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**Church Raikes, Chipping
Code for Sustainable Homes Design Stage Ecological Assessment**

DRAFT

Produced for

*Croft Goode Architects
4 The Crossroads
Freckleton Street
Kirkham
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January 2012

Produced by

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Section A1: Contact Details

Ecologist's Details

Company name: TEP – The Environment Partnership
Company address: Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH
Contact name: Lynsey Crellin
Contact telephone number: 01925 844066

Developer / Client Details

Company name: Croft Goode Architects
Company address: 4 The Crossroads
Freckleton Street
Kirkham
Lancashire
PR4 2SH
Contact name: Chris Blake
Contact telephone number: 01772 686030

Section A2: Development Details

BRE Reference Number:
To be confirmed by the Client
BRE Client Number:
To be confirmed by the Client

Development Name: Church Raiké, Chipping.

Development Address: Church Raiké, Chipping, PR3 2QL





Section B1: ecologist's qualifications

B1.1 Do you hold a degree (or equivalent qualification, e.g. N/SVQ level 5) in ecology or related subject?

Yes

No

If yes, please provide details: BSc (Hons) Biology with Industrial Experience

B1.2 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 the ecological protection, enhancement and mitigation measures e.g. ecological impact assessments.*

Yes

No

If yes, please provide details: Practising ecologist at TEP since March 2008.

B1.3 Are you bound by a professional code of conduct and subject to peer review?¹ *i.e. 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 (IHEM); Institute of Environmental Management and Assessment (IEMA); Landscape Institute (LI).*

Yes

No

If 'no' has been answered for any question in Section B1 then the requirements of a 'suitably qualified ecologist' under Code for Sustainable Homes has not been met. The ecology report CANNOT be used in the Code for Sustainable Homes assessment unless it is verified by an individual who is 'suitably qualified' (see section B2 below).

¹ 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



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Section B2: Report Verification

Details on verifying an ecology report for a Code for Sustainable Homes assessment

- B2.1 The verifier of the report must provide written confirmation that they comply with the definition of a 'suitably qualified ecologist' (as detailed above in Section B1).
- B2.2 The verifier of 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 the scope of works proposed
 - avoid invalid, biased and exaggerated statements.
- B2.3 Written confirmation from the third party verifier on all the points detailed under 1 and 2 above (for section B2) must be included in an appendix to this guidance.
- B2.4 The Code for Sustainable Homes ecological assessment for Church Raiké has been checked and verified by Lindsey Cunliffe who is a suitably qualified ecologist in accordance with the relevant guidance. Please refer to Appendix One for a letter drafted by Lindsey to the BRE plus a copy of her CV confirming her credentials.

As the report has been verified by an individual who does meet these requirements it can be used in the Code for Sustainable Homes ecological assessment.

Section C: Site Survey

- C.1 Have the findings of the ecology report been based on data collected from a site survey(s)²?

Yes

No

If yes, please provide details to justify this (e.g. date (s) and scope of site survey (s))³

² The site visit(s) and survey(s) must be conducted at appropriate times of the year when it is possible to determine the presence, or evidence of the presence, of different plant and animal species

³ 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.

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If 'no' has been answered to Question 1 of Section C then the ecology report CANNOT be used to determine compliance with the requirement of the relevant Code for Sustainable Homes credits.

Findings of Site Survey and Investigation

C.2 The Church Raikie site covers an area of 1,972m² and the central grid reference is SD 62110 43435. The land is currently occupied by rough grassland with a large area of scrub along with smaller areas of introduced shrub, hardstanding and scattered trees. There are also hedgerows that run along the north-eastern and south-western boundaries. A representative photograph of the site is shown below.

Figure 1 – Church Raikie Development Site



C.3 Details of the site layout were provided by Croft Goode Architects and supplemented by a site survey undertaken by Lee Greenough in November 2012 giving an overview of key habitats and any likely sites for species of conservation concern.

C.4 The survey was undertaken outside the optimal time period for vegetation surveys however given the limited nature of the habitats on site it is unlikely that the survey has been significantly limited by being outside of the normal survey period. Invasive species that would most likely occur in the habitats present on site generally have identifiable winter features (such as berries, dead stems and structure) that allow them to be identified throughout the year. All vegetation present was identifiable and an accurate species list recorded to inform this assessment.



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- C.5 The site survey involved desk based analysis before undertaking a site visit to establish the site condition and its locale. A walkover survey was felt to be the most appropriate method of survey based on initial desk based analysis.
- C.6 Plans provided by Croft Goode Architects and available to TEP include:
- a. Topographical Survey – Drawing No. S10/213A;
 - b. Landscaping layout – Drawing No. 09-1441-P09;
 - c. Ecological Assessment - TEP Report Ref. 3192.003; and
 - d. Arboricultural Implications Assessment – TEP Report Ref. 3192.001.

Current Ecological Significance

- C.7 The site covers an area of 1,972m² and is surrounded by residential development. The site is dominated by fertile grassland with areas of scrub and introduced shrub. There are also small areas of hardstanding, an area of tall ruderal herb and hedgerows present.
- C.8 The developable area in question is identified in the topographical survey (Drawing No S10/213A) located within Appendix 2 of this report and is the area on which the assessment has been based.
- C.9 Figures 2 and 3 show the location of the Church Raikie site at the local and wider landscape scale.

Figure 2 – Location of Church Raikie within the local landscape context




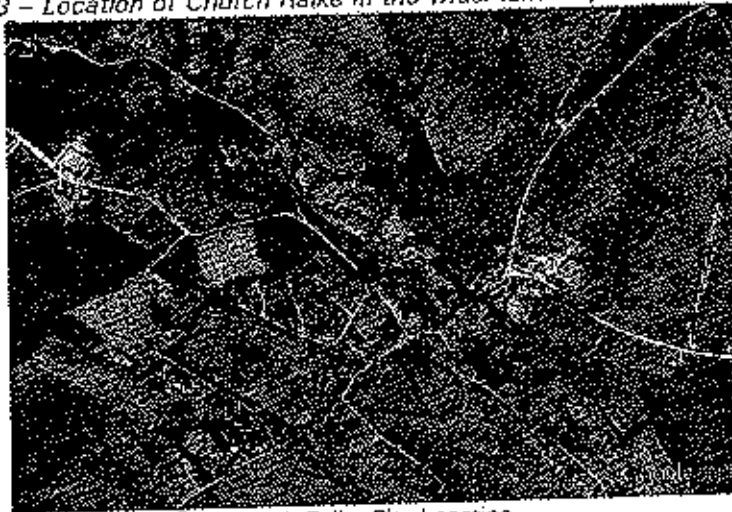
 Indicative Site Boundary



Figure 3 – Location of Church Raikes in the wider landscape context



● Church Raikes Site Location

Site Habitats

Hardstanding/Bare Ground

- C.10 There are two small areas of hardstanding/bare ground on the site. These areas are of limited ecological value.

Grassland

- C.11 The majority of the site is occupied by rough grassland. The grassland is species poor and for this reason has been deemed to have limited ecological value.
- C.12 The eastern corner of the site is occupied by dense, tall ruderal vegetation, including species such as rosebay willowherb, creeping thistle and nettles. This is deemed to be of limited ecological value due to the small area it covers.

Lowland Woodland (Scrub, shrubs and hedgerow)

- C.13 There is one tree present on site, an ash located within the hedgerow on the south-western boundary.
- C.14 A large area of dense scrub dominated by blackthorn is located in the western corner of the site. This is of ecological value due to the sheltering, foraging and nesting opportunities it provides for local wildlife.
- C.15 The southern corner of the site contains an L-shaped swathe of introduced shrub dominated by garden privet, but also containing bramble and blackthorn. This is of limited ecological value due to the predominance of non-native species.



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- C.16 A short stretch of species poor defunct hedge dominated by hawthorn is located in the northern corner of the site. This is of limited ecological value due to its lack of size and species diversity. The south-western boundary of the site is defined by an intact hedge. An initial assessment suggested that this may satisfy criteria for 'important' status under the *Hedgerow Regulations* (1997) due to the presence of four woody species, a supporting bank, connections with other hedges and less than 10% gaps. Due to the time of year of the initial site visit, a full assessment could not be undertaken and therefore a further survey is required in spring to confirm the value of the hedge.
- C.17 Vegetation (trees, hedgerows and scrub) located outside the site in close proximity to the boundary should be appropriately protected in accordance with BS5837:2005 'trees in relation to construction'. All recommendations made within the tree survey report (Ref: 3192.001) regarding tree protection must be adhered to.
- C.18 No trees on site have the potential to provide roosting habitat for bats, however please note this was a ground-based assessment only and if bats are suspected on site at any time works must cease immediately and a licensed bat consultant must be contacted for advice.
- C.19 The proposed development plans (09-1441-P09) show that all vegetation on site is to be removed to facilitate the development. During the construction phase of works disturbance to vegetation (trees, scrub, introduced shrub and hedgerows) should be kept to a minimum during the British breeding season (March – August).⁹ If clearance must be undertaken during the British bird breeding season the developer must ensure that a thorough nesting bird survey is undertaken by an ecologist beforehand.

Invasive Species

- C.20 A small patch of Himalayan balsam was noted in the centre of the site. Himalayan balsam is a non-native/invasive plant that can out-compete local flora. Under provisions made within the Wildlife and Countryside Act, 1981, it is an offence to spread Himalayan balsam. Liability may also extend in situations where a landowner has knowingly permitted the spread of Himalayan balsam onto neighbouring land. Failure to manage and dispose of Himalayan balsam in accordance with current guidelines can lead to prosecution.
- C.21 If control of Himalayan balsam is possible within enhancement measures to contribute to the redevelopment of the site, it is recommended that prior to the

⁹ All birds, their nests and eggs are protected by law under the Wildlife and Countryside Act 1981 – this makes it an offence, with certain exceptions, to deliberately take, damage or destroy the nest of any wild bird while it is in use or being built. It is also illegal to take and destroy the egg of any wild bird.

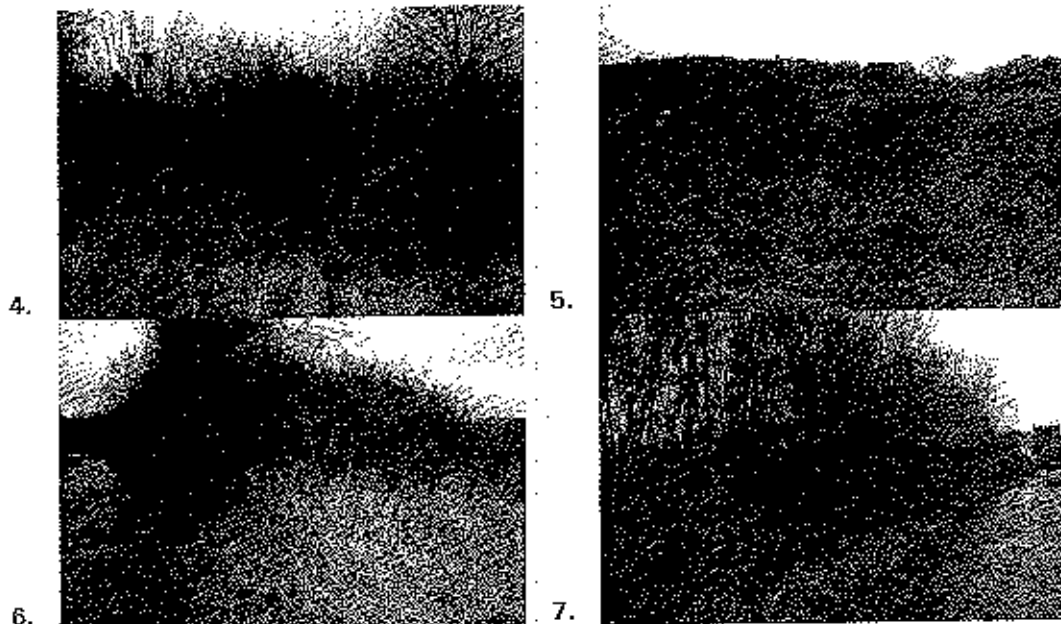


development the balsam is cut back using mechanical methods or pulled out by hand. If strimming is used as a method of control, the plants should be cut as close to ground level as possible between May and June, prior to plants seed.

- C.22 It is likely that extensive patches of balsam may take years to eradicate, due to the seed bank that may have established. This might be reduced by removing the topsoil from areas that had dense infestations.

Fauna

- C.23 Although the potential for protected species on site is very low, if any are suspected on site at any time works must cease immediately and an ecologist must be contacted for advice.
- C.24 The presence of lowland woodland within the construction zone would indicate the possibility of birds being present in and around the site. Removal of the trees, scrub and hedgerows should take place outside of the British bird breeding season (March - August) or a nesting bird survey undertaken beforehand.
- C.25 The photographs overleaf show examples of the habitats found on site.



Figures showing: 4) Area of dense scrub;
5) Fertile grassland;
6) Area of introduced shrub; and
7) Potential 'important' hedgerow along road.



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Section D: Details from site survey

D1.0 Evaluation Criteria for Eco1: Ecological Value of the Site

D1.1 Is the construction zone of low or insignificant ecological value⁵?

Yes

No

If yes, please provide a brief statement explaining how it has been deemed to be of low or insignificant value.

Assessment

D1.2 To satisfy Eco1, and obtain the 1 credit available, the developer must ensure wherever possible, development is on land that already has limited value to wildlife, discouraging the development of ecologically valuable sites.

D1.3 As described in section C.9 – C.24, the site consists of grassland, lowland woodland and hardstanding. The hardstanding is of no ecological value and the grassland on site is deemed to be of limited ecological value due to its low species diversity.

D1.4 The ecological assessment of the development area, produced in support of planning (TEP reference: 3192.003), defines the development area as being of low ecological value. In the context of this Code for Sustainable Homes ecological assessment, the habitats across the site are deemed to be of ecological value due to the range of wildlife which they can support.

D1.5 As all vegetation is to be removed from site 0 credits can be awarded under Eco1.

D2.0 Evaluation Criteria for Eco2: Ecological Enhancement

D2.1 Has the developer / client required you to provide advice and recommendations for enhancing site ecology?

Yes

No

If yes, please provide a brief statement outlining all the key⁶ recommendations and all your additional⁷ recommendations

⁵ The development site is defined as any land used for buildings, hard standing, landscaping, or site access; including areas used for temporary site storage, buildings 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.

⁶ Key recommendations: the client / developer will be required to adopt / implement all key recommendations.



D2.2 The following recommendations have been based on the proposed site plan which identifies areas of new building, hardstanding and landscaping.

The key site recommendations, all of which must be implemented are:

- a. pesticide use such as weedkillers, insecticides, slug pellets and fungicides are to be kept to a minimum to prevent bioaccumulation within the animal food chain;
- b. implement good horticultural practice within the planting scheme e.g. use peat-free composts and mulches and application of non-residual pesticides;
- c. ensure 40% of the tree planting within the scheme is native and 10% is of wildlife value. Please note cultivars of native species are not considered to be native but will be assessed for their value to local wildlife;
- d. ensure 30% of the shrub and herbaceous planting is native and 20% is of known wildlife value;
- e. ensure the trees, scrub and hedgerows are not disturbed within the British bird breeding season (March-August), unless a nesting bird survey is carried out by a suitably qualified ecologist beforehand;
- f. ensure trees and shrubs adjacent to the site boundary are appropriately protected in accordance with BS5837:2005 'trees in relation to construction' and the tree survey;
- g. ensure the Himalayan balsam is dealt with in accordance with best practise guidelines;
- h. incorporate bird boxes/tables in at least 10% of the plots;
- i. ensure a hedgerow assessment is undertaken prior to removal; and
- j. adhere to recommendations made within the ecological assessment, in particular those relating to replacement hedgerow planting and the inclusion of native and wildlife-friendly species within the planting scheme.

- D2.3 At least 2 of the following additional recommendations must be implemented
- a. ensure 50% of the tree planting is native and 20% is of known wildlife value;
 - b. ensure 40% of all shrub planting within the scheme is native and 30% is of wildlife value;
 - c. ensure all turfed areas are planted with a seed mix containing at least 5 native species;
 - d. incorporate bird boxes/tables in at least 20% of the plots;
 - e. plant native climbers on at least 10% of the building and fence elevations; and
 - f. plant 200 bulbs within the landscaping scheme.

⁷ Additional recommendations: the client / developer will be required to adopt / implement at least 30% of additional recommendations.



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D2.4 Details of suitable plant species and specifications of wildlife boxes are contained within Appendix 3 and 4 of this report. Please note these lists are not exhaustive and are intended as guidance only.

Assessment of Ecological Enhancement

D2.5 If all key and 2 additional recommendations as detailed above are implemented, then **1 credit** can be awarded under Eco2.

D3.0 Evaluation Criteria for Eco3: Protection of Ecological Features

D3.1 Are there any existing features / areas of ecological value^a on the site and boundary area?

Yes

No

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

Assessment

D3.2 Eco3 aims to protect existing ecological features from substantial damage during the clearing of the site and completion of construction works. The following protection measures have been produced following the completion of a site visit and review of the proposed plans.

D3.3 All vegetation on site will be removed to facilitate the development. Carefully scheduled clearance works should ensure birds are not disturbed during the breeding season.

D3.4 An area of the non-native invasive species Himalayan balsam was found on site. This should be dealt with in accordance with best practice guidelines. See section C.20-C.22 for further information.

D3.5 As the hedgerow along the south-western boundary has the potential to be classed as important under the *Hedgerow Regulations* (1997) a hedgerow assessment must be carried out in spring prior to clearance works.

D3.6 Any trees located outside of the developable area should be appropriately protected from damage during the clearance and construction phase of works, in accordance with BS5837:2005 'trees in relation to construction'. The following recommendations should be implemented:

^a 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 development site to be of low or insignificant ecological value (Eco 1) then there will be no features of ecological value to protect. If there is an area(s) or feature(s) of low or insignificant ecological value you wish to advise be retained and enhanced / improved.

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- a. Trees should be protected in accordance with BS5837:2005 (Trees in relation to construction – recommendations) with Heras fencing fixed into the ground prior to starting construction and before vehicles are taken onto the site;
- b. Fencing should be placed as far as the extent of the overhanging tree canopies (as a minimum) to protect sufficient roots for survival and preserve their integrity until development is finished. No vehicular access, storage of materials or potential contaminants should be situated within the protective area; and
- c. Adhere to all recommendations regarding tree protection made within the tree survey.

Assessment

D3.7 As no vegetation is to be retained on site, 0 credits can be awarded under Eco 3.

D4.0 Evaluation Criteria for Eco4: Change of Ecological Value of Site

D4.1 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

No

D4.2 A detailed scheme has been provided by Croft Goode Architects and the following information can be provided:

- a. a brief description of the landscape and habitats surrounding the development site;
- b. the total site area before and after development; and
- c. details of the site pre-construction.

a. description of landscape / habitats surrounding the development site

D4.3 It is important to assess the typology of the surrounding landscape as this is unlikely to change throughout the development. The site is located in a rural area with the immediate locality being dominated by agricultural land, residential and commercial development. An illustrative example of the surrounding landscape of the Church Raikie site is shown in section C.8 of this report.

b. the total site area before / after development

D4.4 The total area of the site is 1,972m². This will remain unchanged before and after development.

c. ecological diversity if the site pre / post construction

D4.5 Tables 1 and 2 show the areas of the different habitat type pre and post construction and the associated number of species per habitat type.



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Table 1 – Site details before development

Habitat Type ⁹	Area of Habitat m ²	No. Species per habitat type
Hardstanding	38	0
Fertile Grassland	1133	11.6
Lowland Woodland	801	9* (actual)
Total:	1972	20.6

*Native and wildlife-friendly species observed during site visit include: ash (*Fraxinus excelsior*), elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), ivy (*Hedera helix*), hazel (*Corylus avellana*), holly (*Ilex aquifolium*), privet (*Ligustrum ovalifolium*), blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus*).

Table 2 – Site details after development

Habitat Type	Area of Habitat m ²	No. Species per habitat type
Building Footprint	474	0
Hardstanding	1089	0
Typical Garden Planting	378	0
Lowland Woodland	31	0
Total:	1972	0

D4.6 Has your client / developer requested you to carry out the calculation for Eco 4 Change in Ecological Value of Site¹⁰?

Yes

No

If yes, please provide all stages of calculations and state what the total change is detailing:

- a. ecological calculation before development
- b. ecological calculation after development

D4.7 4 credits are available under Eco4 for steps taken to minimise reductions in the ecological value of the site and to encourage improvement / enhancement. Credits are awarded as follows:

⁹ 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.

¹⁰ The calculation must be carried out in line with the methodology provided in the most current version of the Code for Sustainable Homes Guidance.



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

a. ecological calculation before development

D4.8 A topographical survey has been provided by Croft Goode Architects and supplemented by habitat measurements from TEP. Table 3 below shows the area of the different habitat types pre-construction and the associated number of species per habitat type.

D4.9 Fertile grassland is given a standard score of 11.6 species as defined in Code for Sustainable Homes guidance, therefore the site scores relatively highly prior to development due to the amount of grassland on site.

Table 3 – Ecological calculations before development

A Plot type	B Area of Plot (m ²)	C Species No	D Site Score (species x plot area)
Hardstanding	38	x 0	= 0
Fertile Grassland	1133	x 11.6	= 13143
Lowland Woodland	801	x 9	= 7209
Total Site Area	1972	(2) Total	= 20352
Totals Site Score / Total Site Area = (2) / (1) =			10.32

D4.10 The ecological diversity of the site prior to development is +10.32.

b. ecological calculations after development

D4.11 A planting plan has been provided by Croft Goode Architects and shows that under the proposed scheme layout all vegetation currently on site will be removed to facilitate the construction. Where new habitats are being created or where floral species are being planted as part of a landscape design, only those species which are native or have known attraction to local wildlife can be included in the calculations.

D4.12 Table 4 shows the area of the different habitat types post construction and the associated number of species per habitat type.



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Table 4 – Ecological calculations after development

A Plot type	B Area of Plot (m ²)	C Species No.	D Site Score (Species x plot area)
Building Footprint	474	x 0	= 0
Hardstanding	1089	x 0	= 0
Typical Garden Planting	378	x 0	= 0
Lowland Woodland	31	x 0	= 0
(1) Total site area =	1972	(2) Total	0
Totals Site Score / Total Site Area = (2)/(1) =			0.00

The ecological diversity of the site after development is 0.00.

Table 5 showing the change in ecological value prior to and post development

Total no. of species after development	Total no. of species before development	Total change in species
0.00	10.32	-10.32

Currently the proposed development achieves **0 Credits** under Eco 4 due to there being a negative change of over -9 native or wildlife-friendly species.

- D4.13 Up to 4 credits can be gained under Eco4. The following tables demonstrate how enhancements may be undertaken to the habitat types on site to achieve an enhanced score.

Table 6 – Ecological calculations after development (Enhanced to achieve 1 credit)

A Plot type	B Area of Plot (m ²)	C Species No.	D Site Score (Species x plot area)
Building Footprint	474	x 0	= 0
Hardstanding	1089	x 0	= 0
Typical Garden Planting	278	x 0	= 0
Lowland Woodland	131	x 20	= 2620
(1) Total site area =	1972	(2) Total	2620
Totals Site Score / Total Site Area = (2)/(1) =			1.33



The enhancements outlined in Table 6 above would result in a change in ecological value of -8.99. Based on this assessment **1 CSH credit** could be awarded under Eco4.

D4.14 The enhancements outlined above include:

- 100m² of typical garden planting (turf only) must be converted to lowland woodland (tree, shrub and herbaceous planting).
- Areas of lowland woodland must be planted with at least 20 species which are native or of known wildlife value. See appendix 3 for guidance on recommended species. Please note this list is not exhaustive but provides an indication of species which could be included within the schedule.

D4.15 Table 7 demonstrates how further enhancements could be undertaken to achieve 2 credits under Eco4.

Table 7 – Ecological calculations post development (Enhanced to achieve 2 credits)

A Plot type	B Area of Plot (m ²)		C Species No		D Site Score (Species x Area)
Building Footprint	474	x	0	=	0
Hardstanding	1089	x	0	=	0
Wildlife Garden Planting	409	x	36	=	14724
<i>(Wildlife Garden)</i>	1972			Total	14724
Totals Site Score / Total Site Area =					7.47

The enhancements outlined in Table 7 above would result in a change in ecological value of -2.85. Based on this assessment **2 CSH credits** could be awarded under Eco4.

D4.16 The enhancements outlined above include:

- All areas of soft landscaping will need to be designated as wildlife garden planting.
- All wildlife garden planting will need to include at least 36 native or wildlife-friendly species (guidance on recommended species can be found in Appendix 3, please note this list is not exhaustive but is intended only to provide an indication of species which could be included).



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D4.17 See below and Appendix 5 for further information on wildlife garden planting. TEP would review any revised landscaping drawings to assess whether habitat types in the new layout comply with recommendations made in section D4.20 and therefore can be considered to be wildlife gardens. Although not all of these criteria will need to be adhered to, the majority must be undertaken in order for areas of soft landscaping to be considered wildlife gardens.

Wildlife Garden Planting

D4.18 The characteristics of a wildlife garden can be widely interpreted as space that provides food and shelter to local fauna and is rich in structural and floristic diversity. The elements of a wildlife garden which provide benefit to local wildlife are; fruit or berry bearing plants, plants used for cover and access to water. Below is a description of how TEP believes the gardens of new residential developments can be considered wildlife gardens.

D4.19 Each garden should include features which provide both shelter and foraging opportunities, a lawn is of some wildlife value if accented by broad structured planting using native species and is planted in a manner that encourages ecological diversity e.g. no use of pesticides or insecticides.

D4.20 In urban areas wildlife gardens have the potential to encourage insects and, therefore, support local bird life. Where trees cannot be introduced into each garden the erection of a pergola or trellis with native climbers will add alternative structural diversity. The following enhancements must be undertaken within each individual garden for it to be considered wildlife friendly (see appendix 4 for an illustration of the enhancements) ;

- At least 70% of planting must be native or of known wildlife value (see appendix 3);
- To encourage structural diversity each garden should include a native tree, native hedge or pergola with trained native climbers;
- Shelter for local fauna should be provided in the form of a bat or bird box (see appendix 3);
- Foraging opportunities must be available in the form of a fruit/berry producing plant or a bird table;
- At least one planting bed should be incorporated within the garden design and this bed should range in width to encourage planting for structural diversity;
- Pesticide use such as weedkillers, insecticides, slug pellets and fungicides are to be kept to a minimum to prevent any cumulative effects within the animal food chain; and
- Good horticultural practice should be implemented within the planting scheme e.g. use peat-free composts and mulches and application of non-residual pesticides.

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- D4.21 Church Raika may have the potential to achieve 3 or 4 credits under Eco4, however this would require modifications to the scheme which are likely to prove unfavourable with both the developer and residents due to increased costs and loss of amenity space. Further information on achieving more credits will be provided on request.
- D4.22 Enhancements to the development scheme will be subject to review based on amendments to the landscape scheme and the production of a planting schedule. TEP will review any landscaping proposals and planting schedules and assess whether further credits may be awarded.

Section E: Summary

- E.1 Details of the development layout were made available by Croft Goode Architects additionally this information was supplemented by a site and desk based study of the site. Information provided was used to inform category 9 of the BRE's Code for Sustainable Homes Assessment.
- E.2 The site occupies an area of land in Chipping near Preston. At the time of the site survey the site was dominated by fertile grassland with scrub, introduced shrub, hedgerows and hardstanding.
- E.3 Legislative issues which are relevant to this site include:
- a. **Breeding birds:** vegetation clearance must be carried out outside of the British bird breeding season (March-August) or a nesting bird check conducted beforehand. See paragraph C.19 for further details.
 - b. **Trees:** Trees and other vegetation adjacent to the site should be appropriately protected during the clearance and construction phase of works in accordance with BS5837:2005 'trees in relation to construction' and the Arboricultural Implications Assessment.
 - c. **Other protected species:** although the presence of protected species on site is unlikely, if any protected species are suspected at any time works must cease immediately and an ecologist must be contacted for advice.
 - d. **Hedgerow:** as the hedgerow along the south-western boundary has features which may mean it is classed as an 'important hedgerow' under the *Hedgerow Regulations (1997)* a hedgerow survey must be undertaken prior to removal.
 - e. **Himalayan balsam:** the Himalayan balsam on site must be dealt with in accordance with best practice measures. See section C.20-C.22 for details.
- E.4 As all vegetation is to be cleared to facilitate the development, 0 CSH credits can be awarded under Eco1.



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- E.5 If all key recommendations and two of the additional recommendations are implemented within the development scheme then 1 CSH credit can be awarded under Eco2.
- E.6 As no vegetation is to be retained on site, 0 CSH credits can be awarded under Eco3.
- E.7 Based on an assessment of the current landscape scheme 0 CSH credits can be awarded under Eco4. If enhancements were undertaken in line with those described in Tables 6 and 7, a possible 2 credits may be achieved.
- E.8 From categories Eco1 to Eco4 (inclusive), based on the current information provided a total of 1 CSH credit is available to the developer provided all key recommendations and two additional recommendations (as detailed under Eco2) are implemented at the scheme.

Section F: Report Validation

Signature of validation

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

Name of ecologist:

Signature of ecologist:

Date:

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Appendix 1:
Report Verification and Ecologist CV

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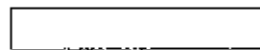


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*Appendix 2:
Developable Area*

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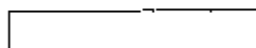
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Suggested species lists for planting schemes (native and exotic)

a) Vascular Plants (native herbs, bulbs/tuberous and grasses/sedges)

<i>Native Herbaceous Species suitable for housing areas (grassland, borders, shade)</i>		
Botanical Name	Common Name	Comments
<i>Achillea millefolium</i>	Yarrow	
<i>Achillea ptarmica</i>	Sneezewort	damp
<i>Ajuga reptans</i>	Bugle	shade
<i>Alliaria petiolata</i>	Garlic mustard	shade
<i>Cardamine flexuosa</i>	Wavy bitter-cress	shade
<i>Cardamine pratensis</i>	Cuckoo-flower	damp
<i>Centaurea nigra</i>	Knapweed	
<i>Eupatorium cannabinum</i>	Hemp agrimony	
<i>Filipendula ulmaria</i>	Meadowsweet	damp
<i>Galium mollugo</i>	Hedge bedstraw	
<i>Geranium pratense</i>	Meadow cranesbill	
<i>Geranium robertianum</i>	Herb Robert	shade
<i>Geum urbanum</i>	Herb Bennett	shade
<i>Glechoma hederacea</i>	Ground-ivy	shade
<i>Hypericum maculatum</i>	Imperforate St-John's-wort	
<i>Hypericum perforatum</i>	Perforate St-John's-wort	
<i>Hypericum tetrapetrum</i>	Square-stemmed St-John's-wort	damp
<i>Hypochaeris radicata</i>	Cat's-ear	
<i>Lathyrus pratensis</i>	Meadow vetchling	
<i>Leucanthemum vulgare</i>	Ox-eye daisy	
<i>Linaria vulgaris</i>	Common toadflax	
<i>Lotus corniculatus</i>	Birds-foot trefoil	
<i>Medicago lupulina</i>	Black medick	
<i>Myosotis sylvatica</i>	Wood forget-me-not	
<i>Persicaria bistorta</i>	Bistort	
<i>Plantago lanceolata</i>	Ribwort plantain	
<i>Primula vulgaris</i>	Primrose	shade
<i>Prunella vulgaris</i>	Self-heal	
<i>Pulicaria dysenterica</i>	Fleabane	damp
<i>Ranunculus acris</i>	Meadow buttercup	
<i>Rumex acetosa</i>	Common sorrel	
<i>Silene dioica</i>	Red campion	
<i>Silene vulgaris</i>	Bladder campion	
<i>Sonchus arvensis</i>	Corn sow-thistle	
<i>Stachys sylvatica</i>	Hedge woundwort	
<i>Stellaria holostea</i>	Greater stitchwort	

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Native Herbaceous Species suitable for housing areas (grassland, borders, shade)

Botanical Name	Common Name	Comments
<i>Succisa pratensis</i>	Devil's-bit scabious	
<i>Trifolium pratense</i>	Red clover	
<i>Trifolium repens</i>	White clover	
<i>Veronica chamaedrys</i>	Germander speedwell	shade
<i>Vicia cracca</i>	Tufted vetch	
<i>Vicia sepium</i>	Bush vetch	

Bulbs and Tuberous Species

Botanical Name	Common Name	Comments
<i>Allium ursinum</i>	Wild garlic	shade
<i>Crocus nudiflorus</i>	Autumn crocus	Non-native
<i>Crocus vernus</i>	Spring crocus	Non-native
<i>Crocus x stellaris</i>	Dutch crocus	Non-native
<i>Galanthus nivalis</i>	snowdrop	Non-native
<i>Hyacinthoides non-scriptus</i>	Bluebell	shade
<i>Iris foetidissima</i>	Stinking Iris	
<i>Iris pseudacorus</i>	Yellow flag	
<i>Muscari armeniacum</i>	Grape-hyacinth	Non-native
<i>Narcissus cultivars</i>	Garden daffodil	Non-native
<i>Narcissus pseudonarcissus</i>	Wild daffodil	
<i>Ornithogalum angustifolium</i>	Star-of-Bethlehem	Non-native

Native Grass Species and Sedges

Botanical Name	Common Name	Comments
<i>Agrostis capillaris</i>	Common bent	
<i>Agrostis stolonifera</i>	Creeping bent	damp
<i>Alopecurus pratensis</i>	Meadow foxtail	
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass	
<i>Brachypodium sylvaticum</i>	False-brome	shade
<i>Carex flacca</i>	Glaucous sedge	damp
<i>Carex hirta</i>	Hairy sedge	
<i>Carex nigra</i>	Common sedge	damp
<i>Cynosurus cristatus</i>	Crested dog's-tail	
<i>Deschampsia cespitosa</i>	Tufted hairgrass	damp
<i>Deschampsia flexuosa</i>	Wavy hairgrass	shade
<i>Festuca ovina</i>	Sheep's fescue	
<i>Festuca rubra</i>	Red fescue	
<i>Holcus lanatus</i>	Yorkshire fog	

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<i>Native Grass Species and Sedges</i>		
Botanical Name	Common Name	Comments
<i>Holcus mollis</i>	Creeping soft-grass	
<i>Luzula campestris</i>	Field woodrush	
<i>Melica uniflora</i>	Wood melick	shade
<i>Milium effusum</i>	Wood millet	shade
<i>Poa annua</i>	Annual meadowgrass	
<i>Poa pratensis</i>	Smooth meadowgrass	
<i>Poa trivialis</i>	Rough meadowgrass	

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b) Woody Species: North-West, Native Trees, Shrubs and Climbers

<i>Native Woody Species</i>		
Botanical Name	Common Name	Comments
<i>Alnus glutinosa</i>	Alder	
<i>Betula pendula</i>	Silver birch	
<i>Betula pubescens</i>	Downy birch	
<i>Corylus avellana</i>	Hazel	
<i>Crataegus monogyna</i>	Hawthorn	
<i>Cytisus scoparius</i>	Broom	
<i>Frangula alnus</i>	Alder buckthorn	Damp acid area
<i>Fraxinus excelsior</i>	Ash	
<i>Hedera helix</i>	Ivy	
<i>Ilex aquifolium</i>	Holly	
<i>Lonicera periclymenum</i>	Honeysuckle	
<i>Malus sylvestris</i>	Crab apple	
<i>Populus nigra betulifolia</i>	Black poplar	Not N of Ribble
<i>Populus tremula</i>	Aspen	
<i>Prunus avium</i>	Wild cherry	
<i>Prunus spinosa</i>	Blackthorn	
<i>Quercus petraea</i>	Sessile oak	
<i>Quercus robur</i>	Oak	
<i>Rosa arvensis</i>	Field rose	
<i>Rosa canina</i> agg.	Dog-rose	
<i>Rosa pimpinellifolia</i>	Burnet rose	
<i>Rubus fruticosus</i>	Bramble	
<i>Rubus idaeus</i>	Raspberry	
<i>Salix caprea</i>	Goat willow	
<i>Salix cinerea</i>	Grey willow	
<i>Salix pentandra</i>	Bay willow	
<i>Salix purpurea</i>	Purple willow	
<i>Salix repens</i>	Creeping willow	
<i>Sambucus nigra</i>	Elder	
<i>Solanum dulcamara</i>	Bittersweet	
<i>Sorbus aucuparia</i>	Mountain ash	
<i>Taxus baccata</i>	Yew	
<i>Tilia cordata</i>	Small-leaved lime	
<i>Ulex europaeus</i>	Gorse	
<i>Ulmus glabra</i>	Wych elm	
<i>Viburnum opulus</i>	Guelder-rose	
Long-established exotics (Archaeophytes)		
<i>Salix alba</i>	White willow	

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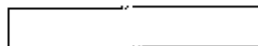




<i>Native Woody Species</i>		
Botanical Name	Common Name	Comments
<i>Salix fragilis</i>	Crack willow	
<i>Salix viminalis</i>	Osier	
<i>Tilia x europaea</i>	Lime	

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c) Exotic Wildlife Friendly Species,
From "Gardening with Wildlife in Mind", English Nature, 2005

<i>Exotic Herbaceous Species suitable for attracting wildlife to housing areas</i>		
Botanical Name	Common Name	Comments
<i>Aubretia deltoidea</i>	Aubretia	
<i>Monarda didyma</i>	Bergamot	
<i>Rudbeckia hirta</i>	Black-eyed Susan	
<i>Borago officinalis</i>	Borage	
<i>Primula chungensis</i>	Candelabra primula sp	Damp areas
<i>Cynara cardunculus</i>	Cardoon	
<i>Nepeta x faassenii</i>	Catmint	
<i>Malva sylvestris</i>	Common mallow	
<i>Chrysanthemum segetum</i>	Corn marigold	
<i>Onopordon acanthium</i>	Cotton thistle	
<i>Euphorbia cyparissias</i>	Cypress spurge	
<i>Hesperis matronalis</i>	Dame's violet	
<i>Verbascum nigrum</i>	Dark mullein	
<i>Lamium orvala</i>	Dead-nettle	
<i>Foeniculum vulgare</i>	Fennel	
<i>Tanacetum parthenium</i>	Feverfew	
<i>Geranium renardii</i>	French cranesbill	
<i>Centaurea macrocephala</i>	Giant hardhead	
<i>Cephalaria gigantea</i>	Giant scabious	
<i>Echinops bannaticus</i>	Globe thistle	
<i>Solidago spp</i>	Goldenrod species	
<i>Lunaria biennis</i>	Honesty	
<i>Sedum spectabile</i>	Ice-plant	
<i>Stachys lanata</i>	Lambs lugs	
<i>Melissa officinalis</i>	Lemon balm	
<i>Pulmonaria officinalis</i>	Lungwort	
<i>Aster spp</i>	Michaelmas daisies	Single varieties only
<i>Linaria purpurea</i>	Purple toadflax	
<i>Centranthus ruber</i>	Red valerian	
<i>Geranium macrorrhizum</i>	Rock cranesbill	
<i>Mentha suaveolens</i>	Round-leaved mint	
<i>Salvia officinalis</i>	Sage	
<i>Saponaria officinalis</i>	Soapwort	
<i>Scabiosa atropurpurea</i>	Sweet scabious	
<i>Symphytum tuberosum</i>	Tuberous comfrey	
<i>Lamium album</i>	White deadnettle	
<i>Achillea filipendulina</i> Gold Plate	Yarrow	

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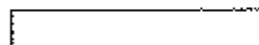
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<i>Exotic Shrub and Tree Species suitable for attracting wildlife to housing areas</i>		
Botanical Name	Common Name	Comments
<i>Berberis x stenophylla</i>	Berberis	
<i>Ceanothus divergens</i>	Californian lilac	
<i>Caryopteris x clandonensis</i>	Caryopteris	
<i>Prunus laurocerasus</i>	Cherry laurel	
<i>Clematis tangutica</i>	Clematis species	Climber
<i>Clematis montana</i>	Clematis species	Climber
<i>Olearia macrodonta</i>	Daisy-bush species	
<i>Escallonia spp</i>	Escallonia species	
<i>Pyracantha angustifolia</i>	Firethorn	
<i>Ribes sanguineum</i>	Flowering currant	
<i>Fuchsia magellanica</i>	Fuchsia	
<i>Hebe</i> Midsummer beauty	Hebe	
<i>Leycesteria formosa</i>	Himalayan honeysuckle	
<i>Amelanchier lamarckii</i>	June-berry	
<i>Lavandula angustifolia</i>	Lavender	
<i>Choisya ternata</i>	Mexican orange-blossom	
<i>Myrtus communis</i>	Myrtle	
<i>Pyrus communis</i>	Pear	
<i>Rosmarinus officinalis</i>	Rosemary	
<i>Pinus sylvestris</i>	Scot's pine	
<i>Cotoneaster frigidus</i>	Tree cotoneaster	

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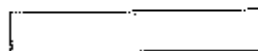


*Appendix 4:
Information on Bird Boxes*

APPENDIX 4

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Information on Bird Boxes & Sparrow Terraces

Suppliers (prices correct as of Oct 2003):

Alana Ecology
The Old Primary School
Church Street
Bishop's Castle
Shropshire
SY9 5AE

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Tel: +44 (0)1588 630173
Fax: +44 (0)1588 630176
Email: sales@alanaecology.com

Sparrow Terrace, Stone Colour

House sparrows are gregarious and prefer to nest close to each other, so this woodcrete box provides room for three families under one roof. Made from long-lasting, breathable woodcrete. Stone colour. No maintenance required.
Dimensions 245 x 430 x 200 mm.
Weight 13kg. Designed for fixing to walls (not suitable for fences or sheds due to the weight of the box).



A02085 *Sparrow Terrace, Stone Colour* (also available in brown)
£34.00 net **£39.95 inc VAT**

Schwegler 9A House Martin Double Nest

These woodcrete nests are durable and ready for immediate use when birds return each summer. Easily fixed under the eaves on the outside walls of buildings, at least 2 metres from the ground. The backing board may be painted to match the building.

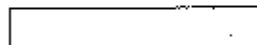


Model 9A is a double unit with two nests mounted side by side on a backing board, as shown. Model 9B is similar to the 9A above but with one single nest.

A02018 *Schwegler 9A House Martin Double Nest*
£22.09 net **£25.95 inc VAT**

A02019 *Schwegler 9B Single House Martin Nest*
£12.72 net **£14.95 inc VAT**

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Schwegler 1B Bird Box, natural brown

The most popular box for garden birds, the 1B appeals to a wide range of species, and is the official nest box of National Nest Box Week. The box can be nailed to the trunk of a tree, or hung from a branch. Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance. Woodcrete, 23cm high x 16cm diameter. With standard 32mm diameter entrance hole

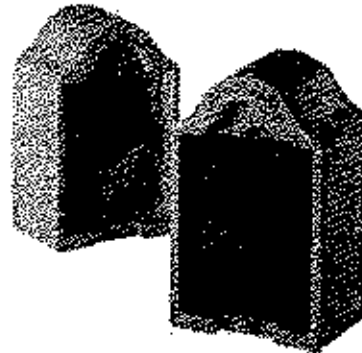


Up to 2) £15.28 net **£17.95 inc VAT** (3+) £14.43 net

£16.96 inc VAT

The Bird House

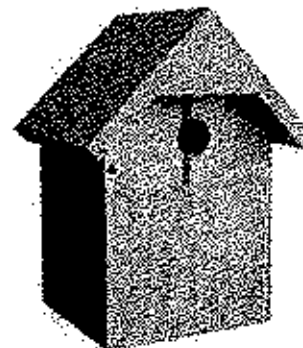
A decorative yet practical nest box designed for fixing to a tree trunk, wall or fence using the bracket on the back. It will attract similar species to the standard 1B box. Robust and durable Schwegler woodcrete construction



A02084 The Bird House, £22.09 net, **£5.96 inc VAT**

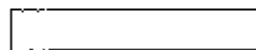
Gable Nest Box

A substantial wooden bird box with a gable roof and 28mm entrance hole. Made of 15mm thick softwood; external dimensions 14.5cm x 14.5cm x 26cm high (to top of gable). Suitable for the smaller garden birds.



A03008 Gable Nest Box, £8.47 net, **£9.95 inc VAT**

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Wooden Bird Box

A simple wooden bird box with sloping roof, suitable for the smaller garden birds. Made from substantial 2cm thick softwood. 14cm w x 18cm d x 26cm h (backplate 33.5cm h). The standard model has a 32mm diameter entrance hole attractive to a wide range of smaller garden birds.

A03004 Wooden Bird Box, £8.47 net, **£9.95 inc VAT**



Roosting Pockets

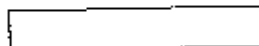
These attractive roosting/nest pockets can be used by wild birds in autumn, winter and spring. The birds can save energy during the colder months by roosting in a sheltered place. These pockets also provide a warm nesting place in the spring for smaller birds such as wrens. Made from natural materials. The pockets have a wire at the back to fix onto a branch, or they can be stapled or nailed to a fence or trellis with plant cover. Pack of 3 assorted roost pockets (styles may vary).

A02090 Roosting Pockets, £6.77 net, **£7.95 inc VAT**



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Appendix 5:
Information on Wildlife Garden Planting

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