BAT SURVEY REPORT

St Johns Nursery, Clacton-on-Sea, Essex, CO16 8BP

E3 Design

May 2018

Total Ecology Ltd
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Quality Control

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Appendices

1. EXECUTIVE SUMMARY

1.1.1. An initial Bat Risk Assessment survey was carried out by Total Ecology in March 2015 (Total Ecology, 2015) and that report should be read in conjunction with this one. Although no evidence of roosting bats was found, based upon the building features and quality of the habitat in the surrounding area, several buildings and three trees were assessed as having low potential to contain roosting bats. Therefore a single nocturnal survey was undertaken which is the subject of this report.

1.1.2. A single nocturnal survey was carried out on 8th of May with 2 surveys carried out on 9th of May 2018, both a dawn and a dusk, undertaken on separate parts of the site. The dates and surveyor details relating to these nocturnal surveys are given in Table 1. Weather conditions during the surveys were optimal with no rain and appropriate ambient air temperatures and timings.

1.1.3. A total of 32 bats were recorded during the nocturnal surveys. Most bats were recorded as common pipistrelle *Pipistrellus pipistrellus*, with soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula* and unidentified species of myotis *Myotis sp.* also recorded. Activity was recorded as both foraging and commuting across the site. No bats were observed utilising any buildings surveyed or the oak trees *Quercus sp.* to the north east of site. A bat was observed roosting in the ash tree *Fraxinus excelsior* to the south east of site, outside of the boundary. This bat was not identified due to it not echolocating on emergence.

1.1.4. As no bat roosts have been found within the site, the proposed works should not contravene legislation relating to bats and their roosts.

1.1.5. Site enhancement measures are recommended for bats and birds including temporary bat boxes on trees during site clearance and construction and long-term mitigation of bat and bird boxes to be built into at least 1 in 5 of the new buildings on site.

2.0 INTRODUCTION

2.1 Background

2.1.1 Total Ecology was commissioned by Mr Dave Caruso on behalf of E3 Design in February 2018 to undertake a desk based study and a Phase 1 habitat and bat risk assessment survey of St Johns Nursery, Clacton-on-Sea, Essex, CO16 8BP. The approximate National Grid Reference for the centre of the site is **TM 14514 16089** (Figure 1, Appendix A). The survey is required prior to proposed redevelopment of the site for mixed business and residential purposes.

2.1.2 An initial Risk Assessment survey was carried out by Total Ecology in March 2015 (Total Ecology, 2015) and that report should be read in conjunction with this one. Although no evidence of roosting bats was found, based upon the building features and quality of the habitat in the surrounding area, several buildings and three trees were assessed as having low potential to contain roosting bats. Therefore, a single nocturnal survey was undertaken which is the subject of this report.

2.2 Site Description

2.2.1 The site is located within Clacton-on-Sea, a town within the Tendring peninsula, Essex. The site is immediately bordered by arable fields to the north and west, residential properties to the south and Earl's Hall Drive road to the east, with further arable land as well as scrub and woodland habitat. Further from site, arable fields continue to both the north and south. To the east, are the residential buildings of Clacton-on-Sea, leading to the North Sea, approximately 5.5km from site. At its closest point, the sea is approximately 3km south-east of site. West of site is dominated by both residential dwellings and arable land. An area of woodland is approximately 2.4km west of site. Flag Creek runs inland approximately 4km east of site.

2.3 Survey Objectives

2.3.1 Surveys were undertaken to:

- establish the presence / absence of bat roosts in the buildings and trees
- assess the level of usage of confirmed roost sites and the status of the roosts,
- identify access points utilised by bats,
- determine an appropriate mitigation strategy to minimise impacts on roosting bats arising from the proposed works.

3.0 METHODOLOGY

3.1 Nocturnal Surveys

3.1.1 A single nocturnal survey were conducted by surveyors equipped with Batbox Duet, Anabat SD2, EM3 or EM Touch bat detectors, positioned to give a clear view of both sides of the buildings being surveyed. The emergence survey commenced 15 minutes before sunset and continued until all bats were considered to have emerged in accordance with the Bat Conservation Trust Guidelines (BCT, 2016). Dawn surveys commenced 90 minutes before sunrise and continued until 15 minutes after sunrise (BCT, 2016).

3.1.2 **Table 1** Survey date and personnel

Date/ Timings/ Weather	**Surveyor 1**	**Licence No**	**Additional Surveyors**
08/05/2017 20.16-22.01 Light Breeze 20°C	Jon Cranfield	**N/A**	George Boniface Ray Cranfield Steve Cranfield
09/05/2017 3:45 – 5:30 Still 13°C	Jon Cranfield	**N/A**	George Boniface Ray Cranfield
09/05/2017 20:17 – 22:02 Moderate breeze 17°C	Laura Thompson	**2018-35006-CLS-CLS**	Jon Devlin

3.1.3 During surveys the main objective is to record any bats entering or leaving the surveyed bridge and the location of any entry/exit points. In addition, surveyors record any other bat activity detectable from their survey position. Where possible the time of recording, species, number of bats, type of activity, and flight path of

observed bats is recorded. Bats entering or leaving a building are considered evidence of roost presence within the property.

3.2 Surveyor Experience

3.2.1 Laura Thompson (Licence no. 2018-35006-CLS-CLS)

Laura has been completing a range of commercial bat surveys since 2011, including static dusk emergence surveys and dawn re-entry surveys, swarming survey and transects. She has completed bat risk assessments and nocturnal surveys on a wide range of developments, from individual properties, schools, heritage buildings and churches to proposed wind turbine developments. She has also completed supervision work on known roost sites.

3.2.2 Jon Devlin

Jon began surveying bats in the summer of 2015 whilst volunteering in Transylvania, Romania with Operation Wallacea. In September 2016 he began to undertake professional survey work with Econorth Ltd upon a range of projects including development sites and monitoring programmes.

3.2.3 Jon Cranfield

Jon has been carrying out commercial bat surveys since 2013, including dusk emergence surveys and dawn re-entry surveys. He has completed surveys on a wide range of residential and commercial sites in this time including leisure centre buildings, private houses and along natural features such as hedgerows. He has devised the use of thermal imaging, with Steve Cranfield, to collect an enhanced view of bat activity on surveys in 2017 and 2018.

3.2.4 George Boniface

George is in his second season of carrying out dusk and dawn surveys and has assisted with surveys on a wide range of development sites, voluntary surveys and on his university course when studying for his masters. He is an associate ecologist for Herpetologic Ltd leading mainly on amphibian, reptile and mammal surveys, including bats, in Hertfordshire, Essex and Leicestershire.

3.2.5 Ray Cranfield

Ray has been an ecologist for 18 years as an associate for Herpetologic Ltd with extensive experience with amphibians, reptiles, birds and mammals (including bats). He is a member of the Essex Field Club and has assisted mammal and bat ecologists of a variety of small to large projects including. Ray has five years'

experience of carrying out dusk and dawn surveys on natural and artificial features (including trees, tree lines, hedges, buildings and other suitable structures) for commercial/development related projects.

3.2.6 **Steve Cranfield**

Steve has been carrying out bat surveys for the last two years and has experience of carrying out dusk and dawn surveys on a wide range of development sites. Steve also has ten years' experience as a thermal camera operator and has been devising innovative ways of recording bat activity after dark using tripod, mast and hand mounted thermal cameras.

4.0 SURVEY RESULTS

4.1 Nocturnal Surveys

4.1.1 A single nocturnal survey was carried out on 8th of May with 2 surveys carried out on 9th of May 2018, both a dawn and a dusk, undertaken on separate parts of the site. The dates and surveyor details relating to these nocturnal surveys are given in Table 1. Weather conditions during the surveys were optimal with no rain and appropriate ambient air temperatures and timings.

4.1.2 A total of 32 bats were recorded during the nocturnal surveys. Most bats were recorded as common pipistrelle *Pipistrellus pipistrellus*, with soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula* and unidentified species of myotis *Myotis sp.* also recorded. Activity was recorded as both foraging and commuting across the site. No bats were observed utilising any buildings surveyed or the oak trees *Quercus sp.* to the north east of site. A bat was observed roosting in the ash tree *Fraxinus excelsior* outside of the boundary on the south east of site. This bat was not identified due to it not echolocating on emergence.

4.1.3 *8th May 2018, Dusk Emergence Survey:* This survey was completed on buildings I and J. Thirteen bats were observed on this survey, all of them pipistrelles *Pipistrellus sp.* Bats were observed commuting and foraging around buildings I and J from 21.01 until the survey end, however no bats were observed emerging from the buildings.

4.1.4 *9th May 2017, Dawn Activity Survey:* The dawn survey was completed on building reference E. Throughout the survey only three bats were recorded, two pipistrelles and a noctule. All bats were recorded commuting, although only a pipistrelle was observed at 4:28, travelling from west to east to the south of building reference E. No bats were observed utilising the building.

4.1.5 *9th May 2018, Dusk Emergence Survey:* There were three trees on site deemed to hold bat roosting potential and these were surveyed on this nocturnal. To the north of site, were two oak trees. Activity was recorded in the form of bats commuting past and foraging around this corner of the site, however no bats were seen to emerge from either tree. Approximately 3 individuals were noted in the form of 11 passes. Species noted included both common pipistrelle and soprano

pipistrelle. Bats were observed almost constantly from 21.04 until 21.59. To the south, an ash tree was surveyed. A bat was observed emerging from this tree at 20.54, 22 minutes after sunset. This bat was not identified as it did not echolocate. Both common pipistrelles and unidentified species of myotis bats were observed commuting across site; pipistrelles were also observed foraging west of the tree line, on site. Thirteen bats were recorded in total.

5.0 ASSESSMENT

5.1 Constraints to Survey

5.1.1 The bat risk assessment survey was conducted in March when bat species are less active, and a number of bat species roost deep in crevices where visible evidence of their presence is less likely to be encountered. In addition, bat species utilise a number of roosts throughout the year and a lack of evidence should not therefore be considered proof of lack of bat roost, as roosts remain protected throughout the year, including periods during which they are not occupied.

5.2 Potential Impacts of Development

5.2.1 As no roosting bats were found to be utilising any of the buildings or trees on site, it is deemed that the proposed works will not result in the disturbance, modification or loss of any bat roosts and therefore will not impact upon bat populations. The bat roost that was discovered in an offsite ash tree will not be impacted by the development if appropriate lighting is used.

5.3 Legislation

5.3.1 All bat species and their roosts in Britain are protected under the Wildlife and Countryside Act 1981 (as amended) (WCA) through their inclusion on Schedule 5. The implementation of the Countryside and Rights of Way Act 2000 (CRoW 2000) has amended the WCA 1981 to include 'reckless' damage to, or destruction of a roost, and disturbance of bats whilst in a roost.

5.3.2 Bats are also included on Annex IV of Council Directive 92/43/EEC of 21st May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (known as the Habitats Directive). As a result of the United Kingdom ratifying this directive, all British bats are protected under The Conservation of Habitats and Species Regulations 2010. Combined, these make it an offence to kill, injure, capture or disturb bats or obstruct access to, damage or destroy roosts.

5.3.3 Paragraph 41(1) (b) of the Regulations states: A person who deliberately disturbs wild animals of any such (European Protected) species, is guilty of an offence. For the purposes of this paragraph, the disturbance of animals includes in particular any disturbance which is likely: -

a. to impair their ability-
   i. To survive, to breed or reproduce, or to rear or nurture their young, or

ii. In the case of animals of a hibernating or migratory species, to hibernate or migrate; or

b. to affect significantly the local distribution or abundance of the species to which they belong.

5.3.4 Under the law, a bat roost is any structure or place used for shelter or protection e.g. a building, bridge or tree. Bats use many roost sites and feeding areas throughout the year and they tend to re-use the same roosts for generations.

5.3.5 All British birds, their nest and eggs are protected in law under Part 1 of the Wildlife and Countryside Act 1981 (WCA 1981) (as amended). It is an offence (with exception to species listed in Schedule 2) to deliberately take, kill or injure any wild bird or to take, damage, or destroy any nest or egg of any wild bird. As a Schedule 1 listed bird, barn owls receive further protection (WCA 1981). It is an offence to disturb a barn owl, unless under licence, 'while it is building a nest or is in, on or near a nest that is containing eggs or young' or to 'disturb dependent young of such a bird'.

5.4 National Planning Policy Framework

5.4.1 The NPPF outlines government planning policies and how they should be applied within local authorities. The framework places an emphasis on sustainable development, encouraging the re-use of land that has previously been developed over using land that has a higher environmental value and by minimising impacts on biodiversity. The NPPF states that developments should aim to conserve or enhance biodiversity and encourages opportunities to incorporate biodiversity in and around developments.

5.5 UK and Local Biodiversity Action Plans (BAP)

5.5.1 Noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bats *Plecotus auritus* are listed as UK priority species (UKBAP, 2007). Actions for conservation effort have been identified for each of these species, which include consideration of the effects of land use, the promotion of habitat creation, enhancement and improvement and the protection of roosts via the implementation of legislation and policy.

5.5.2 Several species of bat are listed as UK priority species (UKBAP, 2007). All bat species are therefore included under the NERC Act.

5.6 Legal Implications of Proposed Development

As no bat roosts have been found within the surveyed buildings or trees within the site boundary, the proposed works should not contravene legislation relating to bats and their roosts.

6.0 RECOMMENDATIONS AND MITIGATION

6.1 Survey Conclusions

6.1.1 The original risk assessment showed the identified buildings and trees as low risk due to their features and the quality of the surrounding habitat. This led to the recommendation of one nocturnal survey. The nocturnal survey requirement is determined through reference to the recommended bat survey guidance (BCT, 2016) and based upon the assessed potential of the structure to contain roosting bats. Following this guidance a single nocturnal survey was undertaken between the 8th May 2018 and the 9th May 2018. The dates and surveyor details are given in Table 1. Weather conditions during the surveys were optimal with no rain, and appropriate ambient air temperatures and timing.

6.1.2 No bats were observed utilising the buildings or trees on site during any of the 2018 surveys and therefore it is concluded that bats are unlikely to roost on site.

6.2 Enhancement Measures

6.2.1 The National Planning Policy Framework (NPPF) outlines government planning policies and how they should be applied within local authorities. The framework places an emphasis on sustainable development, encouraging the re-use of land that has previously been developed over using land that has a higher environmental value and by minimising impacts on biodiversity. The NPPF states that developments should aim to conserve or enhance biodiversity and encourages opportunities to incorporate biodiversity in and around developments.

6.2.2 Taking the requirements of the NPPF into account opportunities should be sought where possible for nature conservation enhancement at this site. Prior to works commencing on site, it is recommended that bat roosting features in the form of 6 Schwegler 2F bat boxes are placed on suitable trees on the boundaries of the site. For maximum bat potential, the boxes should be at least 4-6m off the ground on the south or west elevations of the tree. This will provide suitable roosting opportunities for bats whilst the works take place and in the future. Suitable bat boxes can be brought from a number of retailers and further advice, if necessary, on construction details and siting arrangements can be provided by Total Ecology.

6.2.3 A suitable lighting scheme will be included in the development design as per the following:

- Darkness hours through switching off lighting when not required (i.e. 22:30 to 05:30 Variable Lighting Scheme)
- Use of PIR timers activated by large objects (not bats)
- Cowling of light sources/ directional lighting away from the woodland
- Use of Narrow Spectrum Lights with no UV content, Low pressure sodium and warm white LED.

6.2.4 Bat roosting features should be installed on a minimum of one in five of the new buildings on site. The bat roosting boxes should be incorporated into the design of the buildings. The roosting features should be situated high on the building (at least 3-5 metres), on a south or south-western elevation and away from direct, artificial lighting. Positioning near the eaves or gable apex of the property would be preferable. Several types of integrated or enclosed bat roosting features are available to match the design of the building. Three separate possible designs are suggested below:

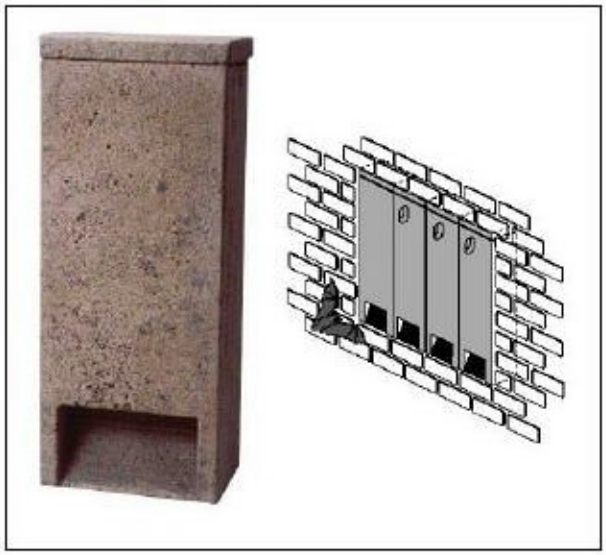
Ibstock Enclosed Bat Box 'C'

- **Product Specification**

  The Enclosed Bat Box 'C' from Ibstock is designed for the pipistrelle bat. It is ideal for new builds as it can be integrated directly into the brickwork to produce a discrete but attractive home for bats. The inside of the box is designed to create several roosting zones which are ideal for crevice dwelling bats such as the pipistrelle. The bottom entrance means that no maintenance is required as dropping simply fall out the bottom.

- Dimensions: Small Box - 215 x 215mm, Large Box - 215 x 290mm.

2FR Schwegler Bat Tube



Product Specification

The 2FR Bat Tube is suitable for bat species which inhabit buildings and is designed to be built into the masonry of an external wall. It can either be built flush with the wall or beneath a rendered surface. The tube is constructed from woodcrete and has an integrated wooden panel onto which bats can easily cling. The 2FR has transverse connecting holes which allow several tubes to be placed next to each other in modular form in order to create a much larger space. It is recommended that at least three units are connected together.

Dimensions: Height 47.5cm x Width 20cm x Depth 12.5cm.

Habibat Bat Box - Custom Brick Facing

Product Specification

The Habibat Bat Box is a large, solid box made of insulating concrete with an internal roost space, which can be incorporated into the fabric of a building as it is built or renovated. A variety of facings can be fitted to suit any existing brick, wood, stonework or rendered finish, rendering the box unobtrusive and aesthetically pleasing. The Habibat box is suitable for species which are most commonly found roosting in buildings in the UK, such as Pipistrelle, Natterer's, Whiskered, and Brandt's bats.

Dimensions: 215mm width x 440mm height x 102mm depth

6.3 Birds

6.3.1 All wild birds in the UK are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy the nest (whilst being built or in use) or its eggs. It is essential that care should be taken not to carry out works likely to disturb breeding, therefore any work to the bridge should be carried out outside the bird breeding season March to August. If this is not possible then the

bridge should be checked for active nests by a suitably qualified ecologist prior to work commencing.

- Bird nesting features should be installed in a minimum of one in five of the new buildings across the site. The placement of the bird nest boxes will vary by type of box and species (manufacturers guidance should be followed). General placement should be away from direct sunlight and prevailing winds, usually on the north or eastern elevation of the building. Many types of integrated bird nesting features are available. Three separate possible designs are suggested below:

1SP Schwegler Sparrow Terrace

Product Specification

The terrace can be incorporated into the wall. Due to its weight (15kg), it is not suitable for fences or garden sheds. Ideally place the terrace two metres or more above the ground.

Dimensions: 24.5cm height x 43cm width x 20cm depth

Bird Brick Boxes- swift Box

Product Specification

The swift box has a crescent shaped hole to one side of the box, allowing swifts access but restricting use by starlings. This box has a rough internal floor to make it easier for the birds to move around; in the centre of the floor is a raised nest cup to assist the birds' nest building. The ideal internal depth of a swift box is 140 mm, however if cavity width is limited, boxes can be manufactured with a reduced depth (minimum 100 mm).

Ibstock Eco-habitat for Swifts

Product Specification

The Eco-habitat for Swifts is designed to be incorporated into the brickwork of a new build or renovation. It will provide a suitable nesting site for a pair of swifts whilst being a discrete addition to the building. It should be sited high up in an external wall, as close to the eaves as possible.

Dimensions: height 140mm x width 326mm

7.0 REFERENCES

Bat Conservation Trust (2016) *Bat Surveys Good Practice Guidelines.*

Conservation of Habitats and Species Regulations (2010) http://jncc.defra.gov.uk/page-1379

Mitchell-Jones, J. (2004) Bat Mitigation Guidelines. English Nature.

Mitchell- Jones, A. J & Mcleish, A. P. (2004) *3rd Edition Bat Workers' Manual.* Joint Nature Conservation Committee, Peterborough.

http://magic.defra.gov.uk/ (Viewed on 19/03/2018)

Total Ecology (2018) *Extended Phase 1 habitat survey and bat risk assessment survey report, St Johns Nursery*

UK BAP Priority Species (2007) http://jncc.defra.gov.uk/page-5170

APPENDIX A

Figures

Legend

- Building Reference
- Surveyor Location
- Commuting

TOTAL ECOLOGY

Unit 4, Shawwell Business Centre
Beighlaw Road
Cramlington
Northumberland
NE45 5PE

[redacted]

Project	St Johns Nursery, Clacton-on-Sea
Title	Nocturnal Survey Plan; Dusk 8th May 2018
Client	Mr Dave Caruso
Date	14thMay 2018
Ref	Figure 1

Legend

- Building Reference
- Surveyor Location
- Commuting

TOTAL ECOLOGY

Unit 4, Shawwell Business Centre
Eastgate Road
Cramlington
Northumberland
NE45 5PE

[redacted]

Project	St Johns Nursery, Clacton-on-Sea
Title	Nocturnal Survey Plan; Dawn 9th May 2018
Client	Mr Dave Caruso
Date	14th May 2018
Ref	Figure 2

Legend

- Building Reference
- Surveyor Location
- Commuting
- Tree
- Foraging
- Roost

TOTAL ECOLOGY
innovative ecological consultants

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NE45 5PE

[redacted]

Project	St Johns Nursery, Clacton-on-Sea
Title	Nocturnal Survey Plan; Dusk 9th May 2018
Client	Mr Dave Caruso
Date	14th May 2018
Ref	Figure 3

APPENDIX B

Report Conditions

Total Ecology Ltd

REPORT CONDITIONS

St Johns Nursery, Clacton-on-Sea, Essex, CO16 8BP

This report is produced solely for the benefit of ES Design and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to Total Ecology. In time improved practices, new information or amended legislation may necessitate a re-assessment. Opinions and information provided in this report are on the basis of Total Ecology using due skill and care in the preparation of this report.

This report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times.

This report is limited to those aspects reported on, within the scope and limits agreed with the client under our appointment. It is necessarily restricted and no liability is accepted for any other aspect. It is based on the information sources detailed in the report. Some of the opinions are based on unconfirmed data and information and are presented as the best opinion within the scope for this report.

Reliance has been placed on the documents and information supplied to Total Ecology by others but no independent verification of these has been made and no warranty is given on them. No liability is accepted or warranty given in relation to the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report.

Whilst skill and care have been used, no investigative method can eliminate the possibility of obtaining partially incorrect, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather related conditions.

Although care is taken to select monitoring and survey periods that are typical of the environmental conditions being measured, within the overall reporting programme constraints, measured conditions may not be fully representative of the actual conditions. Any predictive or modelling work undertaken as part of the commission will be subject to limitations including the representativeness of data used by the model and the assumptions inherent within the approach used. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches model in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions.

The potential influence of our assessment and report on other aspects of any development or future planning requires evaluation by other involved parties.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Total Ecology accept no liability for issues with performance arising from such factors

February 2008