

EXECUTIVE SUMMARY

- Hamilton Lofts are building a new residential development on a site at Hamilton Road, Twickenham, London.
- At the time of the site visit, two large buildings and several areas of hard standing dominated the site. There were a number of small saplings on the northern boundary.
- A total of **9 credits** for ecology can be awarded if the recommendations in this report are carried out:
 - No. Q1: If the recommendations set out in Section 5.1 are followed then **1 credit** can be awarded. The client must provide written confirmation that the recommendations will be followed, prior to the credits being awarded.
 - No. Q2: As Middlemarch Environmental Ltd is a member of the AWTC, **1 credit** will be awarded subject to the recommendations in Chapter 6 being observed. The client must provide written confirmation that the recommendations will be followed, prior to the credits being awarded.
 - No. Q3: There are no features present on site which require protection and therefore **1 credit** is awarded.
 - No. R1-4: From the information supplied **4 credits** of the 4 available credits can be awarded as there will be a gain of 35.87 species per hectare.
 - No. Q5: **2 credits** are awarded as 100% of the dwellings have a footprint/floor area ratio greater than 2.5.

1. INTRODUCTION

Acanthus LW Architects commissioned Middlemarch Environmental Ltd to conduct a BREEAM ecological assessment at Hamilton Road, Twickenham, London.

The ecological assessment was performed to comply with the format of Eco-Homes 2003 (The environmental rating for homes).

Middlemarch Environmental Ltd is a member of the Association of Wildlife Trust Consultancies (AWTC) and is accredited to conduct BREEAM ecological assessments.

The ecological assessment aims to identify the important ecological features of the site and detail measures which should be taken to protect and enhance them. It also appraises the ecological diversity of the site before and after development.

➤ This report is divided into nine chapters:

- Chapter 1 provides an explanation of the BREEAM concept.
- Chapter 2 provides a brief introduction to the development.
- Chapter 3 describes the methodology used in the ecological assessment.
- Chapter 4 provides a description of the site and the current ecological value of the site.
- Chapter 5 outlines the measures to be undertaken to obtain the ecological credits relating to the existing site ecology.
- Chapter 6 identifies specific options needed to obtain ecological enhancement credits.
- Chapter 7 details the species diversity change credits for the site.
- Chapter 8 details the footprint/floor area ratio credit.
- Chapter 9 provides a summary of the credits awarded.

1.1 EcoHomes – The Environmental Rating for Homes

- 1.1.1 EcoHomes – The Environmental Rating for Homes assesses the environmental impact of new home schemes. It aims to provide guidance on ways of minimising the adverse effects of new home buildings on the global and local environments, whilst promoting healthy internal conditions.
- 1.1.2 The basis of the scheme is a certificate awarded to individual buildings on the basis of credits for a set of performance criteria determined by the Building Research Establishment (BRE). The certificate enables the owners to gain recognition for building environmental performance. Trained personnel, appointed by BRE, assess the building. The number of credits attained is interpreted in the form of an overall rating of *Excellent*, *Very Good*, *Good* or *Pass*. Some credits are optional.
- 1.1.3 The performance criteria are grouped under the following categories: energy, water, pollution, materials, transport, ecology and land use and health and well being. Some categories are optional.
- 1.1.4 This report assesses site ecology, which is carried out at Stage 3 of the overall assessment. The aim is to reduce the ecological impact of the development project, such as by minimising the loss of important wildlife habitats, and maximising the wildlife potential of the site by the enhancement and creation of new habitats and their subsequent sympathetic management.

1.2 Ecological Credits

1.2.1 There are 9 ecological credits available, these are as follows:

a) Ecological Credit No. Q1

1 credit for *minimising ecological damage* by either:

- building on land which meets defined criteria for low ecological value; or
- where land is ecologically valuable, designing within recommendations following an audit by the AWTC (Association of Wildlife Trust Consultancies – The Wildlife Trusts Partnership) or another qualified organisation recognised and audited by a recognised authority.

b) Ecological Credit No. Q2

- 1 credit for designing-in features for positive *enhancement of the site ecology* in accordance with advice from the AWTC.

c) Ecological Credit No. Q3

- 1 credit for the protection of existing features.

d) Ecological Credit No. R1-4

- 1 credit for a change of ecological value of between –9 and –3 natural species hectares;
- 2 credits for a change of ecological value of between –3 and +3 natural species hectares;
- 3 credits for a change of ecological value of between +3 and +9 natural species hectares;
- 4 credits for a change of ecological value of greater than +9 natural species hectares.

e) Ecological Credit Q5

- 1 credit for 60% of dwellings with a *floor area/footprint ratio greater than 2.5*.
- 2 credits for 80% of dwellings with a *floor area/footprint ratio greater than 2.5*.

2. PROJECT INTRODUCTION

- Hamilton Lofts are building 14 flats on a site at Hamilton Road, Twickenham, London. The flats will have on site car parking and a communal garden space. The site has an approximate area of 0.23 Ha.

3. METHODOLOGY

This chapter details the methodology used by the AWTC to carry out a BREEAM Ecological Assessment.

3.1 BREEAM Ecological Assessment

BREEAM Ecological Assessment methodology consists of:

- a site visit;
- an appraisal of landscape proposals and other documents; and,
- recommendations.

3.2 BREEAM Ecological Assessor

A site visit was conducted on the 11th October 2005.

3.3 Documentation Provided

Document Name/Drawing Number	Author
Site Layout/3593 PL02	Acanthus LW Architects
Planting Strategy/3593 PL03	Acanthus LW Architects
Basement Plan/3593 PL04	Acanthus LW Architects
Ground Level Plan/3593 PL05	Acanthus LW Architects
Level 1 Plan/3593 PL06	Acanthus LW Architects
Level 2 Plan/3593 PL07	Acanthus LW Architects
Level 3 Plan /3593 PL08	Acanthus LW Architects
Level 4 Plan/3593 P109	Acanthus LW Architects
Location Plan/3593 SK05	Acanthus LW Architects
Existing Site Photographs/3593	Acanthus LW Architects

4. CURRENT ECOLOGICAL VALUE

4.1 Site Location

The Hamilton Road development site is located on Hamilton Road, Twickenham, London at National Grid Reference: TQ 154 732.

4.2 Existing Site

The development is situated within an approximately 0.23 Ha site, set in a residential area of Twickenham, London, and is roughly square in shape. At the time of the survey, buildings and hard standing dominated the site.

Three buildings were situated on site, two are former power station buildings of are two and three storey Victorian red brick constructions, with sloping slate roofs.

The other building is a brick fronted concrete construction with wooden doors.

Houses bound the site to the west and south. The northern boundary of the site comprises a chain link fence approximately 1.5 m high and the eastern boundary is a wall approximately 2 m high and a single storey building.

4.3 Species

At the time of the site visit on 11th October 2005 the species listed in Table 4.1 below were recorded.

Common Name	Latin Name
Buddleia	<i>Buddleia sp</i>
Rosebay willowherb	<i>Chamerion angustifolium</i>
Common fleabane	<i>Conyza sumatrensis</i>
Herb Robert	<i>Geranium robertianum</i>
Hop	<i>Humulus lupulus</i>
Daisy	<i>Bellis perennis</i>
Oxford ragwort	<i>Senecio squalidus</i>
Virginia creeper	<i>Parthenocissus</i>
Dandelion	<i>Taraxacum officinale agg.</i>
Mugwort	<i>Artemisia vulgaris</i>
Common mallow	<i>Malus sylvatica</i>
Bramble	<i>Rubus fruticosus agg.</i>
Nettle	<i>Urtica dioica</i>
Cocksfoot	<i>Dactylis glomerata</i>
Spear thistle	<i>Cirsium vulgare</i>
Cleavers	<i>Galium aparine</i>
Apple mint	<i>Mentha villosa</i>
False oat grass	<i>Arrhetherum elatius</i>
Ivy leaved toadflax	<i>Cymbalaria muralis</i>
Meadow sweet	<i>Filipendula ulmaria</i>
Broad leaved dock	<i>Rumex obtusifolius</i>
Creeping thistle	<i>Cirsium arvense</i>
Sycamore	<i>Acer pseudoplatanus</i>
Ash	<i>Fraxinus excelsior</i>
Common sorrel	<i>Rumex acetosa</i>
Sea aster	<i>Aster tripolium</i>
Rose sp.	<i>Rosa sp.</i>
Wisteria	<i>Wisteria floribunda</i>

Table 4.1: Species identified on site during survey 11th October 2005

4.4 Habitats

At the time of the site visit the following habitats, listed in alphabetical order were recorded on site:

- Buildings
- Hard Standing
- Ephemeral short perennial/tall ruderal vegetation
- Scattered trees

4.4.1 Buildings

Three buildings were present on site at the time of the survey.

Building 1 is situated on the eastern boundary of the site; it is a brick fronted single storey concrete construction with wooden doors. A concrete lintel is present above the doors and below the roof, which appears to slope away from the site.

There are some gaps below the lintel.

Building 2 is situated in the centre of the site with the end facing Hamilton Road; it is approximately 12 metres long by 7 metres wide. The building is a 2 storey Victorian looking construction of red brick with a wooden and concrete soffit board below the slate apex roof. It also has wooden framed windows.

There are numerous holes in the brickwork, roofing tiles, windows and soffit board. Much of the building is swathed in a dense cover of hop, wisteria and rose, there is some evidence that nesting birds have utilised the building.

Building 3 is located adjacent to Building 2 on the western boundary of the site; it is a three storey ex factory, constructed of red brick with wooden framed windows in brick arches. A wooden door is located on the third storey facing onto the site; this has a number of holes in the brickwork below and a large gap under the door. The roof of the building is constructed of arched corrugated iron and roofing felt. Like Building 2, Building 3 is covered with wisteria and rose.

All buildings are in use, however Building 2 & 3's use is minimal and thus bat roost potential is thought likely and ecological value is high.

4.4.2 Hard standing

Concrete and gravel hard standing dominate the site, this is of low ecological value.

4.4.3 Ephemeral short perennial/tall ruderal vegetation

Patches of ephemeral short perennial/tall ruderal vegetation are located on the edge of the site and on the northern boundary; these are dominated by buddleia and fleabane with occasional clumps of nettle, cocksfoot, herb Robert, apple mint and bramble.

This habitat is of low ecological value.

4.4.3 Scattered trees

On the northern boundary of the site, is a 6 metre tall sycamore and a number of ash saplings, all are of limited ecological value, due to their young age.

5. CURRENT SITE ECOLOGY CREDITS

5.1 Ecological Credit No. Q1

1 credit is available for *minimising ecological damage*

If the following recommendations are adopted then **1 credit** can be awarded. The client must provide written confirmation that the recommendations will be followed, prior to the credits being awarded.

The buildings on site have been assessed as having the potential to provide roosting sites for bats. If these buildings are to be removed they must have a bat survey undertaken on them prior checked to demolition.

All bats are included in Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994, (or Northern Ireland, 1995) (the Habitats Regulations), which defines 'European protected species of animals'.

The following account represents a simplified summary of the legislation provided by Mitchell-Jones and Robertson (2004). *Taken together, the Act, Order and Regulations make it illegal to:*

- intentionally or deliberately kill, injure or capture (or take) bats;*
- deliberately disturb bats (whether in a roost or not);*
- recklessly disturb roosting bats or obstruct access to their roosts (England & Wales only; proposed for Scotland in 2004);*
- damage or destroy bat roosts;*
- possess or transport a bat or any part of a bat, unless acquired legally;*
- sell (or offer for sale) or exchange bats, or parts of bats.*

The word 'roost' is not used in the legislation, but is used here for simplicity. The actual wording in the legislation is 'any structure or place which any wild animal...uses for shelter or protection' (WCA) or 'breeding site or resting place' (Habitats Regulations). Because bats tend to re-use the same roost after periods of vacancy, legal opinion is that the roost is protected whether or not the bats are present at the time.

5.2 Ecological Credit No. Q3

There is one credit available for the *protection of existing features*.

There are no features present on site which require protection therefore this credit is awarded.

6. ECOLOGICAL ENHANCEMENT CREDIT NO. Q2

There is **1 credit** available for designing-in features for positive *enhancement of the site ecology*.

This credit will be awarded if the following criteria are undertaken. Section 6.1 is compulsory and we recommend 6 of the other 8 criteria be undertaken.

6.1 Good Horticultural Practice

- 6.1.1 It is important to implement good horticultural practice in any landscaping scheme, including the use of peat-free composts, mulches and soil conditioners.
- 6.1.2 The use of pesticides (herbicides, insecticides, fungicides and slug pellets *etc*) should be discouraged to prevent cumulative fatal effects to animals via the food chain, particularly invertebrates, birds and/or mammals. Any pesticides used should be non-residual.

From the information provided by Acanthus LW Architects the following recommendations are made:

6.2 Trees

Plant 11 trees which must be native/wildlife species (Appendix 1).

6.3 Shrubs/Ground cover planting

Plant a minimum of 128 m² shrubs; at least 75% of these should be species attractive to wildlife (Appendix 1).

6.4 Bulb Planting/Wild flowers

At least 42 m² of wild flowers are to be planted.

6.5 Hedge

A native/wildlife friendly hedge should be planted along the northern boundary of the site.

6.6 Bat Boxes

At least 4 bat boxes/bricks are to be erected/installed. The bat boxes can be attached to the buildings (Appendix 2).

6.6 Bird Boxes

At least 6 bird boxes are to be erected; these should be either open fronted or hole nesting boxes. See Appendix 2 for further details.

6.7 Bird Tables

The wildlife corridor must contain 1 bird table.

6.8 Ladybird/Lacewing Boxes

Two wooden ladybird/lacewing boxes should be provided for the wildlife corridor. Ladybirds and lacewings are valuable natural pest controllers, reducing the need for chemical pesticides. Detailed specifications for the Ladybird/Lacewing Boxes are provided in Appendix 3.

7. SPECIES CHANGE CREDITS R1-R4

Tables 7.1 and 7.2 provide the calculations to assess the species change post development based on current client information.

The species diversity per hectare prior to the commencement of development was calculated and the results are given in Table 7.1.

Habitat/Plot type	Area (ha)	Species Score/hectare	Site score
Buildings and hard standing	0.23	0	0
Total	0.23		0

Table 7.1 Pre-development ecological value

Mean species/hectares= 0

The post development species diversity was calculated from the information supplied by the client.

Habitat/Plot type	Area (ha)	Species Score/hectare	Site score
Fertile grassland	0.007	11.6	0.0812
Buildings	0.189	0	0
Hedge	0.012	13.8	0.1656
Wildlife planting	0.022	8(ACTUAL)	8 (ACTUAL)
Total	0.23	25.4	8.25

Table 7.2 Post development ecological change

Mean species/hectare= 35.87

There is a gain of 35.87 species/hectare. This would allow for **4 credits** to be awarded.

8. FOOTPRINT/FLOOR AREA RATIO CREDIT Q5

There are **2 credits** available for ensuring *land and material use is maximised for each dwelling on the development.*

- **1 credit** will be awarded where 60% of the dwellings on site have a floor area/footprint ratio greater than 2.5.
- **2 credits** will be awarded where 80% of the dwellings on site have a floor area/footprint ratio greater than 2.5.

The following credit ratings have been calculated from information supplied by Acanthus LW Architects:

Floor area	Footprint	Ratio
3592	936	3.8

Table 8.1: Floor area/Footprint ratios

This table indicates that the development has a floor area/footprint ratio greater than 2.5 and therefore **2 credits** are awarded.

9. SUMMARY OF ECOLOGICAL CREDITS TO BE AWARDED

9.1 Ecological Credit No. Q1

If the recommendation set out in Section 5.1 is followed then **1 credit** will be awarded. The client must provide written confirmation that the recommendations will be followed, prior to the credits being awarded.

9.2 Ecological Credit No. Q2

As Middlemarch Environmental Ltd is a member of the AWTC, **1 credit** will be awarded subject to the recommendations in Chapter 6 being observed. The client must provide written confirmation that the recommendations will be followed, prior to the credits being awarded.

9.3 Ecological Credit No. Q3

There are no features present on site that require protection and therefore **1 credit** is awarded.

9.4 Ecological Credits No. R1 to R4

This section has been calculated from information supplied by Acanthus LW Architects. If planting remains in its current form then **4 credits** can be awarded.

9.5 Ecological Credit No Q5

This section has been calculated from information supplied by Acanthus LW Architects. The whole development on site has a floor area/footprint ratio greater than 2.5 and therefore **2 credits** are awarded.

Appendix E

Flood Risk Assessment



Hamilton Lofts Ltd.

Proposed Development
At
37 Hamilton Road, Twickenham

FLOOD RISK ASSESSMENT

FINAL REPORT

August 2008

Our Ref MDR/HR/EA. Prepared by M D Rockel M A (Cantab) C Eng MICE

1 Background

This Flood Risk Assessment is part of the planning application for the redevelopment of 37 Hamilton Road. PPS 25 requires site-specific Flood Risk Assessments (FRAs) to be carried out by developers and submitted with planning applications in areas of flood risk identified by the Local Authorities Strategic Flood Risk Assessment for the Borough.

The objectives of the FRA are to establish the following:

- Whether the proposed development is likely to be affected by current or future flooding from any source.
- Whether the development will increase flood risk elsewhere within the floodplain.
- Whether the site is suitable for development against the criteria of the Sequential Test of Annex D of PPS 25.
- Whether the measures proposed to deal with remaining risks are appropriate.

This appraisal has been undertaken in accordance with the criteria set out for Flood Risk Assessments in the Planning Policy Statement 25 – Development and Flood Risk (PPS 25) and the current version of its associated Practice Guide published by the Department for Communities and Local Government.