



3 Legion Road
Hayling Island
Hampshire
P011 9ES

The Code for Sustainable Homes (Version Nov 2010)
Pre-Estimation Assessment & Site Strategy Report

For

R & G Builders Ltd

Project Reference

CSH-0078

Date

20th August 2014

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Revision Schedule

Revision	Revision A	Revision B	Revision C
Date	20 th August 2014		
Prepared By	Darren Pinnick		
Checked By	Scott Spearing		
Project Reference	CSH-0078		
BRE Reference	BRE-00023414-DS-001-00		

Revision Reference	Revision Comments	Related Credits
Revision A	First Issue	-



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Executive Summary

BEAT Solutions have been appointed to provide Code for Sustainable Homes assessment advice for R & G Builders Ltd. The proposed development is located at the land adjacent to 3 Legion Road and will consist of 1 No. 3 Bed End Terraced House. This development is to be assessed under the Code for Sustainable Homes version Nov 2010. This project has been registered with the BRE under reference number: BRE-00023414-DS-001-00.

This report summarises how the dwelling on the proposed development will achieve Code Level 3. This is based on the completion of the Code for Sustainable Homes pre-estimator tool and correspondence with the design team confirming the specification and proposal to meet Code Level 3 overall.

The pre-estimator tool was completed on 20th August 2014 by BEAT Solutions. This showed the credits which are likely to be achieved when subject to the formal design stage assessment and post construction review. The overall score for all plots exceeds 57.00 points as required for Code Level 3.

Project Summary:

Number of Plots:	1
Required Code Level:	3
Predicted Code Level:	3
Required Score Range:	>57.00%points
Predicted Score Range:	60.43%points
Mandatory Requirements:	All Met
Code Version:	Nov 2010
Registered with BRE:	Yes under registration number BRE-00023414-DS-001-00

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1 Development Overview

The proposed development is located at the land adjacent to 3 Legion Road and will consist of 1 No. 3 Bed End Terraced House. This development is to be assessed under the Code for Sustainable Homes version Nov 2010. The development is currently at a post planning stage.

2 Development Team

	Company	Contact
Client	R & G Builders Ltd	Ralph Evans
Developer	As Above	As Above
Architect	C.J. Wilkinson A.B. Eng.	Chris Wilkinson
Ecologist	BEAT Solutions c/o LCES	Jenny Sutch
Ground Conditions / Drainage	TBC	TBC
CSH Assessor	BEAT Solutions	Darren Pinnick

3 Introduction

This report has been prepared for R & G Builders Ltd by BEAT Solutions; a licensed organisation under the BRE Code for Sustainable Homes scheme and specialist consultants in energy and carbon assessments.

This report provides a specific site strategy for the proposed development to meet Code Level 3. The pre-estimator tool was completed on 20th August 2014 for all plots and confirms a score of at least 57.00 points, as required by Code Level 3, has been achieved. For more information on exact credit scoring please see section 10, this report should be read in conjunction with our Pre-Estimation Tool which can be found in appendix A, as it outlines the key requirements and provides specific guidance.

4 Code for Sustainable Homes Summary

The Code for Sustainable Homes (CSH) was introduced in England in April 2007 following extensive consultation with environmental groups and the home building and wider construction industries. The CSH measures the sustainability of a dwelling against nine design categories, rating the 'whole home' as a complete package. The categories assessed are:

- | | |
|--|------------------------|
| ▪ Energy and CO ₂ Emissions | ▪ Pollution |
| ▪ Water | ▪ Health and Wellbeing |
| ▪ Materials | ▪ Management |
| ▪ Surface Water Runoff | ▪ Ecology |
| ▪ Waste | |

Each category includes a number of issues which have a potential impact on the environment. Each issue is assessed against a performance target and awarded one or more credits. The performance targets are more demanding than the minimum needed to satisfy Building Regulations or other legislation. They represent good or best practice, are technically feasible and can be delivered by the building industry. [*The Code for Sustainable Homes, Setting the standard in sustainability for new homes, Communities and local Government, October 2008*]

Subsequently many councils and housing associations have used the Code for Sustainable Homes process to ensure the delivery of sustainable developments.

5 Category Weightings and Credit Percentages

The CSH categories are weighted according to importance, as indicated in the table below. Each category is allocated a different number of credits and therefore individual credits carry a specific weighting as a percentage of the overall total:

Category	Total Credits within Category	Weighting Factor (% points contribution)	Approx. weighted value of each credit
Energy and CO ₂ Emissions	31	36.4%	1.17
Water	6	9.0%	1.50
Materials	24	7.2%	0.30
Surface Water Run-off	4	2.2%	0.55
Waste	8	6.4%	0.80
Pollution	4	2.8%	0.70
Health and Wellbeing	12	14.0%	1.17
Management	9	10.0%	1.11
Ecology	9	12.0%	1.33
Total		100%	

It should be noted that within the Code for Sustainable Homes, mandatory minimum performance standards are set for some issues. For three of these, a single mandatory requirement is set. These requirements must be met, whatever Code level is sought. Confirmation that the performance requirements are met for all four is a minimum entry requirement for achieving a level 1 rating. The three un-credited issues are within:

- Environmental impacts of materials
- Management of surface water run-off from developments
- Storage of non-recyclable waste and recyclable household waste

If the mandatory minimum performance standard is met for the three un-credited issues, two further mandatory issues need to be considered. Credits are awarded for every level of achievement recognised within the Code, and minimum mandatory standards increase with each rating level. The two issues with increasing mandatory minimum standards are:

- ENE1 - Dwelling emission rate
- WAT1 - Indoor water use

The table below illustrates the raising scale required relating to the mandatory issues above:

Credit Issue	Code Level 3	Code Level 4	Code Level 5
ENE1 – Dwelling Emission Rate (DER)	0% reduction in DER over target emission rate	25% reduction in DER over target emission rate	100% reduction in DER over target emission rate
WAT1 – Indoor Water Consumption	105 litres/person/day	105 litres/person/day	80 litres/person/day

The table below indicates the required score to achieve any given overall Code for Sustainable Homes level:

Total Points (after % weighting)	Code Level
36	Level 1 (*)
48	Level 2 (**)
57	Level 3 (***)
68	Level 4 (****)
84	Level 5 (*****)
90	Level 6 (*****)

6 Report Format

At this stage of the assessment BEAT Solutions have been appointed to complete the Code for Sustainable Homes Pre-estimator tool in order to advise R & G Builders Ltd on the requirements of the CSH and to support the build process. The completed CSH pre-estimator tool can be found in Appendix A, complete with a summary and evidence required for each credit issue.

7 Evidence

In order to complete a Code assessment and recommend to the BRE for certification, each credit that is targeted must be confirmed using supporting documentation. At the design stage, examples of information that could be provided include copies of design drawings, specification and preliminary documents, letters of correspondence or minutes from meetings signed off by all parties. Please note the evidence requirements in the CSH pre-estimator tool found in Appendix A.

8 Disclaimer

BEAT Solutions has undertaken the following Code for Sustainable Homes Pre-Assessment for 3 Legion Road with the assistance of R & G Builders Ltd. All information provided to BEAT solutions has been accepted in good faith as being accurate and representative of the proposed scheme at the time of review. The credits and credit requirements are based on the BRE Code for Sustainable Homes Pre- Estimator Assessor Tool.

The assessor (for itself and as agent for its staff) and its staff shall not be liable whether in Contract or in Tort or otherwise for any loss or damage sustained as a result of using or relying on the information contained in this report or the final certificate from the BRE that it is based on.

It is the responsibility of the client or its agents or contractors to notify BEAT Solutions in writing of any proposed changes which will affect the credits and criteria set out within this report. This is to ensure that any deviations or changes to the proposed strategy will maintain Code Level 3 and can be confirmed in writing by BEAT Solutions prior to any implementation. Failure to do this is likely to result in additional time and expenditure to rectify.

9 Copyright

The Code for Sustainable Homes name and logo are registered trademarks of the Building Research Establishment Ltd and Communities and Local Government. Copyright exists on Code for Sustainable Homes and it may not be used or reproduced in any form or for any purpose without prior written consent of BRE. This report is the property of BEAT Solutions and may not be copied or duplicated without consent from BEAT Solutions in writing.

10 Strategy Summary

The completed pre-estimator tool (Appendix A) for the development shows the credits which will be targeted to achieve a Code Level 3, the table below provides a brief summary of the credits targeted. Feasibility work and commitments in the scheme design demonstrate how the code level will be achieved; this information is presented in the Credit Summary section below and in Appendix A.

Credits Credits in bold are mandatory	Credits Available	Plot 1	N/A	N/A	N/A	N/A
Energy and CO₂ Emissions						
ENE1 - Dwelling Emission Rate	10	0.3	0.0	0.0	0.0	0.0
ENE2 - Fabric Energy Efficiency	9	5.8	0.0	0.0	0.0	0.0
ENE3 - Energy Display Devices	2	2	0	0	0	0
ENE4 - Drying Space	1	1	0	0	0	0
ENE5 - Energy Labelled White Goods	2	2	0	0	0	0
ENE6 - External Lighting	2	2	0	0	0	0
ENE7 - Low or Zero Carbon Technologies	2	0	0	0	0	0
ENE8 - Cycle Storage	2	2	0	0	0	0
ENE9 - Home Office	1	1	0	0	0	0
Water						
WAT1 - Indoor Water Use	5	4	0	0	0	0
WAT2 - Outdoor Water Use	1	1	0	0	0	0
Materials						
MAT1 - Environmental Impact of Materials	15	12	0	0	0	0
MAT2 - Responsible Sourcing of Materials -Basic Building Elements	6	0	0	0	0	0
MAT3 - Responsible Sourcing of Materials -Finishing Elements	3	0	0	0	0	0
Surface Water Runoff						
SUR1 - Management of Surface Water Run-off from Developments	2	2	0	0	0	0
SUR2 - Flood Risk	2	2	0	0	0	0
Waste						
WAS1 - Storage of non-recyclable waste and recyclable household waste	4	4	0	0	0	0
WAS2 - Construction Site Waste Management	3	0	0	0	0	0
WAS3 - Composting	1	1	0	0	0	0
Pollution						
POL1 - Global Warming Potential of Insulants	1	1	0	0	0	0
POL2 - NOx Emissions	3	3	0	0	0	0
Health and Wellbeing						
HEA1 - Daylighting	3	2	0	0	0	0
HEA2 - Sound Insulation	4	3	0	0	0	0
HEA3 - Private Space	1	1	0	0	0	0
HEA4 - Lifetime Homes	4	0	0	0	0	0
Management						
MAN1 - Home User Guide	3	3	0	0	0	0
MAN2 - Considerate Constructors Scheme	2	0	0	0	0	0
MAN3 - Construction Site Impacts	2	2	0	0	0	0
MAN4 - Security	2	2	0	0	0	0
Ecology						
EC01 - Ecological Value of Site	1	0	0	0	0	0
EC02 - Ecological Enhancement	1	1	0	0	0	0
EC03 - Protection of Ecological Features	1	1	0	0	0	0
EC04 - Change in Ecological Value of Site	4	3	0	0	0	0
EC05 - Building Footprint	2	0	0	0	0	0
Aprox. Total Weighted Points: *		60.43	0.00	0.00	0.00	0.00
Overall CODE Level		CODE LEVEL 3	Nil Rated	Nil Rated	Nil Rated	Nil Rated

Please note, the above table is not the official BRE Pre-Estimator Tool and used for indicative purposes only. Please see Appendix A for the completed BRE Pre-Estimator.

11 Credit Summary

Credits ENE 1 & ENE 2 have been confirmed prior to this document being finalised and issued to relevant parties. If there is a plan/wish to change the specification throughout the build we ask you please contact BEAT Solutions for consultation before such changes are made. Changes that are made without consultation may have a detrimental effect on the designed credits below and could affect overall Code for Sustainable Homes compliance.

1. ENERGY AND CO2 EMISSIONS

- 1) ENE 1 (**MANDATORY**) – It has been confirmed that design stage SAP calculations ref: SAP-0498 (AD) Rev A (18-03-14) achieve DER/TER percentage improvements and credit entitlement as shown in Table 11.1.1a below:-

Table 11.1.1a

Plot No.	DER	TER	Improvement (%)	Credits Awarded
1	15.72	16.12	2.48	0.3

Please note that these credits will be finalised upon completion of the dwelling/s and the issuing of the “As Built” SAP Calculation/s.

- 2) ENE 2 – It has been confirmed that SAP Calculations ref: SAP-0498 (AD) Rev A (18-03-14) achieve FEE (Fabric Energy Efficiency) scores and credit entitlement as shown in Table 11.1.2a below:-

Table 11.1.2a

Plot No.	FEE Score	Credits Awarded
1	49.6	5.8

Please note that these credits will be finalised upon completion of the dwelling/s and the issuing of the “As Built” SAP Calculation/s.

- 3) ENE 3 - Energy display devices are to be used to monitor both mains Electric and Gas usage within the property. These energy displayed devices can only be fitted to new metered supplies. The energy display device must be a system comprising a self-charging sensor(s) fixed to the incoming mains supply/supplies. It must measure and transmit energy consumption data to a visual display unit (Energy Display Device), as a minimum the visual display unit must be capable of displaying the following minimum information:

- Local time.
- Current mains energy consumption (kilowatts and kilowatt hours).
- Current emissions (g/kg CO₂).
- Current tariff.
- Current cost (in pounds and pence). For pre-payment customers this should be ‘real time’ data and for ‘credit’ paying customers cost should be displayed on a monthly basis.

- Display accurate account balance information (amount in credit or debit)
- Visual presentation of data (i.e. non-numeric) to allow consumers to easily identify high and low level of usage.
- Historical consumption data so that consumers can compare their current and previous usage in a meaningful way. This should include cumulative consumption data in any of the following forms day/week/month/billing period.

It has been confirmed that both the electric and the primary heating system fuel are going to be monitored through energy display devices, therefore 2 of 2 credits can be awarded.

Code compliant smart meters can be sourced through The Code Store subject to terms. Please see the link below for more information.

The Code Store: <http://www.thecodestore.co.uk/>

- 4) ENE 4 – It is confirmed that drying space will be provided within the rear gardens by the use of a fixed rotary dryer with a line length of at least 6m+ to achieve 1 of 1 credit.
- 5) ENE 5 – It is confirmed that white goods will be provided to the dwellings. A+ or higher rated fridge/freezers and A rated or higher washing machine and dishwasher together with EU labelling scheme information to be included within the Home Users Guide. Therefore 2 of 2 credits can be awarded.
- 6) ENE 6 – It is confirmed that all external space lighting will have dedicated energy efficient fittings and controlled by PIR's. It has been assumed that no security lighting will be installed. If burglar security lighting is to be installed then it must have a maximum wattage of 150 W, must be PIR controlled and have daylight cut-off sensors. All other security lighting must be a dedicated energy efficient fitting and fitted with daylight cut-off sensors or a time switch. If the above requirements are met 2 of 2 credits can be awarded.
- 7) ENE 7 – It has been confirmed that design stage SAP calculations ref: SAP-0498 (AD) Rev A (18-03-14) achieve a % reduction in CO₂ emissions and credit entitlement as shown in Table 11.1.7a below:-

Table 11.1.7a

Plot No.	Proposed Renewable Technology	Orientation	% Reduction In CO ₂	Credits Awarded
1	None	N/A	N/A	0

Please note that these credits will be finalised upon receipt of the MCS certificates and the issuing of the "As Built" SAP Calculation/s.

- 8) ENE 8 - Cycle storage will be provided within the rear garden shed. This space is to have a secure fixing (i.e. metal "Sheffield Type" hoop) set in concrete base and allow for 0.75x2.0m floor area per cycle space. As cycle storage will be provided within a rear garden shed an allowance for an additional 1m² must be included for the storage of garden tools. Entrance locks to the shed must be to BS3621:2007 standards (hasp and staple are not suitable). Direct access to the highway must be provided without the need for the

resident to take the cycle through the dwelling or other private property. For more detailed information specific to each plot, please see table 11.1.8a below:-

Table 11.1.8a

Plot No.	No. Beds	Cycle Spaces Required	Minimum Shed Size Required(m)	Number of Credits
1	3	2	1.8 x 2.4	2

Please note that these credits will be confirmed and finalised upon a site inspection confirming that the above requirements have been met. If all above criteria has been met can be awarded as detailed above.

- 9) ENE 9 – It has been confirmed that a dedicated Home Office will be provided within one of the rooms in the dwelling (subject to 1.5% daylighting requirements). For dwellings with three or more bedrooms, a suitable room is a room other than the kitchen, living room, master bedroom or bathroom. For dwellings with one or two bedrooms or studio homes, a suitable room is the living room, one of the bedrooms or any other suitable area in the home such as a large hall or dining area. Please see table 11.1.9a which confirm the room that will be designated as the Home Office. The room will need to have the following services installed before a site inspection can be conducted:-

- Sufficient Space:- 1.8m of free wall space to enable future fitting of a desk, filing cabinet and bookshelf without interfering with the intended use of the room and layout.
- Two double power sockets
- Two Telephone points:- Alternatively, only one telephone point can be installed where it can be evidenced that the dwelling is within an area serviced by broadband. Written confirmation from the service provider will be required, this can often be verified online by using the providers website.
- An openable window:- The window must have an openable casement of at least 0.5m².
- Daylighting calculations in section 11.7.1, confirm the chosen rooms have achieved the minimum 1.5% daylight factor.

Table 11.1.9a

Plot No.	No. Beds	Home Office Room	Daylighting Factor Achieved	Number of Credits
1	3	Bedroom 2	a	1

2. WATER

- 1) **WAT 1 (MANDATORY)** – Internal water usage within all plots needs to be equal or less than 90 litres/person/day to achieved Code Levels 3 & 4. In order to meet this requirement the following fittings will need to be installed:-

- All WC's: 4/2.6 litre dual flush.
- All Basin Taps: Not to exceed 4 litres per minute.
- All Kitchen and Utility Taps: Not to exceed 4 litres per minute.
- All Showers: 6 litres per minute.
- All Baths: 160 litres capacity to overflow.
- Dishwashers: When specified it is not to exceed 1.00 litres per place setting. Please consult with BEAT Solutions before purchasing to ensure that the chosen product meets with the above requirements.
- Washing machine: When specified it is not to exceed 8.55 litres per kg of dry load. Please consult with BEAT Solutions before purchasing to ensure that the chosen product meets with the above requirements.

The above specification will make a predicted average internal water use of **90 litres/person/day** therefore 4 of 5 credits can be awarded.

- 2) **WAT 2** – A water butt for the collection of rainwater will be installed within the gardens of all off the units (where applicable). A Code compliant water butt can be found at <http://www.thecodestore.co.uk/>. The water butt must have all of the criteria listed below to be defined as code compliant:-

- Must have a lid to the collector this lid must be child-proof.
- Must have the provision of a tap or other arrangement for drawing off water.
- Connection to the rainwater downpipes with an automatic overflow into the conventional rainwater drainage system.
- A means of detaching from the rainwater downpipe and access provision to enable the interior to be cleaned.
- Where the collection system is to be sited outside, and not buried (Rainwater Harvesting), it must be stable and adequately supported. The material used for the container needs to be durable and opaque to sunlight.

A minimum size of 200 litre water butt is to be provided to the dwelling, therefore 1 of 1 credits can be awarded.

3. MATERIALS

- 1) **MAT 1 (MANDATORY)** – A MAT 1 calculator tool has been completed for all dwellings. Please see table 11.3.1a below for a detailed plot specific scoring:-

Table 11.3.1a

Plot No.	MAT 1 Calculator Score	Number of Credits
1	12.77	12

Please note that these credits have been based on the current drawings, any changes to the material selections will change the above scores. Please consult BEAT Solutions prior to making any changes to avoid any loss of credits. These credits will be finalised at an "As Built" stage once all materials have been constructed.

2) MAT 2 – Credit not sought.

3) MAT 3 – Credit not sought.

4. SURFACE WATER RUNOFF

1) SUR 1 (MANDATORY) – Peak runoff rates and annual runoff rates post development must be no worse than pre development rates.

A drainage engineer's report/calculations will need to show that this can be achieved.

- 1 credit is awarded for the first 5mm of rainfall being dealt with on site.
- 1 credits is awarded where water quality is demonstrated.

The project is targeting maximum 2 or 2 credits and will be subject to the engineer's reports/calculations. A Completed SUR1 Summary Template will need to be completed by the appointed engineer for credit verification, click (<https://www.dropbox.com/s/cerguh216e8ghy2/SUR%201%20Summary%20Template.doc>) to download.

2) SUR 2 – After a brief search of the Environment Agency flood map it has been assumed that the site is at a low risk of flooding. A full Flood Risk Assessment (FRA) will need to be undertaken as part of the Code for Sustainable Homes requirements. Therefore it is assumed that 2 of 2 credits can be awarded.

5. WASTE

- WAS 1 (MANDATORY) – To achieve all 4 credits under this criteria the requirements for waste storage should be as follows:-
 - The dwelling is to be provided with a minimum of 2 x 240l external bin storage and 3 internal bins located within a kitchen cupboard with no bin smaller than 30litres. All bins need to comply with suitable wheelchair access as defined within IDP checklist, click (<https://www.dropbox.com/s/wl7sisdi3ph1l89/IDP%20Checklist.doc>) to download.
- WAS 2 – Credit not sought.
- WAS 3 – It has been assumed that composting facilities will be installed in the private outdoor space of all of the dwellings in order to meet the criteria of this section. The composting bin will need to be located within an external space accessible by wheelchairs as per the requirements of the IDP checklist, click (<https://www.dropbox.com/s/wl7sisdi3ph1l89/IDP%20Checklist.doc>) to download.

6. POLLUTION

- 1) POL 1 – To achieve the 1 available credit all insulants will require a GWP of less than 5. Manufacturer's details will need to be provided in order to evidence this credit.

Please refer to the POL 1 checklist, click the link below to download the checklist to show details on the elements assessed. A completed POL 1 checklist with evidence will be required for Post Construction certification.

(<https://www.dropbox.com/s/u3d755rc5wvpsn/POL%201%20Checklist.doc>)

- 2) POL 2 – The POL 2 calculator tool has been completed for all dwellings. Please note that dwellings that have heating and hot water powered by electricity does not score any credit within this section. Please see table 11.6.2a below for a more detailed plot by plot score:-

Table 11.6.2a

Plot No.	NOx Emissions (mg/kWh)	Number of Credits
1	30.00	3

Please note that these credits will be finalised upon completion of the dwelling/s and the issuing of the "As Built" SAP Calculation/s.

7. HEALTH AND WELLBEING

- 1) HEA 1 – Detailed daylight calculations have been undertaken by BEAT Solutions and credits have been awarded according to these calculations. Please see table 11.7.1a below for a detailed plot summary.

Table 11.7.1a

Plot No.	Daylighting Factors Achieved?	View Of Sky Achieved?	Number of Credits
1	a	r	2

It has been assumed that due to the site surroundings, credits for 'View of Sky' will not be gained.

- 2) HEA 2 – It has been confirmed that 3 credits will be achieved for Sound Insulation. A 5dB improvement is sought by the client, this can be achieved by using Robust Detail or Pre Completion Testing.

- 3) HEA 3 – Private outdoor space is allocated to all dwellings on the site. The private space has been shown in the form of a rear garden. All private spaces for houses must have at least 1.5m² of floor space per bedroom and suitable access for wheelchair users in order to comply with the Code for Sustainable Homes criteria. Please check compliance access requirements of IDP Checklist, click (<https://www.dropbox.com/s/wl7sidi3ph1l89/IDP%20Checklist.doc>) to download.

- 4) HEA 4 – Credit not sought.

8. MANAGEMENT

- 1) MAN 1 – A Home Users Guide will need to be produced which includes as a minimum, the following:

Non-technical information on the developments operational issues (Part 1):

- Environmental Strategy/Design & Features.
- Energy Use & Efficiency
- Water Use
- Recycling & Waste
- Public Transport
- Sustainable DIY
- Emergency Information
- Links, References & Further Information
- Provision of Information in Alternative Formats

Information on the site and its surroundings (Part 2):

- Recycling & Waste
- Public Transport
- Local Amenities
- Responsible Purchasing
- Emergency Information
- Links, References & Further Information

Please visit the MAN 1 checklist link below for a full list of requirements for compliance within this section.

(<https://www.dropbox.com/s/1rzhq05pp1pqbc2/MAN%201%20Checklist.doc>)

The client has confirmed that a Home Users Guide with both parts 1 & 2 will be provided. Therefore 3 of 3 credits can be awarded.

- 2) MAN 2 – It has been confirmed that the Considerate Constructors Scheme will not be undertaken for this development. If the Considerate Constructors Scheme is to be undertaken please inform BEAT Solutions of this change.
- 3) MAN 3 – It has been confirmed that the developer will undertake the following points to achieve 2 of 2 credits for Construction Site Impacts. The developer is to achieve the 2 credit by:
- 1) Monitor Water consumption from site activities.
 - 2) Adopt best practice policies to reduce air/dust pollution.

- 3) Adopt best practice policies to reduce ground/water pollution.
- 4) 80% of timber is to be reclaimed, reused or responsibly sourced.

Please refer to the MAN 3 checklist for a full list of requirements, click the link below to download.

(<https://www.dropbox.com/s/06wz79bmpy4yf6n/MAN%203%20Checklist.doc>)

- 4) MAN 4 – The developer is to gain the advice of a Secured by Design liaison officer and will need to incorporate this advice into this project in order to gain section 2 compliance. Please note that if section 2 compliance is achieved then a written letter from the Secured by Design officer will be required in order to evidence this credit. It is therefore assumed that 2 of 2 credits will be achieved.

9. ECOLOGY

In order to achieve credits for ecology, the appointment of a suitably qualified ecologist is required prior to any compliance onsite. It is the responsibility of the client to ensure that the ecologist completes and returns the CfSH Ecology Report Template together with a copy of the ecology site report, click (<https://www.dropbox.com/s/d3lu0h7y8wf0d1g/CfSH%20Ecology%20Report%20Template.doc>) to download.

- 1) ECO 1 – It has been confirmed that the site is of ecological value, therefore 0 credits can be awarded.
- 2) ECO 2 – It has been confirmed that this credit will be sought and that all key recommendations, and a minimum of 30% of the additional recommendations highlighted within the ecology report will be adopted onto the site.
- 3) ECO 3 – It has been confirmed that the site is of ecological value, therefore 0 credits can be awarded. To achieve one credit, the protection of ecological features must be included.
- 4) ECO 4 – It has been confirmed that this site will achieve a minor enhancement in ecological value therefore achieving 3 credits.
- 5) ECO 5 – It has been assessed that due to the low rise nature of the development 0 credits can be awarded for this criteria.

Please refer to the full ecology site report in Appendix B.

12 Conclusion

We have assessed the merits of this project in successfully achieving Code for Sustainable Homes. This report identifies and outlines the strategy and requirements to successfully achieve Code Level 3 on this project. We are therefore able to confirm that the project can achieve and will deliver Code for Sustainable Homes compliant dwelling to Code Level 3 standards, subject to the client, R & G Builders Ltd signing the declaration below. The client, R & G Builders Ltd is responsible for ensuring the construction works are successfully implemented in accordance with this report.

13 Declaration

We the undersigned agree and confirm that statements and assumptions contained within this report will be implemented and verified and where necessary any deviations or changes to the strategy will be notified to BEAT Solutions in writing prior to implementation to ensure a continued method of compliance.

On behalf of the Developer/Contractor/Builder:

One behalf of the Client:

Signature: _____

Signature: _____

Name: _____

Name: _____

Organisation: _____

Organisation: _____

Position: _____

Position: _____

Dated: _____

Dated: _____



14 Appendix A – BRE Code for Sustainable Homes Pre-estimator Tool

Plot 1





Results

Development Name:	3 Legion Road, Hayling Island
Dwelling Description:	3 Bed End terraced house
Name of Company:	Ralph Evans
Code Assessor's Name:	Darren Pinnick of BEAT Solutions
Company Address:	Beat Solutions, Unit 2 Barley Business Park, Duncan Road, Park Gate, Southampton, Hampshire, SO31 1ZT
Notes/Comments:	To Achieve Code Level 3:- Based on SAP calculations and discussions with developer regarding strategy options.

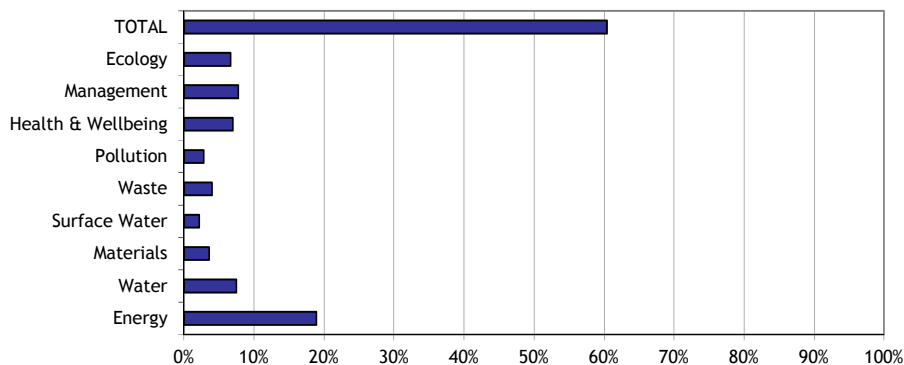
PREDICTED RATING - CODE LEVEL: 3

Mandatory Requirements: All Levels

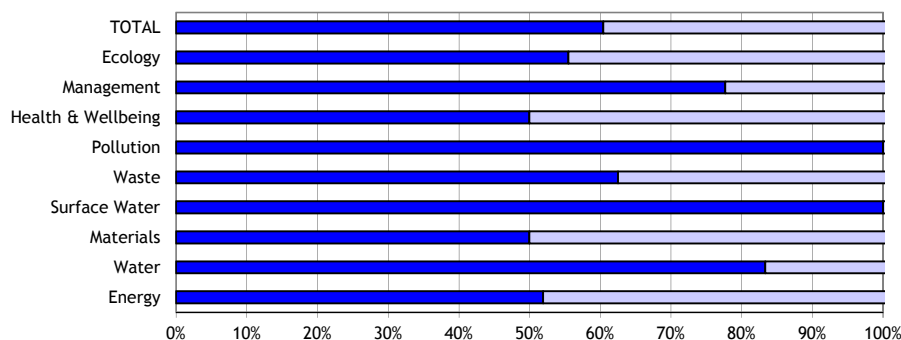
% Points: 60.43% - Code Level: 3

Breakdown: Energy - Code Level: 3
Water - Code Level: 4

Graph 1: Predicted contribution of individual sections to the total score and percentage of total achievable score



Graph 2: Predicted percentage of credits achievable: Total and by Category



NOTE: The rating obtained by using this Pre Assessment Estimator is for guidance only. Predicted ratings may differ from those obtained through a formal assessment, which must be carried out by a licensed Code assessor.

Permission is given for this estimator to be copied without remuneration or copyright for use only on projects where a Code for Sustainable Homes assessment is carried out. Whilst every care is taken in preparing this estimator, BREG cannot accept responsibility for any inaccuracies or for consequential loss incurred as a result of such inaccuracies arising through the use of the estimator tool.

CATEGORY 1 ENERGY		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 51.93		Credits	Level			
Contribution to Overall % Score: 18.90 points		16.1 of 31 Credits	Level 3			
Ene 1 Dwelling Emission Rate	Credits are awarded based on the percentage improvement of the Dwelling Emission Rate (DER) over the Target Emission Rate (TER) as calculated using SAP 2009. Minimum standards for each Code level apply. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score What is the predicted number of credits? 0.3 OR Are zero net CO₂ emissions achieved?	0.3 of 10 Credits	Level 3	Based on BEAT Solutions SAP-0498 Rev A.	BEAT Solutions to provide full SAP calculations once the specification has been confirmed.	
Ene 2 Fabric Energy Efficiency	Credits are awarded based on the Fabric Energy Efficiency (kWh/m²/yr) of the dwelling. Minimum standards apply at Code levels 5 and 6. The Code energy calculator can be used to calculate a predicted score. Enter the predicted score Apartments, Mid-terrace ☐ OR End terrace, Semi and Detached ☒ OR Staggered Mid terrace ☐ What is the predicted number of credits? 5.8	5.8 of 9 Credits	-	Based on BEAT Solutions SAP-0498 Rev A.	BEAT Solutions to provide full SAP calculations once the specification has been confirmed.	
Ene 3 Energy Display Devices	Credits are awarded where a correctly specified Energy Display Device is installed monitoring electricity and/or primary heating fuel consumption. Select whether the EDD monitors electricity and/or fuel None Specified ☐ Primary Heating only ☐ OR Electricity only ☐ OR Electricity and primary heating fuel ☒	2 of 2 Credits	-	Developer to provide smart gas and electric meter displaying fuel consumption data and costs. (see section 11.1 of full report for further information). These can be sourced through select service providers such as EON, at an additional cost.	The developer is to provide manufacturers information to confirm the smart meter complies with section 11.1 of this report. Photographic evidence of the meter will be taken during the site inspection.	

Issue	Credits	Level	Assumptions Made	Evidence Required
Ene 4 Drying Space	One credit is awarded for the provision of either internal or external secure drying space with posts and fittings or fixings capable of holding 4m+ of drying line for 1-2 bed dwellings and 6m+ for dwellings with 3 bedrooms or greater. Will drying space meeting the criteria be provided? ☐ Yes OR ☐ No	1 of 1 Credits	-	The developer is to provide, an external rotary drying line and is to be provided within the rear garden. This is to have a line length of 6m+. Manufacturers information to confirm the line length of the dryer. A site plan to confirm the location within the rear garden. Photographic evidence will be taken during the site inspection.
Ene 5 Energy Labelled White Goods	Credits are awarded where each dwelling is provided with either information about the EU Energy Labelling Scheme, White Goods with ratings ranging from A+ to B or a combination of the previous according to the technical guide. Select the appropriate option below EU Energy labelling information <u>only</u> A+ rated appliances A rated washing machine and dishwasher B rated tumble dryer or washer dryer EU Energy labelling information provided	2 of 2 Credits	-	The developer is to provide the white goods listed to the left and is also required to be provided the EU labelling information within the Home Users Guide:- A+ rated fridge/freezer, A rated dishwasher, A rated washing machine. Developer to supply purchase orders for the white goods supplied. The home users guide is also to contain the EU labelling information. Photographs will be taken during the site inspection.
Ene 6 External Lighting	Credits are awarded based on the provision of space lighting* with dedicated energy efficient fittings and security lighting fittings with appropriate control gear.. Space Lighting ☐ None provided OR ☐ Non Code compliant lighting OR ☒ Code compliant lighting Security Lighting ☒ None provided OR ☐ Non Code compliant lighting OR ☐ Code compliant lighting and controls Dual lamp luminaires ☐ Compliant with both above criteria	2 of 2 Credits	-	The developer is to ensure all external lighting is to be provided using ideally compact fluorescent light fittings within dedicated energy efficient light fittings, which use less than 40 lumens per curuit watt, with PIR and/or daylight sensor controls. Drawings and specification to confirm that lights fittings are all low energy dedicated light fittings with PIR and/or daylight senors. Photos to be taken on site inspection.

* Statutory safety lighting is not covered by this requirement

Issue		Credits	Level	Assumptions Made	Evidence Required
Ene 7 Low or Zero Carbon Technologies	Credits are awarded where there is a 10% or 15% reduction in CO₂ emissions resulting from the use of low or zero carbon technologies. Select % contribution made by low or zero carbon technologies Less than 10% of demand OR 10% of demand or greater OR 15% of demand or greater ☒ ☐ ☐	0 of 2 Credits	-	Credit not sought.	None.
Ene 8 Cycle Storage	Credits are awarded where adequate, safe, secure and weather proof cycle storage is provided according to the Code requirements. Fill in the development details below Number of bedrooms: Number of cycles stored per dwelling* 3 2.0 * if you have storage for 1 cycle per two dwellings insert 0.5 in number of cycles stored per dwelling	2 of 2 Credits	-	Plots 1 is 3 Bedroom therefore the cycle storage will be made available in either garage or an external shed in the rear garden, 2 cycle spaces are required to comply with the minimum size of 2.0m x 0.75m per cycle, with a sheffield type hoop set or fixed into the concrete base with the shed entrance door lock compliant with BS 3621:2007 (not a hasp and staple).	Architect to show suitable sized shed on drawings, photos to be taken on site inspection.
Ene 9 Home Office	A credit is awarded for the provision of a home office. The location, space and services provided must meet the Code requirements. Will there be provision for a Home Office? Yes OR No ☒ ☐	1 of 1 Credits	-	Within bedroom 3 on the first floor, a 1800mm clear wall space is to be provided with two double power sockets and a telephone point. This room is to have an openable window for ventilation of at least 0.5m ² .	Drawings confirming cycle storage layouts and sizes.

CATEGORY 2 WATER		Overall Level: 3		Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 83.33				Credits	Level		
Contribution to Overall Score: 7.50 points				5 of 6 Credits	Level 4		
Wat 1 Indoor Water Use	Credits are awarded based on the predicted average household water consumption, calculated using the Code Water Calculator Tool. Minimum standards for each code level apply. Select the predicted water use / Mandatory Requirement greater than 120 litres/ person/ day OR ≤ less than 120 litres/ person/ day OR ≤ less than 110 litres/ person/ day OR ≤ less than 105 litres/ person/ day OR ≤ less than 90 litres/ person/ day OR ≤ less than 80 litres/ person/ day	4 of 5 Credits	Level 3 AND Level 4	Internal water consumption has been calculated at 90l/p/d using the following flow rates:- Basin 4l/m, Kitchen taps-4l/m, Shower-6l/m, Bath-160l capacity, WC-4/2.6l flush, Dishwasher-not to exceed 1l/place setting, Washing Machine-not to exceed 8.55kg/dry load.	Purchase orders or manufacturers information confirming the fittings provided / flow restrictors have been purchased. Photographs will be taken on site to confirm during site inspection.		
Wat 2 External Water Use	A credit is awarded where a compliant system is specified for collecting rainwater for external irrigation purposes. Where no outdoor space is provided the credit can be achieved by default. Select the scenario that applies No internal or communal outdoor space OR Outdoor space with collection system OR Outdoor space without collection system	1 of 1 Credits	-	Developer to provide external water butt within rear garden.	None.		

CATEGORY 3 MATERIALS		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 50.00		Credits	Level			
Contribution to Overall Score: 3.60 points		12 of 24 Credits	All Levels			
Mat 1 Environmental Impact of Materials	<u>Mandatory Requirement:</u> At least three of the five key building elements must achieve a Green Guide 2008 Rating of A+ to D. <u>Tradable Credits:</u> Points are awarded on a scale based on the Green Guide Rating of the specifications. The Code Materials Calculator can be used to predict a potential score. Mandatory Requirement Will the mandatory requirement be met? ☒ Enter the predicted score What is the predicted number of credits? 12	12 of 15 Credits	All Levels		Confirmed with a MAT 1 score of 12.77.	BEAT Solutions to provide MAT1 calculation, once final materials selection have been made.
Mat 2 Responsible Sourcing of Materials - Basic Building Elements	Credits are awarded where materials used in the basic building elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score What is the predicted number of credits? 0	0 of 6 Credits	-		Credit not sought.	None.
Mat 3 Responsible Sourcing of Materials - Finishing Elements	Credits are awarded where materials used in the finishing elements are responsibly sourced. The Code Materials Calculator can be used to predict a potential score. Enter the predicted Score What is the predicted number of credits? 0	0 of 3 Credits	-		Credit not sought.	None.

CATEGORY 4 SURFACE WATER RUN-OFF		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 100.00%		Credits		Level		
Contribution to Overall Score: 2.20 points		4 of 4 Credits		All Levels		
Sur 1 Management of Surface Water Run-off from developments	Mandatory Requirement: Peak rate of run-off into watercourses is no greater for the developed site than it was for the pre-development site and that the additional predicted volume of rainwater discharge caused by the new development is entirely reduced as far as possible in accordance with the assessment criteria. Designing the drainage system to be able to cope with local drainage system failure. Tradable Credits: Where SUDS are used to improve water quality of the rainwater discharged or for protecting the quality of the receiving waters. Mandatory Requirement Will the mandatory requirement be met? ☒ Select the appropriate option No SUDS ☐ No runoff into watercourses for the first 5 mm of rainfall ☒ Runoff from hard surfaces will receive an appropriate level of treatment ☒	2 of 2 Credits	All Levels		Until the drainage reports and/or calculation are provided, it is assumed that soakaways are being used on site to naturally improve the water quality of the runoff. The developer is to appoint an engineer to calculate surface water runoff before works start on site to confirm locations and volume required. Please note CfSH has special requirement which the engineer need to include within the design, a standard design for b'regs will not always comply with CfSH level 3.	The developer is to appoint a surface water engineer to ensure the peak rate of runoff and volume of runoff has not been increased due to site development based on a 1 year and 100 year period events. Where this has been increased, soakaways are to be designed to manage the additional runoff. Also incorporating an additional 30% for CfSH.
Sur 2 Flood Risk	Credits are awarded where developments are located in areas of low flood risk or where in areas of medium or high flood risk appropriate measures are taken to prevent damage to the property and its contents in accordance with the Code criteria in the technical guide. Select the annual probability of flooding (from PPS25*) Zone 1 - Low ☒ OR Zone 2 - Medium ☐ OR Zone 3 - High ☐ Select the appropriate option(s) Low risk of flooding from FRA** ☒ All measures of protection are demonstrated in FRA ☐ Ground floor level and access routes are 600 mm above design flood level ☐ * Planning Policy Statement 25 - Planning and Flood Risk ** FRA - Flood Risk Assessment	2 of 2 Credits	-		Brief search of EA flood map confirms that the site is not in risk of flooding, however it is assumed it is only an assumption until a full Flood Risk Assessment is provided.	Developer to provide copy of FRA, prior to commencement.

CATEGORY 5 WASTE		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 62.00%		Credits		Level		
Contribution to Overall Score: 4.00 points		5 of 8 Credits		All Levels		
Was 1 Storage of non-recyclable waste and recyclable household waste	Mandatory Requirement: The space provided for waste storage should be sized to hold the larger of either all external containers provided by the Local Authority or the min capacity calculated from BS 5906. <u>Tradable Credits</u> are awarded for adequate internal and/ or external recycling facilities. Mandatory Requirement Will the minimum space be provided and be accessible to disabled people? ☒ Internal Recyclable household waste storage Where there is no external recyclable waste storage and no Local Authority collection scheme Internal storage (capacity 60 litres) ☐ Local Authority collection Scheme Post Collection sorting Internal storage (capacity 30 litres) ☐ Pre-collection sorting Internal storage (3 separate bins, capacity 30 litres) ☒ External Storage, no Local Authority collection scheme 3 separate internal storage bins (capacity 30 litres) ☐ AND Houses External Storage(capacity 180 litres) ☐ Flats ☐ Private recycling operator ☐ 3 or greater types of waste collected ☐	0 of 2 Credits	4 of 4 Credits	All Levels	The site is covered by the local authority collection service. An internal bin consisting of 3 compartments each >7l in size is to be provided within a kitchen cupboard. A minimum of 2 number 240l external bin is also to be provided on a level hardstanding area with suitable level access and a 1500mm turning circle for refuse collection and within 30m of the disabled access point to each dwelling.	Manufacturers information to confirm suitable internal/external bins are to be provided. Confirmation that the site is covered by the local authority waste collection service. A site plan to confirm suitable access and turning circles. Photographs will be taken during site inspection.

Issue		Credits	Level	Assumptions Made	Evidence Required
Was 2 Construction Site Waste Management	A credit is awarded where a compliant SWMP is provided with targets and procedures to minimise construction waste. Credits are available where the SWMP include procedures and commitments for diverting either 50% or 85% of waste generated from landfill. SWMP details Does the SWMP include: + No SWMP ☒ + SWMP with targets and procedures to minimise waste? ☐ + SWMP with procedures to divert 50% of waste ☐ + SWMP with procedures to divert 85% of waste ☐	0 of 3 Credits		Credit not sought.	None.
Was 3 Composting	A credit is awarded where individual home composting facilities are provided, or where a community/ communal composting service, either run by the Local Authority or overseen by a management plan is in operation. Select the facilities available No composting facilities ☐ Individual composting facilities ☒ OR Communal/ community composting*? ☐ Local Authority ☐ OR Private with management plan ☐ * including if an automated waste collection system is in place	1 of 1 Credit	-	The developer is to provide an external compost bin within the rear garden. This is to be at least 200l in volume and have suitable hardstanding level access and a 1500mm turning circle.	Site plan to confirm location within the rear garden along with manufacturers information to confirm the volume of the compost bin. Photographs will be taken during site inspection.

CATEGORY 6 POLLUTION		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 100.00%		Credits	Level			
Contribution to Overall Score: 2.80 points		4 of 4 Credits	All Levels			
Pol 1 Global Warming Potential (GWP) of Insulants	A credit is awarded where <u>all</u> insulating materials only use substances (in manufacture AND installation) that have a GWP of less than 5. Select the most appropriate option All insulants have a GWP less than 5 ☒ OR Some insulants have a GWP of less than 5 ☐ OR No insulants have a GWP of less than 5 ☐	1 of 1 Credits	-		All insulants need to have have a Global Warming Potential of less than 5.	Developer to provide manufacture information to confirm all insulants have GWP of less than 5, prior to purchase by returning POL1 ckecklist.
Pol 2 NOx Emissions	Credits are awarded on the basis of NOx emissions arising from the operation of the space and water heating system within the dwelling. Select the most appropriate option Greater than 100 mg/kWh ☐ OR Less than 100 mg/kWh ☐ OR Less than 70 mg/kWh ☐ OR Less than 40 mg/kWh ☒ OR Class 4 boiler ☐ OR Class 5 boiler ☐ OR All space and hot water energy requirements are met by systems who do not produce NOx emissions ☐	3 of 3 Credits	-		Confirmed, All heating systems produce 30 mg/kWh of Nox Emissions.	

CATEGORY 7 HEALTH & WELLBEING		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 50.00%		Credits	Level			
Contribution to Overall Score: 7.00 points		6 of 12 Credits	No level			
Hea 1 Daylighting	Credits are awarded for ensuring key rooms in the dwelling have high daylight factors (DF) and a view of the sky. Select the compliant areas Room Kitchen: Avg DF of at least 2% ☒ Living Room*: Avg DF of at least 1.5% ☒ Dining Room*: Avg DF of at least 1.5% ☒ Study*: Avg DF of at least 1.5% ☒ 80% of working plane in all above rooms receive direct light from the sky? ☐ Any room used for Ene 9 Home Office must also achieve a min DF of 1.5%.	2 of 3 Credits	-	Daylight calculations have been provided by BEAT solutions to confirm that the kitchen achieves >2% natural daylight factor and the living, dining and home office/study achieves >1.5%.	Photos to be taken during site inspection.	
Hea 2 Sound Insulation	Credits are awarded where performance standards exceed those required in Building Regulations Part E. This can be demonstrated by carrying out pre-completion testing or through the use of Robust Details Limited. Select a type of property Detached Property ☐ Attached Properties: - Separating walls and floors only exist between non habitable spaces ☐ - Separating walls and floors exist between habitable spaces ☒ Select a performance standard Performance standard not sought ☐ Airborne: 3db higher; Impact: 3dB lower ☐ OR Airborne: 5db higher; Impact: 5dB lower ☒ OR Airborne: 8db higher; Impact: 8dB lower ☐	3 of 4 Credits	-	Developer to use a robust detail to achieve 3 credits or pre completion test to achieve a 5db improvement over building regulations.	Developer to provide confirmation of robust detail sign up or pre completion test results.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Hea 3 Private Space	A credit is awarded for the provision of an outdoor space that is at least partially private. The space must allow easy access to all occupants. Will a private/ semi-private space be provided? _____ Yes, private/semi-private space will be provided OR No private/semi-private space	1 of 1 Credits	-	Suitable private space is to be provided in the form of a rear garden, which is fenced and gated for private access. Side paths and gates to be level and at least 900mm wide to comply with the WAS1 assess checklist.	Site plan to confirm location, size and fence types for the private space. Photographs will be taken upon site inspection.
Hea 4 Lifetime Homes	Mandatory Requirement: Lifetime Homes is mandatory when a dwelling is to achieve Code Level 6. Tradable credits: Credits are awarded where the developer has implemented all of the principles of the Lifetime Homes scheme. Mandatory Requirement _____ Dwelling to achieve Code Level 6? Lifetime Homes Compliance _____ All Lifetime Homes criteria will be met OR Exemption from LTH criteria 2/3 applied Credit not sought	0 of 4 Credits	No level	Credit not sought.	None.

CATEGORY 8 MANAGEMENT		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 77.00%		Credits	Level			
Contribution to Overall Score: 7.77 points		7 of 9 Credits	All Levels			
Man 1 Home User Guide	Credits are awarded where a simple guide is provided to each dwelling covering information relevant to the 'non-technical' home occupier, in accordance with the Code requirements. Tick the topics covered by the Home User Guide Operational Issues?☒ Site and Surroundings?☒ Is available in alternative formats?☒	3 of 3 Credits	-	The developer is to compile a home users guide written to the MAN1 checklist (both parts 1 and 2) see appendix C of this report for full requirement list. Developer to confirm alternative formats are available upon further request of clients.	A full home user guide is to be submitted to confirm it covers all the points within the checklist. At design stage a contents page covering the points along with a developer letter confirming the guide will be written to this will suffice.	
Man 2 Considerate Constructors Scheme	Credits are awarded where there is a commitment to comply with best practice site management principles using either the Considerate Constructors Scheme or an alternative locally/ nationally recognised scheme. Select the appropriate scheme and score No scheme used☒ Considerate Constructors OR Best Practice: Score between 24 and 31.5☐ OR Best Practice+: Score between 32 and 40☐ Alternative Scheme* OR Mandatory + 50% optional requirements☐ OR Mandatory + 80% optional requirements☐ * In the first instance, contact a Code Service Provider if you are considering to use an alternative scheme.	0 of 2 Credits	-	Credit not sought	Credit not sought	
Man 3 Construction Site Impacts	Credits are awarded where there is a commitment and strategy to operate site management procedures on site as following: Tick the impacts that will be addressed Monitor, report and set targets, where applicable, for: - CO₂/ energy use from site activities☐ - CO₂/ energy use from site related transport☐ - water consumption from site activities☒ Adopt best practice policies in respect of: - air (dust) pollution from site activities☒ - water (ground and surface) pollution on site☒ 80% of site timber is reclaimed, re-used or responsibly sourced☒	2 of 2 Credits	-	The developer is to implement Prevention of Pollution Guidelines (PPGs) 1, 2, 5 and 13 on site to reduce air/dust and ground/water pollution. At least 80% of the site timber is to be reused, reclaimed or responsibly sourced (FSC). Water meter readings are to be taken and compared to targets set before development.	A developer letter to confirm that the PPGs have been implemented on site during construction works. Purchase orders/FSC certificates for the site timber and tables/graphs to show the monitored water consumption.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Man 4 Security	Credits are awarded for complying with Section 2 - Physical Security from Secured by Design - New Homes. An Architectural Liaison Officer (ALO), or alternative, needs to be appointed early in the design process and their recommendations incorporated. Secured by Design Compliance Credit not sought ☐ OR Secured by Design Section 2 Compliance ☒	2 of 2 Credits	-	The developer is to appoint a SBD or ALO officer and agree to standards outlined in there advise to achieve section 2 compliance.	Developer is to provide a written letter for the SBD or ALO that section upon inspection as been successfully completed.

CATEGORY 9 ECOLOGY		Overall Level: 3	Overall Score	60.43	Assumptions Made	Evidence Required (The below cells can be formatted by assessors if required.)
% of Section Credits Predicted: 55.00%		Credits	Level			
Contribution to Overall Score: 6.66 points		5 of 9 Credits	All Levels			
Eco 1 Ecological Value of Site	One credit is awarded for developing land of inherently low value. Select the appropriate option Credit not sought ☐ OR Land has ecological value ☒ OR Land has low/ insignificant ecological value* ☐ * Low ecological value is determined either a) by using Checklist Eco 1 across the whole development site; or b) where an suitably qualified ecologist is appointed and can confirm or c) produces an independent ecological report of the site, that the construction zone is of low/ insignificant value; AND the rest of the development site will remain undisturbed by the works.	0 of 1 Credits	-	As per ecology report dated 10/3/14	None.	
Eco 2 Ecological Enhancement	A credit is awarded where there is a commitment to enhance the ecological value of the development site. Tick the appropriate boxes Will a <i>Suitably Qualified Ecologist</i> be appointed to recommend appropriate ecological features? ☒ AND Will all key recommendations be adopted? ☒ AND 30% of other recommendations be adopted? ☒	1 of 1 Credits	-	As per ecology report dated 10/3/14	Please see ecology report section 3.2.2. Confirmation of these works will be required upon completion.	
Eco 3 Protection of Ecological Features	A credit is awarded where there is a commitment to maintain and adequately protect features of ecological value. Type and protection of existing features Site with features of ecological value? ☒ OR Site of low ecological value (as Eco 1)? ☐ AND All* existing features potentially affected by site works are maintained and adequately protected? ☒ *If a suitably qualified ecologist has confirmed that a feature can be removed due to insignificant ecological value or poor health conditions, as long all the rest have been protected, then this box can be ticked.	1 of 1 Credits	-	As per ecology report dated 10/3/14	Please see ecology report section 3.2.3. Confirmation of these works will be required upon completion.	

Issue		Credits	Level	Assumptions Made	Evidence Required
Eco 4 Change of Ecological Value of Site	Credits are awarded where the change in ecological value has been calculated in accordance with the Code requirements and is calculated to be: Change in Ecological Value Major negative change: fewer than -9 ☐ Minor negative change: between -9 and -3 ☐ OR Neutral: between -3 and +3 ☐ Minor enhancement: between +3 and +9 ☒ Major enhancement: greater than 9 ☐	3 of 4 Credits	-	As per ecology report dated 10/3/14	As per ecology report dated 10/3/14
Eco 5 Building Footprint	Credits are awarded where the ratio of combined floor area of all dwellings on the site to their footprint is: Ratio of Net Internal Floor Area: Net Internal Ground Floor Area Credit Not Sought ☒ OR Houses: 2.5:1 OR Flats: 3:1 ☐ OR Houses: 3:1 OR Flats: 4:1 ☐ OR Houses & Flats Weighted (2.5:1 & 3:1) ☐ OR Houses & Flats Weighted (3:1 & 4:1) ☐	0 of 2 Credits		None.	None.

16 Appendix B – Ecology Site Report





**3 Legion Road
Hayling Island
P011 9ES**

Code for Sustainable Homes Ecology Report

For

Mr. Ralph Evans

Project Reference

ECO-021

Date

10th March, 2014

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SUMMARY

1. Lindsay Carrington Ecological Services were commissioned by Beat Solutions to conduct a Code for Sustainable Homes assessment at 3 Legion Road, Hayling Island, (Grid reference: SZ 722 998). The assessment was conducted in relation to the development of the site to construct an additional residential dwelling.
2. The primary objective of this report is to gain credits towards Criteria 9: Ecology within the CSH under the Building Research Establishment Environmental Assessment Method (BREEAM). The report is based on an ecological appraisal conducted by Jenny Sutch on 27th February 2014.
3. 3 Legion Road, Hayling Island was considered to be of low ecological value, and an ideal site to redevelop.
4. A total of five credits can be awarded under criteria 9 of the CSH assessment.
5. Recommendations to enhance the site include the use of native species within the landscape design and the provision of bat and bird nest boxes.

1.0 INTRODUCTION

Lindsay Carrington Ecological Services were commissioned by Beat Solutions to conduct a Code for Sustainable Homes assessment at 3 Legion Road, Hayling Island, (Grid reference: SZ 722 998). The assessment was conducted in relation to the development of the site to construct an additional residential dwelling.

The primary objective of this report is to gain credits towards credits 1 to 4 of Criteria 9: Ecology within the Code for Sustainable Homes (CSH) under the Building Research Establishment Environmental Assessment Method (BREEAM).

Section 2 of this report provides an overview of the CSH criteria while Section 3 presents the results of the CSH assessment. A brief summary of the CSH assessment is provided in Section 4 of the report along with details on the enhancement measures that will be implemented in accordance with the CSH assessment.

2.0 METHODOLOGY

2.1 Overview of Code for Sustainable Homes Assessment

CSH establishes a set of criteria to encourage building on sites which are not ecologically valuable, in order to protect sites that are important for nature conservation and, where possible, to enhance local biodiversity. CSH incorporates a checklist of criteria relating to the type of land to be used for new buildings or for access to building sites and a checklist to assist with assessing the value of ecological features. Should the proposed building fail to meet one or more of the ecological criteria the developer has a responsibility to ensure that measures are in place to minimise potential ecological damage and wherever possible take measures to enhance its ecological value. The primary objective of this assessment and report is to gain credits towards Criteria 9: Ecology.

2.2 Criteria for Code for Sustainable Homes Assessment

The CSH Assessment was undertaken according to the Ecological Criteria outlined below.

2.2.1 ECO1: Ecological Value of Site

The aim of this credit is to encourage development on land that already has low ecological value for wildlife, and discourage development on sites with existing ecological value. The land within a site is therefore assessed to determine its ecological value. Where a suitably qualified ecologist is employed the ecological value of a site is determined according to their professional opinion. If it is confirmed that the site has low ecological value then one credit can be awarded.

2.2.2 ECO2: Ecological Enhancement

One credit can be awarded where there is a commitment to enhance the ecological value of the development site, including adopting all key recommendations and 30% of additional recommendations.

2.2.3 ECO3: Protection of Ecological Features

On sites where ecological features are present, unless otherwise advised these features are to be maintained and adequately protected during site clearance, preparation and construction works. The aim is to protect existing ecological features from substantial damage during all stages of construction works. One credit can be awarded where all features are protected.

2.2.4 ECO4: Change in Ecological Value of Site

The ecological value of the site before and after development is calculated to establish the overall change in species per hectare. Credits are awarded depending on the level of change, the categories for which are identified in the Table 1 below. The aim is to reward steps taken to minimise reductions and encourage an improvement in ecological value.

Table 1: Credits awarded for change in species per hectare

Criteria	Credits
Minor negative change: between -9 and -3	1
Neutral: between -3 and +3	2
Minor enhancement: between +3 and +9	3
Major enhancement: greater than +9	4

3.0 RESULTS

3.1 Ecological appraisal

The ecological appraisal which this CSH assessment is based on was undertaken on 27th February 2014 by Jenny Sutch. The results of this survey have been presented below and a phase 1 habitat map provided as Appendix I.

The site comprises an existing residential dwelling and associated garage and shed, areas of hardstanding, amenity grassland, and hedgerow boundaries.

Hardstanding (Target note 1)

Hardstanding in the form of a driveway is present.

Amenity grassland (Target note 2)

Amenity grassland which is currently maintained comprises dominant perennial rye-grass (*Lolium perenne*), locally frequent Yorkshire-fog (*Holcus lanatus*), and locally occasional broad-leaved dock (*Rumex obtusifolius*).

Short perennial (Target note 3)

An area of the garden is dominated by herb species including common mouse-ear (*Cerastium fontanum*), red dead-nettle (*Lamium purpureum*), common mallow (*Malva sylvestris*) and Lords-and-Ladies (*Arum maculatum*). A full list of species present is provided in Table 2.

Table 2 – Species present in the short perennial habitat

Common name	Latin name	Abundance	Status
Grasses, rushes and sedges			
Yorkshire-fog	<i>Holcus lanatus</i>	LF	Common & widespread
Perennial rye-grass	<i>Lolium perenne</i>	D	Common & widespread
Herbaceous plants			
Lords-and-Ladies	<i>Arum maculatum</i>	LO	Common, mostly on calcareous or richer soils
Common mouse-ear	<i>Cerastium fontanum</i>	LO	Common & widespread
Spear thistle	<i>Cirsium vulgare</i>	R	Common & widespread
Cleavers	<i>Galium aparine</i>	LO	Common & widespread
Ivy	<i>Hedera helix</i>	LF	Common & widespread

Common name	Latin name	Abundance	Status
Red dead-nettle	<i>Lamium purpureum</i>	LO	Common on arable, wasteland & hedgebanks
Common mallow	<i>Malva sylvestris</i>	LO	Common on roadsides, wasteland & hedgebanks
Ribwort plantain	<i>Plantago lanceolata</i>	F	Common & widespread
Creeping buttercup	<i>Ranunculus repens</i>	LO	Common & widespread
Common nettle	<i>Urtica dioica</i>	LF	Common & widespread
Germander speedwell	<i>Veronica chamaedrys</i>	LF	Common in woodlands, hedgebanks & grassland

Bare ground (Target note 4)

There is a small area of bare ground against the western boundary.

Hedgerow

A hedgerow is present on the southern half of the eastern boundary with holly (*Ilex aquifolium*), evergreen shrubs, bramble (*Rubus fruticosus agg*), ivy (*Hedera helix*) and Lords-and-Ladies (*Arum maculatum*) present.

Tree

A single holly tree is located within the garden.

Habitats and species present at Legion Road, Hayling Island are common and widespread.

3.2 CSH Assessment

3.2.1 ECO1 Ecological value of site

The plot of land at Legion Road is considered to hold low ecological value, however a holly tree is present which has potential to support nesting birds.

As such, no credits can be awarded under criterion ECO1.

3.2.2 ECO2 Ecological enhancement

Ecological enhancement measures have been recommended within Section 4.2 of this report will add ecological value to the site. The developer will adopt all key recommendations and at least 30% of additional recommendations.

As such a score of one credit can be gained under this criterion.

3.2.3 ECO3 Protection of ecological features

The holly tree on site will be protected during development through the erection of Heras fencing.

One credit can be awarded under this criterion.

3.2.4 ECO4 Change of ecological value of site

The number of species currently present within each habitat on the site has been estimated in Appendix II. The number of species for each habitat following development has also been estimated.

Having undertaken the calculation for ECO4, the overall change in species is 4.27

This represents a minor enhancement resulting in a score of three credits under this criterion.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 *Summary of credits awarded*

A total of five credits can be awarded under Category 9: Ecology of the CSH assessment. The land within the construction zone at Legion Road was considered to hold ecological value due to the presence of one holly tree and therefore no credits can be awarded under criterion ECO1, however the tree will be protected and full credits can be awarded under ECO3. Full credits may be awarded for ECO2 through the enhancement of ecological features on the site as recommended by a Suitably Qualified Ecologist. CSH encourages ecological enhancement on sites such as this, and as such some suggestions for simple measures and features that can be included within the site have been made in Section 4.2. Through implementing the measures within Section 4.2, the development scores 3 credits under ECO4 due to a minor enhancement in the ecological value of the site.

4.2 *Ecological Enhancement*

The following key recommendations will be adopted along with at least 30% of the additional recommendations.

Key recommendations

1. New grassland within the proposed development will be created using turfs comprising two or three species of typical sown lawns including perennial rye-grass (*Lolium perenne*), smooth meadow-grass (*Poa pratensis*) and red fescue (*Festuca rubra*). The turfs will be oversown with an EL1 flowering lawn mix purchased from Emorsgate (www.wildseed.co.uk) which contains thirteen species.
2. Native tree and shrub species, or species known to attract wildlife will be used for planting within any new landscaping proposals. Suitable species will include guelder-rose (*Viburnum opulus*), honeysuckle (*Lonicera periclymenum*), lavender (*Lavendula* sp), thyme (*Thymus vulgaris*), and chives (*Allium schoenoprasum*). Use of native species within urban landscaping schemes provides important foraging habitat for a range of birds and invertebrates, including BAP species such as house sparrow (*Passer domesticus*).

Additional recommendations

Birds and bats

Provision of bird and bat boxes on the buildings will help increase the number of species within the site. The following can be erected:

- Wooden nest box – can be hung from walls. A total of two bird nest boxes will be installed on site.
- Wooden bat boxes – can be hung from walls or trees. One bat box will be erected on site.

Invertebrates

Provision of dead wood habitat will help increase the number of invertebrate species on site as well as providing habitat for mosses, lichens and fungi. This will be provided by burying a wooden 'log' up to one metre below the earth's surface in two of the gardens being created in this phase of the development.

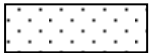
5.0 REFERENCES

Communities and Local Government (2010), *Code for Sustainable Homes – Technical Guide*

APPENDIX I: Phase I habitat map



Key to Phase 1 Habitat Map

	Amenity grassland
	Hardstanding
	Short perennial
	Buildings
	Scattered trees
	Hedgerow
	Survey boundary
 T1	Target notes

Target notes to accompany Phase 1 Habitat Map

Target note	Description
1	Area of hardstanding
2	Amenity grassland comprising perennial rye-grass (<i>Lolium perenne</i>), Yorkshire-fog (<i>Holcus lanatus</i>) and broad-leaved dock (<i>Rumex obtusifolius</i>)
3	Short perennial vegetation with Yorkshire-fog, perennial rye grass, Lords-and-Ladies (<i>Arum maculatum</i>), common mouse-ear (<i>Cerastium fontanum</i>), spear thistle (<i>Cirsium vulgare</i>), cleavers (<i>Galium aparine</i>), ivy (<i>Hedera helix</i>), red dead-nettle (<i>Lamium purpureum</i>), common mallow (<i>Malva sylvestris</i>), ribwort plantain (<i>Plantago lanceolata</i>), creeping buttercup (<i>Ranunculus repens</i>), common nettle (<i>Urtica dioica</i>) and germander speedwell (<i>Veronica chamaedrys</i>)
4	Area of bare ground

APPENDIX II: Full CSH Assessment

Ecology Report Template

Please read the following before completing the report:

- This report template is to be used by Suitably Qualified Ecologist's providing reports which address Ecology 1, 2, 3 and 4 issues. It is a mandatory requirement that this document is completed in a Code for Sustainable Homes submission of evidence.
- The appointed, licensed Code assessor is to pass this document to the appointed ecologist who conducted/ will conduct the ecology work.
- The appointed ecologist is to complete all sections of this report and return it completed with all relevant documentation in the Appendix to the assessor.
- An ecologist may have been appointed to carry out ecological site surveys and to produce an ecology report without being aware that a Code assessment has been, or is to be conducted. In this instance, the ecologist should fill in the relevant details required for the Code in this report template.
- The assessor is to use this report in conjunction with the latest version of the relevant Code Guidance and information provided by the developer / client, to carry out the assessment for the Ecology Category issues stated above.
- There are 6 sections (sections A - F) in this document.
- Section A1 requires contact details for the ecologist and developer / client; section A2 requires the development details.
- Section B1 determines whether the appointed ecologist is 'suitably qualified' (under the Code); and if not, section B2 determines whether the report has been verified by an ecologist who is 'suitably qualified'.
- Section C determines whether the findings of the report have been based on data collected from site surveys conducted at appropriate times of the year to determine whether different species are evident.
(Note: If 'No' is recorded for either Section B or C then the contents of the ecology report cannot be used to determine compliance with the Code requirements).
- Section D provides the assessor with the necessary information to base the assessment on for the various Ecology credits.
- Section E provides details of the documentation / information to be included within the appendix of this guidance.
- Section F requires the signature of the appointed ecologist who has completed this document.

Section A1: Contact Details

Ecologist's Details

Company name: Lindsay Carrington Ecological Services Limited

Company address: The Old Squash Court, Rempstone Hall, Rempstone, Corfe Castle, Wareham, Dorset BH20 5JQ

Contact name: Jenny Sutch

Contact telephone number: 01929 477115

Ecology Report Reference:

Developer / Client Details

Company name: Beat Solutions

Company address: Unit 2, Barley Business Park, Duncan Road, Park Gate, Southampton, Hampshire SO31 1ZT

Contact name: Lynne Pinnick

Contact telephone number: 01489 565920

Section A2: Development Details

BRE Reference Number:

Client Reference Number:

Development Name: Legion Road,

Development Address: 3 Legion Road, Hayling Island

Section B1: Suitably Qualified Ecologist's Qualifications

Do you hold a degree (or equivalent qualification, e.g. N/SVQ level 5) in ecology or related subject?

Yes

If Yes, please provide details:

- 2005: BSc. Hons. Applied Geography (2.1) from Bournemouth University

Are you a practising ecologist with a minimum of 3 years relevant experience within the last 5 years?

Relevant experience must clearly demonstrate a practical understanding of factors affecting ecology in relation to construction and the built environment and will include acting in an advisory capacity to provide recommendations for ecological protection, enhancement and mitigation measures, e.g. ecological impact assessments.

Yes

If Yes, please provide details: ...

I have been a practising ecological consultant for over 7 years during which time I have gained extensive experience conducting ecological surveys as well as devising and implementing ecological mitigation, compensation and enhancement measures. My expertise includes protected species surveys including bats, reptiles, dormice and great crested newts.

Are you bound by a professional code of conduct and subject to peer review*?

A full member of one of the following organisations will be deemed suitable: Chartered Institution of Water and Environmental Management (CIWEM); Institute of Ecology and Environmental Management (IEEM); Institute of Environmental Management and Assessment (IEMA); Landscape Institute (LI).

Yes

If Yes, please provide details :

Full member of CIEEM

**Peer review is defined as the process employed by a professional body to demonstrate that potential or current full members maintain a standard of knowledge and experience required to ensure compliance with a code of conduct and professional ethics.*

Note: If the answer to any question in Section B1 is 'No' then the ecologist writing the report does not meet the requirements of a *Suitably Qualified Ecologist* under the Code. The ecology report therefore cannot be used in the Code assessment unless it is verified by a 'Suitably Qualified Ecologist'. If this is the case, proceed to Section B2.

If the ecologist does meet the requirements of a *Suitably Qualified Ecologist*, proceed to Section C.

Section B2: Report Verification

If the appointed ecologist does not meet the requirements of a *Suitably Qualified Ecologist*, the report must be verified by an individual who does meet these requirements. Otherwise the ecology report cannot be used in the Code assessment.

1. The person who verifies the report must provide written confirmation that they meet the requirements of a

Suitably Qualified Ecologist in accordance with Section B1 above.

2. Details on verifying an ecology report for a Code assessment:
 - The individual verifying the report must provide written confirmation that they comply with the definition of a Suitably Qualified Ecologist (as detailed above in Section B1).
 - The individual verifying the report must confirm in writing they have read and reviewed the report and found it to:
 - represent sound industry practice
 - report and recommend correctly, truthfully, and objectively
 - be appropriate given the local site conditions and scope of works proposed
 - avoid invalid, biased, and exaggerated statements.

Written confirmation from the third party verifier on all the points detailed under 1 and 2 above (for Section B2) must be included in the Appendix to this report (see Section E).

Section C: Site Survey

Have the findings of the ecology report been based on data collected from a site survey(s)?

Yes

If yes, please provide details to confirm this (e.g. date(s) and scope of site survey(s))

An ecological appraisal was conducted on 27th February 2014 by Jenny Sutch of Lindsay Carrington Ecological Services. The survey followed the methodology given in the '*Handbook for Phase 1 habitat survey – a technique for environmental audit*' (2010), Joint Nature Conservation Committee

.....
Note: If 'No' has been answered to Question 1 of Section C the ecology report cannot be used to determine compliance with the requirements of the relevant Code credits.

On what date did/ will initial site preparation works commence?

Note: If the site survey was carried out after initial site preparation works commenced, the ecology report cannot be used to determine compliance with the requirements of the relevant Code credits.

Note to Suitably Qualified Ecologist and the Code assessor: The contents of the ecology report must be representative of the site's existing ecology immediately prior to the commencement of initial site preparation works.

Section D: Details from the Site Survey

Eco 1 Ecological Value of Site

Is the construction zone of low or insignificant ecological value?

The construction zone includes any land used for buildings, hard standing, landscaping, site access and any other land where construction work is carried out (or land being disturbed in any way), plus a 3 metre boundary in either direction around these areas. It also includes any areas used for temporary site storage and buildings.

No

If yes, is there any land outside the construction zone but inside the development site of ecological value?

N/A

Please give details:

If yes, is it possible for all areas / features of ecological value to remain undisturbed by the construction works?

Eco 2 Ecological Enhancement

Has the developer / client required you to provide advice and recommendations for enhancing site ecology?

Yes

If yes, please provide a brief statement outlining all of your KEY recommendations*:

1. New grassland within the proposed development will be created using turfs comprising two or three species of typical sown lawns including perennial rye-grass (*Lolium perenne*), smooth meadow-grass (*Poa pratensis*) and red fescue (*Festuca rubra*). The turfs will be oversown with an EL1 flowering lawn mix purchased from Emorsgate (www.wildseed.co.uk) which contains thirteen species.
2. Native tree and shrub species, or species known to attract wildlife will be used for planting within any new landscaping proposals. Suitable species will include guelder-rose (*Viburnum opulus*), honeysuckle (*Lonicera periclymenum*), lavender (*Lavendula* sp), thyme (*Thymus vulgaris*), and chives (*Allium schoenoprasum*). Use of native species within urban landscaping schemes provides important foraging habitat for a range of birds and invertebrates, including BAP species such as house sparrow (*Passer domesticus*).

If yes, please provide a brief statement outlining all of your ADDITIONAL recommendations*.

Provision of bird and bat boxes on the buildings will help support resident species and encourage additional species to utilise the site. The following can be erected:

- Wooden bird nest box – can be hung from walls. A total of two bird nest boxes will be installed on site.
- Wooden bat boxes – can be hung from walls or trees. One bat box will be erected on site.

Provision of dead wood habitat will help increase the number of invertebrate species on site as well as providing habitat for mosses, lichens and fungi. This will be provided by burying a wooden ‘log’ up to one metre below the earth’s surface in two of the gardens being created in this phase of the development.

** The client / developer will be required to adopt / implement all KEY recommendations and 30% of ADDITIONAL recommendations.*

Eco 3 Protection of Ecological Features

Note: Eco 3 looks at protecting all existing features / areas of ecological value on the site and boundary area. If a feature of ecological value is to be removed as part of the development works, e.g. site clearance, then this credit cannot be achieved. If you have deemed the whole development site to be of poor ecological value then there will be no features of ecological value to protect. If the construction zone is of low ecological value but the wider site is not, give protection measures here. If there is an area(s) or feature(s) of low or insignificant ecological value you wish to advise be retained and enhanced / improved, e.g. a species-poor hedgerow to a species-rich hedgerow, then full details of this advice should be entered as a recommendation under *Eco 2 Ecological Enhancement*.

Are there any existing features/ areas of ecological value on the site or at the boundary of the site?

Yes

If yes, please provide a brief statement outlining the advice/ recommendations given for protecting all existing features and areas of ecological value:

Heras fencing will be installed to protect the existing tree on site.

Are any ecological features to be relocated on the site?

No

If yes, please provide a brief statement outlining the reasons for relocation and recommendations for protecting the ecological features:

Are there any species present on site that are protected by UK and EU law?

No

Where there are species present on site protected by UK and EU law, have recommendations been provided to the developer in order to protect such species in order to comply with UK and EU law?

N/A

Eco 4 Change of Ecological Value of Site

Are you able to provide the following information for before and after construction: habitat types and an estimate of the number of floral species present per habitat type (based on appropriate censusing techniques and confirmed planting regimes)?

Yes

If yes, please provide the following information:

- a. A brief description of the landscape and habitats surrounding the development site

Land at 3 Legion Road is situated within the residential area of Hayling Island, surrounded by residential dwellings and associated gardens.

- b. The total site area (*this will be the same both before and after development*): 166m²

c. Provide details of the site before development in the table below:

Habitat Type*	Area of habitat type (m ²)	Number of species per habitat type
Building/hardstanding	96	0
Amenity	32	3
Short perennial	24	13
Trees / Hedgerow	14	6

d. Provide details of the site after development in the table below:

Habitat Type*	Area of habitat type (m ²)	Number of species per habitat type
Building/hardstanding	58.7	0
Amenity grassland	81.3	13
Hedgerow	14	6
Planting	12	5

* Habitat types will include natural areas, e.g. various grasslands and woodlands; as well as areas of the built environment, e.g. buildings, hard landscaping. The area of each habitat type when added together must always equal the total area of the development site.

Has your client / developer requested you to carry out the calculation for Eco 4 Change in Ecological Value of Site? The calculation must be carried out in line with the methodology provided in the most current version of the Code Guidance.

Yes

If yes, please complete the tables below:

Calculation of the Ecological Value of the Site Before Development

Plot Type	Area of Plot Type [m ²]		Species [No.] (from Table 2 or a SQE*)		Species x Area of Plot Type
Building/hardstanding	96	x	0	=	0
Amenity	32	x	3	=	96
Short perennial	24	x	13	=	312
Trees / Hedgerow	14	x	6	=	84
(1) Total site area =	166			=	492
Species before development = Total species x area of plot type / Total site area = (2)/(1) =					2.96

Calculation of the Ecological Value of the Site After Development

Plot Type	Area of Plot Type [m ²]		Species [No.] (from Table 2 or a SQE*)		Species x Area of Plot Type
Building/hardstanding	58.7	x	0	=	0
Amenity grassland	81.3	x	13	=	1056.9
Hedgerow	14	x	6		84
Planting	12	x	5		60
(1) Total site area =	166			=	1200.9
Species after development = Total species x area of plot type / Total site area = (2)/(1) =					7.23

* SQE = Suitably Qualified Ecologist

Section E: Appendix

The required documentation to be included within the appendix of this guidance document will include: the ecology report; written confirmation from the verifier of the ecology report (where necessary); and any supplementary documentation, e.g. ecologist's curriculum vitae; maps, plans, drawings, letters / emails of correspondence, etc. Please include these details along with the appropriate reference to each document in the table below:

Document	Reference
Ecologist's curriculum vitae	Appendix III

Section F: Signature of Validation

I confirm that the information provided in this document is truthful and accurate at the time of completion.

Name of ecologist: Jenny Sutch

Signature of ecologist:



Date 10/03/2014

APPENDIX III: Ecologist's Curriculum Vitae



CURRICULUM VITAE: JENNY SUTCH

POSITION: Senior Ecologist

SUMMARY STATEMENT: Jenny joined Lindsay Carrington Ecological Services in April 2007. She graduated from Bournemouth University in 2005 and prior to joining our ecology team was employed as a seasonal surveyor for consultancies alongside volunteering for the National Trust on the Isle of Purbeck, Dorset. Jenny's key strengths lie in the survey and implementation of mitigation strategies for bats, reptiles and dormice. Jenny also has extensive experience in undertaking phase 1 habitat surveys, as well as undertaking great crested newt, water vole and otter, and barn owl surveys.

KEY STRENGTHS:

- Ecological surveying;
- Project planning and organisation;
- Report writing;
- Communication skills.

EXPERIENCE AND SKILLS:

Survey Work:

- Extended Phase 1 habitat survey;
- Phase 2 botanical surveys;
- BREEAM / Code for Sustainable Homes;
- Protected species surveys, mitigation and compensation works (including reptiles, great crested newts, bats, dormice, water voles, otters and barn owls).

FORMAL QUALIFICATIONS:

- 2005: BSc in Applied Geography from Bournemouth University (2.1).

ECOLOGICAL LICENCES:

- Natural England Licence to survey / disturb great crested newt;
- Natural England Licence to survey / disturb reptile species listed on the EU Habitats Directive;
- Natural England Licence to survey / disturb bats (all species in all counties in England);
- Natural England Licence to survey / disturb dormice

PROFESSIONAL LINKS:

- Full member of the Institute of Ecology and Environmental Management (IEEM).

CAREER REVIEW:

Lindsay Carrington Ecological Services – Ecologist, April 2007 to-date

During her time with Lindsay Carrington Ecological Services Jenny has been involved with a wide range of ecological surveys and subsequent report writing. Jenny has gained the following experience during this time.

Extended Phase 1 habitat surveys: Jenny has gained extensive experience in conducting extended Phase 1 habitat assessments of sites, mapping habitats and identifying potential protected species constraints. Involvement has largely been concerned with small scale housing projects, but has recently included large scale housing developments. Projects include:

- Premier Travel Inn construction and extension projects for Whitbread at Weston Super-Mare in Somerset and at Highcliffe in Dorset;
- Redevelopment project at Black Hill Barn, Farmington, Gloucestershire;
- Construction of a 5-a-side football pitch at Christ's College, Finchley;
- Aldershot Urban Extension project;
- Demolish / rebuild project on farm in Oxfordshire;
- Potential housing development on farmland in Surrey; and
- Numerous small-scale demolish and rebuild projects in the south of England.

Bat survey, mitigation and compensation works: Jenny has held a Natural England survey licence since 2008 and has undertaken numerous bat surveys, involving assessment of buildings, structures and trees for their potential to support roosting bats, including emergence and dawn swarming surveys using bat detectors on a wide range of projects from small scale demolish / rebuild projects to large scale housing developments. She has assisted with applying for Natural England Licences and has devised and implemented mitigation strategies. Projects Jenny has assisted with include:

- Premier Travel Inn construction at Weston Super-Mare for Whitbread;
- Thistle Hotel redevelopment in Poole for Patch Properties;
- School regeneration project at Grand Avenue Primary and Infant School in Surbiton, Surrey;
- Redevelopment project at Littlemore Scientific Industrial Park, Oxford;
- Renovation projects on the Wherwell Estate for Smiths Gore;
- Restoration projects on Grade II listed buildings in Salisbury and Cullompton;
- Transect surveys in Southampton; and
- Various demolish and rebuild projects in the south of England.

Great crested newt survey, mitigation and compensation works: Jenny has undertaken great crested newt surveys encountering a wide range of waterbodies and terrestrial habitats. She holds a great crested newt licence which she has held since 2007. Jenny also took part in organising and running a great crested newt course with the company. Projects she has been involved with include:

- Pitfall trapping in Horley, near Gatwick for Barrett Homes on behalf of Waterman CPM;
- Surveying within school site for redevelopment project in Devizes;
- Construction of new runway at Redhill Aerodrome; and
- Various small scale surveys and translocations primarily in the south of England.

Reptile survey, mitigation and compensation works: Jenny has conducted a number of reptile surveys and devised mitigation strategies which she implemented. Jenny has held a sand lizard and smooth snake licence since 2007. Projects include:

- Premier Travel Inn construction project at Highcliffe, Dorset;
- Oaklands Park, Chichester, West Sussex involving the relocation of reptiles to facilitate a new rifle range and nature area;
- Translocation of reptiles at Milborne Port for housing development involving supervision of destructive search;
- Large translocation project in Whiteley for a large housing project, involving liaising with local ecologist and supervising mitigation measures; and
- Numerous demolish and rebuild projects.

Dormouse survey, mitigation and compensation works: Jenny gained her dormouse licence in 2009, and had previously been an accredited agent. Projects that she has been involved with include:

- Acting as an accredited agent on a development licence for the construction of a salt store and household recycling centre, involving liaising with the County Ecologist and supervising mitigation measures;
- Presence / absence surveys in woodland near proposed housing development in Whiteley;
- Presence / absence surveys, and devising mitigation strategies for a hedgerow habitat on a farm in Kent;
- Presence / absence surveys in woodland and scrub habitat on National Trust properties and RSPB reserves;
- Devising a mitigation strategy in relation to a small housing development;
- Monitoring programme in Garston wood, Sixpenny Handley with RSPB; and
- Running presence / absence and monitoring programme for the Ministry of Defence on the Lulworth Ranges.

Otter and water vole survey, mitigation and compensation: Jenny has undertaken these surveys on the following projects:

- New landscaping scheme at school in Sherborne including reprofiling of small stream;
- Survey of river adjacent to the McLaren Technology Centre in Woking;
- Survey of Monks Brook in Southampton; and
- Surveys of watercourses in Cambridge.

Watching Brief: Jenny has conducted watching briefs during small and large scale developments, with her responsibilities concerned with ensuring adherence to protective species legislation.

Botanical surveys: Jenny has conducted detailed botanical surveys, including NVC surveys on a number of sites looking at acidic, calcareous, woodland and heathland habitats.

BREEAM / Code for Sustainable Homes: Jenny has been involved in producing ecological reports that meet the BREEAM / Code for Sustainable Homes criteria in order to gain maximum credits for clients. Projects include:

- Redevelopment project at Littlemore Scientific industrial park, Oxford;
- Demolish / rebuild project at a school site in Melksham, Wiltshire; and
- Numerous redevelopment projects of residential properties in Poole, and the New Forest.

Thompson Ecology – March 2007

Jenny had a temporary contract conducting great crested newt surveys in Cardiff immediately prior to joining Lindsay Carrington Ecological Services.

ARM Conservation – March 2006 to September 2006

Jenny had a temporary contract with ARM Conservation, assisting with a large reptile translocation in Kemsley, Kent to facilitate construction of new warehouses. During this time she encountered common lizard, slow worm and grass snake and has consequently become proficient in survey and handling techniques of these species.

Voluntary Officer with the National Trust – October 2005 to March 2007

Jenny volunteered with the National Trust on the Isle of Purbeck intermittently for 15months. During this time she received training in bat survey techniques, conducted reptile and butterfly surveys, assisted with research into the impact of Sika deer on heathland habitats and assisted wardens with habitat management. During this time, Jenny gained experience in the survey and handling of smooth snake and sand lizard and subsequently gained her Natural England Licence.

Authorisation

	Name	Date	Signature
Report prepared by	Louisa Jones	10/03/2014	
Report authorised by	Jenny Sutch	10/03/2014	