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MAES Y DROELL QUARRY GREEN INFRASTRUCTURE STATEMENT

Silica Sand Mold Limited

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Green Infrastructure Statement

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Document history

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Approved	Adam Perry	September 2026

1 GREEN INFRASTRUCTURE STATEMENT

1.1 Introduction

- 1.1.1 This Green Infrastructure Statement (GIS) has been prepared in support of the planning application for the recommencement of industrial sand extraction and progressive restoration to nature conservation after uses at Maes y Droell Quarry, Graianrhyd, Denbighshire.
- 1.1.2 The proposed development comprises the winning and working of high-grade industrial sand from a previously operational quarry together with a northern extension area and a comprehensive phased restoration strategy focused on habitat creation, ecological enhancement and long-term environmental management.
- 1.1.3 Planning Policy Wales (Edition 12) requires that all planning applications be accompanied by a Green Infrastructure Statement proportionate to the scale and nature of development, demonstrating how green infrastructure has been incorporated into the proposal and how the step-wise approach to biodiversity conservation has been applied.
- 1.1.4 Green Infrastructure (GI) in relation to Planning Policy Wales (PPW) is the network of natural and semi-natural features, habitats, watercourses, green spaces and ecological connections that support biodiversity, ecosystem resilience, landscape character, climate adaptation and human wellbeing. GI is considered to be multifunctional, delivering environmental, social and economic benefits simultaneously.
- 1.1.5 The purpose of this statement is to:
- Describe the existing green infrastructure resource associated with the Site i.e. Maes y Droell Quarry;
 - Demonstrate how GI considerations have informed the design and restoration strategy;
 - Explain how the development accords with the DECCA ecosystem resilience principles;
 - Set out how the PPW step-wise approach has been applied; and
 - Demonstrate how the proposals will contribute towards Net Benefit for Biodiversity and long-term ecosystem enhancement.

2 POLICY CONTEXT

- 2.1.1 The statement has been prepared having regard to:
- Future Wales: The National Plan 2040 (Welsh Government, 2021)
 - Planning Policy Wales, Edition 12 (Welsh Government, 2024)
 - Well-being of Future Generations (Wales) Act 2015
 - Environment (Wales) Act 2016

- Technical Advice Note (TAN) 5: Nature Conservation and Planning
- Denbighshire Local Development Plan 2006-2021 (Adopted June 2013)
- Conservation and Enhancement of Biodiversity Supplementary Planning Guidance (Denbighshire County Council)

2.1.2 The policy and guidance documents overall reflect an effort to maintain and enhance biodiversity, in an effort to ensure development leaves the natural environment in a measurably better condition than before development occurred.

3 EXISTING GREEN INFRASTRUCTURE RESOURCE AT MAES Y DROELL QUARRY

Landscape Context

- 3.1.1 The Site occupies approximately 22 hectares of previously worked quarry land together with an undeveloped northern extension area. It lies within a landscape setting that comprises a mosaic of quarry features, woodland, scrub, ponds, wetland habitats, grasslands and heathland communities.
- 3.1.2 The long-term cessation of historic extraction has allowed many habitats to naturally colonise previously disturbed areas, creating a varied patchwork of ecological features.

3.2 Designated Sites

- 3.2.1 The Site does not lie within any international or national ecological designation. However, several important ecological sites are nearby:
- Berwyn and South Clwyd Mountains SAC;
 - Bryn Alyn, SSSI
 - Chwarel Cambrian / Cambrian Quarry, Gwernymyndd, SSSI
 - Glaswelltiroedd Eryrys (Eryrys Grasslands), SSSI
 - Graig, Llanarmon-yn-Ial, SSSI
 - Llandegla Moor, SSSI
 - Ruabon/ Llantysilio Mountains and Minera, SSSI
 - Numerous Local Wildlife Sites (LWSs).

These sites form part of a wider ecological network.

3.3 Habitats

3.3.1 Habitats present within the Site include:

- Mire and wetland habitats;
- Areas of dry and wet heath;
- Ponds, lagoons and other standing waters;
- Mature woodland and tree corridors;
- Young naturally regenerated woodland;
- Scrub habitats;
- Grasslands;
- Quarry spoil and early successional habitats; and
- Built structures capable of supporting bats.

3.3.2 The EclA identifies the mire habitat, wetland features, ponds and more mature woodland corridors as the most valuable green infrastructure assets present on site.

3.4 Species

3.4.1 The Site supports a number of notable species and species groups including:

- Great crested newt;
- Bats, including lesser horseshoe bat;
- Reptile
- Otters for passing and foraging;
- Badger for foraging; and
- Various commonly occurring bird and invertebrate species.

3.4.2 These species rely upon the interconnected network of ponds, woodland, scrub and wetland habitats that currently exist across the Site.

4 GREEN INFRASTRUCTURE ASSESSMENT USING DECCA

4.1.1 Planning Policy Wales promotes ecosystem resilience through the DECCA framework which comprises:

- Diversity
- Extent
- Condition
- Connectivity
- Adaptability

4.2 Diversity

4.2.1 Maes y Droell Quarry contains a diverse range of habitats. These habitats have developed through natural colonisation following quarrying activity and support a broad range of ecological niches and wildlife interests.

4.2.2 The progressive restoration proposals which commence at the outset of the temporary development will increase habitat diversity through the creation of:

- Native woodland;
- Acid grassland;
- Heathland;
- Wetland scrapes;
- Species-rich grassland;
- Permanent and ephemeral ponds; and
- Habitat features for protected species.

4.3 Extent

4.3.1 The existing habitats on site present in isolated patches with relatively limited overall extent. This is especially the case for heathland and mire communities.

4.3.2 The proposed progressive restoration strategy will increase the overall extent of Priority Habitats through coordinated habitat creation and long-term management across the restored quarry.

4.4 Condition

- 4.4.1 Existing habitat quality varies substantially.
- 4.4.2 While some habitats across the site such as wetland, woodland and mire habitats demonstrate local ecological value, there are also extensive areas comprising transient post-industrial (quarrying) habitats, which are undergoing various states of natural succession. Without intervention, many of the more diverse habitat mosaics are likely to gradually transition into relatively uniform scrub and woodland communities. The proposed restoration and management strategy provides an opportunity to actively manage habitats and improve ecological condition over the long term.

4.5 Connectivity

- 4.5.1 One of the principal GI assets associated with the Site is its network of ponds, woodland corridors and linked habitats. These features have the potential to facilitate movement of species, particularly amphibians, bats and mammals.
- 4.5.2 The restoration strategy has been specifically designed to retain and strengthen ecological corridors, particularly along the eastern boundary and through the retention of habitat linkages between restored and retained habitat areas.

4.6 Adaptability

- 4.6.1 Climate resilience is enhanced in the long-term by the proposed temporary operations. This is as a result of retained habitat diversity, water retention features, woodland planting and ecological connectivity.
- 4.6.2 The restoration strategy will create and secure in perpetuity a more resilient ecosystem capable of adapting to future climate pressures through greater habitat heterogeneity, increased woodland cover, enhanced wetland habitats and improved ecological networks.

5 APPLICATION OF THE PPW STEP-WISE APPROACH

5.1 Step 1: Avoid

- 5.1.1 The development and specifically the approach to re-commencing quarrying has sought to avoid impacts on the most valuable green infrastructure assets wherever practicable.
- 5.1.2 The overall approach has been to bring forward a cohesive site wide scheme; this instead of continuing to pursue historic mineral consents which were conceived at a time when the consideration of environmental effects of such operations including upon biodiversity were less mature.
- 5.1.3 The improved quarry design and working scheme retains key ecological corridors along the eastern site boundary and avoids direct impacts upon off-site statutory ecological designations.

- 5.1.4 The retention of established woodland belts and key habitat linkages ensures important ecological functions remain throughout the life of the development.
- 5.1.5 Timing of works will also be designed to avoid impacts. Removal of trees and scrub is to be carried out outside of the bird nesting season. Lighting will be avoided or directional in order to avoid impacts on nocturnal wildlife. Vegetation clearance of areas suitable for reptiles and amphibians will also be timed in order to avoid impacts. The building identified as a lesser horseshoe bat roost will be retained.

5.2 Step 2: Minimise

- 5.2.1 Where impacts cannot be entirely avoided, the proposal have been designed to minimise environmental effects.
- 5.2.2 Key measures include:
- Progressive phased extraction to allow habitat to be created throughout the duration of development, to minimise the impact of any losses in the short-term;
 - Retention of habitat corridors;
 - Retention of ponds and ecological receptor areas during operations;
 - Habitat creation under Natural Resource Wales derogation licence in dedicated areas in advance of disturbance;
 - Restriction of operational lighting;
 - Retention of boundary vegetation; and
 - Progressive restoration: in order to minimise the time between habitat removal and creation of new habitat, the restoration of the site will be phased alongside the phasing of the extraction process, rather than all restoration being carried out following cessation of works.
- 5.2.3 These measures minimise habitat fragmentation and maintain ecological functionality during operations.

5.3 Step 3: Mitigate

- 5.3.1 Further mitigation measures include:
- Great crested newt translocation and licensing;
 - Habitat retention corridors to increase ecosystem resilience and provide stepping stones throughout the site for natural migration of species, including great crested newt;
 - Adhere to an Environmental Management Plan (EMP) to ensure that best practice methods are adhered to in order to limit the generation of litter, dust, noise, vibration and pollution prevention.

5.4 Step 4: Compensate

- 5.4.1 The restoration proposal represents the principal compensation aspect of the scheme and is substantial. At present, the site has transitioned to a mosaic of successional habitats, especially in the southern area of the former quarry, which is likely to succeed to scrub and woodland habitat of limited ecological value. The progressive working and restoration scheme, including the long-term management and aftercare would deliver a large site dedicated for nature conservation purposes. This would form a site of local significance that could support an abundance of habitats and species.
- 5.4.2 Habitat creation as a result of the proposals will include:
- Native woodland planting and scrub;
 - Heathland creation;
 - Species rich grassland;
 - Wetland habitats;
 - Ponds and ephemeral wetlands;
 - Dedicated aquatic and terrestrial habitat to support the existing GCN population; and
 - A long-term habitat management plan for the newly created habitats, funded and secured by planning conditions.
- 5.4.3 The restoration will create a larger and more strategically managed ecological resource than presently exists on site.

5.5 Step 5: Enhancement

- Dedicated aquatic and terrestrial habitats for GCN and reptiles;
- Bat roost enhancements;
- Newly created habitats suitable for foraging badger, bats, nesting birds, terrestrial invertebrate etc;
- Bird boxes; and
- Connective habitats providing natural migration routes throughout the site for a variety of species.

Summary of Habitat Loss and Creation

- 5.5.1 A summary of the approximate total loss of habitat as the result of the Proposed Development and the approximate proposed area of habitat creation is provided in

5.5.2 Table 1.

Table 1: Indicative Changes in Habitat Areas Pre-Commencement and Post-Restoration

Baseline Habitat	Baseline habitat area within Site boundary (m ²)	Restoration/Post Development Habitat	Proposed Post-Development Habitats within site boundary (m ²)
Grassland	12,500	Grassland	60,750
Dry Heath	2,880	Dry Heath	5,700
Wet Heath	1,200	Wet Heath	12,600
Scrub – gorse	30,000	Scrub – gorse	5,000
Scrub – mixed	43,500	Scrub – mixed	8,400
Bracken	18,500	Bracken	2,000
Blanket Bog	3,800	Blanket Bog	1,600
Former settling lagoons, standing water and wetlands	12,100	GCN ponds and wetlands	10,000
Disturbed ground/inland rock	35,400	Assisted Natural Regeneration Slopes	71,000
Mixed broadleaf woodland	57,400	Mixed broadleaf woodland	41,000
Hibernacula	0	Hibernacula	50
Buildings	770	Buildings	0
Artificial unvegetated, unsealed surface	50	Artificial unvegetated, unsealed surface	0
Total	218,100		218,100

5.6 Long-Term Green Infrastructure Benefits

5.6.1 The proposed restoration strategy provides several significant GI outcomes. These are described below.

Biodiversity Enhancement

5.6.2 The scheme creates the opportunity to establish a planned network of habitats specifically designed for biodiversity enhancement rather than allowing unmanaged successional development.

Ecological Connectivity

5.6.3 Retained woodland corridors, new habitat areas and interconnected wetland features will strengthen ecological linkages across the Site and into the surrounding landscape.

Climate Change Adaptation

- 5.6.4 The proposals will contribute to climate resilience through enhanced vegetation cover, woodland creation, carbon sequestration, sustainable water management and ecosystem restoration.

Water Management

- 5.6.5 New ponds, wetlands and restoration landforms will improve water retention and create valuable blue infrastructure assets contributing to wider ecosystem resilience. High-performance quarry plant will conserve water resources, especially when compared to historic practices consented at the site.

Landscape Enhancement

- 5.6.6 The final restored landform will provide a more coherent and visually integrated landscape that complements the surrounding character of the landscape, with no significant long-term visual impacts while delivering environmental benefits.

Long-Term Stewardship

- 5.6.7 Importantly, the development provides a mechanism to secure active management, monitoring and aftercare of habitats that would otherwise continue to develop through unmanaged succession. Statutory aftercare and longer-term ecological management will follow restoration to secure biodiversity objectives.

6 CONCLUSION

- 6.1.1 The proposed development has been informed by Green Infrastructure principles throughout its design. These principles are translated into specific actions that are embedded in the phased working scheme and restoration proposals. The scheme has applied the PPW step-wise approach by avoiding sensitive habitats and species where possible, minimising impacts through phased working and habitat retention, mitigating effects through ecological safeguards, and delivering substantial habitat creation and enhancement at final restoration.
- 6.1.2 Application of the DECCA framework demonstrates that the restoration strategy will improve habitat diversity, increase the extent of valuable habitats, improve habitat condition, strengthen ecological connectivity and enhance ecosystem adaptability in the long-term.
- 6.1.3 The development therefore provides a significant opportunity not only to restore a currently mothballed mineral site but also to deliver as part of the progressive restoration scheme a robust and resilient Green Infrastructure network. This network would exist both during operations and in the long-term once operations are complete. The network would contribute positively to biodiversity, ecosystem resilience, landscape character and climate adaptation objectives within Denbighshire and North Wales.