



Creating sustainable futures

Boddington Brewery, Greater Manchester

Biodiversity Net Gain Assessment Report for Clarion Housing Group

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Executive Summary

Temple was commissioned in July 2023 by Clarion Housing Group to carry out a Biodiversity Net Gain (BNG) assessment of land at Boddington Brewery, Greater Manchester (henceforth referred to as 'the Site'). The proposals for the 0.55ha Site comprise the erection of a residential apartment complex with areas of open space for amenity, biodiversity and ecological enhancement focused in a central courtyard. Results from a Preliminary Ecological Appraisal (PEA) carried out in August 2023 (Temple Group, 2023a) have been used to calculate the pre-development BNG assessment. The main findings are as follows:

- The Site comprised predominantly hardstanding habitat, having previously been in use as a car park, with poor semi-improved grassland and ephemeral/short perennial habitats within the Site along the west and north-west Site boundaries.
- The Site is not subject to any statutory or non-statutory nature conservation designations. The nearest non-statutory designated site is Rochdale Canal Stott's Lane to Dulcie Street SBI located 1.3km south-east.
- The Site post-development will comprise a residential apartment complex with a central courtyard and a podium terrace which host features of biodiversity value. There will be new areas of amenity grassland, ornamental planters, rain gardens, a ground-based green wall and non-native trees added to the Site.
- The baseline biodiversity value of the Site was calculated as **0.10** biodiversity habitat units. There were no linear habitats on Site prior to development.
- The biodiversity value of the Site post-development was calculated as **1.21** area-based biodiversity habitat units.
- As such the development has resulted in a net gain of **1.11** area-based habitat units, a net percentage change of **1,153.17%**.

Recommendations include the addition of native species to the rain gardens, planters, amenity grassland and tree planting, as well as wildflower strips where appropriate and the provision of bird and bat boxes, invertebrate boxes and log piles. A Landscape

Ecological Management Plan (LEMP) should be produced to cover the long-term maintenance of newly created habitats.

1 Introduction

BACKGROUND TO COMMISSION

- 1.1 Temple was commissioned in July 2023 by Clarion Housing Group to produce a Biodiversity Net Gain (BNG) assessment to demonstrate the change in biodiversity value of the Site that will result from the proposed development. This assessment provides specialist advice on how the development at Boddington Brewery, Cheetham Hill, Greater Manchester will impact biodiversity and recommendations for improving the site.
- 1.2 A Preliminary Ecological Appraisal of the Site (Temple Group, 2023a) was carried out in August 2023 by Ross Quick, an ecologist with over two years' experience of undertaking Phase 1 habitat surveys and protected species surveys. The results of this have been used to inform the Biodiversity Net Gain assessment. Post development plans have been provided by the client (Exterior Architecture, 2023a) and have been used to inform the biodiversity value of the site post development.

SITE CONTEXT

- 1.3 The proposed development site is 0.55ha in size and is centred on Ordnance Survey National Grid reference SJ 83774 99260. The Site was used as a car park with commercial and residential properties to the north, south, east, and west, but is currently fenced off and disused, with evidence of development activities on site (rubble piles, trenches etc). The wider surroundings largely consist of residential and commercial properties.

DEVELOPMENT

- 1.4 The development proposals for the Site, based on current plans provided by the client are for a residential apartment complex supplying a large number of homes, with a central courtyard hosting green features such as rain gardens, green walls, planters and street trees, as well as a multi-purpose amenity grassland space (Exterior Architecture, 2023a).

SCOPE OF THE REPORT

- 1.5 This report has been written to assess the impact of the development on biodiversity, and whether the works meet the target of a 10% biodiversity net gain. In line with best practice (Panks et al., 2023), this is specifically in relation to the habitats present and as proposed in the landscape plans (Exterior Architecture, 2023a)

2 Legislative, Policy and Planning

Background

NATIONAL PLANNING POLICY

- 2.1 The revised National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021) requires local authorities to contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity. To protect and enhance biodiversity and geodiversity, plans should 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.
- 2.2 The Environment Bill was passed into law in November 2021, becoming the Environment Act 2021 (UK Government, 2021). The Environment Act 2021 aims to halt the decline of nature by 2030, mandates Biodiversity Net Gain for developments in England only and is likely that it will become law in 2023.

LOCAL PLANNING POLICY

- 2.3 The Manchester Core Strategy Development Plan (2012) states in Policy EN15: “Developers will be expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to the site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate, with reference to:
- The Manchester Biodiversity Strategy and Action Plan (Lancashire Wildlife Trust and Manchester City Council, 2023), which provides further details of priority habitats within Manchester and opportunities for biodiversity enhancement including corridors such as the Mersey, Medlock and Irk River valleys, the canals and disused railway lines and areas of managed greenspace particularly in parks;

- The Green Infrastructure Framework for Greater Manchester (Greater Manchester Combined Authority, 2023) which encompasses an ecological framework that seeks to guide and inform habitat creation and repair”.

3 Methodology

BIODIVERSITY NET GAIN CALCULATION

- 3.1 The Biodiversity Net Gain Assessment has been based on the Biodiversity Net Gain Good Practice Principals for development (Baker *et al.*, 2019), the Biodiversity Metric 4.0 Technical Supplement (Natural England, 2023a) and calculated using the Biodiversity Metric 4.0 Calculation Tool (Natural England, 2023b). Using this approach, the value of a site is quantified in Biodiversity Units, calculated based on extent and quality of the habitats present. Information provided by the site visit conducted in August 2023 has been used to inform the assessment of the current site and plans created by the client used to predict the future changes to the Site.
- 3.2 The habitat survey was carried out using Phase 1 habitat Survey Methodology (JNCC, 2010). Habitat types have been converted to correlate with the BNG Metric habitats using the guidance provided within the BNG metric 4.0 calculation tool.
- 3.3 Habitat biodiversity unit scores are influenced by:
- Distinctiveness¹ - the rarity and importance of the habitat to biodiversity at a national scale;
 - Condition - the quality of a habitat at a point in time based on management, disturbance and other environmental factors; and
 - Strategic significance² – whether the location of the development and/ or off-site work has been identified locally as significant for nature.
- 3.4 These factors are attributed numerical scores and multiplied by the extent of the habitat in hectares to calculate the Biodiversity Unit score for each habitat parcel.
- 3.5 The condition of the habitats has been calculated based on the condition assessment tables in the Technical Annex (Panks et al., 2023), and allocated a

¹ Distinctiveness is automatically determined by the Biodiversity Metric 4.0 Calculation Tool for different habitat types, and allocated an appropriate weighted score. Certain habitat types, such as hardstanding and buildings, are allocated a distinctiveness score of 0.

² Strategic importance weighted scores are between 1 and 1.15.

weighted score between 1 (Poor) and 3 (Good). Details of condition assessments are provided in a PEA report issued (Temple Group, 2023a) alongside this assessment.

- 3.6 When calculating Biodiversity Units for proposed habitats, negative multipliers are implemented to account for difficulty factors associated with habitat establishment, temporal delays and off-site risk.
- 3.7 The Biodiversity Unit values for the site prior to and post-development were then compared to provide an assessment of the change in unit value.

ASSUMPTIONS AND LIMITATIONS

- 3.8 As the habitat survey was carried out using JNCC Phase 1 Habitat Survey methodology, professional opinion has informed the process of conversion where there is not a direct correlation, following the guidance in the BNG metric, to ensure that the calculator presents a realistic picture pre and post development.

4 Baseline Conditions and Post-development Conditions

EXISTING SITE – PRE-CLEARANCE

On-site habitats

- 4.1 The site predominantly comprised hardstanding, with strips of bare ground along the western site boundary and sparsely vegetated urban land along the western half of the northern boundary. These habitats are mapped in Appendix 1, Figure 1.1 and 1.2 (Phase 1 and UKHab, respectively).

Hardstanding

- 3.1 *Description:* Most of the Site comprised hardstanding, having previously been in use as a car park. This was largely devoid of vegetation. Large rubble piles resulting from development works were present in the south-east and south-west of the car park.
- 3.2 *Assessment:* The areas of hardstanding on Site have negligible value to biodiversity, such that they have very low distinctiveness. It is therefore unnecessary and not applicable to attribute this habitat a condition, as it will not affect the overall calculations.

Poor Semi-improved Grassland

- 3.3 *Description:* A small strip of a low-density perennial ryegrass *Lolium perenne* sward was present along the northern boundary in the western half of the Site with patches of bare ground amongst it. Rarely occurring within this habitat was greater plantain *Plantago major*, ribwort plantain *Plantago lanceolata*, and bramble *Rubus fruticosus*.
- 3.4 *Assessment:* This habitat, along with the ephemeral/short perennial and part of the bare ground Phase 1 habitat, is equivalent to 'sparsely vegetated urban land – ruderal/ephemeral' in the BNG metric 4.0. This habitat has been assigned a 'moderate' condition as per the BNG metric 4.0 owing to its lack of plant diversity,

lack of variation in sward height, absence of bracken, bramble and non-native invasive species, and a significant cover of bare ground.

Bare Ground

- 3.5 **Description:** Areas of bare ground were present in the south-west of the Site along the boundary. Patches were also present within the poor semi-improved grassland in the north-west of the site.
- 3.6 **Assessment:** Where this habitat sits within the Phase 1 habitat 'poor semi-improved grassland' in the north-west of the Site (see Appendix 1, Fig. 1 & 2), it correlates with 'sparsely vegetated urban land – ruderal/ephemeral' in the BNG metric 4.0. Here it has been assigned a condition of 'moderate' for reasons outlined above.
- 3.7 Where this habitat is found in the south-west of the Site along the western site boundary, it correlates with 'artificial unvegetated unsealed surface' in the BNG metric 4.0 (see Appendix 1, Fig. 1 & 2). This habitat has negligible value to biodiversity, such that it has very low distinctiveness. It is therefore unnecessary and not applicable to attribute this habitat a condition, as it will not affect the overall calculations.

Ephemeral/Short Perennial

- 3.8 **Description:** A small area of ephemeral/short perennial vegetation was found in the western corner of the Site. This was not dominated by a single species but was a mix of frequently occurring hawksbeard *Crepis sp.*, clover *Trifolium sp.*, herb-Robert *Geranium robertianum* and dandelion *Taraxacum officinale agg.*, with occasional to rarely occurring spear thistle *Cirsium vulgare*, common nettle *Urtica dioica*, rosebay willowherb *Chamerion angustifolium* and redshank *Persicaria maculosa*.
- 3.9 **Assessment:** This habitat correlates with 'sparsely vegetated urban land – ruderal/ephemeral' in the BNG metric 4.0, in combination with the Phase 1 'poor semi-improved grassland' and part of the 'bare ground' habitat. The 'sparsely vegetated urban land' habitat has been assigned a condition of 'moderate' for reasons outlined above.

Baseline Calculation

- 4.2 The biodiversity value of the habitats found on the Site prior to construction (baseline) is shown in Table 4.1 below. Full details of the calculations can be found within the Biodiversity Metric 4.0 Calculation Tool spreadsheet (Temple Group, 2023b). Accordingly, the biodiversity value of the Site pre-development has been calculated as **0.10** habitat units.

Table 4.1 – Biodiversity unit score prior to development³ - area habitats

Habitat	Area (ha)	Distinctiveness	Condition	Strategic Significance	Biodiversity Units
Urban – developed land, sealed surface	0.52	Very low	N/A	Low	0.00
Urban – artificial unvegetated, unsealed surface	0.01	Very low	N/A	Low	0.00
Sparsely vegetated land – ruderal/ephemeral	0.02	Low	Moderate	Low	0.10
Total					0.10

³ Where Biodiversity Units do not add up to the exact Total score, this is due to a rounding artifact within the Biodiversity Net Gain 4.0 Calculator. Scores presented here are the same as presented in the calculator.

ENSURING BIODIVERSITY NET GAIN THROUGH ON-SITE COMPENSATION

- 4.3 The landscape plans provided by the client (Exterior Design, 2023a) include the development of two main apartment blocks in the north and south of the site, separated by a central courtyard and two breezeways, allowing pedestrian access from the north-east of the site through to the south-east where the Site meets Great Ducie Street. The courtyard is divided into sections, including hardstanding for pedestrian access (which connects the breezeways in the north-east and south-west of the Site), a multi-use lawn (with raised mound features, ornamental boulders and steppingstones), rain gardens in the northern section of the courtyard, and ornamental planting features in the south. In addition to this, the landscape plans detail a podium space in the eastern corner of the Site, which includes three ornamental planting areas, furniture features (e.g., fixed timber tables) and is otherwise paved with concrete pavers.
- 4.4 Twenty-three urban trees are also scattered throughout the Site, with fourteen of these being found in the central courtyard. Three more are found in the south-west of the Site by the Site boundary. The remaining six are found in the podium in the east of the Site. The species included consist of *Gleditsia triacanthus* (seven), *Amelanchier lamarckii* (fourteen) and *Viburnum x bodnatense* (two). The various post-development habitats are mapped in Appendix 1, Figure 2.

POST-DEVELOPMENT HABITATS

Urban – rain garden

- 3.10 **Description:** Areas of rain garden habitat are present in the north of the central courtyard, as proposed in the landscape plans provided by the client (Exterior Architecture, 2023a).
- 3.11 **Assessment:** This habitat has been assessed as being reasonably able to achieve a 'good' condition as per the BNG metric 4.0. This is due to the variation in vegetation structure, reasonable diversity of flowering species that offer suitable floral resources for pollinators at differing times of the year, and a lack of non-native invasive species.

Urban – ground level planters

- 3.12 *Description:* Ground level planters are proposed in the southern section of the central courtyard.
- 3.13 *Assessment:* The ground level planters on Site cannot be attributed a condition score as per the BNG metric 4.0, thus it is not applicable to attribute this habitat a condition, as it will not affect the overall calculations.

Urban – developed land, sealed surface

- 3.14 *Description:* Tarmac and concrete pavers give pedestrian access between the two breezeways in the north-east and south-west of the Site within the courtyard and is also found along the edges of the Site within the proposed landscape plans. This and the buildings themselves are representative of this habitat.
- 3.15 *Assessment:* The areas of hardstanding within the proposed landscape plans have negligible value to biodiversity, such that they have very low distinctiveness. It is therefore unnecessary and not applicable to attribute this habitat a condition, as it will not affect the overall calculations.

Urban – ground based green wall

- 3.16 *Description:* A small strip of ground based green wall, comprised of climbing plants, is present in the north-east of the central courtyard, adjacent to the rain garden habitat there.
- 3.17 *Assessment:* Owing to the small size of the strip, the potential for this habitat to provide a varied vegetation structure and a significant variety of plant species is limited. Therefore, this habitat has been assessed as being of 'poor' condition.

Grassland – modified grassland

- 3.18 *Description:* Areas of multi-purpose amenity grassland are proposed within the central courtyard as per the landscape plans.
- 3.19 *Assessment:* This habitat has been assigned a condition of 'moderate' owing to its poor species diversity and lack of variation in sward height. However, a likely absence of scrub, bracken, physical damage, and bare ground is to be expected. This

is supported by “Planting: Objective 2 - Retain a healthy growing medium for all trees and amenity planting areas” of the Landscape Management Strategy (Exterior Design, 2023b).

Individual trees – urban tree

- 3.20 **Description:** Twenty-three urban trees are distributed throughout the site, most notably in the central courtyard but also within the podium area and in the south-west corner of the Site by the Site boundary. Seven of these trees *Gleditsia triacanthus* have been assessed as reasonably being able to achieve a ‘medium’ size as per the Biodiversity Metric 4.0 Technical Supplement (Natural England, 2023a), as they can be expected to reach a Diameter at Breast Height (DBH) of over 30cm within the thirty-year timescale of the BNG assessment. The other sixteen of the trees *Amelanchier lamarckii* and *Viburnum x bodnatense* have been assessed as only being able to reach only a ‘small’ size as per the BNG technical supplement as they are unlikely to reach a DBH of over 30cm within the thirty-year timescale, especially considering the urban context and limited growth conditions.
- 3.21 **Assessment:** The selected species of tree *Gleditsia triacanthus*, *Amelanchier lamarckii* and *Viburnum x bodnatense* are non-native species, are planted in a way so that a continuous canopy will not be formed and are expected to undergo a pruning regime as stated in the Landscape Management Strategy included within the Landscape Statement (Exterior Design, 2023b). In addition, these species of tree are expected to reach maturity within the thirty-year timescale considered by the BNG metric 4.0 and at least 20% of the tree canopy is expected to over sail underlying vegetation (amenity grassland, rain gardens and planters). As such, the urban trees have been assigned a condition of ‘poor’.

BIODIVERSITY NET GAIN CALCULATIONS

- 4.5 A calculation has been provided to determine the biodiversity value for the habitat areas at the site as shown in Table 4.2 below, details of the habitats and recommendations for the site are provided in Section 5.

The biodiversity value of The Site post-development is **1.21** area-based biodiversity habitat units. This calculation is shown in full in the Biodiversity Metric 4.0 Calculation Tool spreadsheet (Temple Group, 2023b).

- 4.6 As such the development has resulted in a net gain of **1.11** area-based habitat units. This results in a net percentage change of **1,153.17%** habitat units.

Table 4.2 – Biodiversity scores post-development

Habitat Creation	Area (ha)	Distinctiveness	Condition	Strategic Significance	Biodiversity Units
Urban – Developed Land; Sealed Surface	0.5005	Very low	N/A	Low	0.00
Individual trees – urban tree	0.3216	Medium	Poor	High	1.04
Grassland – modified grassland	0.0267	Low	Moderate	Low	0.09
Urban – ground level planters	0.0170	Low	N/A	Low	0.03
Urban – rain garden	0.0080	Low	Good	High	0.05
Urban – ground based green wall	0.0003	Low	Moderate	High	0.00
Total					1.21

5 Biodiversity Enhancement

Recommendations

- 5.1 Final site landscaping plans have been provided including the landscape plans and the Landscape Statement (Exterior Design, 2023a, 2023b). If further changes to the final plan occur, the habitat areas will need to be verified against those within this report. If different there may be a need to rerun the metric calculation; this in turn may result in a different amount of biodiversity units and ultimately the amount of net gain provided. The below elements could be considered within the final landscaping design with the aim of maximising a biodiversity net gain and optimising the value of the Site for wildlife.
- 5.2 In order to achieve the net gains predicted in this report, a Landscape Ecological Management Plan (LEMP) should be drawn up to cover the long-term maintenance of retained and newly created on-site habitats. This should form part of the contractual agreement for the future management of the site and will ensure that the habitats created on the site will be locally relevant, ecologically functional and contribute to ecosystem services where possible. If habitats are not appropriately managed, in particular those habitats assigned a medium level of difficulty, then they may not achieve the net gains set out in this report.
- 5.3 It is recommended that the landscape architect liaises directly with the appointed ecologist if any changes to the plans occur to ensure that the areas can support the recommendations outlined below.

Wildflower Planting

- 5.4 To achieve a greater biodiversity net gain, and to improve the value of the Site for wildlife, the inclusion of wildflower planting strips could be considered within the central courtyard, or along the peripheral areas of the Site. In areas where trees or buildings cast a large shadow over this habitat (e.g., within the central courtyard), it should be considered that a specialised seed mix capable of growing in partial shade

(Emorsgate Hedgerow Mixture EH1) could be used to ensure that the habitat does not degrade as the trees mature.

- 5.5 These recommendations would enhance the suitability of the Site for invertebrates and particularly pollinators, which as a group are undergoing significant population decline nationally and globally, which would in turn make the Site more attractive to foraging birds/bats, thus improving the biodiversity value of the Site. This would aid the development of the Site by aligning with a key objective of the Manchester Biodiversity Strategy and Action Plan (Lancashire Wildlife Trust and Manchester City Council, 2022): the development of a local pollinator and insect strategy. This aims to deliver a pollinator and insect strategy, increase pollinator records, and increase the area of land improved for pollinators.

Native Tree Planting

- 5.6 Trees should be protected from damage (and replaced if they suffer significant damage) and should only be pruned as required, so that they can achieve their natural canopy. Microhabitats for birds, mammals and insects should be encouraged, for example by installing bat and bird boxes and retaining dead wood where safe to do so.
- 5.7 Further planting of appropriate native species of trees and woody native shrubs is encouraged including ensuring connectivity between habitats created on site, such as through underplanting of trees with shrubs where possible and where possible ensuring canopies intermingle once mature.

Provision of Nesting and Roosting Opportunities

- 5.8 To enhance the Site for nesting birds, it is recommended that bird and bat boxes are erected on the roofs and/or walls of the proposed buildings. These should include 5 x 1B Schwegler Nest Box (or similar), with at least two of these having 'oval' nest holes (this is to provide for Black Redstart, a bird species of priority identified in the Manchester Core Strategy 2012), two with 36mm nest holes and one 26mm nest hole to provide for a diversity of nesting bird species.

Provision of Invertebrate Habitat

- 5.9 A minimum of 3 x Schwegler invertebrate boxes (or similar) should be provided within the Site to provide habitat for invertebrates, these are particularly good for solitary bees which are undergoing significant national population decline. These could be placed within the central courtyard close to the rain gardens and/or ornamental planters and would also be suitably placed in proximity to wildflower strips, should this be considered as a feature in updated landscape plans.
- 5.10 The provision of deadwood on Site (for example, 2 x log piles placed within the rain gardens or amongst the planters) would offer excellent habitat for a range of invertebrate species such as butterflies and beetles. This would also provide additional foraging opportunities for other species such as bats and birds.

Good Horticultural Practice

- 5.11 It is recommended that sustainable horticultural practices are employed to minimise off-Site ecological impacts when incorporating new areas of ornamental planting. These include:
- All native plant material should be sourced from suppliers who have adopted Flora Locale's Code of Practice for Collectors, Growers and Suppliers of Native Flora (2012);
 - The use of peat-free composts and soil conditioners to reduce the loss of important peat bogs;
 - Feeding of plants (where required, excluding grassland and wetland habitats) using organic based fertilisers and improving the soil structure by incorporating organic material, preferably composted municipal waste;
 - The use of drought tolerant plants and mulches to reduce evaporation and the amount of mains water needed for horticulture; and
 - Minimising the use of pesticides (herbicides, insecticides, and fungicides) to prevent cumulative fatal effects to animals via the food chain. Where use is unavoidable, non-residual chemicals should be applied.

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Appendix 1: Pre- and Post-development Habitat Maps

Figure 1.1: Baseline Habitat Survey Map (Phase 1)

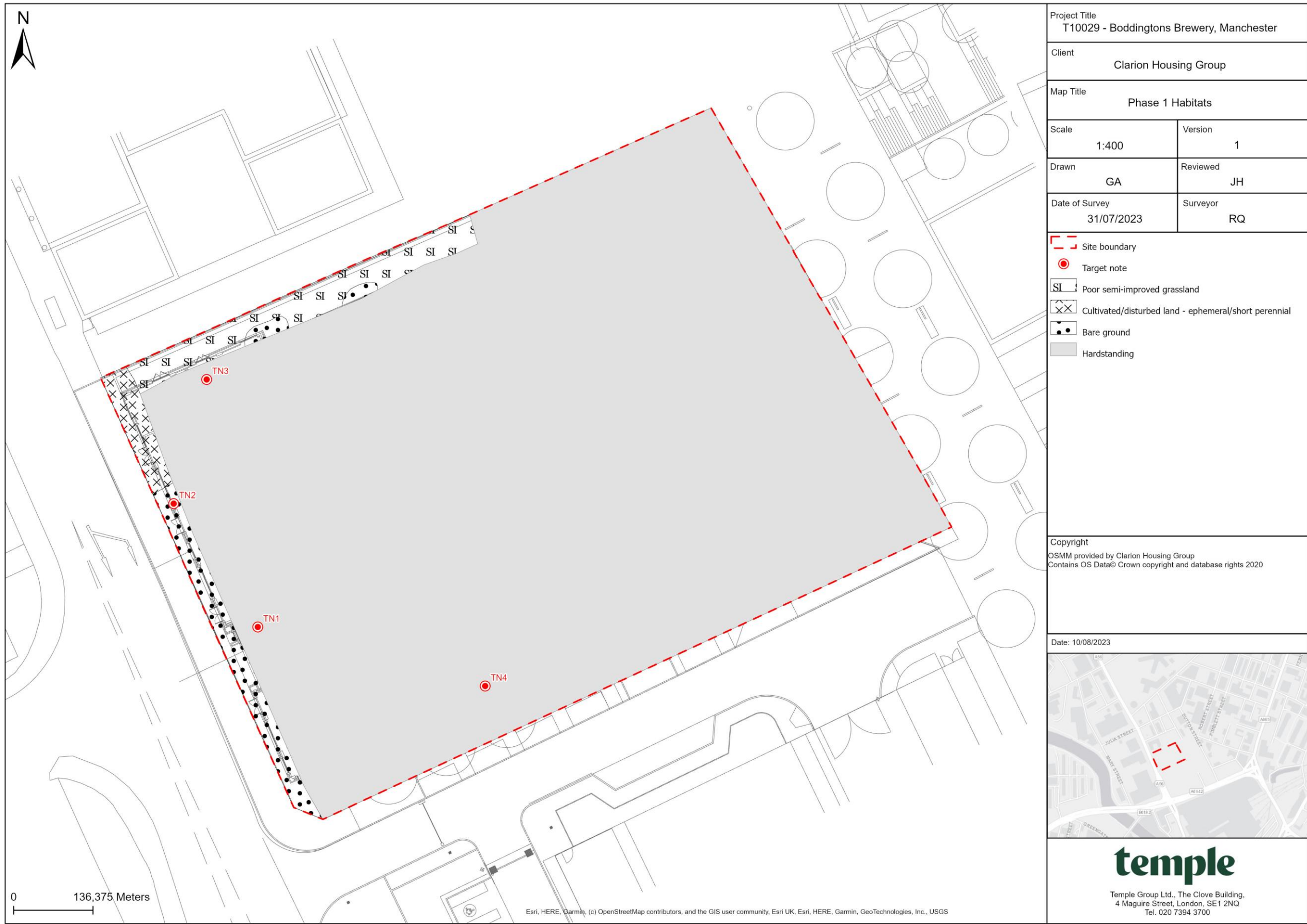


Figure 1.2: Baseline Habitat Survey Map (UKHab 2.1)

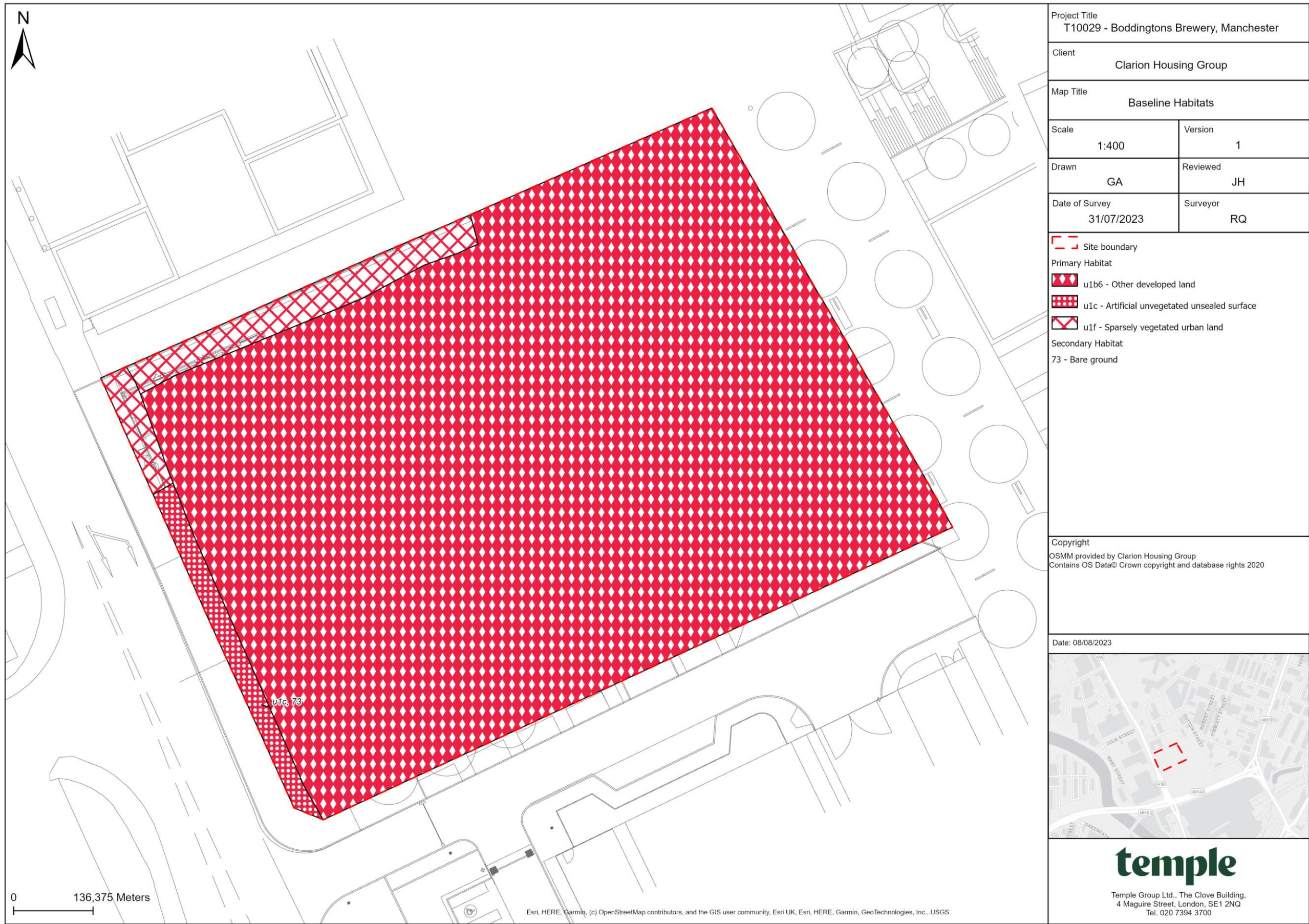
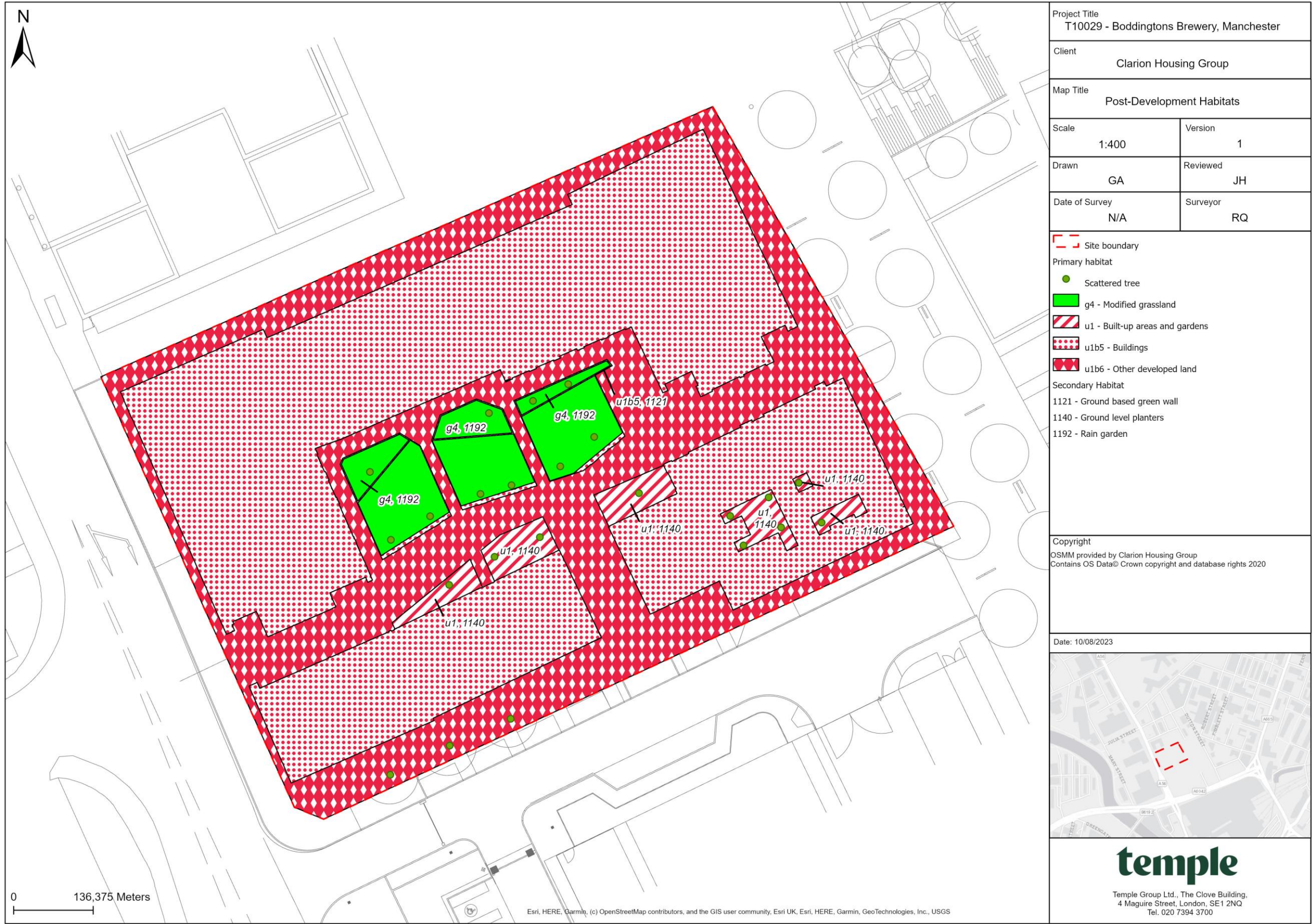


Figure 2: Post-development Habitat Map (UKHab 2.1)



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