Biodiversity Impact Assessment

Including;
Biodiversity Net Gain Assessment
Urban Greening Factor

The Hop Exchange
24 Southwark Street
London
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Limitations and Copyright

Project	The Hop Exchange
Report Type	Biodiversity Impact Assessment
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NON-TECHNICAL SUMMARY

This report estimates the overall biodiversity impact of the proposed development at The Hop Exchange, Southwark. This report assesses the development using the Biodiversity Net Gain metric and Urban Greening Factor metric.

Key results:

The development of the site is expected to result in an **increase in its biodiversity value**. The proposed development is expected to result in a Biodiversity net gain of **0.076 Biodiversity Units** and an **Urban Greening Factor score of 0.08.** The proposed development will result in the creation of **283 m^2 of vegetated habitat.**

Additional ecological enhancements including bat boxes and bird boxes are due to be included within the scheme. See separate ecological enhancement scheme for details

As the existing site has a baseline biodiversity value of 0 units, it is not possible to calculate a measurable net gain in the form of a percentage increase.

1   INTRODUCTION

Background

1.1   This report has been instructed by Peer Freeholds Ltd.

1.2   The proposed development involves the addition of multiple storeys on the western section of the existing building with roof terraces and the replacement of the atrium roof located in the centre of the site.

Purpose of the report

1.3   This report assesses the value for biodiversity of the existing habitats on site and the proposed changes to the development site. This report provides an overview of the biodiversity net gain/urban greening factor generated by the proposed plans.

Limitations

1.4   Biodiversity Net Gain assessments and calculations can only provide a proxy measure for the real long-term biodiversity changes that occur on any given site.

1.5   This assessment has been produced using the information available at this stage. As such, the assessment is based on a number of important assumptions. This report aims to make any such assumptions explicit so that they can be reviewed or updated as appropriate.

Information supplied

1.6   This report has been prepared with reference to the following supplied reports and plans, showing the extent of the site boundary, the existing habitats present and the indicative landscaping:

- Preliminary Ecological Assessment, TMA, July 2020 (ref. 200624-ED-01a)

- Landscape proposals, Terrafirma, March 2021 (ref. ref. 2183-TF-XX-00-DR-L-1000 rev. P07)

Site location

1.7   The site is located in Southwark, London. The surrounding area is dominated by urban development including commercial and residential buildings and railway lines. The river Thames is located north of the development site.

1.8   The central grid reference for the site is TQ 32553 80166. The initial survey covers approximately 0.28 hectares, however only approximately 0.23 hectares are due to be impacted by the proposed works.

2   ASSESSMENT METHODOLOGY

Sources of Habitat Information

2.1   Baseline site habitat types and areas have been taken from the Phase 1 Habitat Map within the Preliminary Ecological Assessment (TMA, 2020). The Map is included in Appendix 1 of this report. TMA's MyTrees software has been used to calculate the size of each habitat area indicated on the Phase 1 Habitat Map.

2.2   Post-development habitat types and areas have been taken from the indicative landscaping layouts available at this time. Assumptions have been made regarding the classification of habitats due to be implemented, and about the eventual condition of those habitats, as outlined in Section 5.2 below.

Biodiversity Net Gain

2.3   The value of the on-site habitats is calculated using The Biodiversity Metric 2.0 calculation tool Beta Version (Natural England, December 2019). Once the value of the baseline and proposed habitats is assessed this tool is then used to measure the overall biodiversity net gain of the proposed development.

2.4   The value for biodiversity of a habitat on site is measured using 'biodiversity units'. These 'Biodiversity units' are calculated based on the type of habitat (based on the UK Habitat Classification ("UKHab") and the size, quality and connectivity of the habitat. This metric also considers whether the habitat is sited in an area identified locally, typically in a relevant Local Plan, as being of significance for nature.

2.5   Habitats within the existing site are considered to be of a higher value if they are well connected to similar habitat in the wider area, are a distinctive or rare type of habitat, if they are of a high quality for supporting nature and if the area is well-known for its ability to support nature. Examples of high scoring habitats include ancient woodlands or peat bogs, whereas low scoring habitats would include habitats such as agricultural land.

2.6   Habitats which are to be created, restored or enhanced during the development are calculated with additional consideration given for 'risk'. The risk components of this include the difficulty of creating or restoring the habitat and the risk associated with the length of time it takes for a habitat to establish. This means that if a high quality habitat is removed from the site and re-established elsewhere on the site it is likely to result in a biodiversity net loss due to the length of time it will take to establish the new habitat and the risk that the habitat will never fully establish.

2.7   Due to the small size of the site, habitat areas were measured in meters square, rather than hectares. As such the biodiversity units had to be adjusted accordingly. In this case units were divided by 10,000 to account for the use of meters squared.

Urban Greening Factor

2.8   Policy G5 'Urban Greening' from the London Plan (GLA, 2019) states that major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.

2.9   This assessment has been undertaken using methods outlined in the Urban Greening Factor for London Research Report (GLA, 2017). Urban greening is calculated by multiplying area 'factors' by the amount of land it occupies in the proposed development. 'Factors' are pre-determined surface cover types. These surface cover types are given a value based on their contribution to urban greening. For example, semi-natural vegetation, such as woodland, is given the highest score and habitat such as concrete is given the lowest possible score. This number is then divided by the area of the site to give a numeric urban greening score.

2.10   London boroughs are set to develop an Urban Greening Factor to identify the appropriate amount of urban greening required in new developments within their area which are tailored to local circumstance. In the interim, the Mayor of London recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominantly commercial development.

2.11   Unlike Biodiversity Net Gain, the value of Urban Greening is not worked out based on a comparison with the value of the original habitats as it is in biodiversity net gain; it is based solely on the value of the proposed habitats.

3   ANTICIPATED BIODIVERSITY IMPACT

Qualitative Assessment

3.1   The Preliminary Ecological Assessment (TMA, 2020) states that the site is dominated by buildings and hardstanding habitats. The proposed development is not due to result in the loss of habitats of ecological value.

3.2   The site is isolated in the landscape, separated by large areas of urban development. The site does not form a key habitat corridor or stepping-stone in the landscape. As such, the site does not have high biodiversity functional value over-and-above the value of the habitats themselves.

3.3   The proposed redevelopment of the site will include areas of green roofs, which can be designed to create key habitats for the conservation of some of London's 'Priority Species' – particularly black redstarts, house sparrows, various bat species and various bees such as the brown-banded carder bee.

3.4   In additional to habitat creation, a number of ecological enhancements will be included within the scheme, including bird boxes and bat boxes (see separate Ecological Enhancement Scheme for details; TMA, 2020).

3.5   As such, the redevelopment of the site is expected to result in an increase in biodiversity value by replacing unvegetated flat roofs, with areas of vegetated green roofs.

4   BIODIVERSITY NET GAIN – BASELINE VALUE OF CURRENT HABITATS

Habitats

4.1   The below table lists the habitat types present within the site according to the 2020 Preliminary Ecological Assessment site survey and the value of these habitats under the Biodiversity Metric 2.0.

4.2   The habitat classifications have been selected based on the closest fit to the habitats identified within the Preliminary Ecological Assessment, whilst also selecting classifications with a 'habitat distinctiveness' score appropriate for the habitat type in the context of the site and its surroundings.

4.3   Full habitat descriptions are contained within the Preliminary Ecological Assessment.

Table 1. Value of existing habitats

Habitat type	Size (m²)	Description	Biodiversity Units
Urban – developed land; sealed surface	2,339	Hard standing and buildings.	0.00

Assumptions

4.4   The following assumptions have been used in calculating the BNG score:

4.5   The calculations do not take into account areas outside the site footprint, which are assumed not to be affected by the development. If areas outside the footprint are to be affected, they should also be taken into account in the calculations.

4.6   The Ecological Connectivity factor has been classed as Low due to the site occurring in an urban landscape and not connecting neighbouring habitats.

4.7   The Strategic Significance factor has been classed as 'Not in local strategy'.

5 BIODIVERSITY NET GAIN - VALUE OF PROPOSED HABITATS

Habitat creation

5.1 The below table lists the habitat types proposed within the development and their value under the Biodiversity Metric 2.0. The habitat types and areas are indicative based on outline information available at this stage.

Table 2. Value of created habitats

Habitat type	Size (m^2)	Description	Habitat Units
Urban – developed land; sealed surface	2152	Hard surfaces and buildings	0.00
Urban – Introduced Shrub	122	Introduced shrub planters located around the roof terrace including lavender (*Lavandula species*), *Geranium* species, *Allium* species, and *Ceanothus* species	0.023
Urban – Brown Roof	43	Species yet to be confirmed	0.018
Urban – Extensive Green Roof	18	Species yet to be confirmed	0.009
Urban – Ground based green wall	30	Species to include *Ceanothus* species, Rosa species, firethorn (*Pyracantha rogersiana*) and *Clematis* species.	0.007
Urban – Facade-bound green wall	70	Species to include *Ceanothus* species, Rosa species, firethorn (*Pyracantha rogersiana*) and *Clematis* species.	0.019
TOTAL	**2435**		**0.076**

Assumptions

5.2 The following assumptions have been used in calculating the BNG score:

5.3 It has been assumed that all brown roofs will comprise sparsely vegetated areas with areas of rocky terrain to provide habitats for black redstart and invertebrates.

5.4 It has been assumed that all green roofs will comprise biodiverse 'extensive' green roofs such as wildflower meadow, unless stated otherwise.

5.5 Please note due to the inclusion of green walls within the proposed development, the total area of proposed habitats is larger than the current site area.

5.6 To provide a conservative calculation, it has been assumed that all new habitats will achieve a Habitat Condition score of 'Moderate' with the exception of introduced shrubs (see below). Where new habitats can be created and maintained to a higher condition, the Biodiversity Calculator can be amended accordingly.

5.7 In accordance with the Biodiversity Metric 2.0 Technical Supplement, Introduced Shrubs are allocated a Habitat Condition score of 1 (Poor).

6 URBAN GREENING FACTOR - VALUE OF PROPOSED HABITATS

Habitat creation

6.1 The below table lists the habitat types proposed within the development and their value under the Urban Greening Factor.

Table 3. Value of proposed habitats

Habitat type	Size (m2)	Description	Urban Greening Factor	Value
Flower-rich perennial planting	122	Shrubbery and planters on ground floor and roof terraces.	0.7	85.4
Sealed surfaces	2,152	Hard standing and buildings	0	0
Extensive Green Roof	61	Extensive green roofs and brown roofs with minimum substrate depth of 80 mm	0.7	42.7
Green wall	100	Green walls – both Façade bound and ground based	0.6	60
TOTAL	**2435**		**0.08**	**188.1**

Assumptions

6.2 As well as the details included in Section 5.2, above, the following assumptions have been used in calculating the UGF score:

6.3 Introduced shrubbery and planters have been classed as 'Flower-rich perennial planting'.

6.4 Please note due to the inclusion of green walls within the proposed development, the total area of proposed habitats is larger than the current site area. The guidance documents acknowledge this and concludes it does not undermine the usefulness of the approach. (The Ecology Consultancy, 2017)

7   RESULTS AND ASSESSMENT

Biodiversity Net Gain

Table 4. Biodiversity net gain results

On-site prior to development.	0 units
On site post development	0.076 units
Total change to site	**+ 0.076 units**

7.1   As the existing site has a biodiversity value of 0 units it is not possible to calculate measurable net gain in the form of a percentage increase.

7.2   Based on the results of this calculation the proposed development is expected to achieve a **gain** of approximately 0.076 biodiversity units and the **creation of 283 m^2 of vegetated habitats**.

Maximising the Biodiversity Net Gain score

7.3   In order to maximise the scale of biodiversity value within the development, the following factors will be considered within the detailed design of the development:

- Maximise the provision of green space throughout the development. Green roofs will be included on appropriate roof areas and terraces where possible.

- Where possible, amenity spaces will make use of biodiverse habitats such as biodiverse meadow grassland as opposed to short-mown grassland.

- Areas of green walls will be maximised to add to the biodiversity of the site.

- Robust management of landscaping can help ensure that the habitats achieve good condition, which is of meaningful biodiversity value.

Urban Greening Factor

Table 5. Urban greening score

Total site area	2435 m^2
Urban greening score	**0.08**

7.4   Please note due to the inclusion of green walls within the proposed development, the total area of proposed habitats is larger than the current site area.

7.5   Based on the results of this calculation the proposed development is expected to achieve an Urban Greening Factor score of 0.08. This does not achieve the target score of 0.3 for developments that are predominately commercial. However, these targets have been designed for new builds and can be significantly more challenging to achieve on sites which retain existing structures.

Maximising the Urban Greening Factor score

7.6   The measures listed in Section 7.3, above, will help to maximise the urban greening factor of the development.

7.7   Exceeding the target score within the significant constraints of development of such a site is a significant challenge. Wherever possible, meaningful biodiverse habitats relevant to the local area will be combined and interspersed with useable and attractive amenity spaces to ensure that the development has a multi-faceted positive impact. (See separate Ecological Enhancement Scheme Report, TMA, 2020).

7.8   Key constraints on including a more widespread coverage of greenery and biodiverse habitats within the site include the following:

- The proposed development involves renovation works to an existing structure. As such the ability to create large areas of green space are limited to flat roofs.

- Areas of roof which cannot be combined with green roofs, for instance plant machinery and the atrium roof area which comprises a large area of the site.

- The requirement for amenity space such as seating and wheelchair accessibility limits the area of roof which can be vegetated.

8 REFERENCES

- British Standards Institution (2013). BS42020 – Biodiversity – Code of practice for planning and development.
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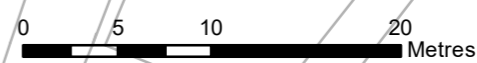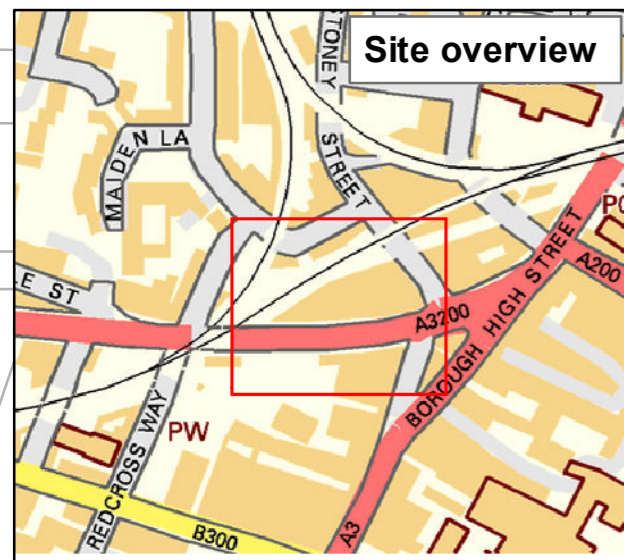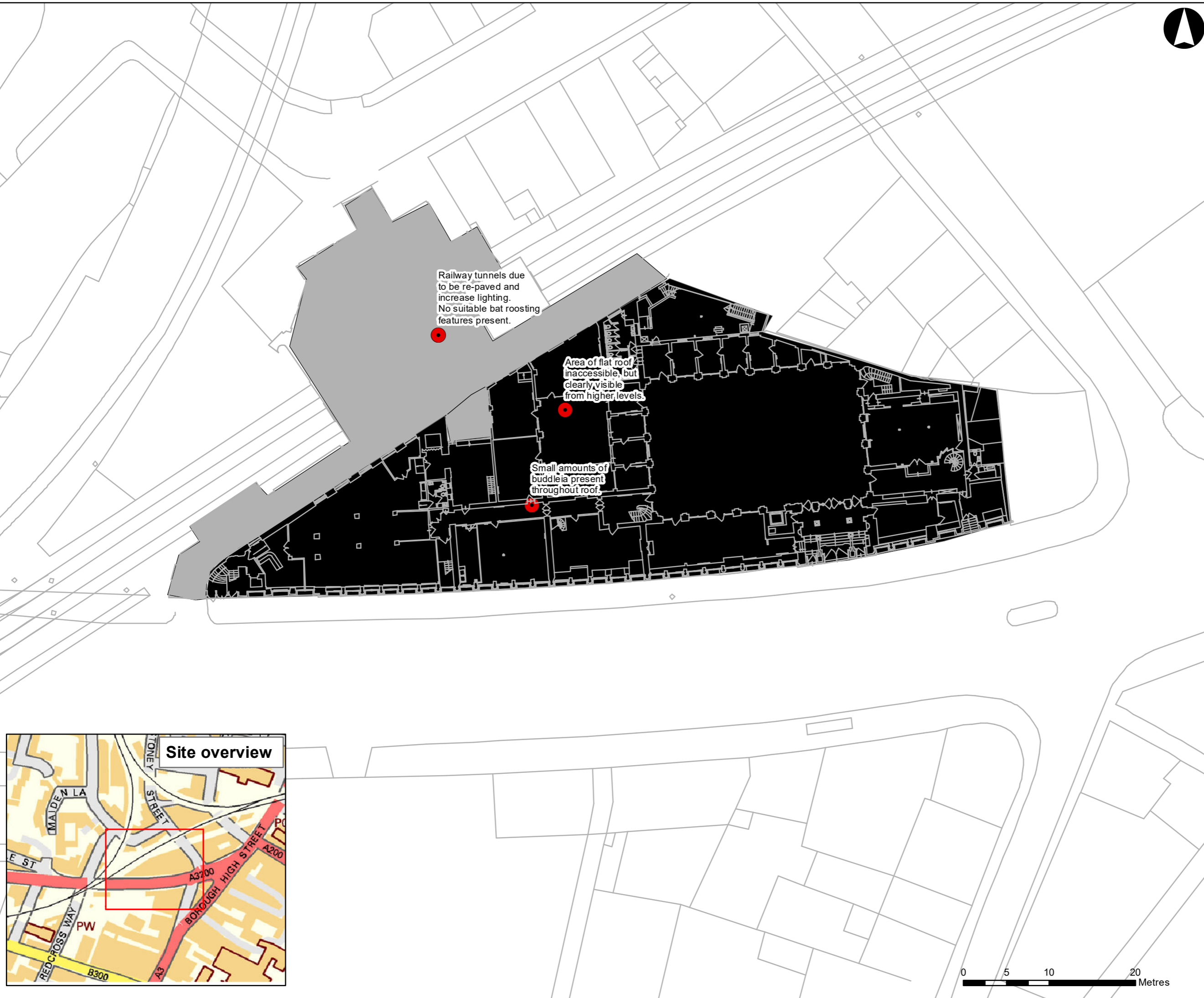
9   APPENDICES

Appendix 1 – Existing site habitats

Legend

- TargetNote
- Hard standing
- Building

Railway tunnels due to be re-paved and increase lighting. No suitable bat roosting features present.

Area of flat roof inaccessible, but clearly visible from higher levels.

Small amounts of buddleia present throughout roof.

Site overview

MAIDEN LA
TONEY STREET
REDCROSS WAY
PW
BOROUGH HIGH STREET
A3700
B300
A3
A200
A200
PO

0   5   10   20
Metres

TIM MOYA ASSOCIATES

arboriculture   ecology   landscape   innovation