

Our Ref: ARC/PCB0317/HPA

Date: 20th March 2017

Address: Adrian Hill
Account Manager
Paper Escape
3 Portland Grove
Chinley
High Peak
SK23 6AX



For the attention of Adrian

**RE: POTENTIAL FOR ECOLOGICAL ENHANCEMENT AT PAPER ESCAPE,
BOWDEN LANE, CHAPEL-EN-LE-FRITH**

Thank you for your request to provide advice on potential enhancement for wildlife at the above location. Please find our recommendations below.

The site is currently predominantly semi-improved grassland with small areas of scrub and a few small and medium sized trees present.

The proposed development of the site is to construct a storage facility with its associated amenity land, and hard-standing (see Figure 1).

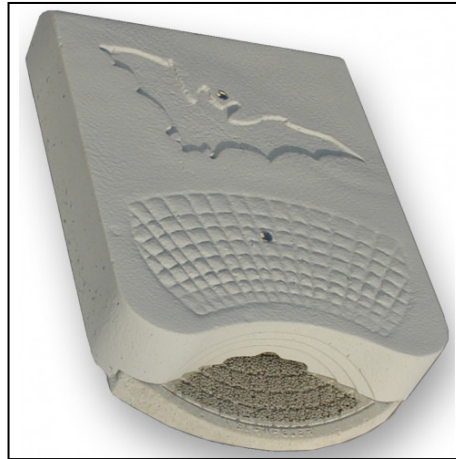
BATS

There is potential to enhance the site for bats. This can be through the erection of external bat-boxes on the buildings. Wooden bat-boxes are likely to be damaged by weather relatively quickly, so more durable bat-boxes made of woodcrete such as the Schwegler 2FE and 1WQ (pictured below) are recommended.

2FE



1WQ



These boxes can be painted using non-toxic external paint to remain in keeping with the building décor.

While these boxes can be placed on any aspect of the buildings, ideally they should be mounted avoiding facing south/south-west where prevailing weather tends to originate.

If external boxes are to be used, a minimum of four boxes should be erected along each long edge of the building and at least two on the north-eastern edge of the building.

The boxes should be placed as close to the apex of the roof as possible, ideally avoiding placement above windows to avoid the potential for discolouration from faeces and urea should the boxes be used.

The site can also be enhanced for bats through appropriate landscaping and planting within the wider site which is discussed later in this document.

These bat-boxes are available from a range of suppliers including Envisage Wildcare (www.wildcareshop.com) and Alana Ecology (www.nhbs.com).

NESTING BIRDS

The same principles with regard to weather damage apply to the bird nest-boxes as with the bat-boxes, and again more durable woodcrete boxes are available such as the Schwegler 3S and 3SV pictured below. The 3SV box has the addition of an anti-predator tube attached to the front entrance.

3S



3SV



The access to these boxes is large (45mm), allowing them to be used by larger bird species such as starling and blackbird, but they will also be used by smaller passerine species.

These nest-boxes are also available from the same suppliers as the bat-boxes.

Given the highly territorial nature of some bird species that may use the boxes such as robin (*Erithacus rubecula*) and blackbird (*Turdus merula*), it is recommended that no more than four boxes should be placed on each group of buildings and should be spaced as far apart as possible. Placement height should ideally be 2.5m or more above ground level.

Further site enhancement for nesting birds is expected to be a longer term result of the project, largely due to the lack of suitable features for such species within the site at present and is expected to be a result of appropriate planting within the general landscaping of the site.

Where shrubs/hedgerows are to be planted, species used should ideally be native and with a recognised ecological value. Where possible species used should include hawthorn (*Crataegus monogyna*), field maple (*Acer campestre*), hazel (*Corylus avellana*) and mountain ash (*Sorbus aucuparia*).

Where there is scope to include larger trees within the wider landscaping, species including oak (*Quercus robur*), beech (*Fagus sylvatica*) and ash (*Fraxinus excelsior*) could be considered.

Further enhancement for birds can be through additional planting to attract insects (see below).

ENHANCEMENT FOR OTHER SPECIES

Site enhancement for other species (notably invertebrates) can be achieved through the use of insect attracting plants in other areas of the site (see Appendix A).

The current plans (Figure 1) indicate areas to be planted, presumably as amenity grassland. Dingy skipper (*Erynnis tages*) are known to be present within the wider area so seeding should include as high a level as possible of bird's foot trefoil (*Lotus corniculata*), the main food plant of this species.

A search of the internet (although not exhaustive) indicated that the NF4 butterfly mix available from www.ysjseeds.co.uk would be suitable as this contains 5% of this plant species.

The site can also be further enhanced for invertebrates by the use of night scented plants in borders and hedgerows which are likely to attract moths such as buddleia (*Buddleja davidii*), honeysuckle (*Lonicera sp.*) and jasmine (*Jasminum sp.*).

As mentioned above, such planting will also provide food for bat and bird species.

TIMESCALES FOR IMPLEMENTATION

It is expected that the erection of bat-boxes and nest-boxes for birds can be implemented after completion of each phase of the development. Landscaping and planting is expected to be undertaken where possible following each development phase, but the majority is expected to be undertaken following completion of the construction phase.

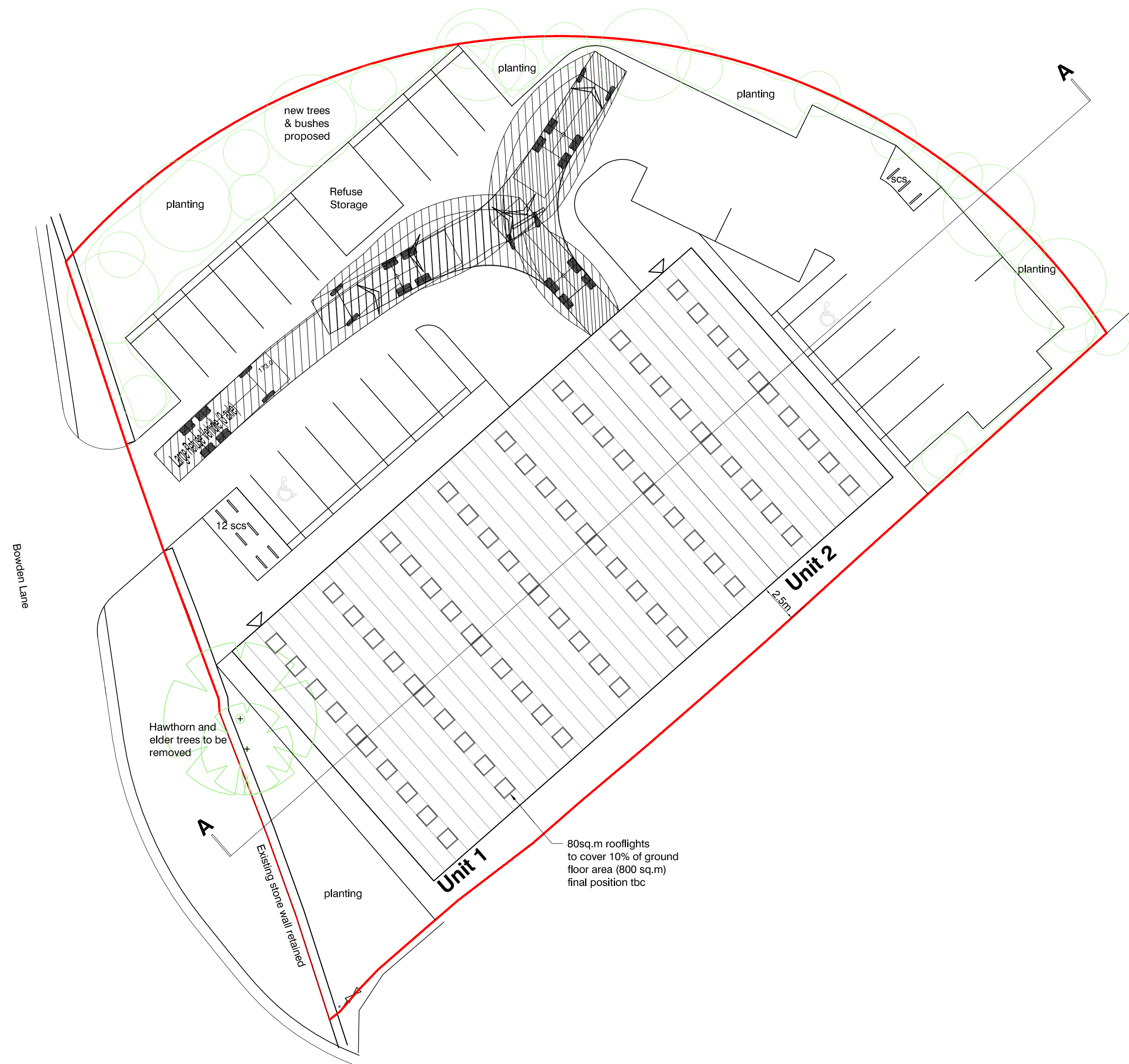
I trust that this document is sufficient for your requirements, and if you have any further queries, please do not hesitate to contact me.

Yours sincerely,

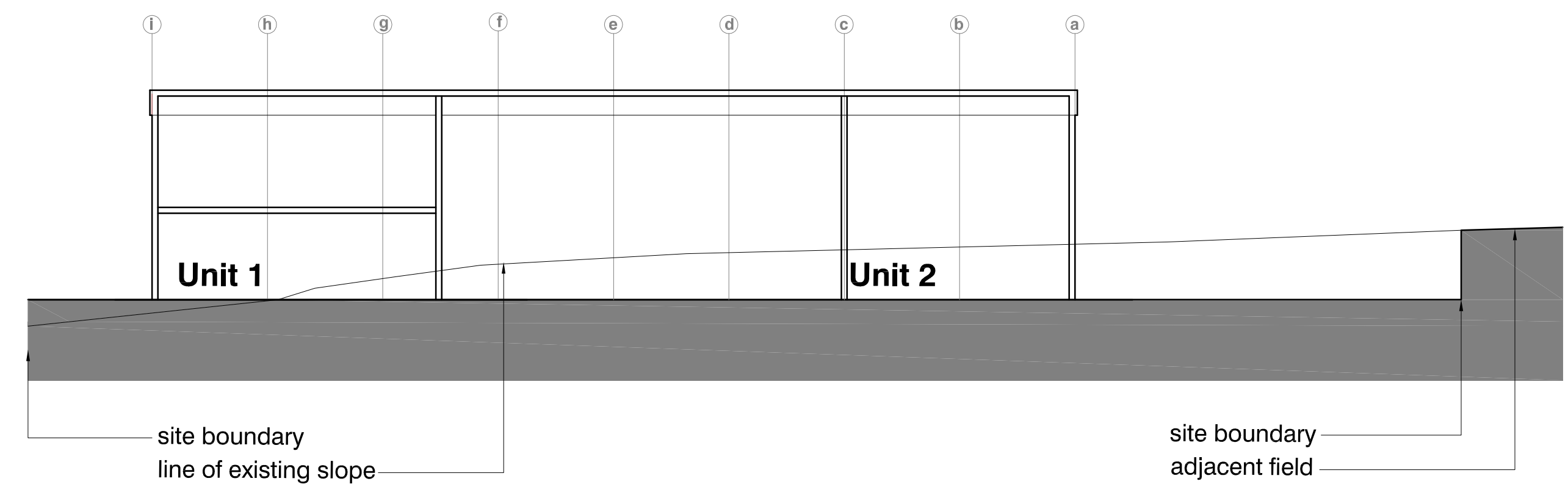
A handwritten signature in black ink, appearing to read 'Chris Richards', with a stylized, cursive script.

Chris Richards
BSc (Hons), PGCert, MCIEEM.
Principal Ecologist

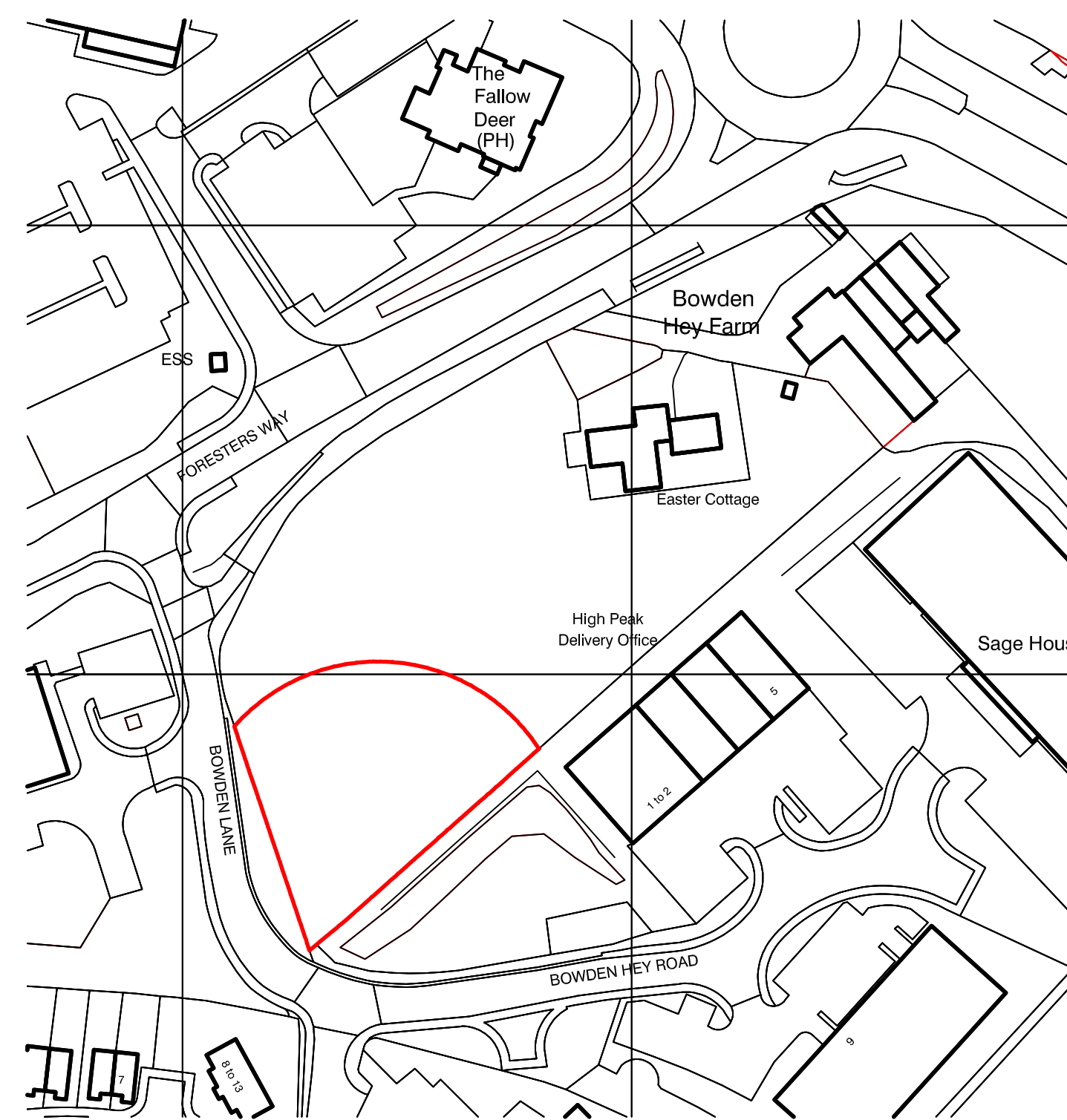
FIGURE 1 - PROPOSED DEVELOPMENT LAYOUT



Site Plan 1:200



Proposed Site Section AA 1:200



Location Plan 1:1250



Revision A: 13/01/16 landscaping scheme amended
HIGH PEAK ARCHITECTS LTD
 2nd Floor, Wharf House, Wharf Road, Whaley Bridge, High Peak, Derbys SK23 7AD
 Tel: 01663 719717 Website: highpeakarch.com Email: hpa@highpeakarch.com

Proposed B8 Unit
 Bowden Lane, Chapel en le Frith

Site Plan
 1332.PL01A

APPENDIX A - DETAILS OF INSECT ATTRACTING PLANT SPECIES

WILD PLANT SPECIES FOR WILDLIFE GARDENING

Note: Where 'attracts insects' is mentioned you can assume that birds will also be consequently be attracted, and where 'seeds' are mentioned these will attract birds generally, although some seed types are specific to certain species. The odd plant here, like Columbine, can overtake your garden if not suitably controlled.

FLOWERS AND PLANTS

Amaranth - attracts insects

Bird's-foot Trefoil - foodplant for Wood White / Silver-Studded butterflies, &

Six-Spot Burnet moth

Bistort - attracts insects / seed source

Cat-Mint - attracts bees

Columbine - attracts insects

Common Evening Primrose - attracts insects / seed source

Common Thistle - seeds for Goldfinches

Common Toadflax - nectar for bees and bumble-bees

Corn Cockle - attracts butterflies

Cornflower - attracts insects / seed source

Cow Parsley - seed source

Cowslip - foodplant for Duke of Burgundy Fritillary

Devil's Bit Scabious - caterpillars of Marsh Fritillary

Dill - slugs attracted / seed source

Dog Rose - often aphids on leaves / hip fruits for birds

Dog Violet - caterpillars of various Fritillary butterflies

Eyebright - attracts bees and butterflies

Fennel - insects / hoverflies / seed source

Field Poppy - attracts insects and bees / seeds

Foxglove - attracts bumble-bees

Garlic Mustard - food source/egg laying habitat for Green-veined White &

Orange Tip butterflies

Golden Rod - attracts insect / seeds

Great Mullein - attracts butterflies

Greater Knapweed - attract bumble-bees and butterflies / seed source

Greater Plantain - seeds favoured by birds

Ground-Ivy - attracts bees

Hemp Agrimony - attracts butterflies

Honesty - attracts butterflies and bees

Honeysuckle - foodplant for caterpillars of White Admiral butterfly (rather specialised and of limited distribution) / nectar for hawkmoths and other night- flying moths

Ivy - foodplant for Holly Blue butterfly and Swallow-Tail moth caterpillars / berries for birds / attracts insects during flowering

Lady's Bedstraw - foodplant for caterpillars of Broad-Bordered Bee Hawk-moth

Lady's Smock/Cuckoo Flower – flowers for hoverflies and foodplant for Green Veined White & Orange Tip butterflies

Marjoram - nectar for butterflies and bees, and attractive to burnet moths

Marsh Marigold - beetles and other insects

Marsh and Nodding Thistles - flowers attract bumble-bees and other insects

Meadow Buttercup - attracts beetles and flies

Meadow Crane's-Bill - attracts bees

Meadow grasses - many grasses are useful habitats for certain butterfly caterpillars

Oxeye Daisy – attracts many insects

Primrose - attracts insects, bees, slugs! (though not popular with many gardeners!) / seeds for some birds / Duke of Burgundy Fritillary caterpillar (very unlikely in gardens)

Purple Loosestrife - insects plus seed source

Ragged-Robin - attracts butterflies and bees

Red & White Dead-nettle - nectar for bumble-bees

Red Campion - attracts flies and bees

Red Valerian - for butterflies

Red/White Clover - nectar for bumble-bees/bees/ foodplant of Clouded Yellow butterfly (very rarely breeds in Britain – mainly a migrant)

Rosebay Willow-herb - nectar source for bees / foodplant for Elephant Hawk-moth caterpillars

Rosemary - attracts various flying insects

Selfheal - attracts bees

St. John's Wort - attracts insects / seeds for some bird species

Stinging Nettle - food source Red Admiral, Peacock, Tortoiseshell and Comma butterfly caterpillars / seed source

Tall Melilot - bee nectar source

Teasel - good seed source – flowers attractive to various butterflies

Thyme - attracts bees

Tormentil - foodplant for caterpillars of Grizzled Skipper butterfly (unlikely in gardens)

Traveller's Joy - attracts bees and hoverflies

Tufted Sedge - insects and seed source

Water Mint - attracts various insects

White Campion - attracts moths

White Dead-Nettle - attracts bees

Wild Angelica - attracts slugs and snails!, flowers for pollinating insects, winged fruits

Wild Pansy - attracts bees

Yarrow - seeds / various insects and aphids / hoverflies and butterflies

SHRUBS AND TREES

Blackberry - fruit supply for birds, flowers attract many butterflies, especially Browns

Broom - attracts insects and bees / seed source

Buckthorn - foodplant for Green and Brown Hairstreak (rare) and Brimstone butterflies

Common Alder - seed source for birds and finches

Crab Apple - fruit for birds / flowers for insects

Gorse - attracts insects, especially bees and Silver-Studded Blue butterfly

Hawthorn / Elder - insects during summer / berries for autumn/winter

Holly - berries for birds / foodplant for Holly Blue butterflies

Pear - various insects

Silver Birch - seed source / aphids often present

Willow - attracts many insects and caterpillars

Gardening for bats

Aim at having flowers in bloom through the year, including both annuals and herbaceous perennials.

Below are some suggestions, but this is by no means an exhaustive list. See what grows well in YOUR garden, and what seems most attractive to insects.

Flowering times are approximate, varying in different areas. Regular dead-heading extends flowering period in many flowers. A=annual, HA=hardy annual,

HHA=half-hardy annual, P=perennial, W=wild flower,

Flowers for borders

	<i>Hypericum</i>	P	March- March – Oct.
St John's Wort	<i>Calendula</i>	H/A	March- June
marigolds	<i>a. deltoidea</i>	P	March
aubretia	<i>Lunaria rediva</i>	HB	March – May
honesty	<i>Myosotis sp.</i>	A/P	April
forget-me-not	<i>Bergenia</i>	P	April - June
elephant ears	<i>Erysimum</i>	B	May – Sept.
Wallflowers	<i>Geranium sp</i>	P	May -
Cranesbills	<i>Achillea</i>	P	May - July
Yarrow	<i>Papaver sp.</i>	A	May - August
Poppies	<i>Hesperis matronalis</i>	P	May – Sept.
Dames violet	<i>Centranthus ruber</i>	P	June – Aug.
Red Valerian	<i>Limnanthes</i>	HA	June- Sept.
Poached egg plant	<i>Centaurea nigra</i>	P	June – Sept.
Knapweed	<i>Leucanthemum vulgare</i>	P	June – Aug.
Phacelia	<i>Oenothera biennis</i>	B	June-Sept.
Ox-eye daisy	<i>Iberis umbellata</i>	HA	June – July
Evening primrose	<i>Dianthus barbatus</i>	B	June -
Candytuft	<i>Gaillardia</i>	P	June – Oct.
Sweet William	<i>V.bonariensis</i>	P	July-Aug.
Blanket flowers	<i>knautia arvensis</i>	HA	July-Aug
Verbena	<i>matiola bicornia</i>	A/P	July – Sept.
Scabious	<i>Scabious sp.</i>	HHA	July – Oct.
Night-scented stock	<i>heliotrope</i>	A/P	July – Oct.
Pincushion flower	<i>Cosmos sp.</i>	A/P	August-Nov.
Cherry pie	<i>Rudbeckia sp.</i>	P	August-Oct.
Mexican aster	<i>lavatera sp.</i>	P	August-Sept.
Cone flower	<i>Aster sp.</i>	P	Sept.
Mallow	<i>Sedum spectabile</i>	P	Sept.
Michaelmas daisy	Herbs – both leaves and flowers are fragrant		
Ice plant 'Pink lady'	<i>Foeniculum vulgare</i>		July – Sept.
	<i>Monarda didyma</i>		June - Sept
Fennel	<i>Myrrhis odorata</i>		April - June
Bergamot	<i>Hyssopus officinalis</i>		July - Sept
Sweet Cicely	<i>Tanacetum parthenium</i>		June – Sept.
Hyssop	<i>Borago officinalis</i>		May – Sept.
Feverfew			
Borage			

Native ‘bat-friendly’ plant species

(Taken from the Bat Conservation Trust's leaflet 'Gardening for Bats')

Rosemary	<i>Rosemary officinalis</i>	March - May
Lemon balm	<i>Melissa officinalis</i>	
Coriander	<i>Copriamum sativum</i>	June - August
Lavenders	<i>Lavendula sp.</i>	
Marjoram	<i>Origanum sp</i>	
Trees, shrubs and climbers important to insects		
Oak	<i>Quercus sp.</i>	large gardens only
Silver birch	<i>Betula pendula</i>	
Common alder	<i>Alnus glutinosa</i>	Suitable for coppicing
Hazel	<i>Corylus avellana</i>	Suitable for coppicing
Elder	<i>Sambucus nigra</i>	Small
Pussy willow	<i>Salix caprea</i>	Suitable for coppicing
Hawthorn	<i>Crataegus monogyna</i>	Suitable for coppicing
Honeysuckle	<i>Lonicera sp.</i>	grow a variety for succession.
Dog rose	<i>Rosa canina</i>	Climber
Bramble	<i>Rubus fruticosus</i>	Climber
Ivy	<i>hedera helix</i>	Climber
Buddleia	<i>Buddleia davidii</i>	shrub
Guelder rose	<i>Viburnum opulus</i>	shrub
Gorse	<i>Ulex sp.</i>	shrub
Plants for pond edges and marshy areas		
Purple loosestrife	<i>Lythrum salicaria</i>	W
Meadow sweet	<i>Filipendula ulmaria</i>	W
Lady's smock	<i>Cardamine pratensis</i>	W
Water mint	<i>mentha aquatica</i>	W
Angelica	<i>Angelica sylvestris</i>	W
Hemp agrimony	<i>Eupatorium cannabinum</i>	W
Marsh marigold	<i>Caltha palustris</i>	W
Creeping Jenny	<i>Lysimachia nummularia</i>	W
Fringed water lily	<i>Nymphoides peltata</i>	W
Water forget-me-not	<i>Myosotis scorpioides</i>	W

Allow part of your lawn to grow long in summer and cut in autumn, removing the clippings. Avoid using fertilizers. Compost heaps are good producers of insects too.

Add a seat to watch your garden come to life!