wardell-armstrong.com

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

STRATA STERLING BARNSLEY WEST LTD

LAND SOUTH OF BARUGH GREEN ROAD, BARNSLEY

OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

OCTOBER 2023

wardell armstrong

Wardell Armstrong
36 Park Row Leeds, LS1 5JL, United Kingdom
Telephone: +44 (0)113 831 5533 www.wardell-armstrong.com

DATE ISSUED:	**11th October 2023**
JOB NUMBER:	**LD10756**
REPORT NUMBER:	**0001**
VERSION:	**V1.0**
STATUS:	**Final**

STRATA STERLING BARNSLEY WEST LTD

LAND SOUTH OF BARUGH GREEN ROAD, BARNSLEY

OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

OCTOBER 2023

PREPARED BY:		
Tobias Crook	EIA Coordinator	[redacted]
REVIEWED BY:		
William Mulvany	Associate Director	[redacted]
APPROVED BY:		
Tim Palmer	Technical/Director	[redacted]

CONTENTS

1 OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

1.1 Terms of Service

1.1.1 This Outline Construction Environmental Management Plan (OCEMP) has been prepared by Wardell Armstrong LLP on behalf of Strata Sterling Barnsley West Ltd (SSBW) to support a hybrid planning application on land to the south of Barugh Green Road, Barnsley. The application seeks to achieve both hybrid and outline planning permission for the proposed development.

1.2 Aims and Objectives

1.2.1 This OCEMP provides a draft framework from which a more detailed Construction Environmental Management Plan (CEMP) would be produced should planning permission be granted for the proposed development. The CEMP would ensure that those key details outlined in this OCEMP are fully incorporated into the construction phase of the proposed development. It should be noted that this OCEMP is presented in outline only, meaning any details mentioned would require further investigation, if found to be acceptable by Barnsley Metropolitan Borough Council (BMBC). The CEMP would also be subject to approval by the regulator(s) prior to implementation.

1.2.2 The CEMP would remain as an active document throughout the construction phase of the, then approved development, and would be subject to review and updates on a regular basis to ensure that construction operations continue to meet good industry practice standards, as well as to reflect any changing conditions found when on-site.

1.2.3 The CEMP should be read in conjunction with a number of other documents and management plans that form part of the planning applications or would be produced should planning permission be granted.

1.3 OCEMP Structure

1.3.1 The structure of this OCEMP is as follows:

- Section 1 (Introduction): Provides background information and outlines the purpose and structure of the OCEMP.
- Section 2 (The Site and Proposed Development): Provides a brief description of the site and proposed development.
- Section 3 (Construction Management): Outlines the roles and responsibilities of those involved in the construction phase, relevant legislation and regulations,

training strategies, and communication methods.

- Section 4: (General Site Management) Details the non-environmental operations that would be implemented as part of the construction phase.
- Section 5: (Environmental Management) Details those environmental factors that are key to the site and development, what construction operations would affect them and, if necessary, how impacts would be mitigated.

2 THE SITE AND PROPOSED DEVELOPMENT

2.1 The Site

2.1.1 The Site is located on land to the east of Higham Common Road, a little way to the south of Barugh Green Road, Barnsley. The land is largely open field plots currently used for grazing and agricultural purposes.

2.1.2 Other notable characteristics of the site include the following:

- Considerable areas of the site have been subject to opencast mining during the twentieth century with a number of mine shafts currently present on-site. Large areas of the site are located in High Risk development Areas.
- Overhead electrical wires cross the site.
- A strong network of public right of ways cross the site.
- The site may contain medieval boundaries, farm buildings and agricultural activity.
- Hermit Lane crosses the northern boundary of site in an east-to-west direction.
- 'Milepost' approximately 900 metres north of the site. Listed building consent has recently been approved to relocate this milepost (reference: 2019/1567).

2.2 The Proposed Development

2.2.1 The proposed development comprises an employment development with the following being applied for as part of a hybrid planning application:

Employment development, including:

a) Hybrid planning application:
   - earthworks to create development platforms;
   - drainage features including dry detention basin, embankments, bunds;
   - strategic landscaping and ecological areas; and
   - access

b) Outline planning permission for:

- employment land (use classes E/B2/B8 with ancillary office) and;
- associated servicing and infrastructure works including car parking, vehicle, pedestrian, and cycle circulation, plot landscaping, noise mitigation, drainage features and all associated infrastructure.

3 CONSTRUCTION MANAGEMENT

3.1 Roles and Responsibilities

3.1.1 There would be a number of roles that would be involved in the construction of the proposed development, all of which would be responsible for compliance with the CEMP, where applicable.

3.1.2 The Project Manager would be responsible for instructing suitably qualified persons to undertake measures and for ensuring that works are undertaken to a suitable standard, and in compliance with any planning conditions. The roles and responsibilities of these persons would be detailed in the CEMP.

3.2 Legislation, Regulation and Other Requirements

3.2.1 The construction phase of the proposed development would comply with all relevant legislation, regulations, and quality standards. All necessary consents would also be obtained to carry out needed construction works.

3.2.2 The Project Manager would be responsible for ensuring that the construction phase comply with all applicable environmental legislation, regulation and other requirements. A legislation register would be prepared as part of the CEMP and updated throughout the construction phase, as and when required.

3.3 Training and Awareness

3.3.1 SSBW would develop an environmental communication and training plan prior to any works. It would include requirements for all employees, sub-contractors, suppliers and other visitors to be trained about environmental management and would promote environmental awareness throughout the project.

3.3.2 Appropriate personnel would receive training in order to ensure project work is carried out with due regard to environmental protection and to minimise the environmental impact of the proposed development.

3.3.3 The contents and methods of training would be detailed in the CEMP and reflective of those details approved by BMBC.

3.4 Communication

3.4.1 *Communication (General)*

3.4.2 Environmental management would be communicated to all relevant parties by a range of means, including the CEMP and other documents produced as part of the planning application and in compliance with planning conditions.

3.4.3 *Communication Between Contractors*

3.4.4 Communication between SSBW and contractors would take the form of telephone, electronic communication and site meetings. Minutes would be taken for all meetings and would include attendance records that would be distributed to the relevant personnel, as required.

3.4.5 The Project Manager would convene site meetings with all contractors to communicate, discuss and consult any change in conditions, working practices, health, safety and environmental arrangements, where necessary. The meetings would include any hazards or residual risks that have been identified in conjunction with the implemented environmental protection measures. Each contractor would nominate an appropriate person to attend these meetings.

3.4.6 *External Communication*

3.4.7 SSBW would be responsible for all public relations and communications with members of the local community, as deemed necessary. This includes the provision of a mechanism that would allow the public to register complaints and procedures for responding to complaints.

3.4.8 A notice would be erected at the site entrance to provide details of the project and details of key contacts, including emergency details when outside of permitted hours of operation.

3.4.9 A Local Liaison Group would be established with agreed Stakeholders, with the intention of informing the local community about the construction of the site. The Local Liaison Group would manage and share information relating to the programme of construction works. Although meetings would not be public, a platform for sharing the meeting minutes will be provided.

4 GENERAL SITE MANAGEMENT

4.1 Development Phasing

4.1.1 The site will be developed in a single phase with earthworks and development platforms formed and built development following. The employment development will be implemented in this single phase from 2024-2027. Phasing will be set out in the final CEMP, linked where appropriate to the wider phasing approach for Barnsley West.

4.2 Construction Programme

4.2.1 The employment development will be implemented in a single phase from 2024-2027. This will include infrastructure, earthwoirks, drainage and strategic landscaping from 2024-2026, with the units and detailed on-plot landscaping, parking and associated works following on from 2025-2027, after the grant of Reserved Matters permission.

4.3 Hours of Operation

4.3.1 The construction phase working hours would be as set out below:

- 07.15 – 18.00 Monday to Friday (with no noisy working until after 7.30am); and
- 07.15 – 13.00 Saturday (with no noisy working until after 7.30am)

4.3.2 No construction activities would be undertaken on Sundays or during Bank Holidays. This ensures that any disturbance is minimised, and the timing of the proposed development is not adversely affected. The final, agreed hours of operation would be set out in the CEMP, as potentially set out in a suitably worded planning condition.

4.3.3 In exceptional circumstances, where additional or alternative working hours are required, including nighttime workings and on Sundays and Bank Holidays, these shall be agreed in writing with BMBC.

4.4 Site Compound

4.4.1 A site compound comprising site office, welfare facilities, storage cabins, and storage areas for the setting down of external materials would be provided during the construction phase. The site compound would be located near the site entrance, although is likely to be relocated to where required as the construction programme progresses.

4.4.2 All necessary materials for the construction of the proposed development would be loaded within the site boundaries of the relevant working zone to minimise

congestion. The materials would be stored within a material storage area, as part of the site compound. No plant movement would be allowed outside of the site boundaries unless otherwise agreed with BMBC. All plant would be secured at night to prevent unauthorised use. The use, storage and handling of hazardous materials would be carried out in accordance with relevant guidance.

4.4.3 The foundations of the site compound would have hard surfacing, and security fencing, CCTV, and external lighting would be used during hours when illumination falls below safe working levels and for security purposes. Lighting directed towards residential areas would be avoided, where possible. The perimeter of the site would not be illuminated, and unnecessary spillage of light and upward lighting would be kept to a minimum.

4.5 Plant and Machinery

4.5.1 The plant and machinery that would be used in the construction of the proposed development would likely include, but not limited to, the following:

- Long-reach excavators;
- Bulldozers;
- Tippers;
- Front-end loaders;
- Scrapers;
- Hydraulic excavators; and/or
- Backhoe Loaders.

4.6 General Housekeeping

4.6.1 The general housekeeping measures would include, but not be limited to, the following:

- Clear access routes with appropriate signposting.
- Segregated and regular removal of waste, including food waste.
- Keep site clear and tidy.
- Visually inspect plant, equipment and material storage areas for leaks and spills.
- Keep toilet, changing and drying facilities clean.

4.7 Environmental Incident and Emergency Response

4.7.1 Prior to any construction works, an Environmental Incident and Emergency Response Plan (EIERP) would be prepared, in accordance with GPP21: Pollution Incident Response Plans (2017). This plan would detail the events and levels that constitute an incident that would require an emergency response, as well as the procedures for dealing with it. Examples of incidents and emergency responses that would be included in the EIERP would be detailed in the CEMP.

4.7.2 The EIERP would be communicated to all workers. All workers would be trained in environmental incident and response procedures and made aware of environment risks.

4.8 Health and Safety

4.8.1 SSBW would ensure that appropriate resources required to implement health and safety legislation and guidance is made available.

4.8.2 Personal Protective Equipment (PPE) would be worn at all times when on-site, to further reduce any risks. Risk assessments would be carried out to ensure that the risk strategy remains up to date. Inspections would also be carried out throughout the construction phase. All workers would be checked for competence and trained on site-specific procedures before starting work, and continually trained throughout the project.

4.8.3 A 'tool box talk', as part of the training plan, would be undertaken periodically to alert all workers of any hazards and changes to the construction area.

4.9 Decommission

4.9.1 It is anticipated that the proposed development would exist well beyond a design life of 60 years (including refurbishment), although may require subsequent redevelopment. Any requirements for demolition would comply with all legislative requirements and codes of practice pertaining at the time.

4.9.2 It is also anticipated that a detailed method statement would be prepared at that time which would incorporate the safety and effect of the demolition upon the local environment, as relevant at the time of decommissioning.

5 ENVIRONMENTAL MANAGEMENT

5.1 Landscape and visual impact

Construction operations

5.1.1 The landscape would change during the construction phase and experience direct changes through the demolition of existing farm buildings, extensive cut and fill earthworks, new access arrangements, and site clearance, including tree felling and boundary hedgerow removal or potential relocation. There would also be presence of construction machinery and large cranes.

5.1.2 All public right of ways (PROW) and the Green Way on Hermit Lane would need to be closed during extensive earthworks.

Impacts and mitigation (landscape)

5.1.3 The landscape character of the area would experience direct changes as a result of the above operations. A large area of the farmland would be affected, resulting in a conspicuous change to the character of the landscape. The dominant presence of urban development in the landscape character area is considered to reduce the magnitude of change. Areas of existing woodland and vegetation would be retained and protected with important hedgerows potentially being relocated.

Impacts and mitigation (visual amenity)

5.1.4 An application for temporary closure orders would be made to BMBC. Upon completion of construction, it would be necessary to apply for permanent diversions to the appropriate footpaths. This would result in a deterioration of views or make them inaccessible.

5.1.5 Construction operations would be able to be seen from a large proportion of the view to the east of Miners Public House Recreation Ground. Views from this area would be reduced by existing boundary vegetation from the Grounds.

5.1.6 Construction activities may also be seen from residential areas within Higham e.g. cranes. This would be within the context of the urban edge of Barnsley where the composition of the view already comprises a mix of residential and employment development, with the hospital development and overhead power lines punctuating the skyline.

5.1.7 Residents at the eastern edge of Higham, Barugh Green, and west of Hermit Lane, and the western edge of Pogmoor and Gawber may have close views of construction

operations. There may be extensive deterioration in views from these areas, with screening from garden vegetation potentially reducing any visual impacts.

5.1.8 Construction operations would be seen in the mid-distance from properties at higher elevations within Gawber with the context of existing residential properties and rooftops in the foreground. Wind turbines are visible in the distance and on the horizon. Properties at lower elevations are unlikely to be visually affected due to obstruction from existing residential properties.

5.1.9 Properties at the south edge of Mapplewell, concentrated along the B6131, would have a mid-distance and typically filtered view of construction operations. Construction operations would be seen in the context of the existing edge of Barnsley, employment development at Barugh and a pylon line. Tall cranes would be seen alongside other similar vertical structures.

5.1.10 Construction operations may visually affect views from properties at Kexbrough. Higham would screen much of the views of construction operations from Kexbrough with tall cranes seen over rooftops and alongside other vertical structures, such as Barnsley Hospital infrastructure and overhead pylon lines.

5.1.11 Construction operations would be seen from long-distances, and in the context of the urban edge of Barnsley, from properties at High Holyland. Tall cranes would be seen in the context of a pylon line and Barnsley Hospital.

5.1.12 Construction operations would be seen in the foreground of views from the edge of the employment development at Barugh Green, and at the access of Cannon Way. Construction works would generate additional vehicle movement in this view, but this is not uncharacteristic of the urban area.

5.1.13 Users of the road network near the site would experience intermittent and transient views of construction operations, but would typically be filtered by vegetation and properties. There would be some channelled views of the site.

5.1.14 Road users of the A635 would have an oblique and transient view of the construction operations, with clearance works enhancing this view. Construction works would increase additional movement and activity in the view, but would not be uncharacteristic of the urban area.

5.1.15 South-bound motorway users would have transient views of the construction operations. Views would be close, but short-term due to speed of travel. The

additional vehicle movements generated by construction works would not be uncharacteristic of the urban area. Construction operations may not be perceptible from north-bound motorway users.

5.2 Ground conditions

Construction operations

5.2.1 Those construction operations or environmental factors that may generate potential impacts on ground conditions include the importation of materials, earthworks, ground stability, creation of pathways, soil loss or disturbance, accidental spills, release of hazardous gases, contamination exposure via soils and demolition.

Impacts and mitigation (material importation)

5.2.2 There is the potential that contaminated materials could be imported to the site via importation of necessary construction materials, such as bulk fill material.

5.2.3 To limit any negative effects caused by importation of materials to the site, a remediation strategy report would be produced, which would discuss the requirements for any imported materials. The concentration thresholds within the report would be used to ensure that only materials with concentrations of potential contaminants below their respective Generic Assessment Criteria are brought to the site.

Impacts and mitigation (earthworks)

5.2.4 Earthworks, including the surcharging mounds, would be carried out using site won materials to achieve a materials balance. Topsoil would be retained on-site and reused in garden areas and soft landscaping. Additionally, any shallow coal seams encountered during the earthworks would be excavated and removed under an incidental coal agreement with The Coal Authority.

5.2.5 To limit any negative effects, the material on-site would be optimised and proven to be geotechnically suitable for re-use. This would be done by detailed analysis, sampling regimes and validation procedures, and would be implemented through compliance with an earthworks strategy and remedial strategy.

Impacts and mitigation (ground stability)

5.2.6 Construction workers or future site users may potentially be exposed to unstable ground conditions, primarily uncontrolled opencast backfill material, proposed and existing slopes, natural groundwater springs, mine entries and possible underground

coal workings. Any exposure to unstable ground conditions could be detrimental to human health.

5.2.7 The uncontrolled opencast backfill would be improved by surcharging. New or existing slopes would be subject to a slope stability assessment. The natural groundwater springs, any mine entries, and unrecorded underground coal workings would be subject to remediation and mitigation e.g. drilling and grouting.

5.2.8 The uncontrolled opencast backfill material would be subject to surcharging outlined in an earthworks strategy in order to mitigate risk of future settlement. The stability of cut and fill operations would be assessed, and mitigation measures would be put in place to ensure that long-term stability can be achieved.

5.2.9 Any natural groundwater would be remediated and mitigated by use of drainage. This would reduce the groundwater level below the plateaus, embankments and cutting of the proposed development. Any other features, such as mineshafts and mine adits, would be removed or treated as part of these operations.

Impacts and mitigation (preferential pathways)

5.2.10 The creation of preferential pathways allowing the migration of potential contaminants may occur through construction operations, such as by removing surface soils.

5.2.11 The CEMP would detail any measures to be implemented that would minimise creating preferential pathways through activities such as topsoil removal which are considered to generate short-term effects.

Impacts and mitigation (soils)

5.2.12 Soils may be potentially lost or disturbed due to mixing with the underlying natural strata or with the made ground colliery spoil during the site scrape.

5.2.13 The removal and stockpiling of site-worn topsoil would be carried out in accordance with the earthworks strategy. Site-won topsoil would be incorporated into the landscape proposals which would support sustainable re-use of soils.

Impacts and mitigation (spills)

5.2.14 As part of the construction phase, items such as fuels and solvents would be stored on site and may result in contamination if accidentally spilled. This may impact underlying soils and groundwater or surface water.

5.2.15 The mitigation of potential spills would be achieved through the correct implementation of the CEMP. The CEMP would provide health and safety procedures, including spill drills, machinery checks, etc.

Impacts and mitigation (hazardous gases)

5.2.16 During the construction phase, workers may be exposed to hazardous ground gases and soil vapours. Exposure to elevated concentrations of hazardous ground gases and soil vapours, if at sufficiently high concentrations or for prolonged periods of time, can be detrimental to human health.

5.2.17 Health and safety procedures involving the use of appropriate PPE to protect against the inhalation of hazardous ground gases and soil vapour would be followed and detailed in the CEMP. In addition to following health and safety procedures, workers in confined spaces must be provided with appropriate training e.g. rescue training.

Impacts and mitigation (contamination)

5.2.18 Construction workers may be exposed to potential contamination within the underlying soils e.g. drainage excavations, and when demolishing existing structures.

5.2.19 In order to mitigate against any contamination exposure, those relevant procedures in the CEMP would be followed. A remediation strategy would outline the procedure if any unexpected contamination were identified during the construction phase.

5.3 Flood risk and drainage

Construction operations

5.3.1 During the construction phase, there would be a number of operations that could reduce surface water quality with respect to physical contaminants, such as materials handling, earthworks, excavation and foundation construction, installation of temporary and permanent infrastructure and roads, construction of dwellings and drainage runs, formation of public spaces, and movement of plant and vehicles.

Impacts and mitigation

5.3.2 The above construction operations may lead to the disturbance and mobilisation of physical contaminants (i.e. dust, sediments, and muds). In particular, during periods of heavy rainfall, vehicle movements resulting in damage to soil structure may generate increased sedimentation within surface water run-off. In addition, during periods of dry, windy weather, wind-blown dusts generated but the excavation of soils have the potential to directly reduce the quality of surface water features.

5.3.3 These operations may result in sediments directly or indirectly entering surface water features, impacting on the physical, chemical and biological quality of the surface water receptors in the surrounding area.

5.3.4 Contaminants, spilled contaminants, and suspended sediments have the potential to affect surface and ground water bodies via surface run-off, shallow interflow, and infiltration. Construction activities such as piling, and ground excavation may create new pollutant pathways from the surface to the underlying strata.

5.3.5 There is a risk of pollution from foul water from site worker accommodation and sanitary facilities. Foul water from temporary staff welfare facilities would be contained within sealed storage vessels and disposed of off-site to minimise the risk of surface or groundwater contamination where a direct connection cannot be made to the existing public sewer network.

5.3.6 Off-site flood risk may increase due to increased runoff due to soil compaction on-site. There are water courses on-site which are at a lower level than the development platforms. There would be no risk from fluvial main river or tidal flooding, including from artificial sources, during the construction phase. Plant, machinery or materials would not be stored in areas at risk of flooding, wherever possible.

5.3.7 Those undertaking earthworks would prepare risk assessments and method statements covering all aspects of their work that have a potential to cause physical damage to structures.

5.3.8 In order to address any environmental impacts, the CEMP would be implemented as required to ensure any adverse effects on the water environment are avoided or minimised. The Environment Agency Pollution Prevention Guidelines (PPG) would be taken into consideration when preparing the CEMP. Method statements would be agreed within the Environment Agency to ensure compliance with PPG prior to the commencement of construction operations. This is to ensure that surface runoff quality is appropriately managed.

5.3.9 Construction operations would comply with DEFRA guidance on the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites which provides guidance on the soil, management, and movement of soil on-site. This is to be outlined a Soil Management Plan.

5.3.10 The adoption of best practice construction methods and construction management processes would significantly mitigate many of the identified potential environment

effects during the construction phase.

5.4 Transport and access

Construction operations

5.4.1 The construction phase would generate construction traffic movements. However, no specific detail in terms of the number of vehicles is available at this stage.

5.4.2 Vehicle movements generated by the construction process are likely to be primarily associated with the delivery of plant and construction materials, as well as construction staff travelling to and from the site. The construction phase would necessitate the movement of substantial volumes of material through operations such as earthworks.

Impacts and mitigation

5.4.3 The movement of construction traffic may result in temporary adverse effects on the operation of the local road network and may also adversely affect pedestrian amenity, severance, fear and intimidation, and increase the risk of accidents and safety. In addition, Heavy good vehicles (HGV) accessing the site during the construction phase vehicles could carry mud or dust on to the local road network.

5.4.4 Standard measures would be put in place to minimise traffic and associated disruption during the construction phase. However, the likely effects of construction traffic on the main routes to and from the site are considered to be temporary and short-term. Any potential impacts would be mitigated through the CEMP and Construction Traffic Management Plan (CTMP).

5.4.5 Notice regarding any planned road closures or diversions of roads and footpaths would be given to the Highways Authority, the Police, Fire Brigade and other emergency services sufficiently in advance of any required closure or diversion dates.

5.4.6 All construction traffic entering and leaving the site would be closely controlled. Vehicles making deliveries and or removing spoil or demolition material, etc. will travel via designated routes, which would be agreed with the Highways Authority.

5.5 Air quality

Construction operations

5.5.1 The construction operations that have the potential to generate impacts on air quality include demolition of existing buildings, earthworks, construction of buildings and access roads, and construction traffic movements which create trackout.

5.5.2 From earthworks, the main sources of dust may be from cleaning the site, stripping and stockpiling of topsoil and subsoil, ground excavation, importing, tipping and stockpiling materials, levelling ground, trenching, road construction, and vehicle movement.

5.5.3 Trackout may occur through the spillage of dusty materials onto road surfaces or through the transportation of dirt by vehicles. This dust and dirt can then be deposited and re-suspended by other vehicles.

Impacts and mitigation

5.5.4 The construction operations may generate the risk of dust soiling and could affect human health conditions, particularly during earthworks, demolition and trackout operations.

5.5.5 A best practice dust mitigation plan would be written and implemented for the site. This would set out the practical measures to be incorporated as part of a best working practice scheme. This would take into account the recommendations included within the IAQM guidance.

5.5.6 Modern construction techniques and sustainable materials would be used, and particular skills and experience would be incorporated and used throughout the construction phase.

5.5.7 All dust and air quality complaints would be recorded, and appropriate measures be taken to identify causes and reduce emissions in a timely manner. Exceptional incidents that cause dust and emissions, and the action taken to resolve the situation, would be recorded in a log book and made available to the appropriate authorities, upon request.

5.6 Biodiversity

Construction operations

5.6.1 During the construction phase, the proposed development has the possibility of impact on the biodiversity of the site and surrounding area. Those construction operations that could have an impact on biodiversity include the removal of woodland, cut and fill operations, and construction of the employment development.

Impacts and mitigation (statutory designated sites)

5.6.2 The construction operations are not anticipated to have an adverse impact on Denby Grange Colliery Ponds Special Area of Conservation (SAC) or the South Pennine Moors SAC, including any supporting habitats.

5.6.3 It is considered unlikely that the site could support golden plover and short-eared owl, associated with the Peak District Moors/South Pennine Moors phase 1 Special Protection Area.

Impacts and mitigation (non-statutory designated sites)

5.6.4 The Redbrook Pastures Local Wildlife Site (LWS) is located to the north east of the site. The construction operations would not result in the loss of any habitats within the LWS, but have the potential to negatively affect habitats e.g. pollution from fuel spills. This could also be the case for Hugset Wood LWS. No other impacts are anticipated on other surrounding LWSs.

5.6.5 It is recommended that an Ecology Construction Environmental Management Plan (EcoCEMP) is created prior to any construction operations taking place on land adjacent to any LWS. The EcoCEMP would detail the methods adopted to prevent accidental damage of LWS habitats. The use of artificial lighting near the LWS during later hours would be avoided, where possible. Where artificial lighting is required, it would be directed towards active workings. The CEMP would detail any measures required to prevent pollution of Redbrook Pastures or Hugset Woods LWS, where appropriate.

Impacts and mitigation (broad-leaved trees)

5.6.6 Some broad-leaved semi-natural woodland would be lost during the construction phase, with all other areas of woodland being retained and is considered to not have a significant effect on overall woodland integrity. However, retained woodland could be affected by operations such as encroachment of machinery, soil compaction and

damage to roots.

5.6.7 Scattered trees would be removed as part of cut and fill operations. Scattered trees would be retained where possible, but as a result may be prone to damage by operations such as encroachment of machinery and soil compaction.

5.6.8 Throughout the construction phase, tree protection zones would be established around any retained trees.

5.6.9 New woodland areas and scattered trees planted on site would be native species and ideally of local provenance. Species composition would allow for a mix of flowering, fruit and seed-bearing tree species. Planting of heavier standard trees would be encouraged to reduce the time for woodland to mature.

5.6.10 Artificial lighting that could illuminate retained or newly planted habitats would be avoided, where possible. Where essential, measures would be adopted to reduce negative impacts upon habitats.

5.6.11 Measures to prevent any adverse impacts would be detailed in an EcoCEMP. A Habitat Landscape Management Plan (or similar) would also be produced that details methods of habitat establishment and any specific measures to be adopted during establishment which could benefit biodiversity on-site.

Impacts and mitigation (hedgerows)

5.6.12 The majority of hedgerows would be lost and potentially relocated as part of cut and fill operations. Permission would be required from BMBC to allow for the removal of any 'important' hedgerows.

5.6.13 Prior to any translocation of species-rich hedgerows, an appropriate method statement would be prepared by a competent expert. This method statement would detail methods of hedgerow removal and re-establishment, as well as suitable timings and any additional measures required to prevent death of any translocated plants. Residual measures would also be detailed in the event that hedgerow fails to re-establish, such as replacement planting.

5.6.14 As recommended, additional hedgerow would be planted within the employment development area. Any new hedgerow would ideally comprise a mixture of native species.

5.6.15 Measures to prevent any adverse impacts would be detailed in an EcoCEMP and a Habitat Landscape Management Plan (or similar).

Impacts and mitigation (running water)

5.6.16 A small section of the stream located within the woodland areas to the north of Hermit Lane would be culverted to facilitate the creation of development foundations. A new open ditch would be created as part of the proposed development and is considered likely to mitigate for the lost section of the stream.

5.6.17 Measures to prevent any adverse impacts would be detailed in an EcoCEMP and a Habitat Landscape Management Plan (or similar).

Impacts and mitigation (bats)

5.6.18 Cut and fill operations would result in the loss of habitats, including those suitable for roosting, foraging or commuting bats. This may include loss of trees and/ or buildings that are suitable for bat roosting.

5.6.19 The loss of hedgerows, woodland and pastoral fields would reduce the availability of suitable bat foraging and commuting habitat, until green spaces are available upon completion of cut and fill operations.

5.6.20 Considering the irregular use of bat roosts, the following mitigation measures would be implemented as part of the construction phase:

- Bat roost update surveys would be undertaken on trees and buildings every two years. Should any bat roosts be identified, it may be necessary to apply for a European Protected Species Mitigation Licence from Natural England.
- Prior to any demolition or tree works, an appropriately qualified ecologist would be present on-site to check any potential roost features for bats.
- Install a mixture of bat roosting boxes on-site in newly built buildings or areas of woodland. An ecologist would be consulted to confirm detailed box specifications.
- The use of artificial lighting would be avoided, where possible.
- New woodland, tree planting, hedgerows, and connective features that create a diversity of habitats, would be incorporated into the detailed design of green spaces. This would reinstate lost roosting, foraging and commuting habitats.

Impacts and mitigation (birds)

5.6.21 Construction operations would result in the loss of suitable breeding and foraging habitat for bird species. During the construction phase, suitable habitats may not be present on site over the medium-term. In the meantime, it is anticipated that

surrounding woodland and gardens would be utilised more frequently. The loss of habitat may be most stressful for farmland birds, but may use the site as a breeding ground during the construction phase.

5.6.22 All vegetation clearance and ground disturbance would be undertaken outside of breeding bird season. If this is not possible, a suitably qualified ecologists would undertake a nesting bird check at least 48 hours prior to such operations, in order to confirm the presence or absence of any active nests. If any active nests are found, a buffer zone would be established around the nest and remain in place until all birds have left the nest.

5.6.23 A variety of bird boxes would be installed in new buildings or areas of woodland, to allow the provision of nesting opportunities to mitigate the loss of breeding habitat. An ecologist would be consulted to confirm detailed box specifications.

5.6.24 New woodland, tree planting, hedgerows, and connective features that create a diversity of habitats, would be incorporated into the detailed design of green spaces.

Impacts and mitigation (amphibians)

5.6.25 Great Crested Newts (GCN) are likely absent from the site. However, a precautionary approach would be taken due to limited access to some garden ponds located near the site during preliminary studies. Other amphibians may be present in woodland areas.

5.6.26 During site clearance, all areas of vegetation over 10cm in height would be subject to clearance under precautionary measures. In this case, the following measures would be carried out:

- Prior to the removal of such vegetation, a ‘fingertip’ search would be conducted by a suitably qualified ecologist. Any tall vegetation would be cleared using hand tools until such a height where a ‘fingertip’ search can be carried out.
- Any cut vegetation would be removed from the site in order to not create new areas of suitable refugia.
- An ecologist would be consulted regarding any excavations, the storage of materials and water management on-site in order to avoid the potential creation of habitats suitable for GCN.
- In the unlikely event a GCN is found, all construction operations would cease, and advice would be sought from a suitably qualified ecologist. An application for a

European Protected Species Mitigation Licence may be required, should GCNs be found.

5.6.27 In addition, any potential refugia would be cleared outside of the GCN hibernation period (October – February).

Impacts and mitigation (reptiles)

5.6.28 Reptiles are considered likely to be absent from the site. However, reptiles are mobile and could be found within isolated areas of suitable habitat. As such, clearance of these areas could result in harm to such species.

5.6.29 Given the mobility of reptiles and presence of isolated suitable habitats on-site, the following precautionary measures would be undertaken during clearance works:

- Suitable reptile refugia would be removed by hand during the active reptile period (March – October).
- Directional strimming of vegetation would be carried out within suitable habitat areas to a height of 150mm. Following this, a check of the habitat by a suitably qualified ecologist would be carried out before stripping of the remaining habitat.

Impacts and mitigation (badgers)

5.6.30 No badgers have been recorded on-site. However, cut and fill operations would result in the loss of suitable badger habitat and could damage any potential badger setts or harm any badgers which have travelled to the site in the interim, by reason of becoming trapped in excavations.

5.6.31 Due to the high mobility of badgers, a pre-commencement badger survey would be undertaken prior to the commencement of earthworks, as well as prior to the construction of the employment development area. Where areas are left undisturbed for periods of over three months, a further pre-commencement check would be carried out before recommencing operations. In the event that a badger sett is found, and works be required within 30m of the sett, an appropriate mitigation license from Natural England would be required before such works proceed.

5.6.32 Site workers would be made aware of the potential for badgers to access the site and create setts within mounded spoil during construction operations. In case of this event, all excavations would be covered if left open overnight to reduce the risk of entrapment. Alternatively, a slope or ‘mammal ladder’ would be provided. Any pipework with a diameter of 10cm would also be capped overnight.

Impacts and mitigation (non-native invasive species)

5.6.33 Japanese knotweed has been identified on-site and it is possible that rhizomes or other sub-surface growth may be present, meaning such species or other plant material could be spread away from the site.

5.6.34 Prior to any construction operations, an updated invasive species walkover survey would be undertaken to confirm the presence or absence of any non-native invasive species.

5.6.35 Prior to any construction operations within 8 metres of the identified location of Japanese knotweed, an invasive species specialist would be consulted to confirm the condition and growth status of the species, and any treatment works, where appropriate. This check would be undertaken between April and September, but ideally between June and July.

5.6.36 A Non-invasive Species Management Plan would also be completed, detailing any treatment and pre-cautionary measures to prevent the spread of the invasive species.

Impacts and mitigation (hedgehogs)

5.6.37 European hedgehog has been identified on-site, as the site supports suitable habitat for foraging, seeking refuge and hibernation. Clearance of woodland, scrub, hedgerows and grasses would result in the loss of this suitable habitat and harm to hedgehogs. Later stages of the construction phase would reinstate suitable habitat, but would be absent in the medium-term.

5.6.38 Clearance of dense vegetation or potential hedgehog refugees would be undertaken during active periods of hedgehog (March – October) and would adopt a precautionary approach. Dense vegetation would be cut by hand to a height of 20cm to allow for a suitably qualified ecologist to undertake a 'fingertip' search for any hedgehogs. Any refugia would also be removed by hand and under supervision of an ecologist.

5.6.39 Any potential hibernation features would be removed outside of the hedgehog hibernation period (November – February).

5.6.40 All excavations would be covered if left open overnight to reduce the risk of entrapment. Alternatively, a slope or 'mammal ladder' would be provided. Any pipework with a diameter of 10cm would also be capped overnight.

5.7 Noise

Construction operations

5.7.1 Construction operations have the potential to cause disturbance by generating noise, in particular the use and movement of plant and machinery, use of the site compound, ground engineering, earthworks, road construction, creation of building foundations and subsequent structures.

Impacts and mitigation

5.7.2 The noise generated by construction operations has the potential to disturb neighbouring land users, including those at residential dwellings and reducing amenity value. Those noise impacts generated by the construction phase would be temporary, but nevertheless, the following mitigation measures would be employed.

5.7.3 In particular, an acoustic barrier could also be implemented on the north-western site boundary to minimise disturbance to those most-sensitive residential receptors. This can be established in the CEMP.

5.7.4 The CEMP would detail appropriate measures to minimise impacts of construction noise and would be followed accordingly. Relevant mitigation measures may include the regular maintenance of plant and machinery, limit the speed of vehicles, restricting noisy activities e.g. demolition to certain hours.

5.8 Climate change

Construction operations

5.8.1 The construction phase would result in greenhouse gas (GHG) emissions from various activities, such as by consumption of fossil fuels by construction plant and vehicles, the generation of consumed mains electricity, the manufacture of construction materials, and the transport of workers, materials and waste to and from the site.

Impacts and mitigation

5.8.2 The GHG Mitigation Hierarchy would be used which provides a structure for mitigating GHG emissions. In addition, The Whole Life Carbon Assessment for the Built Environment (RICS, 2017) provides a benchmark factor for estimating average building construction site GHG emissions where more specific information is not available and could be used to monitor climate change elements of the construction phase.

5.9 Cultural heritage

Construction operations

5.9.1 Construction operations, including earthworks, stripping of topsoil and cut and fill operations, excavations may have an impact on archaeological assets. The creation of open space may provide opportunities to preserve such remains.

Impacts and mitigation

5.9.2 It is considered that the construction phase has the potential to have an adverse impact on unknown archaeological remains and potential remains associated with medieval or later settlement on-site. Geophysical anomalies are also present on land to the south of Hermit Lane and may have potential archaeological value.

5.9.3 The potential for unknown archaeological remains would be addressed through further field evaluation. This would involve undertaking a scheme of trial trenching to assess the results of the geophysical survey. Based on the results, appropriate mitigation measures would be considered.

5.9.4 Significant remains that cannot be preserved would be excavated and recorded prior to the relevant constriction operation(s) commencing. All archaeological fieldwork would be carried out in accordance with a Written Scheme of Investigation, as agreed by BMBC. Recording remains would enable their evidential value to be preserved and bring information to a wider audience.

5.9.5 Listed building consent has recently been approved to relocate 'Milepost approximately 500 metres west of junction with Claycliffe Road' (reference: 2019/1567) and would be carried out in accordance with consented details. This is a way to the north of the employment site.

5.10 Waste and resource use

Construction operations

5.10.1 Throughout the construction phase, there is the potential of waste to occur and resource and materials to be used as part of the process. Those operations involved have the potential to generate environmental impacts at the site and surrounding area.

Impacts and mitigation

5.10.2 It is anticipated that materials and resources used during construction of the proposed

development would be sourced from sustainable and/or local sources where practicable. Where possible materials arising from the demolition of buildings and breaking out of hard surfaced areas would be recycled and reused on-site or transferred to an appropriately licensed recycling facility.

5.10.3 The construction process is likely to give rise to a range of waste arisings including demolition spoil (concrete, brick rubble, steel, aluminium, plastics, wood etc.), soils, packaging (plastics, pallets, expanded foams etc.), and liquids (dirty water, fuels etc.). In addition, waste materials may be generated from inaccurate ordering, poor usage, badly stored materials, poor handling, spillage etc.

5.10.4 It is expected that all contractors would be required to investigate opportunities to minimise waste arisings at source and, where such waste generation is unavoidable, to maximise the recycling and reuse potential of demolition and construction materials. Wherever feasible, such arisings would be dealt with in a manner that reduces environmental impact and maximises potential re-use of materials. Recycling of materials would largely take place off-site where noise and dust are less likely to result in impacts to the occupants of surrounding properties.

5.10.5 No burning of demolition or construction waste would be undertaken on the Application Site. Building materials containing asbestos would be fully assessed in advance of demolition works commencing. Any identified asbestos or other controlled waste would be removed by a licensed contractor in accordance with the relevant legislation and regulations.

5.10.6 A Site Waste Management Plan (SWMP) would be prepared to set out the procedures to sort, reuse and recycle construction waste and would be subject to a suitably worded planning condition. Adherence to the SWMP would support better control over materials handling and waste, compliance with relevant waste legislation for the handling, transport and disposal of wastes, compliance with environmental management systems and management of waste-related costs.

wardell-armstrong.com

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON
41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BRISTOL
Temple Studios
Temple Gate
Redcliffe
Bristol
BS1 6QA
Tel: +44 (0)117 203 4477

BURY ST EDMUNDS
Armstrong House
Lamdin Road
Bury St Edmunds
Suffolk
IP32 6NU
Tel: +44 (0)1284 765 210

CARDIFF
Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE
Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH
Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW
24 St Vincent Place
Glasgow
G1 2EU
Tel: +44 (0)141 428 4499

LEEDS
36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON
Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International office:

ALMATY
29/6 Satpaev Avenue
Hyatt Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

wardell armstrong