
Ecology Report

Rear courtyard - Coopers Art Gallery
Church Street
Barnsley
S70 2AH

Revised May 2014

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1 Introduction

1.1 Preamble

This report is a revised version of the Ecology Report issued in November 2013. Since that report, the project design has been finalised and a more comprehensive assessment of the ecological impacts has been undertaken and ecological mitigation proposed. This report replaces the 2013 Ecology Report.

Oatlands Ecology was commissioned by GHM Partnership to carry out an ecology survey, with a focus on bats, of the rear courtyard of Coopers Art Gallery prior to the proposed development of the courtyard.

1.2 Survey Site Location

The property subject to this report is the Rear courtyard, Coopers Art Gallery, Barnsley, S70 2AH.

1.3 Description of Survey Site

See Section 5: Photographs

The survey site included the rear courtyard of Coopers Art Gallery and the exterior of the buildings facing the courtyard.

The courtyard is a small area of hard-standing (0.1ha) currently used as a car park by the gallery staff. It is bordered on the north and west sides by the existing gallery buildings, the east (rear) by Eastgate and the south by an adjacent walled garden - almost totally dominated by a large outbuilding. There are 6 mature London plane trees *Platanus x acerifolia* along this boundary within the courtyard – see Figure 1: Phase 1 Habitat Plan.

1.4 Outline of the Proposed Development

The proposal is for the extension of the existing art gallery, a new gallery and an external sculpture court / dining area – see the relevant architect drawings for full details.

2 Methodology

2.1 Details of the Surveyors Experience

The survey was carried out by Andrew Perry, B.Sc. (Hons), CEnv MCIEEM. He is a Chartered Environmentalist and a licensed bat ecologist¹ with over 10 year's professional experience of bat surveys for a variety of developments including large commercial developments, large road and pipeline schemes throughout the UK as well as smaller residential surveys.

Andrew is an active member of the West Yorkshire Bat Group and a Natural England Volunteer Bat Warden.

2.2 Desk Study

The following organisation / sources were contacted / used for existing ecological information within 1km of the study site.

- The Sheffield Biological Records Centre to request ecological records of protected / notable species and both statutory and non-statutory designated sites.
- The South Yorkshire Bat Group for records of bats.
- The MAGIC website to identify statutory designated sites, Ancient Woodland within 1km and pre-mapped UKBAP habitats within or adjacent to the site².

The survey site was also considered in terms of its potential value for bats by using publicly available aerial photographs and OS maps to look at the sites connectivity to potentially wider landscape, and potentially important foraging areas.

2.3 Ecological Site Survey

A field survey, following the Phase 1 Habitat Survey methodology³, was carried out on 12th November 2013 to identify broad habitat types and features of ecological interest (i.e. ponds / controlled species).

In conjunction with the survey, the potential for the survey site to support breeding birds and other legally protected faunal species and/or faunal species of nature conservation importance, e.g. UK and Local Biodiversity Action Plan (BAP) priority species was assessed.

¹ Class Survey Licence: WML CL18 (Bat Survey Level 2) Registration No. CLS0519

² <http://magic.defra.gov.uk/MagicMap.aspx>

³ JNCC. 2007. Handbook for Phase 1 Habitat Survey – Technique for environmental audit

2.4 Bats - Initial Scoping Survey

Buildings - External

Using high quality binoculars, all visible exterior surfaces of the buildings bordering the courtyard were actively searched for features with the potential to support bats - such as small gaps, holes etc. - and evidence of bats - such as droppings, urine staining and smoothing around potential access points.

Searched areas included:

- The surfaces of external walls and the ground at the foot of the walls.
- The eaves / soffits and exterior surfaces below the eaves / soffits.
- All windows including panes, sills and frames.
- All sheltered areas i.e. corners, behind pipes and areas of accumulated dust and webs.

Trees

Using high quality binoculars, the bases, upper trunks and major limbs of all trees within, and adjacent to, the survey site were searched for features with the potential to support bats - such as holes, cracks, splits, peeling bark and damaged limbs and evidence of bats themselves such as droppings, urine staining and smoothing around potential access points.

Assessment of Bat Potential

The potential of the buildings and trees within and adjacent to the survey site to support bats was then considered using the surveyors considerable experience and training and the criteria outlined in *Section 7.1: Appendix 1: Tables 7.1a - c*.

Trees were categorised into one of the following:

- Confirmed or Suspected Roost.
- Category 1a: – High bat roost potential: Large, well connected trees with multiple, highly suitable features capable of supporting large bat roosts.
- Category 1b: – Moderate bat roost potential: Large, well connected trees with less potential than Category 1a. Multiple suitable features capable of supporting small roosts or individual bats.
- Category 2a: Low bat roost potential: Trees with less potential than Category 1b. Few suitable features with a limited potential to support bats.
- Category 2b: No obvious potential. Trees with no obvious potential. However, due to size/structure/limited views tree may support unobserved features with a limited potential to support individual bats.
- Category 3: Negligible bat roost potential. Trees with no observed features suitable for roosting bats

3 Results and Evaluation

3.1 Desk Study

Statutory and Non Statutory Sites

- There are no statutory designated sites within 1km of Coopers Gallery.
- Old Mill Lane Natural Heritage Site is located 825m north east of Coopers Gallery and separated from it by many busy roads and the urban conurbation.

UKBAP Habitats

There is a small area of deciduous woodland approx. 1ha in size 130m North West of Coopers Gallery, separated from it by two busy roads (Church Street & Church Lane) and buildings.

Protected & Notable Species

Table 3.1a: Bat records within 1km of the survey site

Roost Records				
Record Type	Species	Location	Distance from site	Record date
Foraging	<i>Pipistrellus sp.</i>	Regent Street, Barnsley	150m south	11/08/1992
Possible roost	<i>Pipistrellus pipistrellus</i>	Exchange County Way, Barnsley	200m north	01/09/2000
Foraging	<i>Pipistrellus sp.</i>	County Way, Barnsley	250m north east	07/09/1992
Foraging	<i>Pipistrellus pipistrellus</i>	Churchfield, Barnsley	250m west	29/07/2002
Foraging	<i>Pipistrellus pipistrellus</i>	Victoria Ave, Barnsley	250m west	12/06/1991
Foraging	<i>Pipistrellus sp.</i>	Market Hill, Barnsley	370m south	10/08/1992
Possible roost	<i>Pipistrellus sp.</i>	Sackville St, Barnsley	375m west	30/06/2003
Unknown	<i>Unknown</i>	Western St, Barnsley	400m north west	17/01/1998
Possible roost	<i>Pipistrellus sp.</i>	Western St, Barnsley	400m north west	22/06/1991
Foraging.	<i>Pipistrellus sp.</i>	Kendary St, Barnsley	420m south	08/06/2006

Roost Records				
Record Type	Species	Location	Distance from site	Record date
Grounded bat	<i>Unknown</i>	Hopwood St, Barnsley	450m north west	08/12/2003
Maternity Roost	<i>Pipistrellus sp.</i>	Western Street, Barnsley	460m west	11/06/1991
Maternity Roost	<i>Pipistrellus sp.</i>	Western Street, Barnsley	470m west	07/08/1989
Foraging	<i>Unknown</i>	Huddersfield Rd, Barnsley	500m north	14/06/1991
Possible roost	<i>Not identified</i>	Kensington Road	715m north west	06/07/1992
Roost (excluded)	<i>Pipistrellus sp.</i>	Market St, Oakwell	850m south west	17/08/2005
Possible roost	<i>Not identified</i>	Southwell St, Barnsley	850m west	13/10/2000
Maternity roost	<i>Nyctalus leisleri</i>	Bond Rd, Barnsley	865m north west	12/07/2005
Maternity Roost	<i>Myotis daubentoni</i>	Old Mill Lane, Barnsley	885m north east	26/08/2013
Foraging	<i>Pipistrellus pygmaeus</i> <i>Nyctalus noctula</i> <i>Myotis daubentoni</i>	The Fleets (large waterbody)	895m north east	Between 1992 - 2011
Foraging	<i>Myotis daubentoni</i>	River Dearne	960m east	20/08/2011
Roost	<i>Pipistrellus sp.</i>	Welbeck Street, Barnsley	950m west	21/11/1995

Table 3.1b: Other notable species within 1km of the survey site

Record Type	Species	Designation	Location	Record date
Field record	House sparrow <i>Passer domesticus</i>	UKBAP Priority Species	46 records scattered throughout search area	Between 27/01/2008 – 19/02/2013
Field record	Black bird <i>Turdus merula</i>	Red / Amber List Species	55 records scattered throughout search area	Between 02/01/2005 – 25/01/2009
Field record	Starling <i>Sturnus vulgaris</i>	Red / Amber List Species	31 records scattered throughout search area	Between 27/01/2008 – 22/03/2012
Field record	Goldfinch <i>Carduelis carduelis</i>	Red / Amber List Species	14 records scattered throughout search area. Nearest record 45m west of the site.	Between 27/12/1990 – 19/02/2013
Field record	Dunnock (Hedge accentor) <i>Prunella modularis</i>	Red / Amber List Species	19 records scattered throughout search area. Nearest 625m north	25/09/2009
Field record	Goldcrest <i>Regulus regulus</i>	Red / Amber List Species	2 records within 1km – 875m west & 640m north of the site	25/01/2009

3.2 Ecological Site Survey

See Figure 1: Phase 1 Habitat Plan & Section 5: Photographs

The survey site is a very small enclosed area (0.1ha) of hard standing which is used as a car park by the gallery staff.

There is a belt of six mature London plane along the southern boundary and a small group of five mature holly trees *Ilex aquifolium* and two mature London plane trees at the Eastgate entrance of the courtyard.

A small overgrown and neglected flower bed is located close to Building dominated by competitive ruderal species such as cocks foot *Dactylis glomerata*, dandelion *Taraxicum officinale*, broadleaf plantain *Plantago major* and creeping buttercup *Ranunculus repens*.

3.3 Fauna

Birds

No disused nests or evidence of historic nesting was observed in the trees or buildings during the survey. However, a variety of common birds were observed, or heard, within or adjacent to the survey site and it is likely that other species are present at different times of year.

Species observed include, blackbird *Turdus merula*, robin *Erithacus rubecula*, wood pigeon *Columba palumbus*.

Bats

Evidence of Bats

No evidence of bats or any other indications of either current or historic bat use was observed during the survey.

Buildings - Assessment of Bat Potential

All buildings facing onto the courtyard appeared to be in good condition with all external pointing intact with no gaps or missing masonry.

No lifted or broken/missing roof tiles were observed and the visible ridge tiles and lead flashing was tight with no suitable bat access.

The eaves / soffits of Building 1 were easily inspected from the ground and were clean, in good condition with no suitable gaps observed.

No features suitable for bats were observed during the survey and the survey site is considered to have a very low - negligible potential to support bats.

Trees - Assessment of Bat Potential

All trees were in in good condition (in relation to features suitable for bats) with no large, veteran trees present. None of the trees supported holes, cracks, crevices, large areas of lifted bark or coverings of ivy.

Using the criteria outlined in *Section 7.2: Appendix 1* below all trees were categorised as:

- Category 3: Negligible Bat Roost Potential. Trees with no observed features suitable for roosting bats.

4 Impact Assessment and Recommendations

4.1 Impact Assessment

The site was considered to have a very low ecological conservation value.

The survey site is located in a densely populated part of central Barnsley and is ecologically and geographically isolated from any designated site, all other areas of semi – natural or artificial habitats and from existing records of protected / notable species described above in *Section 3.1: Desk Study Results*.

To summarise:

- Designated sites:
Old Mill Lane Natural Heritage Site is located 825m north east of the survey site. It is ecologically isolated from the survey site with no obvious connection (i.e. water courses, tree belts or other connecting habitats).
- Bat Records:
The nearest record of a bat roost (possible roost) is 200m north of the survey site (recorded in 2000). There are no obvious commuting corridors or habitat linkages (i.e. tree belts or water courses) between any bat roost records and the survey site.
- Notable Bird Records
 - The nearest gold finch record is 345m west of the survey site.
 - The nearest gold crest record is 640m west of the survey site.

Both are species associated with woodland / arable habitats, although do frequent urban gardens and parks. However, the record locations and the survey site are separated by the dense urban conurbation of central Barnsley, including several very busy roads with no obvious commuting corridors or habitat linkages between them.

Although there are no records of house sparrow, blackbird, starling and dunnock (all widespread, somewhat common but declining species) within or adjacent to the survey site. However, records are numerous and spread throughout the search area (1km radius) and it considered likely these species will frequent the survey site - indeed a blackbird was observed within the site during the field survey.

The proposed development will results in the felling of 4 mature London plane trees,- due to the trench foundations along the wall line cutting through established tree root zones - resulting in a negative ecological impact of the site.

However given the survey sites small size, paucity of natural features within and adjacent to it and the ecologically isolated and intensely urban location the survey site is considered to have a very low ecological value and the ecological impacts of the proposed development are considered to be minor and restricted to the survey site itself.

4.2 Recommendations

The National Planning Policy Framework (NPPF) endorses the principle of minimising impacts on biodiversity and providing net gains where possible⁴.

In order to satisfy the NPPF the following compensation / mitigation measures are recommended.

- Retention and protection (if necessary) of Trees 7 – 13 - see *Figure 1: Phase 1 Habitat Plan*.

An arboriculture Method Statement describing measures to protect the root zones of these trees to be included within the Construction Environmental Management Plan (CEMP).

- Creation of a “Living / Green Wall” on the southern wall of the new gallery facing into the courtyard – see *Figure 5: Location of green / living wall & integrated bat provision - new gallery*.

The living / green wall should be installed by a specialist company as soon as practicable at the conclusion of the construction phase.

The living / green wall should be composed of a variety of native and, if practicable, locally sourced species (e.g. ivy *Hedera* travellers joy *Clematis*, honeysuckle *Lonicera* etc.) with specific advice on the most suitable species and cultivars for the location and maintenance of the Living Wall provided by the specialist installation company.

- Creation of a second living /green wall on the north side of the southern boundary wall - facing into the courtyard. This living / green wall should extend for the full length of the southern boundary wall and be designed as permanent and stable habitat feature.

The wall should be installed by a specialist company as soon as practicable at the conclusion of the construction phase.

It should be composed of a variety of native and, if practicable, locally sourced climbing species with specific advice on the most suitable species and cultivars for the location and maintenance of it provided by the specialist installation company.

⁴ National Planning Policy Framework. March 1012: Section 7: Conserving and Enhancing the Natural Environment. Available from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

- A minimum of 2 x bird bricks should be installed within the southern boundary wall (behind the living / green wall). The bird bricks should be located ~30cm from the top of the wall and spaced at ~10m apart – see *Figure 2: Example Bird Boxes for fitting into walls*.
- A minimum of 2 x bird boxes should be fitted into Trees 7 - 13 to the east of the courtyard. These should be located in different trees and be at least at least 4m from the ground – see *Figure 3: Example Bird Boxes for fitting into trees*.
- A minimum of two commercially produced integrated bat roosts should be installed within the cavity walls of the new gallery on the southern elevation — see *Figure 5: Location of green / living wall & integrated bat provision - new gallery*.

4.3 Other Considerations

Breeding Birds

Although no nests, or other evidence that birds breed within the survey site, was observed during the survey, the trees do have the potential to support breeding birds in the future.

All breeding birds are protected under the Wildlife and Countryside Act 1981 and disturbance to any species of breeding birds is an offence - see *Section 7: Appendix 2 for full legislative context*.

Therefore, in order to ensure an offence is not committed works impacting the trees within the survey site should be conducted outside the breeding season (the breeding season is widely considered to be between the 1st March & 30th June). If this is not practicable the developer should ensure no active nests are present before works commence.

5 Photographs

Photo 1: Building 1 – See Fig 1



Photo 2: Building 2 – See Fig 1



Photo 3: Building 3 – See Fig 1



Photo 4: Building 4 – See Fig 1



Photo 5: Building 5 – See Fig 1



Photo 6: Building 6 – See Fig 1



Photo 7: From Eastgate towards the gallery



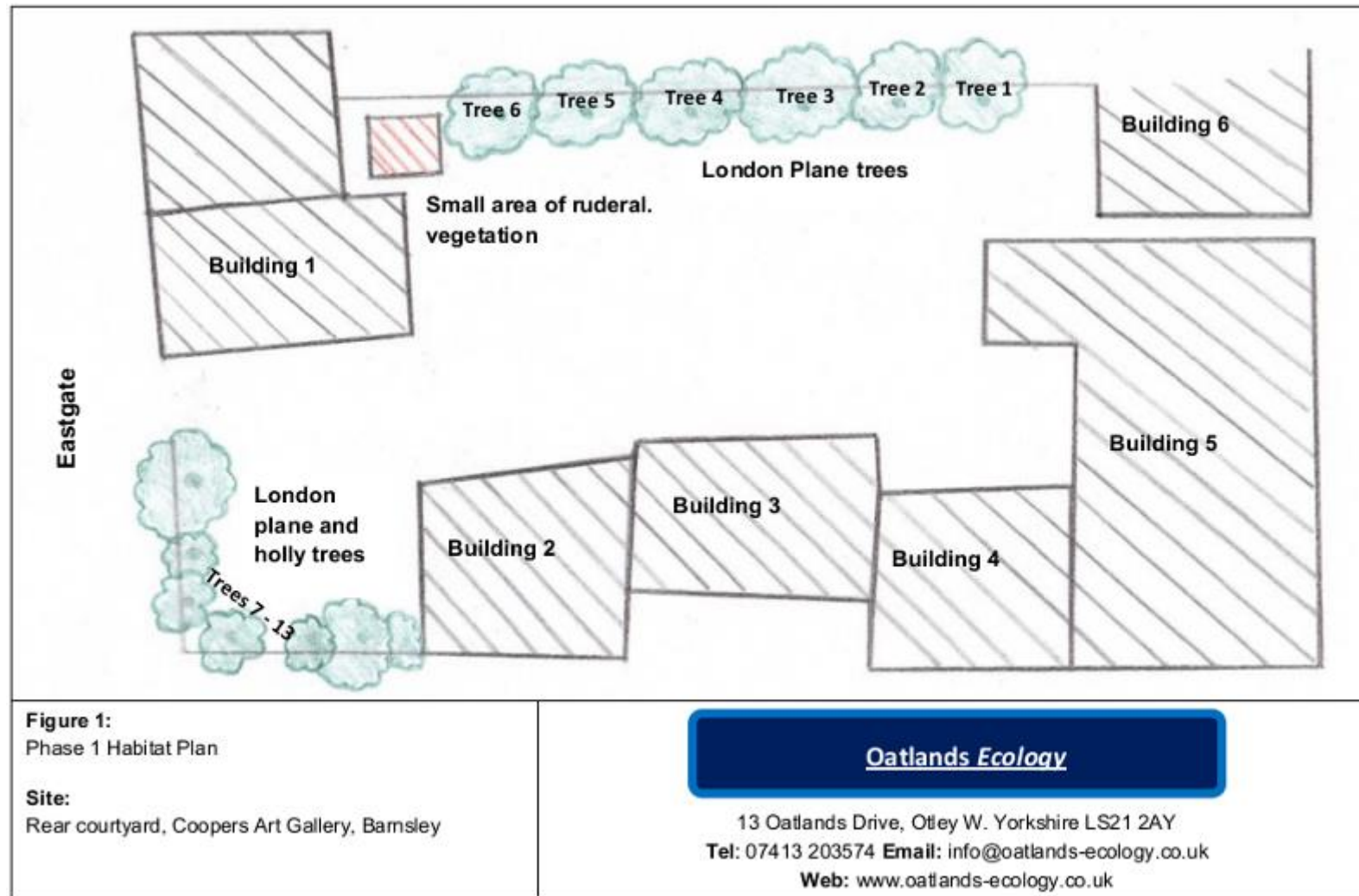
Photo 8: From the gallery towards Eastgate



Photo 9: Holly trees at Eastgate entrance



6 Figures







GR2 Bird and Bat Box



Traditional General Purpose Bird Box

Figure 3:

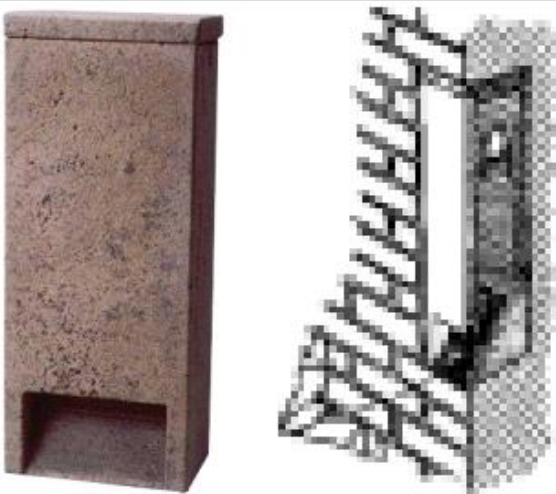
Examples of Nest boxes fitting into trees

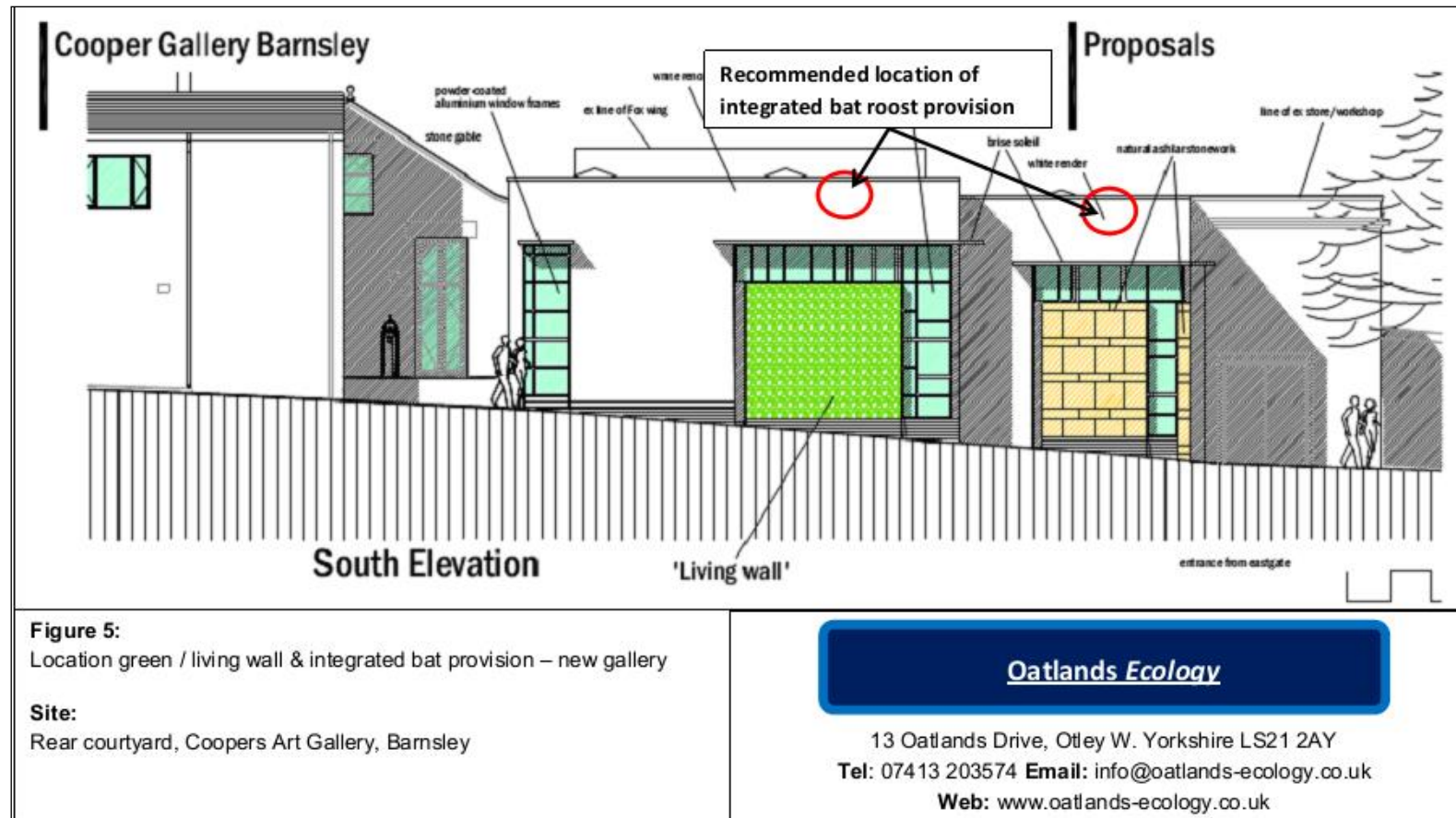
Site:

Rear courtyard, Coopers Art Gallery, Barnsley
Pictures taken from
NHBS <http://www.nhbs.com>

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Cavity Bat Roost http://www.wildcareshop.com/cavity-bat-roost.html	Schwegler 1 FR Bat Tube http://www.nhbs.com/1fr_schwegler_bat_tube_te_fno_161276.html
Figure 4: Examples of Integrated Bat Boxes Site: Rear courtyard, Coopers Art Gallery, Barnsley	<u>Oatlands Ecology</u> 13 Oatlands Drive, Otley W. Yorkshire LS21 2AY Tel: 07413 203574, Email: info@oatlands-ecology.co.uk Web: www.oatlands-ecology.co.uk



7 Appendices

7.1 Appendix 1: Factors Affecting the Probable Use of a Site by Bats

Table 7.1a: Assessing the Probability of a Building being used by Bats.

Bat Potential	Locational Features
Higher bat roost potential	• Disused or largely undisturbed • Hanging tiles or wood cladding, esp. on south facing walls • Rural setting • Close to water or woodland • Pre 20th century / early 20th century construction • Traditional stone or timber construction • Large complex buildings or structures • Suitable foraging areas adjacent or close by • Adjacent commuting corridors / linear features to foraging areas • Gaps between masonry blocks and bricks • Holes in the walls caused by missing bricks and mortar. • Spaces / gaps under the eaves or in soffits • Gaps in the roof tiles and gable ends
Negligible bat roost potential	• Active industrial setting • Urban setting with few feeding areas • Over 400m from woodland or water • Modern construction of steel and sheet materials • Modern well maintained buildings with few potential access points • Shaded roof (if no other heat source (i.e. boiler) present) • No adjacent vegetation • No suitable foraging areas adjacent or close by • No adjacent commuting corridors / linear features to foraging areas • No / few gaps between masonry • No holes in walls / roof/ soffits/eaves

Adapted from Table 5.1- Bat Mitigation Guidelines JNCC. 2004 & Table 8.2 - Bat Surveys- Good Practice Guidelines BCT. 2012.

Table 7.1b: Factors affecting the probable value of development sites for bats.

Value for bats	Features within or adjacent to the site
Lower ↑ ↓ Higher	• No features likely to be used by bats (roosting, foraging or commuting) • No suitable foraging habitat • Small number of potential roost sites in buildings or trees (i.e. probably not maternity roost or hibernacula). • Isolated foraging habitat not connected to the wider landscape by linear features such as water courses, tree lines etc. • Site is close to known bat roosts. • Bats recorded or observed using an area for foraging or commuting close to a potential roost. • Site is connected with the wider landscape by strong linear features that could be used by commuting bats e.g. river valleys, streams or hedgerows. • High quality habitat for foraging bats e.g. broad leaved woodland, tree lines watercourses and grazed parkland • Buildings or trees with many potential roost sites • Presence of structures with particular significance for roosting bats (e.g. mines, caves, tunnels, ice houses & cellars).
Confirmed Presence	• Evidence indicates that a building, tree or other structure is used by bats e.g. • Bats seen roosting or observed flying from a roost or freely in the habitat • Droppings, carcasses feeding remains etc. found • Bats heard “chattering” inside the roost on a warm day or at dusk.

Adapted from Table 4.2 - Bat Surveys- Good Practice Guidelines (BCT. 2012)

Table 7.1c: Assessing the potential of trees to support bats

Bat Potential	Features of trees
High bat roost potential	• Veteran trees • Large cavities and crevices • Major dead limbs • Heavily ridged and lifting bark • Trunks covered by ivy on mature trees • Very close to hedgerows, woodland or major water courses
	• Mature trees • Small / superficial cavities and crevices • Minor dead limbs but no obvious cavities / lifting bark / splits • Lifting bark on main trunk • Trunks covered by ivy on semi-mature trees / clean trunks. • Some distance from hedgerows, woodland or major water courses
Negligible bat roost potential	• Young trees • No visible cavities or crevices. • No major dead limbs • No lifting bark • No ivy on the trunk • Tree isolated, not close to hedgerows, woodland or water courses

Adapted from Table 5.1 Bat Mitigation Guidelines. (JNCC 2004)

Using the surveyors significant experience and the criteria in Table 7.1c above, all trees within or adjacent to the survey site were categorised according to their potential to support bat⁵

- Confirmed or Suspected Roost.
- Category 1a: – High bat roost potential: Large, well connected trees with multiple, highly suitable features capable of supporting large bat roosts.
- Category 1b: – Moderate bat roost potential: Large, well connected trees with less potential than Category 1a. Multiple suitable features capable of supporting small roosts or individual bats.
- Category 2a: Low bat roost potential: Trees with less potential than Category 1b. Few suitable features with a limited potential to support bats.
- Category 2b: No obvious potential. Trees with no obvious potential. However, due to size/structure/limited views tree may support unobserved features with a limited potential to support individual bats.
- Category 3: Negligible bat roost potential. Trees with no observed features suitable for roosting bats.

⁵ Categories and descriptions adapted from Bat Conservation Trust (BCT). 2012. Bat Surveys: Good Practice Guidelines. BCT, London. Box 8.2 p65.

7.2 Appendix 2: Relevant Legislation

Breeding Birds

All birds, their nests and eggs are protected by law. Under the current legislation it is an offence, with certain exceptions to:

- Intentionally kill, injure or take any wild bird.
- Intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built.
- Intentionally take or destroy the egg of any wild bird.
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.