Land Between Gravel Hill and Brinsham Lane

Construction Environment Management Plan: Biodiversity

Heidelberg Materials UK Ltd

Prepared by:

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
V1.0	11 October 2024	Rea Yellowlees	Stephanie Attwood	Angela Collins
V1.1	16 October 2024	Bryn Hickson Rowden	Angela Collins	Angela Collins

Basis of Report

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Acronyms and Abbreviations

CEMP-B	Construction Environmental Management Plan: Biodiversity
HML	Heidelberg Materials Limited
LEMP	Landscape and Ecology Management Plan
NE	Natural England
NGR	National Grid Reference
SGC	South Gloucestershire Council

1.0 Introduction

1.1 Background

SLR Consulting was commissioned by Heidelberg Materials Limited (HML) to produce a Construction Environment Management Plan: Biodiversity (CEMP-B) to support proposals for an alternative access and temporary haul road (for a period of 15 years) to link Southfields and Brinsham West Quarries that would replace a tunnel below Wickwar Road agreed as part of the ROMP/IDO permission issued by South Gloucestershire Council (ref: 11/0613/MW). Historically a CEMP-B was produced by Tetra Tech (March 2023)[1]

A planning application to South Gloucestershire Council (SGC) was initially submitted by Tetra Tech and was submitted and validated in April 2022. This application currently remains undetermined by SGC.

This CEMP-B sits alongside the Landscape and Environment Management Plan and the two should be read in conjunction to ensure that all ecological matters are considered during the proposed works.

1.2 Site Description

The 'site' is located north of Chipping Sodbury, Bristol, BS37 7BT (at Ordnance Survey (OS) National Grid Reference (NGR) ST 72300 846652 (Figure 1).

The study area comprises land along the line of a proposed access route north from the active Southfields Quarry across Gravel Hill Road an intervening field and then Brinsham Lane into improved pasture at the edge of the future Brinsham West Quarry.

1.3 Purpose of Report

The purpose of this CEMP-Bis to provide details of the mitigation measures that will be put in place during the construction phase of the development, as requested by South Gloucestershire Council's Ecologist on two occasions, being Laura Turner (June 2023) and Michelle Newman (April 2022) as part of the consultation process for planning application reference P22/02019/F.

- *A CEMP has been recommended, usually this would be conditioned, however based on the sensitivity of the site and the habitats it will be impacting this will be required prior to determination to assess the avoidance measures and mitigation is appropriate. The CEMP (Biodiversity) shall be written in accordance with BS42020, including mitigation details on bats, birds, great crested newt, reptiles, dormice and badger, as well as any pollution prevention measures. The approved CEMP shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details, unless otherwise agreed in writing by the local planning authority. (PSP21).*
- *The CEMP will be informed by updated activity surveys, however the following will likely be required for inclusion:*
    - *Location of reptile fencing as mentioned in the ecology report to safeguard reptiles within the SNCI*
    - *Details on how retained habitats will be mitigated against dust/noise/vibration*
    - *Further details on vehicle movement to ensure retained habitats are*

[1] Brinsham West Quarry Access Road, Chipping Sodbury. Construction Environmental Management Plan: Biodiversity. March 2023 Tetra Tech.

safeguarded

- *Materials should be stored on cleared ground or pallets to safeguard habitats and animals underneath*
- *Specific mitigation details for Ladden Brook*

The objectives of this CEMP-B are to:

- Ensure no breach of wildlife legislation occurs on site for the duration of the construction works; and
- Protect the important ecological features of the site during the construction phase; and
- Provide a plan to enable the avoidance/minimisation of damage to adjacent habitats and protect habitats retained as part of the final works; and
- Detail how enhancement and compensation for habitat impacted by the scheme is achieved .

1.4 Scope of Scheme

The proposed development includes a temporary, single track haul road, connecting the consented Brinsham West Quarry with the processing plant at Southfields Quarry.

The proposed access route comprises a single carriageway (9.2m wide) with two 20m long passing bays interspersed along the route (total width of passing bays 17.2m wide, including the width of the carriageway) and a concrete culvert portal unit spanning the Ladden Brook.

The detailed haul road alignment is provided in SLR DWG no. 425.065060.00001.29.001 Rev 4 and Brinsham West Quarry, Chipping Sodbury Culvert Hydraulic Design (Vectos 2021), which includes drawing VD21534-VEC-00-XX-SK-S-0001 Rev 3.0 (as amended).

The culvert design where the scheme crosses Ladden Brook is shown in Appendix B.

1.5 Technical Competency

This CEMP-B was drafted by Rea Yellowlees a Project Ecologist with SLR Consulting, a Qualifying member for CIEEM, and has over two and half years' experience working in environmental consultancy. Rea has undertaken a variety of ecological surveys including UK Habitat Classification (UKHab), and protected species surveys. Additionally, Rea has completed the River Condition Assessment (RCA) accreditation for the BNG Statutory Metric through Modular River Survey.

This report was quality assured by Stephanie Attwood Principal Ecologist MSc DIC BSc (Hons) MCIEEM with over 17 years of experience as a working professional ecologist. Steph is a licensed bat worker and experienced botanist.

2.0 Roles and Responsibilities

2.1 Roles and responsibilities during the construction phases

The CEMP-B will be distributed to all relevant personnel involved in the site construction works.

2.1.1 Toolbox Talk

All construction workers will be provided with a ‘Toolbox Talk’ conducted by the Ecological Clerk of Works (ECoW) prior to commencing work within the site so that they are made aware of the ecological issues relating to the proposed development. This talk will detail the important ecological features, identifying their locations and explain the purpose of the CEMP-B. Initially

this presentation will be delivered by the ecologist as part of the Reasonable Avoidance Measures (RAMs), however it is anticipated that subsequent presentations will be incorporated into the general Health and Safety briefing which is given to all workers when they first visit the site.

2.1.2 Biodiversity Champion

A Biodiversity Champion will be nominated to influence site activities during construction works in line with the recommendations of this report. The Biodiversity Champion does not need to be an ecologist but should be familiar with this report and have sufficient authority and presence on site to influence activities. The Biodiversity Champion can be (but is not restricted to) a member of the client operations team or lead construction contractor. The Biodiversity Champion nominated during the Construction Phase should have a regular site presence. Once management of the site is transferred into the Operational Phase, at the end of the Construction Phase, the role of Biodiversity Champion can be transferred to a new individual (See LEMP – SLR October 2024). During the Construction Phase the role of a Biodiversity Champion is to provide advice to the construction teams on all pertinent ecological issues as highlighted by this document as well as preceding documents and to check that the ecological protection and mitigation measures, as specified in this document, are correctly implemented. General responsibilities of the Biodiversity Champion during the Construction Phase are:

- Overseeing that all site contractors know to report any ecological concerns/issues to them;
- Check and document that an overview of the site's ecological constraints are included within the contractor inductions as appropriate;
- Oversee that site works do not encroach into the tree root protection zone areas;
- Undertaking weekly checks of the retained trees and buffer zones. Organising repairs where necessary;
- Contacting an ecologist with uncertainties about ecological issues surrounding the development;
- If site preparation works are scheduled during the nesting bird season (generally considered to be March-September inclusive), to organise for an ECoW to undertake a nesting bird check in advance of works that could impact an active nest. If a nesting bird is identified, to implement suitable working methods (including protection zones) as advised by the ECoW;
- Ensure no lighting is used during construction;
- Supervising the installation of bird boxes and bat boxes at suitable locations;

2.1.3 Client Responsibilities

The client responsibilities include the following:

- Ensuring that the contractors employed are suitably qualified and experienced to undertake works, whilst maintaining the ecological value of the site; and
- Providing to the contractor, all information required to allow them to carry out appropriate habitat and landscape management during the construction phase. This includes any updated versions of this CEMP-B, which will be circulated as soon as possible after being received.
- Ensuring the contractor adheres to the relevant provisions made within this document and to comply with the advice of the ECoW / Biodiversity Champion; and

- To contact the Biodiversity Champion, and/or if necessary, the ECoW, regarding any uncertainties or activities that may impact on ecological features on site.

3.0 Ecology Baseline

SLR Consulting carried out a UK Habitat Classification (UKHab) survey and protected species surveys in 2020 and 2021. The findings of these surveys are detailed in Table A below.

Table A: Ecological Baseline Summary of Findings

Survey Type	Survey Date	Summary
Ecological Appraisal (EA)	April 2024	On the 9th of April 2024 SLR ecologists Stephanie Attwood and Leah Cutts undertook a UK Habitat classification survey within the site boundary together with a 30m buffer. Three Sites of Special Scientific interest (SSSI's), one Local Nature Reserve (LNR), and ten Sites of Natural Conservation Interest (SNCI's) are present within 2km of the site. Of note, Ladden Brook and Brinsham Bridge SNCI is within the northern section of the Site. Ladden Brook is crossed by the proposed Haul Road. The proposed access road will result in the loss of the following habitats: • Other neutral grassland g3c, (106, mown), (107, mown and collected), (516 active management); • Other neutral grassland g3c, (128, tussocky), (10, scattered scrub) (205 Ancient tree). • Species-rich Native Hedgerows h2a5 (33 line of trees); • Other lowland mixed deciduous woodland w1f7 (217 woodland open space), (507, nutrient-enriched substrate) and (29, plantation); and • Wet woodland w1d (217 woodland open space) (507nutrient-enriched). See Figure 1 for the UKHab map. The northern section of the Site (within the SNCI) crosses Ladden Brook stream corridor where is proposed to build a box culvert Appendix B. A veteran Ash *Fraxinus excelsior* is present within the Site. Native bluebell *Hyacinthoides non-scripta* was recorded within the Site. Habitats on site were noted as having potential to support invertebrates *Lucanus cervus*; reptiles; breeding birds; roosting, foraging, & commuting bats; badgers *Meles meles*; otters *Lutra lutra*; water vole *Arvicola amphibius*; hazel dormouse *Muscardinus avellanarius*; amphibians, and hedgehog *Erinaceus europaeus*. However: • Birds - The site was not considered suitable for wintering birds due to the lack of wet areas within the Site.

Survey Type	Survey Date	Summary
		• Otters - No signs otters were found during the Survey and no holts were observed 50m up or downstream. • Badgers -No setts were observed during the survey within the Site or within 30m and no evidence of badgers were observed. • Water Vole - A mammal burrow was observed along the bank face of the brook. Therefore, it is not possible to rule out the presence of water voles in this area. • Dormouse - Historically Tetra Tech has undertaken dormouse checks in 2021 and found no evidence of dormouse it is therefore considered highly unlikely that dormouse could off populated the woodland within the last few years due to the behaviour of this species. Dormouse is therefore considered to be absent from the Site. • No invasive non-native plant species (INNS) were observed during the site survey and therefore INNS are considered absent from the Site. Outside the site: • The nearest waterbody is c350m to the north. GCN are considered likely absent from the site. Two great crested newts (Triturus cristatus) (GCN) licence returns have been identified within 500m using MAGIC, both of which found GCN present. However, Tetra Tech undertook eDNA of this waterbody north of the Site in 2021 which was negative. Protected Species Scoped into this CEMP-B are as follows: • Bats • Breeding birds • Badgers • Otters • Water vole • Hedgehog • Reptiles • Amphibians • Stag beetle
Ground Level Tree Assessment (GLTA)	April 2024	A GLTA of trees was undertaken in conjunction with the UKHab survey on 9th of April 2024, by Stephanie Attwood (licensed bat worker) and Leah Cutts, SLR ecologists. The site contained two trees with potential for roosting bats. The veteran tree contained suitable roosting features for multiple bats (PRF-Ms) and another tree contained a suitable roosting feature for individual bats (PF-I).

4.0 Risk Assessment of Potentially Damaging Construction Activities

4.1 Construction Activities

Construction activities with the potential to have detrimental impacts on ecological and biodiversity features are listed below:

- Movement of machinery and vehicles;
- Vegetation clearance;
- Digging / excavation or infilling;
- Dumping, spreading, discharge or storage of materials; and
- Construction of temporary road and bridge.

4.2 Summary of Impacts

The potential impact(s) (direct or indirect) to protected species or important ecological features resulting from the proposed construction activities have been identified and outlined in Table B below.

No artificial/flood lighting or night-time working will occur as part of this scheme and is therefore excluded as a potential impact to noctule wildlife.

Table B: Potential impacts to Ecological Features

Ecological Feature	Potential Impacts
Ladden Brook and Brinsham Bridge SNCI	The proposed route will cross Ladden Brook and result in the loss and/or fragmentation of SNCI habitat. The habitats to be impacted within the SNCI area consist of broadleaved woodland, wet woodland with a scrub understorey. During the construction phase the SNCI could be impacted via run off, chemical spillages and inadvertent incursion onto bankside habitat. Retained habitat will need to be protected during the construction.
Habitats	The proposed access road will result in the loss of three notable habitats: other lowland mixed deciduous woodland and plantation woodland, species-rich native hedgerow (NERC/BAP) along Gravel Hill Road, and areas of wet woodland (NERC/BAP). The veteran ash tree will be retained as part of the proposed scheme; however, construction activities may impact the veteran tree. Retained habitat will need to be protected during the construction.
Plants	Native bluebells are present within the Site boundary and could be lost by development
Amphibians (including GCN)	GCN are likely absent as no suitable connected breeding habitat was recorded within 500 m of the site and a negative eDNA result was returned for the pond located 0.3 km north of the site. There is therefore no impact predicted.
Reptiles	Habitat loss through vegetation clearance, groundworks and site traffic could reduce the availability of suitable habitat for reptiles.

Ecological Feature	Potential Impacts
	Construction works have the potential to kill or injure reptiles, particularly during site clearance, which would be an offence under the Wildlife and Countryside Act (WCA) 1981 (as amended).
Breeding birds	Habitat loss through vegetation clearance. The clearance of vegetation could result in killing or injuring birds or damaging or destroying their nest/eggs which would be an offence occurring under the WCA 1981 (as amended).
Bats	Severance of commuting routes during site clearance and construction could result in isolation from vital resources such as foraging habitat and roosting sites as well as loss of foraging habitat through site clearance. The small section of woodland removed from the proposed scheme is not considered to impact the local bat population as they will still be able to follow the woodland edge. The veteran tree containing suitable roosting features for multiple bats will be retained and buffered as part of the proposed scheme. There will be therefore no impact on roosting bats within this tree. The other potential roosting ash tree may be removed as part of the proposed scheme. All bats and their roosts receive full protection both under Habitat Regulations and the W&CA making it an offence to kill or injury them as well as disturb them in/ destroy their habitat.
Dormice	Based on the results of the hazel dormouse survey (Tetra Tech 2023b), hazel dormice are considered likely absent from the site. However, given the historic records of hazel dormouse in the surrounding area and the connectivity between the site and the North Yate housing development, where dormouse have been recorded, there is a risk of killing or injuring a dormouse during the removal of vegetation. Hazel dormice are fully protected under the W&CA and Habitats Regulations, making it an offence to kill or injury them as well as disturb them in/ destroy their habitat.
Badgers	Risk of disturbance to badgers that are active within the site, injury or death during site clearance, excavations and driving machinery. This could result in an offence under the Protection of Badgers Act 1992 and the WCA 1981 (as amended). There are no badger setts present and thus no disturbance to their sett (damage, destroy, obstruct) is predicted.
Otters	Otters could be using Ladden Brook and therefore disturbance during construction and possible killing and injury during operation could occur. Habitat degradation via pollution run-off, disturbance (light from the HGVs and noise) and entrapment in excavations are possible impacts during construction. Killing, disturbing or injuring otters would be an offence under the Conservation of Habitats and Species Regulations 2017 as amended.

Ecological Feature	Potential Impacts
Water Voles	A potential mammal burrow within Ladden Brook means the installation of the U-shaped culvert could potentially damage, destroy, or obstruct a structure or place used for shelter or protection. Water voles are protected under section 9 of the W&CA. Schedule 5 of this Act makes it an offence to intentionally damage or obstruct access to water vole burrows.
Small mammals (including rabbits and hedgehog)	Proposed works could have impact on mammals such as hedgehog, rabbits, and deer. Hedgehogs are a priority species under S41 of the NERC Act (2006). Where works may affect mammals such as rabbit burrows, there is a need to ensure compliance with the Wild Mammals (Protection) Act (1996). This legislation requires that no harm to or death of a wild mammal should involve “unnecessary suffering” through negligence.

Mitigation measures are included in section 5.0 below.

5.0 Mitigation

5.1 Overview

Mitigation measures required to address potential impacts identified in Section 4.2 are outlined below in Table C and follow the mitigation hierarchy outlined in BS42020:2013 Biodiversity – Code of Practice for Planning and Development (BSI, 2013) which seeks to firstly avoid impacts, then to mitigate unavoidable impacts. As a last resort, compensation for unavoidable impacts after avoidance and mitigation measures is defined.

In line with the national planning policy and relevant policies of the South Gloucestershire Local Plan (South Gloucestershire LP 2013), the site will be enhanced for biodiversity and the proposals should provide a net gain in biodiversity. Full details of the site enhancements for biodiversity are located in the LEMP.

The mitigation measures outlined below are proportionate to the level of impact identified and to the nature and scope of the works.

5.2 Measures

A suitably qualified ecologist will be employed, where required, to act as an Ecological Clerk of Works (ECoW). The ECoW should be able to "…demonstrate a level of experience and competence commensurate with the complexity of the role needed on site to deal with the wide range of ecological issues likely to be encountered and to adapt to new and unforeseen challenges raised by development activities (BSI, 2013)."

A Biodiversity Champion will be appointed to be responsible for monitoring the works from an ecological perspective, based on the information contained within this CEMP-B. They will decide if/when action is required and check that the ecological protection and mitigation measures, as specified in this document, are implemented.

Table C: Mitigation Measures

Ecological Receptor	Mitigation	Category
Ladden Brook and Brinsham Bridge SNCI	Retained SNCI habitat adjacent to the proposed route will be protected by fencing in line with BS5837:2012: Trees in Relation to Design, Demolition and Construction. Protection fencing should be established prior to construction work taking place on site, and at a minimum ensure that the area is clearly delineated and cannot be accessed by people or machinery. Signage should display area of protection. Excavations adjacent to trees will be required immediately adjacent to the proposed road. Excavations near retained trees will be avoided where possible to minimise potential impacts to the root systems, which can prevent or limit growth. No-essential construction activities will be executed outside the Ladden Brook corridor, broadleaved and wet woodland including the following activities: storage of materials (including soil and rubble), mixing of materials and chemicals, excavations, and the movement/parking or plant and vehicles.	Avoidance

Ecological Receptor	Mitigation	Category
	The Environment Agency's Pollution Prevention Guidelines (2015) should be followed to avoid adverse effects on water quality, measures include: • The use of drip plans, spill kits and plant nappies. • Plant and machines shall not be refuelled within 10m of the brook. • Sediment control of water arising from the working areas will be required, silt traps and turbidity barriers to be used where necessary. The construction compound will be located within Southfields Quarry. All material, fuels, oils and chemicals will be stored off site and away from the ecological receptors. All materials stored, used and disposed of will be in line with construction best practice. Wheel washing facilities if required are located at the Southfield quarry site. Good construction site management must be implemented to • avoid/minimise generation of litter, dust, noise and vibration. Specific attention will be taken to protection measures for the veteran tree. Prior to the start of construction, the veteran tree (see 425.065060.00001.29.001) will have a protection fence established around it in consultation with an ecologist. It will be the role of the site's designated Biodiversity Champion to check that works adjacent to the trees are being undertaken properly, and that pollution prevention measures are being implemented	
	To mitigate for the loss of SNCI habitat within the Review of Old Mineral Permissions (ROMP) boundary, compensation planting is proposed approximately 0.6 km west of the access road and adjacent to Ladden Brook, with appropriate native tree and shrub species that have been recorded within SNCI, this will include the creation of an area of wet woodland. Conservation management of the wider Ladden Brook and Brinsham Bridge SNCI is recommended to restore habitats to a higher conservation value. As part of the proposals, the Habitat Management Plan for the period 2015- 2025 agreed to as part of the ROMP Condition 46 will need to be reviewed and updated to reflect current conditions on the Site and any future development proposals. Compensation details can be found in the LEMP.	Compensation
Habitats	The retained habitat adjacent to the areas to be directly impacted by construction will be protected during construction using fencing installed in accordance with British Standards BS 5837 2012: Trees in Relation to	Avoidance

Ecological Receptor	Mitigation	Category
	Design, Demolition and Construction. These areas will be fenced to prevent heavy machinery compressing the root stock or causing inadvertent damage during clearance and construction. In the British Standard 5837, root protection area is generally calculated by multiplying the diameter of the tree at breast height in metres by 12, up to a maximum of 15m from the trunk, this is increased for Veteran Trees.	
	Any waste generated on-site will be reused, recycled or disposed of in accordance with Section 33 and 34 of the Environmental Protection Act 1990. Any movement of waste from the site taken by a registered waste carrier and transferred to a facility licensed to accept the waste. Waste transfer from the site will also be accompanied by Special Waste consignment notes and in accordance with the Duty of Care. Opportunities to minimise waste through the design process (where applicable) will be considered and actions taken where identified and cost-effective. All subsoils, clay and topsoil will be stored on site and will be reused in accordance with The Institute of Quarrying: Good Practice Guide for Handling Soil in Minerals Working (IQ, 2021).	Avoidance
	Veteran tree An arboricultural assessment is recommended as a planning condition and root protection zone (RPZ) implemented to prevent any impacts on the veteran tree.	Avoidance
	Wet Woodland See SNCI compensation above. To mitigate for the loss of the wet woodland, an area adjacent to Ladden Brook has been identified within the landholding of the Mine which will be enhanced into wet woodland or existing wet woodland is enhanced through appropriate management or additional planting. Full mitigation details can be found in the LEMP. All habitats created or enhanced will be assessed following the Biodiversity Net Gain Condition Assessment Criteria, although the project is exempt from BNG but the condition assessment criteria is a useful measure of improvements.	Mitigation
	Broadleaved Woodland See SNCI compensation above. To mitigate for the loss of the deciduous woodland it is recommended that other areas of woodland surrounding	Compensation

Ecological Receptor	Mitigation	Category
	the Site are enhanced by improving the condition of the woodland currently present. Woodland enhancement is detailed in the ROMP Habitat Management Plan and LEMP. Post construction monitoring and management of created habitats is provided within the LEMP.	
	Hedgerows It is proposed to translocate sections of the hedgerow that are to be removed during the construction and operational phase. These translocated hedges will then be moved again, back to their original location during the restoration. Small sections (approximately 2m) of hedgerow will be removed either side of the gateways along Brinsham Lane and a total of 8m will be removed from the hedgerow to the north of Gravel Hill Road. All sections of the hedgerows removed to facilitate the construction of the haul road will be translocated either side of the gap where visibility splay allows. Refer to the LEMP - Drawing CHR-001 and CHR-007, Appendix A and Appendix B – Translocation Method Statement. In addition, it is proposed to infill sections of existing hedgerows (see LEMP, SLR Oct 2024).	Compensation
	Bluebells It is proposed to translocate sections of the hedgerow and woodland understory that contain native bluebells or areas that are to be removed during the construction and operational phase. These areas will be stored onsite and re-spread after construction has been completed.	Mitigation
Reptiles	The proposed Haul Road will impact areas of grassland which are suitable for reptiles with the longer more tussocky sward being most suitable. The woodland and scrub habitat which are relatively heavily shaded are less suitable for reptiles. However, the woodland areas offer potential hibernation habitat. Based on the relatively small footprint of works and habitat in the wider landscape a reptile translocation is not considered reasonable, and it is recommended that the vegetation clearance works is carried out using the below ‘two phased’ and supervised by an ECoW: • All clearance works is supervised by an ECoW; • Prior to works commencing, the ECoW will give a ‘Toolbox Talk’ to all site contractors; • The clearance works should be undertaken during the season when reptiles are active (March to	Mitigation

Ecological Receptor	Mitigation	Category
	October) and within suitable weather conditions (dry, light winds and temperatures between 10°C and 19°C); • The first habitat clearance should be cut to 100cm and clippings removed. All areas of vegetation should be checked prior to cutting by the ECoW; • A second cut will then be made 24 hours later to ground level. This will displace any reptiles out of the construction footprint and prevent the killing and injury to reptile species. • Any reptiles found during the construction works should be translocated outside of the footprint of works. In order to prevent impacting upon hibernating reptiles all tree, hedgerow and scrub removal will occur during the reptile active period (March to October, weather dependent) this will include the removal of root balls, in addition any piles of brash will be dismantled by hand. Any materials stored on or near site should be stored on cleared ground or pallets to safeguard habitats and animals' underneath. At the discretion of the onsite ecologist areas of suitable reptile habitat that will not be impacted by works in the SNCI will be marked off and protected using suitable fencing.	
	The arisings from vegetation clearance will be used to create log and brash piles, to be sited in suitable areas to provide additional reptile habitat. In addition, as part of the works the proposed access road will create woodland rides and open south facing batters potentially suitable as basking habitat. All created and retained habitats will be managed as part of an updated HMP to enhance their value for reptiles.	Mitigation
Amphibians (including GCN)	Contractors will follow the sensitive clearance methodology for reptiles as this will also account for terrestrial GCN and other amphibians. This includes the timing of works, and the supervision of stages clearance works by the ECoW. In the unlikely event of discovering any GCN are found in the footprint of the works, works must stop immediately and the ECoW should be contacted for advice on how to proceed.	Mitigation
Breeding birds	Vegetation clearance in form of hedgerows, trees and scrub will be undertaken outside of the main breeding bird season (March to August inclusive). Ideally September and October to align with Reptile mitigation methods.	Avoidance
	The following measures will be implemented to avoid/reduce impacts on birds during the construction works:	Mitigation

Ecological Receptor	Mitigation	Category
	Procedures for vegetation clearance to minimise the impact on birds are described below: • If vegetation clearance is to take place during breeding bird season, an ECoW should be appointed to carry out a nesting bird check on any vegetation to be cleared, or vegetation directly adjacent to major works, no more than 48 hours prior to works commencing. • If an active nest is encountered, an appropriate exclusion zone, likely to be at least 5m, will be decided by the ECoW based on the construction activity taking place and species of bird identified. This exclusion zone will be marked out and protected from any clearance activity until the young are fully fledged and have left the nest. A greater buffer may be necessary for more sensitive species. • For any areas where a thorough check cannot be undertaken, the ECoW will provide a watching brief and will instruct the Contractor to carefully clear vegetation to facilitate closer inspections to locate any hidden nests that may be present in dense vegetation; • Vegetation clearance will be limited to only that essential for the works; • Any vegetation removed will be rendered unsuitable for birds to nest in. The ECoW should undertake the following monitoring during the works: • Monitoring of any active nests found, following nesting bird checks, until chicks have fledged. • Monitoring of buffer zones around any active nests to ensure plant and operatives maintain sufficient distance to reduce disturbance. • Monitoring of breeding bird behaviour, specifically alarm calls which could indicate presence of nearby nests.	
	In line with the national planning policy and relevant policies of the South Gloucestershire Local Plan (South Gloucestershire LP 2013), the site should be enhanced for biodiversity and the proposals should provide a net gain in biodiversity. Additional enhancements to be included within the proposals include the installation of ten bird boxes on retained trees. A range of types to be used to provide opportunities for several species. Based on the onsite habitats, the following designs are recommended: • Eco Small Bird Box (various sizes of entrance hole of 25 mm, 28 mm and 32 mm) • 2HW Schwegler Nest Box (or similar alternatives)	Compensation
Bats	To mitigate for the loss of the PRF-I and the trees being removed for the Haul Road, it is recommended that the	Compensation

Ecological Receptor	Mitigation	Category
	wider roosting resource is increased by the installation of 10 tree mounted bat boxes.	
	To reduce the potential for impacts on retained trees adjacent to the proposed route, the proposed construction areas should be clearly marked and fenced with all trees to be retained protected during construction in accordance with British Standards BS 5837 2012: Trees in Relation to Design, Demolition and Construction. In addition, the wider construction area will be fenced prior to works progressing. The Veteran Tree contained PRF-M and it is recommended that at minimum a 10m buffer is retained from any construction activities in order to minimise disturbance to any bats present. The proposals include no artificial lighting or night-time working along the proposed access road when otters would be active	Avoidance
	Prior to felling, all trees should be reassessed for their roosting potential. If potential for multiple bats is found, then tree climbing surveys should be undertaken. If climbing surveys are unable to be undertaken and a MEWP is unable to gain satisfactory access, the ECoW must be consulted and an appropriate plan established prior to any felling works. In addition, all trees with low suitability for roosting bats will be felled using a precautionary 'soft felling' approach to the felling using a MEWP (where possible) as summarised below: • The tree should be section felled by removing limbs above the potential roosting features first; • The whole section of the stem containing the potential roosting feature should then be felled and lowered to the ground on a pulley system with potential roosting feature facing upwards; • If inside the potential roosting feature can be easily seen and checked for any animals when the tree is on the ground, then it can be cut into smaller sections to allow the removal of the arisings. If the stem cannot be inspected, it should be left in situ over-night and carefully cut into smaller sections the following day. All trees identified as having negligible suitability for roosting bats may be felled without any further action or survey required. Prior to the commencement of any works on site, a toolbox talk will be given to contractors to include information on the potential of bats roosting on site, bat signs and what to do if bats are found during works.	Mitigation

Ecological Receptor	Mitigation	Category
	The 10 bat boxes will be installed prior to works commencing. A range of types will be used to provide opportunities for several species. Based on the species recorded and the onsite habitats, the following designs are recommended or a suitable alternative: • Vivara Pro WoodStone Bat Box • Large Multi Chamber WoodStone Bat • Miramare Woodstone Bat Box	Compensation
Dormice	As Dormice are not considered present within the site, no mitigation is required. In the unlikely event of discovering any evidence suggesting dormice presence in the footprint of the works, works must stop immediately and the ECoW should be contacted. A Natural England (NE) Mitigation Licence will be required to allow vegetation clearance to continue.	Mitigation
Badgers	A pre-commencement survey will be carried out two months prior to works commencing to assess to activity of the four inactive setts recorded during 2021 survey. If these are found to be active or any additional setts found, then a mitigation licence maybe required from NE Another pre-commencement survey will be undertaken at the start of works. Furthermore, during site clearance and construction, the following measures will be undertaken to avoid potential impacts on commuting/foraging badgers or other mammals using the site: • Backfilling or providing a ramp in excavations before dusk to avoid badgers becoming trapped in them; • Maintaining access across the construction site for badgers by not blocking or storing equipment along important commuting routes; • Any pipe work over 25cm in diameter will be stored in such a way the mammals cannot access (for example facing upwards, or covered). • Site contractors are made aware, during site inductions, of the potential presence of badgers onsite, what action is to be taken if a badger or a new badger sett is found during construction works; and • Any chemicals or potentially harmful compounds to be stored within badger proof containers.	Mitigation
Otters	A pre-commencement otter survey will be carried out no more than three months before works commencing. If evidence of otter is recorded during the check, works will not commence until further monitoring is carried out using camera traps to understand how otter is using the area. If an otter holt/ resting location is recorded a full	Mitigation

Ecological Receptor	Mitigation	Category
	assessment will be completed on potential impacts and where necessary, a Natural England licence. All work to the brook will be supervised by the ECoW. The proposals include no artificial lighting or night-time working along the proposed access road when otters would be active. In addition, it is unlikely that the proposed U-shaped spanning bridge will restrict otters from commuting along the brook as the channel will be maintained and the access road will not be a barrier to movement (only 6.5 m width with no significant vehicle movement occurring along the access route during the main periods of otter activity). In addition, any deep trenches will have escape ramps for mammals included into the design of the trench to allow the escape of any trapped mammals from the trench. The following measures will be implemented to avoid/reduce impacts caused by construction works activities and the appointed Biodiversity Champion for the project will ensure that the Contractor adheres to these measures: • Backfilling or providing a ramp in excavations before dusk to avoid otters becoming trapped in them; • Site contractors are made aware, during site inductions, of the potential presence of otter onsite, what action is to be taken if an otter or signs of otter are found during construction works; • Any chemicals or potentially harmful compounds to be stored within otter proof containers; and • In addition, a speed limit of 30mph should be imposed during the operational phase of the proposed development. In the unlikely event of discovering any evidence suggesting otter presence in the footprint of the works, works must stop immediately and the ECoW should be contacted for advice on how to proceed.	
Water Voles	Any works undertaken within 5m of Ladden Brook will first require pre-works verification survey to search for water vole activity. This could include camera traps to confirm the presence of water vole. If evidence of water vole is recorded during the check, works will not commence. If a water vole burrow/nest is recorded a full assessment will be completed on potential disturbance, impacts and the requirement for a Natural England licence and the water voles trapped and removed from the culvert footprint. All work to the brook will be supervised by the ECoW.	Avoidance
Small mammals (including rabbits and hedgehog)	To avoid potential impacts to any hedgehogs on site, areas of the site will be sensitively cleared under the supervision of a ECoW (as per reptile sensitive clearance	Mitigation

Ecological Receptor	Mitigation	Category
	methods) and during times where hedgehogs will be active (April to October), weather permitting). Any hedgehogs encountered will be allowed to disperse or moved by hand if required to suitable retained habitat. Excavations to be covered overnight or at least have one gently sloping side to allow animals to escape. Where works may affect rabbit burrows, there is a need to ensure compliance with the Wild Mammals (Protection) Act (1996). This legislation requires that no harm to or death of a wild mammal should involve "unnecessary suffering". In practice when closing a rabbit warren, crushing of animals below ground must be avoided and humane clearance of the warren undertaken.	
All Protected species	If during construction any protected species is discovered, alive or dead, work must stop immediately. Advise must then be sought from the ECoW. The ecologist will then provide further advice or contact Natural England for advice before proceeding. Contact details for the ECoW will be displayed on-site. All operatives will remain vigilant throughout the works and report any suspected protected species activity within the site to the project ecologist.	

Appendix A Relevant Legislation and Planning Policy

Land Between Gravel Hill & Brinsham Lane – Haul Road

Construction Environment Management Plan: Biodiversity

Heidelberg Materials UK Ltd

SLR Project No.: 425.065060.00001

11 October 2024

A.1 Relevant Legislation and Planning Policy

A.1.1 Legislation

A summary of legislation relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original legislation should be consulted for definitive information.

Environment Act (2021)

The Environment Act has wide ranging provisions including those around:

- Environmental governance;
- Environmental regulation;
- Waste and resource efficiency;
- Air quality and environmental recall;
- Water; • Nature and biodiversity;
- Conservation covenants.

Of particular relevance is Part 6 of the Act which introduces “biodiversity gain in planning” and will apply in England to planning applications under the Town & Countryside Act and the Planning Act. Schedule 14 now requires that biodiversity gain be a condition of planning permission in England. These changes will be enacted through subsequent secondary legislation or regulations. This part of the Act also changes the responsibilities that Government or public bodies have by strengthening the existing NERC Act biodiversity duty. Public authorities are now required to seek to conserve and enhance biodiversity in the exercise of their functions.

Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Under the Habitats Regulations it is an offence to deliberately capture, kill or

disturb[2] wild animals listed under Schedule 2 of the Regulations as well as damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time). European Sites, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), are also protected under the Habitat Regulations, and any proposal that could affect them will require a Habitats Regulations Assessment (HRA).

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

Part 3 of the regulations provide for the protection of areas of habitats or species where maintenance of the status of water is an important factor.

Under the regulations additional consideration may need to be given to sites in the form of a Water Framework Directive (WFD) assessment where a project lies in proximity to a water body or to linked water bodies which could be affected. This includes consideration of whether water bodies are WFD receptors in particular those of high status or have high status morphology.

Natural Environment & Rural Communities (NERC) Act 2006

Section 40 of the NERC Act 2006 places a duty on public authorities to have regard to the purpose of conserving biodiversity in the exercise of their functions. Public authorities include government departments, local authorities and statutory undertakers. Section 41 of the Act (Section 42 in Wales) requires the publication of a list of habitats and species publish which are of principal importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity. Note that Sections 40 and 42 were superseded in Wales by the Environment (Wales) Act 2016 (see below).

Protection of Badgers Act 1992

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to: • Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;

- Intentionally kill, injure, or take any wild animal listed under Schedule 5 to the Act;

[2] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

A.2 Planning Policy

A summary of national planning policy relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original policy documents should be consulted for definitive information. For local planning policy relevant to biodiversity the relevant local plans should be consulted.

A.2.1 National Planning Policy (England)

The National Planning Policy Framework (NPPF)[3] sets out guidance for local planning authorities and decision-makers in how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05[4], the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out. Specific policies relating to habitats and biodiversity are set out in paragraphs 174 and 179-182 of the NPPF.

Paragraph 174 states that: *"Planning policies and decisions should contribute to and enhance the natural and local environment by:*

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Development f) should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate".

[3] Ministry of Housing, Communities & Local Government (2021).

[4] Ministry of Housing, Communities & Local Government (2021).

Paragraph 179 states that:

"To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

Paragraph 180 states that:

"When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."

Paragraphs 181-182 relate to European sites (referred to as habitats sites) and state:

"The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

A.3 Relevant Legislation and Planning Policy

A.3.1 Legislation

A summary of legislation relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the

Appendix B Culvert Design

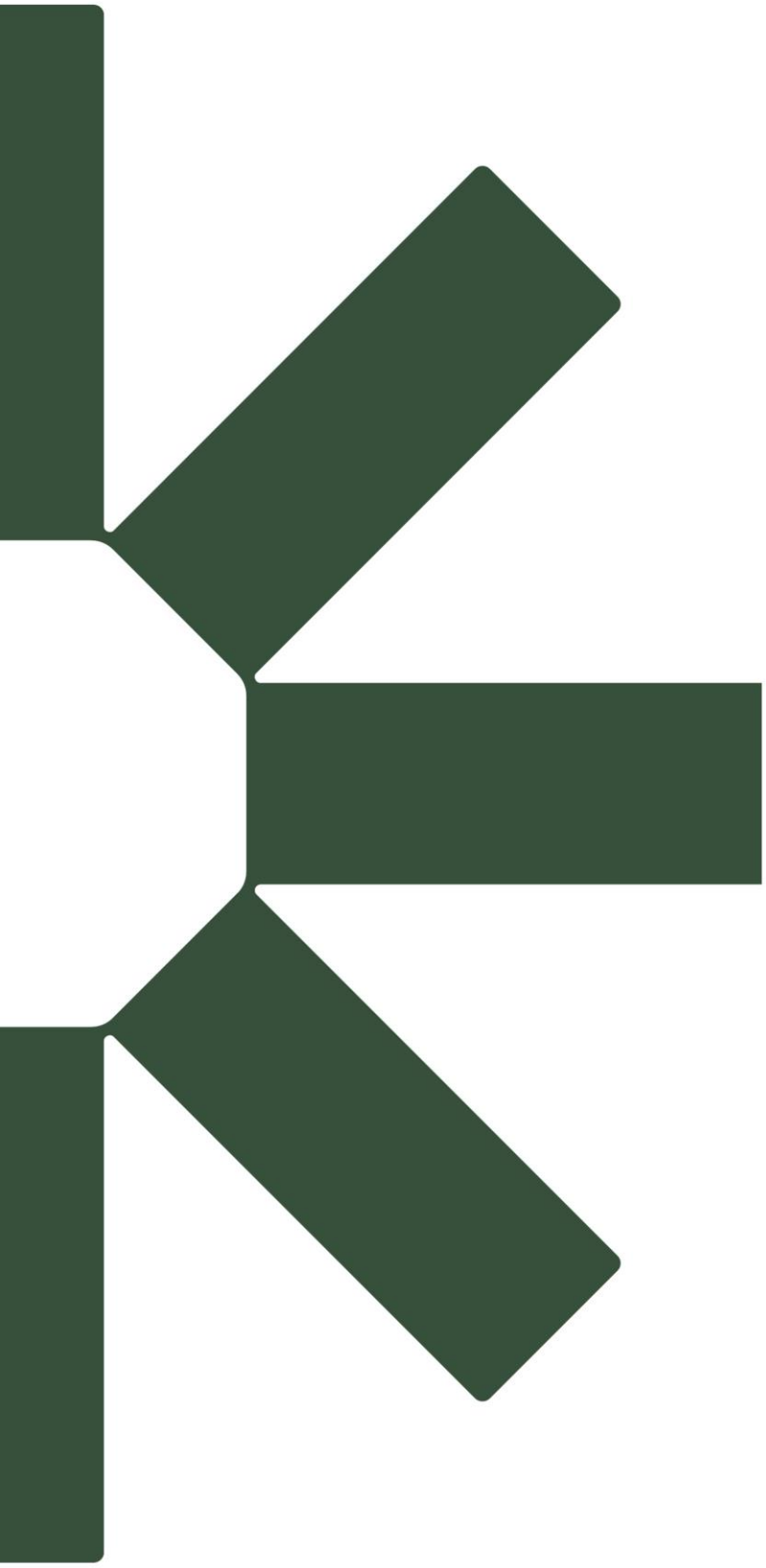
Land Between Gravel Hill & Brinsham Lane – Haul Road

Construction Environment Management Plan: Biodiversity

Heidelberg Materials UK Ltd

SLR Project No.: 425.065060.00001

11 October 2024



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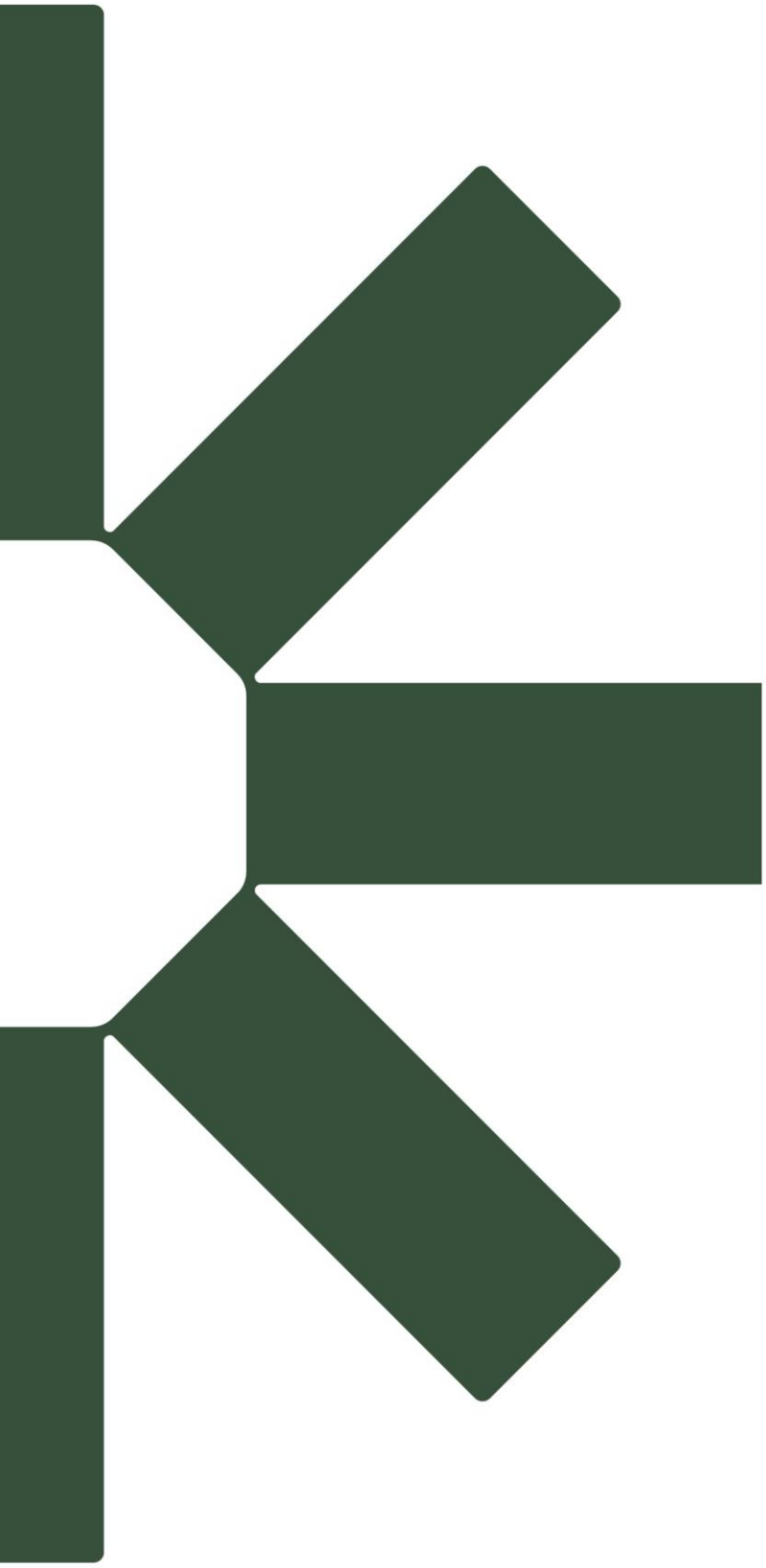

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