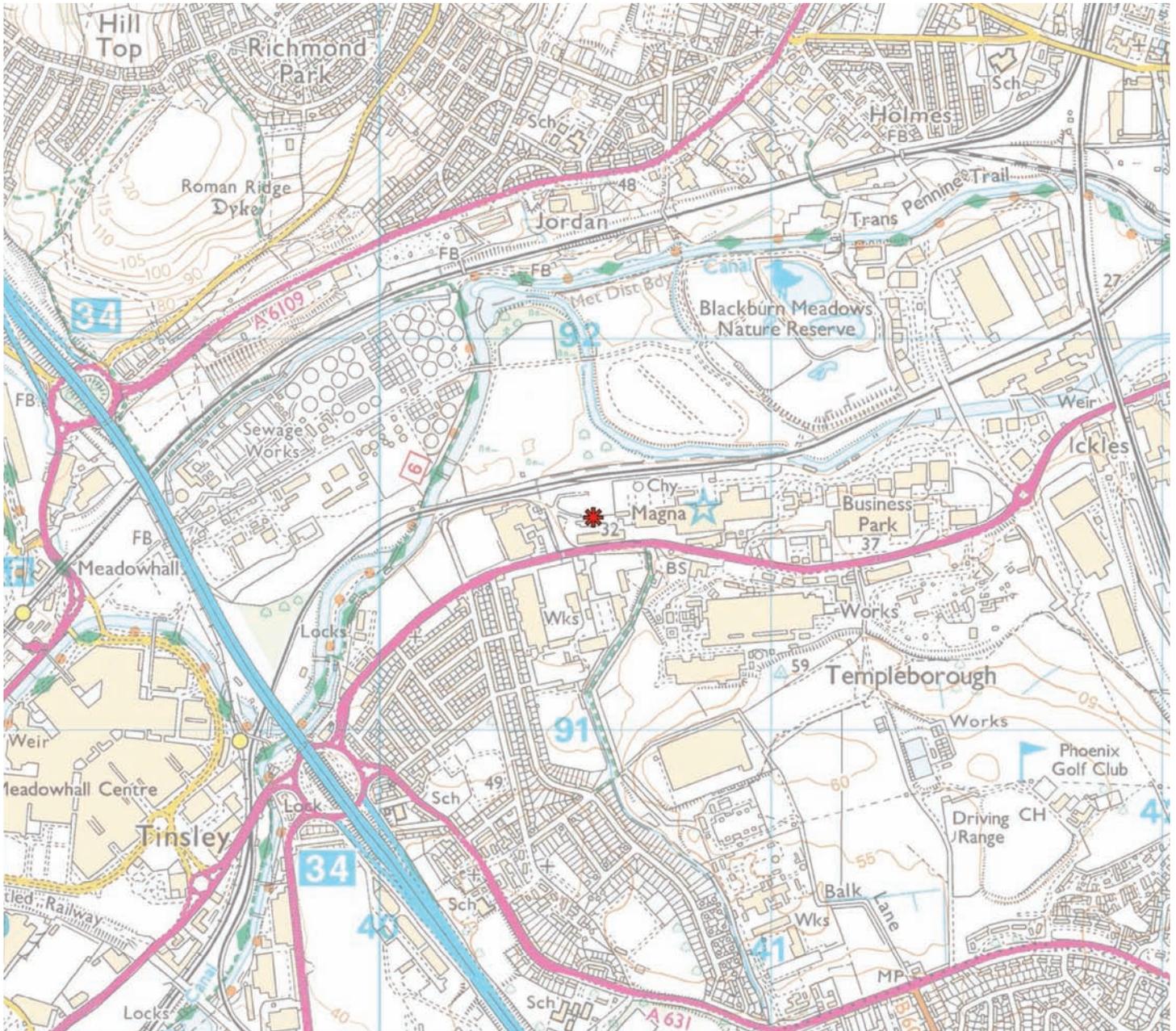
ROLTON KILBRIDE





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SITE CONTEXT PLAN

PREFACE

This document forms the Non-Technical Summary (NTS) of the Environmental Statement (ES) that accompanies a planning application submitted by Rolton Kilbride (the Applicant) who is seeking to obtain planning permission for a proposed Renewable Energy Centre (REC) for the recovery of energy (heat and power) from non-hazardous residual waste using an Advanced Conversion Technology process called ‘gasification’, and a Mechanical Treatment Facility (MTF) for the recovery of recyclable materials with the associated plant and infrastructure and landscaping located within land at Phoenix Road, Rotherham (the Application Site).

The Application Site is located within the administrative area of Rotherham Metropolitan Borough Council (RMBC). The site lies outside of but immediately adjacent to Sheffield City Council (SCC). The REC and MTF are known as Rotherham Energy Scheme and referred to within this Environmental Statement (ES) as the “Proposed Development”.

The ES comprises studies on each of the aspects of the environment identified as likely to be significantly affected by the Proposed Development, which are supported with technical appendices where appropriate. This ES is structured as follows:

- Volume 1: Comprises the written statement and graphic material in the form of figures, drawings and photomontages, which is the main volume of the ES
- Volume 2: Contains the Technical Appendices to the main volume of the ES

Additional documentation that will be submitted with the planning application includes:

- Planning Statement
- Design and Access Statement
- Application Forms
- Technical Drawings

- Statement of Community Involvement
- Coal Mining Risk Assessment
- Waste Management Plan
- Environmental Statement

The ES and associated documents will be available for viewing during normal business hours at Metropolitan Borough Council Offices at the following location:

**Rotherham Metropolitan Borough Council
Environment and Development Services
Riverside House
Main Street
Rotherham
S60 1AE**

The ES may be purchased in Volumes, the costs for which are set out below:

- Non-Technical Summary – £10
- Volume 1: Main Volume and Figures - £150
- Volume 2: Technical Appendices - £150

Copies of all documents can be obtained on CD for £15. For copies of any of the above please contact Pegasus Group at the following address:

**Pegasus Group
Pegasus House
Querns Business Centre
Whitworth Road
Cirencester
Gloucestershire
GL7 1RT**

Tel: 01285 641717

Fax: 01285 642348

INTRODUCTION

Background

The Proposed Development includes a proposed Renewable Energy Centre (REC) for the recovery of energy (heat and power) from non-hazardous residual waste using an Advanced Conversion Technology process called 'gasification', and a Mechanical Treatment Facility (MTF) for the recovery of recyclable materials with the associated plant and infrastructure and landscaping located within land at Phoenix Road, Rotherham.

The proposed facility will have the capacity to process up to 215,000 tonnes of non-hazardous residual waste per annum; that is waste that is left following the practicable removal of recyclable materials (i.e. pre-treated waste) and that may otherwise be disposed of at a landfill site or exported to a similar facility abroad. The residual waste feedstock will predominantly be in the form of a Refuse Derived Fuel (RDF) which is a waste product following pre-treatment.

The Proposed Development would generate up to 23 megawatts (MW) of exportable electricity.

The Applicant and EIA Project Team

Rolton Kilbride is a privately owned developer of Renewable Energy Centres. Rolton Kilbride is also working with a set of highly specialised technology partners and advisers who have extensive experience in the field of energy generation, gasification and the use of modern environmental technology.

This ES has been co-ordinated and managed by Pegasus Group. The consultants who have contributed to the preparation of this ES are as follows:

- Air Quality – AQC
- Landscape / Townscape and Visual – Pegasus Group
- Traffic and Transport – Curtins
- Hydrology and Flood Risk – PFA Consulting
- Hydrogeology and Ground Conditions – Rolton Group
- Noise – LF Acoustics
- Ecology and Nature Conservation – Avian Ecology
- Archaeology and Cultural Heritage – Cotswold Archaeology
- Socio Economics – Pegasus Group

EIA Process

The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 require that a proposed development which falls within the description of a 'Schedule 2 Development' within the meaning of the Regulations, will require an Environmental Impact Assessment (EIA) where the development is likely to have significant effects on the environment by virtue of such factors as its nature, size or location (Regulation 2).

Under the EIA Regulations Scoping is not a mandatory requirement, however, requesting a Scoping Opinion from the local authority can be helpful. Obtaining a Scoping Opinion enables consultation over the content and extent of matters to be included within the ES from all key statutory and non-statutory bodies. The Scoping should identify key environmental issues, appropriate surveys and methodologies, potential mitigation and areas of further assessment.

The aim of the Scoping process is to identify key environmental issues at an early stage, to determine which elements of the Proposed Development are likely to cause significant environmental effects and to identify issues that can be 'scoped out' of the assessments.

The Applicant submitted a Scoping Request to RMBC in March 2016. The Scoping Request set out the proposed methodology for each of the key environmental issues and requested comments from RMBC and other Statutory Consultees on the suitability of the Proposed Development, the proposed methodology and the likely significant effects of the construction and operational phases of the Proposed Development.

A Scoping Opinion confirming the issues to be covered in the EIA was provided by RMBC in May 2016.

Under the EIA Regulations, proposals which fall within the scope of Schedule 2 development, an EIA is discretionary. This EIA has been produced however, in recognition of the strategic significance of the development and the expected local interest in the proposals. The EIA and this ES have been undertaken and prepared with due regard to the criteria of Schedule 4 of the Regulations. The ES includes an assessment of the predicted effects of the proposed development, focussing, as required by the EIA Regulations, on those effects that have the potential to be significant. The content of the ES, as well as the overall approach to the EIA, has also been designed to reflect other requirements of the EIA Regulations as well as widely recognised good practice in EIA.

CONSULTATION AND SCHEME BENEFITS

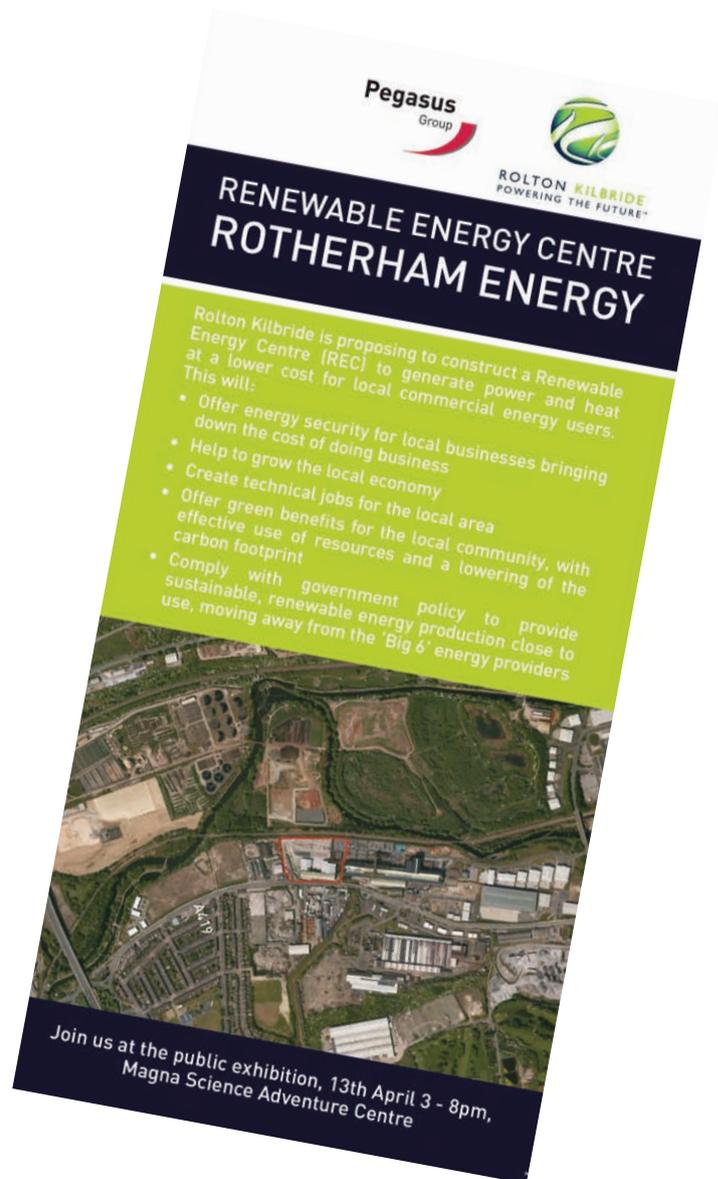
Public Consultation

Public consultation was a fundamental and integral process of the planning application. A well thought out strategy to engage with local stakeholders was carefully delivered from the outset and comprised a press release; residents and press briefings; a leaflet drop and invitation to a public exhibition where members of the design team as well as the technology providers, air quality and transport consultants were on hand to answer any queries.

The Applicant has consulted a number of statutory consultees during the course of the Environmental Impact Assessment Scoping procedure who are aware of the proposals and have provided formal advice.

The Applicant has also engaged in a pre-application consultation process with RMBC prior to the submission of the planning application. The advice received was broadly supportive of the proposals in principle, including guidance setting out the planning policy context that an application would be judged against and an indication of the documentation necessary to support an application.

The full details of the public consultation strategy and feedback from the events are included within the Statement of Community Involvement which is a separate report and will be submitted with the planning application documentation.



Scheme Benefits

The benefits of the facility include:

- Proven technology with outstanding operational and environmental performance and very low emissions;
- Conversion of pre-treated waste into renewable energy, displacing landfill and fossil fuels;
- Reducing greenhouse gas emissions;
- Job creation across a variety of skills and levels of expertise with employment opportunities for local people;
- Transforming an existing industrial site and enhancing with landscape planting;
- The identified land is allocated for development in the Waste Management Sites Policy in the 'Rotherham Local Plan: Publication Sites and Policies Development Plan Document (2015)';
- Production of lower cost renewable energy for local businesses with connections to local energy users via underground cable;
- Clear progression in the transition to a low-carbon economy with grid carbon offset; and
- Compliance with Government policy and the Industrial Emissions Directive to provide sustainable, renewable energy production close to use.

SITE CONTEXT AND LOCATION

The Application Site is approximately 3.4 hectares in size and rectangular in shape. The site lies within an industrialised/urbanised area located to the north of Sheffield Road (A6178) in Templeborough, approximately 2km south west of Rotherham town centre, 7.5km north east of Sheffield City Centre and 1.5km east of M1 junction 34 near Meadowhall. The western boundary of the site aligns with the boundary division of RMBC to the east and SCC to the west.

Access to and egress from the site for vehicles is via Phoenix Road to the western boundary. Phoenix Road junctions with Sheffield Road at the south west corner of the site.

The nearby uses to the west and south are generally industrial and / or commercial in nature although the residential area of Tinsley is located approximately 200m south west of the site just east of the motorway junction. The Magna Science Adventure Centre (former Templeborough Steelworks site) lies to the east. To the north beyond the railway line and the River Don lies Blackburn Meadows Waste Water Treatment Works and Blackburn Meadows Nature Reserve and Local Wildlife Site.

The River Don, a main river is located approximately 0.1km to the north east of the site and flowing east. At its closest point to the site the river is approximately 20m wide. An Ordinary Watercourse, The Chapel Flat Dike, lies a short distance to the east of the site flowing in a northerly direction, within a culvert, to discharge into the River Don.

The site is located in Zone 2 Flood Risk Area of the Environment Agency flood mapping and is free from any other environmental designations. There is public

sewerage infrastructure across the site which leads to Blackburn Meadows Waste Water Treatment Works. An Air Quality Management Area (AQMA) is located south of the site's boundary. The far north western corner of the site lies within a coal mining referral area. There are no listed buildings or Conservation Areas within the vicinity of the site. There are no public rights of way through the site.

The site once formed an integral part of the Templeborough Steelworks which passed through a number of ownerships from Steel Peach and Tozer to British Steel, United Engineering Steels Ltd. and to Corus plc. The open part of the site was used for metal fragmentation to supply metal to the adjoining steelworks. The building was used for ingot stripping. All activities at the site ceased following the closure of Templeborough Steelworks. The site remained vacant and the building and associated infrastructure was retained. In 2008 the Sterecycle Rotherham Waste Recycling and Treatment Facility (Autoclave Vessels and a Materials Recycling Facility (MRF)) became operational and operated within the existing building.

The site is currently in use as a storage area and headquarters for road works in the locality. The site itself is almost entirely concreted with the majority serving as a car park with the rest either serving as a storage area / warehouse. There are small areas of short amenity grassland and some shrubs and scrub vegetation, including along the northern boundary beside the railway line, although these are not considered to be of significant ecological value. The site is free from established and mature trees. A line of young poplar trees run north-south through part of the site, and there is a short section of overgrown hedgerow containing young beech and hawthorn along the south-eastern boundary.

Historical Uses of the Site

An Envirocheck report of the site has been completed and shows the earliest historical maps date from 1892 where the site covers part of two fields with a field boundary crossing the central part of the site. In the north-west is an area of rough pasture and 'Deadman's Hole Lane' crossing the corner of the site. In the mapping from 1905 – 1906 the field boundary is no longer shown crossing the site. An 'Air Shaft' is shown adjacent to the northern boundary (possibly associated with underground mines). The 1923 mapping shows the site is now occupied with part of Templeborough Steelworks. The site is largely covered with railway sidings feeding from the main railway lines beyond the northern site boundary. A travelling crane is located in the south. The southern boundary is now formed by a retaining wall. The western end of a Rolling Mill building encroaches on the south eastern part of the site.

The 1934 – 1935 mapping shows additional railway lines or travelling cranes and a number of small associated buildings have been constructed in the south of the site.

Mapping for 1955 illustrates the buildings for the Rolling Mills have been extended into the central part of the site. A rectangular building has been constructed in the north of the site. In the central eastern part of the site is now an area labelled with 'Tanks'. A number of smaller buildings have been constructed adjoined to the main Rolling Mill building in the east of the site. In 1963 – 1972 Phoenix Road has now been constructed in the west with a gatehouse and barriers in the south western corner. Much of the central and eastern parts of the site are covered with an extension to the Steelworks. In the north several tanks, an electrical substation and a hopper have now been constructed.

In 1993 one railway siding remains connected to the main railway lines in the north east of the site. Two other sidings or travelling cranes extend from the buildings. Phoenix Road is still present in the west. The substation, tanks and hopper are still present in the north. Much of the central and southern part of the site are covered with the main building of Templeborough Steelworks. A tank is now labelled in the centre of the site.

In 1994 the buildings covering much of the central and southern parts of the site have now been demolished. A rectangular building is now present adjacent to the southern site boundary. All the railway sidings in the west have been removed. The tanks, hopper and substation in the north have been removed; two weighbridges are now present in the north.

In 2015 the rectangular building in the south of the site has been extended towards the north now forming a roughly 'U' shaped building on plan. Two small buildings in the north have been demolished. A small rectangular building is now present adjacent to the western site boundary.

Ecological Considerations

Land within the Application Site boundary is predominantly hardstanding with several areas of heavily managed amenity grassland, together with a fenced-off area of dense scrub which also supports immature birch trees, several lines of planted trees, including a line of semi-mature Lombardy poplar running north-south through part of the Application Site together with a hedgerow. The hedgerow is species-poor and is heavily managed beech and hawthorn, approximately 1m in height. Buddleia plants are present within the Application Site, primarily around the Site margins.

The only standing water within the Application Site is a series of small concrete-lined tanks containing water of a very poor quality. These tanks were devoid of ecological value.

The Application Site lies within an industrialised/urbanised area. The lack of resources or features that are likely to attract protected or notable species would suggest any individuals present are only likely to be present on temporary and fleeting basis.

There are no statutory designated sites within the site. Eight statutory designated sites are located within 5km of the site and the Peak District Moors SPA lies within 20km. The nearest statutory designated site is Centenary Riverside Local Nature Reserve located 1.3km east of the site and includes a mixture of wet and dry woodland, wet grassland, meadow and reedbed, marshland and a small pillwort pond. The Application Site does not lie within an Impact Risk zone for any local SSSIs.

There are no non statutory designated sites within the site. There are 12 non statutory designated sites within 2km of the site, the closest is Blackburn Meadows Local wildlife

Site located approximately 20m north of the site supporting usual urban plant communities, and a range of breeding birds.

Landscape and Heritage Considerations

The Application Site is not subject to any statutory or non-statutory landscape designations and is currently occupied by a large industrial building, and is surrounded by built form of similar or larger scale and height. This large scale building, currently used by Costain Ltd as a depot, forms a key built element and visual feature due to its footprint and height (approximately 17.5m to eaves and 21.8m to ridge). It is, broadly, a U shaped building with the elevation covered in metal vertical cladding with pitched roof. Services, including a chimney stack and external staircases run along its elevations introducing vertical elements and interrupting its simple form. The northern part of this building is lower with shallow pitched roofs and consists of two separate parts, located at either side of the main taller building.

The existing industrial building within the Application Site follows the alignment and abuts Sheffield Road. It follows and reinforces the building line along this road, enclosing the street scene. A chimney stack is located near the western side of the main building and along with the external staircase. There are a number of relatively tall vertical elements such as cranes, chimney stacks, and street lighting columns in the plots surrounding the Application Site which reinforce the industrial character of this area.

The central and northern part of the Application Site has an open character and comprises a tarmacked car park and internal vehicular concrete access road running along

the western boundary and connecting to Sheffield Road. A cabin is located near the entrance off Sheffield Road with retaining walls and steps to accommodate changes in levels. Modular offices are located in the north eastern corner and extend along the northern boundary, forming a combination of single and two storey built form. A palisade fencing secures the perimeter of the Application Site.

There are no Public Rights of Way (PRoWs) or Permissive Footpaths within the Application Site, or any other form of public access, except for pedestrians along Sheffield Road.

The nearest Registered Park and Garden is the Grade II Boston Park, located approximately 2.2km to the east, and is adjacent to the Grade II Moorgate Cemetery. Grade II Clifton Park is located approximately 3.0km to the north east, near the Rotherham town centre. The Grade II* Wentworth Woodhouse lies approximately 3.4km away to the north.

Existing Flood Risk

The Environment Agency's Flood Map shows the site lies within Flood Zone 1 and 2 with the majority of the site falling within Flood Zone 2. Flood Zone 2 Medium Probability is defined as land having between a 1 in 100 and 1 in 1000 annual probability of river flooding.

The Risk of Flooding from the Environment Agency Surface Water Map shows the site lies in an area with very low (< 1 in 1000) chance of surface water flooding, with small isolated areas with a medium (between 1 in 100 and 1 in 30) chance of flooding, corresponding with low points on the site.

Modelled flood levels for the River Don have been obtained from the Environment Agency and based on the Environment Agency risk categories, the risk of flooding of the site from watercourses is considered to be 'low'.

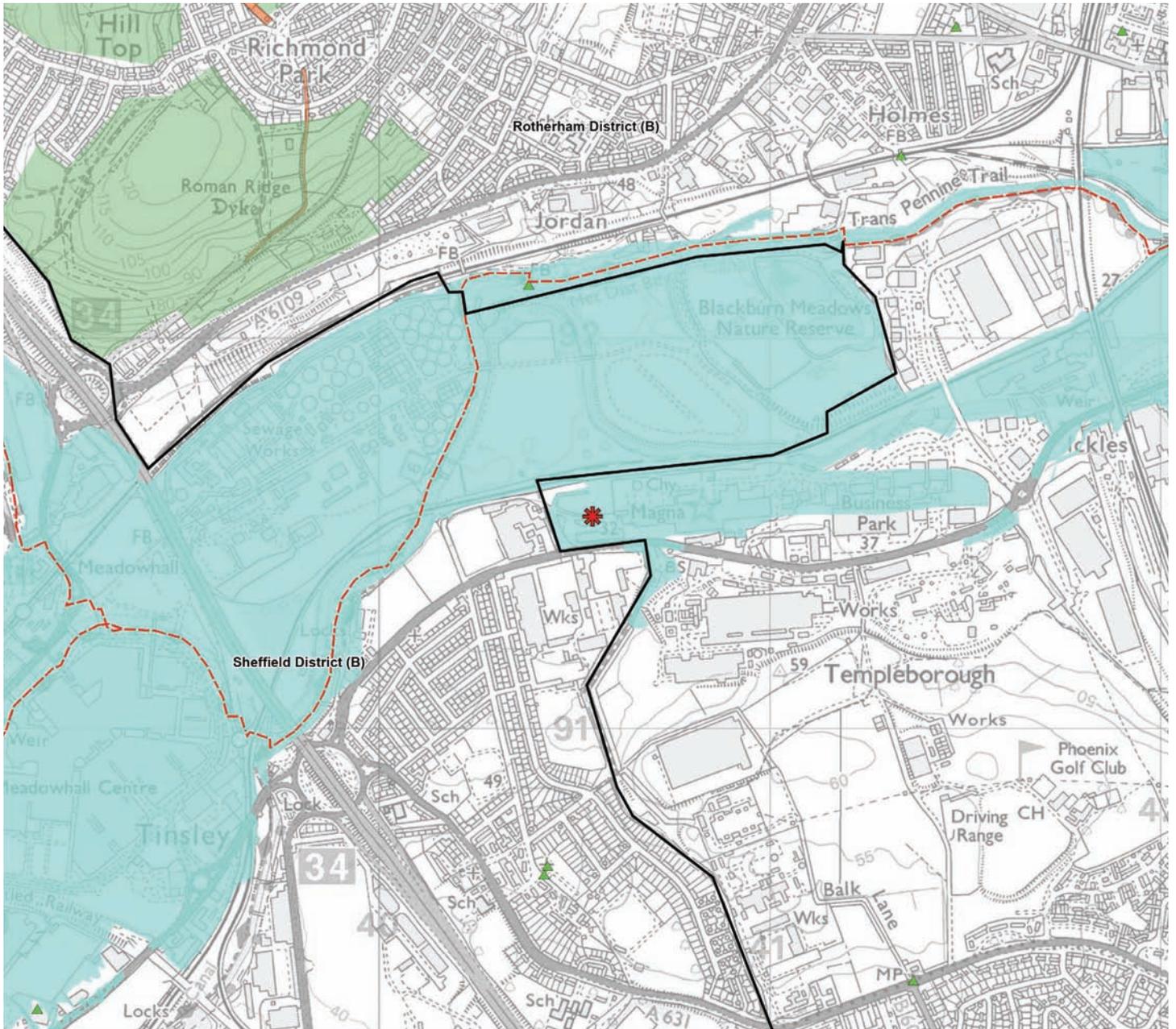
Evidence of surface water flooding in the vicinity of the site access exists. Surface water flooding is likely to be caused by the blockage of a culvert on the Chapel Flat Dyke, running down a public footpath opposite the south east corner of the site and onto the road.

The Environmental Constraints and nearby Designations are shown on the constraints plan on P11.

KEY

-  Site Location
-  Local Authority Boundary
-  Green Belt
-  Sustrans National Route
-  Grade II Listed Building
-  Scheduled Monument
-  EA Flood Zone 2

The assessment HAS NOT considered policies from the Rotherham Adopted Core Strategy (2014)



ENVIRONMENTAL CONSTRAINTS PLAN

ALTERNATIVES & CUMULATIVE DEVELOPMENT

Consideration of Alternatives

Schedule 4, part 1, paragraph 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 requires that “an outline of the main alternatives studied by the applicant and an indication of the main reasons for this choice, taking into account the environmental effects” are included within the ES.

Other sites were considered early in the feasibility process, however, the principal reason for the selection of the site was its location within an allocated site in an industrial area with good access to the primary route network and in close proximity to energy intensive industrial customers.

The Application Site is located within an existing industrial area that is allocated in the Joint Waste Plan as a ‘Safeguarded Site’ by Policy WCS2. The purposes of these sites are to protect and safeguarded existing sites used for waste management purposes and are essential to achieving the overall strategy of the Joint Waste Plan.

The design of the Proposed Development has been informed by an iterative process with alternative layouts and elevations considered throughout the process. Layout option drawings of the site were developed prior to the final option taken forward, the drawings demonstrate constraints and opportunities associated with the location and orientation of the buildings, vehicular movement and access as well as landscaping proposals. As part of the design development the following were considered; weighbridges and office re-location to prevent queuing on Sheffield Road; access returned to original configuration; pedestrian crossing points added and the entrance barrier and fence moved further into the access road. New planting was introduced into the principal frontages of the site and machinery to be kept away from the street elevation.

A series of elevation option alternatives were explored and considered throughout the iterative design process. The Proposed Development has been designed with the intention of forming a landmark building within the Rotherham area. The colour palette has been selected to make the Proposed Development appear as a coherent and simple image. The selection of the muted copper effect colour for the roofs and some of the elevations, aims to create a landmark building, enhancing the streetscape and the townscape of this part of Rotherham. The architecture of the Proposed Development has been designed to complement the mass, scale, form and appearance of the large facilities of the Magna Science and Adventure Centre, adjacent immediately to the east and two other biomass developments already present in the local area; the EON Blackburn Meadows Biomass Power Plant and the Templeborough Biomass Power Plant (currently under construction).

Site Identification and Feasibility

The Rotherham Energy site was identified to provide the opportunity for power to be supplied to any interested local businesses as well as the opportunity to supply heat in the form of steam and / or hot water if required; and in view of the need for new waste infrastructure within Rotherham Metropolitan Borough Council area with the plant saving approximately 215,000 tonnes of waste going to landfill annually.

The site at Rotherham was chosen having established:

- Its availability and its size which was suitable for a 215,000 tonnes facility;
- Its proximity to energy intensive industrial consumers. It is intended that the proposal will be able to offer low cost secure energy to one or more neighbouring businesses, assisting in securing the future of those companies and their employees;
- Its access within an existing industrial estate which immediately joins the primary route network without the need to go through residential areas.

No other viable site alternatives that met all three criteria were identified.

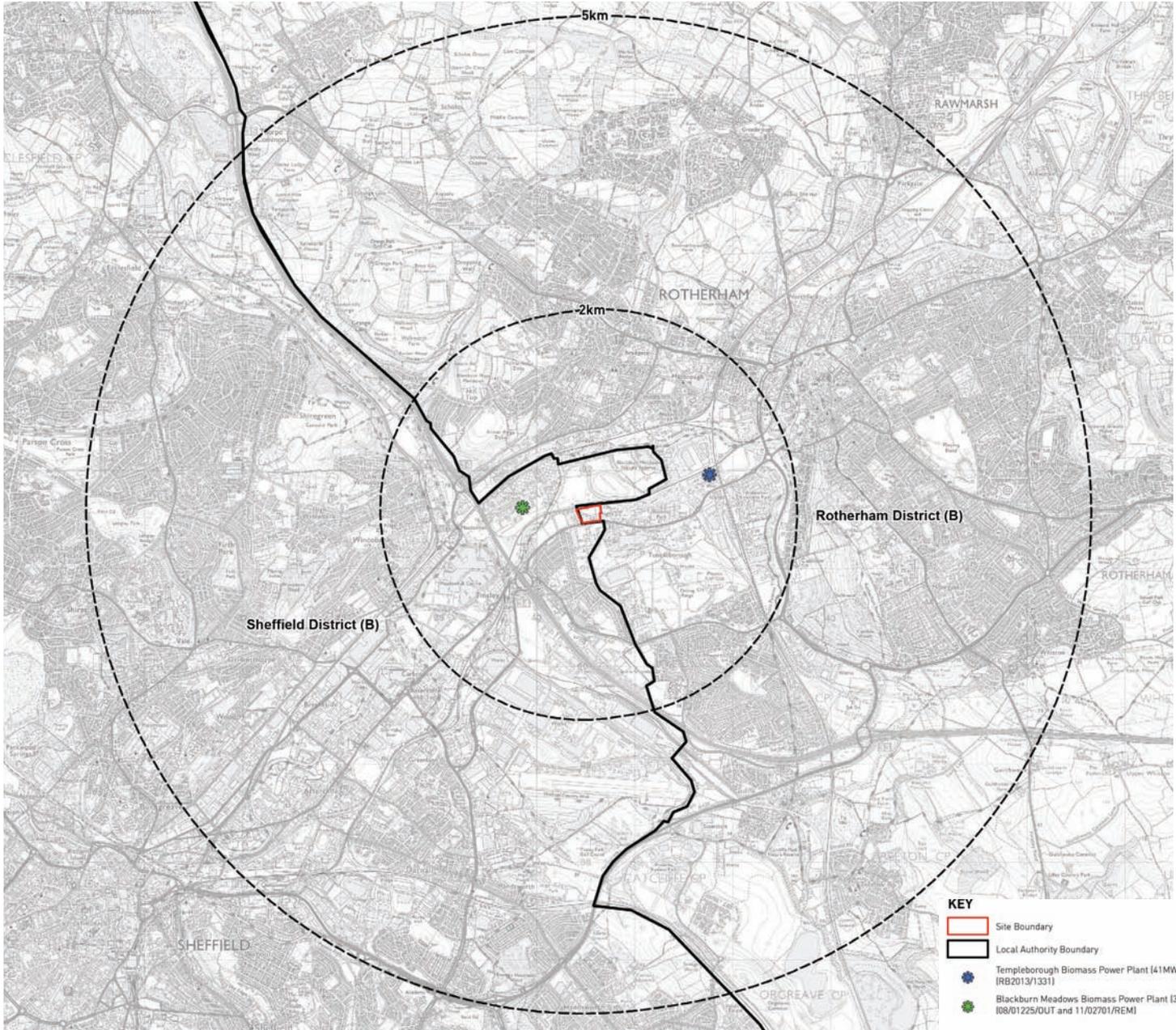
Consented Development & Cumulative Considerations

Schedule 4, part 1, paragraph 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 requires that a description of the likely significant effects of the development on the environment should cover cumulative effects.

The main aim of a cumulative assessment is to assess the additional impact of the development proposed on the baseline of projects that are either already operational, have planning permission or which are in the planning system.

During the pre-application process RMBC identified two sites to be included within the cumulative assessment. The sites lie within a 2km radius of the Proposed Development and are as follows:

- Templeborough Biomass Power Plant (Ref RB2013/1331)
- Blackburn Meadows Biomass Power Plant (Ref 08/01225/OUT and 11/02701/REM)



KEY

-  Site Boundary
-  Local Authority Boundary
-  Templeborough Biomass Power Plant (41MW) (RB2013/1331)
-  Blackburn Meadows Biomass Power Plant (30MW) (08/01225/OUT and 11/02701/REM)



CUMULATIVE SCHEMES PLAN

PROPOSED DEVELOPMENT

The Proposed Development includes the demolition of existing buildings, construction and operation of a Renewable Energy Centre for the recovery of energy (heat and power) from non-hazardous residual waste using an Advanced Conversion Technology process called 'gasification', a Mechanical Treatment Facility for the recovery of recyclable materials with the associated plant and infrastructure, with associated access, parking, landscaping and ancillary buildings on land at the Former Templeborough Steel Works, Sheffield Road, Templeborough, Sheffield.

The Proposed Development will use an Advanced Conversion Technology (ACT) process called gasification. Gasification technology has an established track-record and is fully proven and bankable. Several European and Financial institutions and banks have completed thorough due diligence on the gasification technology projects, including Barclays, Lloyds, RBS, Bayern, Bank of Ireland, HSBC, HSH Nordbank, Natixis, UniCredit and LB Nord, and all have concluded that it is fully bankable. Furthermore, thorough technical due diligence has been undertaken on behalf of the banks, investors and project developers, carried out by qualified and experienced engineering consultants including Mott Macdonald, Fichtner and Rowan House. As an ACT the Proposed Development would qualify under the Renewables Obligation (RO) and the Contracts for Difference (CFD) mechanism.

The proposed facility will have the capacity to process up to 215,000 tonnes of non-hazardous residual waste per annum; that is waste that is left following the practicable removal of recyclable materials (i.e. pre-treated waste) and that may otherwise be disposed of at a landfill site or exported to a similar facility abroad. The residual waste feedstock will predominantly be in the form of a Refuse

Derived Fuel (RDF) which is a waste product following pre-treatment; the RDF feedstock would be supplemented by other non-hazardous pre-treated commercial and industrial waste (C&I) and pre-treated municipal solid waste (MSW). It is intended that the residual waste will primarily be sourced from within South Yorkshire; however, the planning application seeks flexibility to receive wastes from a wider catchment for practical and operational reasons. The facility will not accept hazardous or clinical waste.

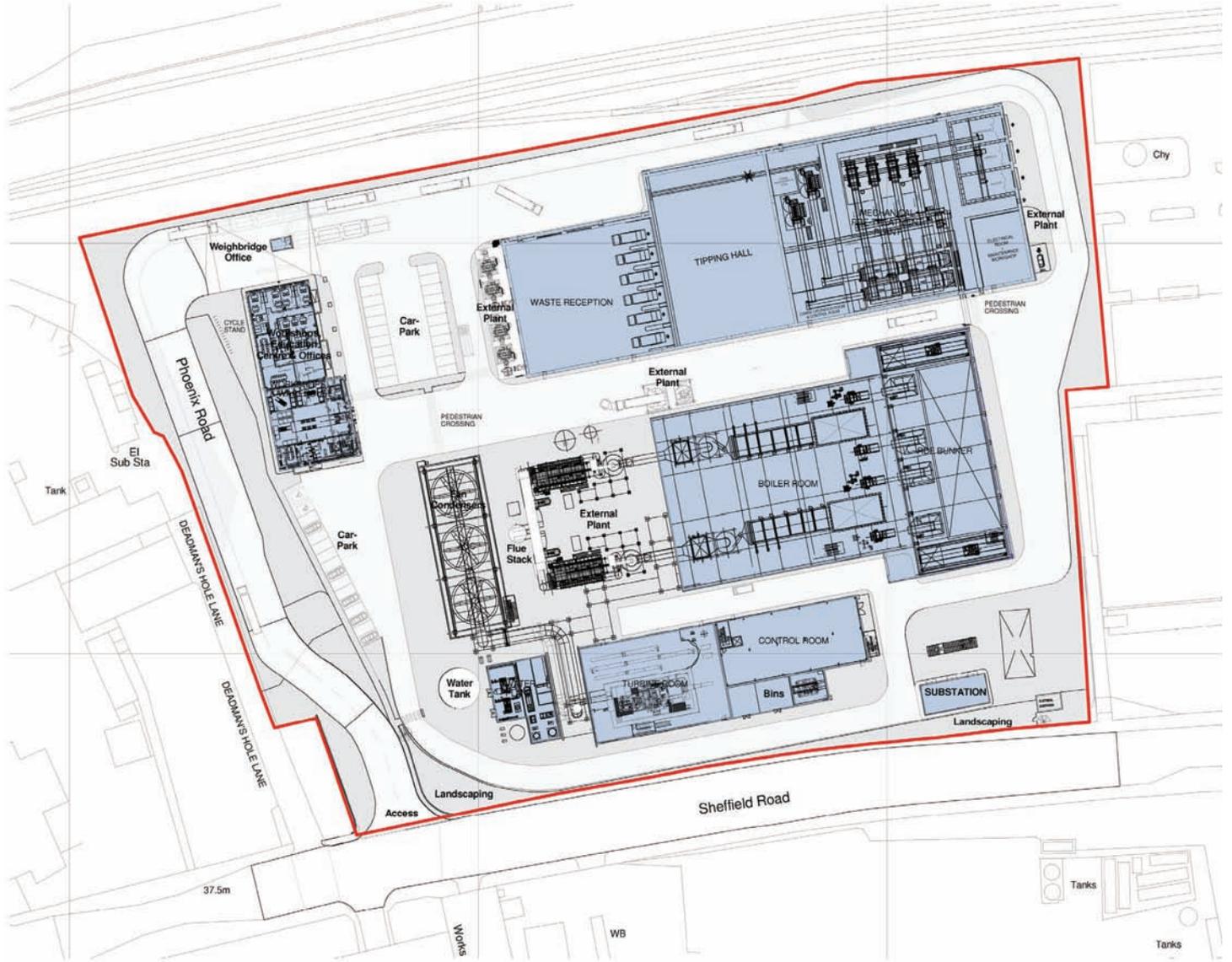
Unlike incineration, the facility will employ an ACT, known as 'gasification', that heats the residual waste to very high temperatures, causing the materials to break down whilst also generating a gas which when burnt off in a boiler creates steam, which in turn drives a steam turbine to generate electricity or exported as heat.

The proposed facility will have capacity to produce circa 23MW of exportable electricity depending on the amount of heat to be exported, which in itself is dependent on the temperature and quantity of heat required by the eventual heat off-taker(s). In the event that a local user cannot be secured for the electricity it would be routed to the national distribution network.

The built development will comprise the following key elements:

- **Mechanical Pre-Treatment Plant, Tipping Hall & Waste Reception** – The building will be L-shaped in form measuring 126.6m long x 40.6m wide narrowing to 34.2m wide and at its highest point would be 21.65m above ground level. The building will accommodate the reception hall and mechanical pre-treatment plant. The building would be finished in a combination of built up trapezoidal cladding (horizontally and vertically laid) in silver/grey with built up roof and standing seam cladding for the roof and wall feature in muted copper effect/terracotta, incorporating vents and louvres. Windows and doors would be steel or aluminium framed, doors either timber or steel, with two roller shutter doors to the northern elevation and three roller shutter doors to the eastern elevation.
- **High Level Conveyor** – Comprising a high level, enclosed conveyor located between the Mechanical Treatment Plant and the RDF Bunker.
- **Boiler Room and RDF Bunker** – This building will be T-shaped in form measuring 80m long x 57m wide and at its highest point would be 45m above ground level sloping down to an eaves height of 38.4m above ground level. The building will accommodate the fuel bunker, cranes/crane maintenance area, and gasification processing plant (gasification and combustion chambers, boiler, economiser, chemical dosing system, feed water pumps, etc). The building would be finished in a combination of built up trapezoidal vertical cladding in silver/grey and trapezoidal horizontal cladding in varied colours, with built up roof and standing seam cladding for the roof and wall feature in muted copper effect/terracotta, incorporating vents and louvres. Windows and doors would be steel or aluminium framed, doors either timber or steel.
- **Flue Stack** – A single flue stack will be located towards to the west of the Boiler Room and Bunker measuring 3.7m in diameter at its base and extend to 100m above ground level, with a walk around metal framework platform for access to the continual air quality monitoring system. The flue stack would be finished in a muted grey colour.
- **Offices, Workshops and Education Facility** – This building would be located to the north-west corner of the site. The building will measure 43m long x 20m wide and 15.75m at its narrowest point. The building will have a split roof reflecting the operational requirements within, with the southern part (primarily workshop and storage) constructed to a maximum height of 15m above ground level and the southern part (administrative offices and education centre) constructed to a maximum height of 8m above ground level at its highest point. The building will accommodate the education facility and visitors area, reception, meeting rooms, welfare facilities (toilets and kitchen), offices, workshop, storage, driver restroom, with stairs and lifts. The building would be finished in a combination of built up trapezoidal cladding (horizontally and vertically) and flat panel composite cladding in light grey incorporating vents and louvres, and glazed curtain walling in dark grey, with built up standing seam clad roof in muted copper/terracotta, incorporating rooflights. Windows and doors would be steel or aluminium framed, doors either timber or steel.

- **Control Room and Turbine Hall** – This building will be located towards the southern boundary of the site and measure 69.6m long x 23.7 wide and 16.2m at its narrowest point. The building will have a split roof with the eastern part (control room) constructed to a maximum height of 16.2m above ground level at its highest point and the western part (turbine room) constructed to a maximum height of 26.2m above ground level. The building will accommodate the electrical plant and control room, and the steam turbine/generator, cooling pumps, compressed air system, heating system and controls, etc. The building would be finished in a combination of built up trapezoidal horizontal cladding in light grey and trapezoidal horizontal cladding in varied colours incorporating vents and louvres, with built up standing seam clad roof in muted copper/terracotta. Windows and doors would be steel or aluminium framed, doors either timber or steel.
- **Water Plant Room** – This building will be located to the western elevation of the Turbine Room and Control Room building towards the southern boundary of the site. The building will measure 20.7m long x 14.9m wide and 7.5m at its narrowest point. The sloping roof design will be constructed to a maximum height of 6.9m above ground level. The building would be finished in built up trapezoidal cladding horizontally laid in silver/grey, with built up standing seam clad roof in muted copper/terracotta. Windows and doors would be steel or aluminium framed, doors either timber or steel.
- **Weighbridge Office and Weighbridges** – The weighbridge office will be located to the north-west of the application site adjacent to the two proposed weighbridges (weighbridge in and weighbridge out). The building will be rectangular in shape measuring 5m long x 3m wide with the roof constructed to a maximum height of 3.4m above ground level. The building would be finished in flat panel cladding in silver/grey with windows and doors steel or aluminium framed, doors either timber or steel.
- **Electricity Sub-Station** – This building will be located to the south-eastern corner of the application site. The building will measure 16.4m long x 7.5m wide with the roof constructed to a maximum height of 2.8m above ground level. The external facing materials and fenestration is still to be determined, potential options include steel with cladding as per other buildings, GRP enclosure if available, or built in brick with cut timber roof and tiles.



PROPOSED SITE LAYOUT



**PROPOSED SITE LAYOUT
ILLUSTRATING LANDSCAPING**

- **External Plant** – The precise details and location of external plant will be subject to the technical design phase; however, the external plant will include (not exclusively):
 - » Odour Control Plant;
 - » Air Cooled Condensers (ACC) Plant;
 - » Flue gas filters and associated equipment;
 - » Storage silos and bunkers including storage of flue gas cleaning materials, recovered materials and residues;
 - » Continuous emission monitoring equipment (CEMs);
 - » Water Tank(s), pumps and fire-fighting equipment/pumps, etc;
 - » Emergency diesel.
- **Vehicle Access / Service Area** – The Proposed Development will utilise the existing site access taken from the northern side of the A6178-Sheffield Road via a priority T-junction arrangement and a comprehensive internal vehicular route will be provided around the entire perimeter of the Application Site as well as between the main Boiler Room and the Tipping Hall.
- **Vehicle Parking** - 38 car parking spaces in total which includes 2 disabled bays.
- **Cycle Parking** - Provision for 28 cycling spaces.
- **Site security** – Securing the operational area will be 2.4m high fencing with two pairs of double-leaf lockable gates.
- **Lighting** – The facility will be lit by a series of external building mounted and pole mounted directional lighting.
- **Landscaping** – Given the nature of the existing and Proposed Development there is limited opportunity for providing landscaping. However, additional planting will be provided to include opportunities for tree and shrub planting.

Operational Development (Process Description)

The key stages of the operational development are set out below:

Vehicle Access – Vehicular access to the Renewable Energy Centre will utilise the existing site access taken from the northern side of the A6178-Sheffield Road via a priority T-junction arrangement.

Vehicles delivering residual waste or for the import/export of process materials (i.e. delivering lime, carbon, etc. or removal of metals, bottom ash, fly-ash residue, etc.) will be routed to the weighbridges/Weighbridge Office. Access and egress will be controlled by security barriers, operated by staff situated within the Weighbridge Office. A weighbridge will be located in front of each barrier (in and out). Siting the weighbridges within the Application Site allows for vehicles to enter the facility without queuing on the public highway.

On arrival, waste carrying vehicles will report to the Weighbridge Office where waste documentation, waste carrier certificates and transfer notes will be checked to ensure compliance with the Duty of Care Regulations and the facility's Environmental Permit. Vehicles containing any non-conforming waste will be quarantined and managed in accordance with the site's Environmental Permit. The quantity of waste the vehicles carry will then be assessed by passing them over the In-Weighbridge.

The residual waste will be managed according to the different sizes of waste provider organisations, anticipated to be: Tier 1 from the major waste companies will account for approximately 60% of the waste entering the plant; Tier 2 will consist of waste from local operators and will account for 30% waste; and Tier 3 where 10% of the waste will come from the spot market. Economic and contractual obligations will play a large factor in the distance waste travels to a facility (the greater the waste needs to travel,

the greater the waste management cost to the operator) and hence waste will not generally be transported over long distances. Although waste from Tier 1 will be transported from major waste organisations it is anticipated that this would be sourced from within South Yorkshire and/or from within the 1-hour drive catchment.

It is anticipated that residual waste will be delivered to the site via a combination of refuse collection vehicles (RCVs) which will typically be 18 to 22 tonne vehicle (gross weight) or articulated bulk haulage vehicles from nearby waste transfer stations under a Duty of Care Waste Transfer Note.

Staff and visitors arriving by car will be routed around the weighbridges using the passing lane and to the car park within the operational area (to either the east or south of the Offices and Workshop building). Access will be controlled by a security barrier, operated by staff situated within the Weighbridge Office.

Waste Reception – Once accepted in to the facility, all vehicles delivering residual waste would drive into the Tipping Hall of the Mechanical Treatment Plant (MTP). Once the vehicle is inside the Tipping Hall the fast acting doors will close; the Tipping Hall operates under negative pressure to draw in and contain odours with the air then fed into the ACT processing plant (gasification plant) so that it is 'cleaned' as part of the overall emissions control process before being released through the flue stack.

Once the residual waste is unloaded within the Tipping Hall, the vehicles will exit the building; facilities are provided for delivery/collection vehicles to temporarily lay-up within the operational area to enable drivers to use the welfare facilities located in the Office and Workshop building.

All residual waste would be loaded into the MTP hoppers where it would be passed through a series of shredders and magnets to enable any ferrous materials not previously recovered to be extracted. The recovered metals will be collected and stored in a bunker, which will be periodically collected and sent for recycling.

Once passed through the MTP, the residual wastes would be conveyed using an enclosed overhead conveyor from the MTP building to the fuel bunker in the Boiler Room and Bunker building. An overhead fuel crane will operate on a pre-programmed cycle and move around the fuel bunker to mix the residual waste to create a more homogeneous mixture. The crane will then deliver residual waste automatically to the fuel hopper to the ACT unit. The fuel bunker has sufficient storage capacity to enable operations to continue without delivery of residual waste for a period of up to 4 days.

Thermal Conversion – Unlike incineration, gasification does not burn (combust) the residual waste, but heats the materials at high temperatures (circa 1,400 degrees Celsius) until their composition breaks down. The thermal conversion will take place in two stages. The first stage involves the gasification (heating) of the residual waste within the gasification unit (primary chamber). The outputs from the gasification process is a synthetic gas called 'syngas' and 'bottom ash' (see Ash Management below). The second stage involves the high temperature oxidation of the syngas within the high-temperature oxidation unit (secondary chamber), whereupon there is a complete breakdown of Carbon Monoxide (CO), Total Organic Carbon (TOC) with a final production of a flue gas with low Nitrogen Oxides (NOx) content.

Changing the residual waste to syngas, means the combustion environment can be finely controlled to achieve compliance with the emissions thresholds of the Industrial Emissions Directive (IED) (Directive 2010/75/EU of the European Parliament and the Council on industrial emissions).

Heat Recovery – The heat recovery system is located adjacent to the gasifiers. Energy is recovered from the hot syngas from the secondary chamber to produce steam.

Depending on how the energy is to be utilised (heat or electricity), the boiler system is designed to deliver saturated steam (for the delivery of heat) or superheated steam (for the production of electricity).

Energy System – The energy system will consist of a turbine with generator and an air cooled vacuum condenser with condensate pumps located within the Turbine Hall. Generated electricity will be connected to the Power Company's distribution network. Condensate from the air-cooled condenser will be directed to the feed water tank of the boiler system by condensate pumps.

If required the turbine can be fitted with a suitable extraction point to enable steam, at the appropriate pressure, to be taken from the turbine for use by nearby local consumers.

Air Pollution Control / Flue Gas Cleaning System – The gasses generated during the thermal conversion process, having passed through the heat recovery system, enter the flue gas cleaning system. This will comprise a bag house filter, a storage silo for lime and activated carbon, and a filter dust silo. In summary, the flue gases are passed through a bag house filter, where upon lime and activated carbon will be injected to adsorb any contaminants in the flue gas. The bag house filter residue (referred to Air

Pollution Control Residue (APCR)), comprises the used lime and activated carbon, together with fly ash, which is collected and stored in the filter dust silo. The APCR is a hazardous waste, due to its high alkaline content, which would be disposed of either at an appropriately licenced hazardous waste landfill or further processed, e.g. washing and/or stabilisation such that the treated APCR could be sent to a non-hazardous landfill. The cleaned flue gas is then discharged to the atmosphere via the stack.

Control and Monitoring System – The facility will operate within the terms and conditions set out with the statutorily required Environmental Permit, which is independently authorised, monitored and enforced by the Environment Agency. The facility will be equipped with a control and monitoring system that will provide automatic control of the process during normal operating conditions and continually monitored by fully trained and experienced staff. The control system also features a separate and independent automatic shutdown system. The emissions from the flue stack are continually monitored to ensure compliance with the emissions thresholds of the Industrial Emissions Directive (IED); in the unlikely event that

emissions thresholds could be breached the facility would be temporarily shut-down until resolved. All emissions data is collated and made available to the Environment Agency.

Maintenance - Maintenance will be programmed to occur twice yearly and necessitates the ceasing of operations for a two-week period in the summer and a one-week period during the winter. These times would be programmed to coincide with the manufacturer’s shutdown periods. Across the resultant 49 weeks of scheduled operation, ad-hoc maintenance and other generation drop-out periods associated with grid-synchronisation and the processing of non-homogenous wastes may result in the need for short-term shut-downs. This includes periods when one line is shut down for maintenance whilst the other lines remain operational. Total shutdown will only be required for maintenance of common systems.

Bottom Ash Management (ash from the gasification process) - The ash is discharged from the gasification unit (primary chamber) and is temporarily stored on site with the bottom ash bunker before being transferred for off-site disposal. The ash can be either recycled/recovered,



SITE ELEVATIONS

for example to complement construction materials, or disposed of at an appropriately licensed landfill site.

Electricity/Heat Connection – The Applicant is currently in on-going discussions with local business users for the export of electricity and/or heat via a private connection. Accordingly, the installation and operation of electricity grid connection cabling and/or heat pipework connection are not included within the scope of the Proposed Development.

Surface Water Management – A sustainable urban drainage system (SUDs) is proposed for managing the disposal of surface water from the Proposed Development on the site. As the use of infiltration devices is not appropriate for the majority of the site flow balancing methods are proposed, comprising a system piped and geocellular storage tanks, in order to attenuate surface water runoff to greenfield runoff rates with discharges to the local watercourse.

Hours of Operation - The facility will operate continuously: 24 hours a day, 7 days per week.

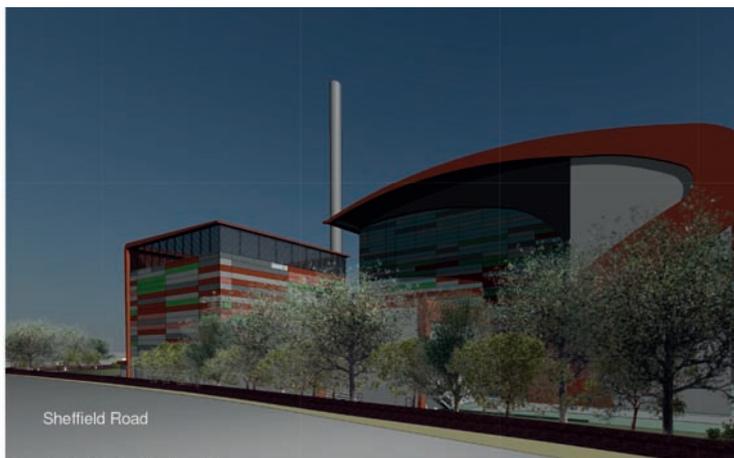
Staffing – The facility will employ circa 42 full time equivalents directly employed over three shifts and a further 10 staff providing specialist services from local businesses. The staffing complement comprises a variety of skills and levels of expertise, and there will be employment opportunities for local people.

Vehicle Movements – Deliveries of residual waste would occur:

- Monday to Fridays – 07:00 to 19:00
- Saturday – 07:00 to 14:00
- Sundays - None

The proposed facility is expected to generate a total of 209 daily vehicular trips, 126 of which are heavy goods vehicles (HGVs) (63 in /63 out).

There would also be car trips associated with circa 42 staff, albeit operating on a shift pattern. It is expected that HGVs importing and exporting materials from the site will do so evenly throughout the 12-hour period and there is unlikely to be a peak in movements associated with these operations.



2 Sheffield Road - View from right



3 Sheffield Road - View from left

Grid Connection

The Applicant has held discussions with Northern Power Networks (the responsible DNO) regarding the scale of the generation considered, which would typically be connected to the local 33kV network via the onsite substation which is located to the south east of the Proposed Development within the site boundary.

Demolition

The Proposed Development would involve the demolition of the existing buildings and structures on the site, and where relevant the breaking up of existing hardstanding.

Construction

Subject to the grant of planning permission, it is anticipated that the construction of the proposed facility would commence in Q4 2017. It is anticipated that construction would last for approximately 30 months followed by a 6-month period of commissioning.

The construction process would involve the demolition of existing buildings and site clearance, construction of principal access routes, construction of buildings, service areas and parking, followed by the installation of both internal and external plant, and commissioning; landscaping works would be carried out at the end of the construction process.

Construction would normally take place during the hours of 07:00 to 18:00 (Monday to Friday) and 08:00 to 13:00 (Saturday); no construction would take place on Sundays or bank holidays.

Environmental control measures will be imposed to minimise adverse environmental effects during the entire construction phase, from site set-up/demolition works to commissioning. A Construction Environmental Management Plan (CEMP) will be prepared addressing potential effects on noise, vibration, air quality, water quality, surface quality (prevention of contamination of ground/surface waters), site transportation and traffic management, visual intrusion and waste management, as well as providing details on general 'housekeeping' including monitoring and recording, and a mechanism for communication/addressing complaints from members of the public. The appointed contractor will also be required to register with the Considerate Construction Scheme and will be required to adhere to legislative requirements and standard best construction practice which also includes measures to minimise construction noise/vibration and dust generation both within the site and along the agreed construction routes. Any departures from the CEMP will be submitted to RMBC in advance.

It is anticipated that waste will be generated during all stages of the construction phase. A Site Waste Management Plan (SWMP) will be prepared and all relevant contractors will be required to seek to minimise waste arising at source and, where such waste generation is unavoidable, to maximise its recycling and reuse potential.

Consents

In addition to planning permission, other consents will be required to enable the Proposed Development to proceed. Of particular importance to this development is the need for an Environmental Permit from the Environment Agency that will control all operations associated with the plant based upon various risk assessments. Information presented in this ES will be used in the preparation of the Permit.

AIR QUALITY

Introduction

The potential effects of dust and particulate emissions during the construction (including demolition) phase have been assessed qualitatively following published guidance. The operational impacts of the Proposed Development on air quality, odour and bioaerosol conditions for local receptors have also been assessed. Air quality impacts have been assessed quantitatively using dispersion modelling, while odour impacts have been assessed both quantitatively and qualitatively; quantitatively using odour modelling and qualitatively following a risk assessment technique outlined in published guidance. Bioaerosol impacts have been assessed based upon the levels expected to be generated and the likelihood of their being emitted from the Proposed Development.

Baseline Conditions

Local monitoring and mapping shows background pollutant concentrations of every pollutant apart from nickel to be below the objectives or Environment Agency's Environmental Assessment Levels (EALs). Measured nickel concentrations at the Tinsley Automatic Urban and Rural Network (AURN) monitor also exceeded the EAL in 2014.

Roadside nitrogen dioxide concentrations exceed the objective in several places in both Rotherham and Sheffield.

Likely Significant Effects

The construction works have the potential to create dust. During construction it will therefore be necessary to apply a package of mitigation measures to minimise dust emission. With these measures in place, it is expected that any residual effects will be Not Significant. However, the guidance recognises that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term dust annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be Not Significant.

The odour risk assessment has demonstrated that the odour effects for all local receptors will be Negligible. Overall the risk assessment has judged the Proposed Development to be insignificant in terms of odour effects. The odour modelling has reinforced this conclusion, indicating that odour concentrations will be below the relevant criterion at all local sensitive locations.

The qualitative bioaerosol assessment has also demonstrated that the Proposed Development will have an insignificant effect on local receptors in terms of bioaerosol concentrations.

The assessment has demonstrated that the Proposed Development will result in an insignificant change in concentrations at all local sensitive receptor locations for all pollutants and all averaging periods, with the exception of annual mean nitrogen dioxide. The Proposed Development will have a Negligible impact on annual mean nitrogen dioxide concentrations at most local receptors, but a Slight Adverse to Moderate Adverse impact at up to

48 properties in the Bradgate area of Rotherham. This represents a small proportion of homes in the vicinity of the Proposed Development. The assessment has also demonstrated that, bearing in mind the worst-case assumptions applied, the impacts at the 46 of these properties that are within the Wortley AQMA will actually most likely be Negligible. If the Environment Agency's guidance is followed, all impacts would be screened out as insignificant. The impacts at local sensitive ecological sites have also been screened out as insignificant.

As such, the overall air quality impacts of the Proposed Development are deemed insignificant.

Mitigation and Enhancement

The construction works have the potential to create dust. During construction it will therefore be necessary to apply a package of mitigation measures to minimise dust emissions. With these measures in place, it is expected that any residual effects will be Not Significant. However, the guidance recognises that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term dust annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be Not Significant.

No additional mitigation has been proposed for the operational impacts as the assessment has demonstrated that none is necessary. The air quality assessment has employed a number of worst-case assumptions, thus impacts are likely to be lower than those set out.

Conclusion

The assessment has demonstrated that the Proposed Development will not have a significant impact on dust and PM10 (particulate matter) levels during construction (including demolition), provided that the recommended mitigation is applied. Similarly, odour and bioaerosol emissions will be kept to a sufficiently low level that the local effects will be insignificant.

The overall operational air quality impacts of the Proposed Development are judged to be Not significant. This judgement takes account of the uncertainties in future predictions of road traffic emissions, and the worst-case assumptions applied in the dispersion modelling assessment.

LANDSCAPE AND VISUAL

Introduction

The landscape and visual impact assessment has assessed the likely effects of the Proposed Development on landscape / townscape features and elements within the Application Site, landscape / townscape character of the local area, and on local visual amenity. The assessment has been undertaken with regard to best practice, particularly the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (2013), as published by IEMA and the Landscape Institute.

Baseline Conditions

The Application Site is not subject to any statutory or non-statutory landscape designations. There are no notable areas of tree or shrub vegetation. Grass and naturalised perennial vegetation cover areas of soft ground between the car park and access road. Trees are present near the northern and southern section of the eastern boundary, and separate Magna Science and Adventure Centre, which is located in the adjacent plot to the east. The northern boundary is free from any form of vegetation and abuts a railway line with rubble / hardcore separating it from the fence. The western boundary is delineated by a concrete wall, accommodating changes in levels, and separates the Application Site from the adjacent business / industrial premises of Darwins Holdings Limited to the west. Sheffield Road forms the southern boundary of the Application Site.

The Application Site is currently occupied by a large industrial building and is currently used by Costain Ltd. as a depot. It forms a key built element and visual feature due to its footprint and height and is surrounded by built form of similar or larger scale and height. There are a number of relatively tall vertical elements such as cranes, chimney stacks, and street lighting columns in the townscape

surrounding the Application Site. The central and northern part of the Application Site has an open character and comprises a tarmacked car park and internal vehicular concrete access road running along the western boundary and connecting to Sheffield Road. A cabin is located near the entrance off Sheffield Road with retaining walls and steps to accommodate changes in levels. Modular offices are located in the north east corner and extend along the northern boundary, forming a combination of single and two storey built form. A palisade fencing secures the perimeter of the Application Site.

The topography of the Application Site is relatively level varying between 36m AOD to approximately 32m AOD. It sits approximately 2-3m below the adjacent Sheffield Road / the A6178 with the retaining wall running along the road. The site falls within the valley of the River Don and is surrounded by the more elevated topography, generally over 2km distance.

There are no Public Rights of Way (PRoWs) within the Application Site, any apparent watercourses or waterbodies, or heritage assets that would be relevant from a landscape or visual point of view.

Likely Significant Effects

The assessment has not identified any significant landscape effects which would arise as a result of the Proposed Development, when considered in isolation and as part of the cumulative assessment. None of the visual receptors and the majority of the selected viewpoints have been assessed as subject to significant visual effects. Receptors at only three viewpoints, Viewpoint 3, 10, and 13, have been assessed as experiencing significant visual effects due to proximity and inter-visibility with the

Proposed Development. In cumulative terms however, none of the visual receptors and viewpoints have been considered significantly affected by the addition of the Proposed Development.

Mitigation and Enhancement

Mitigation measures (such as design evolution of the proposed built form, and varied height of different parts of the Proposed Development to minimise the perceived massing of the buildings) have been incorporated into the design of the Proposed Development as part of the iterative design process. The colour palette has been selected to make the Proposed Development appear as a coherent and simple image. The selection of the muted copper effect colour for the roofs and some of the elevations however, aims to create a landmark building, enhancing the streetscape and the townscape of this part of Rotherham. The measures are therefore an integral part of the development and no further additional mitigation is considered necessary from a landscape and visual perspective.

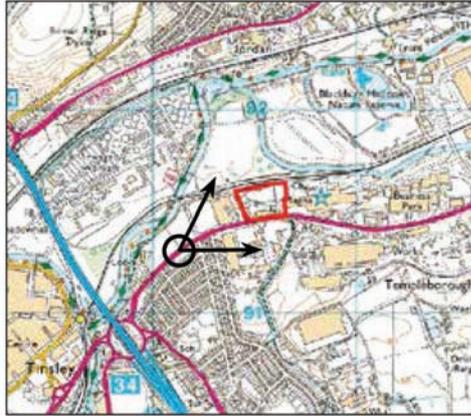
Conclusion

The Application Site lies outside of any statutory or local/non-statutory landscape designations. The Application Site is currently occupied by a number of industrial/trade counter buildings, set within an industrial context including the large facilities of the Magna Science and Adventure Centre, adjacent immediately to the east. Two other biomass developments are already present in the local area, and within the 2km radii of the Proposed Development, the EON Blackburn Meadows Biomass Power Plant and the Templeborough Biomass Power Plant, the second currently under construction.

The Proposed Development would result in the replacement of the existing industrial buildings with a number of other, slightly larger industrial buildings up to 45m in height, together with a 100m tall stack. The stack would be slightly taller than the 90m high stack of the nearby EON Blackburn Meadows Biomass Power Plant.

The nature of the Proposed Development, together with the context provided by the land uses surrounding the Application Site, would mean that the Proposed Development is considered to be appropriate to the setting and townscape character of the site. The introduction of the Proposed Development would not result in any significant effects on local landscape or townscape features or elements, or the character of the landscape / townscape within and around Rotherham. In cumulative terms there would be no significant effects.

Effects upon visual amenity would also be generally not significant with only three locations assessed as subject to significant visual effects. Such higher degree of effects reflects close proximity and relatively open views towards the Proposed Development. In cumulative terms however, such effects would not be significant due to the context provided by the surrounding land uses.

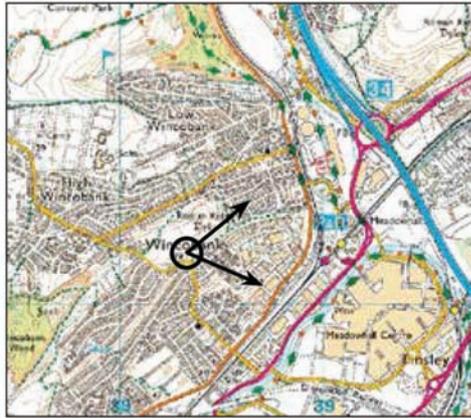


VIEWPOINT 10

FOOTPATH ALONG SHEFIELD ROAD, NEAR FOX
AND DUCK PUBLIC HOUSE







VIEWPOINT 11

RECREATIONAL GROUND NEAR ROMAN RIDGE
ON WINCOBANK COMMON



Existing view



Photomontage view



TRAFFIC AND TRANSPORTATION

Introduction

The traffic and transport assessment has considered the environmental impacts of traffic to include pedestrian amenity, highway safety and driver delay in the context of the relative change in traffic flows. Two receptors have been identified within the study area, these being the Templeborough Residential Area and the Tinsley Residential Area.

Baseline Conditions

The location of the Application Site has been considered in the context of existing and future consented infrastructure using GIS-based modelling techniques, which confirm that the site relates well by non-car modes to adjoining residential areas.

Baseline traffic flows have been collected and used as the basis of the environmental impact analysis. Analysis against daily flows is considered reasonable in light of the fact that the trip profile of the site is likely to be distributed evenly over the course of the day.

Likely Significant Effects

Operational phase impacts have been determined with reference to the trip generation calculations contained within the submitted Transport Assessment.

Construction (including demolition) phase impacts could be generated from the arrival and departure of construction workers and associated HGV traffic. Whilst impacts can be significantly reduced with appropriate mitigation, the construction phase impacts would be, at worst, categorised as Negligible. This is considered to be acceptable, particularly in light of the temporary nature of this phase of development.

In terms of operational effects, it is considered that the change in traffic flows would be unlikely to materially or discernibly alter the operation of the surrounding highway network. Consequently, the significance of the operational effects are considered to be acceptable.

Cumulative impacts during construction could arise alongside the construction of adjoining schemes. However, schemes are either already operational and are included within the baseline assessment or are not likely to route along the A6178-Sheffield Road. Notwithstanding, an arbitrary quadrupling of construction traffic flows assumed for the Proposed Development will only yield an acceptable Moderate Adverse impact.

Mitigation and Enhancement

Given the Application Site's current permanent extant land use and the resulting impact of the Proposed Development, it is considered that the surrounding highway network is of a suitable standard and will not require further mitigation to accommodate movements associated with the operational phase.

For the construction phase it is proposed that a Construction Traffic Management Plan (CTMP) would be prepared and submitted to the Local Planning Authority prior to the commencement of on-site works. The purpose of the CTMP would be so that appropriate environmental management practices are followed during the construction (and demolition) phase of the project.

For the operational phase an Outline Travel Plan has been prepared to promote the use of sustainable travel amongst future staff visitors.

Conclusion

The Proposed Development can be accommodated without any unacceptable detriment to the environmental effects of traffic. It is noted that the inclusion of mitigation measures at both construction and operational phases would reduce the effects and impacts of the development further.

HYDROLOGY AND FLOOD RISK

Introduction

An assessment has been undertaken of the likely significant effects that the Proposed Development would have on the water environment. The effect of the Proposed Development on local flood risk and water quality of nearby watercourses has been assessed and mitigation measures proposed. This assessment is supported by a detailed Flood Risk Assessment.

Baseline Conditions

The site consists of industrial buildings with large areas of vehicle parking/hardstanding, with limited landscaped area. Former uses have included a steelworks, and more recently a waste incineration facility.

The main body of the site is situated below an access road, from Sheffield Road. The access road falls from a level of approximately 37 m AOD, entering the lower level where the buildings are situated at 32.5 m AOD.

The Chapel Flat Dyke runs culverted to the east of the site, and the River Don to the north of the site. The site's surface water runoff currently drains to onsite surface water sewers which discharge into the Chapel Flat Dyke

Likely Significant Effects

The construction of the Proposed Development will temporarily disrupt the onsite drainage network.

Potentially polluting activities and accidental spillages and leakages may occur during the construction (including demolition) and operation of the Proposed Development which could have an effect on local water quality.

Mitigation and Enhancement

Good site management, adequate contingency planning and implementation of the Environment Agency's pollution prevention guidelines and best practice construction techniques will reduce the risk of a significant water pollution event occurring.

The surface water drainage system will incorporate stormwater storage and will be discharged at a reduced flow during short duration intense storm events (e.g. thunderstorms) into the onsite sewer network (and therefore chapel Flat dyke). The system will provide a degree of flood risk betterment during these storm events.

The surface water drainage system will incorporate specific measures to intercept oil and silt and other pollutants from the site and relevant plant will be designed to minimise pollution risk (e.g. bunded).

Conclusion

Adopting best practice construction site management and provision of a suitably designed surface water drainage system incorporating pollution control and stormwater storage minimises the effect of the Proposed Development on local flood risk and water quality in nearby watercourses.

HYDROGEOLOGY AND GROUND CONDITIONS

Introduction

A qualitative assessment of the effects of the Proposed Development arising from likely ground conditions has been completed. The assessment has considered the extent and methods of foundation construction, the anticipated degree of disturbance of the ground, the final form of the development, and the relevant national policies for contaminated land assessment and management

Baseline Conditions

The baseline ground conditions at the site have been assessed by a Phase 1 Desktop Study.

Likely Significant Effects

Prior to mitigation a number of likely significant effects have been identified relating to the risk of the effects of contaminated land on construction workers, end users and controlled waters.

Mitigation and Enhancement

The following mitigation measures have been recommended:

- Undertake a Detailed Unexploded Ordnance Threat and Risk Assessment prior to carrying out intrusive site investigation works (and development);
- Undertake a Site Specific Coal Mining Risk Assessment Report prior to carrying out intrusive site investigation works (and development);
- As coal-bearing strata exist beneath the site and boreholes will be required, a permit will be necessary from the Coal Authority before drilling (or subsequent piling during the construction phase) is undertaken;
- Undertake a Phase 2 Geo-environmental Ground Investigation prior to development to provide an assessment of the ground conditions on the application site with respect to geotechnical properties and any potential contamination (including hazardous gases) in the underlying soils and/or groundwater;
- Application of appropriate measures during the construction (and demolition) phase to protect construction workers, site neighbours and the environment more generally, from exposure to any contaminated material which may be encountered (e.g. dust control measures, containment of soil and groundwater arising from works in the ground, use of appropriate PPE);
- If piling through the Secondary A aquifer is required as part of the development, a Report on Piling and Risks to Groundwater should be completed to the satisfaction of the Environment Agency (EA). The piling technique should be chosen to mitigate risks to controlled waters;

- The safe stockpiling, containment and testing of material displaying visual or olfactory evidence of contamination during the construction works. Based on the results of subsequent testing, the stockpiled soils should be re-used, treated or disposed of off-site;
- A 'clean' and inert soil cover layer should be placed over in-situ soils in areas of new landscaping. The cover soils should be validated prior to placement;
- Building slabs and membranes should be designed to mitigate the Characteristic Gas Situation classification for the site; ground gas monitoring should be undertaken to classify the gas regime, as described within BS 8485 and C665.
- The concrete used within the Proposed Development should be designed in accordance with the concrete classification for the site (assessed using BRE Special Digest 1);
- The local water supply company should be consulted regarding the pipe material and backfill specification of potable water supply pipes;
- Operation on sealed hard standing would ensure any oils/lubricants or wastes are not able to penetrate into the underlying natural ground and controlled waters; and
- Develop systems in line with the plant/facility Environmental Permit to ensure all potential contamination issues associated with the operation of the facility would have been satisfactorily controlled.

Conclusion

Following the implementation of the recommended mitigation measures the residual effect of the Proposed Development with respect to all receptors is assessed to be Neutral, as either ground contamination sources or transport pathways to receptors will have been removed.

NOISE AND VIBRATION

Introduction

A noise assessment has been carried out for the Proposed Development.

The assessment has taken account of potential effects during the demolition of the existing building within the site and the construction and future operation of the Proposed Development, upon surrounding residential receptors.

Baseline Conditions

Noise surveys have been undertaken to determine the existing noise levels at properties which would be potentially affected by the construction and operation of the Proposed Development.

The surveys indicated that noise levels at the surrounding properties are principally influenced by road traffic travelling on the surrounding road network, both during the day and night-time periods

Likely Significant Effects

The Proposed Development is located within an urban area, with a number of noise sensitive receptors surrounding the site to the west, north and east. An assessment of the noise levels associated with the construction of the Proposed Development indicates that noise associated with the works would result in a Negligible effect.

Noise levels associated with the operation of the Proposed Development are anticipated to remain within acceptable levels of noise when assessed against the requirements of relevant standards and guidelines. Noise levels associated with the operation with appropriate noise mitigation measures incorporated into the design would result in a Negligible effect at surrounding properties.

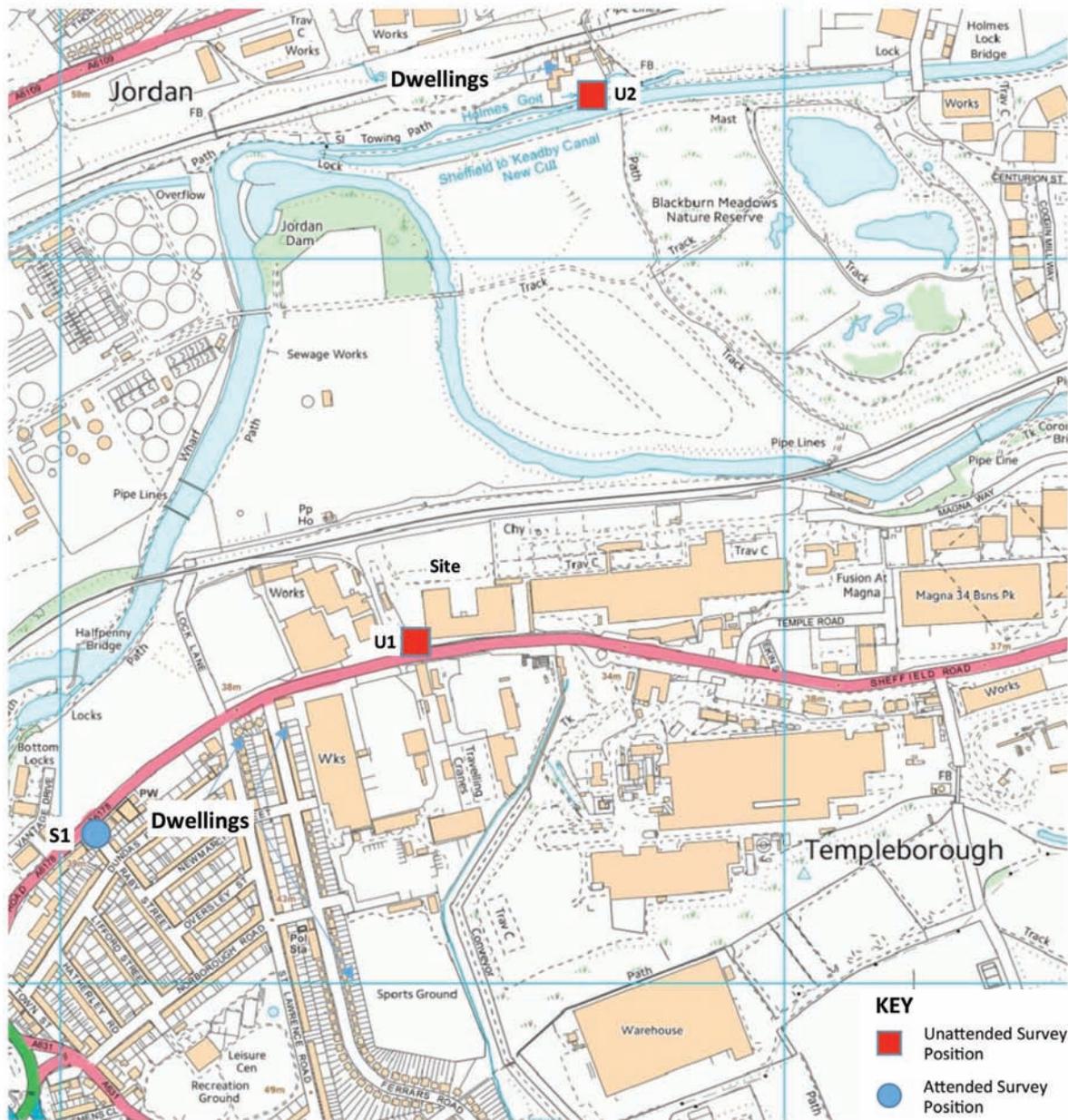
There would be regular deliveries made to the site throughout the day. The numbers of HGVs using Sheffield Road would be lower than associated with the presently permitted use and thus a Negligible effect has been identified.

Mitigation and Enhancement

A range of mitigation measures have been incorporated into the design to ensure the operation of the Proposed Development did not result in any adverse noise effects. The assessment would be updated during the detailed technology design phase to ensure that the final plant requirements met the required noise limits.

Conclusion

In summary, with appropriate mitigation, the construction and operation of the Proposed Development would not give rise to any adverse noise impacts at surrounding properties.



NOISE MEASUREMENTS LOCATION PLAN

ECOLOGY AND NATURE CONSERVATION

Introduction

This assessment compiles information from a desk study, Extended Phase I habitat survey, enabling the determination of the likely ecological effects of the Proposed Development.

The assessment establishes the likely presence of protected or notable species, identifies statutory designated sites for nature conservation in the vicinity of the Proposed Development, and evaluates the overall conservation status of the Application Site. The potential effects on identified ecological features including designated sites and protected and notable species is assessed in line with current guidance, and appropriate mitigation and enhancement measures are described.

Baseline Conditions

An Extended Phase 1 habitat survey was undertaken on the Application Site in February 2016. The survey recorded habitats within the Application Site and aimed to establish the presence or potential presence of protected and notable species.

Statutory designated sites were identified within a 5km radius of the Application Site (extended to 20km for SPAs and Ramsars) using the Multi Agency Geographic Information for the Countryside (MAGIC) website, along with the Joint Nature Conservation Committee (JNCC) and Natural England (NE) websites. SBRC (Sheffield Biological Records Centre) and RBRC (Rotherham Biological Records Centre) provided records of protected and notable species, locally designated sites and habitats within a 2km radius of the approximate centre of the Application Site.

The Application Site generally comprised an area of hardstanding and buildings within an urbanised/ industrialised area and supported little vegetation and

therefore offered limited opportunities for protected and notable species. No buildings or other features were considered to be suitable for roosting bats. The Blackburn Meadows and River Don LWS sites lie nearby; however no direct habitat linkage is present due to the adjacent railway line and absence of equivalent habitat within the Application Site.

No confirmed evidence of protected or notable species was identified during the Phase 1 habitat survey. The hardstanding land was considered unsuitable for the majority of protected and notable species, although lit areas provide some limited foraging interest for some species of bat. The features of site level ecological value comprised several relatively isolated extents of hedgerow, scrub and tree-lines; however only the line of immature trees will be directly affected by proposed works.

The overall importance of the Application Site habitats to protected and notable species is assessed to be very low, with the higher value features being retained as part of the Proposed Development. A line of immature Lombardy poplars will be removed; however these are of limited ecological value. Mitigation and enhancement measures will include the planting of trees along the southern and eastern margins of the Site.

Likely Significant Effects

No significant effects are anticipated on statutory or non-statutory designated sites or habitats. No significant effects are anticipated on protected species, including birds, bats, badger, dormouse, amphibians and reptiles and invertebrates.

Mitigation and Enhancement

Mitigation and enhancement measures will include the following:

- Pollution prevention and control measures will be employed during construction;
- Inclusion of lighting scheme that avoids light spill onto habitats adjacent to the the Application Site; and
- Installation of additional bird and bat boxes.

Conclusion

The Application Site is of very limited ecological value, being dominated by hardstanding and situated within an urbanised area with limited vegetation cover generally restricted to the Site margins. The buildings were not suitable for bats or birds. Higher value habitats are present within the wider landscape, including the Blackburn Meadows and River Don Local Wildlife Sites (LWS) sites, but these are not directly linked to the Site. Effects overall on protected or notable species and habitats are generally anticipated to be Negligible.



ARCHAEOLOGY AND CULTURAL HERITAGE

Introduction

The archaeology and cultural heritage assessment has considered the likely significant effects of the Proposed Development and has been informed by a staged process of heritage survey including desk-based research and assessment of the setting of heritage assets.

Baseline Conditions

There is some limited general potential for prehistoric activity close to the River Don (such as associated with previous river courses at depth) although no specific evidence for this within the site.

The Site is located some 600m to the west of the Roman fort and vicus of Templeborough. The extent of the fort, settlement and associated cemeteries are well-documented and the Site lies well outside of these. In a usual form for Roman forts and developed settlements roads are likely to have entered from north, east, south and west. On the present currently considered alignments the westward Roman road is not projected through the Site or its immediate vicinity.

The Site is likely to have been used as meadow land or pasture during the medieval period, and there is no known potential for remains of this period. Similarly, the Site formed agricultural fields until the early 20th century, with no recorded buildings

The impact of 20th-century industry is visible within the landscape surrounding the Site. In 1916 the land was bought by Steel, Peech and Tozer Ltd for a new melting shop and rolling mill. The Site was subject to extensive landscaping/excavation during the development of the industrial units. The Site is currently in use as a depot for materials needed in the construction of the M1 motorway by Costain.

The building within the site is of 1950s or 60s date, with later wings, and is not a heritage asset.

Likely Significant Effects

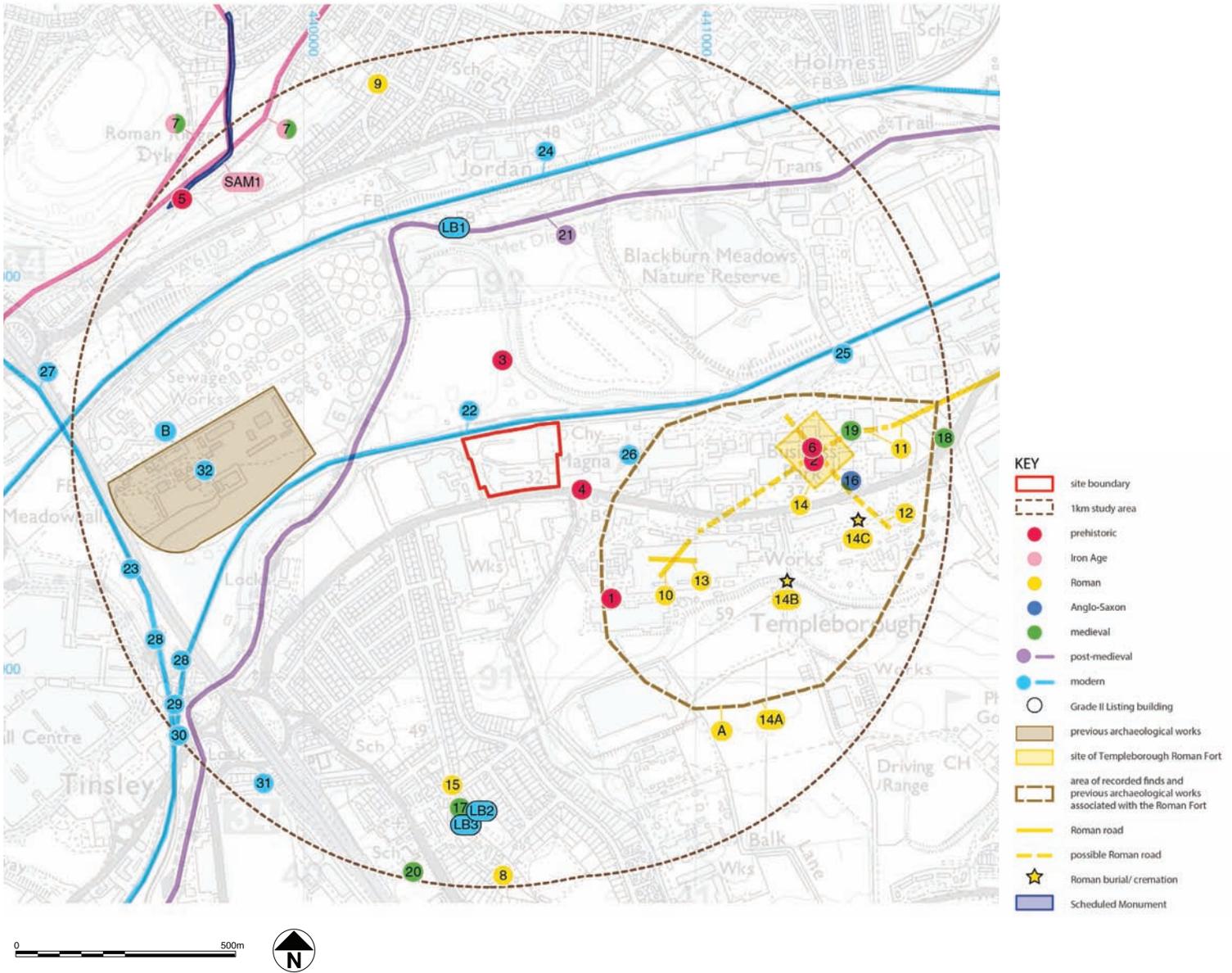
No heritage assets are recorded within the site, and there will be no known physical harm to archaeological remains. No designated heritage assets lie within the Site. The proposed facility would result in no harm to the significance or setting of any designated heritage assets, through change to their settings. A study area of up to 5km distance from the Site has been assessed. Although the proposals require a tall chimney of 100m, the landscape is one which is characterised by its industrial development through the 18th to 21st centuries, including many examples of industrial chimneys. The development is not at odds with this landscape.

Mitigation and Enhancement

It is recommended that appropriate archaeological conditions are attached to any permission granted for the present application, such as a programme of archaeological monitoring and recording.

Conclusions

The development proposals would be in line with the objectives of the Rotherham Local Plan Core Strategy 2013-2028 policies. This includes Policy CS23, Sections A and D which states that Proposals will be supported which protect the heritage significance and setting of locally identified heritage assets such as buildings of local architectural or historic interest, locally important archaeological sites and parks and gardens of local interest. The development proposals are consistent with the objectives and requirements of the 1990 Planning (Listed Buildings and Conservation Areas) Act and the Framework as no harm will be occasioned to the significance of any designated heritage assets, either physically or through change to their setting.



HERITAGE ASSETS PLAN

SOCIO-ECONOMICS

Introduction

The socio economic assessment considers effects of the Proposed Development during both the construction (including demolition) and operational phases. The analysis focuses on the provision of employment and the effect in terms of the economy within Rotherham Borough and Brinsworth and Catcliffe Ward.

There are a wide range of socio-economic issues that exist and which will be affected by the Proposed Development.

Baseline Conditions

Rotherham Borough is expected to experience population growth.

The area currently experiences a high level of deprivation, particularly related to employment and health and disability.

The area has a high level of unemployment and the majority of workers are employed in lower value occupations. The unemployed within Brinsworth and Catcliffe ward that are seeking a job are similarly looking for lower value employment. The level of qualifications is also low. However, the pay received by people working in Rotherham Borough is higher than the income of residents within the area. Rotherham nevertheless experiences net out-commuting flows.

Likely Significant Effects

The key socio-economic effects of the Proposed Development can be summarised as follows:

- Provision of circa 210 to 273 additional jobs during the construction phase in the construction sector;
- Provision of up to 42 jobs during the operational phase;
- The jobs will include elementary jobs during both the operational and construction phases which responds to the type of jobs being sought by the unemployed in Brinsworth and Catcliffe Ward currently;
- The provision of a different range of jobs locally which may meet the needs of some local residents;
- Investment in construction, operation and maintenance all of which will provide for indirect effects including generating work for local tradesmen;
- The increase of the local disposable income (for employees of the facility and tradesmen) which will have induced effects on local economy;
- Additional £4.85M GVA per annum for the local economy;
- The provision of lower priced sustainable energy for local businesses, reducing business costs which may be used to expand or enhance businesses (including new jobs and/or increased wages);
- The above will all address the current deprivation relating to employment; and
- Potential reductions in commuting flows.

Mitigation and Enhancement

There are no identified negative effects associated with the Proposed Development in socio-economic terms and so no mitigation has been identified.

Cumulative and In-combination Effects

When assessed alongside the identified related developments, the effects of the Proposed Development are generally consistent with those associated with the Proposed Development in isolation. However, the positive effects are greater.

Conclusion

Overall the Proposed Development is considered to provide for Minor positive effects and will contribute to addressing the employment needs of the area while preventing around 215,000 tonnes of residual waste going to landfill, utilising it as a valuable resource.

SUMMARY

The technical chapters which have made up the Environmental Statement and assess the Renewable Energy Centre and Mechanical Treatment Facility at Rotherham Energy Scheme demonstrate that there are no overriding environmental constraints or planning policies which would preclude the development of the Application Site.

The Planning Statement which forms a separate part of the planning application demonstrates significant weight for both Planning Policy and Waste Policy which demonstrates the need for and benefits of the scheme. The Proposed Development is in accord with the relevant policies of the Development Plan and other material planning considerations including the principle of sustainable development.

The proposal has also been shown to be in compliance with national strategic level planning policies contained within the National Planning Policy Framework and the National Planning Policy for Waste, and guidance set out in the Waste Management Plan for England and both EN-1 and EN-3. These documents are significant material considerations in the planning process and indicate this proposal is acceptable.

The above considerations demonstrate that upon considering the significant benefits associated with the scheme against the relatively minor impacts, the proposal, on balance, falls well within the scope of acceptability as the benefits would indeed outweigh any limited harm.

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