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BREEAM, 77-79 Charlotte Street, London

Ecological Report to Inform BREEAM New Construction 2014 Assessment (LE2 to LE5)

For

Charlotte Street Property Ltd

Project No: AHUS105 / 001 / 002 / 003

February 2015

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AHUS105 / 001	002

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001	1st Draft	05/02/15	Verity Dickie	Rebecca Anderson	Sam Lowe
002	2nd Draft	10/02/15	Verity Dickie	Rebecca Anderson	Sam Lowe
003	Final	11/02/15	Verity Dickie	Rebecca Anderson	Sam Lowe

verification of any of the documents or information supplied to Thomson Ecology Limited has been made.

Contents

1. Summary

1.1 Background

1.1.1 Charlotte Street Property Ltd is proposing to demolish one building to facilitate the construction of a new building at 77-79 Charlotte Street, London. The new building will comprise a mix of office and residential accommodation. The site is approximately 0.024ha.

1.1.2 The site is to be assessed using the BREEAM New Construction assessment process (BRE, 2014) which considers whether a proposal will enhance or damage the ecological value of a site. Charlotte Street Property Ltd commissioned Thomson Ecology on 12th January 2015 to produce a report on LE02-LE05 of the BREEAM 2014 assessment based on the results of an extended Phase 1 habitat survey.

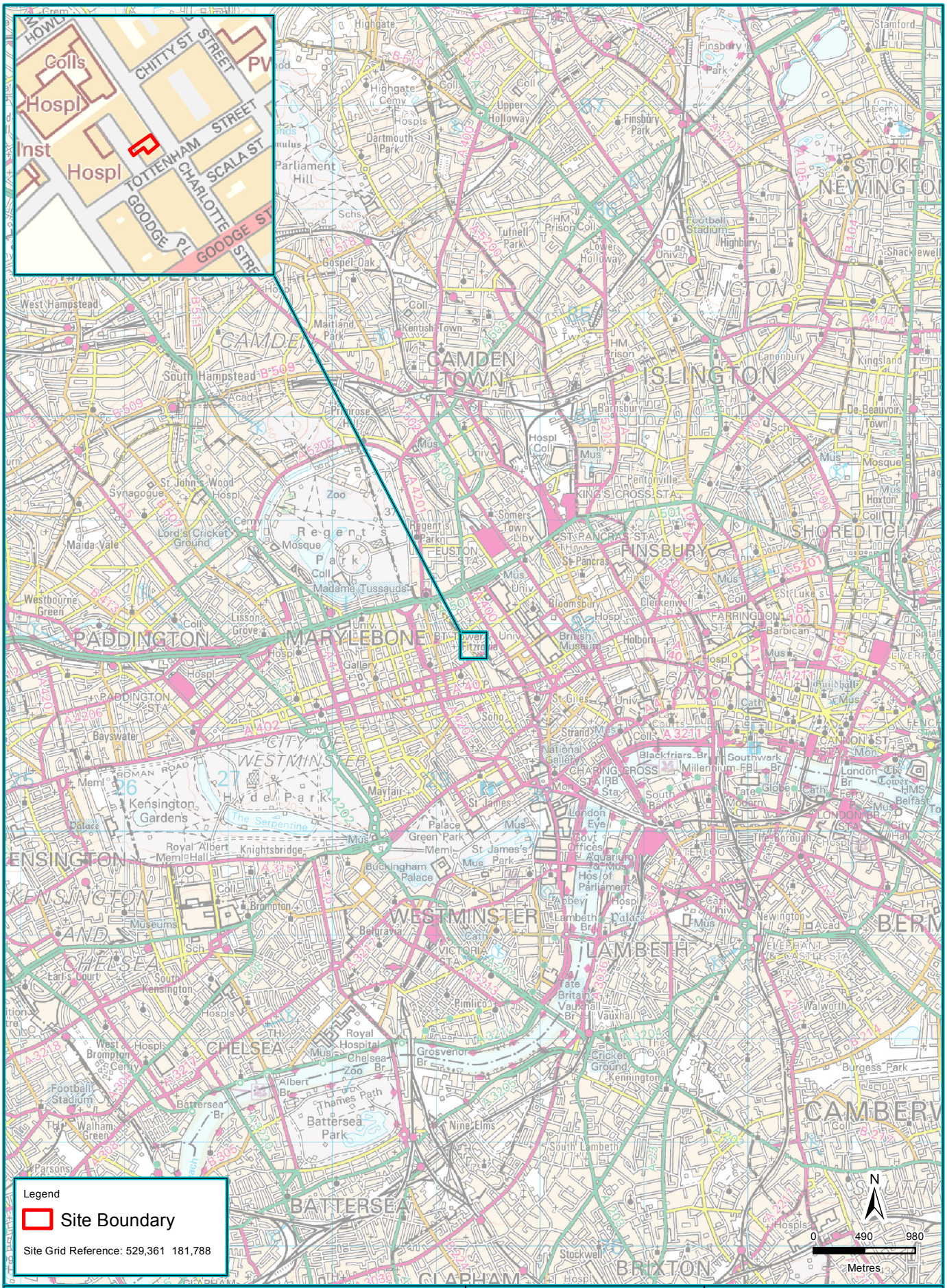
1.2 Likely Credit Rating

Section	Max Credits Available	Likely Credit Rating for Development*	Justification/Requirements
LE02	2	2	The site largely comprises building and hard standing and is considered to be of low ecological value. Two credits available.
LE03	2	2	There will be an overall positive change in the ecological value of the site as a result of the development.
LE04	2	1	Ecologist appointed. All recommendations followed. Due to the area available for landscaping it is not possible to achieve an increase of six species or greater.
LE05	2	2	The client must adopt all requirements and at least four additional requirements.
Total	8	7	

*Likely credit rating based on our assessment – to be confirmed by BRE Assessor

1.2.1 The likely credit rating is **seven credit points** if recommendations made throughout the report are followed.

1.2.2 Our justification for the likely credit rating given above is discussed in the main body of the report.



Client: Charlotte Street Property Ltd		Drawing Ref: AHUS106/17921/1	
Figure Number: 1		Scale at A4: 1:50,000	
Figure Title: Site Location		Drawn: AC	Checked: NS
		Date: 27/01/2015	Date: 27/01/2015

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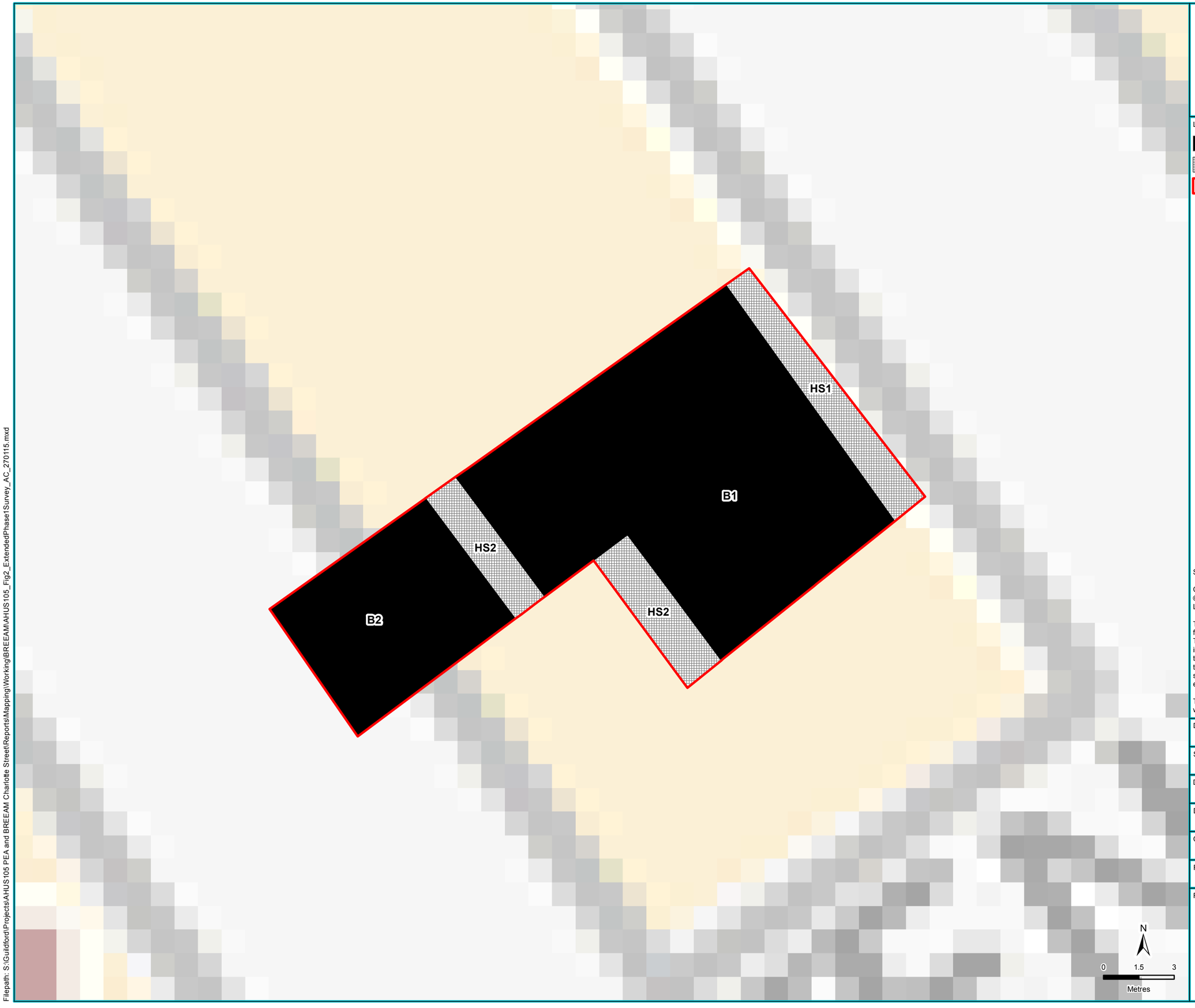

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Legend

- Building
- Hard Standing
- Site Boundary

Site Grid Reference: 529,361 181,788

This map has been drawn at a sufficient level of accuracy to fulfil the requirements of a Phase 1 baseline habitat survey. The level of accuracy depends on both the size of the area involved and the base mapping. Every effort has been made to create a map that is as accurate as possible. However, this map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

Drawing Ref	AHUS105/17922/1
Scale at A3	1:150
Drawn: AC	Checked: NS
Date: 27/01/2015	Date: 27/01/2015
Client	Charlotte Street Property Ltd
Figure Number	2
Figure Title	Extended Phase 1 Habitat Survey Map

Filepath: S:\Guildford\Projects\AHUS105 PEA and BREEAM Charlotte Street\Reports\Mapping\Working\BREEAM\AHUS105_Fig2_ExtendedPhase1Survey_AC_270115.mxd

Photograph 1:
Area of hard standing to the east of the site.

Photograph 2:
Existing building (B1 on Figure 2).

Photograph 3:
Garage onto Tottenham Mews (B2 on Figure 2).

Client: Charlotte Street Property Ltd		Drawing Ref: AHUS105/17923/1	thomson ecology
Figure Number: 3		Scale at A4: Not applicable	
Figure Title: Photographs of the Site		Drawn: AC	Checked: NS
		Date: 27/01/2015	Date: 27/01/2015

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2. Introduction

2.1 Development Background

2.1.1 Charlotte Street Property Ltd is proposing the demolition and redevelopment of 77-79 Charlotte Street, London. Office accommodation will be provided in the basement and ground floor levels, whilst the upper floors will be used for residential use. The garage building use may be being retained; however the main building will be demolished. The new building will cover an area of approximately 240m^2. The site spans between Charlotte Street and Tottenham Mews in Fitzrovia, Camden. It falls within a conservation area; however, the current building has been assessed as having a 'neutral' impact on the conservation area.

2.1.2 The site is to be assessed using the BREEAM New Construction 2014 assessment process (BRE, 2014) which considers whether a proposal will enhance or damage the ecological value of a site.

2.1.3 Charlotte Street Property Ltd commissioned Thomson Ecology on 12th January 2015 to undertake a desk study and an extended Phase 1 habitat survey of the site to confirm habitats and plant species present on the site (Thomson Ecology report ref: AHUS105/001/001/001). This information has been used to inform this assessment.

2.2 General Approach and BREEAM Assessment

2.2.1 Conducting an ecological walkover survey following extended Phase 1 survey methodology is a standard technique for assessing the ecological value of development sites.

2.2.2 Following the BREEAM 2014 guidelines, a site visit carried out by a suitably qualified ecologist allows an informed assessment of the ecological value of a site to be made. The ecologist can then give advice on ecological enhancement, determine how any identified features of ecological value can be retained and protected and to what degree the ecological value of the site may be changed.

2.2.3 The full BREEAM assessment will be carried out by a registered assessor and the information in this report is intended to assist with the BREEAM assessment by giving the likely credit rating. In addition, advice or recommendations are given as to how a higher credit rating could be achieved for this development.

2.3 Suitably Qualified Ecologist

2.3.1 It is possible for a non-full member of CIEEM to undertake the work if it is checked and signed off by a Suitably Qualified Ecologist (SQE).

2.3.2 The field survey and report has been undertaken by Ecologist Verity Dickie BSc GradCIEEM. This report has been signed-off by Senior Ecologist Rebecca Anderson BSc (Hons) MSc MCIEEM.

2.3.3 Rebecca meets the criteria for a suitably qualified ecologist by:

- Holding a degree in Biological Sciences;

- Being employed as a practising ecologist with over eight years relevant experience (including within the last five years); and
- Being a full member of the Chartered Institute of Ecology and Environmental Management (this makes her subject to peer review and bound by a professional code of conduct).

3. LE02 – Ecological Value of Site and Protection of Ecological Features

3.1 Background

3.1.1 One credit point is available where evidence is provided that the construction zone is defined as land of low ecological value and a second credit point is available where all existing features of ecological value within and surrounding the construction zone will be fully protected from damage during site preparation and construction works. The aim of LE02 is to encourage development on land that already has limited value to wildlife and to protect existing features from substantial damage during site preparation and construction works.

3.1.2 A site visit was carried out by Thomson Ecology to determine the ecological value of the site. The methodologies used for the field survey and evaluation are given in Appendix 1.

3.1.3 The field survey was conducted on 22nd January 2015.

3.2 Guidance

Protected Sites and Habitats

3.2.1 In line with BREEAM New Construction 2014 guidelines, a desk study from Greenspace Information for Greater London (GiGL) was carried out for the site, comprising a search of protected sites and habitats. The desk study included a search for SAC, SPA and RAMSAR sites within 2km of the site, SSSI's within 500m of the site and other habitats (for example, broadleaved woodland, water courses, wetlands, flower rich meadows/ grassland and heathland) within 100m of the site.

3.2.2 There are no protected sites or habitats within these distances to the site.

3.3 Field Survey

Habitats and Flora

3.3.1 The following Phase 1 habitats (JNCC, 2010) were recorded on site:

- Building; and
- Hard standing.

3.3.2 These habitats are described as follows. A map showing the main features and distribution of habitats on the site is given on Figure 2. The full list of plant species recorded during the survey is given in Appendix 2. Photographs depicting the main features may be found in Figure 3.

Habitat Name	Building	Code	B1-B2	Area (m^2)	200
Description: There are a total of two buildings on site (B1 and B2 on Figure 2). B1 is a flat-roof, glass-fronted building currently used as office accommodation. B2 is a flat-roof garage building.					
Key Species: N/A					

Habitat Name	Hard standing	Code	HS1-HS2	Area (m^2)	40
Description: There are two areas of hard standing located within the site. HS1 is at the front of building B1 and is a walkway to a small storage shed. HS2 is split into two areas and is currently used as a storage area for plant. Ruderal plant species have colonised within areas of HS2 giving a coverage of approximately 3%.					
Key Species: Dandelion (*Taraxacum officinale* agg.), butterfly-bush (*Buddleja davidii*) and bristly ox-tongue (*Picris echioides*)					

3.4 Assessment of ecological value and protection of ecological features

3.4.1 This evaluation is based on the standard criteria given in Appendix 1.

3.4.2 No habitats or plants of ecological value were recorded on site.

3.5 Conclusion

3.5.1 The online desk study has identified that there are no statutory or non-statutory sites located within set distances of the site (as outlined in Section 3.1.2), therefore assessing the construction zone to be land of low ecological value. Therefore **one credit point** is available. During the site visit, there were no features of ecological value identified within the site boundary and therefore a **second credit point** is available.

4. LE03 – Mitigating Ecological Impact

4.1 Background

4.1.1 Under LE03, credits are awarded if steps are taken to minimise reductions or increase the ecological value of the site. In this case, ecological value is based on the number of plant species per hectare (counting native species). This is worked out using numbers of species for the various landscape types on site both before and after development. Credit points are available as listed in the table below.

Credits available under LE03 – Mitigating Ecological Impact

Credit Points	Criteria
1	Where evidence provided demonstrates that the change in the site's existing ecological value, as a result of development, is minimal.
2	Where evidence provided demonstrates that there is no negative change in the site's existing ecological value as a result of development.

4.1.2 In this case a minimal change is defined as a change of ecological value of between less than zero and equal to, or less than, minus nine species. No negative change of ecological value is defined as being equal to or greater than zero species. One scenario has been incorporated into LE03 in order to advise as to how additional credits can be achieved by incorporating additional species into the soft landscaping design.

4.2 Guidance

Species before development - Scenario 1

4.2.1 A total of two types of habitat were identified on site. The number of species identified in each habitat type is summarised in the following table. This can be used to calculate the average number of species before development. A full list of the species identified in each habitat type is given in Appendix 2.

Plot Type (Habitat)	Area on Site (m^2)	Number of Native Species		Species x Area of Plot Type
Building	200.97	0		0
Hard standing	38.3	0		0
3% ruderal coverage	1.19	2		2.38
Total site area =	**240.46**		**Total =**	**2.38**

Plot Type (Habitat)	Area on Site (m^2)	Number of Native Species		Species x Area of Plot Type
Species before development = **Total species x area of plot type/Total site area =**				**0.009**

Species after development

4.2.2 Following refurbishment, the site will largely comprise buildings and hard-standing. As part of the development proposals a green roof will be incorporated into the landscaping proposals (see Appendix 3).

4.2.3 By multiplying the number of native species proposed within each planting scheme by the area of each landscaping type, the average number of species after development can be calculated. This is based on our suggested landscaping proposals and only includes native species or species with a known benefit to wildlife. The green roof has been based on a Bauder Green Roof Wildflower Blanket which contains a total of 24 native species. The species list has been provided in Appendix 4. The calculation is shown in the following table:

Plot Type (Habitat)	Area on Site (m^2)	Number of Native Species		Species x Area of Plot Type
Green roof	30	24		720
Proposed building	192.96	0		0
Hard standing	17.5	0		0
Total site area	**240.46**		**Total**	**720**
Species after development = **Total species x area of plot type/Total site area =**				**2.99**

4.2.4 The total change in species can be calculated as follows:

Total No. Species After Development		Total No. Species Before Development		Total Change in Species
2.99	-	0.009	=	2.98

4.2.5 Based on the area set aside for landscaping, a positive increase in the ecological value of the site should be possible, providing the recommendations for native species planting is followed.

4.3 Conclusion

4.3.1 Under the current proposals it is possible to achieve **two credit points** under LE03 as there will be a minimal change in the ecological value of the site as a result of the development. The second credit point is available as there will be a positive change in the ecological value of the site after development providing the landscaping proposals are incorporated.

4.3.2 The calculations above also apply to Eco 04 of the Code for Sustainable Homes Assessment whereby credits are awarded by taking steps to minimise reductions or improve the ecological value of the site. A total of two credit points under Eco 04 can be achieved as there will be a neutral change in the number of number of species of between -3 and less than or equal to +3 natural species. It may be possible to achieve three credits under Eco 4 if the green roof is increased to a size of 31m^2 as this will allow for a minor enhancement of greater than 3 and less than or equal to 9 natural species.

5. LE04 – Enhancing Site Ecology

5.1 Background

5.1.1 Two credit points are available under LE04 if steps are taken to protect and enhance the ecological value of the site following development.

5.1.2 One point is available if a suitably qualified ecologist is appointed to advise and report on enhancing and protecting the ecological value of the site; and the ecologist's recommendations for general enhancement and protection of site ecology are implemented.

5.1.3 A second credit is available if the criteria of the first credit are met, the recommendations of the ecology report for the enhancement of site ecology have been implemented in the final design and build, and the SQE confirms that this will result in an increase in the ecological value of the site, with an increase of six plant species or greater.

5.2 Appointed Professional Ecologist

5.2.1 Thomson Ecology has been appointed as professional ecologists to advise the client on ecological enhancement and protection of ecological features. Rebecca Anderson is the suitably qualified ecologist in this case as indicated in the introduction of this report (see Section 2.3).

5.3 Recommendations

5.3.1 The proposals apply to all land within the current site boundary, including the existing building (B1 on Figure 2) to be demolished. This will allow for the construction of a new building comprising office and residential accommodation.

5.3.2 General recommendations concerning biodiversity enhancement of the site are as follows:

- 'Insect Hotels' should be incorporated into the green roof design. They need to be placed in areas with full or partial sunlight and can be constructed from items such as bamboo canes, logs and recycled building materials;
- The green roof should be planted with species of native origin or species with a know attraction or benefit to wildlife; and
- At least two bird boxes should be installed on the new building.

5.3.3 Implementing these recommendations should result in one credit point being awarded.

5.4 Further Increase in Ecological Value of the Site

Species after Development

5.4.1 A second credit point is available under LE04 providing the first credit point is achieved and if evidence is provided to demonstrate a positive increase in the ecological value of the site up to six plant species or greater.

5.4.2 Given the area available for landscaping, it will not be possible to achieve a positive increase in the ecological value of the site of six species or greater as it will require planting over 50 native

species within the area available for the proposed green roof. Therefore a second credit point under LE04 is not achievable.

5.5 Conclusion

5.5.1 One credit point should be achieved if the above recommendations are adopted. Currently, it is not possible to achieve a second credit point under LE04 based on the area available for landscaping.

5.5.2 This section is equivalent to Eco 2 of the Code for Sustainable Homes Assessment, whereby the ecological value of the site enhance by following key recommendations and by ensuring over 30% of additional recommendations are implemented and followed. The key recommendation for this development is the implementation of the green roof, planted with species of native origin or species with a known attraction to wildlife. Additional recommendations include the addition of insect hotels and the installation of at least two bird boxes on the new building. By implementing one of these additional recommendations, this will ensure over 30% of the additional recommendations are followed. Providing the key recommendation is implemented and over 30% of the additional recommendations are followed, one credit is available under ECO 2.

6. LE05 – Long-Term Impact on Biodiversity

6.1 Background

6.1.1 Up to two credits are available under LE05 providing that:

- A suitably qualified ecologist (SQE) has been appointed prior to commencement of activities on site;
- The SQE has confirmed that all relevant UK and EU legislation relating to protection and enhancement of ecology has, or will be, complied with during the design and construction process;
- An appropriate landscape and habitat management plan, appropriate to the site, is produced covering at least the first five years after project completion in accordance with BS 42020:2013; and
- Where additional measures to improve the assessed site's long term biodiversity are adopted.

Suitably Qualified Ecologist

6.1.2 Rebecca Anderson from Thomson Ecology Ltd is the SQE in this case as indicated in the introduction to this report (see Section 2.3). Thomson Ecology Ltd has been appointed prior to commencement of activities on site.

Legal and Planning Policy Issues

6.1.3 There are no known legal or planning policy issues relating to this site.

Management Plan

6.1.4 Given the site will be dominated by building and hard standing and that proposed landscaping comprises the inclusion of a green roof, which will require little management other than that outlined below, a separate management plan is not considered to be required.

6.1.5 The chosen seed mix should be sown following the supplier's guidelines. The Green Roof guide web site provides detailed specifications and guidance on both the installation and maintenance of green roofs. In our view, cutting in late summer or early autumn is advisable to allow plants to seed naturally. Cuttings should be removed from the roof and composted or sent to a green waste re-cycling facility. Similarly, undesirable 'weed' species that threaten to invade the green roof at the expense of the chosen species, should be removed. Further suggestions for green roof maintenance include:

- Drainage outlets and inspection chambers cleared of vegetation; and
- Ensure outlets and shingle perimeters are cleared of dead and live plants.

6.1.6 The green roof should be monitored to ensure species richness is maintained. If species richness is lost (fewer than 20 native species), a green roof specialist should be consulted to advise how best to improve the species-richness.

6.1.7 If bird boxes are installed on the building, these should be cleaned out outside of the bird breeding season (i.e. they should be cleaned out between September to February inclusive) each year. If the boxes are damaged or broken, they should be replaced with the same or similar box. Insect hotels require no maintenance and are most effective left *in situ*.

6.1.8 Personnel should be appointed to take key responsibility for implementing the management plan. This could be a nominated 'Biodiversity Champion' for the site, as referred to in the additional requirements listed below. There should be a nominated Biodiversity Champion both during the development and post-development.

6.2 Additional Requirements

6.2.1 Additional requirements that need to be implemented by the contractor under LE05 in order to gain one or two credit points include the following:

1. The contractor nominates a 'Biodiversity Champion' to influence site activities and to ensure that detrimental impacts on biodiversity are minimised in line with the recommendations of a SQE;
2. The contractor trains the work force on the protection of site ecology during the project;
3. The contractor records actions taken to protect biodiversity and monitor their effectiveness throughout key stages of construction (these records must be made publicly available upon request);
4. A new ecologically valuable habitat appropriate to the local area is created. This includes habitat that supports nationally, regionally or locally important biodiversity and/or which is nationally, regionally or locally important itself (e.g. a priority habitat, habitat listed in the Local BAP or habitat type occurring within designated sites identified in local plans); and
5. The contractor has programmed site works to minimise disturbance to wildlife.

6.2.2 A member of the workforce with sufficient time and authority on site should be nominated as a 'Biodiversity Champion' to ensure that the steps above are undertaken. A record should be kept of the steps taken to ensure these steps are carried out and to report on their ultimate effectiveness.

6.3 Conclusion

6.3.1 If the recommendations given in LE05 are adopted and management recommendations are followed, it should be possible to comply with all requirements set out under LE05 and at least four of the additional requirements by taking the steps indicated above. This would result in **two credit points** being available.

7. References

7.1.1 Bauder (2014) *Vegetation for extensive and biodiverse green roofs*. Bauder.co.uk.

7.1.2 Building Research Establishment Ltd (2014). *BREEAM New Construction Assessment: Non Domestic Buildings, Technical Manual SD5076- 2.0:2014*. BRE.

7.1.3 Green Roof Guide web site: http://www.greenroofguide.co.uk.

7.1.4 JNCC (2010). *Handbook for Phase 1 habitat survey: A technique for environmental audit*. Joint Nature Conservancy Committee, Peterborough.

7.1.5 Stace C (2010). *New Flora of the British Isles (second edition)*. Cambridge University Press, Cambridge.

7.1.6 Thomson Ecology (2015) *Preliminary Ecological Appraisal*. Report ref: AHUS105/001/001/001.

7.1.7 Wileman, T. (2012). *University College London Bloomsbury Campus Extended Phase 1 Habitat Survey Report*. London Conservation Services.

Appendix 1 – Methods Used

7.2 Field Survey

7.2.1 A survey area was defined that encompassed the site proposed for development. This includes the area proposed for redevelopment and adjoining buildings.

7.2.2 An extended Phase 1 survey (JNCC, 2010; IEA, 1995) was conducted throughout the survey area. This is a standard technique for obtaining baseline ecological information for areas of land and can be used to inform the BREEAM assessment process.

7.2.3 The Phase 1 methodology is primarily a mapping technique and uses a standard set of habitat definitions for classifying areas of land on the basis of the vegetation present. For this survey, the technique was modified (or extended) to provide more detail over a smaller area, and give further consideration to fauna.

7.2.4 Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support protected species and other species of conservation concern, including priority species. No specific faunal surveys were undertaken.

7.2.5 A full plant species list was compiled for each of the Phase 1 habitat types identified. Plant species nomenclature follows Stace (2010).

7.3 Ecological Value of the Site

7.3.1 The evaluation is based on standard criteria for assessing nature conservation value. The site is evaluated against ten different criteria as summarised in the following table:

Criteria	Description / Comments
Size	The value of a site usually increases with size. Smaller sites are therefore often of low ecological value.
Diversity	The variety of both species and communities. Sites with a low diversity are generally of low ecological value.
Naturalness	Degree of modification by man. Highly modified sites often have low ecological value.
Rarity	The presence of rare or local species or communities on site. Common and widespread species and communities are often of low ecological value.

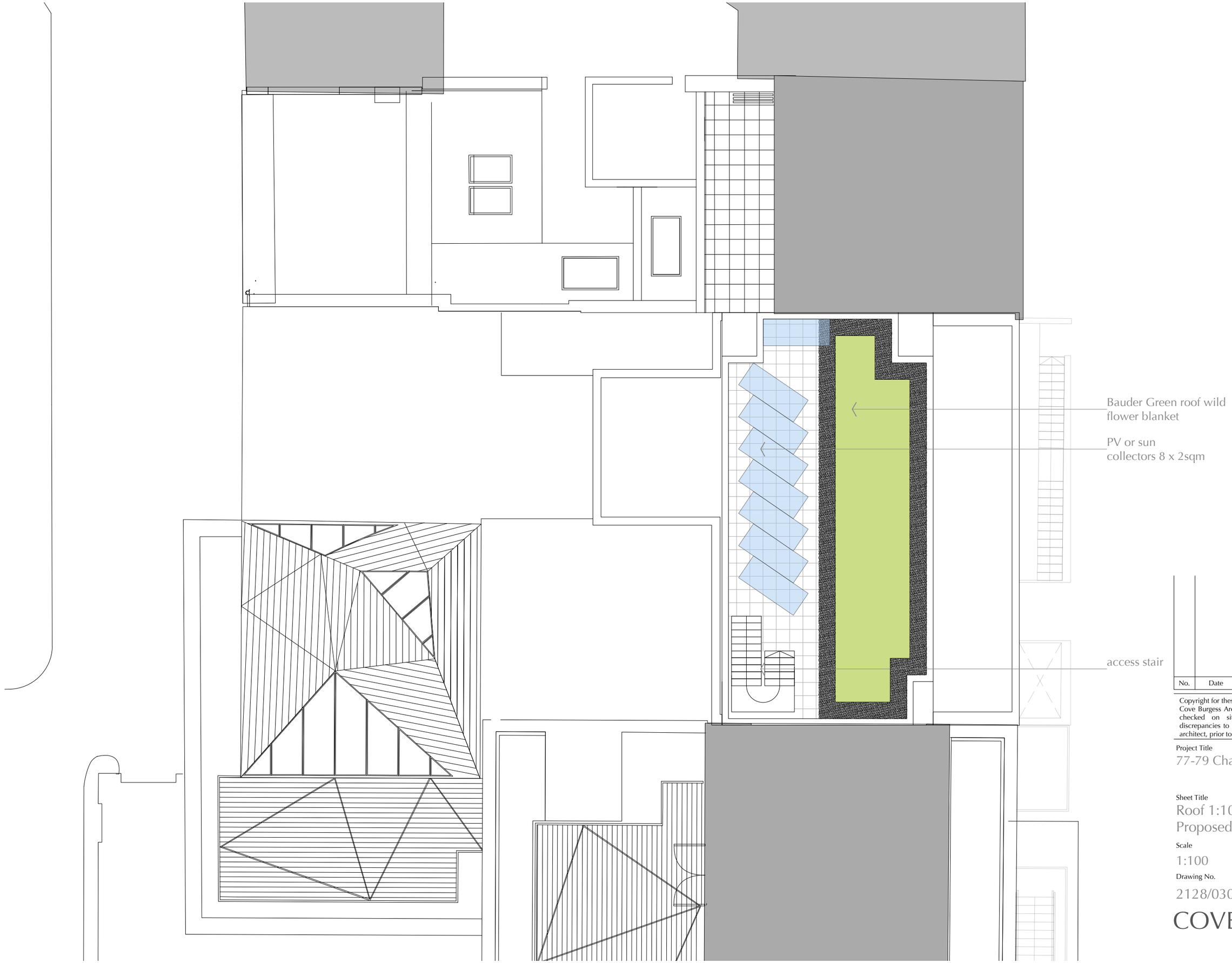
Criteria	Description / Comments
Fragility	Degree of sensitivity of species, communities and habitats to environmental change. Recently established ephemeral or 'artificial' habitats are often of lower ecological value than long established habitats with slow colonising species as they are more readily recreated.
Typicalness	Sites that represent a 'typical' example of a particular ecosystem may have value as well as the best examples of particular ecosystems.
Recorded history	Value of the site for previous scientific study and research. Important sites may be designated for their scientific interest.
Position in an ecological/ geographical unit	Relationship of site to adjacent areas of conservation value. Sites that have no function as wildlife corridors or refuges within similar surroundings often have low ecological value.
Potential value	Potential of site to support species of conservation concern or to develop greater conservation interest through management or natural change. Sites with no or minimal potential are generally of low conservation value.
Intrinsic appeal	Popular species or groups or species (e.g. birds or orchids) may have a greater intrinsic value than others. Sites that support a low diversity of popular species are likely to be perceived as having low ecological value.

Appendix 2 – Species Lists

Hard standing with ruderal vegetation – HS2

Common Name	Species Name	DAFOR
Dandelion	*Taraxacum officinale* agg.	O
Butterfly-bush	*Buddleja davidii*	R
Bristly ox-tongue	*Picris echioides*	R

Appendix 3 – Proposed green roof



No.	Date	Issue Notes

Project Title
77-79 Charlotte Street

Sheet Title
Roof 1:100
Proposed

Scale
1:100

Date Printed
26/1/15

Drawing No.
2128/0306

Revision
-

COVEBURGESS

Appendix 4 – Proposed green roof species list

Common Name	Species Name
Yarrow	*Achillea millefolim*
Thrift	*Armeria maritima*
Daisy	*Bellis perennis*
Clustered bellflower	*Campanula glomerata*
Harebell	*Campanula rotundifolia*
Cornflower	*Centaurea cyanus*
Common centaury	*Centaurium erythrea*
Maiden pink	*Dianthus deltoides*
Viper's bugloss	*Echium vulgare*
Lady's bedstraw	*Galium verum*
Water avens	*Geum rivale*
Yellow toadflax	*Linaria vulgaris*
Bird's foot trefoil	*Lotus corniculatus*
Ragged robin	*Lychnis flos-cu-culi*
Common poppy	*Papaver rhoes*
Orange hawkweed	*Pilosella aurantiaca*
Selfheal	*Prunella vulgaris*
Yellow rattle	*Rhianthos minor*
Common soapwort	*Saponaria officianalis*

Small scabious	*Scabiosa columbaria*
Common Name	**Species Name**
Biting stonecrop	*Sedum acre*
Sea campion	*Silene uniflora*
Bladder campion	*Silene vulgaris*
Wild thyme	*Thymus polytrichus*